

## **APPENDIXES**

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## **APPENDIX 1**

### **Public Scoping Meeting Attendees, Introduced Issues, and Management Plan**

**Carmel Mountain and Del Mar Mesa Management Plan  
Public Scoping Meeting  
February 27, 2001**

Attendees

Susan Anuskiewicz, Parcel owner  
Holly Boessow, City of San Diego MSCP  
Slader Buck, U.S. Fish and Wildlife Service, Refuges Division  
Kathryn Burton, Sorrento Hills Community Planning Board and Friends of Carmel Mountain  
Chuck Corum, Pardee Homes  
Mark Doderer, RECON  
Beth Fischer, Pardee Homes  
Paul Fromer, RECON  
Marvin Gerst, Del Mar Mesa Planning Board  
Diana Gordon, Carmel Mountain Conservancy  
Keith Greer, City of San Diego MSCP  
David Hogan, Center for Biological Diversity  
Jan Hudson, Del Mar Mesa Planning Board  
Robert Hutsel, City of San Diego Mayor's Office  
Isabelle Kay, Carmel Mountain Conservancy  
Mike Kelly, Environmental Conservation Foundation  
Bill Lawrence, City of San Diego Park and Recreation  
Jeanette DeAngelis, City of San Diego Park and Recreation  
Todd Philips, City of San Diego Council District 1  
John Quirk, State Parks  
Allison Rolfe, San Diego Audubon Society  
Lisa Ross, Friends of Carmel Mountain  
Oliver Ryder, La Jolla Friends Meeting  
Thomas Steinke, SCMU/Pardee Homes  
Bobbie Stephenson, RECON  
Mark Webb, County of San Diego Park and Recreation  
Mike Wells, State Parks  
Susan Wynn, U.S. Fish and Wildlife Service, Ecological Services

## Scoping meeting issues

### Multiple Jurisdiction Requirements

- Plan should address what is prohibited by all the different jurisdictions. (Mark Webb)
- Land should be managed in accordance with the NWR requirements and the NWR designations for that unit. (Slader Buck)
- Management plan will ultimately be used by Refuges to satisfy their management plan requirements for these areas and the action items incorporated into the plan will need to be compatible with the federal system. (Slader Buck)
- Refuges is mandated to analysis the potential for hunting and fishing in all NWR areas, however, it is anticipated that resource protection will be an appropriate priority for this area and hunting/fishing will not be allowed. (Slader Buck)
- The Carmel Mountain vernal pools should be included within the NWR Vernal Pool Stewardship Project. (Isabelle Kay)
- In order to bring Carmel Mountain into the NWR, an act of Congress would be needed. However, the management plan can recommend that Carmel Mountain be managed like a NWR if appropriate. (Slader Buck)
- Cooperative agreement between agencies should be addressed in the management plan. If developed, cooperative agreements can help achieve consistency in management. (Slader Buck)

### Restoration

- Restoration potential of the management plan areas should be addressed. (Keith Greer)
- Plan should evaluate restoration potential (i.e. Dudleya) and the possibility of reintroduction of appropriate species (i.e. Orcutt's spineflower). (David Hogan)
- Management plan should address the potential for active mitigation/restoration projects. (Bill Lawrence)
- Management plan should prioritize corridors for revegetation and monitoring. (Bill Lawrence)

### Enforcement

- Management plan/working group should explore the possibility of improving City ordinances in order better enforce open space protection. For example, there is

no City ordinance requirement to stay on trails and there are no dog free areas in the City of San Diego. (Bill Lawrence)

- City ordinance requires that no bikes be allowed on single track trails, only designated park service roads. All applicable City ordinances should be referenced in the management plan. (Bill Lawrence)
- Enforcement section of the management plan should address limitations. For example, violations must be seen by the officer in order to enforce, there are a limited number of officers, and police cannot be called for “minor” crimes, only “major” crimes such as illegal ORV use. (Bill Lawrence)
- Encroachment issues should be addressed including adjacent developments dropping fences into the preserve. Can encroachment violations be enforced through the project tentative map?

### Trails/Access

- Maintain trails and access for a variety of uses. (Keith Greer)
- GIS should be used to identify existing roads and trails. Redundant trails should be identified. (David Hogan)
- Plan should required that trails be clearly delineated. (David Hogan)
- Plan should address where trails will be and what users groups will be permitted on which trails. Mountain bike use must be address included which uses will be allowed on hard trails versus soft trails. (Marvin Gerst)
- Trails need to link to other off-site trail systems. (Marvin Gerst)
- Plan should address whether staging areas is needed, if one will be provided, and if one will not be provided, how undesirable parking and staging will be prevented. (Marvin Gerst)
- Critical linkages to the Trans County Trail should be maintained. (John Quirk, Mike Wells)
- Management plan should address the potential to provide a connecting trail to CVREP. Currently Carmel Mountain and CVREP are separated by a fence. (Isabelle Kay)
- Management plan should thoroughly address trails. No trails should be allowed in vernal pools. (Anne Harvey for Kathryn Burton)
- The park location should be discussed in the management plan. Management plan should discuss whether the park location is appropriate taking into account that it will be a main trail head for three communities. (Anne Harvey)
- Management plan should address the context of the trails as part of a system of trails that continue off-site. (Robert Hutsel)

- If trails are closed, management plan should recommend that a sign be posted stating the reason for closure. (Robert Hutsel)
- CVREP access is limited making access difficult for horse riders. In turn, the horse riders can cause damage by developing new trails to get around. Management plan should consider the potential for a connection to CVREP. (Lisa Ross/Marvin Gerst)
- Management plan should clearly identify access points in regard to adjacent development. (David Hogan)
- Management plan should identify standard widths of trails for each use. (Marvin Gerst)
- Management plan should address maintenance requirements that SDG&E has for their access easements. The management plan should also consider if these access easements can double as trails.
- Trail requirements for horse riders should be considered in the management plan. Paving cannot be used for horse trails because it can result in horseshoe damage and slippage. Decomposed granite or some sort of dirt surface is required for horses. Surface also needs to be able to hold up under the weight of the horses. The width standards that the City has developed for horse trails are not necessary. Trail does not need to be very wide, only needs good drainage. Single track trails can work for horse riders as long as there are no conflicting uses (i.e. bikes). Turnouts can be used to accommodate multiple uses on narrow trails. City requires that trails be safe and maintainable.
- Some feel that trail redundancy should be reduced. Others feel that trail redundancy can give a feeling of being in the open space “on your own”.
- Management plan should identify trails based on allowed usage (who goes where).
- The northeastern area of Carmel Mountain is being accessed by horses taking advantage of the recent burn area. Management should address the damage caused by the new horse trails created. (Diana Gordon)

#### Natural Resource Protection

- Protect endangered species. (Keith Greer)
- Open space areas should be managed like Torrey Pines, with an emphasis on resource protection and only accommodating access where appropriate. (David Hogan)
- Plan should address the responsibility of MSCP to facilitate recovery of covered species. (Oliver Ryder)

- Plan should address the requirements and needs of MSCP, including covered species management and monitoring. (Susan Wynn)
- Active management of the site will require a certain level of knowledge since this area is unique and has more endangered species per square foot than any other area. Therefore, the plan will need a basis for informed decision making. (Oliver Ryder)
- Management plan should address the biotic and non-biotic factors that effect the animal and plant populations on-site. (Oliver Ryder)
- Management plan should focus on the ecosystem and population viability. (Oliver Ryder)
- Management plan areas should be managed for the resources like Torrey Pines. (John Quirk, Mike Wells)
- Management plan should determine if we will have enough land to support the species within the management plan areas and recreational uses. Protection of the species should be the primary goal of the management plan. (Isabelle Kay)
- Management plan should include a feasibility study for bobcat monitoring. (Isabelle Kay)
- Sensitive species monitoring protocols should be included in the management plan. (Mike Kelly)
- Management plan's emphasis should be on natural resources. (Allison Rolfe)

#### Cultural Resources

- Management plan should emphasize the identification of natural and cultural resources within the management plan areas. (Bill Lawrence)
- Cultural resources should be identified and provisions for their protection should be included in the management plan. (Mike Kelly)
- Management plan should address historical preservation. For example, pickets from historic development on-site that should be preserved have been removed from the open space areas. (Diana Gordon)

#### Recreational Uses

- If preservation of ecosystem function is a goal of the plan, recreation must be compatible with that goal. (John Quirk, Mike Wells)
- Management plan should address controlled use while incorporating as many uses as possible. All activities should be considered. For example, the management plan should discuss how to incorporate mountain bikers but still control their use on the site. (Chuck Corum)



- Management plan should address the decline of horse riders in open space areas and the apparent increase of mountain bikers. Management plan should also address that mountain bikers typically like to ride on steep trails which can result in erosion and damage. (Jan Hudson)
- Potential commercial recreation uses should be planned for in the management plan. Examples include various running races, hiking groups such as Happy Trails, etc. Commercial recreation uses can also be considered a potential source of funding. (Robert Hutsel)
- Try to evaluate a wide variety of activities in the management plan even if they are not currently being pursued in the management plan areas. A position on whether each activity or activity type will be allowed should be clearly stated in the management plan (i.e. hang gliding). Management plan should also explore potential group activities (i.e. races) to determine if such uses will be allowed and if a permit will be required for those uses. If group activities are currently allowed to use the site without permits, the management plan should discuss a possible permit system for such activities. (Mike Kelly)
- When the voters approved the acquisition of Carmel Mountain, they were told that it would be a recreational area. Carmel Mountain is considered an important park area, especially for Carmel Valley. This should be considered when developing the management plan and considering which uses will be allowed on-site. (Lisa Ross)
- A oversight group on recreation use should be developed for Carmel Mountain and Del Mar Mesa. The oversight group would consider new proposed uses and determine if they can be accommodated within the open space areas.

#### Private Property

- Provide access for private properties using the least environmentally damaging alternative. (Keith Greer)
- Plan should allow private property to be folded into the plan if ultimately conserved. (Keith Greer)
- Management plan should address access for private property owners. Land swaps might also be an option. (Susan Anuskiewicz)
- Access easement to Schlacter should be vacated.

#### Format

- Incorporate City and other agencies management plan formats. (Keith Greer)

- Plan should not be vague. If there is not enough money to do all the sections in a detailed manner, those sections should be completed at a later date when funding is available. (David Hogan)
- Since there will be a lot of pressures from user groups, the management plan should have a clear statement of purpose and intent. For example, the intent of the plan could be to implement the MSCP or to protect the species within the management plan areas. If so, the management plan statement must be clear to this effect in order to defend against incompatible uses. (John Quirk, Mike Wells)
- Management plan should be designed so it can be actively used in the field. (Bill Lawrence)
- This management plan should provide more specific direction for management than other open space management plans that have been developed in the past (i.e. Penasquitos Preserve management plan). Plan specificity should be taken down to the species level. (Mike Kelly)

#### Funding

- Plan development should best utilize limited grant funds and plan should address limited management resources when discussing management plan implementation. (Keith Greer)
- Management plan should allow for funding through such sources as grants, fines, and settlements. (Bill Lawrence)
- Opportunities and funding will open up when management plan is in place so it is important to get it completed as soon as possible so implementation can begin. (Bill Lawrence)
- Additional funds may be available if all issues cannot be addressed adequately with the funding provided. This management plan should be a “gold plated” management plan. (Mike Kelly)
- The level of management needed to accomplish the goals of the management plan should be addressed. A financing plan should be included in the management plan and the management plan should identify what resources will be needed to accomplish management goals. (Mike Kelly)
- If resources are pooled, costs can be lower. Management plan should address pooling of resources and cost sharing methods when considering the cost and resources needed for management. (Slader Buck)

#### Fire Management

- Plan should incorporate a fire management plan, similar to Irvine (Mark Webb)

- Plan should incorporate a prescribed burn plan. (David Hogan)
- Management plan should address the use of controlled fire for resource management. (Isabelle Kay)
- Management plan should include a fire suppression plan which would instruct fire fighters on precautions to take when fighting fires in order to protect the resources (i.e. avoid vernal pools). (Mike Kelly)
- Prescriptive fire should also be addressed in the management plan, but should be carefully evaluated. Prescriptive fire is not always good. (Mike Kelly)

### Education

- Plan should include a public education component for the surrounding neighborhoods. (David Hogan)
- Management plan should consider developing education plans with adjacent schools (i.e. San Diego Jewish Academy). (Lisa Ross)
- Horse community is getting smaller and there are only a few horse ranches in the area. Management plan should explore an education program on environmental awareness for nearby horse ranches. (Lisa Ross)
- A education program with local schools for open space areas is already in place. It is called Site Stewardship. The management plan should discuss this program and it's potential use within the management plan areas.

### Interim planning

- Interim planning should be done to ensure that areas are properly protected during the plan development process. For example, there is a great potential for ORV use as surrounding developments come in and provide access to the site. (David Hogan)
- Management plan and interim measures should identify immediate threats to management plan areas. (Isabelle Kay)
- Action should be taken in the interim before the management plan is completed to protect the management plan open space area. For example, gates are unlocked on Del Mar Mesa. (Jan Hudson)
- Management plan and interim measures should address damage to short-leaved dudleya by horses, damage to vernal pools by adjacent development, and damage to open space by new horse trails. (Diana Gordon)

### Management Monitoring

- Use objective data to support health and persistence of the community. Monitoring data should provide robust figures that can be used to guide management. (Oliver Ryder)
- There should be quantitative management goals and a monitoring program should be established in order to determine if management goals are being achieved. (John Quirk, Mike Wells)
- Management plan should provide guidance for monitoring recreational use on-site. Open space use will increase over time and the management plan should provide guidance in order to adequately protect the open space areas.

### Adjacent Development/Edge Effects

- Management plan should analyze the high rate of development in recent years and its effect on the management plan areas. (Isabelle Kay)
- Management plan should address preserve edges. Recommended practices for adjacent developments include: controlling lighting, drainage, pet intrusion, etc. (Anne Harvey)
- Management plan should address threats that potential developments could have on wildlife and wildlife connections. (Isabelle Kay)
- The drainage from Torrey Surf and other developments should be discussed. (Anne Harvey)
- Projects will border the natural open space areas. Management plan should address measures to protect against edge effects. For example, fencing should protect from pet intrusion and, in some cases, the fences should be buried to prevent domestic animals from crawling under. (Allison Rolfe)
- Wrought iron fences allow for cat access to natural open space areas. Management plan should consider an improved barrier system to protect against edge effects. (David Hogan)

### Threats

- Damage to open space areas has occurred due to inadequate horse access (horse riders making their own trails or using eroded trails). Management plan should identify how to stop this damage. (Isabelle Kay)
- Management plan should identify exotic plant and animal species within management plan areas. (Isabelle Kay)
- Management area land should be properly used. Management plan should address trail usage, trash, migrant worker camps, etc. (Chuck Corum)

- Management plan should address control of illegal off-road vehicle use. (Robert Hutsel)

### Volunteers

- Management plan should encourage a high level of citizen involvement. The potential for volunteer patrols or park watch programs (residents who have a view of the park from their homes would call in violations) to be developed should be addressed in the plan. (Bill Lawrence)
- Management plan should discuss the potential for management of the open space areas by volunteer groups. (Robert Hutsel)
- Management plan should include positive language for management of open space areas by volunteers. (Mike Kelly)
- Current volunteer force is small and not effective. Management plan should discuss how volunteer force and other protection measure can be made more effective. (Diana Gordon)

### Design Issues

- Management plan should promote design which prevents a suburban/urban experience within the open space areas. Minimal signs, fences, chains, etc. should be used. (Lisa Ross)
- Management plan should address placement of interpretive signs from various environmental groups (i.e. San Diego Audubon). (Allison Rolfe)

### Miscellaneous

- The project consultants should not be afraid to make recommendations to the working group or in the plan. (Anne Harvey)
- A copy of the management plan developed by Carmel Mountain Conservancy should be given to the project consultants. (Isabelle Kay)
- City should look at incorporating Del Mar Mesa into Los Penasquitos Preserve. (Robert Hutsel)
- Other groups not represented at the scoping meeting should be included (i.e. trails coalition, bikes coalition). (Robert Hutsel)
- Pardee has established a conservation bank on Carmel Mountain which must be protected and allowed to function properly. (Beth Fischer)
- Acquisition targets should be identified in the management plan. (Allison Rolfe)

# Preserve Management Issues

## 1.0 Issues

A Public Scoping Meeting was held by the City of San Diego on February 27, 2001 to hear the issues of concern by agencies, jurisdictions, and public stakeholders. At the meeting, City staff described the intention of preparing a management plan for the Carmel Mountain and Del Mar Mesa Preserves and each person in attendance identified the issues they thought should be addressed in the plan.

A list of attendees and issues introduced was prepared by the City (Attachment 1). The Management Plan addresses these issues and others identified after the scoping meeting.

Issues introduced fall into these categories:

- Multiple jurisdictions having different requirements
- Habitat restoration
- Open space protection enforcement
- Trails and access
- Natural resource protection
- Cultural resource protection
- Allowable recreational uses
- Private property access
- Format of the plan
- Funding for implementing the plan
- Fire management
- Education program
- Interim planning
- Management monitoring
- Adjacent development and other edge effects
- Threats to the natural and cultural resources
- Volunteer involvement
- Park design
- Public use
- Urban encroachment
- Easements
- Erosion and sedimentation
- Brush management
- Miscellaneous

The issues introduced at the scoping meeting are described below.

## **1.1 Multiple Jurisdictions Having Different Requirements**

The properties within the Preserves are owned by many different public and private entities. For example, the USFWS National Wildlife Refuge system has management directives for their unit that falls within the Del Mar Mesa Preserve, and other entities have prohibitions against certain activities. The issue was raised that the management plan must take all these items into consideration to be ultimately useful to all property owners. Cooperative agreements between agencies should be addressed in the plan.

Utility easements across the preserves often require maintenance which need to be integrated with Preserve management tasks.

## **1.2 Habitat Restoration**

The restoration of the management plan area should be addressed, in particular, the plan should evaluate the restoration potential for small-leaved live-forever (*Dudleya blochmaniae* ssp. *brevifolia*) and the possibility of reintroduction of other appropriate species such as Orcutt's spineflower (*Chorizanthe orcuttiana*). Active mitigation and habitat restoration projects should be considered, and areas for habitat restoration and monitoring should be prioritized.

## **1.3 Open Space Protection Enforcement**

The issues of enforcing ordinances and Preserve rules, and enforcement limitations was requested to be addressed in the plan.

## **1.4 Trails and Access**

The major issue concerning the trails and access to them is that the trail system must be developed for a variety of uses. Existing roads and trails, redundant trails, and where trails link to off-site trails systems, such as the Trans County Trail, and to the CVREP (Carmel Valley Riparian Enhancement Program), and trail access points should be identified and clearly delineated on maps in the plan. Trail characteristics of various activities should be considered.

## **1.5 Natural Resource Protection**

The overriding issue of the Preserves is how to protect endangered species while allowing the public to use and enjoy them.

## **1.6 Cultural Resource Protection**

As with natural resources, the issue is how to protect the cultural resources while allowing the public to use and enjoy the recreational uses of the Preserves.

## **1.7 Allowable Recreational Uses**

The issue is how to integrate recreational uses with the protection of biological and cultural resources. The plan needs to address allowable and prohibited uses.

## **1.8 Private Property Access**

A few private parcels are surrounded by Preserve lands; the property owners require access to their property.

## **1.9 Format of the Plan**

Specificity and compatibility with agency management plan formats was requested for this plan.

## **1.10 Funding for Implementing the Plan**

Implementing a management plan for the two Preserves will be costly. Funding possibilities, such as grants, fines, and settlements, should be considered and discussed in the plan.

## **1.11 Fire Management**

The concern is the implementation of fire management on both Preserves.

## **1.12 Education Program**

Incorporation of an environmental awareness education program with schools of surrounding neighborhoods, such as the Site Stewardship program, should be addressed in the plan and made part of the Preserve management program.

## **1.13 Interim Planning**

At the scoping meeting, implementing interim protection measures to protect resources before the plan is completed was requested.



## **1.14 Management Monitoring**

Quantitative monitoring should be used to guide management of the Preserves.

## **1.15 Edge Effects and Urban Encroachment**

The effects of the adjacent developments on the Preserves, and the urban/wildland interface should be addressed in the plan.

## **1.16 Threats to the Natural and Cultural Resources**

Existing threats to the resources were identified at the scoping meeting: inadequate trail, access for horseback riders, exotic plant and animal invasion, and off-road-vehicle use.

## **1.17 Volunteer Involvement**

It was suggested that volunteer citizen involvement be encouraged in the plan.

## **1.18 Erosion and Sedimentation**

Erosion along the trails and within disturbed areas is of concern.

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## **APPENDIX 2**

### **General Management Plan for MSCP Areas**

# 1.0 General Management Plan for MSCP Areas

## 1.1 Description of Northern Area

The City has about two-thirds of the Los Penasquitos Lagoon/Canyon and Del Mar Mesa core area within its subarea. This core resource area encompasses one of the few intact natural open space areas in coastal San Diego County that is still linked to larger expanses of habitat to the east. Los Penasquitos Canyon is a regional corridor linking coastal habitats to inland habitats on Black Mountain and in Poway. Important resources in this area include saltmarsh, coastal sage scrub, and southern maritime chaparral. Covered species include San Diego thorn-mint, Shaw's agave, Del Mar manzanita, Encinitas baccharis, Orcutt's brodiaea, wart-stemmed ceanothus, short-leaved dudleya, variegated dudleya, San Diego button-celery, San Diego barrel cactus, willow monardella, San Diego goldenstar, Torrey pine, San Diego mesa mint, Riverside fairy shrimp, southwestern pond turtle, San Diego horned lizard, orange-throated whiptail, California brown pelican, white-faced ibis, Canada goose, northern harrier, Cooper's hawk, golden eagle, western snowy plover, California least tern, burrowing owl, coastal cactus wren, California gnatcatcher, California rufous-crowned sparrow, Belding's savannah sparrow, grasshopper sparrow, mountain lion, and mule deer.

The northern area encompasses a large amount of developed and undeveloped land stretching from the Black Mountain Ranch area of the North City Future Urbanizing Area (NCFUA) south to Lopez Canyon in Los Penasquitos Canyon Preserve in Mira Mesa, and from the coast to Interstate 15. The area encompasses the communities of Carmel Valley, Sorrento Hills, Torrey Pines, Rancho Penasquitos, a portion of Mira Mesa, the Via de la Valley Specific Plan area, and the entire 12,000-acre NCFUA. In addition, the area also includes Torrey Pines State preserve, the Los Penasquitos Lagoon, and Los Penasquitos Canyon Preserve. The majority of the undeveloped private land is disturbed habitat, much of it having been farmed or grazed for decades or longer.

The MHPA in this area is largely comprised of regional linkages leading to biological core areas within existing reserves and parks. In the north lies the area surrounding Black Mountain Park, much of which serves as core area immediately in and surrounding the park, with the remainder of the lands allowing connections to the San Dieguito River Valley to the north and west, and providing one end of a lengthy regional corridor to the south. The core area contains valuable native habitats: mixed and chamise chaparral, coastal sage scrub, and native grassland. The corridor/linkage areas currently contain much non-native and disturbed habitat, including invasive exotic

species, and are in need of enhancement/restoration. The corridors also contain areas with non-native grasslands that are considered important raptor foraging habitats.

The central portion of the northern area is comprised of the heart of the City's North City Future Urbanizing Area, known as NCFUA Subareas 2, 3, 4, and 5. These encompass the San Dieguito Lagoon area, Gonzales Canyon, and most of the area lying between the communities of Carmel Valley and Rancho Penasquitos. NCFUA Subareas 3 and 4 contain only extended regional corridors, linking to the north, west, and south. These corridors primarily lie in canyons or drainages (e.g. La Zanja Canyon, McGonigle Canyon, and Gonzales Canyon), and the majority require restoration to enhance their long-term habitat value, as they are currently in agriculture and disturbed lands. NCFUA Subarea 5 contains core habitat area on the Del Mar Mesa north of Los Penasquitos Canyon Preserve as well as linkages containing disturbed lands and habitat leading toward Carmel Valley and Carmel Creek. NCFUA Subarea 2 contains a portion of the San Dieguito Lagoon enhancement area east of the I-5 freeway. The proposed MHPA boundary in this area is consistent with the open space configuration of the NCFUA Framework Plan, and contains wetlands including the San Dieguito River, limited coastal sage, chaparral, grasslands, and agriculturally disturbed lands.

The southwestern portion of this area contains Torrey Pines State Park, Crest Canyon, Los Penasquitos Lagoon, and Los Penasquitos Canyon Preserve which are core biological resource areas with high to moderate habitat values. Los Penasquitos Canyon Preserve contains large expanses of non-native grassland, and contains some restoration opportunities within its boundaries. This portion of the MHPA also contains linkages and habitat within the southern Carmel Valley neighborhoods (e.g. 8, 8A, and 10) and the Carmel Valley Restoration and Enhancement Project (CVREP), which is intended to serve as a wildlife linkage to the Los Penasquitos Lagoon and Torrey Pines State Park. Carmel Valley Neighborhood 10 contains two major wildlife corridors that converge at CVREP, where they link to adjacent core habitat on and north of Neighborhood 8A. Neighborhood 8, where CVREP is located, also contains existing houses, ranches, and rural-oriented businesses. These are incorporated within the MHPA boundary as low-density areas conditionally compatible with the MHPA.

The linkages to Torrey Pines State Reserve and Los Penasquitos Lagoon from the east are tentative at best. In the south, a rip-rap channel winds west from Los Penasquitos Canyon, underneath freeways, local roads, and railroad tracks to gain access to the Lagoon and State Park. The northern connection to the lagoon is located at the western terminus of CVREP, with 6-8 feet of clearance under the I-5 freeway to allow for Carmel Creek to drain into the lagoon. This wildlife connection is constrained as well.

The eastern portion of the Northern area includes linkages and open space within the Rancho Penasquitos, Mira Mesa, Sabre Springs, Scripps Ranch and Miramar Ranch communities, Miramar Lake and the General Dynamics property/Beeler Canyon area. This area includes core habitat in the Miramar-Poway areas as well as linkages that

extend from Los Penasquitos Canyon Preserve east through Sabre Springs into the Miramar Lake area, MCAS Miramar and Sycamore Canyon Regional Park. The proposed MHPA in this area is consistent with the open space of the existing communities, and includes a large block of habitat in the easternmost portion. This block of habitat is a mixture of chaparral and coastal sage scrub and is located immediately west of Sycamore Canyon Regional Park and north of MCAS Miramar.

## **1.1.1 General Management Plan for MSCP Areas**

### **1.1.1.1 Management Goals and Objectives**

The habitat management aspect of the City of San Diego's MHPA is an important component of the MSCP, related to the goal of the Program. The overarching MSCP goal is to maintain and enhance biological diversity in the region and conserve viable populations of endangered, threatened, and key sensitive species and their habitats, thereby preventing local extirpation and ultimate extinction, and minimizing the need for future listings, while enabling economic growth in the region.

Where land is preserved as part of the MSCP through acquisition, regulation, mitigation or other means, management is necessary to continue to ensure that the biological values are maintained over time, and that the species and habitats that have been set aside are adequately protected and remain viable.

The City will be responsible for and will continue the management and maintenance of its existing public lands (including those with conservation easement), at current levels. The City will also manage and maintain lands obtained as mitigation where those lands have been dedicated to the City in fee title or easement, and land acquired with regional funds within the City's MHPA boundaries. Likewise, the Federal and State agencies will manage, maintain and monitor their present land holdings, as well as those they acquire on behalf of the MSCP, consistent with the MSCP. Lands in the MHPA which are set aside as open space through the development process but are not dedicated in fee to the City, or other acceptable entity, will be managed by the landowner consistent with approved Mitigation, Monitoring and Reporting Programs or Permit conditions. Private owners of land within the MHPA, who are not third party beneficiaries, will have no additional obligations for the management or maintenance of their land.

In order to assure that the goal of the MHPA is attained and fulfilled, management objectives for the City of San Diego MHPA are as follows:

1. To ensure the long-term viability and sustainability of native ecosystem function and natural processes throughout the MHPA.

2. To protect the existing and restored biological resources from intense or disturbing activities within and adjacent to the MHPA while accommodating compatible public recreational uses.
3. To enhance and restore, where feasible, the full range of native plant associations in strategic locations and functional wildlife connections to adjoining habitat in order to provide viable wildlife and sensitive species habitat.
4. To facilitate monitoring of selected target species, habitats, and linkages in order to ensure long-term persistence of viable populations of priority plant and animal species and to ensure functional habitats and linkages.
5. To provide for flexible management of the preserve that can adapt to changing circumstances to achieve the above objectives.

This section lists general management guidelines relevant to the entire City MHPA system, followed by specific guidelines and recommendations for each planned area of the MHPA, including the Otay Mesa area, the Otay River Valley, the Tijuana River Valley, the Eastern Area, Urban Areas, the Northern Area, Lake Hodges and the San Pasqual Valley, and the other Cornerstone Lands. Each area is unique in terms of its existing conditions, MHPA configuration, public or private ownership of land, the existence and location of sensitive species, and management needs.

Based on the above management objectives, the recommended management directives that follow have been identified in order of priority. It is recognized that many of these directives cannot be implemented on approval of the Plan, but will instead occur over the life of the Plan. The ability to implement many of the management directives will be directly related to the availability of funding. In addition, some of the management directives may be implemented as part of mitigation requirements for development projects both within and adjacent to the MHPA. Some of the tasks are also expected to be implemented as research efforts by the scientific and academic community at large.

The management directives are organized by priority into the following two categories. The priorities are intended to assist in the decisions on where to spend limited funds and direct mitigation efforts:

#### **a. Priority 1**

Directives that protect the resources in the MHPA, including management actions that are necessary to ensure that the Covered Species are adequately protected. Refer to Appendix A "Species Evaluated for Coverage under the MSCP."

## **b. Priority 2**

Directives other than those required for covered species status and other long-term items that may be implemented during the life of the plan as funding becomes available.

The management directives listed in this section are a preliminary view of the management requirements of the MHPA within the City of San Diego. It is expected that modifications will be needed over time, based on realities encountered in the field as the MHPA is assembled. Monitoring of selected target species and other sensitive or constrained areas within the MHPA will occur as described in the MSCP Biological Monitoring Plan (under separate cover) with a general description of the Monitoring Plan provided in Section 1.5.13. The Monitoring Plan will inform MHPA (preserve) managers and staff of the general trends of wildlife use and species preservation, as well as indicate areas where special management focus is needed. Cooperation between the field managers, MSCP habitat management technical committee, and the wildlife agencies, is expected to occur to review and discuss existing and new management issues and to respond with practical, case-sensitive solutions. These solutions should be documented, and this management plan should be revised as needed to reflect new information.

An integral part of the management component is the previous section on Land Use Considerations that lists compatible land uses and states policies and guidelines related to the development of land uses within and adjacent to the MHPA. These policies and guidelines should be incorporated into projects during the land development review process. It should be noted that some of the management directives listed in the following sections may already be included as conditions of approved projects within or adjacent to the MHPA and are therefore considered part of this Subarea Plan.

### **1.1.1.2 General Management Directives**

The following general management directives apply to all areas of the City of San Diego's MSCP Subarea Plan, as appropriate.

### **1.1.1.3 Mitigation**

Mitigation, when required as part of project approvals, shall be performed in accordance with the City of San Diego Environmentally Sensitive Lands Ordinance and Biology Guidelines.

### **1.1.1.4 Restoration**

Restoration or revegetation undertaken in the MHPA shall be performed in a manner acceptable to the City. Where covered species status identifies the need for



reintroduction and/or increasing the population, the covered species will be included in restoration/revegetation plans, as appropriate. Restoration or revegetation proposals will be required to prepare a plan that includes elements addressing financial responsibility, site preparation, planting specifications, maintenance, monitoring and success criteria, and remediation and contingency measures. Wetland restoration/revegetation proposals are subject to permit authorization by federal and state agencies.

### **1.1.1.5 Public Access, Trails, and Recreation**

#### **a. Priority 1**

1. Provide sufficient signage to clearly identify public access to the MHPA. Barriers such as vegetation, rocks/boulders or fencing may be necessary to protect highly sensitive areas. Use appropriate type of barrier based on location, setting and use. For example, use chain link or cattle wire to direct wildlife movement, and natural rocks/boulders or split rail fencing to direct public access away from sensitive areas. Lands acquired through mitigation may preclude public access in order to satisfy mitigation requirements.
2. Locate trails, view overlooks, and staging areas in the least sensitive areas of the MHPA. Locate trails along the edges of urban land uses adjacent to the MHPA, or the seam between land uses (e.g. agriculture/habitat), and follow existing dirt roads as much as possible rather than entering habitat or wildlife movement areas. Avoid locating trails between two different habitat types (ecotones) for longer than necessary due to the typically heightened resource sensitivity in those locations.
3. In general, avoid paving trails unless management and monitoring evidence shows otherwise. Clearly demarcate and monitor trails for degradation and off-trail access and use. Provide trail repair/maintenance as needed. Undertake measures to counter the effects of trail erosion including the use of stone or wood crossjoints, edge plantings of native grasses, and mulching of the trail.
4. Minimize trail widths to reduce impacts to critical resources. For the most part, do not locate trails wider than 4 feet in core areas or wildlife corridors. Exceptions are in the San Pasqual Valley where other agreements have been made, in Mission Trails Regional Park, where appropriate, and in other areas where necessary to safely accommodate multiple uses or disabled access. Provide trail fences or other barriers at strategic locations when protection of sensitive resources is required.
5. Limit the extent and location of equestrian trails to the less sensitive areas of the MHPA. Locate staging areas for equestrian uses at a sufficient distance (e.g.

300-500 feet) from areas with riparian and coastal sage scrub habitats to ensure that the biological values are not impaired.

6. Off-road or cross country vehicle activity is an incompatible use in the MHPA, except for law enforcement, preserve management or emergency purposes. Restore disturbed areas to native habitat where possible or critical, or allow to regenerate.
7. Limit recreational uses to passive uses such as birdwatching, photography and trail use. Locate developed picnic areas near MHPA edges or specific areas within the MHPA, in order to minimize littering, feeding of wildlife, and attracting or increasing populations of exotic or nuisance wildlife (opossums, raccoons, skunks). Where permitted restrain pets on leashes.
8. Remove homeless and itinerant worker camps in habitat areas as soon as found pursuant to existing enforcement procedures.
9. Maintain equestrian trails on a regular basis to remove manure (and other pet feces) from the trails and preserve system in order to control cowbird invasion and predation. Design and maintain trails where possible to drain into a gravel bottom or vegetated (e.g. grass-lined) swale or basin to detain runoff and remove pollutants.

### **1.1.1.6 Litter/Trash and Materials Storage**

#### **a. Priority 1**

1. Remove litter and trash on a regular basis. Post signage to prevent and report littering in trail and road access areas. Provide and maintain trash cans and bins at trail access points.
2. Impose penalties for littering and dumping. Fines should be sufficient to prevent recurrence and also cover reimbursement of costs to remove and dispose of debris, restore the area if needed, and to pay for enforcement staff time.
3. Prohibit permanent storage of materials (e.g. hazardous and toxic chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any areas that may impact the MHPA, due to potential leakage.
4. Keep wildlife corridor undercrossings free of debris, trash, homeless encampments, and all other obstructions to wildlife movement.

**b. Priority 2**

1. Evaluate areas where dumping recurs for the need for barriers. Provide additional monitoring as needed (possibly by local and recreational groups on a "Neighborhood Watch" type program), and/or enforcement.

**1.1.1.7 Adjacency Management Issues**

The following management directives are in addition to those outlined in Section 1.4.3, and refer more specifically to management and monitoring requirements.

**a. Priority 1:**

1. Enforce, prevent and remove illegal intrusions into the MHPA (e.g. orchards, decks, etc.) on an annual basis, in addition to complaint basis.
2. Disseminate educational information to residents adjacent to and inside the MHPA to heighten environmental awareness, and inform residents of access, appropriate plantings, construction or disturbance within MHPA boundaries, pet intrusion, fire management, and other adjacency issues.
3. Install barriers (fencing, rocks/boulders, vegetation) and/or signage where necessary to direct public access to appropriate locations.

**1.1.1.8 Invasive Exotics Control and Removal****a. Priority 1**

1. Do not introduce invasive non-native species into the MHPA. Provide information on invasive plants and animals harmful to the MHPA, and prevention methods, to visitors and adjacent residents. Encourage residents to voluntarily remove invasive exotics from their landscaping.
2. Remove giant reed, tamarisk, pampas grass, castor bean, artichoke thistle, and other exotic invasive species from creek and river systems, canyons and slopes, and elsewhere within the MHPA as funding or other assistance becomes available. If possible, it is recommended that removal begin upstream and/or upwind and move downstream/downwind to control re-invasion. Priorities for removal should be based on invasive species' biology (time of flowering, reproductive capacity, etc.), the immediate need of a specific area, and where removal could increase the habitat available for use by covered species such as the least Bell's vireo. Avoid removal activities during the reproductive seasons of sensitive species and avoid/ minimize impacts to sensitive species or native habitats. Monitor the areas and provide additional removal and apply herbicides if

necessary. If herbicides are necessary, all safety and environmental regulations must be observed. The use of heavy equipment, and any other potentially harmful or impact-causing methodologies, to remove the plants may require some level of environmental or biological review and/or supervision to ensure against impacts to sensitive species.

## **b. Priority 2**

1. If funding permits, initiate a baseline survey with regular follow-up monitoring to assess invasion or re-invasion by exotics, and to schedule removal. Utilize trained volunteers to monitor and remove exotic species as part of a neighborhood, community, school, or other organization's activities program (such as Friends of Penasquitos Preserve has done). If done on a volunteer basis, prepare and provide information on methods and timing of removal to staff and the public if requested. For giant reed removal, the Riverside County multi-jurisdictional management effort and experience should be investigated and relevant techniques used. Similarly, tamarisk removal should use The Nature Conservancy's experience in the Southern California desert regions, while artichoke thistle removal should reference The Nature Conservancy's experience in Irvine. Other relevant knowledge and experience is available from the California Exotic Pest Plant Council and the Friends of Los Penasquitos Canyon Preserve.
2. Conduct an assessment of the need for cowbird trapping in each area of the MHPA where cattle, horses, or other animals are kept, as recommended by the habitat management technical committee in coordination with the wildlife agencies.
3. If eucalyptus trees die or are removed from the MHPA area, replace with appropriate native species. Ensure that eucalyptus trees do not spread into new areas, nor increase substantially in numbers over the years. Eventual replacement by native species is preferred.
4. On a case by case basis some limited trapping of non-native predators may be necessary at strategic locations, and where determined feasible to protect ground and shrub-nesting birds, lizards, and other sensitive species from excessive predation. This management directive may be considered a Priority 1 if necessary to meet the conditions for species coverage. If implemented, the program would only be on a temporary basis and where a significant problem has been identified and therefore needed to maintain balance of wildlife in the MHPA. The program would be operated in a humane manner, providing adequate shade and water, and checking all traps twice daily. A domestic animals release component would be incorporated into the program. Provide

signage at access points and noticing of adjacent residents to inform people that trapping occurs, and how to retrieve and contain their pets.

### **1.1.1.9 Flood Control**

The following management directives are in addition to the General Planning Policies and Guidelines outlined in Section 1.4.2.

#### **a. Priority 1**

1. Perform standard maintenance, such as clearing and dredging of existing flood channels, during the non-breeding or nesting season of sensitive bird or wildlife species utilizing the riparian habitat. For the least Bell's vireo, the non-breeding season generally includes mid-September through mid-March.

#### **b. Priority 2**

1. Review existing flood control channels within the MHPA periodically (every 5-10 years) to determine the need for their retention and maintenance, and to assess alternatives, such as restoration of natural rivers and floodplains.

## **1.2 Specific Management Policies and Directives for the MSCP Northern Area**

Including the North City Future Urbanizing Area (NCFUA), Carmel Valley, Rancho Penasquitos, Beeler Canyon, Scripps Ranch, Los Penasquitos Canyon and Lagoon, Torrey Pines State Park, Sorrento Hills, and portions of the University and Mira Mesa communities.

### **1.2.1 Background**

#### **1.2.1.1 Goals and Objectives**

The MHPA in the Northern area consists primarily of regional wildlife corridors providing linkages to the core areas of Del Mar Mesa, Los Penasquitos Canyon Preserve, Los Penasquitos Lagoon, Torrey Pines State Park, the proposed San Dieguito River Valley Regional Park and the Black Mountain area. These linkages and core areas provide an important network of viable native habitats and plant communities, support the full range of native species, and provide functional wildlife connections over the long-term.

### 1.2.1.2 Covered Species

Covered species in the Northern area include:

#### Plants

Del Mar manzanita  
Orcutt's brodiaea  
Encinitas baccharis  
San Diego barrel cactus  
San Diego button-celery  
San Diego goldenstar  
San Diego mesa mint  
San Diego thorn-mint  
Shaw's agave  
Short-leaved dudleya  
Torrey pine  
Variegated dudleya  
Wart-stemmed ceanothus  
Willow monardella

#### Animals

Belding's savannah sparrow  
Burrowing owl  
California brown pelican  
California gnatcatcher  
California least tern  
California rufous-crowned sparrow  
Canada goose  
Coastal cactus wren  
Cooper's hawk  
Golden eagle  
Mountain lion  
Mule deer  
Northern harrier  
Orange-throated whiptail  
Riverside fairy shrimp  
San Diego horned lizard  
Southwestern pond turtle  
Western snowy plover  
White-faced ibis

### 1.2.1.3 Major Issues

The major issues for management in the Northern area based on existing conditions, are the following, in order of priority:

1. Intense land uses and activities adjacent to and in covered species habitat and linkages.
2. Itinerant living quarters.
3. Enhancement and restoration needs.
4. Exotic (non-native), invasive plants and animals.
5. Water drainage issues, including water quality, urban runoff, erosion, sedimentation, and flood control.
6. Utility, facility and road repair, construction, and maintenance activities.

### **1.3 Specific Management Directives for the Northern Area**

The following policies and directives for the Northern area are described in the following text, generally from north to south and east to west.

#### **1.3.1 North City Future Urbanizing Area:**

##### **1.3.1.1 NCFUA Subarea 5**

###### **a. Priority 1:**

1. Clearly demarcate all trails through the Del Mar Mesa area and provide split rail fencing or barriers and signage along sensitive portions to discourage off-trail use. Trails through this area should use the existing disturbed roads as much as possible. No new trails should be cut through existing habitat. Assess existing dirt and disturbed roads and trails for restoration over the long-term.
2. Develop an equestrian use plan for the Del Mar Mesa area that avoids the vernal pool habitat and their associated watershed areas. If possible, the Del Mar Mesa area should be managed as a single unit rather than split into separate entities according to ownership (County, various City departments, easements).

##### **1.3.1.2 Carmel Valley Neighborhood 8A**

###### **a. Priority 1:**

1. Redirect human access from vernal pools and dudleya populations through signage and fencing as necessary to delineate and protect the sensitive areas.

2. Develop an equestrian use plan including a trail system so as to avoid as much as possible wetlands and other highly sensitive areas.
3. Monitor this sensitive area for off-road and off-trail use, and take necessary measures to prevent such use, and repair damage (at minimum, closure of areas) as soon as feasible. Also assess for invasive plant species and remove as soon as possible.

**b. Priority 2:**

1. Use some of the existing dirt roads for trails, and avoid cutting new trails through habitat areas. Restore/revegetate dirt roads (not used as trails) and other disturbed areas to the appropriate habitat (maritime chaparral, vernal pool, grassland, coastal sage scrub), as determined by biologists.



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## **APPENDIX 3**

### **Wildlife and Plant Species Lists for Carmel Mountain and Del Mar Mesa Preserves**

**APPENDIX 3a**  
**PLANT SPECIES OBSERVED ON CARMEL MOUNTAIN**

Scientific Name	Common Name	Origin
<i>Achnatherum coronatum</i> (Thurber) Barkworth	Giant needlegrass	N
<i>Adenostoma fasciculatum</i> Hook. & Arn.	Chamise	N
<i>Adolphia californica</i> Wats.	California adolphia, spineshrub	N
<i>Allium praecox</i> Bdg.	Wild onion	N
<i>Ambrosia psilostachya</i> DC.	Western ragweed	N
<i>Anagallis arvensis</i> L.	Scarlet pimpernel, poor-man's weatherglass	I
<i>Antirrhinum nuttallianum</i> Benth. in DC.	Snapdragon	N
<i>Arctostaphylos glandulosa</i> Eastw. ssp. <i>crassifolia</i> (Jepson) Wells	Del Mar manzanita, Costa Baja manzanita	N
<i>Artemisia californica</i> Less.	California sagebrush	N
<i>Atriplex semibaccata</i> R.Br.	Australian saltbush	I
<i>Avena</i> sp.	Wild oats	N
<i>Avena barbata</i> Link	Slender wild oat	I
<i>Baccharis pilularis</i> DC.	Coyote bush	N
<i>Baccharis salicifolia</i> (Ruiz Lopez & Pavón) Pers.	Mule fat, seep-willow	N
<i>Baccharis sarothroides</i> A. Gray	Broom baccharis	N
<i>Bloomeria crocea</i> (Torrey) Cov.	Common goldenstar	N
<i>Brassica nigra</i> (L.) Koch.	Black mustard	I
<i>Brodiaea orcuttii</i> (E. Greene) Baker	Orcutt's brodiaea	N
<i>Bromus hordaceus</i> L.	Smooth brome	I
<i>Bromus madritensis</i> L. ssp. <i>rubens</i> (L.) Husnot	Foxtail chess	I
<i>Calandrinia maritima</i> Nutt.	Seaside calandrinia	N
<i>Callitriche marginata</i> Torrey	Water-starwort	N
<i>Calystegia macrostegia</i> ssp. <i>arida</i> (E. Greene) Brum	Finger-leaf morning morning-glory	N
<i>Calystegia macrostegia</i> ssp. <i>tenuifolia</i> (Abrams) Brum	Chaparral morning-glory	N
<i>Camissonia bistorta</i> (Torrey & A. Gray) Raven	California sun cup	N
<i>Carex triquetra</i> Boott.	Triangular-fruit sedge	N
<i>Castilleja affinis</i> Hook. & Arn. ssp. <i>affinis</i>	Indian paint brush	N
<i>Castilleja exserta</i> (A.A. Heller) Chuang & Heckard	Purple owl's clover	N
<i>Ceanothus verrucosus</i> Nutt.	Wart-stemmed ceanothus	N
<i>Centaurea melitensis</i> L.	Tocolote, star-thistle	I
<i>Centaureum venustum</i> (A. Gray) Rob.	Canchalagua	N
<i>Centunculus minimus</i> L.	Chaffweed	N

**APPENDIX 3a**  
**PLANT SPECIES OBSERVED ON CARMEL MOUNTAIN**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Cercocarpus minutiflorus</i> Abrams	Mountain-mahogany	N
<i>Chamaesyce polycarpa</i> (Benth.) Millsp.	Spurge	N
<i>Chenopodium</i> sp.	Goosefoot	I
<i>Chlorogalum parviflorum</i> Wats.	Amole, soap plant	N
<i>Chorizanthe staticoides</i> Benth.	Turkish rugging	N
<i>Claytonia perfoliata</i> Willd.	Miner's lettuce	N
<i>Collinsia heterophylla</i> Buist.	Chinese houses	N
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> (Parry) E. Greene	Summer holly	N
<i>Conyza canadensis</i> (L.) Cronq.	Horseweed	N
<i>Coreopsis maritima</i> (Nutt.) Hook.f.	Sea-dahlia	N
<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>	Del Mar sand aster	N
<i>Cortaderia jubata</i> (Lemoine) Stapf	Pampas grass	I
<i>Cotula coronopifolia</i> L.	Brass-buttons	I
<i>Crassula aquatica</i> (L.) Schoen.	Stone-crop	N
<i>Croton californicus</i> Muell.-Arg.	California croton	N
<i>Cryptantha</i> sp.	Cryptantha	N
<i>Datura wrightii</i> Regel	Jimson weed	N
<i>Dicentra chrysantha</i> (Hook. & Arn.) Walp.	Golden ear-drops	N
<i>Dichelostemma capitatum</i> Alph. Wood	Blue dicks	N
<i>Dichondra occidentalis</i> House	Western dichondra	N
<i>Dodecatheon clevelandii</i> E. Greene ssp. <i>clevelandii</i>	Shooting star	N
<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i> (Eastw.) Moran	Short-leaved dudleya	N
<i>Dudleya edulis</i> (Nutt.) Moran	Lady fingers	N
<i>Dudleya lanceolata</i> (Nutt.) Britt. & Rose	Live-for-ever	N
<i>Dudleya pulverulenta</i> (Nutt.) Britt. & Rose ssp. <i>pulverulenta</i>	Chalk lettuce	N
<i>Elatine</i> sp.	Waterwart	N
<i>Eleocharis macrostachya</i> Britton	Pale spikerush	N
<i>Encelia californica</i> Nutt.	Common encelia	N
<i>Eremocarpus setigerus</i> (Hook.) Benth.	Dove weed	N
<i>Erigeron foliosus</i> Nutt.	Leafy fleabane	N
<i>Eriogonum fasciculatum</i> Benth. var. <i>fasciculatum</i>	California buckwheat	N

**APPENDIX 3a**  
**PLANT SPECIES OBSERVED ON CARMEL MOUNTAIN**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Eriophyllum confertiflorum</i> (DC.) A. Gray var. <i>confertiflorum</i>	Golden-yarrow	N
<i>Erodium</i> sp.	Filaree, storksbill	I
<i>Erodium botrys</i> (Cav.) Bertol.	Pin-clover	I
<i>Eschscholzia californica</i> Cham.	California poppy	N
<i>Ferocactus viridescens</i> (Torrey & A. Gray) Britt. & Rose	Coast barrel cactus	N
<i>Festuca</i> sp.	Fescue	N
<i>Festuca rubra</i> L.	Red fescue	N
<i>Filago gallica</i> L.	Narrow-leaf herba impia	I
<i>Foeniculum vulgare</i> Mill.	Fennel	I
<i>Galium angustifolium</i> Nutt. <i>angustifolium</i>	Narrow-leaf bedstraw	N
<i>Galium nuttallii</i> A. Gray	San Diego bedstraw	N
<i>Gnaphalium bicolor</i> Bioletti	Bicolored cudweed	N
<i>Gnaphalium californicum</i> DC.	Green everlasting	N
<i>Hazardia squarrosa</i> (Hook. & Arn.) E. Greene	Sawtoothed goldenbush	N
<i>Helianthemum scoparium</i> Nutt.	Peak rush-rose	N
<i>Hemizonia fasciculata</i> (DC.) Torrey & A. Gray	Golden tarplant	N
<i>Heteromeles arbutifolia</i> (Lindley) Roemer	Toyon, Christmas berry	N
<i>Heterotheca grandiflora</i> Nutt.	Telegraph weed	N
<i>Holocarpha virgata</i> (A. Gray) Keck	Tarplant	N
<i>Hypochaeris glabra</i> L.	Smooth cat's-ear	I
<i>Isocoma menziesii</i> (Hook. & Arn.) G. Nesom	Coast goldenbush	N
<i>Isoetes howellii</i> Engelm.	Howell quillwort	N
<i>Jepsonia parryi</i> (Torrey) Small	Mesa saxifrage	N
<i>Juncus bufonius</i> L.	Toad rush	N
<i>Juncus dubius</i> Engelm.	Mariposa rush	N
<i>Juncus mexicanus</i> Willd.	Mexican rush	N
<i>Lasthenia californica</i> Lindley	Goldfields	N
<i>Lessingia filaginifolia</i> (Hook. & Arn.) M.A. Lane var. <i>filaginifolia</i>	California-aster	N
<i>Leymus condensatus</i> (C. Presl) A. Love	Giant ryegrass	N
<i>Lilaea scilloides</i> (Poir) Haum.	Flowering quillwort	N
<i>Lonicera subspicata</i> Hook. & Arn. Var. $\square$ <i>enudate</i> Rehd.	Wild honeysuckle	N

**APPENDIX 3a**  
**PLANT SPECIES OBSERVED ON CARMEL MOUNTAIN**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Lotus scoparius</i> (Nutt. In Torrey & A. Gray) Ottley var. <i>scoparius</i>	California broom	N
<i>Lupinus bicolor</i> Lindl.	Miniature lupine	N
<i>Lythrum hyssopifolium</i> L.	Grass poly	N
<i>Malacothamnus fasciculatus</i> (Torrey & A. Gray) E. Greene	Chaparral mallow	N
<i>Malosma laurina</i> (Nutt.) Abrams	Laurel sumac	N
<i>Marah macrocarpus</i> (E. Greene) E. Greene	Wild cucumber	N
<i>Mesembryanthemum crystallinum</i> L.	Crystalline ice plant	I
<i>Mesembryanthemum nodiflorum</i> L.	Slender-leaved ice plant	I
<i>Mimulus aurantiacus</i> Curtis	Bush monkeyflower	N
<i>Mirabilis bigelovii</i> A. Gray var. <i>bigelovii</i>	Wishbone bush	N
<i>Muhlenbergia rigens</i> (Benth.) A. Hitchc.	Deergrass	N
<i>Muilla clevelandii</i> (Wats.) Hoover	San Diego Goldenstar	N
<i>Nassella lepida</i> (A. Hitchc.) Barkworth	Foothill needlegrass	N
<i>Nassella pulchra</i> (A. Hitchc.) Barkworth	Purple needlegrass	N
<i>Navarretia hamata</i> E. Greene	Hooked navarretia	N
<i>Nicotiana glauca</i> Grah.	Tree tobacco	I
<i>Ophioglossum californicum</i> Prantl.	California adder's-tongue	N
<i>Opuntia littoralis</i> (Engelm.) Cockerell.	Shore cactus	N
<i>Opuntia prolifera</i> Engelm.	Cholla	N
<i>Phacelia grandiflora</i> (Benth.) A. Gray	Large-flowered phacelia	N
<i>Phacelia minor</i> (Harvey) Thell	Wild canterbury-bell	N
<i>Phalaris lemmonii</i> Vasey	Lemmon canary grass	I
<i>Pickeringia montana</i> Nutt. var. <i>tomentosa</i> (Abrams) J.M. Johnston	Chaparral-pea	N
<i>Pinus torreyana</i> Carriere	Torrey pine	N
<i>Plagiobothrys</i> sp.	Popcornflower	N
<i>Plantago elongata</i> Pursh	Plantain	N
<i>Plantago erecta</i> Morris	Dot-seed plantain	N
<i>Polypodium californicum</i> Kaulf.	California polypody	N
<i>Psilocarphus brevissimus</i> Nutt. var. <i>brevissimus</i>	Dwarf woolly-heads	N
<i>Psilocarphus tenellus</i> Nutt. var. <i>tenellus</i>	Woolly-heads	N
<i>Quercus dumosa</i> Nutt.	Nuttall's scrub oak	N

**APPENDIX 3a**  
**PLANT SPECIES OBSERVED ON CARMEL MOUNTAIN**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Raphanus sativus</i> L.	Radish	I
<i>Rhus integrifolia</i> (Nutt.) Brewer & Watson	Lemonadeberry	N
<i>Ribes speciosum</i> Pursh.	Fuchsia-flowered gooseberry	N
<i>Rumex crispus</i> L.	Curly dock	I
<i>Salix lasiolepis</i> Benth.	Arroyo willow	N
<i>Salvia apiana</i> Jepson	White sage	N
<i>Salvia mellifera</i> E. Greene	Black sage	N
<i>Sambucus mexicana</i> C. Presl	Blue elderberry	N
<i>Scrophularia californica</i> Cham. & Schldl.	California figwort	N
<i>Selaginella bigelovii</i> L. Underw.	Bigelow clubmoss	N
<i>Selaginella cinerascens</i> Maxon	Ashy spike-moss	N
<i>Senecio californicus</i> DC.	California groundsel	N
<i>Silene gallica</i> L.	Windmill pink	I
<i>Sisyrinchium bellum</i> Wats.	Blue-eyed-grass	N
<i>Solanum parishii</i> A.A. Heller	Parish's nightshade	N
<i>Sonchus oleraceus</i> L.	Common sow thistle	I
<i>Stephanomeria virgata</i> (Benth.) ssp. <i>virgata</i>	Slender stephanomeria	N
<i>Stylocline gnaphaloides</i> Nutt.	Everlasting nest straw	N
<i>Trifolium</i> sp.	Clover	N
<i>Xanthium strumarium</i> L.	Cocklebur	N
<i>Xylococcus bicolor</i> Nutt.	Mission manzanita	N
<i>Yucca schidigera</i> K.E. Ortgies	Mohave yucca	N
<i>Zigadenus fremontii</i> (Torrey) S. Watson	Star-lily	N

HABITATS

- N = Native to locality  
I = Introduced species from outside locality

**APPENDIX 3b**  
**WILDLIFE SPECIES OBSERVED/DETECTED ON THE CARMEL MOUNTAIN PROJECT SITE**

Common Name	Scientific Name	Status
<u>Fairy Shrimp</u> (Nomenclature from Eriksen and Belk 1999)		
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	FE, MSCP (state coverage), *
<u>Amphibians</u> (Nomenclature from Crother 2001 and Crother et al. 2003)		
Western spadefoot	<i>Spea hammondii</i>	CSC
Pacific treefrog	<i>Pseudacris regilla</i>	
<u>Reptiles</u> (Nomenclature from Crother 2001 and Crother et al. 2003)		
Two-striped garter snake	<i>Thamnophis hammondii</i>	*
San Diego horned lizard	<i>Phrynosoma coronatum blainvillii</i>	CSC,*,MSCP
Western fence lizard	<i>Sceloporus occidentalis</i>	
Side-blotched lizard	<i>Uta stansburiana</i>	
Belding's orange-throated whiptail	<i>Aspidoscelis hyperythra beldingi</i>	CSC,MSCP
Northern Red diamond rattlesnake	<i>Crotalus ruber</i>	CSC
<u>Birds</u> (Nomenclature from American Ornithologists' Union 1998 and Unitt 1984)		
Turkey vulture	<i>Cathartes aura</i>	
White-tailed kite	<i>Elanus leucurus</i>	CFP, *
Northern harrier	<i>Circus cyaneus hudsonius</i>	CSC,MSCP
Cooper's hawk	<i>Accipiter cooperi</i>	CSC,MSCP
Red-shouldered hawk	<i>Buteo lineatus elegans</i>	
Red-tailed hawk	<i>Buteo jamaicensis</i>	
American kestrel	<i>Falco sparverius</i>	
California quail	<i>Callipepla californica californica</i>	
Killdeer	<i>Charadrius vociferus vociferus</i>	
Mourning dove	<i>Zenaida macroura marginella</i>	
Rock dove	<i>Columbina livia</i>	
Greater roadrunner	<i>Geococcyx californianus</i>	
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	CSC,MSCP
White-throated swift	<i>Aeronautes saxatalis</i>	
Anna's hummingbird	<i>Calypte anna</i>	



**APPENDIX 3b**  
**WILDLIFE SPECIES OBSERVED/DETECTED ON THE CARMEL MOUNTAIN PROJECT SITE**  
**(continued)**

Common Name	Scientific Name	Status
Rufous hummingbird	<i>Selasphorus rufus</i>	
Nuttall's woodpecker	<i>Picoides nuttallii</i>	
Pacific slope flycatcher	<i>Empidonax difficilis</i>	
Ash-throated flycatcher	<i>Myiarchus cinerascens cinerascens</i>	
Cassin's kingbird	<i>Tyrannus vociferans vociferans</i>	
Western kingbird	<i>Tyrannus verticalis</i>	
California horned lark	<i>Eremophila alpestris actia</i>	CSC
Cliff swallow	<i>Hirundo pyrrhonota tachina</i>	
Western scrub-jay	<i>Aphelocoma californica</i>	
Common raven	<i>Corvus corax clarionensis</i>	
Loggerhead shrike	<i>Lanius ludovicianus</i>	CSC
Bushtit	<i>Psaltriparus minimus minimus</i>	
Bewick's wren	<i>Thyromanes bewickii</i>	
House wren	<i>Troglodytes aedon parkmanii</i>	
Northern mockingbird	<i>Mimus polyglottos polyglottos</i>	
California thrasher	<i>Toxostoma redivivum redivivum</i>	
Wrentit	<i>Chamaea fasciata henshawi</i>	
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	FT,CSC,MSCP
Lesser goldfinch	<i>Carduelis psaltria hesperophilus</i>	
Lawrence's goldfinch	<i>Carduelis lawrencei</i>	
House finch	<i>Carpodacus mexicanus frontalis</i>	
Orange-crowned warbler	<i>Vermivora celata</i>	
Yellow-rumped warbler	<i>Dendroica coronata</i>	
Common yellowthroat	<i>Geothlypis trichas</i>	
Black-headed grosbeak	<i>Pheucticus melanocephalus maculatus</i>	
Spotted towhee	<i>Pipilo maculatus</i>	
California towhee	<i>Pipilo crissalis</i>	
Bell's sage sparrow	<i>Amphispiza belli belli</i>	CSC
Southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	CSC,MSCP
Grasshopper sparrow	<i>Ammodramus savannarum perpallidus</i>	MSCP
Song sparrow	<i>Melospiza melodia</i>	

**APPENDIX 3b**  
**WILDLIFE SPECIES OBSERVED/DETECTED ON THE CARMEL MOUNTAIN PROJECT SITE**  
**(continued)**

Common Name	Scientific Name	Status
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	
Dark-eyed junco	<i>Junco hyemalis</i>	
Western meadowlark	<i>Sturnella neglecta</i>	
Oriole	<i>Icterus</i> spp.	
<u>Mammals</u> (Nomenclature from Jones et al. 1997)		
California ground squirrel	<i>Spermophilus beecheyi</i>	
Southern pocket gopher	<i>Thomomys umbrinus</i> (= <i>bottae</i> )	
Pacific (= agile) kangaroo rat	<i>Dipodomys agilis</i>	
Deer mouse	<i>Peromyscus maniculatus</i>	
Woodrat	<i>Neotoma</i> spp.	
San Diego desert woodrat	<i>Neotoma lepida intermedia</i>	CSC
Brush rabbit	<i>Sylvilagus bachmani</i>	
White-footed mouse	<i>Peromyscus</i> sp.	
Coyote	<i>Canis latrans</i>	
Gray fox	<i>Urocyon cinereoargenteus</i>	
Mountain lion	<i>Felis concolor</i>	CFP, MSCP
Southern mule deer	<i>Odocoileus hemionus fuliginata</i>	MSCP

STATUS

- CFP = California fully protected species  
CSC = California Department of Fish and Game species of special concern  
FE = Listed as endangered by the federal government  
FT = Listed as threatened by the federal government  
MSCP = Multiple Species Conservation Program covered species  
\* = Taxa listed with an asterisk fall into one or more of the following categories:
- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
  - Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
  - Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California
  - Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

**APPENDIX 3c**  
**SENSITIVE PLANT SPECIES OBSERVED ON THE CARMEL MOUNTAIN PRESERVE**

Species	State/Federal Status	CNPS List	CNPS Code	Typical Habitat/Comments
<i>Adolphia californica</i> California adolphia	-/-	2	1-2-1	Chaparral/observed on-site
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> Del Mar manzanita	-/FE	1B	3-3-2	Coastal chaparral/observed-on site
<i>Brodiaea orcuttii</i> Orcutt's brodiaea	-/-	1B	1-3-2	Closed-cone coniferous forest, meadows, cismontane wood-land, valley and foothill grass-land, vernal pools/observed on-site
<i>Calandrinia maritima</i> Seaside calandrinia	-/-	4	1-2-1	Coastal bluff scrub, valley and foothill grassland/observed on-site
<i>Ceanothus verrucosus</i> Wart-stemmed ceanothus	-/-	2	1-2-1	Chaparral
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> Summer holly	-/-	1B	2-2-2	Chaparral/observed on-site
<i>Coreopsis maritima</i> Sea dahlia	-/-	2	2-2-1	Coastal sage scrub/observed on-site
<i>Dichondra occidentalis</i> Western dichondra	-/-	4	1-2-1	Chaparral, cismontane wood-land, coastal sage scrub, valley and foothill grassland/observed on-site
<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i> (= <i>Dudleya brevifolia</i> ) Short-leaved dudleya	CE/-	1B	3-3-3	Chaparral, coastal sage scrub (Torrey sandstone)/observed on-site
<i>Ferocactus viridescens</i> Coast barrel cactus	-/-	2	1-3-1	Chaparral, coastal sage scrub, valley and foothill grassland/observed on-site
<i>Lessingia filaginifolia</i> var. <i>filaginifolia</i> (= <i>Corethrogyne filaginifolia</i> var. <i>linifolia</i> ) Del Mar Mesa sand aster	-/-	1B	3-2-3	Chaparral, coastal sage scrub/observed on-site
<i>Muilla clevelandii</i> San Diego goldenstar	-/-	1B	2-2-2	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools
<i>Ophioglossum californicum</i> (= <i>Ophioglossum lusitanicum</i> ssp. <i>californicum</i> ) California adder's-tongue fern	-/-	4	1-2-2	Clay mesa soils/observed on-site
<i>Pinus torreyana</i> ssp. <i>torreyana</i> Torrey pine	-/-	1B	3-2-3	Closed-cone coniferous forest/observed on-site
<i>Quercus dumosa</i> Nuttall's scrub oak	-/-	1B	2-3-2	Coastal chaparral

**APPENDIX 3c**  
**SENSITIVE PLANT SPECIES OBSERVED ON THE CARMEL MOUNTAIN PRESERVE**  
**(continued)**

**SENSITIVITY CODES**

**FEDERAL CANDIDATES AND LISTED PLANTS**

FE = Federally listed, endangered  
FT = Federally listed, threatened  
FPE = Federally proposed endangered  
FPT = Federally proposed threatened

**STATE LISTED PLANTS**

CE = State listed, endangered  
CR = State listed, rare  
CT = State listed, threatened

**CALIFORNIA NATIVE PLANT SOCIETY**

**LISTS**

- 1A = Species presumed extinct.
- 1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
- 2 = Species rare, threatened, or endangered in California but which are more common elsewhere. These species are eligible for state listing.
- 3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.
- 4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

**R-E-D CODES**

**R (Rarity)**

- 1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time.
- 2 = Occurrence confined to several populations or to one extended population.
- 3 = Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

**E (Endangerment)**

- 1 = Not endangered
- 2 = Endangered in a portion of its range
- 3 = Endangered throughout its range

**D (Distribution)**

- 1 = More or less widespread Outside California
- 2 = Rare outside California
- 3 = Endemic to California

**APPENDIX 3d**  
**Descriptions of Sensitive Species Occurring**  
**on the Carmel Mountain Preserve and Not Covered by the MSCP**

**California adolphia (*Adolphia californica*).** California adolphia is a CNPS List 2 species in the buckthorn family (Rhamnaceae). This species generally occurs in Diegan coastal sage scrub or near the edge of chaparral, in dry locales with shrubs four to five feet tall. On Carmel Mountain, California adolphia is present in the southern maritime chaparral, on the southeastern portion of the Preserve. The population on the Preserve has been disturbed by road grading and trash dumping. This shrub flowers from December to April and loses its leaves in late summer and fall, making it difficult to find. Its spiny stems are identifiable at close range year-round, however. It is associated with San Miguel and Friant soils (Reiser 2001). Its geographic range extends from San Diego County south into Baja California. In San Diego County, it is found from the Carlsbad area south into the Proctor Valley and Otay region (Beauchamp 1986).

**South coast saltbush (*Atriplex pacifica*).** South coast saltbush is an annual herb and a member of the Chenopodiaceae (goosefoot) family. It is a CNPS List 1B species. This species is found within coastal bluff scrub and coastal sage scrub from Ventura County south to Baja California, Mexico. South coast saltbush superficially resembles the introduced Australian saltbush (*Atriplex semibaccata*), common throughout southern California.

**Seaside calandrinia (*Calandrinia maritima*).** Seaside calandrinia is a CNPS List 4 species, with low numbers throughout its range along the coast from Santa Barbara County southward into Baja California, Mexico, and on the Channel Islands. This succulent annual herb in the pursland family (Portulacaceae) flowers from March through May. It is typically found on sandy bluffs and openings in coastal sage scrub flats near the beach. It has been mapped on Gaviota fine sandy loam and Terrace Escarpment soils (Reiser 2001). Because the species inhabits coastal environments, development has reduced the number of populations throughout its range. On Carmel Mountain Preserve, this species is present in southern maritime chaparral north and northwest of Carmel Mountain.

**Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*).** Summer holly is a CNPS List 1B species. This evergreen shrub in the heath family (Ericaceae) reaches heights of 15 feet and produces a small white flower from April to June (Munz 1974). Summer holly is found in the chaparral in Orange, Riverside, and San Diego Counties, as well as Baja California, Mexico. In San Diego County it generally occurs at low elevations in chaparral communities near the coast. Summer holly is threatened by development and gravel mining (CNPS 2001). It has been documented as occurring on Carmel Mountain Preserve, but its location has not been mapped.

**Sea dahlia (*Coreopsis maritima*).** Sea dahlia is a CNPS List 2 species. This perennial herb in the sunflower family (Asteraceae) has semi-succulent leaves and reaches two feet in height. It flowers from March to June. It typically grows on coastal bluffs and dunes below 200 feet elevation in coastal strand or coastal sage scrub. Its range extends along the coast from Encinitas in San Diego County south to near San Quentin, Baja California, Mexico. On Carmel Mountain Preserve, sea dahlia is present on north slopes within southern maritime chaparral. The population is currently presumed stable, due to lack of disturbance in that area of the Preserve. Threats to the species include loss of habitat and erosion of remaining sandstone seabluff habitat.



Photograph A3d-1. Sea Dahlia



Photograph A3d-2.  
Sea Dahlia Flowers

**Western dichondra (*Dichondra occidentalis*).** Western dichondra is a CNPS List 4 species, indicating that it has limited distribution or is infrequent throughout its range. Its range extends from Ventura County south into Baja California, Mexico, including the Channel Islands. In San Diego County, it is known from Agua Hedionda south to Point Loma and inland to Poway, Otay Mountain, and the Tijuana Hills (Beauchamp 1986). This small perennial herb in the morning-glory family (Convolvulaceae) flowers from March to May. It often grows almost completely hidden under shrubs or trees in coastal sage scrub and chaparral, or among rocky outcrops in grasslands. It grows primarily in dry sandy soils including Heuerhuero soils and Hambright gravelly clay loam (Reiser 2001). On Carmel Mountain Preserve, this



Photograph A3d-3. Western Dichondra

species is found in southern maritime chaparral, adjacent to and within the 1986 burned area. The numbers of western dichondra are in a slow decline in southern California because habitat is being lost to development and weeds are invading native plant communities.

**California adder's-tongue fern (*Ophioglossum californicum*).** California adder's-tongue fern is a CNPS List 4 whose range extends from the Sierra Nevada foothills to southern California and southward into Baja California, Mexico. In San Diego County, the fern has been reported from Kearny Mesa, Olivenhain, Proctor Valley, and Escondido (Beauchamp 1986). This perennial rhizomatous herb typically occurs on grassy slopes and near vernal pools and seeps, in coastal and foothill locations below 900 feet elevation. The California adder's-tongue fern is easily observed during the springtime, but becomes inconspicuous later in the season. This species is associated with vernal pools and other seasonal wetlands and wet meadows on the Preserve.

**Nuttall's scrub oak (*Quercus dumosa*).** Nuttall's scrub oak is a member of the Fagaceae family. This evergreen shrub is a CNPS *Inventory* (CNPS 2001) List 1B species that occurs in Santa Barbara, Orange, and San Diego Counties as well as in Baja California, Mexico. Nuttall's scrub oak is found within chaparral and coastal sage scrub vegetation on sandy or clay loam soils. This species occurs abundantly within southern maritime chaparral on the Preserve.

**Two-striped garter snake (*Thamnophis hammondi*).** The two-striped garter snake is a sensitive species that may grow as long as 36 inches though 18 to 24 inches is more usual. Its dorsal scales are keeled, which breaks up the reflection of light and results in a dull luster. The overall color is olive drab with a single yellowish stripe running down each side of the body. Patterned into the dorsal coloration are four rows of small, dark spots. The belly is dull yellow, or sometimes salmon colored. The two-striped garter snake ranges in coastal California from the vicinity of Salinas south to El Rosario in Baja California, Mexico. They are normally found in or near permanent fresh water, inhabiting streams, ponds, and lakes throughout their range. They are often found even in temporary bodies of water such as vernal pools. It is the most common snake in southern California, and it is not unusual to encounter several individuals at a time. Activity is most common around dusk and in the early evening. Adults feed on frogs, tadpoles, toads, insect larvae, fish, fish eggs, and earthworms. The two-striped garter snake is ovoviviparous. Breeding commences in April and May and continues throughout the summer months. Gestation is approximately nine weeks. As many as 25 young may be born, though 12 to 13 is more common.



**Photograph A3d-4.** Red Diamond Rattlesnake at Carmel Mountain

**Northern red diamond rattlesnake (*Crotalus ruber*).** The northern red diamond rattlesnake is a CDFG species of special concern. This species occurs below 1,200 meters (4,000 feet) on both sides of the Peninsular Ranges of southwestern California in coastal sage scrub, desert scrub, open chaparral, woodland, and grassland habitats, as well as agricultural fields (Stebbins 1985). This snake is commonly found in areas with rock outcrops. Population declines in the red diamond rattlesnake are generally attributable to impacts related to the increased development near habitat in which this snake is found.

**White-tailed kite (*Elanus leucurus*).** The white-tailed kite is a California fully protected species that occurs in coastal lowland areas from Oregon to northern Baja California, Mexico (National Geographic Society 1983). This resident bird nests in riparian woodlands, live oaks, or sycamore groves which border grassland or open fields (Unitt 1984 and 2004). The white-tailed kite forages over open areas and grasslands feeding primarily on small rodents, in particular the California vole or meadow mouse (Unitt 2004), and insects (National Geographic Society 1983). This species is known to roost in large communal groups (Unitt 1984 and 2004). White-tailed kite populations in southern California have declined due to the loss of grassland foraging habitat to urbanization.

**Coastal subspecies of the horned lark (*Eremophila alpestris actia*).** The coastal subspecies of the horned lark is a CDFG species of special concern. The horned lark (*E. alpestris*) ranges throughout North America; however, the coastal subspecies occupies the coastal slope of San Diego County, extending east to Montezuma Valley (Ranchita), Mason Valley, and Jacumba (Unitt 2004). Other subspecies and hybrids with other subspecies have been encountered in San Diego County (Unitt 2004). Horned larks occur in the coastal strand, arid grasslands, and sandy desert floors of San Diego County year round (Unitt 2004). Decline of this species is generally attributed to urbanization and human disturbance.

**Blue-gray gnatcatcher (*Poliophtila caerulea*).** The blue-gray gnatcatcher is on the sensitive species list for the City of San Diego. The blue-gray gnatcatcher is distributed throughout Mexico and the U.S., excluding northern plains states and the northwest. Locally, this species is a fairly common migrant and winter visitor and a rare and localized summer resident. The blue-gray gnatcatcher winters in dense riparian undergrowth, weedy/brushy agricultural areas, thickets in desert washes, and occasionally chaparral. It breeds in foothill chaparral, desert-edge scrub, and mesquite thickets. Brood-parasitism by brown-headed cowbirds is one contributing reason to the decline of this species.



**Loggerhead shrike (*Lanius ludovicianus*).** The loggerhead shrike is a CDFG species of special concern. This species inhabits most of the continental U.S. and Mexico and is a year-round resident of southern California. The loggerhead shrike prefers open habitat with perches for hunting and fairly dense shrubs for nesting (Small 1994). In southern California, this bird inhabits grasslands, agricultural fields, chaparral, and desert scrub (Unitt 1984). Loggerhead shrikes feed on small reptiles and insects that they often impale on sticks or thorns before eating (Robbins et al. 1983). Loggerhead shrike populations are declining, likely due to urbanization and loss of habitat.

**Bell's sage sparrow (*Amphispiza belli belli*).** Bell's sage sparrow is a CDFG species of special concern. Bell's sage sparrow is an uncommon to locally fairly common resident along the extreme west coast of California. Its breeding range is along the coastal slopes from Trinity County south into northwestern Baja California, Mexico. Locally, it can be found in the interior chaparral and coastal sage scrub habitats, especially dense stands of chamise chaparral (Small 1994). This race is essentially sedentary. Male Bell's sage sparrows show high breeding territory tenacity, even when the habitat is altered dramatically (Ehrlich et al. 1988). This species feeds primarily on spiders, insects, and seeds while breeding, and seeds during the winter.

**Grasshopper sparrow (*Ammodramus savannarum*).** Although they have no official status with resource agencies, grasshopper sparrows are considered locally uncommon. In addition, the County gives "special attention" to this species during the development of the North County MSCP as reported in their update on the plan published on their website (County of San Diego 2001). This species has a patchy distribution within grasslands along coastal California and the foothills of the Sierra Nevadas. Grasshopper sparrows are semi-colonial and are locally rare throughout southern California with the numbers of grasshopper sparrows varying annually. Grasshopper sparrows are a localized summer resident in San Diego County and very rare in winter (Unitt 1984). This species was observed adjacent to the Preserve during surveys in 1994 and probably occurs on the Preserve, although its current status is unknown.

**San Diego black-tailed jackrabbit (*Lepus californicus bennettii*).** The San Diego black-tailed jackrabbit is a CDFG species of special concern. This species can be found throughout southern California, with the exception of the high-altitude mountains. The black-tailed jackrabbit is strictly herbivorous, preferring habitat with ample forage such as grasses and forbs. The San Diego black-tailed jackrabbit breeds throughout the year with the greatest number of births occurring from April through May. This species is generally solitary, except when mating and raising young (Zeiner et al. 1990).

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**APPENDIX 3d**  
**Descriptions of Sensitive Species Occurring**  
**on the Carmel Mountain Preserve and Not Covered by the MSCP**

**California adolphia (*Adolphia californica*).** California adolphia is a CNPS List 2 species in the buckthorn family (Rhamnaceae). This species generally occurs in Diegan coastal sage scrub or near the edge of chaparral, in dry locales with shrubs four to five feet tall. On Carmel Mountain, California adolphia is present in the southern maritime chaparral, on the southeastern portion of the Preserve. The population on the Preserve has been disturbed by road grading and trash dumping. This shrub flowers from December to April and loses its leaves in late summer and fall, making it difficult to find. Its spiny stems are identifiable at close range year-round, however. It is associated with San Miguel and Friant soils (Reiser 2001). Its geographic range extends from San Diego County south into Baja California. In San Diego County, it is found from the Carlsbad area south into the Proctor Valley and Otay region (Beauchamp 1986).

**South coast saltbush (*Atriplex pacifica*).** South coast saltbush is an annual herb and a member of the Chenopodiaceae (goosefoot) family. It is a CNPS List 1B species. This species is found within coastal bluff scrub and coastal sage scrub from Ventura County south to Baja California, Mexico. South coast saltbush superficially resembles the introduced Australian saltbush (*Atriplex semibaccata*), common throughout southern California.

**Seaside calandrinia (*Calandrinia maritima*).** Seaside calandrinia is a CNPS List 4 species, with low numbers throughout its range along the coast from Santa Barbara County southward into Baja California, Mexico, and on the Channel Islands. This succulent annual herb in the purslane family (Portulacaceae) flowers from March through May. It is typically found on sandy bluffs and openings in coastal sage scrub flats near the beach. It has been mapped on Gaviota fine sandy loam and Terrace Escarpment soils (Reiser 2001). Because the species inhabits coastal environments, development has reduced the number of populations throughout its range. On Carmel Mountain Preserve, this species is present in southern maritime chaparral north and northwest of Carmel Mountain.

**Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*).** Summer holly is a CNPS List 1B species. This evergreen shrub in the heath family (Ericaceae) reaches heights of 15 feet and produces a small white flower from April to June (Munz 1974). Summer holly is found in the chaparral in Orange, Riverside, and San Diego Counties, as well as Baja California, Mexico. In San Diego County it generally occurs at low elevations in chaparral communities near the coast. Summer holly is threatened by development and gravel mining (CNPS 2001). It has been documented as occurring on Carmel Mountain Preserve, but its location has not been mapped.

**Sea dahlia (*Coreopsis maritima*).** Sea dahlia is a CNPS List 2 species. This perennial herb in the sunflower family (Asteraceae) has semi-succulent leaves and reaches two feet in height. It flowers from March to June. It typically grows on coastal bluffs and dunes below 200 feet elevation in coastal strand or coastal sage scrub. Its range extends along the coast from Encinitas in San Diego County south to near San Quentin, Baja California, Mexico. On Carmel Mountain Preserve, sea dahlia is present on north slopes within southern maritime chaparral. The population is currently presumed stable, due to lack of disturbance in that area of the Preserve. Threats to the species include loss of habitat and erosion of remaining sandstone seabluff habitat.



Photograph A3d-1. Sea Dahlia



Photograph A3d-2.  
Sea Dahlia Flowers

**Western dichondra (*Dichondra occidentalis*).** Western dichondra is a CNPS List 4 species, indicating that it has limited distribution or is infrequent throughout its range. Its range extends from Ventura County south into Baja California, Mexico, including the Channel Islands. In San Diego County, it is known from Agua Hedionda south to Point Loma and inland to Poway, Otay Mountain, and the Tijuana Hills (Beauchamp 1986). This small perennial herb in the morning-glory family (Convolvulaceae) flowers from March to May. It often grows almost completely hidden under shrubs or trees in coastal sage scrub and chaparral, or among rocky outcrops in grasslands. It grows primarily in dry sandy soils including Heuerhuero soils and Hambright gravelly clay loam (Reiser 2001). On Carmel Mountain Preserve, this



Photograph A3d-3. Western Dichondra

species is found in southern maritime chaparral, adjacent to and within the 1986 burned area. The numbers of western dichondra are in a slow decline in southern California because habitat is being lost to development and weeds are invading native plant communities.

**California adder's-tongue fern (*Ophioglossum californicum*).** California adder's-tongue fern is a CNPS List 4 whose range extends from the Sierra Nevada foothills to southern California and southward into Baja California, Mexico. In San Diego County, the fern has been reported from Kearny Mesa, Olivenhain, Proctor Valley, and Escondido (Beauchamp 1986). This perennial rhizomatous herb typically occurs on grassy slopes and near vernal pools and seeps, in coastal and foothill locations below 900 feet elevation. The California adder's-tongue fern is easily observed during the springtime, but becomes inconspicuous later in the season. This species is associated with vernal pools and other seasonal wetlands and wet meadows on the Preserve.

**Nuttall's scrub oak (*Quercus dumosa*).** Nuttall's scrub oak is a member of the Fagaceae family. This evergreen shrub is a CNPS *Inventory* (CNPS 2001) List 1B species that occurs in Santa Barbara, Orange, and San Diego Counties as well as in Baja California, Mexico. Nuttall's scrub oak is found within chaparral and coastal sage scrub vegetation on sandy or clay loam soils. This species occurs abundantly within southern maritime chaparral on the Preserve.

**Two-striped garter snake (*Thamnophis hammondi*).** The two-striped garter snake is a sensitive species that may grow as long as 36 inches though 18 to 24 inches is more usual. Its dorsal scales are keeled, which breaks up the reflection of light and results in a dull luster. The overall color is olive drab with a single yellowish stripe running down each side of the body. Patterned into the dorsal coloration are four rows of small, dark spots. The belly is dull yellow, or sometimes salmon colored. The two-striped garter snake ranges in coastal California from the vicinity of Salinas south to El Rosario in Baja California, Mexico. They are normally found in or near permanent fresh water, inhabiting streams, ponds, and lakes throughout their range. They are often found even in temporary bodies of water such as vernal pools. It is the most common snake in southern California, and it is not unusual to encounter several individuals at a time. Activity is most common around dusk and in the early evening. Adults feed on frogs, tadpoles, toads, insect larvae, fish, fish eggs, and earthworms. The two-striped garter snake is ovoviviparous. Breeding commences in April and May and continues throughout the summer months. Gestation is approximately nine weeks. As many as 25 young may be born, though 12 to 13 is more common.



**Photograph A3d-4.** Red Diamond Rattlesnake at Carmel Mountain

**Northern red diamond rattlesnake (*Crotalus ruber*).** The northern red diamond rattlesnake is a CDFG species of special concern. This species occurs below 1,200 meters (4,000 feet) on both sides of the Peninsular Ranges of southwestern California in coastal sage scrub, desert scrub, open chaparral, woodland, and grassland habitats, as well as agricultural fields (Stebbins 1985). This snake is commonly found in areas with rock outcrops. Population declines in the red diamond rattlesnake are generally attributable to impacts related to the increased development near habitat in which this snake is found.

**White-tailed kite (*Elanus leucurus*).** The white-tailed kite is a California fully protected species that occurs in coastal lowland areas from Oregon to northern Baja California, Mexico (National Geographic Society 1983). This resident bird nests in riparian woodlands, live oaks, or sycamore groves which border grassland or open fields (Unitt 1984 and 2004). The white-tailed kite forages over open areas and grasslands feeding primarily on small rodents, in particular the California vole or meadow mouse (Unitt 2004), and insects (National Geographic Society 1983). This species is known to roost in large communal groups (Unitt 1984 and 2004). White-tailed kite populations in southern California have declined due to the loss of grassland foraging habitat to urbanization.

**Coastal subspecies of the horned lark (*Eremophila alpestris actia*).** The coastal subspecies of the horned lark is a CDFG species of special concern. The horned lark (*E. alpestris*) ranges throughout North America; however, the coastal subspecies occupies the coastal slope of San Diego County, extending east to Montezuma Valley (Ranchita), Mason Valley, and Jacumba (Unitt 2004). Other subspecies and hybrids with other subspecies have been encountered in San Diego County (Unitt 2004). Horned larks occur in the coastal strand, arid grasslands, and sandy desert floors of San Diego County year round (Unitt 2004). Decline of this species is generally attributed to urbanization and human disturbance.

**Blue-gray gnatcatcher (*Poliophtila caerulea*).** The blue-gray gnatcatcher is on the sensitive species list for the City of San Diego. The blue-gray gnatcatcher is distributed throughout Mexico and the U.S., excluding northern plains states and the northwest. Locally, this species is a fairly common migrant and winter visitor and a rare and localized summer resident. The blue-gray gnatcatcher winters in dense riparian undergrowth, weedy/brushy agricultural areas, thickets in desert washes, and occasionally chaparral. It breeds in foothill chaparral, desert-edge scrub, and mesquite thickets. Brood-parasitism by brown-headed cowbirds is one contributing reason to the decline of this species.

**Loggerhead shrike (*Lanius ludovicianus*).** The loggerhead shrike is a CDFG species of special concern. This species inhabits most of the continental U.S. and Mexico and is a year-round resident of southern California. The loggerhead shrike prefers open habitat with perches for hunting and fairly dense shrubs for nesting (Small 1994). In southern California, this bird inhabits grasslands, agricultural fields, chaparral, and desert scrub (Unitt 1984). Loggerhead shrikes feed on small reptiles and insects that they often impale on sticks or thorns before eating (Robbins et al. 1983). Loggerhead shrike populations are declining, likely due to urbanization and loss of habitat.

**Bell's sage sparrow (*Amphispiza belli belli*).** Bell's sage sparrow is a CDFG species of special concern. Bell's sage sparrow is an uncommon to locally fairly common resident along the extreme west coast of California. Its breeding range is along the coastal slopes from Trinity County south into northwestern Baja California, Mexico. Locally, it can be found in the interior chaparral and coastal sage scrub habitats, especially dense stands of chamise chaparral (Small 1994). This race is essentially sedentary. Male Bell's sage sparrows show high breeding territory tenacity, even when the habitat is altered dramatically (Ehrlich et al. 1988). This species feeds primarily on spiders, insects, and seeds while breeding, and seeds during the winter.

**Grasshopper sparrow (*Ammodramus savannarum*).** Although they have no official status with resource agencies, grasshopper sparrows are considered locally uncommon. In addition, the County gives "special attention" to this species during the development of the North County MSCP as reported in their update on the plan published on their website (County of San Diego 2001). This species has a patchy distribution within grasslands along coastal California and the foothills of the Sierra Nevadas. Grasshopper sparrows are semi-colonial and are locally rare throughout southern California with the numbers of grasshopper sparrows varying annually. Grasshopper sparrows are a localized summer resident in San Diego County and very rare in winter (Unitt 1984). This species was observed adjacent to the Preserve during surveys in 1994 and probably occurs on the Preserve, although its current status is unknown.

**San Diego black-tailed jackrabbit (*Lepus californicus bennettii*).** The San Diego black-tailed jackrabbit is a CDFG species of special concern. This species can be found throughout southern California, with the exception of the high-altitude mountains. The black-tailed jackrabbit is strictly herbivorous, preferring habitat with ample forage such as grasses and forbs. The San Diego black-tailed jackrabbit breeds throughout the year with the greatest number of births occurring from April through May. This species is generally solitary, except when mating and raising young (Zeiner et al. 1990).

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**APPENDIX 3e**  
**SENSITIVE WILDLIFE SPECIES OBSERVED ON THE CARMEL MOUNTAIN PRESERVE**

Species	Status	Habitat
<u>Invertebrates</u> (Nomenclature from Eriksen and Belk 1999)		
San Diego fairy shrimp <i>Branchinecta sandiegonensis</i>	FE, MSCP (state coverage), *	Vernal pools.
<u>Amphibians</u> (Nomenclature from Crother 2001 and Crother et al. 2003)		
Western spadefoot <i>Spea hammondi</i>	CSC	Vernal pools, floodplains, and alkali flats within areas of open vegetation.
<u>Reptiles</u> (Nomenclature from Crother 2001 and Crother et al. 2003)		
Two-striped garter snake <i>Thamnophis hammondi</i>	CSC, *	Permanent freshwater streams with rocky bottoms. Mesic areas.
San Diego horned lizard <i>Phrynosoma coronatum blainvillii</i>	CSC, MSCP, *	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants for forage.
Belding's orangethroat whiptail <i>Aspidoscelis hyperythra beldingi</i>	CSC, MSCP	Chaparral, coastal sage scrub with coarse sandy soils and scattered brush.
Northern red diamond rattlesnake <i>Crotalus ruber</i>	CSC	Desert scrub and riparian, coastal sage scrub, open chaparral, grassland, and agricultural fields.
<u>Birds</u> (Nomenclature from American Ornithologists' Union 1998 and Unitt 1984)		
White-tailed kite (nesting) <i>Elanus leucurus</i>	CFP, *	Nest in riparian woodland, oaks, sycamores. Forage in open, grassy areas. Year-round resident.
Northern harrier (nesting) <i>Circus cyaneus</i>	CSC, MSCP	Coastal lowland, marshes, grassland, agricultural fields. Migrant and winter resident, rare summer resident.
Cooper's hawk (nesting) <i>Accipiter cooperi</i>	CSC, MSCP	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas. Migrant and winter visitor.
Western burrowing owl (burrow sites) <i>Athene cunicularia hypugaea</i>	CSC, MSCP	Grassland, agricultural land, coastal dunes. Require rodent burrows. Declining resident.
California horned lark <i>Eremophila alpestris actia</i>	CSC	Sandy shores, mesas, disturbed areas, grasslands, agricultural lands, sparse creosote bush scrub.

**APPENDIX 3e**  
**SENSITIVE WILDLIFE SPECIES OBSERVED ON THE CARMEL MOUNTAIN PRESERVE**  
**(continued)**

Species	Status	Habitat
Coastal California gnatcatcher <i>Polioptila californica californica</i>	FT, CSC, MSCP	Coastal sage scrub, maritime succulent scrub. Resident.
Loggerhead shrike <i>Lanius ludovicianus</i>	CSC	Open foraging areas near scattered bushes and low trees.
Southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	CSC, MSCP	Coastal sage scrub, chaparral, grassland. Resident.
Bell's sage sparrow <i>Amphispiza belli belli</i>	CSC	Chaparral, coastal sage scrub. Localized resident.
Grasshopper sparrow (nesting) <i>Ammodramus savannarum</i>	MSCP	Tall grass areas. Localized summer resident, rare in winter.
<u>Mammals (Nomenclature from Jones et al. 1997)</u>		
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	CSC	Open areas of scrub, grasslands, agricultural fields.
Mountain lion <i>Felis concolor</i>	CFP, MSCP	Many habitats.
Southern mule deer <i>Odocoileus hemionus fuliginata</i>	MSCP	Many habitats.

**STATUS CODES**

Listed/Proposed

FE = Listed as endangered by the federal government  
 FT = Listed as threatened by the federal government  
 SE = Listed as endangered by the state of California

Other

CFP = California fully protected species  
 CSC = California Department of Fish and Game species of special concern  
 MSCP = Multiple Species Conservation Program covered species  
 \* = Taxa listed with an asterisk fall into one or more of the following categories:

- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
- Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

**APPENDIX 3f**  
**PLANT SPECIES OBSERVED AT THE DEL MAR MESA PRESERVE**

Scientific Name	Common Name	Origin
<i>Acanthomintha coronatum</i> (Thurber) Barkworth	Giant needlegrass	N
<i>Adenostoma fasciculatum</i> Hook. & Arn.	Chamise	N
<i>Adiantum jordani</i> K. Mull.	California maiden-hair fern	N
<i>Adolphia californica</i> Wats.	California adolphia, spineshrub	N
<i>Allium praecox</i> Bdg.	Wild onion	I
<i>Amblyopappus pusillus</i> Hook. & Arn.	Pineapple weed	N
<i>Ambrosia psilostachya</i> DC	Western ragweed	N
<i>Anagallis arvensis</i> L.	Scarlet pimpernel, poor-man's weatherglass	I
<i>Antirrhinum nuttallianum</i> Benth. in DC.	Snapdragon	N
<i>Apiastrum angustifolium</i> Nutt. in Torrey & A. Gray	Wild-celery	N
<i>Arctostaphylos glandulosa</i> Eastw. ssp. <i>crassifolia</i> (Jepson) Wells	Del Mar manzanita, Costa Baja manzanita	N
<i>Artemisia californica</i> Less.	California sagebrush	N
<i>Artemisia palmeri</i> A. Gray	San Diego sagewort, Palmer sagewort	N
<i>Atriplex semibaccata</i> R.Br.	Australian saltbush	I
<i>Avena barbata</i> Link	Slender wild oats	N
<i>Avena fatua</i> L.	Wild oats	N
<i>Baccharis pilularis</i> DC.	Coyote bush	N
<i>Baccharis salicifolia</i> (Ruiz Lopez & Pavón) Pers.	Mule fat, seep-willow	N
<i>Baccharis sarothroides</i> A. Gray	Broom baccharis	N
<i>Bothriochloa barbinodis</i> (Lag.) Herter	Cane bluestem	N
<i>Brassica nigra</i> L.	Black mustard	I
<i>Brodiaea orcuttii</i> (E. Greene) Baker	Orcutt's brodiaea	N
<i>Bromus diandrus</i> Roth.	Ripgut brome	I
<i>Bromus hordaceus</i> L.	Smooth brome	I
<i>Bromus madritensis</i> L. ssp. <i>rubens</i> (L.) Husnot	Foxtail chess	I
<i>Calandrinia ciliata</i>	Red maids	N
<i>Callitriche marginata</i> Torrey	Water-starwort	N
<i>Calochortus splendens</i> Benth.	Lilac mariposa	N
<i>Calystegia macrostegia</i> ssp. <i>arida</i> (E. Greene) Brum.	Finger-leaf morning-glory	N
<i>Camissonia bistorta</i> (Torrey & A. Gray) Raven	California sun cup	N
<i>Cardamine californica</i> (Torrey & A. Gray) E. Greene	Milk maids, tooth wort	N

**APPENDIX 3f**  
**PLANT SPECIES OBSERVED AT THE DEL MAR MESA PRESERVE**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Cardionema ramosissimum</i> (Weinm.) Nelson & J.F. Macbr.	Tread lightly	N
<i>Carpobrotus edulis</i> (L.) Bolus.	Hottentot fig	I
<i>Castilleja exserta</i> (A.A. Heller) Chuang & Heckard	Purple owl's clover	N
<i>Castilleja foliolosa</i> Hook. & Arn.	Woolly Indian paintbrush	N
<i>Ceanothus tomentosus</i> C. Parry	Coast blue lilac	N
<i>Ceanothus verrucosus</i> Nutt.	Wart-stemmed ceanothus	N
<i>Centaurea melitensis</i> L.	Tocolote, star-thistle	I
<i>Centaureum venustum</i> (A. Gray) Rob.	Canchalagua	N
<i>Chaenactis glabriuscula</i> DC.	Yellow pincushion	N
<i>Chamaesyce polycarpa</i> (Benth.) Millsp.	Spurge	N
<i>Chenopodium ambrosioides</i> L.	Mexican tea	I
<i>Chlorogalum parviflorum</i> Wats.	Amole, soap plant	N
<i>Chorizanthe fimbriata</i> Nutt.	Fringed spineflower	N
<i>Chrysanthemum coronarium</i> L.	Garland, crown daisy	I
<i>Claytonia perfoliata</i> Willd.	Miner's lettuce	N
<i>Cneoridium dumosum</i> (Nutt.) Baillon	Bushrue	N
<i>Collinsia heterophylla</i> Buist.	Chinese houses	N
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> (Parry) E. Greene	Summer holly	N
<i>Conyza canadensis</i> (L.) Cronq.	Horseweed	N
<i>Cordylanthus rigidus</i> (Benth.) Jepson ssp. <i>setigerus</i> Chuang & Heckard	Thread-leaved bird's-beak	N
<i>Cortaderia jubata</i> (Lemoine) Stapf	Pampas grass	I
<i>Cotula coronopifolia</i> L.	Brass-buttons	I
<i>Crassula aquatica</i> (L.) Schoen.	Stone-crop	N
<i>Crassula connata</i> (Ruiz Lopez & Pavon) A. Berger	Pygmy-weed	N
<i>Cryptantha intermedia</i> (A. Gray) E. Greene	Nievita	N
<i>Cucurbita foetidissima</i> Kunth	Calabazilla	N
<i>Cynara cardunculus</i> L.	Cardoon	I
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	I
<i>Cyperus alternifolius</i> L.	Umbrella-plant	I
<i>Daucus pusillus</i> Michx	Rattlesnake weed	N

**APPENDIX 3f**  
**PLANT SPECIES OBSERVED AT THE DEL MAR MESA PRESERVE**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Deschampsia danthonioides</i>	Annual hairgrass	N
<i>Dichelostemma capitatum</i> Alph. Wood	Blue dicks	N
<i>Dichondra occidentalis</i> House	Western dichondra	N
<i>Distichlis spicata</i> (L.) E. Greene	Saltgrass	N
<i>Downingia cuspidata</i> Jepson	Downingia	N
<i>Dudleya lanceolata</i> (Nutt.) Britt. & Rose	Live-for-ever	N
<i>Dudleya pulverulenta</i> (Nutt.) Britt. & Rose ssp. <i>pulverulenta</i>	Chalk lettuce	N
<i>Eleocharis macrostachya</i> Britton	Pale spikerush	N
<i>Emmenanthe penduliflora</i> Benth.	Whispering bells	N
<i>Encelia californica</i> Nutt.	Common encelia	N
<i>Epilobium canum</i> (E. Greene) Raven ssp. <i>canum</i>	California-fuchsia, <i>zauschneria</i>	N
<i>Eremocarpus setigerus</i> (Hook.) Benth.	Dove weed	N
<i>Eriogonum fasciculatum</i> Benth. var. <i>fasciculatum</i>	California buckwheat	N
<i>Eriophyllum confertiflorum</i> (DC.) A. Gray var. <i>confertiflorum</i>	Golden-yarrow	N
<i>Erodium botrys</i> (Cav.) Bertol.	Pin-clover	I
<i>Erodium cicutarium</i> (L.) L. Her.	White-stemmed filaree	I
<i>Eryngium aristulatum</i> Jepson var. <i>parishii</i> (C. & R.) Jepson	San Diego button-celery	N
<i>Eschscholzia californica</i> Cham.	California poppy	N
<i>Eucalyptus</i> spp.	Eucalyptus	I
<i>Ferocactus viridescens</i> (Torrey & A. Gray) Britt. & Rose	Coast barrel cactus	N
<i>Filago gallica</i> L.	Narrow-leaf herba impia	I
<i>Foeniculum vulgare</i> Mill.	Fennel	I
<i>Galium angustifolium</i> Nutt. <i>angustifolium</i>	Narrow-leaf bedstraw	N
<i>Galium aparine</i> L.	Goose grass	I
<i>Gastridium ventricosum</i> (Gouan) Schinz & Thell.	Nit grass	I
<i>Gilia</i> sp.	<i>Gilia</i>	N
<i>Gnaphalium bicolor</i> Bioletti	Bicolored cudweed	N
<i>Gnaphalium californicum</i> DC.	Green everlasting	N
<i>Harpagonella palmeri</i> A. Gray	Palmer's grappling hook	N
<i>Hazardia squarrosa</i> (Hook. & Arn.) E. Greene	Sawtoothed goldenbush	N

**APPENDIX 3f**  
**PLANT SPECIES OBSERVED AT THE DEL MAR MESA PRESERVE**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Helianthemum scoparium</i> Nutt.	Peak rush-rose	N
<i>Hemizonia fasciculata</i> (DC.) Torrey & A. Gray	Golden tarplant	N
<i>Heteromeles arbutifolia</i> (Lindley) Roemer	Toyon, Christmas berry	N
<i>Heterotheca grandiflora</i> Nutt.	Telegraph weed	N
<i>Hypochaeris glabra</i> L.	Smooth cat's-ear	I
<i>Isocoma menziesii</i> (Hook. & Arn.) G. Nesom	Coast goldenbush	N
<i>Isomeris arborea</i> Nutt.	Bladderpod	N
<i>Jepsonia parryi</i> (Torrey) Small	Mesa saxifrage	N
<i>Juncus bufonius</i> L.	Toad rush	N
<i>Juncus dubius</i> Engelm.	Mariposa rush	N
<i>Juncus mexicanus</i> Willd.	Mexican rush	N
<i>Lactuca serriola</i> L.	Prickly lettuce	I
<i>Lamarckia aurea</i> (L.) Moench.	Goldentop	I
<i>Lasthenia californica</i> Lindley	Goldfields	N
<i>Layia platyglossa</i> (F. & M.) A. Gray	Tidy-tips	N
<i>Lepidium nitidum</i> Torrey & A. Gray var. <i>nitidum</i>	Shining peppergrass	N
<i>Lessingia filaginifolia</i> (Hook. & Arn.) M.A. Lane var. <i>filaginifolia</i>	California-aster	N
<i>Leymus condensatus</i> (C. Presl) A. Love	Giant ryegrass	N
<i>Linanthus dianthiflorus</i> (Benth.) E. Greene	Ground-pink	N
<i>Linaria canadensis</i> (L.) Dum.-Cours	Blue toadflax	N
<i>Lomatium dasycarpum</i> (Torrey & A. Gray) Coult. & Rose ssp. <i>dasycarpum</i>	Lace parsnip	N
<i>Lonicera subspicata</i> Hook. & Arn. var. <i>denudata</i> Rehd.	Wild honeysuckle	N
<i>Lotus</i> sp.	Trefoil	N
<i>Lotus scoparius</i> (Nutt. in Torrey & A. Gray) Ottley var. <i>scoparius</i>	California broom	N
<i>Lotus strigosus</i> (Nutt.) E. Greene	Bishop's lotus	N
<i>Lupinus bicolor</i> Lindl.	Miniature lupine	N
<i>Lupinus succulentus</i> Koch	Arroyo lupine	N
<i>Lycium californicum</i> Nutt.	California box thorn	N
<i>Lythrum californicum</i> Torrey & A. Gray	California loosestrife	N

**APPENDIX 3f**  
**PLANT SPECIES OBSERVED AT THE DEL MAR MESA PRESERVE**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Lythrum hyssopifolium</i> L.	Grass poly	N
<i>Malacothamnus fasciculatus</i> (Torrey & A. Gray) E. Greene	Chaparral mallow	N
<i>Malosma laurina</i> (Nutt.) Abrams	Laurel sumac	N
<i>Marah macrocarpus</i> (E. Greene) E. Greene	Wild cucumber	N
<i>Marrubium vulgare</i> L.	Horehound	I
<i>Melica imperfecta</i> Trin.	California melic	N
<i>Mesembryanthemum crystallinum</i> L.	Crystalline ice plant	I
<i>Mimulus aurantiacus</i> Curtis	Bush monkeyflower	N
<i>Mirabilis californica</i> A. Gray	Wishbone bush	N
<i>Muhlenbergia rigens</i> (Benth.) A. Hitchc.	Deergrass	N
<i>Muilla clevelandii</i> (Wats.) Hoover	San Diego goldenstar	N
<i>Muilla maritima</i> (Torrey) S. Watson	Common muilla	N
<i>Myosurus minimus</i> L.	Little mouse-tail	N
<i>Nassella lepida</i> (A. Hitchc.) Barkworth	Foothill needlegrass	N
<i>Nassella pulchra</i> (A. Hitchc.) Barkworth	Purple needlegrass	N
<i>Navarretia hamata</i> E. Greene	Hooked navarretia	N
<i>Nemophila menziesii</i> Hook. & Arn. var. <i>menziesii</i>	Baby blue-eyes	N
<i>Nicotiana glauca</i> Grah.	Tree tobacco	I
<i>Ophioglossum californicum</i> Prantl.	California adder's-tongue	N
<i>Opuntia littoralis</i> (Engelm.) Cockerell.	Shore cactus	N
<i>Opuntia prolifera</i> Engelm.	Cholla	N
<i>Oxalis albicans</i> Kunth ssp. <i>californica</i> (Abrams) Eiten.	California wood-sorrel	N
<i>Oxalis pes-caprae</i> L.	Bermuda buttercup	I
<i>Pectocarya linearis</i> (Ruis Lopez & Pavon) DC. ssp. <i>ferocula</i> (I.M. Johnston) Thorne	Comb-bur	N
<i>Pellaea mucronata</i> (D. Eaton) D. Eaton	Bird's-foot fern	N
<i>Pentagramma triangularis</i> ssp. <i>viscosa</i> (D. Eaton) G. Yatskievych, M.D. Windham & E. Wollenweber	Silverback fern	N
<i>Phacelia</i> sp.	Phacelia	N
<i>Pholistoma auritum</i> (Lindley) Lilja var. <i>auritum</i>	Fiesta flower	N

**APPENDIX 3f**  
**PLANT SPECIES OBSERVED AT THE DEL MAR MESA PRESERVE**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Plantago erecta</i> Morris	Dot-seed plantain	N
<i>Plantago major</i> L.	Common plantain	I
<i>Platanus racemosa</i> Nutt.	Western sycamore	N
<i>Pogogyne abramsii</i> J. Howell	San Diego mesa mint	N
<i>Polypogon monspeliensis</i> (L.) Desf.	Annual beard grass	I
<i>Porophyllum gracile</i> Benth.	Odora	N
<i>Psilocarphus brevissimus</i> Nutt. var. <i>brevissimus</i>	Dwarf woolly-heads	N
<i>Psilocarphus tenellus</i> Nutt. var. <i>tenellus</i>	Woolly-heads	N
<i>Quercus agrifolia</i> Nee	Coast live oak, Encina	N
<i>Quercus dumosa</i> Nutt.	Nuttall's scrub oak	N
<i>Ranunculus californicus</i> Benth.	California buttercup	N
<i>Raphanus sativus</i> L.	Radish	I
<i>Rhamnus crocea</i> Nutt.	Spiny redberry	N
<i>Rhus integrifolia</i> (Nutt.) Brewer & Watson	Lemonadeberry	N
<i>Rhus ovata</i> Wats.	Sugar bush	N
<i>Ribes speciosum</i> Pursh.	Fuchsia-flowered gooseberry	N
<i>Rumex crispus</i> L.	Curly dock	I
<i>Salix gooddingii</i> C. Ball.	Goodding's black willow	N
<i>Salix lasiolepis</i> Benth.	Arroyo willow	N
<i>Salsola tragus</i> L.	Russian thistle, tumbleweed	I
<i>Salvia apiana</i> Jepson	White sage	N
<i>Salvia columbariae</i> Benth.	Chia	N
<i>Salvia mellifera</i> E. Greene	Black sage	N
<i>Sambucus mexicana</i> C. Presl	Blue elderberry	N
<i>Sanicula</i> sp.	Sanicle	N
<i>Schinus molle</i> L.	Peruvian pepper tree	I
<i>Scirpus californicus</i> (C.A. Mey.) Steudel.	California bulrush	N
<i>Selaginella bigelovii</i> L. Underw.	Bigelow clubmoss	N
<i>Selaginella cinerascens</i> Maxon	Ashy spike-moss	N
<i>Sidalcea malvaeflora</i> (DC.) Benth. ssp. <i>sparsifolia</i> C.L. Hitchc.	Checker mallow	N



**APPENDIX 3f**  
**PLANT SPECIES OBSERVED AT THE DEL MAR MESA PRESERVE**  
**(continued)**

Scientific Name	Common Name	Origin
<i>Silene gallica</i> L.	Windmill pink	I
<i>Sisymbrium irio</i> L.	London rocket	I
<i>Sisymbrium orientale</i> L.	Mustard	I
<i>Sisyrinchium bellum</i> Wats.	Blue-eyed-grass	N
<i>Solanum parishii</i> A.A. Heller	Parish's nightshade	N
<i>Sonchus asper</i> (L.) Hill ssp. <i>asper</i>	Prickly sow thistle	I
<i>Spergula arvensis</i> L. ssp. <i>arvensis</i>	Stickwort, starwort	I
<i>Spergularia villosa</i> (Pers.) Cambess.	Cleveland sand spurrey	I
<i>Stellaria media</i> (L.) Villars	Common chickweed	I
<i>Stephanomeria virgata</i> (Benth.) ssp. <i>virgata</i>	Slender stephanomeria	N
<i>Stylomecon heterophylla</i> (Benth.) G.C. Taylor	Wind poppy	N
<i>Toxicodendron diversilobum</i> (Torrey & A. Gray) E. Greene	Western poison oak	N
<i>Trifolium</i> sp.	Clover	N
<i>Urtica urens</i> L.	Dwarf nettle	I
<i>Viola pedunculata</i> Torrey & A. Gray	Johnny-jump-up	N
<i>Xanthium strumarium</i> L.	Cocklebur	N
<i>Xylococcus bicolor</i> Nutt.	Mission manzanita	N
<i>Yucca schidigera</i> K.E. Ortgies	Mohave yucca	N
<i>Zigadenus fremontii</i> (Torrey) S. Watson	Star-lily	N

OTHER TERMS

N = Native to locality

I = Introduced species from outside locality

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**APPENDIX 3g**  
**WILDLIFE SPECIES OBSERVED/DETECTED ON THE DEL MAR MESA PRESERVE**

Common Name	Scientific Name	Status
<u>Fairy Shrimp</u> (Nomenclature from Eriksen and Belk 1999)		
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	FE, MSCP (state coverage), *
<u>Invertebrates</u> (Nomenclature from Mattoni 1990 and Opler and Wright 1999)		
Common or checkered white	<i>Pieris protodice</i>	
Sara orangetip	<i>Anthocaris sara</i>	
Alfalfa butterfly	<i>Colias eurytheme</i>	
California ringlet	<i>Coenonympha californica californica</i>	
Painted lady	<i>Vanessa cardui</i>	
Buckeye	<i>Precis coenia</i>	
Behr's metalmark	<i>Apodemia mormo virgulti</i>	
Western elfin	<i>Callophrys augustus iroides</i>	
Bramble or perplexing hairstreak	<i>Callophrys affinis perplexa</i>	
Pigmy blue	<i>Brephidium exilis</i>	
Marine blue	<i>Leptotes marina</i>	
Southern blue	<i>Glaucopsyche lygdamus australis</i>	
Funereal duskywing	<i>Erynnis funeralis</i>	
<u>Amphibians</u> (Nomenclature from Crother 2001 and Crother et al. 2003)		
Pacific treefrog	<i>Pseudacris regilla</i>	
American bullfrog+	<i>Rana catesbeiana</i>	
Western spadefoot	<i>Spea hammondii</i>	CSC
California toad	<i>Bufo boreas halophilus</i>	
<u>Reptiles</u> (Nomenclature from Crother 2001 and Crother et al. 2003)		
San Diego horned lizard	<i>Phrynosoma coronatum blainvillii</i>	CSC, *, MSCP
Western fence lizard	<i>Sceloporus occidentalis</i>	
Side-blotched lizard	<i>Uta stansburiana</i>	
Belding's orangethroat whiptail	<i>Aspidoscelis hyperythra beldingi</i>	CSC, MSCP
Coastal whiptail	<i>Aspidoscelis tigris multiscutatus</i>	
Two-striped garter snake	<i>Thamnophis hammondii</i>	*
Northern red diamond rattlesnake	<i>Crotalus ruber</i>	CSC
<u>Birds</u> (Nomenclature from American Ornithologists' Union 1998 and Unit 1984)		
Turkey vulture	<i>Cathartes aura</i>	
White-tailed kite	<i>Elanus leucurus</i>	CFP, *
Northern harrier	<i>Circus cyaneus hudsonius</i>	CSC, MSCP
Sharp-shinned hawk	<i>Accipiter striatus velox</i>	CSC
Cooper's hawk	<i>Accipiter cooperi</i>	CSC, MSCP
Red-shouldered hawk	<i>Buteo lineatus elegans</i>	
Red-tailed hawk	<i>Buteo jamaicensis</i>	
American kestrel	<i>Falco sparverius</i>	
California quail	<i>Callipepla californica californica</i>	
Band-tailed pigeon	<i>Columba fasciata monilis</i>	
Mourning dove	<i>Zenaida macroura marginella</i>	
Common ground dove	<i>Columbina passerina pallescens</i>	
Greater roadrunner	<i>Geococcyx californianus</i>	

**APPENDIX 3g**  
**WILDLIFE SPECIES OBSERVED/DETECTED ON THE DEL MAR MESA PRESERVE**  
**(continued)**

Common Name	Scientific Name	Status
Common barn owl	<i>Tyto alba pratincola</i>	
Western screech owl	<i>Megascops kennicottii</i>	
Lesser nighthawk	<i>Chordeiles acutipennis texensis</i>	
Poor-will	<i>Phalaenoptilus nuttallii</i>	
Anna's hummingbird	<i>Calypte anna</i>	
Allen's hummingbird	<i>Selasphorus sasin</i>	
Belted kingfisher	<i>Ceryle alcyon</i>	
Acorn woodpecker	<i>Melanerpes formicivorus bairdi</i>	
Nuttall's woodpecker	<i>Picoides nuttallii</i>	
Northern flicker	<i>Colaptes auratus</i>	
Black phoebe	<i>Sayornis nigricans semiatra</i>	
Say's phoebe	<i>Sayornis saya</i>	
Ash-throated flycatcher	<i>Myiarchus cinerascens cinerascens</i>	
Horned lark	<i>Eremophila alpestris</i>	
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	
Cliff swallow	<i>Hirundo pyrrhonota tachina</i>	
Western scrub-jay	<i>Aphelocoma californica</i>	
American crow	<i>Corvus brachyrhynchos hesperis</i>	
Common raven	<i>Corvus corax clarionensis</i>	
Hutton's vireo	<i>Vireo huttoni huttoni</i>	
Plain titmouse	<i>Parus inornatus transpositus</i>	
Bushtit	<i>Psaltriparus minimus minimus</i>	
Bewick's wren	<i>Thyromanes bewickii</i>	
House wren	<i>Troglodytes aedon parkmanii</i>	
Northern mockingbird	<i>Mimus polyglottos polyglottos</i>	
California thrasher	<i>Toxostoma redivivum redivivum</i>	
European starling+	<i>Sturnus vulgaris</i>	
Western bluebird	<i>Sialia mexicana occidentalis</i>	MSCP
Hermit thrush	<i>Catharus guttatus</i>	
Wrentit	<i>Chamaea fasciata henshawi</i>	
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	FT,CSC,MSCP
Phainopepla	<i>Phainopepla nitens lepida</i>	
American goldfinch	<i>Carduelis tristis salicamans</i>	
Lesser goldfinch	<i>Carduelis psaltria hesperophilus</i>	
House finch	<i>Carpodacus mexicanus frontalis</i>	
Orange-crowned warbler	<i>Vermivora celata</i>	
Yellow-rumped warbler	<i>Dendroica coronata</i>	
Common yellowthroat	<i>Geothlypis trichas</i>	
Lazuli bunting	<i>Passerina amoena</i>	
Spotted towhee	<i>Pipilo maculatus</i>	
California towhee	<i>Pipilo crissalis</i>	
Bell's sage sparrow	<i>Amphispiza belli belli</i>	CSC
Southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	CSC,MSCP
Song sparrow	<i>Melospiza melodia</i>	
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>	
Western meadowlark	<i>Sturnella neglecta</i>	
Red-winged blackbird	<i>Agelaius phoeniceus</i>	

**APPENDIX 3g**  
**WILDLIFE SPECIES OBSERVED/DETECTED ON THE DEL MAR MESA PRESERVE**  
**(continued)**

Common Name	Scientific Name	Status
<u>Mammals</u> (Nomenclature from Jones et al. 1997)		
California ground squirrel	<i>Spermophilus beecheyi</i>	
Southern pocket gopher	<i>Thomomys umbrinus</i>	
Pacific (= agile) kangaroo rat	<i>Dipodomys agilis</i>	
Woodrat	<i>Neotoma</i> sp.	CSC
San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	CSC
Cottontail rabbit	<i>Sylvilagus audubonii</i>	
Striped skunk	<i>Mephitis mephitis</i>	
Coyote	<i>Canis latrans</i>	
Gray fox	<i>Urocyon cinereoargenteus</i>	
Mountain lion	<i>Felis concolor</i>	CFP, MSCP
Bobcat	<i>Felis rufus</i>	
Southern mule deer	<i>Odocoileus hemionus fuliginata</i>	MSCP

+ = Introduced species

Status

CFP = California fully protected species

CSC = California Department of Fish and Game species of special concern

FE = Listed as endangered by the federal government

FT = Listed as threatened by the federal government

MSCP = Multiple Species Conservation Program covered species

\* = Taxa listed with an asterisk fall into one or more of the following categories:

- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
- Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

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**APPENDIX 3h**  
**SENSITIVE PLANT SPECIES OBSERVED ON THE DEL MAR MESA PRESERVE**

Species	State/Federal Status	CNPS List	CNPS Code	Typical Habitat/Comments
<i>Adolphia californica</i> California adolphia	-/-	2	1-2-1	Chaparral
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> Del Mar manzanita	-/FE	1B	3-3-2	Coastal chaparral
<i>Artemisia palmeri</i> San Diego sagewort	-/-	2	2-2-1	Coastal sage scrub, chaparral, riparian
<i>Brodiaea orcuttii</i> Orcutt's brodiaea	-/-	1B	1-3-2	Closed-cone coniferous forest, meadows, cismontane wood-land, valley and foothill grass-land, vernal pools
<i>Ceanothus verrucosus</i> Wart-stemmed ceanothus	-/-	2	1-2-1	Chaparral
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> Summer holly	-/-	1B	2-2-2	Chaparral
<i>Dichondra occidentalis</i> Western dichondra	-/-	4	1-2-1	Chaparral, cismontane wood-land, coastal sage scrub, valley and foothill grassland
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button celery	CE/FE	1B	2-3-2	Vernal pools, marshes
<i>Ferocactus viridescens</i> Coast barrel cactus	-/-	2	1-3-1	Chaparral, coastal sage scrub, valley and foothill grassland
<i>Harpagonella palmeri</i> var. <i>palmeri</i> Palmer's grappling hook	-/-	2	1-2-1	Chaparral, coastal sage scrub, valley and foothill grassland
<i>Lessingia filaginifolia</i> var. <i>filaginifolia</i> (= <i>Corethrogyne filaginifolia</i> var. <i>linifolia</i> ) Del Mar Mesa sand aster	-/-	1B	3-2-3	Chaparral, coastal sage scrub
<i>Monardella linoides</i> ssp. <i>viminea</i> Willow monardella	CE/FE	1B	2-3-2	Riparian scrub
<i>Muilla clevelandii</i> San Diego goldenstar	-/-	1B	2-2-2	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools
<i>Myosurus minimus</i> ssp. <i>apus</i> Little mousetail	-/-	3	2-3-2	Vernal pools
<i>Ophioglossum californicum</i> (= <i>Ophioglossum lusitanicum</i> ssp. <i>californicum</i> ) California adder's-tongue fern	-/-	4	1-2-2	Clay mesa soils

**APPENDIX 3h**  
**SENSITIVE PLANT SPECIES OBSERVED ON THE DEL MAR MESA PRESERVE**  
**(continued)**

Species	State/Federal Status	CNPS List	CNPS Code	Typical Habitat/Comments
<i>Pogogyne abramsii</i> San Diego mesa mint	CE/FE	1B	2-3-3	Vernal pools
<i>Quercus dumosa</i> Nuttall's scrub oak	-/-	1B	2-3-2	Coastal chaparral
<i>Selaginella cinerascens</i> Ashy spike-moss	-/-	4	1-2-1	Chaparral, coastal sage scrub

NOTE: See Appendix 3c for Sensitivity Codes



## APPENDIX 3i

### Descriptions of Sensitive Species Occurring on the Del Mar Mesa Preserve and Not Covered by the MSCP

**California adolphia (*Adolphia californica*).** California adolphia is a CNPS List 2 species in the buckthorn family (Rhamnaceae). This species generally occurs in Diegan



**Photograph A3i-1.** California Adolphia (pale green shrub in the middle of the picture) in the Northeast Portion of the Del Mar Mesa Preserve

coastal sage scrub or near the edge of chaparral, in dry locales with shrubs four to five feet tall. This shrub flowers from December to April and loses its leaves in late summer and fall, making it difficult to find. Its spiny stems are identifiable at close range year-round, however. It is associated with San Miguel and Friant soils (Reiser 2001). Its geographic range extends from San Diego County south into Baja California. In San Diego County, it is found from the Carlsbad area south into the Proctor Valley and Otay region (Beauchamp 1986).

On the Del Mar Mesa Preserve, California adolphia is a component of the coastal sage scrub and has been found in the northeast portion of the Preserve and likely occurs at other locations as well.

**San Diego sagewort (*Artemisia palmeri*).** San Diego sagewort is a member of the plant family Asteraceae. This perennial is on List 2 of the CNPS *Inventory* (CNPS 2001). It generally occurs in coastal sage scrub and along drainages in San Diego County and northern Baja California, Mexico. In San Diego County, its distribution ranges from La Jolla south to Otay and east to Alpine (Beauchamp 1986). This species can occur in low numbers in dense riparian vegetation and its presence may be very difficult to detect.

**Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*).** Summer holly is a CNPS List 1B species. This evergreen shrub in the heath family (Ericaceae) reaches heights of 15 feet and produces a small white flower from April to June (Munz 1974). Summer holly is found in the chaparral in Orange, Riverside and San Diego Counties, as well as Baja California, Mexico. In San Diego County it generally occurs at low elevations in chaparral communities near the coast. Summer holly is threatened by development and gravel mining (CNPS 2001).

**Western dichondra (*Dichondra occidentalis*).** Western dichondra is a CNPS List 4 species, indicating that it has limited distribution or is infrequent throughout its range. Its



Photograph A3i-2. Western Dichondra

range extends from Ventura County south into Baja California, Mexico, including the Channel Islands. In San Diego County, it is known from Agua Hedionda south to Point Loma and inland to Poway, Otay Mountain, and the Tijuana Hills (Beauchamp 1986). This small perennial herb in the morning-glory family (Convolvulaceae) flowers from March to May. It often grows almost completely hidden under shrubs or trees in coastal sage scrub and chaparral, or among rocky outcrops

in grasslands. It grows primarily in dry sandy soils including Heuerhuero soils and Hambright gravelly clay loam (Reiser 2001). The numbers of western dichondra are slowly declining in southern California because habitat is being lost to development and weeds are invading native vegetation communities.

**Palmer's grappling hook (*Harpagonella palmeri*).** Palmer's grappling hook is a member of the Boraginaceae family. This annual is a CNPS *Inventory* (CNPS 2001) List 2 species that occurs in Los Angeles, Orange, Riverside, and San Diego Counties as well as in Arizona; in Baja California, Mexico; and on San Clemente Island (Munz 1974). In San Diego County, it occurs on clay soils from Guajome Mesa, Rancho Santa Fe, Poway, Kearny Mesa, Mission Gorge, Rice Canyon, and Otay (Beauchamp 1986).

**Little mousetail (*Myosurus minimus* ssp. *apus*).** This annual is on List 3 of the CNPS *Inventory*, indicating that additional study is needed to determine the level of threat to the species (CNPS 2001). It is an annual herb in the buttercup family (Ranunculaceae) that flowers from March to June. Little mousetail is endemic to vernal pools, where it typically grows in the deeper portions of vernal pools. It ranges from southern Oregon to northern Baja California, Mexico, and can be found in the Central Valley and Riverside, San Bernardino, and San Diego Counties in California. In San Diego County, it is found in a limited number of vernal pools on Del Mar Mesa, Camp Pendleton, Otay Mesa, near Otay Lake, near Peñasquitos Canyon, and in the Ramona area (Reiser 2001).

**California adder's-tongue fern (*Ophioglossum californicum*).** California adder's-tongue fern is a CNPS List 4 whose range extends from the Sierra Nevada foothills to southern California and southward into Baja California, Mexico. In San Diego County, the fern has been reported from Kearny Mesa, Olivenhain, Proctor Valley, and Escondido (Beauchamp 1986). This perennial rhizomatous herb typically occurs on grassy slopes and near vernal pools and seeps, in coastal and foothill locations below 900 feet elevation. The California adder's-tongue fern is easily observed during the

springtime, but becomes inconspicuous later in the season. This species is associated with vernal pools and other seasonal wetlands and wet meadows on the Preserve. It has been documented as occurring on Del Mar Mesa Preserve, but its location has not been mapped.

**Nuttall's scrub oak (*Quercus dumosa*).** Nuttall's scrub oak is a member of the Fagaceae family. This evergreen shrub is a CNPS *Inventory* (CNPS 2001) List 1B species that occurs in Santa Barbara, Orange, and San Diego Counties as well as in Baja California, Mexico. Nuttall's scrub oak is found within chaparral and coastal sage scrub vegetation on sandy or clay loam soils. This species occurs abundantly within southern maritime chaparral on the Preserve.

**Ashy spike-moss (*Selaginella cinerascens*).** Ashy spike-moss is no longer considered a List 4 species by CNPS (CNPS 2001); however, due to the importance of this species to habitat and ecosystem stability, we still consider this species a sensitive resource. Ashy spike-moss is a prostrate non-flowering perennial herb in the spike-moss family (Selaginellaceae) that reproduces by spores in March. It occurs in undisturbed coastal sage scrub and chaparral from Orange County south into Baja California, Mexico. In San Diego County ashy spike-moss is most often found near the coast, south of Highway 78, particularly around the periphery of the city of San Diego. Ashy spike-moss has been documented as occurring on Del Mar Mesa Preserve (see Appendix 3e) and is present in many of the vegetation communities, particularly on flat mesas or slightly sloped mesa edges, wherever the cryptogamic/microbiotic crust has not been disturbed and also in some locations that are recovering from disturbance.

**Two-striped garter snake (*Thamnophis hammondi*).** The two-striped garter snake is a sensitive species that may grow as long as 36 inches though 18 to 24 inches is more usual. Its dorsal scales are keeled, which breaks up the reflection of light and results in a dull luster. The overall color is olive drab with a single yellowish stripe running down each side of the body. Patterned into the dorsal coloration are four rows of small, dark spots. The belly is dull yellow, or sometimes salmon colored. The two-striped garter snake ranges in coastal California from the vicinity of Salinas south to El Rosario in Baja California, Mexico. They are normally found in or near permanent fresh water, inhabiting streams, ponds, and lakes throughout their range. They are often found even in temporary bodies of water such as vernal pools. It is the most common snake in southern California, and it is not unusual to encounter several individuals at a time. Activity is most common around dusk and in the early evening. Adults feed on frogs, tadpoles, toads, insect larvae, fish, fish eggs, and earthworms. The two-striped garter snake is ovoviviparous. Breeding commences in April and May and continues throughout the summer months. Gestation is approximately nine weeks. As many as 25 young may be born, though 12 to 13 is more common.

**Northern red diamond rattlesnake (*Crotalus ruber*).** The northern red diamond rattlesnake is a CDFG species of special concern. This species occurs below 1,200



**Photograph 3i-3.**  
Red Diamond Rattlesnake at Carmel Mountain

meters (4,000 feet) on both sides of the Peninsular Ranges of southwestern California in coastal sage scrub, desert scrub, open chaparral, woodland, and grassland habitats, as well as agricultural fields (Stebbins 1985). This snake is commonly found in areas with rock outcrops. Population declines in the red diamond rattlesnake are generally attributable to impacts related to the increased development near habitat in which this snake is found.

**Sharp-shinned hawk (*Accipiter striatus*)** The sharp-shinned hawk is a California species of special concern that inhabits woodlands, parks, and residential areas throughout most of North America, feeding mostly on birds and occasionally on small mammals, reptiles, and other small prey (Ehrlich et al. 1988). When breeding in mountainous coniferous/deciduous forests in April through August, the sharp-shinned hawk usually nests within 90 meters of water (Zeiner et al. 1990). It is a common migrant and rare summer resident in San Diego County (Unitt 1984).

**White-tailed kite (*Elanus leucurus*).** The white-tailed kite is a California fully protected species that occurs in coastal lowland areas from Oregon to northern Baja California, Mexico (National Geographic Society 1983). This resident bird nests in riparian woodlands, live oaks, or sycamore groves which border grassland or open fields (Unitt 1984 and 2004). The white-tailed kite forages over open areas and grasslands feeding primarily on small rodents, in particular the California vole or meadow mouse (Unitt 2004), and insects (National Geographic Society 1983). This species is known to roost in large communal groups (Unitt 1984 and 2004). White-tailed kite populations in southern California have declined due to the loss of grassland foraging habitat to urbanization. This species was observed on the Preserve.

**Blue-gray gnatcatcher (*Poliophtila caerulea*).** The blue-gray gnatcatcher is on the sensitive species list for the City of San Diego. The blue-gray gnatcatcher is distributed throughout Mexico and the U.S., excluding northern plains states and the northwest. Locally, this species is a fairly common migrant and winter visitor and a rare and localized summer resident. The blue-gray gnatcatcher winters in dense riparian undergrowth, weedy/brushy agricultural areas, thickets in desert washes, and occasionally chaparral. It breeds in foothill chaparral, desert-edge scrub, and mesquite thickets. Brood-parasitism by brown-headed cowbirds is one contributing reason to the decline of this species.

**Bell's sage sparrow (*Amphispiza belli belli*).** Bell's sage sparrow is a CDFG species of special concern. Bell's sage sparrow is an uncommon to locally fairly common resident along the extreme west coast of California. Its breeding range is along the coastal slopes from Trinity County south into northwestern Baja California, Mexico. Locally, it can be found in the interior chaparral and coastal sage scrub habitats, especially dense stands of chamise chaparral (Small 1994). This race is essentially sedentary. Male Bell's sage sparrows show high breeding territory tenacity, even when the habitat is altered dramatically (Ehrlich et al. 1988). This species feeds primarily on spiders, insects, and seeds while breeding, and seeds during the winter.

**San Diego black-tailed jackrabbit (*Lepus californicus bennettii*).** The San Diego black-tailed jackrabbit is a CDFG species of special concern. This species can be found throughout southern California, with the exception of the high-altitude mountains. The black-tailed jackrabbit is strictly herbivorous, preferring habitat with ample forage such as grasses and forbs. The San Diego black-tailed jackrabbit breeds throughout the year with the greatest number of births occurring from April through May. This species is generally solitary, except when mating and raising young (Zeiner et al. 1990).

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**APPENDIX 3j**  
**SENSITIVE WILDLIFE SPECIES OCCURRING ON THE DEL MAR MESA PRESERVE**

Species	Status	Habitat
<u>Invertebrates</u> (Nomenclature from Eriksen and Belk 1999)		
San Diego fairy shrimp <i>Branchinecta sandiegonensis</i>	FE, MSCP (state coverage), *	Vernal pools.
<u>Amphibians</u> (Nomenclature from Crother 2001 and Crother et al. 2003)		
Western spadefoot <i>Spea hammondi</i>	CSC	Vernal pools, floodplains, and alkali flats within areas of open vegetation.
<u>Reptiles</u> (Nomenclature from Crother 2001 and Crother et al. 2003)		
San Diego horned lizard <i>Phrynosoma coronatum blainvillii</i>	CSC, MSCP, *	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants for forage.
Belding's orangethroat whiptail <i>Aspidoscelis hyperythra beldingi</i>	CSC, MSCP,	Chaparral, coastal sage scrub with coarse sandy soils and scattered brush.
Two-striped garter snake <i>Thamnophis hammondi</i>	CSC, *	Permanent freshwater streams with rocky bottoms. Mesic areas.
Northern red diamond rattlesnake <i>Crotalus ruber</i>	CSC	Desert scrub and riparian, coastal sage scrub, open chaparral, grassland, and agricultural fields.
<u>Birds</u> (Nomenclature from American Ornithologists' Union)		
Turkey vulture <i>Cathartes aura</i>		Open fields, grasslands, rocky cliffs. Spring and fall migrant, winter visitor, rare summer resident..
White-tailed kite (nesting) <i>Elanus leucurus</i>	CFP, *	Nest in riparian woodland, oaks, sycamores. Forage in open, grassy areas. Year-round resident.
Northern harrier (nesting) <i>Circus cyaneus</i>	CSC, MSCP	Coastal lowland, marshes, grassland, agricultural fields. Migrant and winter resident, rare summer resident.
Sharp-shinned hawk (nesting) <i>Accipiter striatus</i>	CSC	Open deciduous woodlands, forests, edges, parks, residential areas. Migrant and winter visitor.
Cooper's hawk (nesting) <i>Accipiter cooperi</i>	CSC, MSCP	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas. Migrant and winter visitor.
California horned lark <i>Eremophila alpestris actia</i>	CSC	Sandy shores, mesas, disturbed areas, grasslands, agricultural lands, sparse creosote bush scrub.
Coastal California gnatcatcher <i>Poliophtila californica californica</i>	FT, CSC, MSCP	Coastal sage scrub, maritime succulent scrub. Resident.

**APPENDIX 3j**  
**SENSITIVE WILDLIFE SPECIES OCCURRING ON THE DEL MAR MESA PRESERVE**  
**(continued)**

Species	Status	Habitat
Southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	CSC, MSCP	Coastal sage scrub, chaparral, grassland. Resident.
Bell's sage sparrow <i>Amphispiza belli belli</i>	CSC	Chaparral, coastal sage scrub. Localized resident.
Western bluebird <i>Sialia mexicana</i>	MSCP	Open woodlands, farmlands, orchards.
<u>Mammals</u> (Nomenclature from Jones et al. 1997)		
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	CSC	Open areas of scrub, grasslands, agricultural fields.
Mountain lion <i>Felis concolor</i>	CFP, MSCP	Many habitats.
Southern mule deer <i>Odocoileus hemionus fuliginata</i>	MSCP	Many habitats.

**STATUS CODES**

Listed/Proposed

FE = Listed as endangered by the federal government  
 FT = Listed as threatened by the federal government

Other

CFP = California fully protected species  
 CSC = California Department of Fish and Game species of special concern  
 MSCP = Multiple Species Conservation Program covered species  
 \* = Taxa listed with an asterisk fall into one or more of the following categories:

- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
- Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)



**APPENDIX 4**  
**MSCP Table 3-5**

Table 3-5

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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PLANTS					
<i>Acanthomintha ilicifolia</i> San Diego thorn-mint PE/CE	85% of 8 major populations	15% of major populations	Site-specific preserve design and special measures/management	Monitoring Plan - Site Specific (4 populations) and Management Plans/Directives	YES

**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because all major populations are within the MHPA, and each of the eight major populations will be conserved from 80-100%, with 85% conserved overall. This species is on the list of narrow endemics<sup>3</sup> which requires jurisdictions to specify and implement measures in their subarea plans to avoid or minimize impacts to all populations (including Asphalt Inc., Sky Mesa, El Capitan sites) during project design.

**Notes:** This species occurs on clay and gabbro soils which will be conserved at >28% and >43%, respectively.

**Conditions:** Area-specific management directives and the SPA for the Otay Lakes Resort area must include specific measures to protect against detrimental edge effects from the surrounding development.<sup>4</sup>

<i>Agave shawii</i> Shaw's agave FSC*/	100% of major populations	No major populations	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because all known extant populations are within protected public land (Torrey Pines State Reserve and Border Field State Park). This species is on the MSCP's list of narrow endemics and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures for the species.<sup>3</sup>

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**Notes:** Additional important populations are found on military lands (Pt. Loma) which are not part of the MSCP. Populations at Pt. Loma are not part of the MSCP but will be conserved at a minimum of 91% in the Pt. Loma Ecological Reserve Area.

**Conditions:** Area-specific management directives must include specific measures to protect against detrimental edge effects.<sup>4</sup>

<i>Ambrosia pumila</i> San Diego ambrosia FSC*/	90% of the only major population	10% of the only major population	Site-specific preserve design and special measures/management	Monitoring Plan - Site Specific (major population) and Management Plans/ Directives	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered because 90% of the only major population in the MSCP will be conserved, and the adjoining population at the radio tower site will be 100% conserved. This major population occurs on public lands in the Mission Trails Regional Park. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures for the species.<sup>3</sup>

**Notes:** Occurrences thought to be *Ambrosia pumila* in Spring Canyon, Otay Mesa (east of Otay Lakes), Otay Valley (along the Otay River), and Hidden Trails were misidentified and are now known to be a common species of *Ambrosia*. The small population within the San Diego National Wildlife Refuge (Rancho San Diego) will also be conserved and managed by the USFWS.

**Conditions:** If more than 10% of the population at the Mission Trails Regional Park is impacted, this species will no longer be a covered species. Area-specific management directives must include monitoring of transplanted populations and specific measures to protect against detrimental edge effects.<sup>4</sup>

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Aphanisma blitoides</i> Aphanisma FSC*/	90% of potential habitat (261± acres) - 92% of southern foredunes (123± acres), 88% of southern coastal bluff scrub (138± acres)	10% of potential habitat (28± acres) - 8% of southern foredunes (9± acres) , 12% of southern coastal bluff scrub (17± acres)	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based and Incidental	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
This species will be covered by the MSCP because 90% of its potential habitat will be conserved.					
<b>Notes:</b> Additional potential habitat occurs on military lands (Silver Strand, Imperial Beach) which are not a part of the MSCP. There are no known populations of this species in the MSCP Plan area.					
<i>Arctostaphylos glandulosa</i> var. <i>crassifolia</i> Del Mar manzanita FE/	91% of major populations and 67% of southern maritime chaparral habitat	9% of major populations	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Site Specific	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
This species will be covered by the MSCP because 91% of the major populations will be conserved and 67% of the habitat for the species will be conserved. This species is a Group A species in the County's proposed BMO. <sup>5</sup>					

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<p><b>Notes:</b> Within the County, this species occurs in the western portion of the Metro-Lakeside-Jamul segment, primarily in open space areas. Although not dedicated to the preserve, these areas will not likely be developed.</p> <p><b>Conditions:</b> Area-specific management directives must include specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire.<sup>4</sup> Management measures to accomplish this may include prescribed fire.</p>					
<i>Arctostaphylos otayensis</i> Otay manzanita FSC*/	95% of major populations	5% of major populations	Preserve design/landscape level	Monitoring Plan - Habitat Based and Photo Plot	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 95% of the major populations are located on BLM land and in the open space (100% protection) designation for Otay Ranch, Jamul Mountain, and San Miguel Mountain. This species is a Group A species in the County's proposed BMO.<sup>3</sup></p> <p><b>Notes:</b> This species is often associated with metavolcanic soils of which 34,000 acres are included within the MHPA.</p> <p><b>Conditions:</b> Area-specific management directives must include specific management measures to promote germination of seeds, maintenance of diverse age class structure, and reduction in the risk of catastrophic fire.<sup>4</sup> Management measures to accomplish this may include prescribed fire.</p>					
<i>Astragalus deanei</i> Dean's milk vetch FSC*/	Unknown conservation level and therefore not covered by the plan.				NO

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Astragalus tener</i> var. <i>titi</i> Coastal dunes milk vetch PE/CE	92% of southern foredunes (123± acres)	8% of southern foredunes (11± acres)	Preserve design/landscape level	Monitoring Plan - Habitat Based and Incidental	YES
<p>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</p> <p>This species will be covered by the MSCP because 92% of the vegetative community that is potential habitat for this species will be conserved.</p> <p>Notes: This species historically occurred on the Silver Strand but is thought to be extirpated from the MSCP study area.</p> <p>Conditions: Area-specific management directives must provide for reintroduction opportunities, identify potential reintroduction sites, and include measures to prevent non-native species introductions.<sup>4</sup> Any newly found populations shall be evaluated for inclusion in the preserve strategy through acquisition, like exchange, etc.</p>					
<i>Baccharis vanessae</i> Encinitas baccharis FT/CE	92% of major populations	8% of major populations	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Site Specific (1 population) and Management Plans/ Directives	YES
<p>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</p> <p>This species will be covered by the MSCP because 92% of major populations will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures for the species.<sup>3</sup></p> <p>Conditions: Based on BMPs, area-specific management directives must include specific management measures to address the autecology and natural history of the species, measures to reduce the risk of catastrophic fire, and appropriate male/female plant ratios.<sup>4</sup> Management measures to accomplish this may include prescribed fire.</p>					

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Berberis nevini</i> Nevin's barberry PE/CE	100% of populations (occurrences are all persisting cultivars)	No natural populations present	Site-specific preserve design and special measures/management	Monitoring Plan - Habitat Based	YES
DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED					
<p>This species will be covered by the MSCP because persisting cultivars occurring in Spring Valley and Torrey Pines State Reserve will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures for the species.<sup>3</sup></p> <p><b>Notes:</b> As no known natural populations occur within the plan area, development covered by the plan will not impact the species. Persistence of naturally occurring populations in San Diego County is dependent on conservation efforts outside the MSCP area.</p>					
<i>Brodiaea filifolia</i> Thread-leaved brodiaea PT/CE	88% of vernal pool habitat, 38% of grassland	12% of vernal pool habitat may be impacted, but this habitat is subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED					
<p>This species will be covered by the MSCP because 88% of the vernal pool habitat and 38% of grassland habitat that are potential habitat for this species will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures for the species if a population is identified in the future.<sup>3</sup></p> <p><b>Notes:</b> This species is not known to occur within the MSCP area.</p>					

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Brodiaea orcuttii</i> Orcutt's brodiaea FSC*/	All major populations in MSCP area, 88% of vernal pool habitat, 38% of grassland	12% of vernal pool habitat may be impacted, but this habitat is subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/management	Monitoring Plan - Site Specific (4 populations) and Management Plans/Directives	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because all of the major populations in the MSCP Plan area (4 populations) will be conserved. This is a Group A species in the County's proposed BMO.<sup>5</sup></p> <p><b>Notes:</b> Three major populations occur on Miramar military lands which are not part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.</p> <p><b>Conditions:</b> The San Vicente population is identified as a critical population in the County's Subarea Plan and must be 100% conserved. Area-specific management directives must include specific measures to protect against detrimental edge effects.<sup>4</sup></p>					
<i>Calamagrostis densa</i> Dense reed grass none	91% of major populations	9% of major populations	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES



Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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<p>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</p> <p>This species will be covered by the MSCP because 91% of major populations will be conserved.</p> <p><b>Notes:</b> Taxonomic reclassification has combined this taxon in a more common taxon (<i>Calamagrostis koelerioides</i>) which is widespread.</p> <p><b>Conditions:</b> Trail maintenance/placement to avoid human impacts must be addressed in area-specific management directives.<sup>4</sup> Enhancement opportunities using prescribed fire should be evaluated in management plans. Area-specific management directives must include specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire.<sup>4</sup></p>					
<p><i>Calochortus dunnii</i> Dunn's mariposa lily FSC*/CR</p>	<p>100% of major populations</p>	<p>No major populations</p>	<p>Preserve design/landscape level with site-specific consideration(s)/management</p>	<p>Monitoring Plan - Habitat Based and Photo Plot and Management Plans/Directives</p>	<p>YES</p>
<p>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</p> <p>This species will be covered by the MSCP because 100% of the major populations will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures<sup>3</sup> for the species if a population is identified in the future.</p> <p><b>Notes:</b> Fifty-two percent of one of the three major populations occurs within a major amendment area in the Otay Mountain area. (Take authorization amendments will be subject to public review through CEQA and NEPA processes and require approval by CDFG and USFWS.) This species occurs on gabbro and metavolcanic soils, and &gt;43% of the gabbro soils in the MSCP Plan area are within the MHPA.</p> <p><b>Conditions:</b> At the time permit amendments are proposed, strategies to provide protection for this species within the amendment area must be included.</p>					

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Caulanthus stenocarpus</i> Slender-pod jewelflower FSC*/CR	75% of major populations	25% of major populations	Site-specific preserve design and special measures/management	Monitoring Plan - Habitat Based and Incidental and Management Plans/ Directives	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 3 of 4 (75%) of the major populations and 89% of occurrences will be conserved. The Wildcat Canyon, Poway/Sanrex, and Fortuna Mountain populations are identified as critical and will be 100% protected (San Diego County Subarea Plan requirement).</p> <p><b>Note:</b> This taxon has been combined with the more widespread and common <i>Caulanthus heterophyllus</i> var. <i>heterophyllus</i>.</p> <p><b>Conditions:</b> Area-specific management directives must include specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire.<sup>4</sup> Management measures to accomplish this may include prescribed fire.</p>					
<i>Ceanothus cyaneus</i> Lakeside ceanothus FSC*/	75% of major populations	25% of major populations	Site-specific preserve design and special measures/management	Monitoring Plan - Habitat Based and Photo Plot	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 3 of 4 (75%) of the major populations will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures<sup>3</sup> for the species if a population is identified in the future. This is a Group A species in the County's proposed BMO.<sup>5</sup></p> <p><b>Conditions:</b> Area-specific management directives must include specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire. Management measures to accomplish this may include prescribed fire.</p>					

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Ceanothus verrucosus</i> Wart-stemmed ceanothus FSC*/	67% of major populations, and 64% of known localities	33% of major populations, and 36% of known localities	Site-specific preserve design and special measures/management	Monitoring Plan - Habitat Based and Photo Plot and Management Plans/ Directives	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 67% of the major populations will be conserved, and special management actions will increase populations. This is a Group B species in the County's proposed BMO.<sup>5</sup></p> <p><b>Notes:</b> Additional important populations (30% of known populations) are found on military lands (Pt. Loma, Miramar) which are not part of the MSCP.</p> <p><b>Conditions:</b> Revegetation efforts within appropriate habitats must include restoration of this species. Area-specific management directives for the protected populations must include specific measures to increase populations, including specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire.<sup>4</sup> Management measures to accomplish this may include prescribed fire. Any newly found populations should be evaluated for inclusion in the preserve strategy through acquisition, like exchange, etc.</p>					
<i>Chorizanthe orcuttlana</i> Orcutt's spineflower FE/CE	Unknown conservation level and therefore not covered by the Plan.				NO
<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i> Salt marsh bird's-beak FE/CE	100% of major populations	No major populations	Site-specific preserve design and special measures/management	Monitoring Plan - Site Specific (3 populations)	YES

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 100% of major populations within the MSCP Plan area will be conserved.

**Note:** Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional protection. One population of this species also occurs on military lands (Naval Radar Receiving Facility) which are not part of the MSCP.

**Conditions:** Area-specific management directives must (1) include measures to reduce threats and stabilize populations (e.g., relocation of footpaths, establishment of buffer areas, etc.), (2) address opportunities for reintroduction, and (3) include measures to enhance existing populations (e.g., protect and improve upland habitat for pollinators). There is a federal recovery plan for this species, and management activities should help achieve the specified goals. Any newly found populations shall be evaluated for inclusion in the preserve strategy through acquisition, like exchange, etc.

<i>Cordylanthus orcuttianus</i> Orcutt's bird's-beak FSC*/	75% of major populations	25% of major populations	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Site Specific (4 populations) and Management Plans/ Directives	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 3 of 4 (75%) major populations will be conserved. A portion of the Otay River Valley population lies outside of the MHPA but will be subject to the County's Biological Mitigation Ordinance (80-100% conservation).<sup>5</sup> The Otay Ranch population (southeast of Lower Otay Lake) is considered conserved subject to landowner and agency agreement.

**Condition:** At the time permit amendments are proposed, strategies to provide protection for this species within the amendment area must be included. (Take authorization amendments are subject to public review through CEQA and NEPA processes and require approval by CDFG and USFWS.)

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i> Del Mar Mesa sand aster FSC†/	48% of major populations, 57% of known localities, and 67% of southern maritime chaparral	52% of major populations, 43% of known localities, and 33% of southern maritime chaparral	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Site Specific	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
<p>This species will be covered by the MSCP because 48% of major populations and 67% of its potential habitat (southern maritime chaparral) will be conserved. This is a Group A species in the County's proposed BMO.<sup>3</sup></p> <p><b>Notes:</b> This taxon has been merged with two other <i>Corethrogyne filaginifolia</i> varieties and has been determined not to meet the taxonomic standards for listing.</p> <p><b>Conditions:</b> Area-specific management directives for the protected populations must include specific measures to protect against detrimental edge effects to this species, including specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire.<sup>4</sup> Management measures to accomplish this may include prescribed fire.</p>					
<i>Cupressus forbesii</i> Tecate cypress FSC*/	98% Tecate cypress forest	2% Tecate cypress forest	Preserve design/landscape level	Monitoring Plan - Habitat Based and Photo Plot	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
<p>This species will be covered by the MSCP because 98% of major populations will be conserved, primarily on lands administered by BLM.</p> <p><b>Conditions:</b> Area-specific management directives for the protected populations will include specific measures to maintain or increase populations, including specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire.<sup>4</sup> Management measures to accomplish this may include prescribed fire.</p>					

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i> Short-leaved dudleya FSC†/CE	100% of major populations	No major populations	Site-specific preserve design and special measures/management	Monitoring Plan - Site Specific (3 populations) and Management Plans/ Directives	YES
DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED					
This species will be covered by the MSCP because 100% of major populations will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional conservation measures for the species. <sup>3</sup>					
Notes: The populations on Del Mar Mesa, Carmel Mountain, and Crestview Canyon are subject to considerable edge effects. The wildlife agencies will work with the University of California, San Diego to protect and manage the University of California property adjacent to Skeleton Canyon for this species.					
Conditions: Area-specific management directives must include (1) specific measures to protect against detrimental edge effects to this species, (2) species-specific monitoring, and (3) maintenance of surrounding habitat for pollinators. <sup>4</sup>					
<i>Dudleya variegata</i> Variegated dudleya FSC*/	56% of major populations, 75% of known localities	44% of major populations, 25% of known localities	Site-specific preserve design and special measures/management	Monitoring Plan - Site Specific (5 populations) and Management Plans/ Directives	YES

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 56% of major populations and 75% of known localities will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional conservation measures for the species.<sup>3</sup>

**Conditions:** Area-specific management directives must include species-specific monitoring and specific measures to protect against detrimental edge effects to this species, including effects caused by recreational activities.<sup>4</sup> Some populations now occur within a major amendment area (Otay Mountain), and at the time permit amendments are proposed, strategies to provide protection for this species within the amendment area must be included. (Proposed take authorization amendments will have public review through CEQA and NEPA processes and require approval by CDFG and USFWS.)

<i>Dudleya viscida</i> Sticky dudleya FSC*/	100% of major population	No major populations	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 100% of the only major population within the MSCP will be conserved.

**Notes:** Persistence of this species in San Diego County depends largely on conservation efforts in the MHCP and Camp Pendleton areas.

**Conditions:** Area-specific management directives must address specific measures to protect against detrimental edge effects.<sup>4</sup>

<i>Ericameria palmeri</i> ssp. <i>palmeri</i> Palmer's ericameria FSC*/	66% of major populations	34% of major populations	Site-specific preserve design and special measures/management	Monitoring Plan - Habitat Based and Photo Plot and Management Plans/ Directives	YES
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**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 66% of major populations will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional conservation measures for the species.<sup>3</sup>

**Notes:** Impacts will be fully mitigated through avoidance, minimization, and compensation. Two of the six major populations are subject to potential impacts from proposed road widening projects (Jamacha Blvd., Highways 54/94).

<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button-celery FE/CE	82% of major populations, 88% of vernal pool habitat	18% of major populations may be impacted, but vernal pool habitat is subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/ management	Area-specific Management Directives (wetlands)	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 82% of major populations and 88% of vernal pool habitat will be conserved.

**Notes:** Additional important populations are found on military lands (Miramar) which are not part of the MSCP. Four populations (Proctor Valley, Otay River Valley, Del Mar Mesa, Spring Canyon) are likely to be subject to edge effects. This species has been added to the City of San Diego's list of narrow endemic species. Vernal pools that become part of the National Wildlife Refuge will be managed for the recovery of this species.

**Conditions:** Area-specific management directives must include specific measures to protect against detrimental edge effects.<sup>4</sup>



**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Erysimum ammophilum</i> Coast wallflower FSC*/	92% of southern foredunes, 67% of southern maritime chaparral	8% of southern foredunes, 33% of southern maritime chaparral	Preserve design/landscape level	Monitoring Plan - Habitat Based and Incidental	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 92% of southern foredunes and 67% of southern maritime chaparral vegetation communities (that are potential habitat for this species) will be conserved.</p> <p><b>Notes:</b> Populations from San Diego County are now being treated as <i>Erysimum capitatum</i> ssp. <i>capitatum</i>, a common species of wallflower.</p>					
<i>Ferocactus viridescens</i> San Diego barrel cactus FSC*/	81% of major populations	19% of major populations	Preserve design/landscape level	Monitoring Plan - Habitat Based and Photo Plot	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 81% of major populations will be conserved. This is a Group B species in the County's proposed BMO.<sup>5</sup></p> <p><b>Notes:</b> This is an abundant species that will be protected at varying levels in several subareas: Carmel Mountain, 64%; East Elliott, 75%; Marron Valley, 90%; Mission Trails Regional Park, 94%; Otay Mesa, 70%; Otay River Valley, 100%; Sweetwater Reservoir, 100%; Sycamore Canyon-Fanita Ranch, 50%.</p> <p><b>Conditions:</b> Area-specific management directives must include measures to protect this species from edge effects and unauthorized collection;<sup>4</sup> directives should also include appropriate fire management/control practices to protect against a too frequent fire cycle.</p>					

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Fremontodendron mexicanum</i> Mexican flannelbush PE/CR	Insufficient distribution data and unknown conservation level; therefore, the species is not covered by the Plan.				NO
<i>Githopsis diffusa</i> spp. <i>filicaulis</i> Mission Canyon bluecup FSC*/	Unknown conservation level and therefore not covered by the Plan.				NO
<i>Hemizonia conjugens</i> Otay tarplant PE/CE	66% of major populations	34% of major populations	Site-specific preserve design and special measures/management	Monitoring Plan - Site Specific (5 populations) and Management Plans/ Directives	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 66% of major populations will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional conservation measures for the species.<sup>3</sup></p> <p><b>Conditions:</b> MSCP coverage of this species requires avoidance of populations in the Otay River Valley through sensitive design and development of the active recreation areas as described in the Otay Ranch RMP and GDP. One of the seven major populations occurs within an amendment area (Proctor Valley). At the time permit amendments are proposed, strategies to provide protection for this species within the amendment area must be included (proposed take authorization amendments will be subject to public review through CEQA and NEPA processes, and take authorization amendments require approval by CDFG and USFWS). Area-specific management directives must include specific measures for monitoring of populations, adaptive management of preserves (taking into consideration the extreme population fluctuations from year to year), and specific measures to protect against detrimental edge effects to this species.<sup>4</sup></p>					

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Hemizonia floribunda</i> Tecate tarplant FSC*/	Unknown conservation levels and therefore not covered by the Plan.				NO
<i>Lepechinia cardiophylla</i> Heart-leaved pitcher sage FSC*/	85% of major populations	15% of major populations	Preserve design/landscape level	Monitoring Plan - Habitat Based and Photo Plot	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
<p>This species will be covered by the MSCP because 85% of major populations will be conserved. The Iron Mountain population falls within a 100% conservation area. The other three major populations fall within the County's area of undetermined development status and will receive 80-100% conservation based on the County's proposed BMO (Group A species).<sup>5</sup></p> <p><b>Conditions:</b> Area-specific management directives must include: (1) specific measures to protect against detrimental edge effects; (2) specific measures to promote increase of populations; and (3) specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire (management measures to accomplish this may include prescribed fire).<sup>4</sup></p>					
<i>Lepechinia ganderi</i> Gander's pitcher sage FSC*/	All known locations	No known locations	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based and Photo Plot and Management Plans/ Directives	YES

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 100% of the known locations will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional conservation measures for the species.<sup>3</sup></p> <p><b>Conditions:</b> Area-specific management directives must include: (1) specific measures to protect against detrimental edge effects and uncontrolled access; (2) measures to promote the increase of populations; and (3) specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire (management measures to accomplish this may include prescribed fire).<sup>4</sup> One of the five major populations occurs within a major amendment area (Otay Mountain). At the time permit amendments are proposed, strategies to provide protection for this species within the amendment area must be included (proposed take authorization amendments are subject to public review through CEQA and NEPA processes and require approval by CDFG and USFWS).</p>					
<p><i>Lotus nuttallianus</i> Nuttall's lotus FSC*/</p>	<p>80-100% of major populations; 92% of southern foredune habitat</p>	<p>0-20% of major populations; 8% of southern foredune habitat</p>	<p>Preserve design/landscape level</p>	<p>Monitoring Plan - Site Specific (1 population)</p>	<p>YES</p>
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 80-100% of the major populations will be conserved and 92% of the habitat (southern foredunes) will be conserved.</p> <p><b>Notes:</b> Additional important populations are found on military lands (Imperial Beach, Silver Strand) which are not part of the MSCP. The USFWS is currently working with the Navy to provide protection for this species on Silver Strand.</p> <p><b>Conditions:</b> Area-specific management directives must include specific measures to protect against detrimental edge effects.<sup>4</sup></p>					

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Monardella hypoleuca</i> ssp. <i>lanata</i> Felt-leaved monardella none	89% of major populations	11% of major populations	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based and Photo Plot and Management Plans/ Directives	YES
DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED					
<p>This species will be covered by the MSCP because 89% of major populations will be conserved. The Sequan Peak and Iron Mountain populations are identified as critical populations which will be 100% protected (San Diego County Subarea Plan). This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures for this species.<sup>3</sup> This is a Group A species in the County's proposed BMO.<sup>5</sup></p> <p><b>Notes:</b> Persistence of this species in San Diego County depends, in part, on conservation efforts outside the MSCP area.</p> <p><b>Conditions:</b> Area-specific management directives must also include measures to protect against detrimental edge effects and uncontrolled access.<sup>4</sup></p>					
<i>Monardella linoides</i> ssp. <i>viminea</i> Willow monardella PE/CE	100% of major populations	No major populations	Preserve design/landscape level	Monitoring Plan - Site Specific (2 populations) and Management Plans/ Directives	YES
DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED					
<p>This species will be covered by the MSCP because 100% of major populations will be conserved. Additional important populations are found on military lands (Miramar) which are not included as part of the MSCP. This species occurs in drainages and would receive protection based on Fish and Game Code 1600 agreements and federal wetlands permitting. This is a Group A species in the County's proposed BMO.<sup>5</sup></p> <p><b>Conditions:</b> Area-specific management directives must include specific measures to protect against detrimental edge effects.</p>					

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Muilla clevelandii</i> San Diego goldenstar FSC*/	73% of major populations and 38% of grasslands	27% of major populations	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Site Specific (4 populations)	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 8 of 11 major populations, 125 of 144 occurrences, and 38% of the grassland vegetation community will be conserved. The City of San Diego will avoid populations within its 25% encroachment area. The 4S Ranch population will be transplanted into an appropriate preserve area. This is a Group A species in the County's proposed BMO.<sup>5</sup></p> <p><b>Conditions:</b> Area-specific management directives must include monitoring of the transplanted population(s) and specific measures to protect against detrimental edge effects to this species.<sup>4</sup></p>					
<i>Myosurus minimus</i> ssp. <i>apus</i> Little moustail FSC*/	The MSCP preserve does not include adequate habitat to conserve this species.				NO
<i>Navarretia fossalis</i> Prostrate navarretia PT/	63% of only major population, 88% of vernal pool habitat	37% of only major population, 12% of vernal pool habitat may be impacted, but this habitat is subject to no net loss of function and value and 404(b)1 guidelines	Site-specific preserve design and special measures/ management	Area-specific Management Directives (wetlands)	YES

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 63% of the one major population and 88% of vernal pool habitat will be conserved. Federal wetland regulations will provide additional protection for vernal pool habitats. This is a Group A species in the County's proposed BMO.<sup>5</sup>

**Notes:** State and federal transportation agencies will need to avoid or adequately mitigate the impacts to this species from the extension of State Route 125. An additional small population is found on military lands (Miramar) and is not included as part of the MSCP. Vernal pools incorporated into the National Wildlife Refuge System will be managed for the recovery of this species.

**Conditions:** Area-specific management directives must include specific measures to protect against detrimental edge effects to this species and must incorporate measures to conserve and maintain surrounding habitat (1) for pollinators and (2) as part of the hydrological system for the vernal pools.

<i>Nolina interrata</i> Dehesa bear-grass PT/CE	90-100% of major populations	<10% of major populations	Preserve design/landscape level	Monitoring Plan - Habitat Based and Photo Plot and Management Plans/Directives	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because: 100% of the McGinty Mountain population will be conserved; half of the Sequan Peak population is under protected ownership, and 80-100% of the other half will be conserved; and 80-100% of the Dehesa Peak population will be conserved under the County's proposed BMO (Group A species).<sup>7</sup> This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures for this species.<sup>3</sup>

**Notes:** Acquisition of the remaining portions of the population on Sequan Peak is important, and efforts are underway by CDFG.

**Conditions:** Area-specific management directives must include specific measures to protect against detrimental edge effects<sup>4</sup> and management measures to maintain surrounding habitats for pollinators.

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Opuntia parryi</i> var. <i>serpentina</i> Snake cholla FSC*/	75% of major populations and 67% of southern maritime chaparral	25% of major populations and 33% of southern maritime chaparral	Preserve design/landscape level with site-specific consideration(s)/ management	Area-specific Management Directives	YES
<p>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</p> <p>This species will be covered by the MSCP because 75% of major populations and 67% of the southern maritime chaparral vegetation community will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures for this species.<sup>3</sup></p> <p><b>Notes:</b> Additional important populations are found on military lands (Pt. Loma) which are not part of the MSCP.</p> <p><b>Conditions:</b> Area-specific management directives must include (1) specific measures to protect against detrimental edge effects to this species<sup>4</sup> and (2) translocation, where appropriate. The Otay Ranch project GDP and RMP require protection of 80% of existing occurrences and transplantation of any impacted occurrences to restored areas of comparable size.</p>					
<i>Orcuttia californica</i> California Orcutt grass FE/CE	86% of only major population, 88% of vernal pool habitat	14% of only major population may be impacted, but vernal pool habitat is subject to no net loss of function or value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/ management	Area-specific Management Directives (wetlands)	YES



Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
This species will be covered by the MSCP because 86% of the one major population will be conserved. This species is on the MSCP's list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional specific conservation measures for this species. <sup>3</sup>					
<b>Notes:</b> A population outside of the MHPA (J-13N pool complex) is conserved within dedicated open space as mitigation for the Ramona K-mart. The USFWS will work with the Border Patrol to minimize impacts to this species. An additional small population is found on military lands (Miramar) and is not part of the MSCP.					
<b>Conditions:</b> Area-specific management directives must include specific measures to protect against detrimental edge effects to this species <sup>4</sup> and measures to maintain surrounding habitats for pollinators.					
<i>Pinus torreyana</i> Torrey pine FSC*/	100% of native population	No major populations	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
This species will be covered by the MSCP because the single naturally occurring population at Torrey Pines State Reserve will be conserved and appropriately managed.					
<i>Pogogyne abramsii</i> San Diego mesa mint FE/CE	88% of vernal pool habitat	12% of vernal pool habitat may be impacted, but this habitat is subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/management	Area-specific Management Directives	YES

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
<p>This species will be covered by the MSCP because 88% of its potential habitat (vernal pool habitat) will be conserved. Federal wetland regulations will provide additional protection for vernal pool habitats.</p>					
<p><b>Notes:</b> The three major populations in the county occur on military lands (Miramar) which are not part of the MSCP. The City of San Diego has added this species to its narrow endemics list. The population at Montgomery Field was mistakenly omitted from the original mapping and has now been included. This population will be conserved and managed by the City of San Diego. Vernal pools included in the National Wildlife Refuge will be managed for recovery of this species.</p>					
<p><b>Conditions:</b> Area-specific management directives must include measures to: (1) protect against detrimental effects; (2) maintain surrounding habitat for pollinators; and (3) maintain pool watershed areas.</p>					
<p><i>Pogogyne nuduscula</i> Otay Mesa mint FE/CE</p>	<p>91% of the major population, 88% of vernal pool habitat</p>	<p>9% of the major population may be impacted, and this habitat is subject to no net loss of function and value and 404(b)1 guidelines</p>	<p>Preserve design/landscape level with site-specific consideration(s)/management</p>	<p>Area-specific Management Directives</p>	<p>YES</p>

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 91% of the one major population will be conserved, and federal wetland regulations will provide additional protection for vernal pool habitats.

**Notes:** Twenty-six percent of the stockpan soils will be conserved, which will provide for enhancement opportunities for this species. The City of San Diego has added this species to its narrow endemics list. Vernal pools included in the National Wildlife Refuge will be managed for recovery of this species. The RMP for the Otay Ranch project includes protection for vernal pools with sensitive species.

**Conditions:** Area-specific management directives must include measures to: (1) protect against detrimental edge effects; (2) maintain surrounding habitat for pollinators; and (3) maintain pool watershed areas.

<i>Rosa minutifolia</i> Small-leaved rose /CE	Only known MSCP occurrence transplanted into preserve, propagation and restoration in appropriate habitat	Only known MSCP occurrence transplanted into preserve	Site-specific preserve design and special measures/management	Area-specific Management Directives (1 population)	YES
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Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

There is only one known occurrence of this species in the MSCP on Otay Mesa near Dennery Canyon. The occurrence may be a single clone, and some evidence suggests it may be a cultivar. This species will be covered by the MSCP because the only known occurrence will be conserved through the California Terraces project.

The following conditions for small-leaved rose conservation are required in the CDFG 2081 as a part of the California Terraces project:

1. The rose population shall be salvaged, propagated, and transplanted to a new location that will support a healthy, reproducing population in perpetuity. This goal shall be achieved through a 5-year program that includes site improvement, propagation, transplantation, and monitoring. (a) The rose population shall be transplanted to a suitable open space preserve location on Otay Mesa or to an alternative location subject to Department approval. Criteria in site selection shall include similar habitat, slope, aspect, soils, and hydrology as present on the existing rose site. (b) Propagation and transplanting of the rose population shall be implemented by a qualified native plant nursery/habitat restoration contractor, acceptable to the Department, and under supervision of a qualified botanist. The rose propagation shall take place over a 2-year period. Rose plants to be extirpated shall be salvaged through: (i) seed collection; (ii) preparation of cuttings from rose canes; and (iii) salvage of underground parts and transplantation. (d) Transplantation of the rose clone shall commence during the period of October-December 1997. The remaining rose clone shall be cut into a minimum of 200 clumps. Each clump possessing roots and de-caned stems shall be planted on the habitat management lands as prescribed by a qualified botanist.
2. There shall be no removal of the rose population for a 2-year period commencing from the date of planting propagated rose plants at the approved locations.
3. The progress of the rose mitigation effort shall be assessed through measurements and observations for a period of at least 5 years following implementation of rose transplantation, commencing in December 1997 and ending in July 2002. Factors to be monitored shall include growth, survival and/or establishment rate of the species, presence of introduced weeds, erosion, effects of herbivores, and any other factors important to the success of the mitigation effort. Community structure and species diversity at the mitigation site shall also be assessed. (a) Transplant success criteria over a 5-year period shall include: (i) measurable annual growth on a minimum of 50% of the rose plants; and (ii) flowering of 50% of the rose plants during a minimum of one flowering season. In the event that success criteria are not met, the project applicant shall implement remedial measures subject to Department approval.

<i>Satureja chandleri</i> San Miguel savory None	80-100% of future identified occurrences	0-20%	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based and Photo Plot	YES
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Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED

This species will be covered by the MSCP because it will be conserved at the 80+% level. The County will add this species to Group A or B of the County's proposed BMO.<sup>3</sup>

**Conditions:** Area-specific management directives must include specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire. Management measures to accomplish this may include prescribed fire. This species will be conserved at the 80+% level.

<i>Senecio ganderi</i> Gander's butterweed FSC*/CR	90-100% of major populations	<10% of major populations	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based and Photo Plot	YES
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DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED

This species will be covered by the MSCP because 90-100% of known major populations will be conserved. Half of the Sequan Peak population is under protected ownership, 80-100% of the other half will be conserved, and 90-100% of the McGinty Mountain population will be conserved. The El Cajon Mountain (between El Capitan and San Vicente Reservoir) population is identified as critical which requires 100% protection based on the San Diego County Subarea Plan. Occurrences in the County's areas of undetermined development status will receive 80-100% protection under the County's proposed BMO (Group A species).<sup>5</sup>

**Notes:** This species is often associated with gabbro soils which will be conserved at the 43+% level. Acquisition of the remaining portions of the population on Sequan Peak is important, and efforts are underway by CDFG.

**Conditions:** Area-specific management directives must include: (1) specific measures to protect against detrimental edge effects to this species;<sup>4</sup> and (2) measures to address the autecology and natural history of the species.

<i>Solanum tenuilobatum</i> Narrow-leaved nightshade FSC*/	90% of major populations	10% of major populations	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based and Photo Plot and Management Plans/ Directives	YES
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**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 90% of major populations will be conserved. Two smaller populations, Silverwood and Fernbrook, are identified as critical and will be 100% protected in the San Diego County Subarea Plan.</p> <p><b>Notes:</b> This species is now taxonomically included in <i>Solanum xanti</i>.</p>					
<p><i>Tetracoccus dioicus</i> Parry's tetracoccus FSC*/</p>	<p>80-100% of major populations</p>	<p>0-20% of major populations</p>	<p>Preserve design/landscape level</p>	<p>Monitoring Plan - Habitat Based and Photo Plot</p>	<p>YES</p>

<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 80-100% of major populations will be conserved.</p> <p><b>Notes:</b> Fourteen of 33 (43%) small populations are already under protected ownership. The Dehesa population is identified as critical and will be 100% protected in the San Diego County Subarea Plan. Occurrences in the County's areas of undetermined development status will receive 80-100% protection under the County's proposed BMO (Group A species).<sup>5</sup> Acquisition of the remaining portions of the population on Sequan Peak is important, and efforts are underway by CDFG. This species is often associated with gabbro soils, and 43+% of the gabbro soils are within the MHPA.</p> <p><b>Conditions:</b> Area-specific management directives must include specific measures to protect against detrimental edge effects to this species.<sup>4</sup></p>					
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Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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ANIMALS					
Invertebrates					
<i>Euphydryas editha quino</i> Quino checkerspot butterfly FE/	Unknown conservation level and lack of assurances that Plan will protect preferred habitat (mesa tops/grassland) and connection to known source populations, therefore, not covered by the Plan.				NO
<i>Euphyes vestris harbisoni</i> Harbison's dun skipper FSC*/	Unknown conservation level and therefore not covered by the Plan based on insufficient distribution and life history data.				NO
<i>Lycaena hermes</i> Hermes copper butterfly FSC*/	Unknown conservation level and therefore not covered by the Plan based on insufficient distribution and life history data.				NO
<i>Mitoura thornei</i> Thorne's hairstreak butterfly FSC*/	98% of Tecate cypress forest (larval host plant)	2% of Tecate cypress forest	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based	YES
<p>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</p> <p>This species will be covered by the MSCP because 98% of the major populations of its larval host plant, Tecate cypress, will be conserved. Most of the Tecate cypress forest occurs on BLM lands.</p> <p><b>Conditions:</b> Area-specific management directives must manage for the host species (Tecate cypress).<sup>4</sup> Management measures to accomplish this may include prescribed fire.</p>					

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Panoquina errans</i> Salt marsh skipper FSC*/	93% of salt marsh habitat (1,700± acres)	7% of salt marsh habitat (120± acres) may be impacted, but this habitat is subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 93% of its potential habitat will be conserved.</p> <p><b>Conditions:</b> Area-specific management directives must include measures to: (1) control exotic weeds and invertebrate predators, where appropriate, and (2) control access to saltmarsh habitat.<sup>4</sup></p>					
<i>Branchinecta sandiegoensis</i> San Diego fairy shrimp FE/	88% of vernal pool habitat	12% of vernal pool habitat may be impacted, but this habitat is subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Area-specific Management Directives (wetlands)	YES



Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 88% of its potential habitat (vernal pool habitat) will be conserved. Federal and local wetland regulations will provide additional protection for vernal pool habitats. The Otay Ranch project RMP and GDP require protection for vernal pools with sensitive species.

**Notes:** Additional important habitat for this species occurs on military lands (Miramar) and is not part of the MSCP.

**Conditions:** Area-specific management directives must include specific measures to protect against detrimental edge effects to this species.<sup>4</sup>

<i>Streptocephalus woottoni</i> Riverside fairy shrimp FE/	88% of vernal pool habitat	12% of vernal pool habitat may be impacted, but this habitat is subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Area-specific Management Directives (wetlands)	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 88% of its potential habitat (vernal pool habitat) will be conserved. Federal and local wetland regulations will provide additional protection for vernal pool habitats. The Otay Ranch project RMP and GDP require protection for vernal pools with sensitive species.

**Notes:** Additional important habitat for this species occurs on military lands (Miramar) and is not part of the MSCP.

**Conditions:** Area-specific management directives must include specific measures to protect against detrimental edge effects to this species.<sup>4</sup>

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<b>Reptiles and Amphibians</b>					
<i>Bufo microscaphus californicus</i> Arroyo southwestern toad FE/SSC	All known locations (Cottonwood Creek in Marron Valley, San Vicente Creek and Santa Ysabel Creek in San Pasqual Valley, Sweetwater River, and Otay River), 78% riparian wetland areas in suitable habitat	Upland habitats adjacent to riparian wetlands (potential habitat) in undetermined status areas in Sloan Canyon - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/management	Monitoring Plan - Site Specific (7 locations) and Management Plans/Directives	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because the MHPA preserves all known locations, and 90-95% of the upland habitats within the Marron Valley area will be conserved. Impacts to upland habitats within 1 km of riparian corridors within the MHPA will be minimized during project review by CDFG and USFWS. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.</p> <p><b>Notes:</b> Important habitat areas include the San Diego River below El Capitan Reservoir, San Vicente Creek between Sweetwater Reservoir and Loveland Reservoir, Dulzura Creek, San Pasqual Valley from Lake Hodges to Boden Canyon, Otay River, Jamul Creek, Cedar Creek, and Sycamore Creek.</p> <p><b>Conditions:</b> Area-specific management directives must address the maintenance of arroyo toad through control of nonnative predators, protection and maintenance of sufficient suitable low-gradient sandy stream habitat (including appropriate water quality) to meet breeding requirements, and preservation of sheltering and foraging habitat within 1 km of occupied breeding habitat within preserve lands. Area-specific management directives must include measures to control human impacts to the species within the preserve (e.g., public education, patrol, etc.).<sup>1</sup> Take authorization holders must minimize impacts to upland habitats that are: within the MHPA and are within 1 km of riparian habitat that supports or is likely to support arroyo toad.</p>					

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Rana aurora draytoni</i> California red-legged frog FT/SSC	72% of riparian habitats and freshwater marsh (9,500± acres)	28% of riparian habitats and freshwater marsh (3,800± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
<p>This species is believed to be extirpated from the county. Although unlikely, additional survey effort may detect red-legged frog. Therefore, this species will be covered by the MSCP because 70% of its potential habitat will be conserved. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.</p>					
<p><b>Conditions:</b> Area-specific management directives must provide for management of any new discovered populations within the preserve.<sup>4</sup></p>					
<i>Clemmys marmorata pallida</i> Southwestern pond turtle FSC*/SSC	72% of riparian habitats and freshwater marsh (9,501± acres)	28% of riparian habitats and freshwater marsh (3,800± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based and Management Plans/Directives	YES

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED

This species will be covered by the MSCP because 72% of its potential habitat will be conserved. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.

**Conditions:** Maintain and manage areas with 1500 feet around known locations within preserve lands for the species. Within this impact avoidance area, human impacts will be minimized, non-native species detrimental to pond turtles will be controlled/removed, and habitat restoration/enhancement measures will be implemented.

<i>Cnemidophorus hyperythrus</i> <i>beldingi</i> Orange-throated whiptail FSC*/SSC	59% of potential habitat (129,600± acres) - 64% of coastal sage scrub, 60% of maritime succulent scrub, 54% of chaparral, 67% of southern maritime chaparral, 44% of coastal sage/chaparral - 62% of known point occurrences	41% of potential habitat (89,800± acres) - 38% of known point occurrences	Preserve design/landscape level	Monitoring Plan - Site Specific (pit traps at 12 locations)	YES
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Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 59% of its potential habitat and 62% of known point occurrences will be conserved. Habitat linkages between large blocks of protected lands are conserved in a functional manner. Monitoring of populations and adaptive management of preserves will occur as a result of plan implementation.

**Notes:** This species also occurs extensively on military lands.

**Conditions:** Area-specific management directives must address edge effects.<sup>4</sup>

<i>Phrynosoma coronatum blainvillei</i> San Diego horned lizard FSC*/SSC	60% of potential habitat (132,000± acres) - 64% of coastal sage scrub, 54% of chaparral, 44% of coastal sage/chaparral, 80% of riparian scrub - 63% of known point occurrences	40% of potential habitat (89,700± acres) - 37% of known point occurrences	Preserve design/landscape level	Monitoring Plan - Site Specific (pit traps at 12 locations)	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 60% of its potential habitat and 63% of known point occurrences will be conserved. Habitat linkages between large blocks of protected lands are conserved in a functional manner. Monitoring of populations and adaptive management of preserves will occur as a result of plan implementation.

**Conditions:** Area-specific management directives must include specific measures to maintain native ant species, discourage the Argentine ant, and protect against detrimental edge effects to this species.<sup>4</sup>

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<b>Birds</b>					
<i>Pelecanus occidentalis californicus</i> California brown pelican FE/CE	91% of roosting and foraging habitat (2,900± acres) - 93% of southern coastal saltmarsh, 88% of natural flood channel, 90-95% of beach outside of intensively used recreational beaches	9% of roosting and foraging habitat (270± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
This species will be covered by the MSCP because 91% of roosting and foraging habitat within the MSCP Plan area will be conserved. No new development of beaches is authorized which will result in 90-95% protection of beach habitat that is outside of intensively used beach areas.					
<b>Notes:</b> Most of the important roosting and foraging habitat occurs on military lands and waters under Port Authority jurisdiction which are not included as part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. This species is a common to very common non-breeding visitor which uses mud flats, piers, jetties, etc. to roost, and it forages primarily in coastal ocean waters and San Diego Bay.					

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Egretta rufescens</i> Reddish egret FSC*/	92% of potential habitat (2,700± acres)- 93% of southern coastal saltmarsh, 99% of saltpan, 88% of natural flood channel	8% of potential habitat (230± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED					
This species will be covered by the MSCP because 90% of its potential habitat will be conserved.					
<b>Notes:</b> Additional important habitat occurs in waters under Port Authority and military jurisdiction which are not included as part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. This species forages in shallow lagoons, mud flats, tidal channels, and salt marsh. This species is a rare visitor in fall and winter and a casual visitor in spring and summer but does not nest in San Diego County.					
<i>Plegadis chihi</i> White-faced ibis FSC*/SSC	80% of potential habitat (1,200± acres) - 68% of freshwater marsh, 88% of natural flood channel; additionally 1,800± acres of agricultural land will be conserved	20% of potential habitat (300± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 78% of its potential habitat will be conserved. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. The preserve management plan for the City of San Diego cornerstone lands must include protection and management of potential nesting habitat at Lake Hodges.

**Conditions:** Area-specific management directives must include specific measures to protect against detrimental edge effects to this species.<sup>4</sup>

<i>Branta canadensis</i> Canada goose none	8,200± acres of potential habitat	1,100± acres of potential habitat - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

Although not considered sensitive, this species has aesthetic and intrinsic values and is a regulated game species, thereby being an important species to protect. This species will be covered by the MSCP because 8,200± acres of its potential habitat will be conserved, including open water areas for loafing. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.



Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Haliaeetus leucocephalus</i> Bald eagle FT/CE	89% of potential foraging habitat (wetlands, 5,719± acres), 68% of freshwater marsh, 92% of open water. In addition, foraging opportunities on 100,000+ acres will be conserved.	11% of potential foraging habitat (wetlands, 692± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 89% of its potential foraging habitat (open water and freshwater marsh) will be conserved. Bald eagles are a rare winter visitor which require perching and roosting sites adjacent to open water and marshes. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.</p>					
<i>Circus cyaneus</i> Northern harrier /SSC	42% of potential nesting habitat (12,000± acres) - 93% of saltmarsh, 68% of freshwater marsh, and 38% of grasslands - 85,000± acres of potential foraging habitat	58% of potential nesting habitat (16,300± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based and Management Plans/Directives (nest sites)	YES

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species is an uncommon migrant, winter visitor, and rare summer resident/breeder. This species will be covered by the MSCP because 42% of its potential nesting habitat and 85,000± acres of its potential foraging habitat will be conserved. The plan will not adversely affect the species' long-term survival.

**Notes:** Harriers tolerate patchiness in their habitat, exhibit nest area fidelity, and forage within 4 miles of their nests. Additional conservation of grassland habitats should be a priority and one of the primary factors in the design of preserves in the major amendment areas. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. Active nesting areas include:

Tijuana River Valley - The City of San Diego Subarea Plan includes conservation of two known nesting sites in the Tijuana River Valley and maintenance of some agricultural lands (available for foraging harriers) within the Tijuana River Valley Regional Park. The Tijuana National Estuarine Sanctuary will continue to enhance marshlands and manage for nesting harriers. Some existing grasslands and agricultural lands at the outer limits of the foraging distance for nesting harriers will be developed. With the addition of over 4,000 acres of agricultural and disturbed lands to the City of San Diego's preserve (in comparison with the March 1995 preserve design), adequate foraging areas within this area are conserved. Food production for harriers on preserve lands can be enhanced.

South San Diego Bay/Sweetwater Marsh - The City of San Diego Subarea Plan includes conservation of one known nesting site in the Sweetwater Marsh area. All nesting and foraging habitat within 4 miles of the known nesting site will be conserved. Upland habitat enhancement opportunities exist at the D Street fill area.

Proctor Valley - Proctor Valley includes a historical nesting location (1970s). Over 80% of the Proctor Valley area will be conserved, with most of the development occurring in the upper portion of the valley, away from the more likely nesting areas.

**Conditions:** Area-specific management directives must: (1) manage agricultural and disturbed lands (which become part of the preserve) within 4 miles of nesting habitat to provide foraging habitat; (2) include an impact avoidance area (900 feet or maximum possible within the preserve) around active nests; and (3) include measures for maintaining winter foraging habitat in preserve areas in Proctor Valley, around Sweetwater Reservoir, San Miguel Ranch, Otay Ranch east of Wueste Road, Lake Hodges, and San Pasqual Valley. The preserve management coordination group shall coordinate efforts to manage for wintering northern harriers' foraging habitat within the MSCP preserve.

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Accipiter cooperii</i> Cooper's hawk /SSC	59% of potential foraging habitat (133,400± acres) (47% of oak woodland, 58% of oak riparian, 64% of coastal sage scrub, 54% of chaparral, 44% of coastal sage scrub/chaparral - 57% of known localities) and 52% (5,705± acres) of potential nesting habitat (58% of oak riparian and 47% of oak woodland)	41% of potential foraging (93,900± acres) and 48% of potential nesting habitat (5,200± acres)	Preserve design/landscape level with site-specific consideration(s)/ management	Monitoring Plan - Habitat Based and Management Plans/Directives (site-specific nest territories)	YES

**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 59% of potential foraging habitat, 52% of potential nesting habitat, and 57% of known occurrences will be conserved.

**Conditions:** In the design of future projects within the Metro-Lakeside-Jamul segment, preserve areas shall conserve patches of oak woodland and oak riparian forest of adequate size for nesting and foraging habitat. Area-specific management directives must include 300-foot impact avoidance areas around active nests and minimization of disturbance in oak woodlands and oak riparian forests.<sup>4</sup>

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Buteo swainsoni</i> Swainson's hawk /CT	22% of foraging habitat (11,600± acres) - 38% of grassland, 6% of agricultural fields	78% of foraging habitat (42,000± acres)	Preserve design/landscape level	Monitoring Plan - Habitat Based (10 grassland locations)	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species is an extremely rare visitor during migration which forages in grasslands and agricultural fields. This species will be covered by the MSCP because more than 11,000 acres of potential foraging habitat will be conserved.</p> <p><b>Notes:</b> The plan will not adversely affect the <u>species</u>' long-term survival. Additional conservation of grassland habitats should be a priority and one of the primary factors in the design of preserves in the major amendment areas. This species is a rare migrant through the area.</p>					
<i>Buteo regalis</i> Ferruginous hawk FSC*/SSC	22% of foraging habitat (11,600± acres) - 38% of grassland, 6% of agricultural fields	78% of foraging habitat (42,000± acres)	Preserve design/landscape level	Monitoring Plan - Habitat Based (10 grassland locations)	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered because 11,600± acres of potential foraging habitat will be conserved. This species is an uncommon winter visitor which forages in grasslands and agricultural fields.</p> <p><b>Notes:</b> The plan will not adversely affect the <u>species</u>' long-term survival. Additional conservation of grassland habitats should be a priority and one of the primary factors in the design of preserves in the major amendment areas. This species is not known to nest within the MSCP study area.</p>					

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Aquila chrysaetos</i> Golden eagle BEPA/SSC	53% of potential foraging/nesting habitat (coastal sage scrub, chaparral, grassland and oak woodland) (139,000+ acres) - large blocks of habitat conserved in the eastern portion of the plan area where active nesting territories exist. Of the 11 active nesting territories (based on information from the Golden Eagle Survey Project, San Diego) which are fully or partially within the MSCP plan area, 7 nesting territories should remain viable.	Viability of 4 of the 11 active nesting territories (partially or fully within the plan area)	Preserve design/landscape level with site-specific consideration(s)/management	Monitoring Plan - Habitat Based and Management Plans/Directives (site-specific nest territories)	YES

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 53% of potential foraging and nesting habitat will be conserved. Local populations are not critical to, and the plan will not adversely affect, the species' long-term survival.

**Notes:** Fourteen active nesting territories occur primarily outside of the MSCP area (east and northeast of the plan area). Plans developed for these areas should include measures to conserve adequate habitat to maintain their viability. The following is an analysis of the plan's effects on each nesting territory within the MSCP study area:

1. Rancho San Diego- development under the plan will result in <10% loss of habitat in the nesting territory; nesting territory should remain viable.
2. East Otay Mountain- development under the plan will result in <5% loss of habitat in the nesting territory; nesting territory should remain viable.
3. Sequan Peak- between 30% and 40% of the habitat in the nesting territory could be developed; the nesting territory may not remain viable, but the steepness of the areas that could be developed may preclude enough development to keep the territory viable.
4. Loveland Reservoir- development under the plan will result in <20% loss of habitat in the nesting territory; nesting territory should remain viable.
5. Lake Jennings- between 40% and 60% of the habitat in the nesting territory could be developed under the plan; the nesting territory may not remain viable.
6. El Capitan- development under the plan will result in <15% loss of habitat within the nesting territory; the territory should remain viable.
7. San Vicente Reservoir- development under the plan will result in <30% of the high quality golden eagle habitat being developed, although low quality habitat (steep chaparral) could be developed, resulting in greater habitat loss within the nesting territory (although high density development is not likely to occur because of the steep slopes); the nesting territory may not be viable.
- 8 and 9. San Pasqual (two nesting territories)- development under the plan will result in <20% loss of habitat in the nesting territory; both nesting territories should remain viable.
10. Santee- development under the plan could result in 30%-40% loss of habitat in the nesting territory; nesting territory may not remain viable, although a significant amount of foraging habitat (Miramar and Mission Trails) occurs just outside of the territory and within normal foraging distances.
11. Lake Hodges- development under the plan will result in <20% loss of habitat in the nesting territory; nesting territory should remain viable.

**Conditions:** Area-specific management directives for areas with nest sites must include measures to avoid human disturbance while the nest is active, including establishing a 4,000-foot disturbance avoidance area within preserve lands.<sup>4</sup> Area-specific management directives must also include monitoring of nest sites to determine use/success.

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Falco peregrinus anatum</i> American peregrine falcon FE/CE	61% of historic nesting sites - 58% of foraging habitat (89,400± acres) - 93% southern coastal saltmarsh, 99% of saltpan, 68% of freshwater marsh, 92% of open water, 88% of natural flood channel, 64% of coastal sage scrub, 38% of grassland	39% of foraging habitat (57,000± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED					
This species will be covered by the MSCP because more than 89,000 acres of potential foraging habitat will be conserved.					
Notes: This species has very low population numbers in the county, being primarily a rare fall and winter visitor. All three nest sites occur outside of the MHPA: one on Coronado Bridge, one on a crane in Port Authority jurisdiction, and one on Pt. Loma federal lands. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.					
<i>Rallus longirostris levipes</i> Light-footed clapper rail FE/CE	93% of potential habitat (1,700± acres of southern coastal saltmarsh)	7% of potential habitat (120± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Site-specific preserve design and special measures/management	Management Plans/Directives	YES

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 93% of its habitat will be conserved.

**Notes:** Additional important habitat is found on military lands (Silver Strand) which are not included as part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.

**Conditions:** Area-specific management directives must include active management of wetlands to ensure a healthy tidal saltmarsh environment and specific measures to protect against detrimental edge effects to this species.<sup>4</sup>

<i>Charadrius alexandrinus nivosus</i> Western snowy plover FT/SSC	93% of potential habitat (650± acres) - 99% of saltpan, 90-95% of beach outside of intensively used recreational beaches	7% of potential habitat (46± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/management	Area-specific Management Directives	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 93% of its potential habitat will be conserved. All breeding activity of western snowy plovers in the county occurs in saltpan habitat. No new development of beaches is authorized, which will result in 90-95% conservation of beach habitat that is outside of intensively used beach areas.

**Notes:** Additional important habitat is found on military lands (Silver Strand) which are not part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.

**Conditions:** Area-specific management directives must include protection of nesting sites from human disturbance during the reproductive season and specific measures to protect against detrimental edge effects to this species.<sup>4</sup> Incidental take (during the breeding season) associated with maintenance/removal of levees/dikes is not authorized except as specifically approved on a case-by-case basis by the wildlife agencies.



Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Charadrius montanus</i> Mountain plover C/SSC	22% of potential foraging habitat (11,600± acres) - 38% of grassland, 6% of agricultural fields	78% of potential foraging habitat (41,100± acres)	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because over 11,000 acres of potential foraging habitat will be conserved. The plan will not adversely affect the <u>species'</u> long-term survival.</p> <p><b>Notes:</b> This species is an uncommon winter visitor (primarily in the Tijuana River Valley) that forages in grasslands and agricultural fields. The MSCP conservation requirement for the Tijuana River Valley area is primarily 94%, with a small area identified as 75%.</p> <p><b>Conditions:</b> Area-specific management directives for the Tijuana River Valley should specifically address the habitat requirements for this species.<sup>4</sup></p>					
<i>Numenius americanus</i> Long-billed curlew FSC*/SSC	24% of potential foraging habitat (13,500± acres) - 93% of southern coastal saltmarsh, 99% of saltpan, 38% of grassland, 6% of agricultural fields	76% of potential foraging habitat (42,800± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species is a fairly common migrant and winter visitor.

**Notes:** This species will be covered by the MSCP because more than 13,500 acres of potential foraging habitat will be conserved. The plan will not adversely affect the species' long-term survival. Additional conservation of grassland habitats should be a priority and one of the primary factors in the design of preserves in the major amendment areas. Additional habitat occurs on military lands (Silver Strand, San Diego Bay) which are not part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.

<i>Sterna elegans</i> Elegant tern FSC*/SSC	93% of potential habitat (650± acres) - 99% of saltpan, 90-95% of beach outside of intensively used recreational beaches	7% of potential habitat (46± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/management	Area-specific Management Directives	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 93% of its potential habitat will be conserved.

**Notes:** All breeding activity of elegant terns in the county occurs in saltpan habitat. No new development of beaches is authorized, which will result in 90-95% protection of beach habitat that is outside of intensively used beach areas. Additional important foraging habitat (bay waters) is under the jurisdiction of the Port Authority and military and is not part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.

**Conditions:** Area-specific management directives must include protection of nesting sites from human disturbance during reproductive season and specific measures to protect against detrimental edge effects to this species.<sup>4</sup> Incidental take (during the breeding season) associated with maintenance/removal of levees/dikes is not authorized except as specifically approved on a case-by-case basis by the wildlife agencies.

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Sterna antillarum browni</i> California least tern FE/CE	93% of potential habitat (650+ acres) -99% of saltpan, 90-95% of beach outside of intensively used recreational beaches	7% of potential habitat (46+ acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Area-specific Management Directives	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
<p>This species will be covered by the MSCP because 93% of its potential habitat will be conserved.</p>					
<p><b>Notes:</b> No new development of beaches is authorized, which will result in 90-95% conservation of beach habitat that is outside of intensively used beach areas. Additional important breeding habitat occurs on military lands (North Beach, Silver Strand, Naval Training Center) and is not part of the MSCP. Additional important foraging habitat (bay waters) is under the jurisdiction of the Port Authority and the military and is not part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.</p>					
<p><b>Conditions:</b> Area-specific management directives must include protection of nesting sites from human disturbance during reproductive season, predator control, and specific measures to protect against detrimental edge effects to this species.<sup>4</sup> Incidental take (during the breeding season) associated with maintenance/removal of dikes/levees, beach maintenance/enhancement is not authorized except as specifically approved on a case-by-case basis by the wildlife agencies.</p>					

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Speotyto cunicularia hypugaea</i> Burrowing owl FSC*/SSC	4 known locations (Spring Canyon, northeast of Brown Field, Lake Hodges), 8 known locations within major amendment area (South County segment), 4,000± acres of known habitat	8 known locations (Otay Ranch, San Pasqual Valley, and South County at border), 5,000± acres of known habitat	Site-specific preserve design and special measures/management	Monitoring Plan (10 grassland locations) and Area-specific Management Directives	YES

**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 5,770± acres of potential and 4,000± acres of known suitable habitat (grassland vegetation community) will be conserved, including portions of Spring Canyon, San Pasqual Valley, Lake Hodges, Otay Mesa northeast of Brown Field, Otay Ranch, Otay River Valley, and Future Urbanizing Area 4.

**Notes:** Habitat enhancement opportunities for the species occur in the Spring Canyon, San Pasqual Valley, Lake Hodges, Otay Mesa northeast of Brown Field, Otay Ranch, Otay River Valley, and Future Urbanizing Area 4. The wildlife agencies will enhance and manage lands within their ownership to allow for relocation of burrowing owls, particularly in conjunction with burrowing owl removal programs in areas where their presence conflicts with nesting of California least terns. The wildlife agencies will attempt to achieve additional conservation of occupied burrowing owl habitat or habitat suitable for restoration using state and federal acquisition resources. Persistence of the species in San Diego County is also dependent on adequate conservation of known concentrations in the Santa Maria Valley in the vicinity of Ramona.

**Conditions:** During the environmental analysis of proposed projects, burrowing owl surveys (using appropriate protocols) must be conducted in suitable habitat to determine if this species is present and the location of active burrows. If burrowing owls are detected, the following mitigation measures must be implemented: within the MHPA, impacts must be avoided; outside of the MHPA, impacts to the species must be avoided to the maximum extent practicable; any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies; mitigation for impacts to occupied habitat (at the subarea plan specified ratio) must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management, and enhancement of burrowing owl nesting and foraging requirements.

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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Management plans/directives must include: enhancement of known, historical, and potential burrowing owl habitat and management for ground squirrels (the primary excavator of burrowing owl burrows). Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat. Management plans must also include: monitoring of burrowing owl nest sites to determine use and nesting success; predator control; and establishing a 300 foot-wide impact avoidance area (within the preserve) around occupied burrows.<sup>4</sup>

Eight known burrowing owl locations occur within major amendment areas of the South County Segment of the County Subarea Plan, and the conservation of occupied burrowing owl habitat must be one of the primary factors in preserve design during the permit amendment process.

<i>Empidonax traillii extimus</i> Southwestern willow flycatcher FE/CE	76% of potential habitat (4,900± acres) - 93% of riparian woodland, 80% of riparian scrub - 88% of known localities	24% of potential habitat (1,400± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/management	Monitoring Plan -Habitat Based and Area-specific Management Directives	YES
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DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED

This species will be covered by the MSCP because 4,900± acres (76%) of potential habitat will be conserved.

**Conditions:** Jurisdictions must require surveys (using appropriate protocols) during the CEQA review process in suitable habitat proposed to be impacted and incorporate mitigation measures consistent with the 404(b)1 guidelines into the project. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. For new developments adjacent to preserve areas that create conditions attractive to brown-headed cowbirds, jurisdictions must require monitoring and control of cowbirds. Area-specific management directives must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Any clearing of occupied habitat must occur between September 1 and May 1 (i.e., outside of the nesting period).

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Campylorhynchus brunneicapillus couesi</i> Coastal cactus wren FSC*/SSC	60% of maritime succulent scrub habitat in large contiguous blocks (850± acres)	40% of maritime succulent scrub habitat in small isolated blocks (580± acres)	Site-specific preserve design and special measures/management	Monitoring Plan - Site Specific (31 locations) and Management Plans/ Directives	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
<p>This species is covered because four of five major populations are conserved, including populations at Lake Hodges/San Pasqual Valley, Lake Jennings, South Sweetwater Reservoir/San Miguel Ranch, and Salt Creek/Otay Mesa, and 60% (850 ± acres) of potential habitat will be conserved, allowing for expansion of the populations with management.</p>					
<p><b>Notes:</b> This species also uses other habitat types (coastal sage scrub and chaparral) containing cactus patches. Small clusters of birds at Black Mountain and Spring Valley will also be conserved. Conservation of the Salt Creek population is critical to the persistence of the species in San Diego County, and it would only be conserved under the City of Chula Vista's "Modified GDP B" alternative. The existing distribution of cactus wrens in the MSCP Plan area has been greatly reduced, and restoration of suitable cactus wren habitat and its management are important components of the MSCP Plan. Significant opportunities for restoration within the MHPA occur on Otay Ranch, Spring Canyon (and adjacent areas), Dennery Canyon, San Miguel Ranch, Lake Hodges/San Pasqual Valley, Otay River Valley, and Santee/Lake Jennings. The participating jurisdictions should seek OHV funds for restoration, as much of these areas has been heavily impacted by OHVs. The City of San Diego already has acquired habitat in Spring Canyon as mitigation. The City of San Diego and the wildlife agencies have agreed to make restoration of maritime succulent scrub in Spring Canyon a high priority. The USFWS also will make restoration of maritime succulent scrub a high priority on any lands it acquires in Spring Canyon.</p>					
<p><b>Conditions:</b> The restoration of maritime succulent scrub habitat as specified in the Otay Ranch RMP and GDP must occur at the specified 1:1 ratio. Area-specific management directives must include restoration of maritime succulent scrub habitat, including propagation of cactus patches, active/adaptive management of cactus wren habitat, monitoring of populations within preserves, and specific measures to reduce or eliminate detrimental edge effects.<sup>4</sup> No clearing of occupied habitat may occur from the period February 15 through August 15.</p>					

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Poliptila californica californica</i> California gnatcatcher FT/SSC	73,300± acres of coastal sage scrub and interdigitated habitats in an interconnected network of preserves	67,300± acres of coastal sage scrub and interdigitated habitats	Preserve design/landscape level	Area-specific Management Directives (31 locations)	YES
<b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b>					
<p>This species will be covered by the MSCP because: over 73,300 acres of existing and potential gnatcatcher habitat will be conserved and linked together; over 81% of the core areas where the species occurs (Otay, San Miguel, Mission Trails, Santee, Kearny Mesa, Poway, San Pasqual, and Lake Hodges) will be conserved; and 65% (1,819 of 2,814) of the known locations will be conserved.</p> <p><b>Notes:</b> 68% (57,874 acres) of habitat supporting core gnatcatcher populations, 70% (30,273 acres) of Very High value and 62% High value (4,609 acres) gnatcatcher coastal sage scrub habitat will be conserved. Critical habitat linkages between core areas will be conserved in a functional manner, with a minimum of 75% of the habitat within identified linkages conserved. Populations of this species also occur on military lands which are not part of the MSCP.</p> <p><b>Conditions:</b> Area-specific management directives must include measures to reduce edge effects and minimize disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fire, and management measures to maintain or improve habitat quality including vegetation structure.<sup>4</sup> No clearing of occupied habitat within the cities' MHPAs and within the County's Biological Resource Core Areas may occur between March 1 and August 15.</p>					
<i>Sialia mexicana</i> Western bluebird none	59% of potential habitat (15,500± acres) - 58% of oak riparian forest, 47% of oak woodland, 38% of grassland	41% of potential habitat (12,100± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because over 15,000 acres of habitat will be conserved.

**Notes:** Persistence of this species in San Diego County depends largely on conservation of existing large populations on public lands east of the MSCP Plan area.

<i>Vireo bellii pusillus</i> Least Bell's vireo FE/CE	81% of potential habitat (1,700± acres) - 93% of riparian woodland, 58% of oak riparian forest - 82-100% of major populations	19% of potential habitat (400± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level with site-specific consideration(s)/management	Monitoring Plan - Habitat Based and Management Plans/Directives	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 1,700± acres (81%) of potential habitat will be conserved.

**Conditions:** Jurisdictions will require surveys (using appropriate protocols) during the CEQA review process in suitable habitat proposed to be impacted and incorporate mitigation measures consistent with the 404(b)1 guidelines into the project. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. Jurisdictions must require new developments, adjacent to preserve areas that create conditions attractive to brown-headed cowbirds, to monitor and control cowbirds. Area-specific management directives must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species.<sup>4</sup> Any clearing of occupied habitat must occur between September 15 and March 15 (i.e., outside of the nesting period).



Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Aimophila ruficeps canescens</i> California rufous-crowned sparrow FSC*/SSC	61% of potential habitat (73,600± acres) - 64% of coastal sage scrub, 60% of maritime succulent scrub, 44% of coastal sage/chaparral - 71% of mapped localities	39% of potential habitat (46,600± acres) - 29% of mapped localities	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES
<p>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</p> <p>This species will be covered by the MSCP because 61% (73,600± acres) of potential habitat (including 71% of mapped localities) will be conserved.</p> <p><b>Notes:</b> This species is tolerant of edge effects, small habitat patches, low shrub volume, and short-term habitat disturbance.</p> <p><b>Conditions:</b> Area-specific management directives must include maintenance of dynamic processes, such as fire, to perpetuate some open phases of coastal sage scrub with herbaceous components.<sup>4</sup></p>					
<i>Passerculus sandwichensis beldingi</i> Belding's Savannah sparrow FSC*/CE	93% of potential habitat (1,700± acres of southern coastal saltmarsh) - 71% of mapped localities	7% of potential habitat (120± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based and Management Plans/Directives	YES

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 93% (1,700± acres) of potential habitat (including 71% of mapped localities) will be conserved, and the remaining acres (120±) are subject to no net loss of value and function.

**Notes:** Additional important habitat is found on military lands (Silver Strand, North Island, etc.) which are not part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.

**Conditions:** Area-specific management directives must include specific measures to protect against detrimental edge effects to this species.<sup>4</sup>

<i>Passerculus sandwichensis rostratus</i> Large-billed Savannah sparrow FSC*/SSC	93% of potential habitat (1,700± acres) of southern coastal saltmarsh - 50% of mapped localities	7% of potential habitat (120± acres) - wetlands are subject to no net loss of function and value and 404(b)1 guidelines	Preserve design/landscape level	Monitoring Plan - Habitat Based and Management Plans/Directives	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 93% (1,700± acres) of potential habitat (including 50% of mapped localities) will be conserved, and the remaining acres (120±) are subject to no net loss of value and function.

**Notes:** Additional important habitat is found on military lands (Silver Strand, North Island, etc.) which are not part of the MSCP. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.

**Conditions:** Area-specific management directives must include specific measures to protect against detrimental edge effects to this species.<sup>4</sup>

Table 3-5 (Continued)

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Ammodramus savannarum</i> Grasshopper sparrow none	This species will not be covered by the MSCP because insufficient information is available to determine if adequate habitat is conserved.			NO	
<i>Agelaius tricolor</i> Tricolored blackbird FSC*/SSC	77% of breeding habitat (4,800± acres) - 68% of freshwater marsh, 80% of riparian scrub - 59% of known localities	23% of breeding habitat (1,400± acres)	Preserve design/landscape level	Management Plans/ Directives	YES
<p><b>DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED</b></p> <p>This species will be covered by the MSCP because 77% of potential habitat (including 59% of mapped localities) will be conserved. Breeding colonies move from season to season, and with a goal of no net loss of wetlands, most of the suitable breeding sites will continue to be available. This species forages in grasslands and agricultural fields near its breeding habitat. Foraging habitat near the known nesting colonies will be conserved at 70-100%. Additionally, foraging opportunities will continue to be provided and created in turfed areas such as golf courses and cemeteries. Jurisdictions will require surveys during the CEQA review process in suitable breeding habitat proposed to be impacted. Participating jurisdictions' guidelines and ordinances and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands.</p> <p><b>Conditions:</b> Project approvals must require avoidance of active nesting areas during the breeding season. Area-specific management directives must include measures to avoid impacts to breeding colonies and specific measures to protect against detrimental edge effects to this species.<sup>4</sup></p>					

Table 3-5 (Continued)

SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<b>Mammals</b>					
<i>Corynorhinus townsendii pallescens</i> Townsend's western big-eared bat FSC*/SSC	Unknown/Insufficient data on distribution and life history.			NO	
<i>Eumops perotis californicus</i> California mastiff bat FSC*/SSC	Unknown/Insufficient data on distribution and life history.			NO	
<i>Perognathus longimembris pacificus</i> Pacific pocket mouse FE/SSC	Unknown/Only 3 to 4 known populations in Southern California. Insufficient data on distribution and life history.			NO	
<i>Taxidea taxus</i> American badger /SSC	58% of potential habitat (82,500± acres) - 38% of grassland, 64% of coastal sage scrub, 44% of coastal sage/chaparral	42% of potential habitat (58,300± acres)	Preserve design/landscape level	Monitoring Plan - Habitat Based	YES

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 82,500± acres (58%) of its potential habitat will be conserved.

**Notes:** This species has a wide range, and the plan will not adversely affect the species' long-term survival. Additional conservation of grassland habitats should be a priority and one of the primary factors in the design of preserves in the major amendment areas.

**Conditions:** Area-specific management directives must include measures to avoid direct human impacts to this species if it is present or likely to be present.<sup>4</sup>

<i>Felis concolor</i> Mountain lion /protected	81% of core areas 5, 6, 7, 8, 9, 11, and 12 (105,000± acres) - connected by linkages C, D, N	19% of core areas (24,000± acres)	Preserve design/landscape level	Monitoring Plan - Habitat Based and Corridor Sites	YES
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**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 81% of the core areas (105,000± acres) that support its habitat will be conserved.

**Notes:** Although not considered sensitive, this species has aesthetic and intrinsic values, thereby being an important species to protect. This species has a wide range, and the plan will not adversely affect the species' long-term survival. The criteria used to define core and linkage areas involve maintaining ecosystem function and processes, including large animal movement. Each core area is connected to other core areas or to habitat areas outside of the MSCP either through common boundaries or through linkages. Core areas have multiple connections to help ensure that the balance in the ecosystem will be maintained. An extensive monitoring program will be implemented by the wildlife agencies to detect unanticipated changes in ecosystem function and allow for adaptive management of the preserve system. Specific design criteria for linkages and road crossings/undercrossings are included in subarea plans.

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

SCIENTIFIC NAME COMMON NAME STATUS (Federal/State) <sup>1</sup>	CONSERVED <sup>2</sup> (BASED ON THE MSCP PLAN)	POTENTIALLY IMPACTED/ DEVELOPED (BASED ON THE MSCP PLAN)	GENERAL BASIS FOR ANALYSIS OF COVERAGE	MONITORING METHOD(S) (MONITORING PLAN AND/OR MANAGEMENT PLANS/ DIRECTIVES)	MEETS STATE & FEDERAL TAKE AUTHORIZATION STANDARDS
<i>Odocoileus hemionus fuliginata</i> Southern mule deer none	81% of core areas 5, 6, 7, 8, 9, 11, and 12 (105,000± acres) - connected by linkages C, D, N	19% of core areas (24,000± acres)	Preserve design/landscape level	Monitoring Plan - Habitat Based and Corridor Sites	YES

**DETAILS OF RATIONALE FOR IDENTIFYING SPECIES AS COVERED**

This species will be covered by the MSCP because 81% of the core areas (105,000± acres) that support its habitat will be conserved.

**Notes:** Although not considered sensitive, this broadly distributed species has aesthetic and intrinsic values, and is the only large native herbivore in the plan area, thereby making it an important species to protect. The criteria used to define core and linkage areas involve maintaining ecosystem function and processes, including large animal movement. Each core area is connected to other core areas or to habitat areas outside of the MSCP either through common boundaries or through linkages. Core areas have multiple connections to help ensure that the balance in the ecosystem will be maintained. An extensive monitoring program will be implemented by the wildlife agencies to detect unanticipated changes in ecosystem function and allow for adaptive management of the preserve system. Specific design criteria for linkages and road crossings/undercrossings are included in subarea plans.

**Table 3-5 (Continued)**

**SPECIES EVALUATED FOR COVERAGE UNDER THE MSCP**

<sup>1</sup> Status (Federal/State)

FE=Federally Endangered

PE=Proposed for federal listing as Endangered

FT=Federally Threatened

PT=Proposed for federal listing as Threatened

C=Candidate for federal listing

FSC\* = Federal species of concern; formerly Category 2 or Category 3 candidate for federal listing.

FSC† = Federal species of concern; proposed federal rule to list as Endangered or Threatened has been withdrawn.

Shading indicates federally and state listed species, species proposed for listing, candidate species, and NCCP target species.

BEPA = Bald Eagle Protection Act

CE = State Endangered

CR = State Rare

CT = State Threatened

SSC = State Species of Special Concern

protected = moratorium on hunting

none = no federal or state status

<sup>2</sup> This column indicates the conservation level for the species. Not all major populations are in the GIS database, i.e., if specific locality data are lacking. In these cases, the percentage of major populations preserved is determined or estimated from the percentage of associated habitat in the MHPA.

<sup>3</sup> Measures to conserve population of species on the MSCP Plan's narrow endemic list must be incorporated into the subarea plans that do not have preserve/development areas specifically delineated based on site-specific surveys. The City of San Diego's and the County of San Diego's Subarea Plan areas are primarily where this requirement is applicable, and both subarea plans specify MSCP narrow endemic species conservation measures. Within the City of San Diego's MHPA, populations of MSCP narrow endemic species will be avoided.

The County will conserve MSCP narrow endemic species using a process that: (1) requires avoidance to the maximum extent possible; (2) allows for a maximum 20% encroachment into a population if total avoidance is not possible; and (3) requires mitigation at a 1:1 to 3:1 ratio (in-kind) for impacts if (1) avoidance and (2) minimization of impacts would result in no reasonable use of the property. The County requirements for (1) avoidance, (2) minimization, and (3) mitigation are specifically described in the County's proposed Biological Mitigation Ordinance (BMO).

<sup>4</sup> Area-specific management directives for preserve areas will include specific guidelines for managing and monitoring covered species and their habitats, including following best management practices. Edge effects may include (but are not limited to) trampling, dumping, vehicular traffic, competition with invasive species, parasitism by cowbirds, predation by domestic animals, noise, collecting, recreational activities, and other human intrusion.

<sup>5</sup> The County's proposed BMO includes a list of sensitive plant species (Groups A and B) that require special consideration in project design. The County will conserve Groups A and B species using a process that: (1) requires avoidance to the maximum extent possible; (2) allows for a maximum 20% encroachment into a population if total avoidance is not possible; and (3) requires mitigation at a 1:1 to 3:1 ratio (in-kind) for impacts if (1) avoidance and (2) minimization of impacts would result in no reasonable use of the property.

Source: 1996 MSCP GIS database. Military lands excluded from analysis.

## **APPENDIX 5**

### **Short-leaved Dudleya Enhancement and Restoration Plan for the Carmel Mountain Preserve**



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# Short-leaved Dudleya Enhancement and Restoration Plan for the Carmel Mountain Preserve, San Diego, California

Prepared by

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Bobbie Stephenson, Biologist

April 2005

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# 1.0 Introduction

## 1.1 Existing Locations of Short-leaved Dudleya

The five remaining natural populations of short-leaved dudleya (*Dudleya blochmaniae* ssp. *brevifolia*) are found on sandstone mesas of the Del Mar and La Jolla region of San Diego County. Carmel Mountain and the main portion of Torrey Pines State Park nearby, support the largest populations of short-leaved dudleya. Smaller populations are found at Crest Canyon in Del Mar Heights; Skeleton Canyon at the University of California, San Diego (UCSD); and the Torrey Pines State Park extension north of Peñasquitos Lagoon. The short-leaved dudleya populations are in southern maritime chaparral within the fog belt of coastal San Diego County.

## 1.2 Purpose, Goals, and Objectives

The purpose of this Plan is to establish management procedures to ensure that the subpopulations of the short-leaved dudleya, a species that is extremely restricted in range, is not extirpated on Carmel Mountain. To this end, the following goals have been established for the Carmel Mountain Preserve:

**Goal:** Protect and preserve the existing subpopulations of short-leaved dudleya.

*Objective:* Eliminate disturbance within the existing short-leaved dudleya populations to minimize weed invasions and damage to the dudleya from trampling and vehicles.

**Goal:** Expand the existing populations of short-leaved dudleya.

*Objective:* To maintain and enhance the genetic diversity of the dudleya populations to make them more resistant to stochastic changes

**Goal:** Establish new populations with a minimum of 10,000 short-leaved dudleya.

*Objective:* To reduce the risk of population losses due to catastrophic events such as fire and resulting weed invasions.

# 2.0 Management Actions

The goals and objectives will be successfully attained by implementing the management actions.

**Goal:** Protect and preserve the existing subpopulations of short-leaved dudleya.

*Objective:* Eliminate disturbance within the existing short-leaved dudleya populations.

Action A: Reroute trails and roads to avoid the subpopulations and to protect the subpopulations from trampling by humans, bicycles and other vehicles, and horses.

Action B: Allow the subpopulations to fill in open spots within the perimeter of the existing populations and to expand outward into newly protected areas for three years before beginning active restoration procedures. Monitor the subpopulations each spring.

Action C: Monitor the subpopulations once yearly for three years.

Close roads bisecting existing habitat by implementation of the proposed trail and road closure program included in this document and through future cooperative agreements with SDG&E and private inholding landowners.

Action C: Restore disturbed habitat inside the perimeter of each of the three subpopulations.

**Goal:** Expand the existing self-sustaining populations of short-leaved dudleya.

*Objective:* Restore habitat adjoining the subpopulations.

Action A: Choose an adjoining area with the same physical characteristics as those of the existing subpopulations.

Action B: Remove weedy species by hand or using hand tools.

Preserve, protect, restore, and enhance sandstone terraces dominated by ashy spike-moss and other microbotic species as habitat for new populations of short-leaved dudleya.

- Reroute foot, bike, and horse trails around existing subpopulations of short-leaved dudleya and potential population expansion areas.
- Enter into an MOU between the City of San Diego and CDFG to allow for collection of 5 percent or less of the seed crop from the Carmel Mountain population annually for a period of approximately 10 years.
- Germinate seed to produce plants for captive seed production.
- Use propagated seed to directly seed appropriate restoration and enhancement sites.
- Propagate short-leaved dudleya from seed to grow mature plants for translocation into existing and new population sites.
- Repair of tire ruts with hand tools in areas where repair activities will not adversely affect existing sensitive species or microbotic crusts.
- Implement an exotic plant control measure in short-leaved dudleya habitat. Control measures can include hand removal using cutting devices that minimize soil disturbance, the use of leaf blowers/vacuums to remove weed seeds from microbotic crust/dudleya habitat areas and limited herbicide spraying where sensitive resources

including the short-leaved dudleya will not be impacted. Replanting/reseeding with site appropriate natives grown from locally collected seed.

- Collect, propagate, and broadcast appropriate species of native seed into restoration sites where weeds are under control.

## 3.0 Short-leaved Dudleya Biology

### 3.1 Habitat

Typically, the short-leaved dudleya occupies openings that are dominated by microbial crust, a combination of species such as lichens, mosses, and ashy spike-moss, within the southern maritime chaparral. Herbaceous plants such as Cleveland's shooting stars (*Dodecatheon clevelandii*), dot-seed plantain (*Plantago erecta*), pygmy weed (*Crassula connata*), skunkweed (*Navarettia hamata*), spineflower (*Chorizanthe* sp.), herba impia (*Filago* sp.), popcorn flower (*Plagiobothrys* sp.), and everlasting nest straw (*Stylocline gnaphaliodes*) are also common associates in the openings.



**Photograph A5-1.** Short-leaved Dudleya Habitat (Subpopulation 3), showing ashy spikemoss and lichens



**Photograph A5-2.** Short-leaved Dudleya Habitat (close-up), with manganese nodules and lichens, on the Edge of the Mesa at Carmel Mountain

The southern maritime chaparral that surrounds the short-leaved dudleya populations on Carmel Mountain is about eight feet tall and includes chamise (*Adenostoma fasciculatum*), mission mazanita (*Xylococcus bicolor*), black sage (*Salvia mellifera*), wart-stemmed ceanothus (*Ceanothus verrucosus*), and an occasional Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*).

## 3.2 Phenology

Like other members of the subgenus *Hasseanthus*, short-leaved dudleya is drought-deciduous in summer, surviving on starch reserves stored in a subterranean tuberous caudex (stem). Short-leaved dudleya typically grows on shallow sandy soils that overlay a cemented sandstone hardpan. These soils where the dudleya grows are frequently so shallow that the underground stem will grow downward for a centimeter, hit the hard pan, and continue growing horizontally along the surface of the hardpan layer (Dodero pers. obs.). In the thin soil areas the stem of the short-leaved dudleya can be very irregular in shape.

Annual growth is initiated after the first significant autumn rains and the plants grow actively through early April, as long as soil conditions are moist. After growth is initiated, dry periods of several weeks in mid-winter can cause the plants to cease growing and become dormant for the rest of season (Dodero 1995). In some cases, even if additional rains fall later in the winter or spring, the plants will not respond. This drought dormancy effect seems to be most common in smaller plants, whereas larger plants will usually maintain their leaves unless drought conditions are prolonged by higher than normal temperatures and low humidity. This dormancy response can lead to the mistaken determination that the plants have died or did not occupy a particular location, even though they are actually present underground.

Short-leaved dudleya can begin flowering as early as late April and continue flowering through early June, with seeds being set in late June and July. Short-leaved dudleya generally flowers later in the season than populations of the closely related Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*) elsewhere in San Diego County (Moran 1951). Populations of short-leaved dudleya on Carmel Mountain also begin to flower somewhat earlier than non-specific populations at Torrey Pines State Park, where longer lasting fog cover causes more mesic conditions (Dodero pers. obs.).

The percentage of flowering individuals in a season is correlated with the amount and frequency of rainfall during the winter and early spring. Well-spaced rains throughout the winter, at one- to two-week intervals, leads to a greater number of flowering plants than in dry years or when long dry periods occur in the middle of the normal rainy season. Small plants typically do not flower in a dry year, but in a year with above average or well-spaced rains, the same plant is capable of successful reproduction (Dodero 1995). In any given year only 10 to 30 percent of the individuals in a population will flower. Population estimates made from flowering individuals alone significantly underestimate the total number of plants in a population. Reproduction is primarily by seed; however, short-leaved dudleya is also capable of vegetative reproduction via detached leaves both in nature and in cultivation (Dodero 1995). Within one to three weeks after leaves are removed from the plant, they develop roots at the petiole base and are ready for planting.

Census numbers generated through the San Diego Multiple Species Conservation Program (MSCP) monitoring program for the three subpopulations of short-leaved dudleya on Carmel

Mountain show an increase in the number of flowering individuals in 2001 from the two previous years (City of San Diego 2001). Monitoring has resulted in the following population data for Carmel Mountain:

<u>Year</u>	<u>Rainfall</u>	<u>Number of Individuals</u>
1999	6.5	27,317
2000	5.7	23,487
2001	8.6	66,637
2002	3.0	1,446
2003	10.4	113,134
2004	4.2	18,907
2005	22.49	123,200

These numbers likely reflect responses of the populations to the timing and amount of rainfall each of those years and probably do not indicate an actual increase in population numbers in light of the continued disturbance and ongoing spreading of weeds. In 1999 and 2000 rainfall was well below average and long dry periods of up to several weeks occurred in midwinter. As described above, this type of weather pattern is not favorable for most short-leaved dudleya plants to flower. Even though rainfall was still below normal in the 2001 season, the rains that did occur were well spaced and effective for sustaining plant growth, which is probably the reason more plants flowered plants than in previous years. The 2003 rainfall season total of 10.4 inches was near the annual average rainfall and this is reflected in the increase in plant numbers observed in 2002, the driest year on record.

Potential pollinators that have been seen visiting short-leaved dudleya flowers include bee flies (Bombyliidae), hover flies (Syrphidae), soft-winged flower beetles (*Dasytes* sp.; family Melyridae), honey bees (*Apis mellifera*), bumble bees (genus *Bombus*), and digger bees (family Anthophoridae). The ovoid, striated seeds, at approximately 0.8 millimeter long, are very small and are generally dispersed by wind and water. They have no appendages for attaching to other material or animals for dispersal. Seedlings are frequently seen aggregated where water collects during sheet-flooding across the sandy surface of the mesa. Also, dried inflorescences of this species have been observed blowing across the sand on windy days after they have become detached from the parent plant. This presumably disperses seed as well (Dodero 1995).

## 4.0 Current Conditions of Subpopulations



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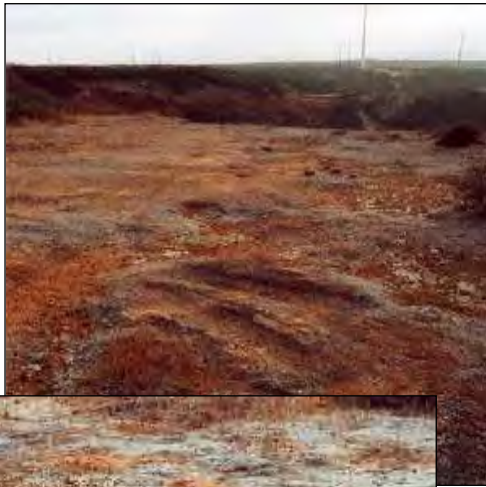
turbances

5-5

Photograph A5-5. Bicycle Tire Tracks and damaged Microbiotic Crust



**Photograph A5-4.** Horse Hoof Imprint in Microbiotic Crust



**Photograph A5-7.** Weed Invasion into Short-leaved Dudleya Habitat after Disturbance from Pocket Gophers

Damage to the dudleya areas has been particularly severe when vehicles have been driven through the habitat during rainy periods when wet soils and microbiotic crusts are most easily damaged.

Although access is more restricted since developments have been built adjacent to the preserve, vehicles, bicycles, horses, and foot traffic continue to crush short-leaved dudleya plants on Carmel Mountain. In addition, these disturbances are breaking and crushing the surrounding microbiotic crust, which allows and promotes weed invasion.

After the initial disturbance, pocket gophers frequently move into the disturbed area to feed on non-native plants, and their burrowing further churns the soil and promotes additional weed growth. The gopher disturbance results in further weed invasion as more non-native annuals invade the disturbed soils (RECON 1999). Access by illegal off-road vehicles is still possible from the SDG&E access road.

## **5.0 Habitat and Population Management of Existing Populations**

### **5.1 Site Protection**

The first priority for the three areas is to protect them from further disturbance from vehicle, horse, and foot traffic as outlined in the trail and road closure program. A locked gate should be installed at the southern terminus of the SDG&E access road to prevent continued unauthorized vehicle traffic into the Preserve. The roads/trails that bisect subpopulations two and three on Carmel Mountain are proposed for closure or rerouting of the trails around the short-leaved dudleya habitat. The SDG&E access road that runs immediately adjacent to Subpopulation 1 is not proposed for closure at this time. This road should be considered for closure if alternate access to SDG&E transmission towers and the private inholdings can be arranged through negotiations between the City, the landowners, and SDG&E. Barriers such as split-rail fencing could be installed along the edge of the road/trail to protect Subpopulation 1. The existing roads/trails that go through Subpopulations 2 and 3 are proposed for closure and fencing barriers and signage can be placed at appropriate locations to discourage foot and vehicle traffic.

If protective fences or barriers are installed, the location and design of the fences should be carefully considered so that the fence installation and maintenance activities do not impact the dudleya populations or the microbiotic crusts in the vicinity. The short-leaved dudleya populations on Carmel Mountain are being censused annually as part of MSCP rare plant monitoring program conducted by the City of San Diego (City of San Diego 2001).

### **5.2 Maintenance**

Hand irrigation for new seedlings and transplants will likely be needed the first season. If dry periods longer than approximately two weeks occur (or if plants look desiccated) after seedlings have germinated or flats of seedlings have been planted, supplemental water will be needed to ensure the greatest survivorship of individuals. Watering of seedlings and transplants should be done gently to minimize any soil disturbance that can uproot seedlings or expose the stem of the plants to the air. The plants should be kept moist until natural rainfall occurs. If natural rain events occur at regular intervals less supplemental watering will be required.

## 5.3 Monitoring

As mentioned previously, the short-leaved dudleya are part of an ongoing MSCP monitoring program. The goals of the annual monitoring program are to: (1) document ecological trends, (2) evaluate the effectiveness of management activities, (3) provide new data on species populations, and (4) evaluate the indirect impacts of land uses and construction. The following are additional monitoring recommendations for the restoration and enhancement program for short-leaved dudleya on Carmel Mountain intended to meet these stated goals.

With careful monitoring, researchers can detect changes in managed and unmanaged populations and communities over time (Primack 1996; Sutter 1996). Monitoring can be used to obtain basic biological information regarding life history traits of species including seed production, pollination, herbivory, dispersal, and seed and plant dormancy (Sutter 1996). With these goals in mind, the restored and newly created populations will be monitored for a minimum of five years. Monitoring activities will include:

- Photographing plots from permanent locations during the active growing period of short-leaved dudleya (February);
- Collection of quantitative data on total counts of short-leaved dudleya individuals in early February (MSCP Biological Monitoring Plan);
- Collection and identification of insect pollinators from the existing population of short-leaved dudleya at Carmel Mountain and the new population sites in May and June to assess on-site pollinator diversity and to ensure sufficient preservation of open ground habitat for pollinators;
- Collection of quantitative data on total counts of flowering individuals at the new population sites in May and June; and
- Collection of detailed qualitative and quantitative information regarding the success of exotic species eradication efforts at the restoration/translocation sites each year in spring. The extent of exotic and native species will be quantified using global positioning system (GPS) technology and the resulting changes in the distribution of these plants, including the dudleya, which will be monitored throughout the five-year monitoring period.

In addition, seedlings established at new population sites will be monitored for collection of detailed data on dudleya growth rates. A minimum of 40 seedlings will be marked and followed through their development from germination through five consecutive growing seasons. Data to be recorded includes number of rosette leaves, maximum length of rosette leaf, number and height of inflorescences, and presence of seed. Leaf measurement data will be recorded annually during late February–early March when the plants have reached their maximum leaf size for the season. The number and height of the inflorescences will be recorded annually in late April–early May during the flowering period.

Based on growth data recorded for variegated dudleya and Blochman's dudleya, short-leaved dudleya seedling plants germinated in the field are not expected to reach flowering maturity under natural conditions until at least the third season of growth (Dodero 1995).

All monitoring activities should be conducted with care to minimize impacts to short-leaved dudleya and microbotic crusts caused by foot traffic. Even occasional foot traffic can have negative effects on habitat quality when microbotic crusts are broken and weeds invade a site as a result of disturbance. Land managers should evaluate the effects of monitoring on habitat quality and adjust the monitoring program schedule and tasks accordingly if damage is occurring.

## **6.0 Population and Habitat Enhancement and Restoration**

### **6.1 Procedures for Enhancement and Restoration**

#### **6.1.1 Site Selection**

There are a number of characteristics to consider when selecting a translocation site. Fiedler and Laven (1996) suggest these selection criteria fall into four general categories: physical, biological, logistical, and historical. Physical characteristics for site selection can be straightforward and typically focus on soils and landscape characteristics. Biological criteria are considered to be the ecological characteristics of a species. Translocation sites should be selected based on the presence of appropriate habitat parameters, including similar plant community structure and successional stage. In addition, potential competitors of the plant species being translocated, including weeds, should be identified and a plan developed and implemented for the control of these other species. Logistical criteria to consider when choosing the translocation site should include how well the site can be protected from unauthorized human access, as well as the level of difficulty in accessing the site for monitoring and remediation efforts. Historical selection criteria include two issues: (1) the use of currently occupied versus potential habitat and (2) consideration of a species evolutionary history, including its specific habitat requirements. Knowledge of how the habitat, occupied by the species, changes over time and how new habitat arises and becomes occupied by the plant is important to the success of restoration efforts. The site selection criteria outlined by Fiedler and Laven (1996) are reflected in the choice of the proposed population creation sites depicted in Figures A5-1a and A5-1b.

Guerrant (1996) performed modeling experiments on a number of rare plant species for which reintroduction programs were implemented. He found the risk of population extinction is greatly reduced if plants of even slightly larger than seedling size are used in a translocation program.

Guerrant also found that the size of the created populations after 10 years is strongly correlated with the size of the plants used. The use of the largest individuals of a species resulted in the largest population size. These size factors have been taken into account in designing the methods for propagating and establishing a new population of small-leaved dudleya at Carmel Mountain.

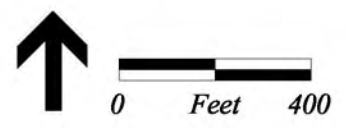
In addition, Guerrant (1996) points out that one of the most serious problems associated with reintroduction is a loss of genetic diversity. Research has shown that reduced population size can rapidly result in the loss of genetic variability. One way to avoid the loss of genetic diversity is to rapidly expand the size of the newly established population



### **Figure A5-1a; COLOR-OVERSIZE**






Image Source: 2001 Aerial Fotobank (flown September 2001)

MATCHLINE  
SEE MAP 2

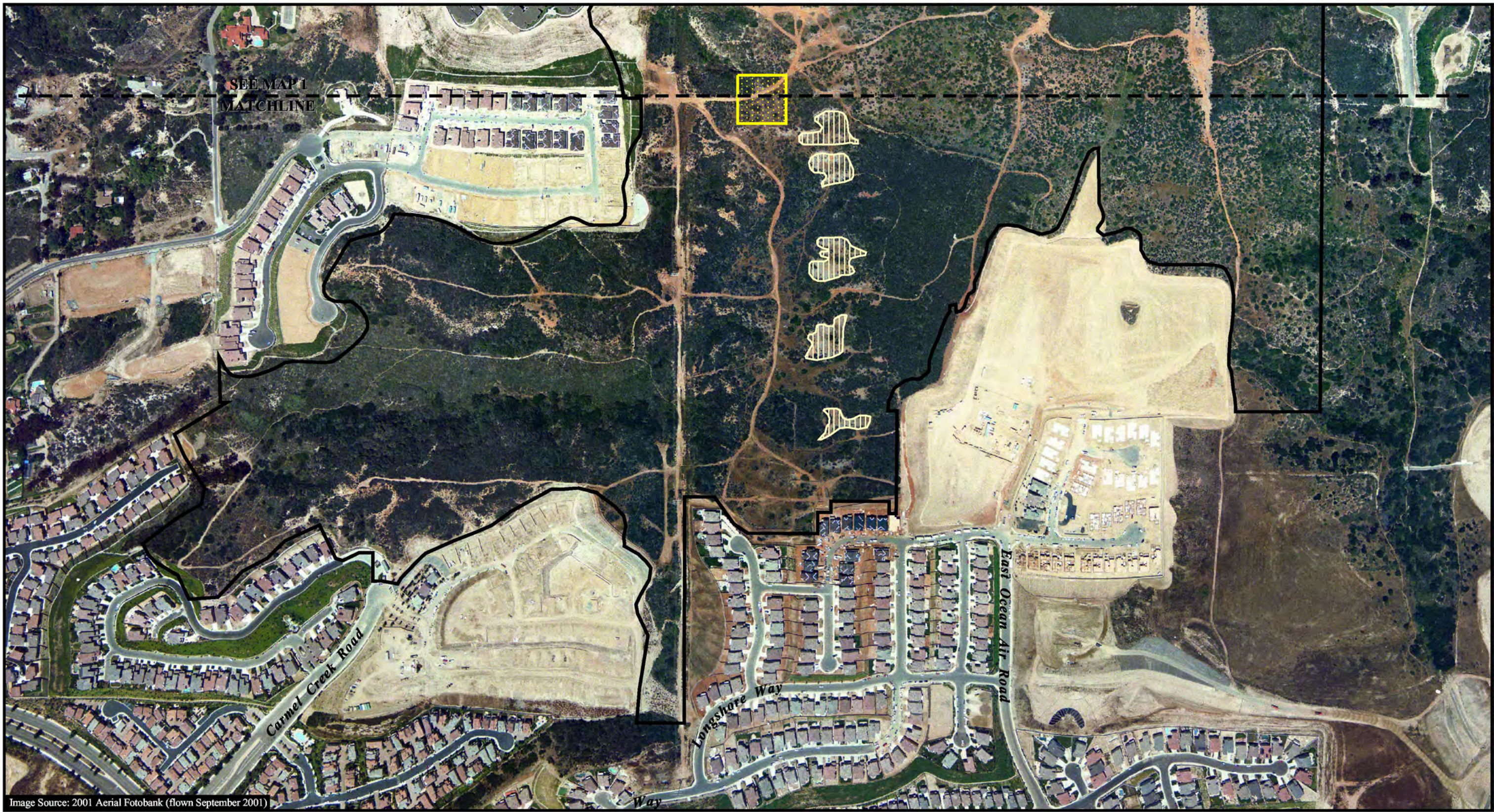


 Carmel Mountain Preserve  
 Private lands

**Proposed Restoration and Enhancement Areas**  
 Existing Short-leaved dudleya population area proposed for enhancement  
 Potential Short-leaved dudleya translocation/restoration area  
*Dudleya brevifolia* population  
 Source: City of San Diego

**FIGURE A5-1a**  
**Potential Short-Leaved Dudleya Restoration Enhancement, and Translocation Areas on Carmel Mountain Preserve (Map 1)**

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SEE MAP 1  
MATCHLINE



Carmel Creek Road


Longshore Way

East Ocean Air Road

Way

Image Source: 2001 Aerial Fotobank (flown September 2001)

 Carmel Mountain Preserve  
 Private lands

Proposed Restoration Areas  
 Potential Short-leaved dudleya translocation/restoration area

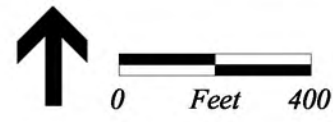


FIGURE A5-1b

Potential Short-Leaved Dudleya Restoration Enhancement, and Translocation Areas on Carmel Mountain Preserve (Map 2)



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(Guerrant 1996). By increasing the number of individuals soon after the population is established, much of the genetic variability present in a population can be maintained.

The natural populations of short-leaved dudleya are found on hard sandstone terraces, a mixture of sandstones and clay with iron concretions that have formed by weathering of the rock. The dominant plants in dudleya habitat include ashy spike-moss and herbaceous species. The proposed creation sites have similar soils and plant communities to those found at the natural population sites nearby.

Dodero (1995) notes that the range of this and other closely related species have probably expanded and contracted throughout the evolutionary history of the group, as areas of appropriate habitat have been exposed and subsequently eroded. The mosaic of occupied and potential dudleya habitat changes over time and probably causes populations to come into contact or become isolated as habitat areas shrink and then expand. Limited dispersal capabilities of short-leaved dudleya reduces the chances that suitable habitat nearby will be colonized naturally.

Three sites, corresponding to the subpopulations identified in the City of San Diego MSCP monitoring program report (City of San Diego 2001) and chosen to expand the subpopulations, have been selected as enhancement areas for short-leaved dudleya (see Figures A5-1a and A5-1b). All conditions at the sites are favorable for growing short-leaved dudleya.

### **6.1.2 Site Preparation**

Because short-leaved dudleya will be established in existing, albeit somewhat disturbed, habitat on intact soils, no soil testing will be necessary. The intact sites most likely support the mycorrhizal associations important to the successful establishment of native plant species. No native species are anticipated to be displaced by this restoration project, which is designed to enhance native habitat for the small-leaved dudleya.

The sites have non-native weedy species, particularly annual grasses, that must be removed before the short-leaved dudleya and its associate plant species are planted. Weeds will be removed by hand.

### **6.1.3 Site Rehabilitation and Maintenance**

Because short-leaved dudleya will be established in existing (albeit somewhat disturbed) habitat occurring on intact soils, no soil testing will be necessary. The sites have non-native weedy species particularly annual grasses that must be controlled and replaced by native species. No native species are anticipated to be displaced by this restoration project, which is designed to enhance the site. The intact sites most likely support the mycorrhizal associations important to the successful establishment of native plant species.

Exotic plants will be controlled throughout the length of the program. Non-native species will be removed primarily using hand tools, although some plants may need to be controlled by Roundup® or another appropriate herbicide sprayed by a licensed pesticide applicator under the supervision of the project biologist. As exotics are removed, these areas will receive hand-broadcast native seed collected including the short-leaved dudleya from on-site in order to enhance the quality of the habitat. Native seeds other than short-leaved dudleya will not be placed directly in the dudleya planting sites in order to avoid competition early in the establishment process. Also, seeds will not be raked into the soil, as this action enhances weed germination and competition. The use of supplemental water for native species other than the dudleya is not anticipated because native seeds will be broadcast during the winter rainy season.

The restoration sites should be actively maintained for a minimum of five years depending on funding. If adequate money is not available in the early years, then the focus should be placed on limiting disturbance to habitat and restoration activities may be extended for a longer period at any particular site. Maintenance will commence following placement and establishment of dudleya seed, transplanted adults, and leaf cuts, if they are used. Maintenance activities will include continued control of exotics and visual inspections to identify incipient problems such as herbivory or vandalism. The monitoring biologist shall direct weeding crews to remove weeds and determine which plants require control during the five-year maintenance period. The need for weeding is expected to decrease substantially by the end of the five-year period, provided successful habitat restoration has been achieved.

#### **6.1.4 Dudleya Seed Collection**

After an MOU agreement for seed collection of this state listed species has been negotiated with CDFG, seeds from individual short-leaved dudleya found in the three subpopulations on Carmel Mountain should be collected annually. Seeds from individuals of short-leaved dudleya found in the populations on Carmel Mountain will be collected in the summer. Dried inflorescences should be collected and placed in paper envelopes, which allow for the evaporation of residual moisture to prevent molding. Seeds are then stored in a cool, dark location to prevent desiccation and maintain viability. Dudleya seeds remain viable for many years under these conditions (Doderer 1995) and germination tests using seeds from *Dudleya multicaulis*, a closely related species, indicate no significant reduction in viability over a two-year storage period.

The seed would be used to propagate plants at a nearby growing facility for later translocation to the Preserve and also to grow plants that will be used to produce seed for direct application to the restoration sites and for dispersal into appropriate but currently unoccupied areas of the Preserve.

To ensure the maintenance of genetic diversity in the enhanced and newly created subpopulations, seed should be collected from individuals in each subpopulation. In the

absence of any genetic information it is probably the best strategy to keep seeds and plants from each subpopulation separate to maintain any genetic differentiation between the subpopulations. Plants propagated from these seeds should only be used in the same subpopulation area that they originated from.

For newly created populations disjunct from the existing sites, plants and seeds from the three different subpopulations could be mixed to create as genetically diverse populations as possible. In theory then the created populations would have the best chance of having at least some individuals that are adapted to the varying types of conditions that may be present at the proposed creation/expansion sites. Past experience with translocation of Blochman's dudleya suggests that plants will do well at the new sites as long as they are properly planted and herbivory is not too severe and weeds are controlled (RECON 1996 and 2001).

### **6.1.5 Propagation**

To propagate short-leaved dudleya for translocation and seed production the following methods should be used. Salvaged soil collected on-site can be placed in standard greenhouse flats to a depth of approximately one inch. Flats should be filled with soil that has a higher clay content than pure sand. The clay is a more stable growing medium than sand and will be easier to transplant into the restoration sites. Clumps of plants grown in sand have a tendency to break apart and will not transplant well.

Soil could be salvaged from nearby locations with the same soil type that are slated for development. Another option would be to salvage soil from the cut edge of the mesa adjacent to the park where the soil has already been disturbed by grading activities.

The dried dudleya fruits can be broken apart by hand to release the seeds that are then sprinkled on the surface of the moist soil. Because of their small size the short-leaved dudleya seeds should not be covered with any soil. The seeds should be immediately watered with a fine mist several times a day to keep them continuously moist for a period of approximately two weeks although in the cool fall and winter seasons most viable dudleya seeds should germinate within one week. To produce plants that will attain the greatest possible size during the first growing season short-leaved dudleya seed is best sown after the first cold front of the season has past, usually in late October. Plants started at that time have the potential to reach flowering size in cultivation in approximately six months.

The sowing of the seed in the flats should be covered with shade cloth to reduce evaporative water loss from the soil and to minimize mechanical disturbance from watering. Each flat requires weeding as needed throughout the growing season. Supplemental watering should be given as needed during dry periods and small seedlings should never be allowed to dry out during the growing season. By late April, supplemental watering should be discontinued to allow the plants to enter their normal dormancy cycle, which starts at the onset of the summer drought.

If flats are intended for translocation into sites with thin soil, the amount of soil placed in the flats can be adjusted to accommodate the depth of the soil at the translocation site. The soil in the flats should always be somewhat more shallow than the soil at the translocation site. The reason for this is that the translocated plants should be planted flush with or slightly below the existing soil surface to ensure that the newly translocated plants are in a slightly depositional rather than an erosional environment. If the underground stems are exposed above the soil surface by erosion the plants are likely to die. Short-leaved dudleyas and closely related species are adapted to live in areas where there is slow deposition of sand and clay (Doderer 1995). The plants can keep pace with the deposition of soil by elongating their stem upward through the soil. As long as deposition of soil is not too rapid, the plants can grow well in this type of environment.

The goal of any translocation or habitat restoration plan is the establishment of a self-sustaining population with a minimum population size which enables the species to retain the genetic resources necessary to adapt to changing environmental conditions (Guerrant 1996). To achieve the goal of creating a self-sustaining population, up to three establishment methods could be used: hand broadcasting of dudleya seed to weed-free areas, planting individuals germinated from seed collected on-site or if necessary planting of whole leaves that develop into new plants after a period of a few weeks. Each method of establishment, whether by seed, cuttings, or transplants, may have drawbacks, depending on site-specific conditions (Guerrant 1996).

Previous restoration experience with Blochman's dudleya, a closely related species, indicates propagation of seed-grown plants in cultivation results in the greatest survivorship of seedlings (approximately 90 percent) over direct seeding (approximately 10 percent). Because of the very thin soils or the presence of intact microbiotic crusts at some of the enhancement sites, flats of cultivated seedlings may not be able to be planted in many locations that otherwise have high restoration potential. In thin soil areas direct seeding may be the only method available to establish plants because flats of seedlings will not be able to be successfully translocated into soil only one centimeter thick. Direct seeding should also be used where planting of cultivated short-leaved dudleyas would impact existing microbiotic crusts.

Another option to solve the problem of thin soils is to bring in relatively small amounts of soil to replace soil lost through road grading and erosion in Subpopulations 2 and 3 on Carmel Mountain. Small amounts of salvaged sandy soil could be collected from the graded edge of the Neighborhood 8A park where it abuts the Preserve and this soil could be thinly spread across the graded road areas that have little or no soil. Soil could be placed up to one inch deep to restore growing areas for the dudleya. At this maximum depth the soils would still be too thin to support shrubs but the short-leaved dudleya is adapted to these conditions. The intent is to establish plants wherever the habitat is appropriate within the restoration sites using the methods and criteria outlined above.

## 6.1.6 Introduction of Other Plant Species

The following herbaceous species are suitable for use in restored and enhanced short-leaved dudleya habitat: Cleveland's shooting stars, dot-seed plantain, pygmy weed, skunkweed, spineflower, herba impia, popcorn flower, and everlasting nest straw. Other associated herbaceous species may also be suitable for revegetation around newly created dudleya populations. All native plant species intended for reintroduction into the restoration and enhancement sites should be collected within the Preserve and hand broadcast. Since the dudleya habitat areas to be restored relatively small, sufficient seed can probably be collected in the vicinity of Carmel Mountain for hand broadcast. Seeds of other plant species directly into newly planted short-leaved dudleya patches to keep competition low. Seeding should be conducted in the fall or early winter just prior to anticipated rainfall. Timing seed dispersal to coincide with rainfall events reduces the amount of time the subject to herbivory and fungal attack and therefore is likely to increase germination success.

## 6.2 Maintenance of Enhancement and Restoration Sites

Exotic plants will be controlled throughout the length of the program. Non-native species will be removed primarily using hand tools, although some plants may need to be controlled by Roundup® or another appropriate herbicide sprayed by a licensed pesticide applicator under the supervision of the project biologist. Herbicides proposed for use in the Preserve must be on the pre-approved Park and Recreation list.

As exotics are removed, these areas will receive hand-broadcast native seed collected including the short-leaved dudleya from on-site in order to enhance the quality of the habitat. Native seeds other than short-leaved dudleya will not be placed directly in the dudleya planting sites in order to avoid competition early in the establishment process. Also, seeds will not be raked into the soil, as this action enhances weed germination and competition. The use of supplemental water for native species other than the dudleya is not anticipated because native seeds will be broadcast during the winter rainy season.

The restoration sites should be actively maintained for a minimum of five years depending on funding. If adequate money is not available in the early years, then the focus should be placed on limiting disturbance to habitat and restoration activities may be extended for a longer period at any particular site. Maintenance will commence following placement and establishment of dudleya seed, transplanted adults, and leaf cuts, if they are used. Maintenance activities will include continued control of exotics and visual inspections to identify incipient problems such as herbivory or vandalism. The monitoring biologist shall direct weeding crews to remove weeds and determine which plants require control during the five-year maintenance period. The need for weeding is expected to decrease substantially by the end of the five-year period, provided successful habitat restoration has been achieved.

In addition, exotic species shall be controlled and replaced with native species by hand broadcasting seed.

## **6.3 Monitoring of Enhancement and Restoration Sites**

### **6.3.1 Planting and Seeding**

After initial planting, the site will be checked twice a week by the project biologist for the first two months, once a week for the next four months, and monthly thereafter to determine if seeding and plantings are successful or if remedial measures including hand irrigation is needed.

Other site problems such as vehicle damage and erosion shall be reported to the City of San Diego and the Wildlife Agencies with recommended remedial measures.

### **6.3.2 Success Criteria**

The success of the population expansion program should be evaluated in light of four goals, which include abundance, extent, resilience, and persistence (Pavlik 1996). The goal of maintaining abundance can be fulfilled by introducing large numbers of plants and propagules into the new site. Extent refers to the number and distribution of populations of a particular species. Resilience is maximized by maintenance of genetic variation, resistance to environmental perturbation, and ability of the plant to become dormant during unfavorable conditions. Persistence of populations is more likely when there is microhabitat variation within the translocation site and the natural community which the species occurs in is maintained.

The goal of the population expansion project is to create viable reproducing populations of short-leaved dudleya which are large enough to survive environmental perturbations and persist for the foreseeable future. Created populations should consist of a minimum of approximately 10,000 individuals. Specific success criteria have been established for enhancing and expanding the numbers of short-leaved dudleya on the Carmel Mountain Preserve. These criteria should be the success goals required of the consultant, agency, or non-profit organization charged with implementing the short-leaved dudleya population expansion project:

If, at end of the five-year period, the population of short-leaved dudleya at the new sites equals or exceeds 10,000 individuals (all age classes), with a minimum of 2,500 flowering plants (in any of the five years) then the expansion effort shall be deemed successful. No further transplanting, seeding of short-leaved dudleya, or other native plant species would be required. Monitoring and control efforts for exotic plants shall continue according to the MSCP guidelines. Since the short-leaved dudleya is a state-listed plant, the project biologist in coordination with the City of San Diego and CDFG plant ecologists will conduct an annual review to assess the effectiveness of restoration and weeding efforts. The long-term management of the

translocation/restoration areas will be performed in accordance with other management activities presented in this Management Plan for Carmel Mountain and Del Mar Mesa Preserves.

### **6.3.3 Reports**

Annual reports will be submitted by September 30 of each year of the program, until the population reaches the success goals, at which time monitoring and reporting will decrease to once every five years for 20 years. Monitoring will then continue or end, based on the results of the 20 years of monitoring. The decision will be that of the Habitat Manager, based on the best science available at the time.

Reports will include the results of control efforts for exotic plants, native seed collection and seeding programs, photodocumentation of the restoration site from permanent locations taken annually, total counts of short-leaved dudleya actively growing each year, total counts of the number of flowering individuals, and annual assessments of the general health and condition of translocated short-leaved dudleya. Annual reports will be submitted to the City of San Diego and the CDFG Natural Heritage Division-Plant Conservation Program.

### **6.3.4 Restorationist Qualifications**

The restoration project biologist should have a minimum of five years of general restoration experience in coastal southern California and a minimum of three years of experience with the monitoring, propagation, translocation of short-leaved dudleya or closely related species. The project biologist should be able to demonstrate an understanding of the special growing requirements of short-leaved dudleya as they relate to the restoration and enhancement of this state listed endangered species.



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## **APPENDIX 6**

### **Vernal Pool Enhancement and Restoration Plan for the Carmel Mountain and Del Mar Mesa Preserves**

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Vernal Pool  
Enhancement and  
Restoration Plan for the  
Carmel Mountain and  
Del Mar Mesa  
Preserves, San Diego,  
California

Prepared by

Mark Dodero, Biologist

Bobbie Stephenson, Biologist

October 2005

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# 1.0 San Diego Mesa Hardpan Vernal Pools

## 1.1 Introduction

San Diego mesa hardpan vernal pools are shallow, isolated, ephemeral wetlands. The micro-topography surrounding vernal pools often consists of small mima mounds or hummocks. Vernal pools fill with water during winter rains and the water evaporates after the rains cease. Plants in vernal pools may be aquatic or may germinate following the drying of the pool. San Diego Mesa hardpan vernal pools have a characteristic suite of plant and animal species. Hardpan vernal pools are primarily found north of Otay Mesa (Holland 1986). Vernal pools are considered to be sensitive habitat by local, state, and federal governments, and it is estimated that over 95 percent of the vernal pool habitat in San Diego County has been destroyed (Bauder 1986).

## 1.2 Recovery Criteria and Goals

### 1.2.1 USFWS Recovery Criteria for San Diego Mesa Hardpan Vernal Pools

The Recovery Plan for Vernal Pools of Southern California (USFWS 1998) describes actions USFWS believes are needed to recover or protect the federally listed species that occur in vernal pools. The Recovery Plan addresses three listed vernal pool species that occur within the Carmel Mountain or the Del Mar Mesa Preserve: San Diego fairy shrimp (*Branchinecta sandiegonensis*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), and San Diego mesa mint (*Pogogyne abramsii*).

The criteria and goal of the Recovery Plan is to increase and stabilize the populations of these species so they can be downlisted from endangered to threatened. Population trends must be shown to be stable or increasing for a minimum of 10 consecutive years prior to USFWS considering the reclassification of the listed species. Monitoring should continue for a period of at least 10 years following reclassification to ensure population stability.

This management plan addresses three actions identified by USFWS as being needed to move the populations toward recovery:

- a. Conduct surveys and research essential to the conservation of these species (described on p. 69 of the Recovery Plan),

- b. Where necessary, reestablish vernal pool habitat to the historical structure and composition to increase genetic diversity and population stability (described on p. 71 of the Recovery Plan), and
- c. Manage and monitor habitat and listed species (described on p. 72 of the Recovery Plan).

As identified in the Recovery Plan, this Vernal Pool Habitat Restoration section of this Management Plan addresses the reestablishment of the physical and biological characteristics of vernal pool habitat such as topography, hydrology, soil properties, water quality, nutrient cycling, species diversity, and species interactions to what they were prior to disturbance.

### **1.2.2 Goals of Vernal Pool Restoration and Enhancement Program on the Carmel Mountain and Del Mar Mesa Preserves**

The restoration plans presented here for vernal pools on Carmel Mountain and Del Mar Mesa are conceptual. Additional detailed information should be gathered prior to implementation of any restoration activities for vernal pools including conducting focused surveys for listed fairy shrimp and listed and sensitive vernal pool plants. In addition, detailed topographic information should be gathered for each proposed restoration area and this data should be used to create a grading plan for implementation. Sensitive species survey data and topographic information will be included in a detailed restoration plan to be prepared for each site and approved by the wildlife agencies and land managers prior to implementation.

The goals of this Plan are to:

- a. Preserve, protect, and restore vernal pool habitat in the Carmel Mountain and Del Mar Mesa Preserves.
- b. Restore natural vernal pool functions and values in degraded and damaged pools.
- c. Minimize and try to eliminate vehicle, horse, and foot traffic disturbance of vernal pool habitat.
- d. Maintain and expand self-sustaining populations of vernal pool plant and animal species including listed and sensitive taxa as appropriate within the Carmel Mountain and Del Mar Preserves to ensure their long-term existence.
- e. Restore the associated disturbed upland habitat around the vernal pools within the Carmel Mountain and Del Mar Mesa Preserves to reduce weed invasion into the vernal pools.

To successfully attain the goals outlined above, the following management actions must be implemented:

- When possible, reroute foot, bike, and horse trails around existing vernal pool habitat areas.
- Close and restore roads that bisect vernal pool habitat in locations that are not part of the designated recreational trails system or roads that provide access routes for SDG&E and private inholdings.
- Erect wooden fences and repair existing barriers to discourage off-trail recreational travel.
- Recontour depressions to a more natural shape in roads and trails that are not part of the designated trail system.
- Repair tire ruts with hand tools in areas where repair activities will not adversely affect existing sensitive species or adjacent microbiotic crusts.
- Collect 5 percent or less of the seed crop from the Carmel Mountain and Del Mar Mesa vernal pool plant species for redistribution into restored pools.
- Use collected seed to inoculate restored pools with appropriate vernal pool flora.
- Control exotic plants through hand removal from pool basins and control weeds in surrounding uplands.

## 2.0 Vernal Pool Resources on the Carmel Mountain Preserve

Approximately 93 vernal pool depressions and seeps have been mapped on Carmel Mountain. Vernal pools mapping for this plan was provided by the City of San Diego and revised in part by RECON (Figures A6-1a and A6-1b). Vernal pools and seeps on the Torrey Surf property were mapped by Helix Environmental Inc. The majority of the pools are located in the southwestern portion of the mesa top (see Figures A6-1a and A6-1b).

Mima mound topography typical of other vernal pool areas in San Diego County does not exist on Carmel Mountain. The vernal pools are depressions on the mesa top. Generally, the vernal pools are in openings of the surrounding southern maritime chaparral and adjacent to openings around mesic meadows, seeps, and ashy spike-moss-dominated areas (see Figures A6-1a and A6-1b).



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Image Source: 2001 Aerial Fotobank (flown September 2001)

MATCHLINE  
SEE MAP 2



Carmel Mountain Preserve



Private lands

Vernal pools



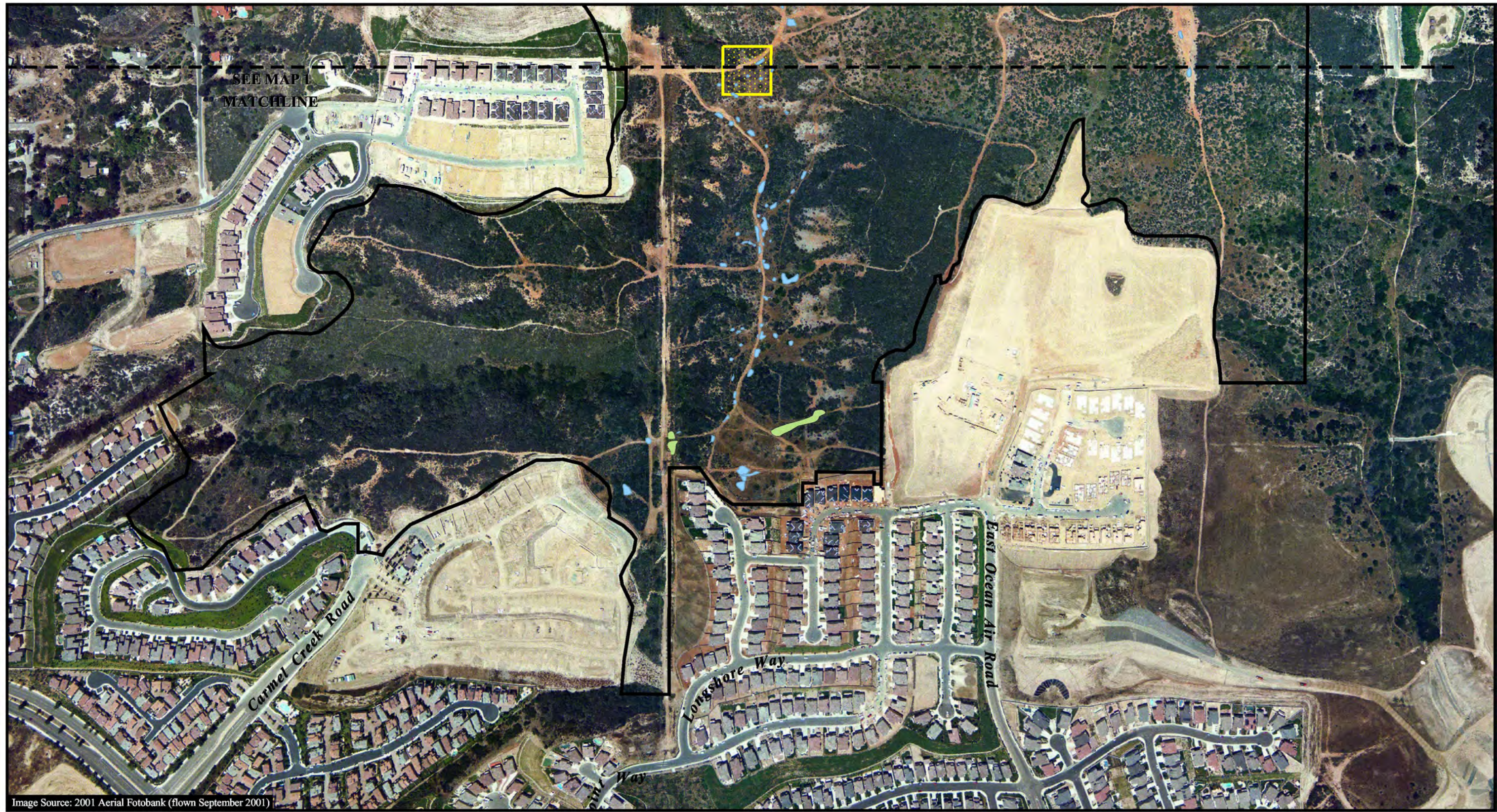
Source: City of San Diego  
revised in part by RECCN (2001/2002)



0 Feet 400

**FIGURE A6-1a**  
**Vernal Pool Locations**  
**on Carmel Mountain Preserve**  
**(Map 1)**

*BLANK BACK OF FIGURE A6-1a*




SEE MAP 1  
MATCHLINE

Carmel Creek Road


Longshore Way


East Ocean Air Road

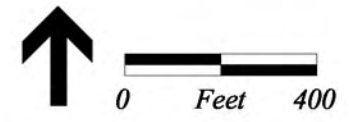
Image Source: 2001 Aerial Fotobank (flown September 2001)

 Carmel Mountain Preserve

 Private lands

Vernal pools  
 Source: City of San Diego, revised in part by RECCN (2001/2002)

Seeps  
 Source: City of San Diego, Helix Environmental Inc., revised in part by RECCN (2002)



**FIGURE A6-1b**  
**Vernal Pool Locations**  
**on Carmel Mountain Preserve**  
**(Map 2)**

*BLANK BACK OF FIGURE A6-1b*

## 2.1 Existing Conditions

### 2.1.1 Disturbances

The vernal pools of Carmel Mountain have suffered different levels of disturbance from road grading and vehicle traffic particularly damaging during wet periods, and creation of new trails by mountain bikes and equestrian use. Levels of damage to the pools range from relatively undisturbed (a few pools) to the other extreme where pools have been virtually eliminated by road grading and trail use. The relatively undisturbed pools are located away from roads and trails in openings in the maritime chaparral vegetation. Other pools have single or multiple sets of tire tracks, but otherwise still support vernal pool indicator species such as woolly marbles (*Psilocarphus brevissimus*). In some cases, depressions along the graded roads that have been impacted by vehicle traffic each wet season, have no or few vernal pool plant indicator species, although the areas have the necessary hydrology to support those indicator species. Western spadefoot (*Spea hammondi*) tadpoles have been observed in depressions located in roads, and the tadpoles have been impacted in the past by unauthorized vehicle traffic. In some cases, very small remnant populations of woolly marbles are found in some of these the road depressions. Water starwort can be found growing in and along the edges of the road where water seeps along the hardpan from the somewhat higher elevations on Carmel Mountain.

### 2.1.2 Hydrology

The maritime chaparral areas on the mesa top are gently tilted to the west and south and these higher areas act as water catchment areas during the wet season. This rainwater infiltrates the topsoil and then eventually reaches the impervious hardpan. Rainwater appears to seep and percolate downhill along the upper surface of the hardpan as subsurface flows into the pools located in flatter portions of the mesa near the southwestern and southern periphery of the cemented sandstone strata. These seeps often stay wet well after rainfall has stopped. This subsurface flow may increase the amount of ponding in the some of the pools beyond that apparent from the visible surface watershed of individual pools.

Roads and trails that have removed all of the topsoil may have the effect of redirecting or channeling flow in unnatural patterns so that some pools may not be ponding much as they once did. Depressions located in graded roads may pond for longer periods because the road grading has either created or deepened existing depressions. In addition the compacted roads possibly direct both more surface flows into these areas than would occur naturally.

### 2.1.3 Vernal Pool Plant Species

Species dominating these pools are woolly marbles, stone-crop (*Crassula aquatica*), flowering quillwort (*Lilaea scilloides*), and water starwort (*Callitriche marginata*) (

Table A6-1). Less common vernal pool species include the Orcutt's brodiaea, chaffweed (*Centunculus minimus*), waterwort (*Elatine brachysperma*), and California adder's-tongue (*Ophioglossum californicum*).

Additional general wetland species present on Carmel Mountain include pale spike-rush (*Eleocharis macrostachya*), mariposa rush (*Juncus dubius*), and toad rush (*J. bufonius*). Areas that can best be described as mesic meadows and seeps, dominated by mariposa rush and blue-eyed grass (*Sisyrinchium bellum*), transition into vernal pool habitat and the herbaceous communities dominated by ashy spike-moss, shooting stars, dot-seed plantain, popcorn flower, wavy-leaved soap plant, and other herbaceous species as well as southern maritime chaparral vegetation.

No listed vernal pool plant species are historically known from Carmel Mountain. Redding soils, which are known to support populations of San Diego mesa mint in other coastal mesas in central San Diego, are limited in extent on Carmel Mountain and are located to the southeast of the main vernal pool complex on the western and central portions of the mesa top. The primary area of vernal pools on Carmel Mountain are found on Carlsbad gravelly loam soils located above the impermeable sandstone terrace. Like San Diego mesa mint, San Diego button celery and spreading navarretia are not known to have been present historically on Carmel Mountain.

Sensitive animal species associated with vernal pool habitat on Carmel Mountain include the listed San Diego fairy shrimp discussed below, as well as the two-striped garter snake (*Thamnophis hammondi*) and western spadefoot.

#### **2.1.4 Endangered Vernal Pool Species on Carmel Mountain**

The San Diego fairy shrimp is federally listed as endangered and is covered by the City of San Diego's Multiple Species Conservation Program (MSCP; 1995). This species is restricted to vernal pools in coastal southern California and south to northwestern Baja California, Mexico (USFWS 2000). The life cycle of fairy shrimp is relatively simple, with larvae hatching out of dormant cysts after being covered with water for a prescribed period of time, developing into adults, and mating and laying eggs before the pool dries. The development time is influenced both by the water temperature and the species-specific responses to environmental cues including water chemistry. San Diego fairy shrimp are found in the spring in vernal pools and other ponded areas that are generally

**TABLE A6-1  
VERNAL POOL PLANT INDICATOR SPECIES FOR THE CARMEL MOUNTAIN PRESERVE**

Plant Species	Type
Orcutt's brodiaea <i>Brodiaea orcuttii</i>	Annual, vernal pools and foothill springs
Water-starwort <i>Callitriche marginata</i>	Annual, vernal pools and moist openings
Chaffweed <i>Centunculus minimus</i>	Annual, vernal pool specialist in region
Stone-crop <i>Crassula aquatica</i>	Annual, vernal pools and ephemeral wetlands
Waterwort <i>Elatine sp.</i>	Annual, ephemeral wetlands, muddy shores
Pale spikerush <i>Eleocharis macrostachya</i>	Perennial, ephemeral wetlands
Mariposa rush <i>Juncus dubius</i>	Perennial, wet places
Toad rush <i>Juncus bufonius</i>	Annual, weedy native of ephemeral wetlands
Rush <i>Juncus triformes</i>	Annual, vernal pools and ephemeral wetlands
Flowering quillwort <i>Lilaea scilloides</i>	Annual, ephemeral wetlands, streams & lake edges
Grass poly <i>Lythrum hyssopifolia</i>	Annual, wet habitats
Water chickweed <i>Montia fontana</i>	Annual, vernal pool specialist in region
California adder's tongue <i>Ophioglossum californicum</i>	Annual, vernal pools and chaparral
Hooked navarretia <i>Navarretia hamata</i>	Annual, vernal pool specialist in region
Lemon canary grass <i>Phalaris lemmonii</i>	Annual, moist areas
Adobe allocarya <i>Plagiobothrys acanthocarpus</i>	Annual, shallow vernal pools and moist openings
Plantain <i>Plantago elongata</i>	Annual, vernal pools, saline and alkaline places
Dot-seed plantain <i>Plantago erecta</i>	Annual, shallow vernal pools and moist openings
Dwarf woolly-heads <i>Psilocarphus brevissimus</i>	Annual, vernal pool specialist
Woolly-heads <i>Psilocarphus tenellus</i>	Annual, vernal pool specialist
Bladder clover <i>Trifolium depaupertum</i> var. <i>amplectans</i>	Annual, wet meadows, open alkaline or spring-moist heavy soils

SOURCE: RECON 1994 and Bauder and McMillan 1996.

NOTE: Vascular plant species known to occupy natural vernal pools in the Carmel Mountain region. Species identified as "vernal pool specialists" are found almost exclusively in natural vernal pools in the region.



less than 30 centimeters deep. This species takes between 3 and 8 days to hatch and development to the adult stage takes between 7 and 20 days.

### 3.0 Vernal Pool Resources on the Del Mar Mesa Preserve



**Photograph 6-1:** Vernal Pool on the Portion of Del Mar Mesa Preserve Owned by CDFG

Vernal pools are shallow, isolated, ephemeral wetlands. The microrelief surrounding vernal pools typically consists of small mima mounds or hummocks. Vernal pools fill with water during winter rains and the water evaporates after the rains cease. Plants in vernal pools may be aquatic or may germinate following the drying of the pool. San Diego mesa hardpan vernal pools have a characteristic suite of plant and animal species. Hardpan vernal pools are primarily found north of Otay Mesa (Holland 1986). Vernal pools are considered to be sensitive

habitat by local, state, and federal governments, and it is estimated that over 95 percent of the vernal pool habitat in San Diego County has been destroyed.

Sensitive plant species occurring in the vernal pools on Del Mar Mesa Preserve include San Diego button celery and San Diego Mesa mint. Sensitive animal species within vernal pool habitat on the Preserve include the two-striped garter snake (*Thamnophis hammondi*), western spadefoot (*Spea hammondi*), and San Diego fairy shrimp. Other sensitive species typically associated with vernal pools include California adder's-tongue, Orcutt's brodiaea (*Brodiaea orcuttii*), and San Diego goldenstar (*Muilla clevelandii*).



**Photograph 6-2:** Vernal Pool on Property Owned by CDFG on Del Mar Mesa Preserve

Numerous vernal pools are on Del Mar Mesa Preserve within areas mapped as chamise chaparral and southern mixed chaparral. Species dominating these pools are water starwort (*Callitriche marginata*), stone-crop (*Crassula aquatica*), woolly marbles (*Psilocarphus brevissimus*), and grass poly (*Lythrum hyssopifolium*). Some of the larger and deeper pools are distinguished by spikerush (*Eleocharis* sp.). Smaller populations of California adder's tongue are present in some pools, and San Diego button-celery is common in many of the pools. San Diego mesa-mint is found in some of the pools as well. Downingia (*Downingia cuspidata*) and little mousetail are present in the southeastern pool complex.

## 4.0 Vernal Pool Restoration Program for the Carmel Mountain Preserve

Lands formerly supporting San Diego mesa hardpan vernal pool habitat, eliminated by topographic disturbance and the loss of hydrologic ponding characteristics, have the potential to be restored. The vernal pools to be restored on Carmel Mountain will support vernal pool indicator species historically known to be present. Plants on the list of vernal pool indicator species (see Table A6-1) should be considered for reintroduction into restored vernal pools on Carmel Mountain.

Since the listed vernal pool plant species are not known to have occurred historically on Carmel Mountain no listed plant species are proposed for introduction to Carmel Mountain. Restored pools that do not currently support the federally listed San Diego fairy shrimp could be inoculated with shrimp cysts after reconstruction with USFWS approval.

Virtually all vernal pools on Carmel Mountain have been disturbed and these pools would all benefit from the proposed restoration program. The pools with the highest priority for restoration activities are located in and adjacent to roads and trails that are not part of the proposed trail system for Carmel Mountain. Restoration of pools and depressions present in and adjacent to roads and trails that are part of the proposed trail system have a lower priority for restoration due to potential conflicts with recreational uses and the necessity to maintain access routes for SDG&E and to private inholdings. Restoration of vernal pool resources in the SDG&E access roads would only be done if these roads are no longer needed by SDG&E or by private landowners to access their property.

The potential vernal pool restoration sites on Carmel Mountain are located in the southwest and southern portions of the Carmel Mountain Preserve (Figures 6-1a-b). Each mapped pool is numbered in these figures and Table A6-2 provides corresponding recommendations for potential vernal pool restoration activities for each numbered pool. Figures 6-2a-f also depict potential trail system rerouting possibilities around vernal pools. This proposed rerouting is intended to minimize impacts of recreational uses to sensitive vernal pool resources. Only trails that cross through vernal pools not located in the SDG&E and private landowner access roads are proposed for rerouting.

**TABLE A6-2  
POTENTIAL VERNAL POOL RESTORATION  
RECOMMENDATIONS FOR THE CARMEL MOUNTAIN PRESERVE**

Vernal Pool No.	Problems/Comments/ Recommendations	Sensitive Species Present	Hand Tools	Heavy Equipment
1	Vernal pool inside road, recontour. *Revised mapping by RECON. On SDG&E access road.			√
2	Vernal pool inside road, recontour. *Revised mapping by RECON. On SDG&E access road.			√
3	Vernal pool inside road, recontour. *Revised mapping by RECON. On SDG&E access road.	<i>Branchinecta</i>		√
4	*Vernal pool was not located, as mapped by City of San Diego. On SDG&E access road.			√
5	Close the road, weed. *Revised mapping by RECON.			√
6	Vernal Pool inside road. Close the road, recontour. *Revised mapping by RECON.			√
7	*Vernal Pool was not located, as mapped by City of San Diego.			
8	Vernal pool inside road, recontour and weed. *Revised mapping by RECON.			√
9	Recontour and weed. *Revised mapping by RECON.		√	
10	Recontour and weed, many road ruts in the pool. *Revised mapping by RECON.		√	√
11	Vernal pool in side road, recontour. Currently on private land, and SDG&E access road.			√
12	Weeding is needed.			√
13	Weeding is needed. *Currently on private land.			
14	Weeding is needed.			
15	Weeding is needed. *Currently on private land.			
16	Weed and recontour. *Currently on private land.		√	
17	Weed and recontour. *Currently on private land.		√	
18	Vernal pool inside road, recontour and weed. *Revised mapping by RECON.			√
19	Vernal pool inside road, recontour and weed. *Revised mapping by RECON.			√

**TABLE A6-2  
POTENTIAL VERNAL POOL RESTORATION  
RECOMMENDATIONS FOR THE CARMEL MOUNTAIN PRESERVE  
(continued)**

Vernal Pool No.	Problems/Comments/ Recommendations	Sensitive Species Present	Hand Tools	Heavy Equipment
20	Weed and recontour, tire tracks in pool.		√	
21	Weed and recontour, tire tracks in pool.			√
22	Close the trail, and weed. Remove nearby trash. *Revised mapping by RECON.			
23	Weeding. *Revised mapping by RECON.			
24	Close the foot trail, and weed. *Revised mapping by RECON.			
25	Weed and recontour. Gopher activity present.		√	
26	Weed and recontour. Gopher activity present.		√	
27	Weed and recontour.		√	
28	Weed and recontour, tire tracks in pool.		√	
29	Weed and remove nearby trash.			
30	Vernal pool inside road, recontour. *Revised mapping by RECON.			√
31	Vernal pool inside road, recontour and weed. *Revised mapping by RECON.			√
32	Weed and recontour.		√	
33	Weed and recontour.		√	
34	Weed and recontour.		√	
35	Weed and recontour.		√	
36	Weed and recontour.		√	
37	Close the foot trail, and weed.			
38	Weed and recontour. *Revised mapping by RECON.			√
39	Weed and recontour.		√	
40	Weed.			
41	Close trail and weed.			
42	Weed. *Revised mapping by RECON.		√	
43	Close trail and weed. Heavy gopher activity.			
44	Close trail and weed. Heavy gopher activity.			

**TABLE A6-2  
POTENTIAL VERNAL POOL RESTORATION  
RECOMMENDATIONS FOR THE CARMEL MOUNTAIN PRESERVE  
(continued)**

Vernal Pool No.	Problems/Comments/ Recommendations	Sensitive Species Present	Hand Tools	Heavy Equipment
45	Weed. Vernal pool within large meadow of <i>Juncus</i> sp, <i>Hemizonia fasciculatum</i> , and <i>Sysrinchium bellum</i> .			
46	Weed and recontour. Vernal pool within large meadow of <i>Juncus</i> sp, <i>Hemizonia fasciculatum</i> , and <i>Sysrinchium bellum</i> .		√	
47	Weed. Vernal pool next to road.			
48	Weed. *Revised mapping by RECON.			
49	Vernal pool in road, recontour.			√
50	Vernal pool in road, recontour. *Revised mapping by RECON.			√
51	Weed within the vernal pool.			
52	Weed within the vernal pool.			
53	*Unable to relocate vernal pool.			
54	*Unable to relocate vernal pool.			
55	Weeding.			
56	*Unable to relocate vernal pool.			
57	Vernal pool in road, recontour. *Revised mapping by RECON.			√
58	Vernal pool in road, recontour. *Revised mapping by RECON. Trim shrubs east side of pool.			√
59	Vernal pool in road, recontour. *Revised mapping by RECON. Trim shrubs west side of pool.			√
60	No restoration.			
61	Recontour. *Revised mapping by RECON.			√
62	Close trail. *Revised mapping by RECON.			√
63	Vernal pool in trail. *Revised mapping by RECON.			
64	Seep. *Revised mapping by RECON.			
65	Seep. *Revised mapping by RECON.			
66	Vernal pool in road, recontour. *Revised mapping by RECON.			√
67	Bulldozed. No longer intact.			
68	Recontour. *Revised mapping by RECON.			√

**TABLE A6-2  
POTENTIAL VERNAL POOL RESTORATION  
RECOMMENDATIONS FOR THE CARMEL MOUNTAIN PRESERVE  
(continued)**

Vernal Pool No.	Problems/Comments/ Recommendations	Sensitive Species Present	Hand Tools	Heavy Equipment
68A	Recontour. *Revised mapping by RECON.			√
68B	Recontour. *Revised mapping by RECON.			√
69	Recontour. *Revised mapping by RECON.		√	
70	Weed pool.			
71	Close trail. Recontour and weed.			√
72	Close trail. Recontour and weed.			√
73	Close trail. Recontour and weed.			√
74	Recontour and weed, tire tracks present.		√	
75	Recontour and weed, tire tracks present. *Revised mapping by RECON.		√	
76	Recontour. *Revised mapping by RECON.			√
76A	Recontour. *Revised mapping by RECON.	<i>Branchinecta</i>		√
77	Recontour. *Revised mapping by RECON.	<i>Branchinecta</i>		√
78	Recontour and weed. *Mapped by RECON.		√	
79	Recontour and weed, tire ruts present. *Mapped by RECON.		√	
80	Recontour and weed. *Mapped by RECON.		√	
81	Recontour and weed. *Mapped by RECON.		√	
82	Recontour and weed. *Mapped by RECON.		√	
83	Seep. *Mapped by Helix Environmental Inc.			
84	Not relocated. *Mapped by Helix Environmental Inc.			
85	Not relocated. *Mapped by Helix Environmental Inc. Revised by RECON, smaller pools combined into one.			
86	Not relocated. *Mapped by Helix Environmental Inc.			




**TABLE A6-2  
POTENTIAL VERNAL POOL RESTORATION  
RECOMMENDATIONS FOR THE CARMEL MOUNTAIN PRESERVE  
(continued)**





Vernal Pool No.	Problems/Comments/ Recommendations	Sensitive Species Present	Hand Tools	Heavy Equipment
87	Not relocated. *Mapped by Helix Environmental Inc.			
88	Not relocated. *Mapped by Helix Environmental Inc.			
89	Not relocated. *Mapped by Helix Environmental Inc. Revised by RECON, smaller pools combined into one.			
90	Not relocated. *Mapped by Helix Environmental Inc.			
91	Not relocated. *Mapped by Helix Environmental Inc.			
92	Not relocated. *Mapped by Helix Environmental Inc. Revised by RECON, smaller pools combined into one.			
93	Not relocated. *Mapped by Helix Environmental Inc.			



\*Mapped vernal pool locations have been provided by the City of San Diego, RECON, and Helix Environmental Inc. Vernal Pools that have been revised, remapped, or added by RECON have been denoted. Restoration on those vernal pools which are located on private land would occur pending land acquisition. Restoration of vernal pools located on SDG&E access roads would occur if they are no longer in use, or if other access roads can be used on the Preserve.



Image Source: 2001 Aerial Fotobank (flown September 2001)

-  Carmel Mountain Preserve
-  Proposed trail
-  SDG&E access road

-  Vernal pools
-  Source: City of San Diego, revised in part by RECON (2001/2002)
-  Proposed fencing
-  Proposed gate for SDG&E access









**FIGURE A6-2a**  
**Potential Trail Rerouting**  
**Around Vernal Pools**  
**with the Potential for Restoration**  
**on Carmel Mountain Preserve (Map 1)**



*BLANK BACK OF FIGURE A6-2a*



**FIGURE A6-2b**  
**Potential Trail Rerouting**  
**Around Vernal Pools**  
**with the Potential for Restoration**  
**on Carmel Mountain Preserve (Map 2)**

	Carmel Mountain Preserve		Vernal pools
	Proposed trail		Vernal pools on private land (Restoration pending land acquisition)
	SDG&E access road		Proposed fencing
			Proposed gate for SDG&E access

0 Feet 60

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*BLANK BACK OF FIGURE A6-2b*



Carmel Mountain Preserve



Proposed trail

Vernal pools

Source: City of San Diego, revised in part by RECON (2001/2002)

Seeps

Source: City of San Diego, Helix Environmental Inc., revised in part by RECON (2002)



Proposed fencing






0 Feet 60



**FIGURE A6-2c**  
**Potential Trail Rerouting**  
**Around Vernal Pools**  
**with the Potential for Restoration**  
**on Carmel Mountain Preserve (Map 3)**


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



Image Source: 2001 Aerial Fotobank (flown September 2001)

 Carmel Mountain Preserve  
 Proposed trail  
 SDG&E access road

Vernal pools  
 Source: City of San Diego, revised in part by RECON (2001/2002)








Seeps  
 Source: City of San Diego, Helix Environmental Inc., revised in part by RECON (2002)

 Proposed fencing

**FIGURE A6-2d**  
**Potential Trail Rerouting Around**  
**Vernal Pools with the Potential for Restoration**  
**on Carmel Mountain Preserve (Map 4)**

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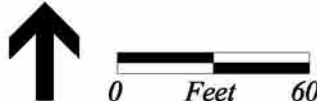
 	 Carmel Mountain Preserve	<b>Vernal pools</b>  Source: City of San Diego, revised in part by RECON (2001/2002)	<b>FIGURE A6-2e</b> <b>Potential Trail Rerouting Around</b> <b>Vernal Pools with the Potential for Restoration</b> <b>on Carmel Mountain Preserve (Map 5)</b>
	 Proposed trail  SDG&E access road	 Proposed fencing	








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Image Source: 2001 Aerial Fotobank (flown September 2001)



 Carmel Mountain Preserve  
 Proposed trail  
 SDG&E access road

 Vernal pools  
 Source: City of San Diego, revised in part by RECON (2001/2002)  
 Proposed fencing

**FIGURE A6-2f**  
**Potential Trail Rerouting Around**  
**Vernal Pools with the Potential for Restoration**  
**on Carmel Mountain Preserve (Map 6)**

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Restoration activities that would be beneficial to individual vernal pools are briefly described in Table A6-2 including recommended weeding activities and topographic recontouring, if this restoration activity would benefit and restore more natural hydrologic conditions. The recommendation provided in Table A6-2 should be reevaluated at such time that a detailed restoration plan is prepared for each restoration site. In a few cases, previously mapped pools could not be relocated with certainty and this fact is also noted in Table A6-2.

Additional details and recommendations regarding establishment of vernal pool target species maintenance and monitoring schedules Implementation

## 5.0 Vernal Pool Resources on Del Mar Mesa

On Del Mar Mesa vernal pools occur in openings in the surrounding chaparral vegetation including chamise chaparral, southern mixed chaparral and scrub oak chaparral communities. Table A6-3 list vernal pool indicator species present in the area. Detailed vernal pool and depression mapping for restoration purposes was prepared for pools located in existing roads. Existing vernal pools located away from roads have not previously been mapped and mapping all the pools on Del Mar Mesa was beyond the scope of this Plan.

Intact vernal and relatively undisturbed vernal pools located and mima mound topography is associated with vernal pools in portions of Del Mar Mesa, but the mounds are not as readily apparent as in other portions of the County due to the dense upland vegetation particularly in the scrub oak community. Vernal pools on Del Mar mesa are known to support State and Federally listed pool species including San Diego mesa mint, San Diego button celery and spreading navarretia and another sensitive vernal pool species, little mousetail (*Myosurus minimus* var. *apus*).

Other sensitive species typically associated with vernal pools on Del Mar mesa include California adder's-tongue, Orcutt's brodiaea, and San Diego goldenstar. Sensitive animal species associated with vernal pool habitat on Del mar mesa include the two-striped garter snake, western spadefoot, and the federally endangered San Diego fairy shrimp, discussed below.

There are numerous vernal pools present on mesas within the eastern third of the Del Mar Mesa Preserve and these vernal pools have a better developed vernal pool flora than the Carmel Mountain pools. Species dominating these pools are San Diego button celery, San Diego mesa mint, water starwort, stone-crop, and woolly marbles. Some of the larger and deeper pools are distinguished by spikerush (*Eleocharus* sp.). Smaller

**TABLE A6-3**  
**VERNAL POOL PLANT INDICATOR SPECIES FOR DEL MAR MESA PRESERVE**

Plant Species	Type
Orcutt's brodiaea <i>Brodiaea orcuttii</i>	Annual; vernal pools and foothill springs
Water-starwort <i>Callitriche marginata</i>	Annual; vernal pools and moist openings
Chaffweed <i>Centunculus minimus</i>	Annual; vernal pool specialist in region
Stone-crop <i>Crassula aquatica</i>	Annual; vernal pools and ephemeral wetlands
Annual hairgrass <i>Deschampsia danthonioides</i>	Annual; vernal pool specialist in region
Downingia <i>Downingia cuspidata</i>	Annual; vernal pool specialist
Waterwort <i>Elatine brachysperma</i>	Annual; ephemeral wetlands, muddy shores
Waterwort <i>Elatine californica</i>	Annual; ephemeral wetlands, muddy shores
Slender spikerush <i>Eleocharis acicularis</i> var. <i>acicularis</i>	Perennial; ephemeral wetlands
Pale spikerush <i>Eleocharis macrostachya</i>	Perennial; ephemeral wetlands
San Diego button celery <i>Eryngium aristulatum</i> var. <i>parishii</i>	Perennial; vernal pool specialist in region
Howell quillwort <i>Isoetes howellii</i>	Annual; vernal pool specialist
Orcutt quillwort <i>Isoetes orcuttii</i>	Annual; vernal pool specialist
Toad rush <i>Juncus bufonius</i>	Annual; weedy native of ephemeral wetlands
Flowering quillwort <i>Lilaea scilloides</i>	Annual; ephemeral wetlands, streams & lake edges
Grass poly <i>Lythrum hyssopifolia</i>	Annual; wet habitats
Candy-flower <i>Montia fontana</i>	Annual; vernal pool specialist in region
Little mouse tails <i>Myosurus minimus</i>	Annual; vernal pool specialist in region
Spreading navarretia <i>Navarretia fossalis</i>	Annual; vernal pool specialist in region
Hooked navarretia <i>Navarretia hamata</i>	Annual; vernal pool specialist in region
Lemon canary grass <i>Phalaris lemmonii</i>	Annual; moist areas
Pill-wort <i>Pilularia americana</i>	Perennial; ephemeral wetlands
Adobe allocarya <i>Plagiobothrys acanthocarpus</i>	Annual; shallow vernal pools and moist openings

**TABLE A6-3  
VERNAL POOL PLANT INDICATOR SPECIES FOR DEL MAR MESA PRESERVE  
(continued)**

Plant Species	Type
Plantain <i>Plantago elongata</i>	Annual; vernal pools, saline and alkaline places
Dot-seed plantain <i>Plantago erecta</i>	Annual; shallow vernal pools and moist openings
San Diego Mesa mint <i>Pogogyne abramsii</i>	Annual; vernal pool specialist
Dwarf woolly-heads <i>Psilocarphus brevissimus</i>	Annual; vernal pool specialist
Woolly-heads <i>Psilocarphus tenellus</i>	Annual; vernal pool specialist
Bladder clover <i>Trifolium depaupertaum</i> var. <i>amplectans</i>	Annual; wet meadows, open alkaline or spring-moist heavy soils

SOURCE: Bauder and McMillan 1996.

NOTE: Vascular plant species known to occupy natural vernal pools in the Del Mar Mesa Preserve region. Species identified as “vernal pool specialists” are found almost exclusively in natural vernal pools in the region.

populations of California adder's-tongue are present in some pools. *Downingia* (*Downingia cuspidata*) and little mousetail are present in the southeastern pool complex.

## 5.1 Current Status of Vernal Pools on Del Mar Mesa

Numerous vernal pools occur on Del Mar mesa in several areas (see Figures 10-1a and 10-1b, and Figures 10-2 through 10-3a–d of the Carmel Mountain and Del Mar Preserves Resource Management Plan). Vernal pools located away from existing roads and trails in the chaparral vegetation are the least disturbed and weedy. A portion of the vernal pools on Del Mar Mesa have been damaged by road grading, off-road vehicle traffic, and creation of unauthorized access paths. Levels of damage to the pools ranges from pools that are undisturbed relatively to pools that have been nearly eliminated by past road grading and associated vehicle traffic. Pools that have been the most severely impacted are located in and adjacent to unauthorized access paths through the California Department of Fish and Game (CDFG) vernal pool preserve area and along the graded access roads west of the preserve. In some cases vernal pools along the graded roads have been bisected and formerly contiguous sections of pools are now divided by the SDG&E access road.

### 5.1.1 Endangered and Threatened Vernal Pool Species on Del Mar Mesa

The restored vernal pools will be designed to support San Diego Mesa mint, San Diego button celery, spreading navarretia, and other vernal pool indicator plant species. Table A6-3 lists vernal pool indicator species for Del Mar Mesa.

#### 5.1.1.1 San Diego Mesa Mint (*Pogogyne abramsii*)

San Diego mesa mint is a member of the Lamiaceae family. This annual herb flowers from April to June and is found only in vernal pools within San Diego County. This species is state and federally listed as endangered and is a CNPS *Inventory* (Skinner and Pavlik 1994) List 1B species. San Diego mesa mint is covered under the MSCP and is considered a narrow endemic species.

#### 5.1.1.2 San Diego Button Celery (*Eryngium aristulatum* var. *parishii*)

San Diego button-celery is a member of the parsley family (Apiaceae). This annual/perennial herb is federally listed as endangered, state listed as endangered, and a CNPS List 1B species. San Diego button celery was designated as a federally listed endangered species on August 3, 1993 (USFWS 1993). It is also a covered species in the MSCP. San Diego button-celery is an annual/perennial species restricted in distribution to Riverside County, San Diego County, and Baja California, Mexico, where it occurs in vernal pools. *Eryngium* is one of the few perennial species found in vernal pools. While the plant can reproduce clonally, it relies largely on seed

germination for successful reproduction. This species has become endangered from habitat loss and fragmentation over recent decades.

### **5.1.1.3 Spreading Navarretia (*Navarretia fossalis*)**

Spreading navarretia is a member of the phlox family (Polemoniaceae). This annual herb is federally listed as threatened, and a CNPS List 1B species. Spreading navarretia was designated as a federally listed threatened species on October 13, 1998 (USFWS 1998). It is also a covered species in the MSCP. Spreading navarretia is restricted in distribution to Riverside County, San Diego County, and Baja California, Mexico, where it occurs in vernal pools.

### **5.1.1.4 San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)**

The San Diego fairy shrimp is federally listed as endangered and is covered by the City of San Diego's MSCP (1995). This species is restricted to vernal pools in coastal southern California and south to northwestern Baja California, Mexico (USFWS 2000). The life cycle of fairy shrimp is relatively simple, with larvae hatching out of dormant cysts after being covered with water for a prescribed period of time, developing into adults, and mating and laying eggs before the pool dries. The development time is influenced both by the water temperature and the species-specific responses to environmental cues including water chemistry. San Diego fairy shrimp are found in the spring in vernal pools and other ponded areas that are generally less than 30 centimeters deep. This species takes between 3 and 8 days to hatch and development to the adult stage takes between 7 and 20 days.

## **5.1.2 Proposed Vernal Pools Restoration Areas**

### **5.1.2.1 Vernal Pool Restoration Program for Del Mar Mesa**

Lands formerly supporting San Diego mesa hardpan vernal pool habitat, eliminated by topographic disturbance and the loss of hydrologic ponding characteristics, will be restored. The vernal pools to be restored on Del Mar mesa will support vernal pool indicator species historically known to be present. Plants on the list of vernal pool indicator species for Del Mar Mesa (see Table A6-3) should be considered for reintroduction into restored vernal pools on Del Mar Mesa.

The potential to re-expand populations San Diego Mesa mint, San Diego button celery, spreading navarretia and other vernal pool indicator plant species is high. Restored pools that do not currently support the federally listed San Diego fairy shrimp (*Branchinecta sandiegonensis*) could be inoculated with shrimp cysts after reconstruction with USFWS approval.



RECON has mapped 93 vernal pools and depressions within the unauthorized road/trail on CDFG land and the SDG&E access roads to the west (Figures A6-3a–h). The pools that should have the highest priority for restoration activities are located in the CDFG preserve along the unauthorized road/trail east-west that traverses the site.

On Del Mar Mesa Preserve, an unauthorized access path crosses the California Department of Transportation (Caltrans) vernal pool reserve and ends at the southeastern corner of the site. Many of the roads and trails bisect vernal pool habitat within the chaparral. Vernal pools are located alongside and in some cases within the roads throughout the Preserve. Deep depressions and road ruts have been made by vehicles in these areas during the wet seasons. The southeastern unauthorized road/trail traverses the fenced off vernal pool reserve and is recommended for future formal closure. Unauthorized trespass is the primary cause of disturbance in the CDFG preserve.

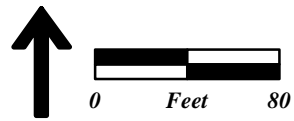
The portion of SDG&E access road that heads north through the preserve bisects vernal pools habitat. Restoration of pools in and adjacent to roads that are part of the proposed trail system are of lower priority for restoration due to the necessity to maintain access routes for SDG&E and to private inholdings. Table A6-4 lists the recommended restoration tasks for the 44 mapped depressions in the east-west path that traverses the CDFG vernal pool preserve and the approximately 44 additional depressions located in existing SDG&E access roads. It is important to note that impacts to vernal pools within the SDG&E access road that are due to SDG&E operations and maintenance activities are addressed in the SDG&E HCP. No restoration in these areas would occur without concurrence from SDG&E.

### **5.1.2.2 Past Vernal Pool Restoration Activities at Del Mar Mesa**

In 1986, 40 artificial vernal pools were created by Caltrans on Del Mar Mesa. This project was intended to mitigate for loss of San Diego mesa mint that was impacted by the construction of Highway 52. A detailed summary of the restoration activities performed as part of this Caltrans mitigation program can be found in Black and Zedler 1998.

### **5.1.2.3 Management of Existing Vernal Pools on Del Mar Mesa**

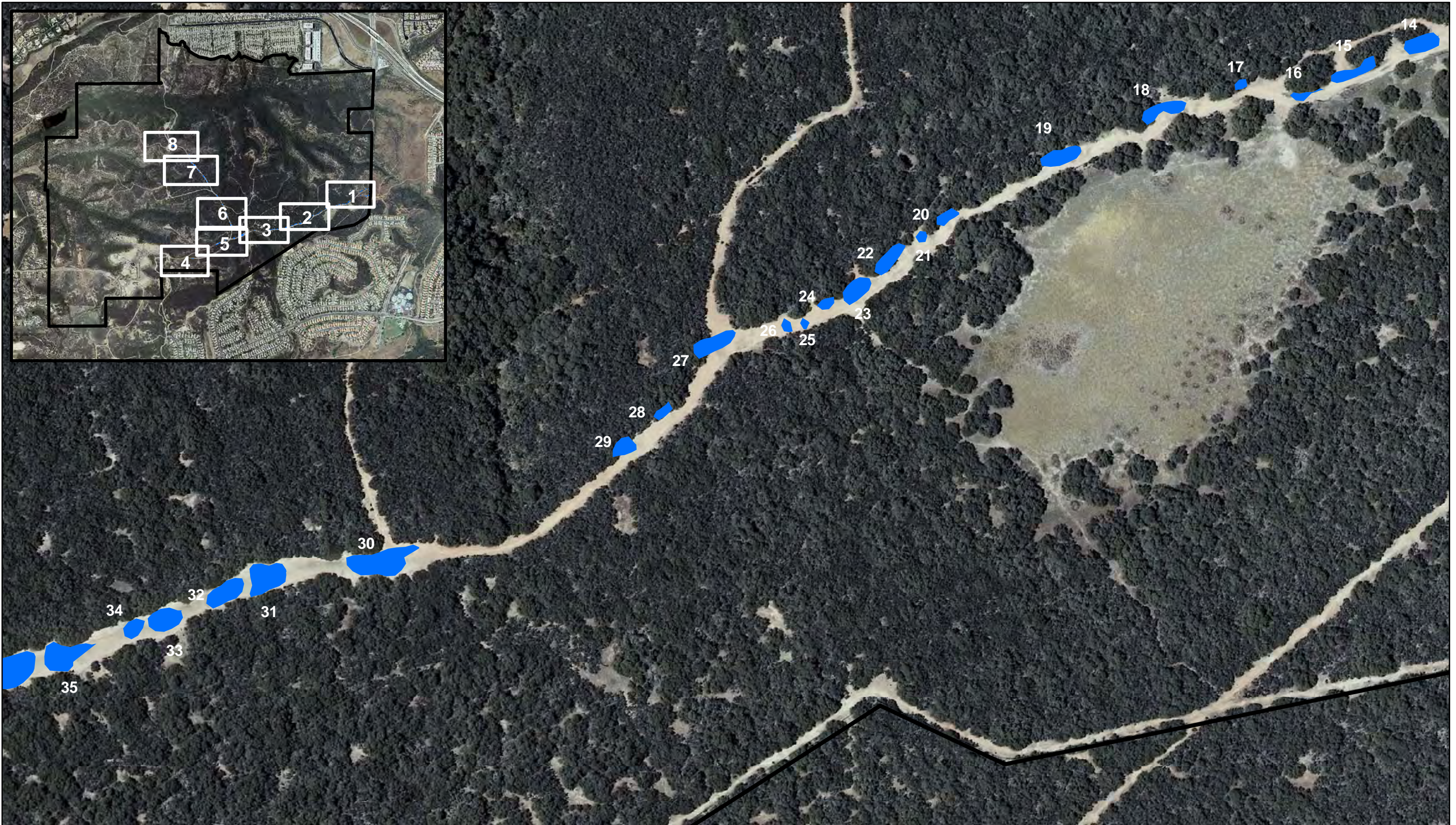
Long-term management of existing vernal pools not requiring restoration should focus on controlling recreational access and implementing the weeding program described later in this chapter. Pools adjacent to the graded roads west of CDFG preserve will require more intensive weeding efforts than pools located away from roads. The many undisturbed pools are currently relatively weed free and land managers will need to



 Del Mar Mesa Preserve  Potential Restoration Pools

**FIGURE A6-3a**  
**Mapped Vernal Pools**  
**with the Potential for Restoration**  
**on Del Mar Mesa Preserve (Map 1)**

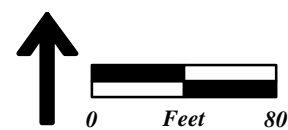
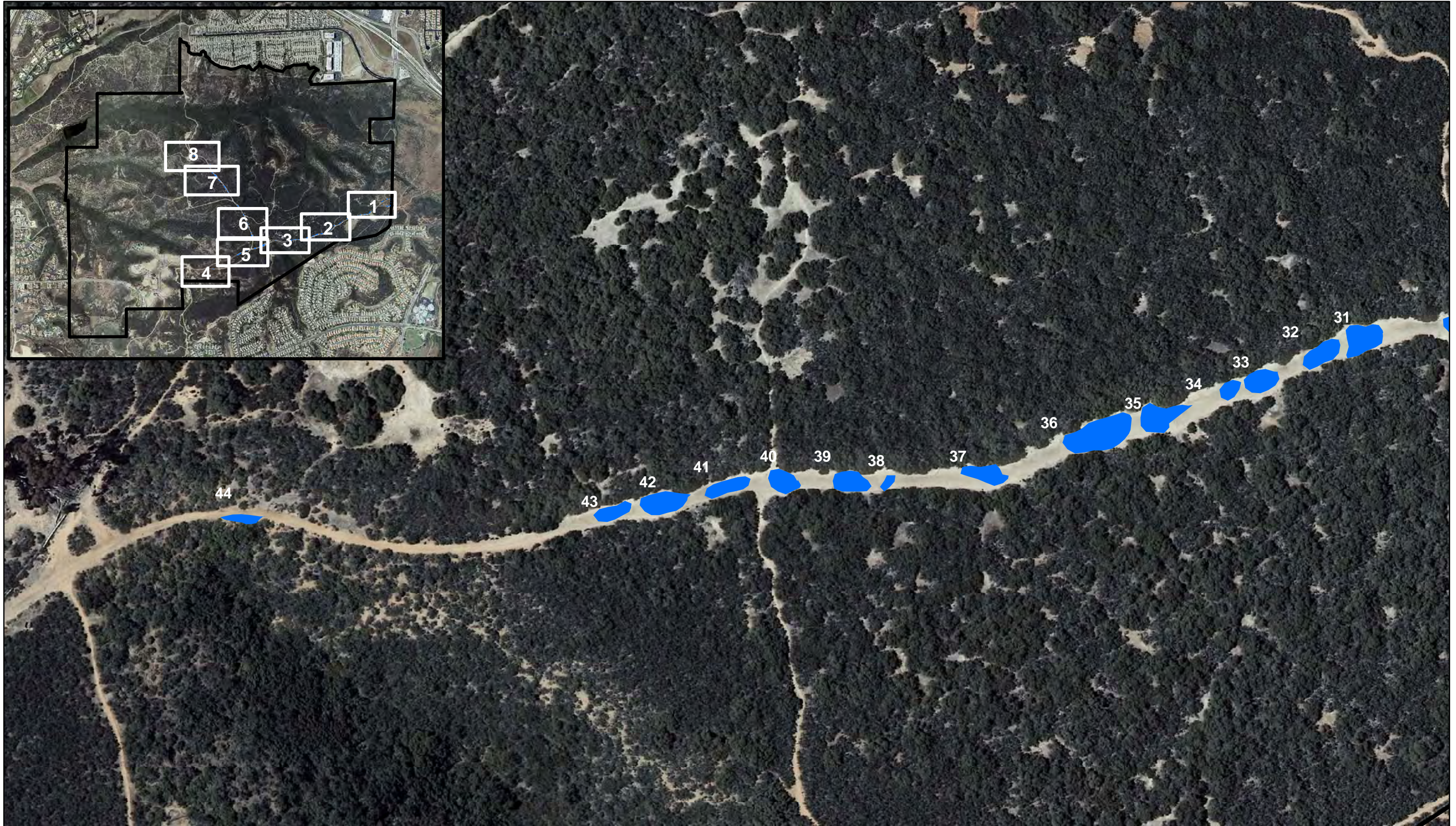
*BLANK BACK OF FIGURE A6-3a*



Del Mar Mesa Preserve Potential Restoration Pools

**FIGURE A6-3b**  
**Mapped Vernal Pools**  
**with the Potential for Restoration**  
**on Del Mar Mesa Preserve (Map 2)**

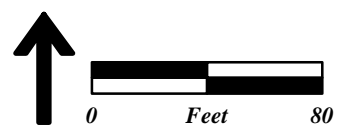
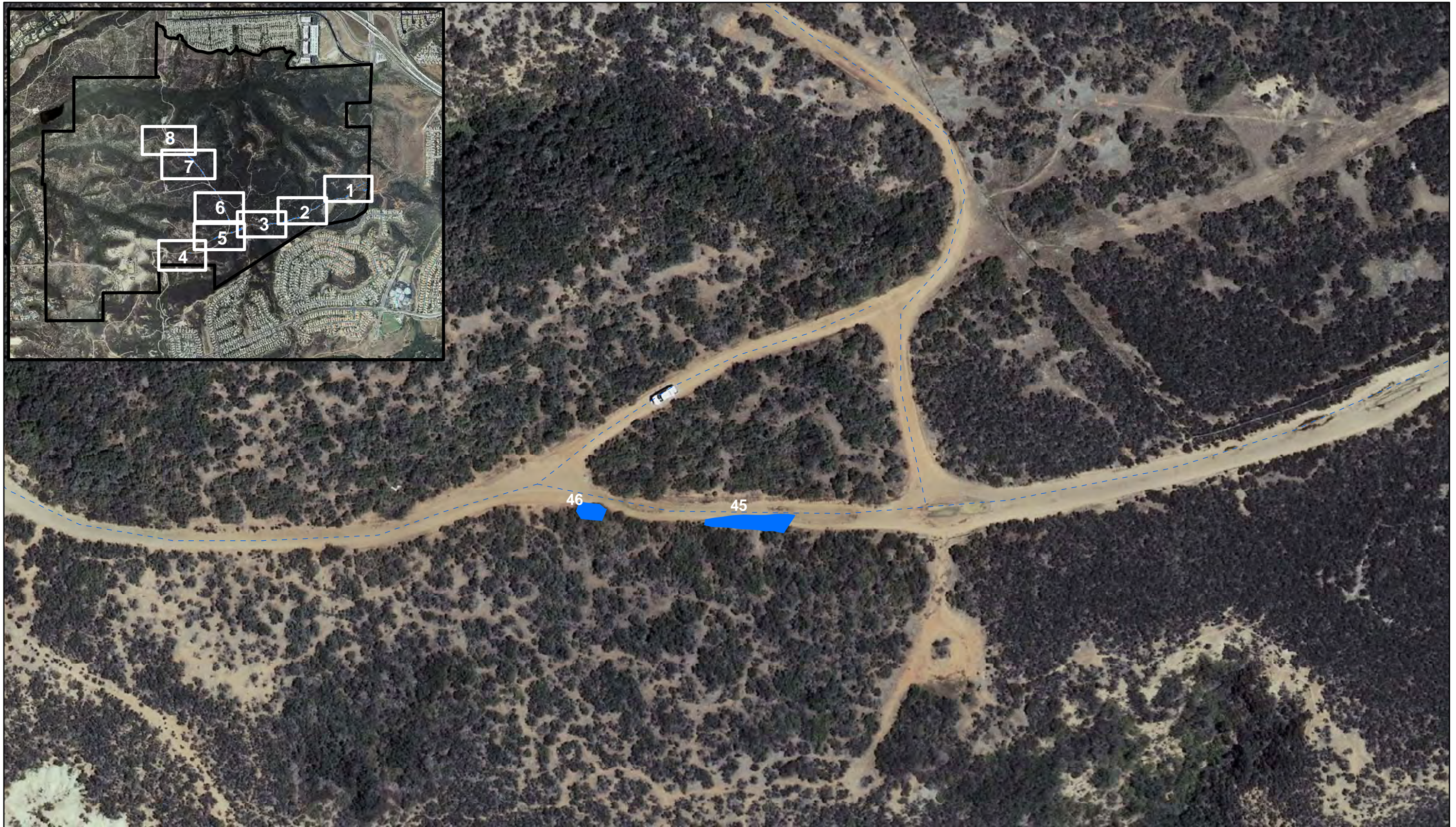
*BLANK BACK OF FIGURE A6-3b*



 Del Mar Mesa Preserve  Potential Restoration Pools

**FIGURE A6-3c**  
**Mapped Vernal Pools**  
**with the Potential for Restoration**  
**on Del Mar Mesa Preserve (Map 3)**

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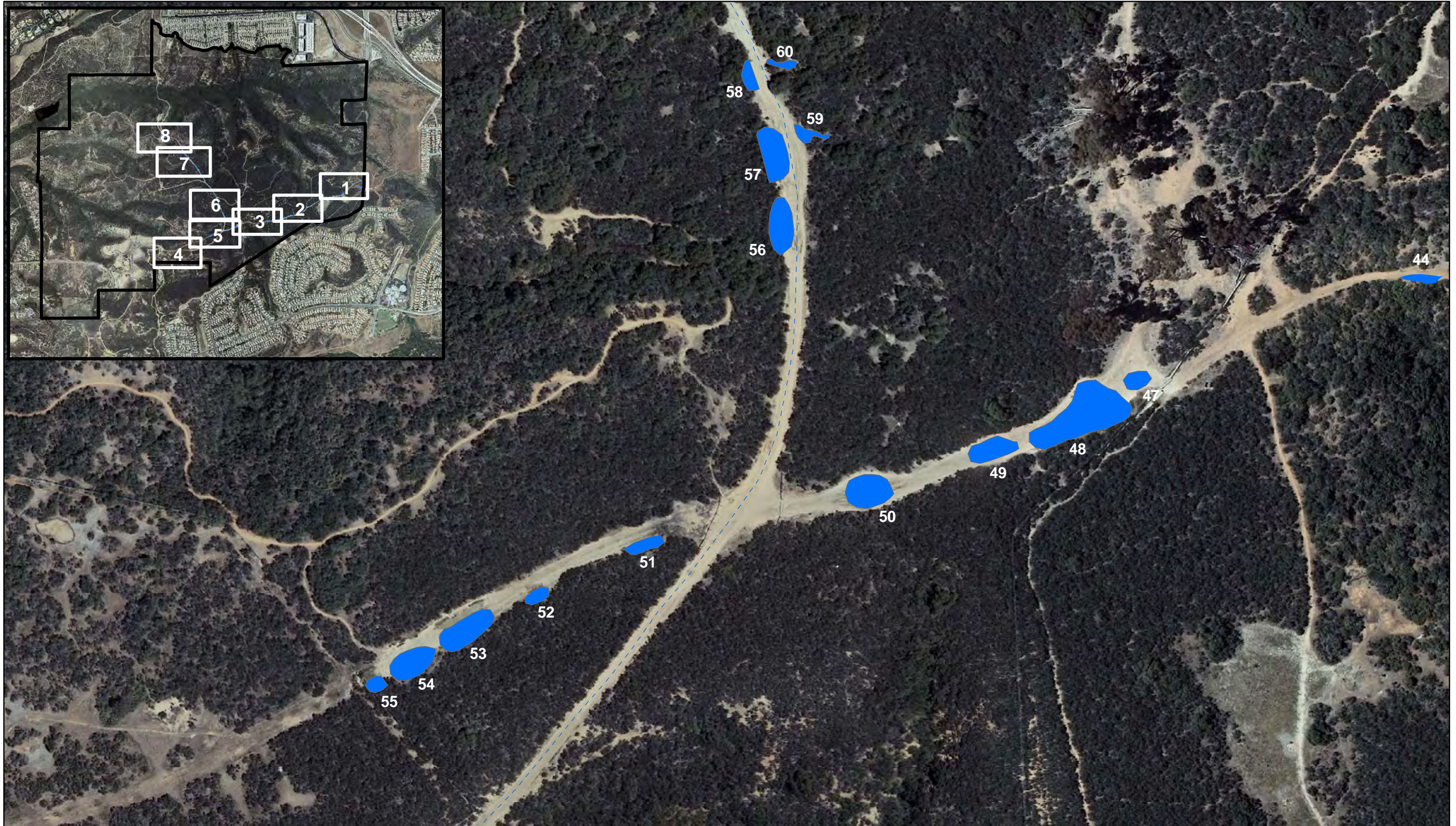


Del Mar Mesa Preserve    - - - SDGE Access Road    Potential Restoration Pools

**FIGURE A6-3d**  
**Mapped Vernal Pools**  
**with the Potential for Restoration**  
**on Del Mar Mesa Preserve (Map 4)**

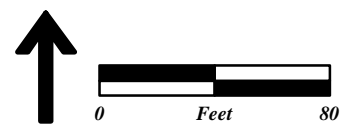
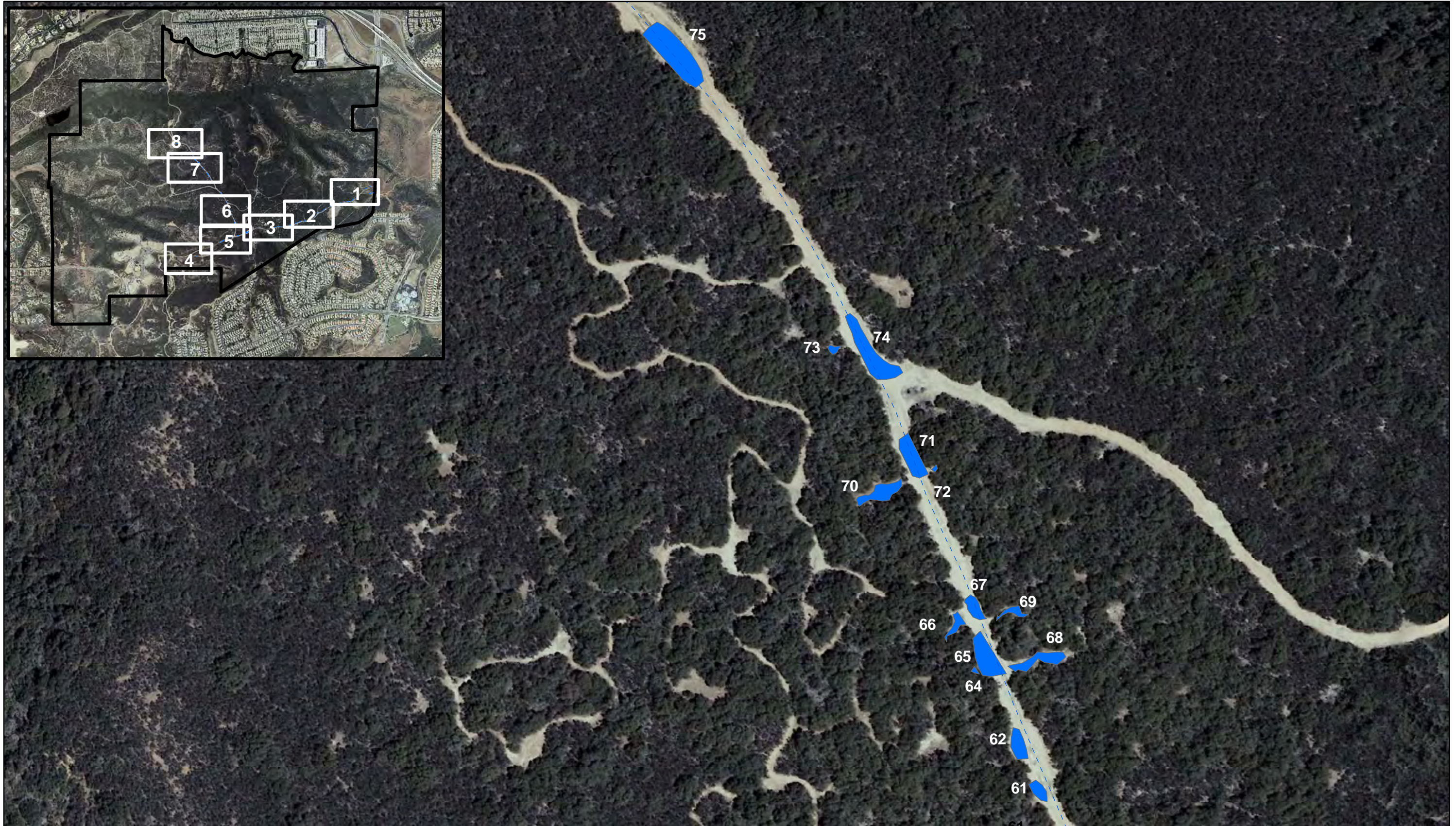


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**FIGURE A6-3e**  
**Mapped Vernal Pools**  
**with the Potential for Restoration**  
**on Del Mar Mesa Preserve (Map 5)**

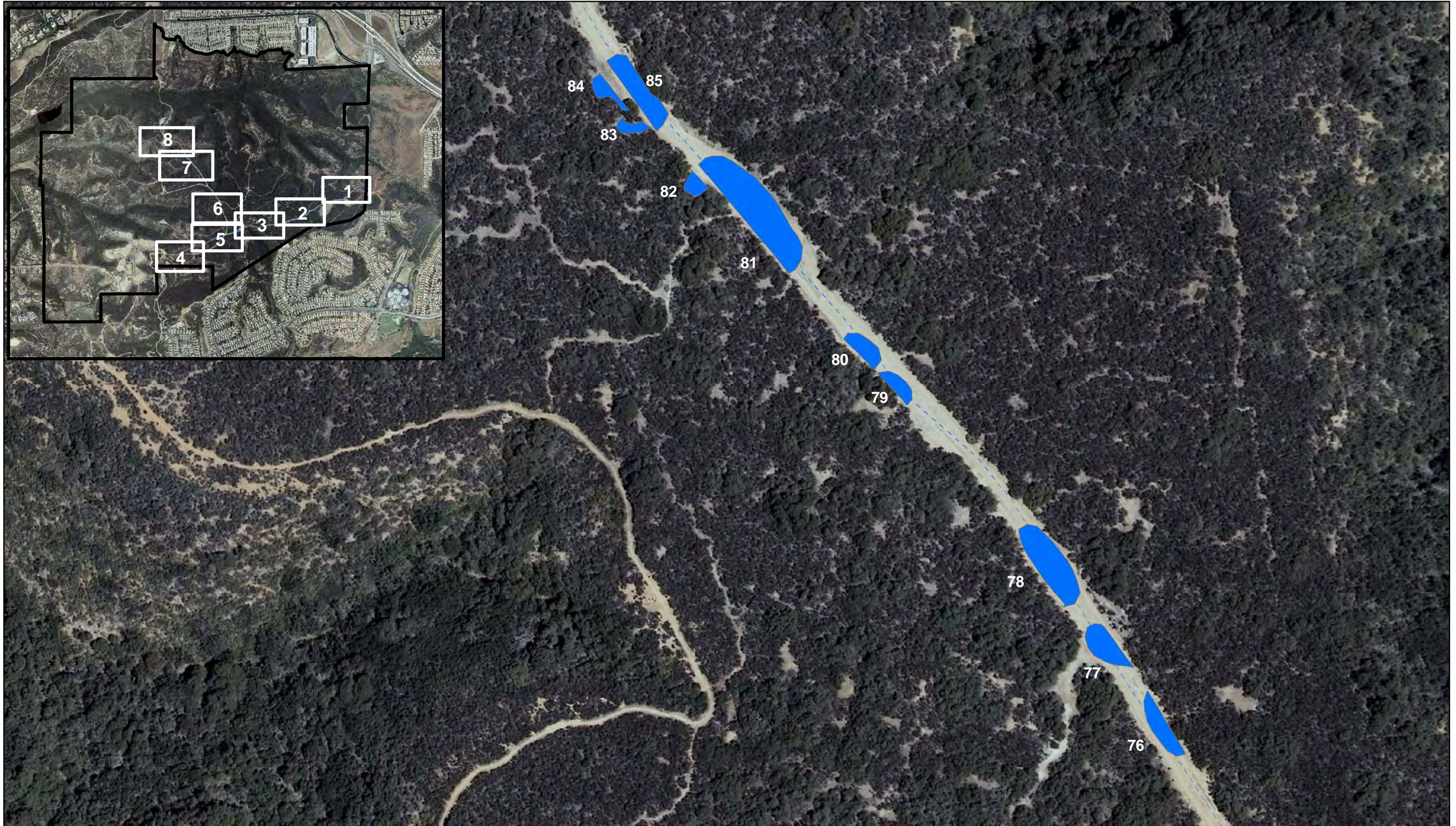
*BLANK BACK OF FIGURE A6-3e*



Del Mar Mesa Preserve
 - - - SDGE Access Road
 Potential Restoration Pools

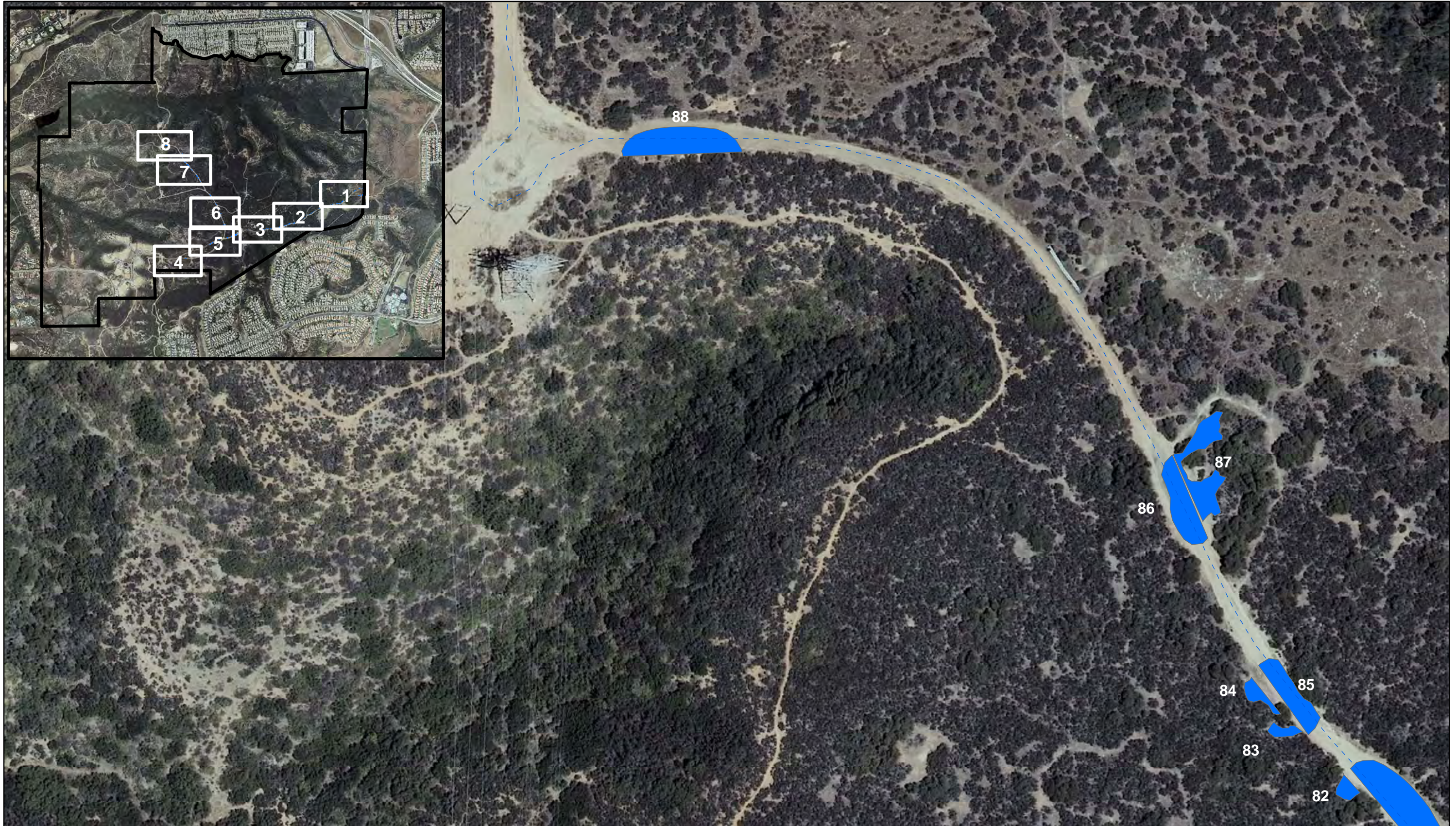
**FIGURE A6-3f**  
**Mapped Vernal Pools**  
**with the Potential for Restoration**  
**on Del Mar Mesa Preserve (Map 6)**

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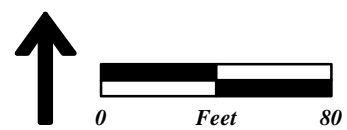


**FIGURE A6-3g**  
**Mapped Vernal Pools**  
**with the Potential for Restoration**  
**on Del Mar Mesa Preserve (Map 7)**

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Del Mar Mesa Preserve    SDGE Access Road    Potential Restoration Pools



**FIGURE A6-3h**  
**Mapped Vernal Pools**  
**with the Potential for Restoration**  
**on Del Mar Mesa Preserve (Map 8)**



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**TABLE A6-4  
POTENTIAL VERNAL POOL RESTORATION  
RECOMMENDATIONS FOR THE DEL MAR MESA PRESERVE**

Vernal Pool No.	Problems/Comments	Sensitive Species Present	Hand Tools	Heavy Equipment
1	Close trail to pool.	<i>Eryngium aristulatum</i> var . <i>parishii</i>		
2	Minor road rut repair with hand tools.		√	
3	Smooth rough spots and trail/road rut ridges going through pool. Adjacent weedy areas.		√	
4	Enlarge pool. Remove weedy fill east of pool. Weedy area on east boundary.	<i>Eryngium aristulatum</i> var . <i>parishii</i>		√
5	Enlarge pool. Remove weedy fill east of pool.			√
6	Enlarge pool. Weed around pool.			√
7	Enlarge and recontour pool.	Immature fairy shrimp observed		√
8	Remove fencing and combine with existing adjacent pools to north/south.	Immature fairy shrimp observed		√
9	Enlarge pool. Remove road ruts and weed. Remove fencing on southside of road and connect with adjacent existing pools.	Immature fairy shrimp observed <i>Eryngium Aristulatum</i> var . <i>parishii</i>	√	√
10	Recontour and weed pool. Remove fence and connect with adjacent existing pools to south. Remove berm south of fence.	<i>Eryngium Aristulatum</i> var . <i>parishii</i>	√	√
11	Recontour and weed pool.			√
12	Enlarge and recontour pool.			√
13	Enlarge pool. Remove fence and connect with existing pool on south side.	<i>Eryngium aristulatum</i> var . <i>parishii</i>		√
14	Enlarge pool. Remove fence and connect with existing pool on south side.	<i>Eryngium aristulatum</i> var . <i>parishii</i>		√
15	Enlarge pool. Remove fence and connect with existing pool on south side.	<i>Eryngium aristulatum</i> var . <i>parishii</i>		√
16	Enlarge and recontour pool.			√
17	Enlarge and recontour pool.			√
18	Enlarge, weed, and recontour pool. Remove fence to south.	<i>Eryngium aristulatum</i> var . <i>parishii</i>		√

**TABLE A6-4  
POTENTIAL VERNAL POOL RESTORATION  
RECOMMENDATIONS FOR THE DEL MAR MESA PRESERVE  
(continued)**

Vernal Pool No.	Problems/Comments	Sensitive Species Present	Hand Tools	Heavy Equipment
19	Enlarge and recontour pool.			√
20	Enlarge and recontour pool.			√
21	Enlarge and recontour pool.			√
22	Enlarge and recontour pool.			√
23	Enlarge and recontour pool.			√
24	Enlarge and recontour pool.			√
25	Enlarge and recontour pool.			√
26	Enlarge and recontour pool.			√
27	Enlarge and recontour pool.			√
28	Enlarge and recontour pool.			√
29	Enlarge and recontour pool.			√
30	Enlarge and recontour pool.			√
31	Enlarge and recontour pool.			√
32	Enlarge and recontour pool.			√
33	Enlarge and recontour pool.			√
34	Enlarge and recontour pool.			√
35	Enlarge and recontour pool.			√
36	Enlarge and recontour pool.			√
37	Enlarge and recontour pool.			√
38	Enlarge and recontour pool.			√
39	Enlarge and recontour pool.			√
40	Enlarge and recontour pool.			√
41	Enlarge and recontour pool.			√
42	Enlarge and recontour pool.			√
43	Smooth out road ruts and weed pool.		√	
44	Smooth out road ruts and weed pool.		√	
45	Recontour.			√
46	Recontour.			√
47	Recontour and weed pool.			√
48	Recontour and weed pool.	<i>Eryngium aristulatum</i> var. <i>parishii</i> , <i>Pogogyne ambramsii</i> present on north side of pool.	√	√

**TABLE A6-4  
POTENTIAL VERNAL POOL RESTORATION  
RECOMMENDATIONS FOR THE DEL MAR MESA PRESERVE  
(continued)**

Vernal Pool No.	Problems/Comments	Sensitive Species Present	Hand Tools	Heavy Equipment
49	Recontour.			√
50	Recontour.			√
51	Recontour.			√
52	Recontour.			√
53	Recontour.			√
54	Recontour.			√
55	Recontour.		√	
56	Recontour.			√
57	Recontour, pool in road.			√
58	Recontour.			√
59	Recontour; and remove berm in road, join with pool #57.			√
60	Recontour; remove berm in road, join with pool #58.			√
61	Recontour.			√
62	Recontour.			√
63	Not relocated, as mapped by City of San Diego.			
64	Recontour; join with pools #65 and #68.			√
65	Recontour; join with pools #64 and #68.			√
66	Recontour; remove road berm and join with pools #67 and #69.			√
67	Recontour; join with pools #66 and #69.			√
68	Recontour; join with pools #64 and #65.			√
69	Recontour; remove road berm and join with pools #66 and #67.			√
70	Recontour; remove road berm and join with pools #71 and #72.			√
71	Recontour; join with pools #70 and #72.			√
72	Recontour; join with pools #70 and #71.			√
73	Remove road berm; join with pool #74		√	

**TABLE A6-4  
POTENTIAL VERNAL POOL RESTORATION  
RECOMMENDATIONS FOR THE DEL MAR MESA PRESERVE  
(continued)**

Vernal Pool No.	Problems/Comments	Sensitive Species Present	Hand Tools	Heavy Equipment
74	Recontour pool.			√
75	Recontour pool.			√
76	Recontour pool.			√
77	Recontour and weed pool.			√
78	Recontour.			√
79	Recontour; join with pool #80.			√
80	Recontour; join with pool #79.			√
81	Recontour; join with pool #82.			√
82	Recontour; remove road berm and join with pool#81.			√
83	Recontour; remove road berm and join with pools #84 and #85. *Currently on private land.			√
84	Recontour; remove road berm and join with pool #83 and #85. *Currently on private land.			√
85	Recontour; remove road berm and join with pools #83 and #84. *Currently on private land.			√
86	Recontour; remove road berm and join with pools #87 and #88. *Currently on private land.			√
87	Recontour; remove road berm and join with pools #86 and #88.			√
88	Recontour and weed pool and join with pools #86 and #87. *Currently on private land.			√

NOTE: See Figures A6-2a-h.

\*Mapped vernal pool locations have been provided by the City of San Diego, as well as by RECON. Vernal pools that have been revised, remapped, or added by RECON have been denoted. Restoration on those vernal pools that are located on private land would occur pending land acquisition. Restoration of vernal pools located in SDG&E access roads (pools #45, #46, #56 -#88) would occur if they are no longer in use, or if other access roads can be used on the Preserve.

perform annual monitoring checks to identify and address any new weed invasion problem areas.

## **6.0 Vernal Pool Restoration Implementation Plan**

### **6.1 Rationale for Expecting Implementation Success**

Existing examples of vernal pool restoration projects in the San Diego region range in age from one to 20 years. In the oldest example, which was a controlled study evaluating the effects of topographic restoration and seed dispersal facilitation (Scheidlinger et al. 1985), vegetation in the restored pools and disturbed areas of the site with persisting pool hydrology was equivalent after 14 years to that of natural pools (Patterson 1995). In restoration programs conducted on Lopez Ridge (Patterson and Netting 1994a) and Naval Air Station (NAS) Miramar (Patterson and Netting 1994b) and California Terraces on Otay Mesa (RECON 1997, 2000), restoration success criteria similar to those proposed herein were met within two seasons. Other local vernal pool restoration projects in various stages of planning and implementation are being undertaken on Otay Mesa, NAS Miramar, and Camp Pendleton.

Vernal pool creation projects in California have been undertaken in many localities in the Central Valley and in Santa Barbara (Ferren and Givertz 1990). Although these projects have met with mixed success, most workers in the field agree that while self-sustaining ephemeral wetland habitat for particular target species is possible to create, this habitat should not be considered an equivalent substitute for natural habitat (Ferren and Givertz 1990). In cases where limited natural habitat is available, vernal pool recreation and restoration becomes an important method in preserving vernal pool habitat and the species that depend on it.

#### **6.1.1 Restorationist Qualifications**

The restoration project biologist should have a minimum of five years of vernal pool restoration experience in coastal southern California. The project biologist should be able to demonstrate an understanding of the special growing requirements vernal pool plant species as they relate to the restoration and enhancement of vernal pools. The project biologist or biology team must have the necessary state and federal permits to work with listed vernal pools species.

## **6.2 Site Preparation**

### **6.2.1 Preliminary Design and Engineering**

Conceptual planning of the restoration area involves the creation of a preliminary design for the topographic reconstruction for each vernal pool site. The reconstruction concept plan below is based in part on the re-excavation of basins that appear to have been filled with soil due to the erosion and leveling of adjacent mounds, when present. The general locations for the proposed restoration basins have been determined and mapped in the field. Detailed final grading plans should be prepared prior to implementation of restoration activities.

A topographic base map depicting 0.5-foot topographic contours from the existing surface should be prepared by a topographic engineering survey within the proposed vernal pool restoration sites. After reconstruction, the boundary of the restored vernal pools will be recorded in the field using post-processed GPS with a horizontal accuracy of less than one foot. The final grading plans will be re-plotted at 1 inch equals 40 feet, showing pool boundary, existing path and level, and finished 0.5-foot topographic contours for use in the field. Each pool boundary will be marked with contractor sand and the finished basin floor and outflow elevations will be checked with laser survey equipment.

### **6.2.2 Topographic Reconstruction**

Vernal pools to be restored on both Carmel Mountain and Del Mar Mesa are primarily located on existing roads and trails. In general, pool basin restoration will reverse the topographic effect of disturbance on the site, consisting primarily of erosion and the filling in of the depressions. The resulting hydrologic effect of this kind of disturbance is a reduction in the capacity of the site to capture and store rainwater. The primary physical change accomplished by this project will be the removal of a portion of the fill material from the restoration areas to restore pools and possibly restore the natural hydrology of existing depressions to enhance ponding and retention of water within the preserves. On Carmel Mountain, material removed from excavated basins could be salvaged and used to cover roads and trails proposed for closure where all the topsoil has been previously removed by road grading. Use of salvaged topsoil on closed roads that have been graded to the sandstone hardpan would create better conditions for plant restoration and establishment.

On Del Mar Mesa, within the CDFG preserve, soil removed from excavated basins can be used to reconstruct low mounds on the site, where appropriate. Some vernal pools on the site are associated with mounds, while others are not. Any excess fill material not used in mound reconstruction should be removed from the site. Existing non-natural features such as roadways and deep vehicle tracks will be regraded as appropriate to restore more natural soil conditions. Grading activities will be conducted during the fall, prior to seasonal rains, to minimize unintended compacting of the soils by grading equipment. The grading will be conducted under

the direction of a qualified biologist with vernal pool restoration experience. Areas that are to remain unaffected by restoration activities will be marked prior to implementation.

Grading will be implemented using small-tracked dozers with ripping tines and slope boards, and a sheep's foot for mound construction. The grading contractor and operators will also be experienced in vernal pool restoration work. The restoration team will include a qualified surveyor to assure that the grading plan is implemented as designed.

### **6.2.3 Barriers**

Concurrent with the implementation of the restoration grading, vehicle barriers such as wooded split rail fences will need be erected and maintained around the perimeter of the vernal pool restoration sites on Carmel Mountain. On Del Mar Mesa gates and vehicle barriers are in need of repair and enforcement patrols will be needed to reduce and minimize the ongoing vandalism to fences and gates.

Steel signs attached to the fence will provide notice that the area is an ecological preserve, notify that trespassing is prohibited, and cite penalties for trespass violation including liability for repair of any damage within the barrier such as disturbance of soil or vegetation. Signage will be provided at 200-foot intervals around the entire restoration area.

## **6.3 Planting and Restoration Plan**

### **6.3.1 Reintroduction of Vernal Pool Biota**

Restoration of the native vernal pool habitats within the preserves requires the reintroduction of plants and animals at the site in addition to the physical reconstruction described above. The restoration of vernal pool habitat can be greatly accelerated by the active transport of propagules from donor sites into the restored ponds (Scheidlinger et al. 1985; RECON 1999). This will be accomplished by the redistribution of seeds, spores, bulbs, eggs, and other propagules from on-site vernal pools; as well as by the translocation of the propagules of individual species from off-site habitats.

### **6.3.2 Seed Collection**

- Prior to the initiation of grading in the restoration site, vernal pool seed collection will be conducted both at Carmel Mountain and Del Mar Mesa Preserves. It has been experimentally demonstrated that it is best to collect seeds within five miles of the proposed restoration or enhancement site. Vernal pool indicator species listed in Table A6-1 for Carmel Mountain and Table A6-3 for Del Mar Mesa, should be considered for introduction to the created pools.



- The hand-collected vernal pool seeds would either be distributed in the basins immediately following the completion of topographic reconstruction or just prior to or after significant rain events at the discretion of the project biologist.

### 6.3.3 Translocation of Endangered Species

- Three listed plant species are known to currently still persist Del Mar Mesa Preserve vernal pool complex, San Diego button celery, San Diego Mesa mint and spreading navarretia. These species will be introduced into the restored pools from seed collected on site. San Diego fairy shrimp may also be introduced to restored vernal pools. As mentioned previously, San Diego fairy shrimp may be introduced into pools that do not currently support this species. Surveys determining their presence or absence will be conducted prior to this implementation.
- Less than 5 percent of the seed crop from San Diego button celery San Diego Mesa mint and spreading navarretia on the site would be collected while in fruit during the summer/fall. This seed will be stored in labeled bags or boxes that are adequately ventilated and kept out of direct sunlight in order to prevent the occurrence of fungus or excessively heating the seed. Seed will be distributed into restored pools that do not support existing populations of San Diego button celery, San Diego Mesa mint or spreading navarretia.

The San Diego fairy shrimp is known to currently still persist in the vernal pool complexes on the Preserves. Shrimp cysts would only be introduced into pools that do not support existing populations of San Diego fairy shrimp. The following translocation guidelines would be adhered to for any fairy shrimp translocation effort.

- Vernal pool soil would be collected when it is dry to avoid damaging or destroying fairy shrimp cysts, which are fragile when wet.
- A hand trowel or similar instrument shall be used to collect the sediment. Whenever possible, soil shall be collected in chunks. The trowel shall be used to pry up intact chunks of sediment, rather than loosening the soil by raking and shoveling which can damage the cysts.
- Soil containing fairy shrimp cysts shall not be introduced into pools that may already have populations of any species of shrimp.

### 6.3.4 Establishment of Vernal Pool Target Species

Necessary criteria for this restoration plan include enhancement of populations of three sensitive plant species in vernal pools on Del Mar Mesa: San Diego button celery, San Diego Mesa mint, and spreading navarretia. The introduction of these species will add to the plant diversity of the restored pools and enrich the vernal pool habitat. Following topographic

reconstruction, the vernal pools will be inoculated with these three species' seed that will be collected from the plants in the Del Mar Mesa Preserve.

If restored pools have suitable hydrologic conditions, San Diego fairy shrimp cysts will be introduced in the vernal pools following the guidelines listed above.

### **6.3.5 Off-Site Translocation for Species Diversity**

In order to meet target species diversity criteria, translocation of plant species listed in Table A6-1 for Carmel Mountain and Table A6-3 for Del Mar Mesa may be implemented. All species represented in Tables A6-1 and A6-3, which are present in nearby control pools but not present on the restoration site, shall be considered for introduction to the site. Species proposed for introduction to the site shall be considered to be indicative of vernal pool habitat quality and likely to have formerly occupied vernal pools on the site prior to disturbance.

## **6.4 Irrigation**

No irrigation of restored vernal pools is recommended. Water inputs to the pools should be confined to natural rainfall.

## **6.5 As-Built Implementation Reporting**

The first year implementation and monitoring report will include a final as-built plan. The as-built status report will include topographic mapping showing as-built topographic pool contours, basin locations, barriers, photographs of the restoration site, and a summary of project activities taken place. The status of endangered species, planting and weeding efforts, and the progress towards reaching the restoration goals will be included.

# **7.0 Maintenance During Monitoring Period**

## **7.1 Maintenance Activities**

Regular maintenance of the vernal pool restoration area, including intensive weeding and remedial plantings, will be required during the construction year and subsequent five-year monitoring period. On-going maintenance of the barriers and prohibition of trespassing will also be necessary. Maintenance activities will include but are not limited to the following:

- Removal of aggressive non-native weeds shall be implemented during the five-year monitoring periods for the vernal pool and adjacent upland habitats. All weeding shall be done by hand in the pool basins. In adjacent upland areas weeds can be controlled through use of approved herbicide, hand tools, or a line trimmer. The frequency and amount of weeding will depend on the rainfall patterns and other contributing factors. The preserve should be weeded at least twice a month following initial germination of non-native seedlings and should continue until all non-native species have been eliminated or restricted from setting seed.
- The monitoring biologist shall direct weeding crews to remove weeds that require control during the five-year monitoring period. The need for weeding is expected to decrease substantially by the end of the monitoring period provided successful habitat restoration has been achieved.
- All fencing and signs shall be checked and repaired as necessary once every month.
- Trash in the Preserve areas shall be removed once every month, if present.
- Any persons found willfully damaging the habitat within the preserves, including but not restricted to trash dumping, off-road-vehicle activity, trespass, plant removal, and destruction of barriers, shall be prosecuted to the full extent of the law.
- After initial seeding, the site will be checked twice a week by the project biologist for the first two months, once a week for the next four months, and monthly thereafter.
- Other site problems such as vehicle damage and erosion shall be reported to the land managers with recommendations for remedial measures.

## 7.2 Schedule

Maintenance activities described above will be performed at the intervals listed in Table A6-5.

**TABLE A6-5  
APPROXIMATE MAINTENANCE SCHEDULE OF VERNAL POOL  
RESTORATION AREAS ON CARMEL MOUNTAIN AND DEL MAR MESA PRESERVES**

Type/Task	Construction Year	Year 1	Year 2	Year 3	Year 4	Year 5
Site protection	Monthly	Monthly	Quarterly	Quarterly	Quarterly	Quarterly
Weed control	As-needed	As-needed	As-needed	Quarterly	Quarterly	Twice a year
Trash removal	Monthly	Monthly	Quarterly	Quarterly	Quarterly	Quarterly
Replanting/ seeding	Winter	Winter	Winter	Winter	Winter	Winter

## 8.0 Monitoring Plan

### 8.1 Monitoring Methods

#### 8.1.1 Hydrology

Hydrological characteristics of the restoration site to be monitored include assessment of the depth, periodicity, and duration of inundation in the created, restored, and control pools. Precipitation is recorded at the nearest reporting weather station. Field methods for the hydrological monitoring are described below.

- Each restored pool shall be topographically mapped at 0.5-foot contour intervals.
- Each monitored pool will be measured for water depth every two weeks until the standing water is gone. Water depth will be measured using a ruler placed in the low point of the pool.
- A water-depth versus time chart shall be prepared for each monitored pool illustrating water depth and ponding periodicity over the basin low-point.

#### 8.1.2 Biota

Biological parameters of the mitigation site to be monitored include species presence and relative cover (for plants) within each created and control basin. For target and indicator species, a qualitative assessment of reproductive success will be made. Photodocumentation will provide a basinwide overview of the vegetative community.

- Biological observations shall be made by a field biologist trained in the methods described below and familiar with the plant taxa listed in Tables A6-1 and A6-3.
- During the aquatic phase of each monitored basin, all plant and animal taxa observed shall be recorded.
- During the aquatic phase, each monitored basin shall be dip-net sampled for aquatic invertebrates using pole-mounted dip-nets in appropriate mesh size to capture cladocerans, ostracods, branchiopods, and tadpoles at two-week intervals until there is no ponded water or the two listed shrimp species are detected, whichever comes first.
- Each monitored basin shall be sampled for plant species presence and estimated cover using a meander survey of at least a 15-minute duration per basin within 45 days of the disappearance of standing water.
- Each monitored basin shall be photographed from an established photo point during the vegetation sampling period.

## 8.2 Vernal Pool Performance Criteria

Intermediate yearly performance criteria demonstrating progress towards the final criteria are difficult to quantify due to the unpredictability of seasonal precipitation patterns and the sensitivity of recovering vernal pool and ephemeral wetland communities to that variability. Therefore, the yearly target criteria are semi-quantitative.

- Each of the specified success criteria will be evaluated following the completion of seasonal field monitoring to determine if the final success criteria have been met and to assess the likelihood that the criteria will ever be met (taking into account the seasonal conditions).
- The final assessment of success will be based on the combined performance over the monitoring period and an analysis of the trends established.

### 8.2.1 Location of Control Habitat

For the Carmel Mountain restoration program a minimum of 10 control pools shall be chosen from the least disturbed pools on Carmel Mountain as determined by the project biologist(s). For the Del Mar Mesa restoration program a minimum of 10 control pools shall be chosen from the least disturbed pools on Del Mar Mesa.

Control pools shall be chosen to include the ranges of both physical and biotic characteristics included in the long-term mitigation goals. All control pools shall support vernal pool vegetation, as defined below in the target vegetation and cover criteria.

### 8.2.2 Target Vegetation and Cover

- For each pool, the area of vernal pool vegetation shall be defined for purposes of this section as coincident with the area supporting a combined relative pool species cover of more than 50 percent, measured within 45 days of the disappearance of standing water. In a drought year, this criterion shall be considered to be met if the total relative cover by pool species equals that of the averaged value of control pools having similar hydrological characteristics in that year and if the qualifying area has met this criterion in a previous monitoring year.
- For each pool, the total absolute vegetative cover in areas of qualified vernal pool vegetation, not including target weed species, shall equal or exceed 50 percent of the averaged value of control pools having similar hydrological characteristics.

### 8.2.3 Target Plant Species Diversity

- Created basins shall support reproducing populations of a minimum number of vernal pool species equivalent to that supported by the control pools. Equivalence is met if

(1) the pool species richness value for each basin (see Monitoring Plan section, below) is equal to or greater than the minimum value found in the control pools and (2) the value of pool species richness in the combined restored pools is equal to or greater than that of the control pools.

### 8.2.4 Target Indicator Wildlife and Endangered Shrimp Species

Characteristic animal species of vernal pools in the Carmel Mountain and Del Mar Mesa Preserve are primarily aquatic invertebrates and amphibians, although terrestrial invertebrate (especially insect) and vertebrate species are important components of the vernal pool community (Zedler 1987). Of the aquatic invertebrates, species of branchiopods, which includes fairy shrimp (Anostraca), clam shrimp (Conchostraca), and tadpole shrimp (Notostraca), are among the most distinctive inhabitants of ephemeral aquatic habitat (Pennak 1989). Unlike most aquatic invertebrates, these species are found almost exclusively in ephemeral freshwater habitats.

A number of branchiopods that are thought to occur almost exclusively in natural vernal pools have been listed or proposed for listing as endangered by the USFWS, the San Diego fairy shrimp which are found in the Del Mar mesa vernal pools.

The seed shrimp (subclass Ostracoda) is another small crustacean group that is highly distinctive in vernal pools. In the United States, freshwater seed shrimp have been comprehensively studied only in the several eastern and midwestern states and in Washington (Pennak 1989). Vernal pools in the region invariably support one or more seed shrimp species, some of which may be undescribed endemic taxa (Zedler 1989).

The target indicator wildlife species listed in Table A6-6 includes species that are found primarily in natural vernal pools within the region and are therefore considered indicators of habitat quality and restoration success.

**TABLE A6-6  
TARGET INDICATOR WILDLIFE SPECIES  
FOR CARMEL MOUNTAIN AND DEL MAR MESA**

Group	Species
Anostraca	<i>Branchinecta sandiegonensis</i> (San Diego fairy shrimp)
Conchostraca	<i>Cyzicus</i> sp. (clam shrimp)
Ostracoda	<i>Bradleycypris</i> sp., <i>Eucypris</i> sp., <i>Heterocypris</i> sp., <i>Lymnocythere</i> sp., <i>Pseudoilicypris</i> sp. (seed shrimp)
Dytiscidae	<i>Agabus</i> sp. (predaceous water beetles)
Pelobatidae	<i>Scaphiopus hammondii</i> (western spadefoot toad)

- Each of the created vernal pools within the restoration area shall support populations of at least two of the species listed in Tables A6-1 and A6-3 (vernal pool indicator species).

- A plant life indicator species richness value shall be determined for each created and control pool and the richness value of created pools shall be equal to or greater than that of the control pools.

### 8.2.5 Target Weed Species

Non-native weed species expected to be potential significant factors in the vegetation of the vernal pools include annual grasses (*Bromus* spp.), rabbitfoot grass (*Polypogon monspeliensis*), brass buttons (*Cotula coronopifolia*), loose-strife (*Lythrum hyssopifolia*), filaree (*Erodium* spp.), sand-spurrey (*Spergularia bocconii*), curly dock (*Rumex crispus*), common knotweed (*Polygonum arenastrum*), perennial ryegrass (*Lolium perenne*), and Italian ryegrass (*Lolium multiflorum*). Of these, the *Lolium* species are some of the most significant competitors with native pool vegetation as it becomes established.

- Within the vernal pool vegetation in each restored and preserved vernal pool, the relative cover of non-native species shall not exceed one percent.
- All localities of non-native plant species within the vernal pool preserves will be eliminated as a part of ongoing maintenance activities.

## 8.3 Target Hydrological Regime

In coastal southern California, annual precipitation is highly seasonal, with most of the rainfall occurring in the winter and early spring from December through April. On the coastal mesas, summer and fall precipitation is rare and is never of sufficient magnitude to cause ponding in natural vernal pools. The first major rainfall event of the season rarely fills natural pools; this water being used to wet and recharge surface soils dried during the summer drought. Subsequent storms charge the perched water table formed in the low-permeability soil profile of natural vernal pool landscapes, which is expressed as surface ponding in basins and topographic depressions.

The formation of a perched water table and the occurrence of surface ponding requires a soil profile with very low permeability but is also highly dependent on the topography of the site. Depressions must be present as places for the ponding to be expressed and as reservoirs to capture precipitation. The shape of the perched water table surface is influenced by the pattern and capacity of basins, interbasin soil permeability, slope of the overall site, and variations in subsoil permeability such as sand lenses and holes in the hardpan. It is this surface shape, changing over time under the influence of gravity, evaporation, and precipitation, which determines the depth and duration of ponding in the depressions.

The depth and duration of water in these temporal ponds is highly dependent upon the magnitude and number of storm events, the time interval between each event, and the climactic determinants of evaporation and transpiration (temperature, humidity, sunlight, and winds)

between each storm event. Annual occurrences of winter rains in the region are remarkably variable. Therefore, the success criteria for hydrological characteristics also depend on a comparison with control habitats representing the expression of long-term performance goals during each monitoring year.

### **8.3.1 Watershed Analysis**

The restoration of mound and basin topographic relief to the mitigation site is expected to result in the restoration of natural hydrologic conditions to the sites. Currently, graded roads and vehicles have caused siltation to the extent that of the precipitation falling on the sites is unable to pond adequately to support a diverse assemblage of vernal pool species. Topographic restoration will reestablish the ability of the landscape to capture and retain precipitation.

### **8.3.2 Duration, Periodicity, and Depth of Inundation**

- All monitored vernal pools, including the control pools and pools within the preserves, shall be monitored to record water depth over the low point in each basin during the course of six rainy seasons following restoration. From this data, a water depth–time curve shall be prepared for each basin illustrating depth and periodicity of inundation.
- Prior to the end of the monitoring period, each restored pool shall demonstrate hydrological patterns of duration, periodicity, and depth of inundation which fall within the range of variation observed in the control pools.

## **8.4 Annual Reports**

Vernal pool restoration efforts, whether conducted for mitigation or for habitat enhancement purposes, should include preparation of an implementation plan that is approved by the Wildlife Agencies and the City. The reporting guidelines outlined below are typically required for mitigation projects. Reporting requirements for each proposed restoration project will be determined by the Wildlife Agencies and the City during the plan approval process.

Following submittal and review from City of San Diego, annual reports presenting the monitoring results shall be submitted to the USFWS. These reports shall assess both the attainment of yearly target criteria and progress toward the final success criteria. Annual reports will be submitted following each of the six project years (one construction year and five years of monitoring) for the vernal pool restoration. Monitoring and reporting may be done by the same entity, or the monitoring may be done by qualified biologists hired by the City or qualified volunteer biologists, and the report done by the City, depending on staff availability and budget.

Annual reports shall include, at the minimum, the following:



- Names, titles, and organizations of everyone who participated in the monitoring activities for the year, including those who wrote the report.
- Quantitative and qualitative results for each monitored pool, including statements of success, failure, and remedial actions recommended to reach the success goals.
- A photograph of each pool.
- Topographic maps showing and identifying each monitored pool.

## **9.0 Completion of Restoration**

### **9.1 Notification of Completion**

If the final success criteria have been met at the end of the five-year monitoring program, notification of these events shall be provided to USFWS with the fifth-year report.

If the final success criteria have not been met by the end of the monitoring program, the fifth-year report will discuss the possible reasons for the failure and what should be done to bring the site to completed status. Included in the fifth-year report will be detailed plans to complete the restoration project and meet the final success criteria.

### **9.2 Agency Confirmation**

Following receipt of the report the USFWS shall be permitted to visit the restoration sites to confirm completion of the restoration effort and accuracy of the jurisdictional delineation.

## **APPENDIX 7**

### **California Invasive Plant Council (Cal-IPC) List**

# The CalEPPC List: Exotic Pest Plants of Greatest Ecological Concern in California

October, 1999

The CalEPPC list is based on information submitted by our members and by land managers, botanists and researchers throughout the state, and on published sources. The list highlights non-native plants that are serious problems **in wildlands** (natural areas that support native ecosystems, including national, state and local parks, ecological reserves, wildlife areas, national forests, BLM lands, etc.).

## List categories include:

**List A:** Most Invasive Wildland Pest Plants; documented as aggressive invaders that displace natives and disrupt natural habitats. Includes two sub-lists; List A-1: Widespread pests that are invasive in more than 3 Jepson regions (see page 3), and List A-2: Regional pests invasive in 3 or fewer Jepson regions.

**List B:** Wildland Pest Plants of Lesser Invasiveness; invasive pest plants that spread less rapidly and cause a lesser degree of habitat disruption; may be widespread or regional.

**Red Alert:** Pest plants with potential to spread explosively; infestations currently small or localized. If found, alert CalEPPC, County Agricultural Commissioner or California Department of Food and Agriculture.

**Need More Information:** Plants for which current information does not adequately describe nature of threat to wildlands, distribution or invasiveness. Further information is requested from knowledgeable observers.

**Annual Grasses:** New in this edition; a preliminary list of annual grasses, abundant and widespread in California, that pose significant threats to wildlands. Information is requested to support further definition of this category in next List edition.

**Considered But Not Listed:** Plants that, after review of status, do not appear to pose a significant threat to wildlands.

## Plants that fall into the following categories are not included in the List:

- Plants found mainly or solely in disturbed areas, such as roadsides and agricultural fields.
- Plants that are established only sparingly, with minimal impact on natural habitats.



## 1999 List Review Committee:

**Dr. Lars W.J. Anderson,**  
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**Ellie Wagner, Botanist**  
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**Peter Warner,**  
**Restoration Coordinator**  
Golden Gate National Parks  
Association

The CalEPPC list is updated regularly. Please use the form provided to send comments, suggestions or new information to: **Peter Warner, 555 Magnolia Avenue, Petaluma, CA, 94952-2080**, or via email at **peterjwarner@earthlink.net**

*Thanks to all those who submitted comments for the 1999 list.*

# The California Exotic Pest Plant Council

## List A-1: Most Invasive Wildland Pest Plants; Widespread

Latin Name <sup>1</sup>	Common Name	Habitats of Concern and Other Comments	Distribution <sup>2</sup>
<i>Ammophila arenaria</i>	European beach grass	Coastal dunes	SCo,CCo,NCo
<i>Arundo donax</i>	giant reed, arundo	Riparian areas	cSNF,CCo,SCo,SnGb,D,GV
<i>Bromus tectorum</i>	cheat grass, downy brome	Sagebrush, pinyon-juniper, other desert communities; increases fire frequency	GB,D
<i>Carpobrotus edulis</i>	iceplant, sea fig	Many coastal communities, esp. dunes	SCo,CCo,NCo,SnFrB
<i>Centaurea solstitialis</i> <sup>C</sup>	yellow starthistle	Grasslands	CA-FP (uncommon in SoCal)
<i>Cortaderia jubata</i>	Andean pampas grass, jubatagrass	Horticultural; many coastal habitats, esp. disturbed or exposed sites incl. logged areas	NCo,NCoRO,SnFrB,CCo,WTR,SCo
<i>Cortaderia selloana</i>	pampas grass	Horticultural; coastal dunes, coastal scrub, Monterey pine forest, riparian, grasslands; wetlands in ScV; also on serpentine	SnFrB,SCo,CCo,ScV
<i>Cynara cardunculus</i> <sup>B</sup>	artichoke thistle	Coastal grasslands	CA-FP, esp. CCo,SCo
<i>Cytisus scoparius</i> <sup>C</sup>	Scotch broom	Horticultural; coastal scrub, oak woodlands, Sierra foothills	NW,CaRF,SNF,GV,SCo,CW
<i>Eucalyptus globulus</i>	Tasmanian blue gum	Riparian areas, grasslands, moist slopes	NCoRO,GV,SnFrB,CCo,SCoRO,SCo,nChI
<i>Foeniculum vulgare</i>	wild fennel	Grasslands; esp. SoCal, Channel Is.; the cultivated garden herb is not invasive	CA-FP
<i>Genista monspessulana</i> <sup>C</sup>	French broom	Horticultural; coastal scrub, oak woodlands, grasslands	NCoRO,NCoRI,SnFrB,CCo,SCoRO,sChI,WTR,PR
<i>Lepidium latifolium</i> <sup>B</sup>	perennial pepperweed, tall whitetop	Coastal, inland marshes, riparian areas, wetlands, grasslands; potential to invade montane wetlands	CA (except KR,D)
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil	Horticultural; lakes, ponds, streams, aquaculture	SnFrB,SnJV,SNH(?); prob. CA
<i>Pennisetum setaceum</i>	fountain grass	Horticultural; grasslands, dunes, desert canyons; roadsides	Deltaic GV,CCo,SCo,SnFrB
<i>Rubus discolor</i>	Himalayan blackberry	Riparian areas, marshes, oak woodlands	CA-FP
<i>Senecio mikanioides</i> (= <i>Delairea odorata</i> )	Cape ivy, German ivy	Coastal, riparian areas, also SoCal (south side San Gabriel Mtns.)	SCo,CCo,NCo,SnFrB,SW
<i>Taeniatherum caput-medusae</i> <sup>C</sup>	medusa-head	Grasslands, particularly alkaline and poorly drained areas	NCoR,CaR,SNF,GV,SCo
<i>Tamarix chinensis</i> , <i>T. gallica</i> , <i>T. parviflora</i> & <i>T. ramosissima</i>	tamarisk, salt cedar	Desert washes, riparian areas, seeps and springs	SCo,D,SnFrB,GV,sNCoR,sSNF,Teh,SCoRI,SNE,WTR
<i>Ulex europaeus</i> <sup>B</sup>	gorse	North, central coastal scrub, grasslands	NCo,NCoRO,CaRF,n&cSNF,SnFrB,CCo

## <sup>1</sup>Noxious Weed Ratings

- F: Federal Noxious Weed, as designated by the USDA; targeted for federally-funded prevention, eradication or containment efforts.
- A: CA Dept. of Food & Agriculture, on “A” list of Noxious Weeds; agency policies call for eradication, containment or entry refusal.
- B: CA Dept. of Food & Agriculture, on “B” list of Noxious Weeds; includes species that are more widespread, and therefore more difficult to contain; agency allows county Agricultural Commissioners to decide if local eradication or containment is warranted.
- C: CA Dept. of Food & Agriculture, on “C” list of Noxious Weeds; includes weeds that are so widespread that the agency does not endorse state or county-funded eradication or containment efforts except in nurseries or seed lots.
- Q: CA Dept. of Food & Agriculture’s designation for temporary “A” rating pending determination of a permanent rating.

**For most species nomenclature follows *The Jepson Manual: Higher Plants of California* (Hickman, J., Ed., 1993).**

# Exotic Pest Plants of Greatest Ecological Concern in California

## List A-2: Most Invasive Wildland Pest Plants; Regional

Latin Name <sup>1</sup>	Common Name	Habitats of Concern and Other Comments	Distribution <sup>2</sup>
<i>Ailanthus altissima</i>	tree of heaven	Riparian areas, grasslands, oak woodlands, esp. GV, SCo	CA-FP
<i>Atriplex semibaccata</i>	Australian saltbush	SoCal, coastal grasslands, scrub, "high marsh" of coastal salt marshes	CA (except CaR,c&sSN)
<i>Brassica tournefortii</i>	Moroccan or African mustard	Washes, alkaline flats, disturbed areas in Sonoran Desert	SW,D
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome	Widespread; contributing to SoCal scrub, desert scrub type conversions; increases fire frequency	CA
<i>Cardaria draba</i> <sup>B</sup>	white-top, hoary cress	Riparian areas, marshes of central coast; also ag. lands, disturbed areas	Problem only in CCo
<i>Conicosia pugioniformis</i>	narrow-leaved iceplant, roundleaf iceplant	Coastal dunes, sandy soils near coast; best documented in San Luis Obispo and Santa Barbara cos.	CCo
<i>Cotoneaster pannosus</i> , <i>C. lacteus</i>	cotoneaster	Horticultural; many coastal communities; esp. North Coast, Big Sur; related species also invasive	CCo,SnFrB,NW
<i>Cytisus striatus</i>	striated broom	Often confused with <i>C. scoparius</i> ; coastal scrub, grassland	SnFrB,CCo,SCo,PR
<i>Egeria densa</i>	Brazilian waterweed	Streams, ponds, sloughs, lakes; Sacramento-San Joaquin Delta	n&sSNF,SnJV,SnFrB,SnJt,SNE
<i>Ehrharta calycina</i>	veldt grass	Sandy soils, esp. dunes; rapidly spreading on central coast	CCo,SCoRO,WTR
<i>Eichhornia crassipes</i>	water hyacinth	Horticultural; established in natural waterways, esp. troublesome in Sacramento-San Joaquin Delta	GV,SnFrB,SCo,PR
<i>Elaeagnus angustifolia</i>	Russian olive	Horticultural; interior riparian areas	SnJV,SnFrB,SNE,DMoj
<i>Euphorbia esula</i> <sup>A</sup>	leafy spurge	Rangelands in far no. CA, also reported from Los Angeles Co.	eKR,NCo,CaR,MP,SCo
<i>Ficus carica</i>	edible fig	Horticultural; Central Valley, foothill, South Coast and Channel Is. riparian woodlands	nSNF,GV,SnFrB,SCo
<i>Lupinus arboreus</i>	bush lupine	Native to SCo, CCo; invasive only in North Coast dunes	SCo,CCo,NCo
<i>Mentha pulegium</i>	pennyroyal	Santa Rosa Plain (Sonoma Co.) and Central Valley vernal pools; wetlands elsewhere	NW,GV,CW,SCo
<i>Myoporum laetum</i>	myoporum	Horticultural; coastal riparian areas in SCo	SCo,CCo
<i>Saponaria officinalis</i>	bouncing bet	Horticultural; meadows, riparian habitat in SNE, esp. Mono Basin	NW,CaRH,nSNF,SnFrB,SCoRO,SCo,PR,MP,SNE,GV
<i>Spartina alterniflora</i>	Atlantic or smooth cordgrass	S.F. Bay salt marshes; populations in Humboldt Bay believed extirpated	CCo(shores of S.F. Bay)

## <sup>2</sup>Distribution by geographic subdivisions per the Jepson Manual

CA=California	GV=Great Valley	ScV=Sacramento Valley
CA-FP=California Floristic Province	KR=Klamath Ranges	SnJV=San Joaquin Valley
CaR=Cascade Ranges	MP=Modoc Plateau	SN=Sierra Nevada
CaRF=Cascade Range Foothills	NCo=North Coast	SNE=East of SN
CCo=Central Coast	NCoRI=Inner NCo Ranges	SNF=SN Foothills
ChI=Channel Islands	NCoRO=Outer NCo Ranges	SNH=High SN
CW=Central Western CA	NW=Northwestern CA	SnFrB=San Francisco Bay Area
D=Deserts	PR=Peninsular Ranges	SnGb=San Gabriel Mtns
DMoj=Mojave Desert	SCo=South Coast	SW=Southwestern CA
DSon=Sonoran Desert	SCoRI=Inner SCo Ranges	Teh=Tehachapi Mtns
GB=Great Basin	SCoRO=Outer SCo Ranges	WTR=Western Transverse Ranges

# The California Exotic Pest Plant Council

## List B: Wildland Pest Plants of Lesser Invasiveness

Latin Name <sup>1</sup>	Common Name	Habitats of Concern and Other Comments	Distribution <sup>2</sup>
<i>Ageratina adenophora</i> <sup>f</sup>	eupatory	Horticultural; coastal canyons, coastal scrub, slopes, Marin to San Diego Co; San Gabriel Mtns.	CCo,SnFrB,SCo,SCoRO
<i>Bassia hyssopifolia</i>	bassia	Alkaline habitats	CA (except NW,SNH)
<i>Bellardia trixago</i>	bellardia	Grasslands, on serpentine, where a threat to rare natives	NCoRO,CCo,SnFrB
<i>Brassica nigra</i>	black mustard	Coastal communities, esp. fog-belt grasslands; disturbed areas	CA-FP
<i>Cardaria chalapensis</i> <sup>B</sup>	lens-podded white-top	Wetlands of Central Valley	CA
<i>Carduus pycnocephalus</i> <sup>C</sup>	Italian thistle	Grasslands, shrublands, oak woodlands	sNCo,sNCoR,SNF,CW,SCo,ScV
<i>Centaurea calcitrapa</i> <sup>B</sup>	purple starthistle	Grasslands	NW,sCaRF,SNF,GV,CW,SW
<i>Centaurea melitensis</i>	tocalote, Malta starthistle	Widespread; sometimes misidentified as <i>C. solstitialis</i> ; perhaps a more serious invader than currently recognized	CA-FP,D
<i>Cirsium arvense</i> <sup>B</sup>	Canada thistle	Especially troublesome in riparian areas	CA-FP
<i>Cirsium vulgare</i>	bull thistle	Riparian areas, marshes, meadows	CA-FP,GB
<i>Conium maculatum</i>	poison hemlock	Mainly disturbed areas but may invade wildlands; known to poison wildlife; early expanding stage in many areas, esp. San Diego Co. riparian, oak understory	CA-FP
<i>Crataegus monogyna</i>	hawthorn	Horticultural; recent invader, colonizing healthy native forest around Crystal Springs reservoir on S.F. peninsula	SnFrB,CCo,NCo,NCoR
<i>Ehrharta erecta</i>	veldt grass	Wetlands, moist wildlands; common in urban areas; potential to spread rapidly in coastal, riparian, grassland habitats	SnFrB,CCo,SCo
<i>Erechtites glomerata</i> , <i>E. minima</i>	Australian fireweed	Coastal woodlands, scrub, NW forests, esp. redwoods	NCo,NCoRO,CCo,SnFrB,SCoRO
<i>Festuca arundinacea</i>	tall fescue	Horticultural (turf grass); coastal scrub, grasslands in NCo, CCo	CA-FP
<i>Hedera helix</i>	English ivy	Horticultural; invasive in coastal forests, riparian areas	CA-FP
<i>Holcus lanatus</i>	velvet grass	Coastal grasslands, wetlands in No. CA	CA exc. Dson
<i>Hypericum perforatum</i> <sup>C</sup>	Klamathweed, St. John's wort	Redwood forests, meadows, woodlands; invasion may occur due to lag in control by established biocontrol agents	NW,CaRH,n&cSN,ScV,CCo,SnFrB,PR
<i>Ilex aquifolium</i>	English holly	Horticultural; coastal forests, riparian areas	NCoRO,SnFrB,CCo
<i>Iris pseudacorus</i>	yellow water iris, yellow flag	Horticultural; riparian, wetland areas, esp. San Diego, Los Angeles cos.	SnFrB,CCo,sSnJV,SCo
<i>Leucanthemum vulgare</i>	ox-eye daisy	Horticultural; invades grassland, coastal scrub	KR,NCoRO,n&cSNH,SnFrB,WTR,PR
<i>Mesembryanthemum crystallinum</i>	crystalline iceplant	Coastal bluffs, dunes, scrub, grasslands; concentrates salt in soil	NCo,CCo,SCo,ChI
<i>Myriophyllum aquaticum</i>	parrot's feather	Horticultural; streams, lakes, ponds	NCo,CaRF,CW,SCo
<i>Olea europaea</i>	olive	Horticultural and agricultural; reported as invasive in riparian habitats in Santa Barbara, San Diego	NCoR,NCoRO,CCo,SnFrB,SCoRO,SCo
<i>Phalaris aquatica</i>	Harding grass	Coastal sites, esp. moist soils	NW,cSNF,CCo,SCo
<i>Potamogeton crispus</i>	curlyleaf pondweed	Scattered distribution in ponds, lakes, streams	NCoR,GV,CCo,SnFrB,SCo,ChI,SnGb,SnBr,DMoj
<i>Ricinus communis</i>	castor bean	SoCal coastal riparian habitats	GV,SCo,CCo
<i>Robinia pseudoacacia</i>	black locust	Horticultural; riparian areas, canyons; native to eastern U.S.	CA-FP,GB
<i>Schinus molle</i>	Peruvian pepper tree	Horticultural; invasive in riparian habitats in San Diego, Santa Cruz Is.	SNF,GV,CW,SW,Teh

# Exotic Pest Plants of Greatest Ecological Concern in California

## List B: Continued

Latin Name <sup>1</sup>	Common Name	Habitats of Concern and Other Comments	Distribution <sup>2</sup>
<i>Schinus terebinthifolius</i>	Brazilian pepper	Horticultural; riparian areas	sSCo
<i>Senecio jacobaea</i> <sup>B</sup>	tansy ragwort	Grasslands; biocontrol agents established	NCo,wKR,s&wCaR, nSNF, nScV,SW
<i>Spartium junceum</i>	Spanish broom	Coastal scrub, grassland, wetlands, oak woodland, NW forests, esp. redwoods; also roadcuts	NCoRO,ScV,SnFrB, SCoRO,SCo,sChI,WTR
<i>Verbascum thapsus</i>	woolly or common mullein	SNE meadows, sagebrush, pinyon-juniper woodlands; shores of Boggs Lake (Lake Co.)	CA
<i>Vinca major</i>	periwinkle	Horticultural; riparian, oak woodland, other coastal habitats	NCoRO,SnFrB, CCo, sSCoRO,SCo

## Red Alert: Species with potential to spread explosively; infestations currently restricted

Latin Name <sup>1</sup>	Common Name	Habitats of Concern and Other Comments	Distribution <sup>2</sup>
<i>Alhagi pseudalhagi</i> <sup>A</sup>	camel thorn	Noxious weed of arid areas; most infestations in California have been eradicated	GV,sSNE,D
<i>Arctotheca calendula</i> <sup>A</sup>	Capeweed	Seed-producing types are the problem; most are vegetative only	NCo,SnFrB,CCo
<i>Centaurea maculosa</i> <sup>A</sup>	spotted knapweed	Riparian, grassland, wet meadows, forest habitats; contact CA Food & Ag if new occurrences found	CaR,SN,nScV,nCW,MP, nSNE,sPR,NW
<i>Crupina vulgaris</i> <sup>F,A</sup>	bearded creeper, common crupina	Aggressively moving into wildlands, esp. grassland habitats	NCoR (Sonoma Co.),MP
<i>Halogeton glomeratus</i> <sup>A</sup>	halogeton	Noxious weed of Great Basin rangelands; report locations to CA Food & Ag; goal is exclusion from CA	GB
<i>Helichrysum petiolare</i>	licorice plant	North coastal scrub; one population on Mt. Tamalpais, w. Marin Co.	Not in Jepson
<i>Hydrilla verticillata</i> <sup>F,A</sup>	hydrilla	Noxious water weed; report locations to CA Food & Ag; eradication program in place; found in Clear Lake (Lake Co.) in 1994	NCoRI,n&cSNF,ScV,SCo,D
<i>Lythrum salicaria</i> <sup>B</sup>	purple loosestrife	Horticultural; noxious weed of wetlands, riparian areas	sNCo,NCoRO,nSNF,ScV, SnFrB,nwMP
<i>Ononis alopecuroides</i> <sup>Q</sup>	foxtail restharrow	Eradication efforts underway in San Luis Obispo Co.; to be looked for elsewhere in CA	CCo; not in Jepson
<i>Retama monosperma</i>	bridal broom	First noted at Fallbrook Naval Weapons Station, San Diego Co; could rival other invasive brooms	San Diego Co.; not in Jepson
<i>Salvinia molesta</i> <sup>F</sup>	giant waterfern	Ponds, lakes, reservoirs, canals	Napa, Sonoma cos., lower Colorado River; not in Jepson
<i>Sapium sebiferum</i>	Chinese tallow tree	Horticultural; riparian, wetland habitats, open areas and understory	ScV,SnFrB; not in Jepson
<i>Sesbania punicea</i>	scarlet wisteria tree	Horticultural; riparian areas; American River Parkway, Sacramento Co., Suisun Marsh, San Joaquin River Parkway	ScV,SnJV; not in Jepson
<i>Spartina anglica</i>	cord grass	Scattered in S.F. Bay	Not in Jepson
<i>Spartina densiflora</i>	dense-flowered cord grass	Scattered in S.F. Bay, Humboldt Bay salt marshes	CCo,NCo
<i>Spartina patens</i>	salt-meadow cord grass	One site in S.F. Bay, also Siuslaw Estuary, OR and Puget Sound, WA	CCo

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## Need More Information

Latin Name <sup>1</sup>	Common Name	Habitats of Concern and Other Comments	Distribution <sup>2</sup>
<i>Acacia dealbata</i>	silver wattle	Aggressive in natural areas?	SnFRB,SCoRO,SCoRI,CCo
<i>Acacia decurrens</i>	green wattle	Sometimes confused with <i>A. dealbata</i> ; aggressive in natural areas?	Unknown
<i>Acacia melanoxylon</i>	blackwood acacia	Reported from S.F. Bay area, central coast, Santa Cruz Is.; spreads slowly; other areas?	SnFrB,SCoRO,SCo,CCo
<i>Aeschynomene rudis</i> <sup>B</sup>	rough jointvetch	Princeton area, Colusa Co.; pest of rice crops; potential threat to riparian, wetland habitats?	ScV
<i>Agrostis avenacea</i>	Pacific bentgrass	Invading vernal pools in San Diego area; attempts at manual eradication unsuccessful so far; problem in other areas?	sNCo,sNCoR,SNF, GV,CW,nSCo
<i>Aptenia cordifolia</i>	red apple	Habitats where invasive?	CCo,SCo,sChI
<i>Asphodelus fistulosus</i>	asphodel	Common in SCo highway rights-of-way, other disturbed sites; threats to wildlands?	sSnJV,SCo
<i>Carduus acanthoides</i> <sup>A</sup>	giant plumeless thistle	Threatens wildlands?	NCoRI,nSN,SnFrB, nSCoRO,MP
<i>Cistus ladanifer</i>	gum cistus	Horticultural; invades coastal sage scrub, chaparral; areas where problematic?	sCCo,SnGb
<i>Cordyline australis</i>	New Zealand cabbage	Infestation at Salt Point State Park; bird-dispersed; other problem areas?	Not in Jepson
<i>Cotoneaster</i> spp. (exc. <i>C. pannosus</i> , <i>C. lacteus</i> )	cotoneaster	Horticultural; bird-distributed; which species are problems in wildlands?	Unknown
<i>Cupressus macrocarpa</i>	Monterey cypress	Native only to Monterey Peninsula; planted and naturalized CCo, NCo; threat to wildlands?	CCo
<i>Descurainia sophia</i>	flixweed, tansy mustard	Entering Mojave wildlands through washes; threat to wildlands?	CA
<i>Dimorphotheca sinuata</i>	African daisy, Cape marigold	Horticultural; reported as invasive in w. Riverside Co., Ventura Co.; problem elsewhere?	SnJV,SCoRO,SCo,PR
<i>Echium candicans</i> , <i>E. pininana</i>	pride of Madeira, pride of Teneriffe	Horticultural; riparian, grassland, coastal scrub communities; spreads by seed	CCo,SnFrB,SCo,sNCo
<i>Ehrharta longiflora</i>	veldt grass	Reported from San Diego	Not in Jepson
<i>Erica lusitanica</i>	heath	Threat to wildlands?	NCo (Humboldt Co.)
<i>Euphorbia lathyris</i>	caper spurge, gopher plant	Invades coastal scrub, marshes, dunes; Sonoma, Marin cos.; threat to wildlands?	NCo,CCo,GV,SCo
<i>Gazania linearis</i>	gazania	Horticultural; invades grassland in S.F., coastal scrub?	CCo,SCo
<i>Glyceria declinata</i>		Although reported from Central Valley vernal pools, genetic research is needed to confirm identity; plants that have been called <i>G. declinata</i> key in Jepson to native <i>G. occidentalis</i>	Uncertain; not in Jepson
<i>Hedera canariensis</i>	Algerian ivy	Horticultural; invasive in riparian areas in SoCal?	Not in Jepson
<i>Hirschfeldia incana</i>	Mediterranean or short-pod mustard	Increasing in western, southern Mojave; threat to wildlands?	NCo,SNF,GV,CW,SCo, DMoj
<i>Hypericum canariense</i>	Canary Island hypericum	Reported in San Diego area, coastal sage scrub, grassland; threat to wildlands?	SCo
<i>Hypochaeris radicata</i>	rough cat's-ear	Widespread in coastal grasslands, wetlands; threat to wildlands?	NW,CaRF,nSNF,ScV, CW,SCo
<i>Isatis tinctoria</i> <sup>B</sup>	dyers' woad	Well-known invader in Utah; threat to wildlands?	KR,CaR,nSNH,MP
<i>Ligustrum lucidum</i>	glossy privet	Horticultural; spreading rapidly on Mendocino coast; problem in other areas?	NCo; not in Jepson
<i>Limonium ramosissimum</i> ssp. <i>provinciale</i>	sea lavender	Reported spreading in Carpinteria Salt Marsh; problem in other areas?	Not in Jepson



# Exotic Pest Plants of Greatest Ecological Concern in California

## Need More Information: Continued

Latin Name <sup>1</sup>	Common Name	Habitats of Concern and Other Comments	Distribution <sup>2</sup>
<i>Ludwigia uruguayensis</i> (= <i>L. hexapetala</i> )	water primrose	Invasive in aquatic habitats; non-native status questioned?	NCo,sNCoRO,CCo, SnFrB,SCo
<i>Malephora crocea</i>	ice plant	Invades margins of wetlands, bluffs along SCo	CCo,SCo,sChI
<i>Maytenus boaria</i>	mayten	Horticultural; scattered in riparian forests, ScV; east SnFrB	ScV,SnFrB
<i>Mesembryanthemum nodiflorum</i>	slender-leaved iceplant	Abundant on Channel Islands; invades wetlands; habitats where problematic?	SnFrB,SCo,ChI
<i>Nicotiana glauca</i>	tree tobacco	Disturbed places; not very competitive with natives in coastal scrub, chaparral; spreading along Putah Creek (Yolo Co.); problems elsewhere?	NCoRI,c&sSNF, GV,CW,SW,D
<i>Oxalis pes-caprae</i>	Bermuda buttercup	Invades disturbed sites; invasive in undisturbed habitats?	NCo,NCoRO,CCo, SnFrB,SCoRO,SCo
<i>Parentucellia viscosa</i>		Threat to NCo (Humboldt Co.) dune swales?	NCo,NCoRO,CCo,SCo
<i>Passiflora caerulea</i>		Horticultural; reported from SoCal; threat to wildlands?	SCo; not in Jepson
<i>Pennisetum clandestinum</i> <sup>FC</sup>	Kikuyu grass	Disturbed sites, roadsides; threat to wildlands?	NCo,CCo,SnFrB,SCo, Santa Cruz Is.
<i>Phyla nodiflora</i>	mat lippia	Most varieties in CA are native; taxonomy unclear; status of plants in vernal pools, wetlands?	NW(except KR,NCoRH), GV,CCo,SnFrB,SCo, PR,DSon
<i>Pinus radiata</i> cultivars	Monterey pine	Cultivars invading native Monterey, Cambria forests, where spread of pine pitch canker is a concern	CCo
<i>Piptatherum miliaceum</i>	smilo grass	Aggressive in SoCal creeks, canyons; threats to wildlands?	NCo,GV,CW,SCo
<i>Pistacia chinensis</i>	Chinese pistache	Horticultural; invades riparian areas and woodlands in ScV	ScV
<i>Prunus cerasifera</i>	cherry plum	Oak woodland, riparian areas; esp. Marin, Sonoma cos.; bird-distributed; problems elsewhere?	SnFrB,CCo
<i>Pyracantha angustifolia</i>	pyracantha	Horticultural; spreads from seed in S.F. Bay area; bird-distributed; problem elsewhere?	sNCoRO,CCo,SnFrB, SCo
<i>Salsola soda</i>	glasswort	Threat to salt marshes?	nCCo,SnFrB
<i>Salsola tragus</i> <sup>C</sup>	Russian thistle, tumbleweed	Abundant in dry open areas in w. Mojave Desert, Great Basin; not limited to disturbed sites; threats?	CA
<i>Salvia aethiops</i> <sup>B</sup>	Mediterranean sage	Creates monocultures in E. Oregon grasslands; threat to CA wildlands?	MP
<i>Stipa capensis</i>		Distribution and threats?	Not in Jepson
<i>Tamarix aphylla</i>	athel	Spreading in Salton Sea area; threats to wildlands?	nSnJV,nSCo,D
<i>Tanacetum vulgare</i>	common tansy	Jepson reports as uncommon, escape from cultivation in urban areas; problem in wildlands?	NCo,NCoRO,CaRH, SCoRO
<i>Verbena bonariensis</i> , <i>V. litoralis</i>	tall vervain	Horticultural; invades riparian forests, wetlands; extensive along ScV riparian corridors; roadsides (Yuba Co.); elsewhere?	ScV,nSnJV,nSnFrB,CCo



# The California Exotic Pest Plant Council

## Annual Grasses

Latin Name <sup>1</sup>	Common Name	Habitats of Concern and Other Comments	Distribution <sup>2</sup>
<i>Aegilops triuncialis</i> <sup>B</sup>	barbed goatgrass	Serpentine soils, grasslands	sNCoR, CaRF, n&cSNF, ScV, nCW
<i>Avena barbata</i>	slender wild oat	Lower elev. in SoCal; coastal slopes, coastal sage scrub, disturbed sites	CA-FP, MP, DMoj
<i>Avena fatua</i>	wild oat	Lower elev. in SoCal; coastal slopes, coastal sage scrub on deeper soil, disturbed sites	CA-FP, MP, DMoj
<i>Brachypodium distachyon</i>	false brome	Expanding in SoCal; common in Orange Co.	sNCoR, sCaRF, SNF, GV, CW, SCo, sChI
<i>Bromus diandrus</i>	ripgut brome	Coastal dunes, coastal sage scrub, grasslands	CA
<i>Lolium multiflorum</i>	Italian ryegrass	Wetland areas, esp. vernal pools in San Diego Co.; common in disturbed sites	CA-FP
<i>Schismus arabicus</i>	Mediterranean grass	Threat to Mojave and Colorado desert shrublands?	SnJV, CW, sChI, D
<i>Schismus barbatus</i>	Mediterranean grass	Threat to Mojave and Colorado desert shrublands?	SnJV, SW, D

## Considered, but not listed

Latin Name <sup>1</sup>	Common Name	Habitats of Concern and Other Comments
<i>Albizia lophantha</i>	plume acacia	Not invasive
<i>Anthoxanthum odoratum</i>	sweet vernal grass	Disturbed sites on coast; Marin, Sonoma, Mendocino cos.
<i>Carpobrotus chilensis</i>	sea fig	Native status in question; not a threat to wildlands
<i>Centranthus ruber</i>	red valerian	Horticultural; roadcuts in Marin Co.; not a threat to wildlands
<i>Convolvulus arvensis</i> <sup>C</sup>	field bindweed	Disturbed sites; ag lands
<i>Coprosma repens</i>	mirror plant	No evidence of wildland threat
<i>Crocosmia x crocosmiiflora</i>		Generally in disturbed coastal, urban areas, roadsides
<i>Digitalis purpurea</i>	foxglove	Horticultural; scattered in prairies, meadows, disturbed sites; not a major wildland threat
<i>Dipsacus sativus</i> , <i>D. fullonum</i>	wild teasel, Fuller's teasel	Roadsides, disturbed sites
<i>Fumaria officinalis</i> , <i>F. parviflora</i>	fumitory	S.F. Bay area, Monterey Bay salt marshes, sandy disturbed sites
<i>Medicago polymorpha</i>	California bur clover	Grasslands, moist sites; mainly restricted to disturbed sites
<i>Melilotus officinalis</i>	yellow sweet clover	Restricted to disturbed sites in CA
<i>Nerium oleander</i>	oleander	Horticultural; not invasive, although reported from riparian areas in Central Valley, San Bernardino Mtns.
<i>Picris echioides</i>	bristly ox-tongue	Disturbed areas
<i>Silybum marianum</i>	milk thistle	Disturbed areas, especially overgrazed moist pasturelands; may interfere with restoration
<i>Xanthium spinosum</i>	spiny cocklebur	Identified as native in <i>The Jepson Manual</i> (Hickman, 1993) and <i>A California Flora</i> (Munz and Keck, 1968); restricted to disturbed areas
<i>Zantedeschia aethiopica</i>	calla lily	Horticultural; mainly a garden escape in wet coastal areas
<i>Zoysia cultivars</i>	Amazoy and others	Horticultural; no evidence of wildland threat

## Request for Information: Exotic Pest Plants of Greatest Ecological Concern in CA

Please use this form to propose adding a new plant to the CalEPPC list or to provide other comments. Please provide as much detail as possible. Use the second side of this form or attach additional sheets if more space is needed. Please mail completed form to: **Peter Warner, 555 Magnolia Avenue, Petaluma, CA, 94952-2080**. Comments can be submitted by email to [peterjwarner@earthlink.net](mailto:peterjwarner@earthlink.net)

Species Name: \_\_\_\_\_

Does this weed displace healthy native communities, or is it mainly restricted to disturbed sites like roadsides, agricultural areas, etc.? \_\_\_\_\_

In which region(s) of California does this weed infest wildlands? Indicate county(ies) and/or Jepson regions (see page 3). \_\_\_\_\_

Which native communities does it infest? \_\_\_\_\_

List any rare plants, animals or communities threatened by this weed: \_\_\_\_\_

How does it spread? (Seeds carried by wind, birds, other animals; vegetative runners?) \_\_\_\_\_

Is this plant a recent invader of California wildlands? Ideas about how it got here? \_\_\_\_\_

Is this plant sold by nurseries, or used in landscaping, restoration or other activities that might lead to its further spread in wildlands? \_\_\_\_\_

Describe any techniques that have been used to eradicate this plant. Have they been successful? If not, why is the plant difficult to eradicate? \_\_\_\_\_

Other comments? \_\_\_\_\_

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ FAX: \_\_\_\_\_ email: \_\_\_\_\_



## Who We Are:

Throughout California, natural wildlands and parks are under attack from invasive pest plants. As natural habitat is replaced by exotic plants, we also lose many of the state's native birds, insects, fish and other wildlife species. People concerned with the protection, management and enjoyment of our natural areas have become increasingly alarmed about the spread of invasive exotic vegetation. Since its formation in 1992, CalEPPC has been dedicated to finding solutions to problems caused by non-native pest plant invasions of the state's natural areas. The objectives of CalEPPC are to:

- provide a focus for issues and concerns regarding exotic pest plants in California;
- facilitate communication and the exchange of information regarding all aspects of exotic pest plant control and management;
- provide a forum where all interested parties may participate in meetings and share in the benefits from the information generated by this council;
- promote public understanding regarding exotic pest plants and their control;
- serve as an advisory council regarding funding, research, management and control of exotic pest plants;

- facilitate action campaigns to monitor and control exotic pest plants in California; and
- review incipient and potential pest plant management problems and activities and provide relevant information to interested parties.

## What We Do:

CalEPPC:

- Holds an annual statewide symposium;
- Co-sponsors regional workshops on control of problem wildland weeds;
- Publishes a quarterly newsletter with timely, practical information;
- Maintains an informative web site at [www.caleppc.org](http://www.caleppc.org)
- Sponsors rigorous experiments on control methods for French broom, German ivy, pampas grass and other invasive pest plants;
- Advances public and professional awareness of wildland weed problems and solutions by sponsoring illustrated brochures and a soon-to-be published book on California's worst wildland weeds;
- Is recognized as an authoritative source of new information on all aspects of wildland weed management.

# 1999 CalEPPC Membership Form

If you would like to join CalEPPC, please remit your calendar dues using the form provided below. All members will receive the CalEPPC newsletter, be eligible to join CalEPPC working groups, be invited to the annual symposium and participate in selecting future board members. Your personal involvement and financial support are the keys to success. Additional contributions by present members are welcomed!

### Individual

- Low Income/Student\* \$15.00
- Regular \$25.00
- Family \$40.00
- Contributing \$50.00
- Sustaining \$100.00
- Lifetime \$1000.00

### Institutional

- N/A
- Regular \$100.00
- Contributing \$250.00
- Patron \$500.00
- Sustaining \$1000.00

Please make an additional contribution in my name to:

Student/Low Income membership: \$ \_\_\_\_\_

Cape Ivy Biocontrol Fund: \$ \_\_\_\_\_

Please make your check payable to **CalEPPC** and mail with this application form to:

CalEPPC Membership  
c/o Sally Davis  
32912 Calle del

---

Name \_\_\_\_\_

---

Affiliation \_\_\_\_\_

---

Address \_\_\_\_\_

---

City/State/Zip \_\_\_\_\_

---

Office Phone \_\_\_\_\_

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Home Phone \_\_\_\_\_

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Fax \_\_\_\_\_

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email \_\_\_\_\_

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*\* Students, please include current registration and/or class schedule*

The CalEPPC List:

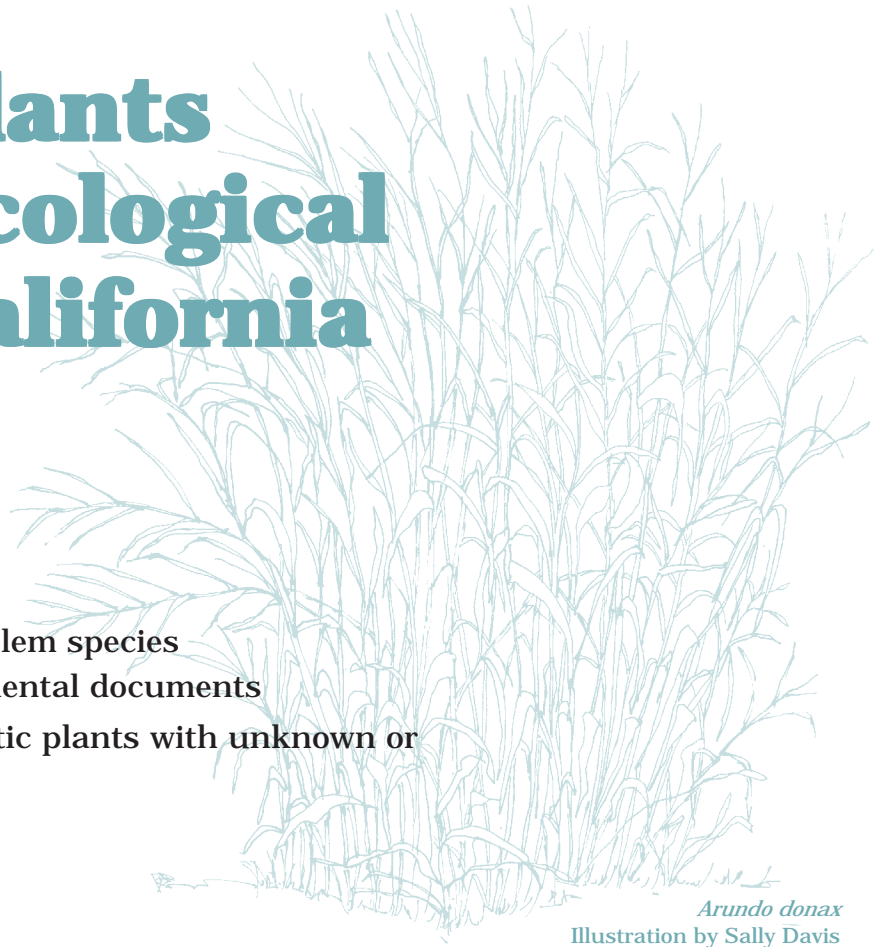
# Exotic Pest Plants of Greatest Ecological Concern in California

October, 1999

## Potential uses for this list:

- Informing the public
- Targeting species for control efforts
- Alerting restorationists to potential problem species
- Aiding those who comment on environmental documents
- Soliciting additional information on exotic plants with unknown or changing status

**NOT FOR RESALE**



*Arundo donax*

Illustration by Sally Davis

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## **APPENDIX 8**

### **Advisory Council on Historic Preservation Guidelines**





# Federal Register

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Tuesday,  
December 12, 2000

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## Part II

### Advisory Council on Historic Preservation

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36 CFR Part 800

Protection of Historic Properties; Final  
Rule

**ADVISORY COUNCIL ON HISTORIC PRESERVATION****36 CFR Part 800**

RIN 3010-AA05

**Protection of Historic Properties****AGENCY:** Advisory Council on Historic Preservation.**ACTION:** Final rule; revision of current regulations.

**SUMMARY:** The Advisory Council on Historic Preservation is publishing its final rule, replacing the previous rule which implemented the 1992 amendments to the National Historic Preservation Act (NHPA), and improved and streamlined the rule in accordance with the Administration's reinventing government initiatives and public comment. Litigation earlier this year challenged that previous rule. This rulemaking has addressed questions and concerns raised by that litigation, and has given the public a chance to provide input to determine how the rule has operated and revise the rule as appropriate. The final rule modifies the process by which Federal agencies consider the effects of their undertakings on historic properties and provide the Council with a reasonable opportunity to comment with regard to such undertakings, as required by section 106 of the NHPA. The Council has sought to better balance the interests and concerns of various users of the section 106 process, including Federal agencies, State Historic Preservation Officers (SHPOs), Tribal Historic Preservation Officers (THPOs), Native Americans and Native Hawaiians, industry, and the public.

**DATES:** This final rule is effective January 11, 2001.

**FOR FURTHER INFORMATION CONTACT:** If you have questions about the rule, please call Frances Gilmore or Paulette Washington at the regulations hotline (202) 606-8508, or e-mail us at [regs@achp.gov](mailto:regs@achp.gov). When calling or sending e-mail, please state your name, affiliation, and nature of your question, so your call or e-mail can then be routed to the correct staff person. Informational materials about the new rule will be posted on our web site (<http://www.achp.gov>) as they are developed.

**SUPPLEMENTARY INFORMATION:** The information that follows has been divided into five sections. The first one provides background information introducing the agency and summarizing the history of the rulemaking process. The second section highlights the changes incorporated into

the final rule. The third section describes, by section and topic, the Council's response to public comments on this rulemaking. The fourth section provides a description of the meaning and intent behind specific sections of the final rule. Finally, the fifth section provides the impact analysis section, which addresses various legal requirements, including the Regulatory Flexibility Act, the Paperwork Reduction Act, the National Environmental Policy Act, the Unfunded Mandates Act, the Congressional Review Act and various relevant Executive Orders.

**I. Background**

The Advisory Council on Historic Preservation ("Council") is the major policy advisor to the Government in the field of historic preservation. Twenty members make up the Council. The President appoints four members of the general public, one Native American or Native Hawaiian, four historic preservation experts, and one governor and one mayor. The Secretary of the Interior and the Secretary of Agriculture, four other Federal agency heads designated by the President, the Architect of the Capitol, the chairman of the National Trust for Historic Preservation and the president of the National Conference of State Historic Preservation Officers complete the membership.

This final rule sets forth the revised section 106 process. Section 106 of the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470f (NHPA), requires Federal agencies to take into account the effect of their undertakings on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Council a reasonable opportunity to comment on such undertakings.

Through Section 211 of the National Historic Preservation Act, the Council is authorized to "promulgate such rules and regulations as it deems necessary to govern the implementation of section 106 \* \* \* in its entirety."

After publishing two Notices of Proposed Rulemaking (59 FR 50396, October 3, 1994; and 61 FR 48580, September 13, 1996), the Council published a final rule setting forth a revised process implementing section 106 in its entirety (64 FR 27044-27084, May 18, 1999). Such rule went into effect on June 17, 1999, and superseded the rule previously issued in 1986.

Two major forces behind that revision process were the 1992 amendments to the National Historic Preservation Act (NHPA), and the Administration's reinventing government efforts. In

October, 1992, Public Law 102-575 amended the NHPA and affected the way section 106 review is carried out. Among other things, the 1992 amendments:

1. Clarified that "[p]roperties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined to be eligible for inclusion on the National Register." 16 U.S.C. 470a(d)(6)(A);

2. Required that "[i]n carrying out its responsibilities under section 106, a Federal agency shall consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to properties described" above. 16 U.S.C. 470a(d)(6)(B). Also see 36 CFR 800.2(c)(3) (granting such tribes and Native Hawaiian organizations, "consulting party" status in the section 106 process). Implementation of this statutory consultation requirement is found throughout the proposed rule. See, for example, 36 CFR 800.3(f)(2), 800.4(a)(4), 800.4(b), 800.4(c)(1), 800.5(a), 800.6(a)-(b).

3. Added a provision in the NHPA prohibiting Federal agencies from granting a license or assistance to applicants who, with the intent to avoid the requirements of section 106, significantly adversely affected historic properties related to the license or assistance. In such cases, the Federal agency can only grant the license or assistance if it determines, after consulting with the Council, that circumstances justify granting the license or assistance despite the effects to the historic property. 16 U.S.C. 470h-2(k). See 36 CFR 800.9(c).

4. Explicitly recognized the long-standing practice of having Federal agencies develop agreements to address adverse effects of their undertakings to historic properties. This practice had also been recognized in the earlier, 1980 amendments, where Section 205(b) of the NHPA was changed to state that the Council could be represented in court by its General Counsel regarding "enforcement of agreements with Federal agencies." It also clarified that where such an agreement is not reached, the head of the relevant Federal agency must document his/her decision pursuant to section 106. Such agency head cannot delegate that responsibility. It also provided that agreements executed pursuant to the section 106 process would govern the relevant Federal undertaking and all its parts. 16 U.S.C. 470h-2(l). See 36 CFR 800.6, 800.7.

5. Added a member to the Council. This Council member would be a Native

American or Native Hawaiian appointed by the President. 16 U.S.C. 470i(a)(11).

6. Explicitly clarified the fact that the Council has authority to “promulgate such rules and regulations as it deems necessary to govern the implementation of section 106 of this Act *in its entirety*.” 16 U.S.C. 470s (emphasis added) (highlighted text was added by the 1992 amendments); and

7. Amended the definition of the term “undertaking,” by adding “[projects, activities, and programs] subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency” to the list of actions constituting an “undertaking.” 16 U.S.C. 470w(7)(D). The amended, statutory definition of “undertaking” was adopted verbatim in the rule. 36 CFR 800.16(y).

Additionally, as part of the Administration’s National Performance Review and overall regulatory streamlining efforts, the Council undertook a review of its regulatory process to identify potential changes that could improve the operation of the section 106 process and conform it to the principles of the Administration. A description of the Council’s revision efforts from 1992, which led to the final rule that went into effect in 1999 (“1999 rule”), is found in its preamble (64 FR 27044–27084, May 18, 1999). That preamble extensively details its history, purpose, intent, and response to public comment.

On February 15, 2000, the National Mining Association (“NMA”) filed a lawsuit challenging the 1999 rule. Among other things, the lawsuit alleged violations of the Appointments Clause of the Constitution and certain provisions of the Administrative Procedure Act pertaining to rulemaking. After assessing the allegations contained in the lawsuit, the Council decided to move forward with the present rulemaking process that culminates today with this final rule. The Council believed that this rulemaking would provide an opportunity to address assertions about the procedural adequacy of the promulgation of the 1999 rule, including those about the participation of the National Trust for Historic Preservation (“Trust”) and the National Conference of State Historic Preservation Officers (“NCSHPO”), as Council members, in the adoption of the final, revised rule. It would also give the public a chance to provide input to determine how the rule has operated and revise the rule as appropriate. This rulemaking does not evidence Council agreement with the merits of the allegations but, rather, the Council’s

desire to remove these issues from litigation.

Accordingly, at the June 23, 2000 Council meeting in Maine, the Chairman of the Council asked the Council members to take two actions. The first action was a new vote on the adoption of the 1999 rule, without the participation of the Trust and NCSHPO. The Council members voted 16–0 in favor of the 1999 rule, with the Trust and NCSHPO voluntarily recusing themselves from the vote and any deliberation on it.

The second action was a vote on undertaking the present rulemaking process, using the text of the 1999 rule as the proposed rule. Again, the Council members voted in favor of moving forward with the rulemaking by a vote of 16–0, with the Trust and NCSHPO voluntarily recusing themselves from the vote and any deliberation on it. Accordingly, on July 11, 2000 the Council published a proposed rule for public comment (65 FR 42833–42849).

The public was given a 30-day period, until August 10, in which to comment on the proposed rule. All those who filed a timely request for an extension of the comment period were given until August 31 to submit their comments. We believe the extension granted was reasonable in light of the circumstances.

As stated above, the text of the proposed rule submitted for public comment was the same as the one for the final rule that had been in effect for more than a year. That final rule, in turn, was the product of a rulemaking process that afforded the public ample opportunity, throughout six years, to participate and comment. The preamble of that 1999 final rule (found at 64 FR 27044–27084, May 18, 1999) extensively details its history, purpose, intent, and response to public comment. It is a lengthy document and will not be reprinted here.

After the close of the public comment period, the Council, minus the Trust and NCSHPO, considered the comments and incorporated changes into a draft rule as was deemed appropriate. On November 17, 2000, the Council voted on whether to adopt the draft rule as a final rule. As stated before, the Council members representing the Trust and NCSHPO had already recused themselves from the rulemaking process and proposed suspension. They accordingly removed themselves from the table and took no part in the deliberations and vote on this matter.

The Council voted to adopt the draft rule as the final rule now being published, by a vote of 17 for, 1 abstention, and none against.

The Council reiterates that the Trust and NCSHPO did not participate in any way whatsoever in the deliberations, decisions, votes, or any other Council activities regarding this rulemaking. Their only participation in this rulemaking took the form of a written comment filed by NCSHPO on the proposed rule. Such comment was submitted by NCSHPO, as a member of the general public, during the commenting period provided by the notice of proposed rulemaking.

## II. Highlights of Changes

The Council retained the core elements of the section 106 process that have been its hallmark since 1974. The Council also retained the major streamlining improvements that were adopted in June, 1999. Changes adopted were primarily modifications to remove operational impediments in the process and clarifications of certain provisions and terms. In addition, a number of technical and informational edits were made throughout the rule. Major changes are as follows:

### 1. Clarification of the Role of State Historic Preservation Officers.

Section 800.2(c)(1) was amended to acknowledge the statutory responsibility of SHPOs to cooperate with agencies, local governments, and organizations and individuals to ensure that historic properties are considered in planning.

### 2. Clarification of the Role of Indian Tribes and Tribal Historic Preservation Officers

Section 800.2(c)(2) was completely rewritten to better distinguish the roles of Indian tribes that had assumed the responsibilities of SHPOs on their tribal lands under section 101(d)(2) of the Act from that of Indian tribes which had not. The Council notes that these amendments do not change the substantive role of non-101(d)(2) Tribes or any other party in the section 106 process under the proposed rule, but simply provide for a clearer rule. Section 800.2(c)(2)(ii) was also amended to clarify that the Act requires agency consultation with Indian tribes and Native Hawaiian organizations that attach religious and cultural significance to historic properties regardless of whether the historic properties are located on or off tribal land. Section 800.2(c)(2)(ii)(B) was amended to better reflect the sovereignty of Indian tribes over their tribal lands.

### 3. More Flexibility To Involve Applicants

Section 800.2(c)(5) was amended to resolve a major problem regarding the participation of applicants for Federal assistance or permission in the Section 106 process. Under the change, an agency may authorize a group of applicants to initiate the section 106 process, rather than being required to grant individual authorizations. Language was also added to clarify that such authorizations do not relieve the Federal agency of its obligations to conduct government-to-government consultation with Indian tribes.

### 4. Clarification of Undertakings Covered by the Section 106 Process

Section 800.3(a)(1) was amended to better state the premise of the rule that only an undertaking that presents a type of activity that has the potential to affect historic properties requires review. The previous language implied that making such a determination related to the circumstances of the particular undertaking, rather than the more generic analysis of whether the type of undertaking had the potential to affect historic properties.

### 5. Reinforcement of the Federal Agency's Responsibilities in Identifying Historic Properties

Section 800.4(a) was amended to assert that determinations in this subsection are made unilaterally by the Agency Official, after consultation with SHPO/THPO. Some had misunderstood the previous version as providing for consensus determinations.

### 6. Revision of the Role of Invited Signatories

Section 800.6(c)(2) was rewritten to remove confusion about the ability of the Federal agency to invite other parties to become formal signatories to Memoranda of Agreement and to clarify their rights and responsibilities as invited signatories. Also regarding memoranda of agreement, § 800.6(c)(8) was amended to provide that the option for their termination exists not only when one party simply cannot comply with its terms, but also when the terms are not being followed for whatever reason.

### 7. Revision of the Use of Environmental Impact Statements (EIS) To Comply With Section 106

Section 800.8(c)(4) was rewritten to more clearly state the actions a Federal agency must take in making a binding commitment in an NEPA documents to carry out measures to avoid, minimize or mitigate adverse effects and thereby

use the NEPA process to comply with section 106 requirements.

### 8. Redefinition of the Role of the Council When Improving the Operation of Section 106

Section 800.9(d)(2) was amended to require the Council to participate in section 106 reviews in a manner parallel to SHPOs/THPOs when the Council decides to join individual case reviews it would not otherwise engage in. This occurs when the Council has determined that section 106 responsibilities are not being properly carried out by an agency or SHPO/THPO and the Council's participation can remedy the problem.

### 9. Modification of Documentation Standards

Section 800.11(a) was amended to state that a Federal agency's responsibility to provide documentation was limited by legal authority and the availability of funds. Section 800.11(c)(2) was also amended to require Federal agencies to include the views of the SHPO/THPO when consulting with the Council on withholding confidential information.

### 10. Inclusion of National Register Eligibility Assessment in Consideration of Post-Review Discoveries

Section 800.13(b)(3) was amended to add a requirement that a Federal agency seeking expedited section 106 review for properties discovered after approval of an undertaking provide information on the eligibility of affected properties for the National Register.

### 11. Increased Flexibility for Programmatic Agreements

Section 800.14(b) was amended by the addition of a new section authorizing the Council to create "prototype programmatic agreements" which could be executed by a Federal agency and an SHPO/THPO without Council participation. This would permit routine programmatic agreements that follow an accepted model to be completed more expeditiously.

### 12. Improved Consideration of Stakeholder and Public Views on Proposed Exemptions

Section 800.14(c)(5) was amended to add Council consideration of the views of SHPOs/THPOs and others consulted when determining whether to approve an exemption from the section 106 process. The Council was also required to notify the agency and SHPOs/THPOs of its decision on the requested exemption.

### 13. More Flexibility for Federal Agencies When Consulting With Indian Tribes on Nationwide Program Alternatives

Section 800.14(f) was amended to reemphasize a Federal agency's obligation under various authorities to consult with Indian tribes and Native Hawaiian organizations when developing nationwide program alternatives, but to acknowledge that it is the agency's responsibility to determine the appropriate means of meeting those obligations.

## III. Response to Public Comments

Following is a summary of the public comments received in response to the notice of proposed rulemaking, along with the Council's response. The public comments are printed in bold typeface, while the Council response follows immediately in normal typeface. They are organized according to the relevant section of the proposed rule or their general topic.

### Section 800.1

**The Council should expand the definition of SHPO responsibilities beyond cooperation with the Secretary, Advisory Council and Federal agencies to include explicit reference to organizations and individuals, such as regulatees and their consultants.** The Council noted that such language was warranted by the NHPA, and therefore inserted language regarding such SHPO duties per section 101(b)(3)(F) of the NHPA.

**The very last sentence of this section should be changed to: "The Agency Official is encouraged to initiate the section 106 process as early as practicable in the undertaking's planning so that it may consider impacts on historic resources."** The language on the proposed rule stated that the Agency Official "shall ensure that the section 106 process is initiated early in the undertaking's planning \* \* \*". The Council disagreed with the commenter's proposed change since it is crucial that agencies initiate the section 106 process at a point where alternatives have not yet been foreclosed. Otherwise, the review would be rendered meaningless.

**Council is urged to preserve flexibility provision under the 1986 regulations, which stated: "The Council recognizes that the procedures for the Agency Official set forth in these regulations may be implemented by the Agency Official in a flexible manner reflecting different program requirements, as long as the purposes of section 106 of the Act and these regulations are met."** Specific areas of

flexibility are incorporated in the proposed rule to embody the general flexibility term found in the 1986 rule. Among these are: phased identification, compression of steps, NEPA coordination, and the various program alternatives under § 800.14 of the rule.

#### Section 800.2(a)

**The regulations should state that Federal agencies that authorize applicants to initiate consultation are still responsible for their government to government relationships with tribes.**

The Council agreed and incorporated such change at § 800.2(c)(5) since the statement comports with Executive Orders and Memoranda regarding the government-to-government responsibilities of Federal agencies towards federally recognized tribes.

**Requirements of § 800.14 preclude implementation of § 800.2(a) insofar as it calls for utilization of the agency's existing procedures to fulfill consultation requirements.** The Council disagreed. The comment failed to consider the difference between procedures that implement 36 CFR part 800 (those under § 800.2(a)) and procedures that actually substitute/modify the process under 36 CFR part 800 (those under § 800.14).

**Nothing in NHPA requires Federal agencies to consult with a particular party, thus, while such consultation may be beneficial, it should be left to the discretion of the Federal agency under NHPA.** The Council not only believes that such consultation is beneficial, but it also believes it has the required authority to justify this and all other sections of the proposed rule. Consultation occurs in the section 106 process propounded by the rule in a way that is fully consistent with the statute. See, for example, the statutory language under section 101 of the NHPA regarding SHPO and THPO assistance to Federal agencies in the section 106 process, the consultation requirements with Indian tribes and Native Hawaiian organizations under the 1992 amendments to the NHPA, and language under Section 110 of the NHPA ensuring that public involvement occurs in the section 106 process. Such consulting entities have the specialized knowledge and interest that Federal agencies may lack. Consultation with these parties provides the Federal agency with the information it needs to make reasoned assessment of how its undertakings affect historic properties. Furthermore, it is clear to the Council through its years of experience, that such consultation is necessary and that Federal agencies heavily rely on such assistance (in particular that of the

SHPOs). Please also refer to responses given under the legal topics.

**Federal officials (and not State, local or tribal government officials) are responsible for taking into account the effects of their undertakings on historic properties. Furthermore, it is inappropriate to mention Section 112 of the NHPA in this section since the Council has no authority to enforce it.**

The Council agrees that the responsibility for section 106 compliance lies with Federal agencies, including the "take into account" responsibility. The Council clarifies that section 112 is merely restated in the rule for reference purposes (as opposed to enforcement).

**ACHP refusal to take a position regarding delegation of authority have resulted in SHPOs disregarding FCC's jurisdiction and emphasizes on enforcement over historic preservation.**

During the time frame of this rulemaking, the Council issued a memorandum to the FCC, all SHPOs and the telecommunications industry clarifying its position on delegations of authority. This and several other issues mentioned by the telecommunications industry in this rulemaking process have been or are in the process of being addressed through ongoing discussions with the industry, the FCC and SHPOs. These discussions commenced before the present rulemaking process. Such ongoing discussions are referred hereinafter as "Telecommunications Working Group."

**Although section 101 of the NHPA establishes an advisory role for SHPOs to assist Federal agencies, the rules fail to establish consistent objective standards for SHPOs to apply in carrying out their duties. It undermines the ability of SHPOs and Federal agencies to adequately serve the Council's goal of protecting historic properties.** The Council believes that the rule contains adequate standards that guide SHPOs in carrying out their functions. These standards can be found in various parts of the rule (e.g., criteria of adverse effect under § 800.5(a), and various definitions of terms under § 800.16). Further standards, such as the National Register Criteria of Eligibility (36 CFR part 63), are referenced in the present rule, and guide SHPO duties. Furthermore, pursuant to the NHPA, the Department of the Interior regularly reviews SHPO programs and ensures such programs and their personnel have the necessary expertise to guide their performance of their statutory duties, which include "to consult with \* \* \* Federal agencies \* \* \* on Federal undertakings that may affect historical properties." 16 U.S.C. 470a(b)(3)(I).

**"Delegation authority" should be expanded to include "approved" state agencies and other pre-approved designees to conduct section 106 coordination on behalf of the Agency Official.** The Council disagrees since the comment fails to realize that such authority can only come through statute. Congress specifically placed section 106 compliance responsibilities on Federal agencies. Only Congress can shift that responsibility. The Council is only aware of certain Department of Housing and Urban Development programs containing such a statutory delegation.

#### Section 800.2(b)

**Licensees should be recognized as consulting parties under the regulations.** Applicants for licenses, permits, approvals or assistance are specifically listed in the rule as consulting parties (see §§ 800.2(c)(5) and 800.3(f)(1)).

**Add the following to § 800.2(b)(2): "Within 30 days of receipt of a request for such advise, the Council shall reply in writing with advise, or it shall reply in writing that it will not offer advice stating its reason(s) for so doing." This is needed to ensure Council responds in a timely fashion.** The Council disagreed with this proposal. Time limits, and the consequences of not replying in time, are already specified in the proposed rule as needed.

#### Section 800.2(c)

**Remove the first sentence of § 800.2(c)(1)(I). It is unrealistic to charge the SHPO with "reflecting the interests of the State and its citizens in the preservation of their cultural heritage." This only encourages agencies to treat SHPO coordination as the be-all and end-all of consultation, even where large numbers of a State's citizens violently disagree with a SHPO position.** The rule reasonably supports the idea that the SHPO reflects the interests of the State by virtue of being a State official appointed by the elected State Governor.

**Several comments requested that the rule distinguish the roles of Tribes that have an approved "Tribal Historic Preservation Officer" (THPO) pursuant to section 101(d)(2) of the NHPA, and those that do not. The use of the term "THPO" for both was deemed to be highly confusing.** As stated in the highlight of changes above, § 800.2(c)(2) was completely rewritten to better distinguish the roles of Indian tribes that had assumed the responsibilities of SHPOs on their tribal lands under section 101(d)(2) of the Act from that of Indian tribes which had not. The Council notes that these amendments do

not change the substantive role of non-101(d)(2) Tribes or any other party in the section 106 process of the proposed rule, but simply provide for a clearer rule.

**Many THPO's have construed this provision to mean that they must be invited to participate as "consulting parties" on all undertakings affecting properties of traditional religious and cultural importance, a position at odds with the NHPA. It is requested that the role of tribal representatives and THPO's in consultation off tribal land to be clarified consistent with the statute.** The Council believes that section 101(d)(6)(B) of the NHPA clearly gives federally recognized tribes and Native Hawaiian organizations a right to be consulted regarding historic properties of religious and cultural significance to them. The cited section of the statute does not qualify that right depending on whether the historic property is located on or off tribal lands. It also does not qualify that right depending on whether the tribe has a THPO certified pursuant to section 101(d)(2) of the NHPA.

**Too difficult to implement requirements of § 800.2(c)(2) when the project is not on reservation land. It is unreasonable for each Federal agency to develop on their own information as to which tribe(s) may be associated with specific geographic areas.** While the Council acknowledges certain initial difficulties in identifying tribes to consult outside tribal lands, it believes the statute is clear in mandating such consultation regardless of the location of the historic property. The Council and the National Park Service are currently conducting a guidance project to assist agencies in identifying Indian tribes to be consulted.

**Regulations do not create a "consultative" role for SHPO staff who would prefer to spend their time and efforts preserving historic properties rather than enforcing procedures on telecommunications projects.** The SHPOs have a specific statutory duty to consult with Federal agencies and assist them with their section 106 duties. 16 U.S.C. 470a(b)(3)(I). Moreover, the SHPOs do spend their time directly preserving historic properties through their involvement in the section 106 process. The Council has not received contrary views from any SHPOs. Finally, similar issues of SHPO/telecommunications industry work in the section 106 process is being addressed by the ongoing Telecommunications Working Group.

**Definition of "additional consulting parties" is too open ended, since it makes it possible for anyone who can**

**claim a "concern" to become a consulting party, adding delays and expenses to the process (§ 800.2(c)(6)). Even if Council had authority over this issue, at a minimum the rule should require a demonstration of some form of protectable interest similar to the concept of legal standing.** Standards for additional consulting parties adequately balance the project's need for expediency and the right of those with defined interests in getting involved in the process. To ensure this provision is not abused, the rule gives the Agency Official the ultimate discretion to invite additional consulting parties or not. The Council believes the Agency Official is in a better position to balance the benefits of including these parties against the costs of so doing. The Agency Official will be able to do this on a case by case basis, according to the particulars of the specific undertaking at issue.

**Use of the phrase "SHPO/THPO" has led to misunderstandings concerning the different regulatory roles of the SHPOs and THPOs in consultation on projects located off tribal lands. Guidance is needed to clarify these roles.** The Council believes the rule is clear in that Federally recognized tribes have to be consulted regarding historic properties of cultural and religious significance to them, regardless of the location of such properties. With the changes regarding the use of the term THPO, there should be no confusion as to consultative rights of tribes.

**Expanded definition of consulting parties has made it difficult and time consuming for agency officials to establish an appropriate consultation process. Guidelines for determining formal consulting parties should be developed.** The Council believes that §§ 800.2 and 800.3(f) set forth clear standards for who should be a consulting party, and a clear process for who makes the determination and when. A further expansion on this topic to aid Federal agencies is better suited for guidance.

**Regulations give tribes a secondary role to SHPOs with respect to tribal cultural and sacred properties which are not on tribal lands. The 1992 Amendments were intended to provide tribes with rights at least equivalent to SHPOs regardless of where the properties are located. Tribes want same consultation rights as SHPO for tribal cultural properties located off tribal lands. SHPO role is a creation of the regulations and is not required in the Act.** The Council does not believe that Tribes have a secondary role to SHPOs. They do have a different role however. The rule recognizes that

Tribes are entitled to consult regarding historic properties of religious and cultural significance to them that may be affected by an undertaking. The SHPO is also entitled to consult, consistent with the definition of SHPO responsibilities in the Act, regarding historic properties. 16 U.S.C. 470a(b)(3).

**The regulations assume that the THPO is a regulatory/executive body of a tribal government. Federal agencies believe that consulting with the THPO or tribal cultural resource manager fulfills the government-to-government responsibility. Agencies need to become familiar with this responsibility. The regulations fail to address or identify the process for government-to-government consultation.** It is the duty of the relevant Federal agency (and not the Council) to specify how they meet their government-to-government responsibilities. See Executive Memorandum on Government-to-Government Relations with Native American Governments, dated April 29, 1994.

**Granting SHPOs a role on tribal lands where there is no 101(d)(2) THPO is an intrusion on tribal sovereignty and is hypocritical since tribes are not given an equivalent role for their traditional cultural and sacred properties off tribal lands.** The Council disagrees. Tribes that attach religious and cultural significance to historic properties must be invited to consult, regardless of where the property is located. The proposed rule follows statutory roles given to Tribes and SHPOs. See 16 U.S.C. 470a in general, and 470a(d)(2)(D)(iii).

**The regulations provide a significant role for the THPO, above the tribal government leader. Federal agencies now have an "out" to avoid the government-to-government responsibility. Agencies need to learn, and ACHP trainers need to emphasize, the difference. The regulations should include a section that requires agencies to develop a process that recognizes the THPO role.** The Council reasonably assumes 101(d)(2) THPOs are the appropriate contact for government to government relations. Nevertheless, the Council will confirm this statement with the Department of the Interior.

**800.2(c)(3)(vi) is confusing. This allows for the SHPO and Council to ignore and avoid tribal involvement. It also provides an outlet for Federal agencies to disregard Federal law, E.O.s, etc. Finally, the SHPO then becomes a decision maker on tribal lands.** This provision was requested by Tribal comments that wanted to avoid Tribes being required to sign an agreement if they chose not to sign it. A

waiver under § 800.2(c)(3)(vi) requires positive action from the Tribe, and therefore does not present a loophole to be used by Federal agencies or any other entities.

**A tribe that does not have a 101(d)(2) THPO does not have the same authority as a tribe that does. This gives the SHPO the ability to come onto reservation lands and dictate how the tribe handles its preservation program and individual projects. Would like the regulations to provide tribes the option of inviting the SHPO into consultation on tribal lands.** Section 101(d)(2) of the NHPA provides for THPO substitution of the SHPO on tribal lands if approved by DOI. If there is no approved 101(d)(2) THPO, NHPA provides that the SHPO shall consult with Federal agencies on any undertaking within the State. Also, NHPA specifically states the right of private owners of land within tribal boundaries to request SHPO involvement in undertakings on tribal lands. See section 470a(d)(2)(D)(iii) of NHPA.

**Change last sentence to: Nothing in this part alters, repels, interprets, or modifies tribal sovereignty or preempts, modifies, or limits the exercise of any such rights.** This change would delete "is intended to . . ." The Council agreed with such a change since it was needed to more properly accord with tribal sovereign rights and the original intent of the section.

#### Section 800.2(c)(5)

Several comments requested that the rule be changed so that Federal agencies will not be required to give specific authorization for each applicant to initiate consultation with SHPO/THPOs. The Council supported amending the proposed rule to allow agencies to authorize applicants to initiate consultation on a broader basis than individual authorizations.

Because of the time and resources required to consult with Tribes, more Federal agencies are delegating their consultation responsibilities, without guidance, to consultants, applicants and others. Many tribes, however, refuse to interact with parties other than the Federal agency or agency director. The Council responds to this concern by clarifying that such insistence is due to the Federal agencies' government-to-government responsibilities under Executive Orders and Memoranda.

**Delegating authority to applicants is delegating Federal agency responsibility. This process lacks the integrity of upholding the intent of laws and EOs. Generally, tribes are insisting on formal consultation with Federal**

**agencies, not applicants.** Federal agencies are required to consult with Indian Tribes on a government-to-government basis pursuant to Executive Orders, Presidential memoranda, and other authorities. The proposed rule therefore was amended to acknowledge this responsibility. The authorization to applicants to initiate consultation does not include consultation with Tribes.

#### Section 800.2(d)

**Proposed part 800 elaborate procedures for public participation go well beyond the provisions of NHPA. NHPA does not require separate public notice and comment requirements at every stage of the review process. Recommend that part 800 recognize Federal agencies' existing public participation procedures and permit agencies to rely on those procedures in addressing adverse effects only.** The rule does not require separate public notice and comment requirements at each step. Also, the proposed rule already allows for use of agency procedures. Nevertheless, it is simply impractical and illogical to solely rely on agency procedures for public involvement regarding section 106 if such procedures fail to address historic preservation issues.

**Public participation provisions are an improvement over the 1996 proposed rule, but still invite problems. Council is not vested with authority to regulate public participation. Section 106 does not address this topic. Council has no authority to vest anyone, but itself, with a reasonable opportunity to comment on the Federal undertaking.** The Council believes it has the required authority to justify this and all other sections of the proposed rule. Please refer to our response regarding legal authority, below.

**This provision lies outside of the NHPA section 106 authority, and is a back door mechanism to impose upon Federal agencies the Council's interpretation of the interested public instead of leaving the interpretation of that role to the agencies, in consultation with the Secretary of Interior as provided for in section 110(a)(2)(E) of the NHPA. Deleting this provision is recommended.** The Council disagrees. As stated below, the Council has the required authority to justify this and all other sections of the proposed rule. Furthermore, § 800.2(d)(3) allows the use of agency procedures to the extent they provide pertinent information on historic preservation.

#### Section 800.3(a)

Several comments requested clarification that under § 800.3(a) the

**agency should not be considering case-specific issues, and that in this section the reference is to "type and nature" of the undertaking.** In light of these comments and practical experience, the Council agreed that such a change was necessary. The language in § 800.3(a) was amended to state that the determination is as to whether the undertaking is a "type" of activity that has the potential to cause effects on historic properties, assuming such properties would be present.

**Regulations should address what happens with program alternatives or PAs that were executed before the effective date of the new regulations.** Such agreements are still valid and will continue to be in effect according to their terms.

#### Section 800.3(b)

**The section should read that the Agency Official "may coordinate \* \* \*." Council cannot require such coordination.** The comment misreads the proposed rule. It only states that the Agency Official "should coordinate," implying encouragement, but not requirement.

#### Section 800.3(c)

**30 day response period is too long and only ensures the destruction or damage to an archeological site where the project went forward because of the necessities of the mission. A 15 day response period would be much more appropriate in recognition of the rapid forms of communication available.** The Council disagrees. The 30 day time period reflects an adequate balance between project need for expediency and workload requirements on reviewers.

**Either delete section 3(c)(3) altogether, or add further guidance or regulatory definition of the phrase "\* \* \* and to the nature of the undertaking and its effects on historic properties." Also, delete any discussion of timing in section 3(c)(4). It erroneously implies that nearly everything submitted to the SHPO falls under a 30 day review period. Review time periods should simply be referenced in the various sections of §§ 800.4–800.6.** The rule indeed imposes a 30 day limit on SHPO/THPO at each step of the process where a formal response is required to findings and determinations, unless otherwise noted. See § 800.3(c)(4). SHPO/THPO cannot require the process to stop by failing to respond by the end of this period. On the other hand, there is no such clock for consultation alone (e.g., regarding APE or for seeking ways to avoid, minimize or mitigate adverse

effects). All that the Federal agency needs to do regarding such consultation is to make a reasonable effort to consult (which may or may not take 30 days) and move forward with the process.

#### Section 800.3(d)

**Once SHPO declines to participate, Federal agencies should have no further burdens. To the extent that the Council is relying on SHPOs to comment or consult on its behalf under section 106, the agency complies with section 106 by providing SHPO (Council) an opportunity to comment. Rule should also contain presumption that SHPO concurs with a written finding if it does not respond within 30 days. Accordingly, § 800(d) should read: (1) If the SHPO declines in writing to participate, or otherwise cooperate, in the section 106 process, the Agency Official shall proceed as it believes appropriate; (2) If the SHPO does not respond within 30 days to a written finding under this part, or sooner if reasonably requested by the Agency Official, a presumption of concurrence with such finding shall be created.**

Federal agency obligations under section 106 of the NHPA do not terminate when the SHPO or any other entity declines to continue participating. SHPOs do not comment or participate in consultation on behalf of the Council. A process of allowing the agency to proceed without any Council review when SHPO declines to participate or respond within the 30 days is inconsistent with the letter, intent and spirit of the law. Nothing in the NHPA indicates in any way whatsoever that Federal agency responsibilities under section 106 disappear once a SHPO refuses to participate. The statute mandates Federal agencies to take into account the effects of their undertakings on historic properties and afford the Council a reasonable opportunity to comment regardless of what any other entity does or does not do. 16 U.S.C. 470f. It is noted that the rule does have certain, reasonable presumptions of concurrence when a response does not come in time. See particularly, § 800.3(c)(4).

#### Section 800.3(f)

**The regulations do not give adequate guidance regarding federally designated THPO's, Federally recognized tribes without a designated THPO, and federally recognized tribes not occupying tribal lands. Guidance is also needed to identify associated tribes, crosscutting boundaries or ancestral lands, differentiate among differing views of ancestral lands to ensure that tribes' rights are addressed**

**without impinging upon the property rights of private landowners.** Such information can be provided in a guidance but is not appropriate in a rule. Furthermore, see information above regarding Council/NPS project regarding assistance to Federal agencies regarding ancestral lands.

**Section fails to establish who is responsible for establishing the list of consulting parties, setting a time limit in which the SHPO should respond, and defining what constitutes a good faith effort in doing so.** This comment is incorrect. The proposed rule does establish that the Agency Official is ultimately responsible for establishing the list of consulting parties. It also sets forth the 30 day comment period. The meaning of a "good faith effort" will be better handled through guidance.

#### Section 800.4(a)

**This is a useful and important provision. Minor wording changes are proposed to remove any suggestion that the SHPO is responsible for the decision: "(a) Determine scope of identification efforts. In consultation with the SHPO/THPO and other consulting parties, the Agency Official shall (1) Determine and document the area of potential effects, as defined in § 800.16(d); etc."** The Council agreed with this recommended amendment since it clarifies that the ultimate decision here is made by the Agency Official. However, the phrase "and other consulting parties" was removed from the recommended language since the obligation to consult at this stage would not extend to other consulting parties.

**Section on determining Area of Potential Effect fails to include time limit for a response by SHPO or other consulting parties to an agency's determination of APE.** As stated above, the agency obligation is to consult. Failure by SHPO/THPO to respond to consultation within a reasonable time would allow agency to finalize its unilateral determination of the area of potential effect and move forward in the process.

**Indian Tribes are given broad discretion to designate any property to which they attach religious and cultural significance, whether or not within tribal lands, as historic in the context of the consultation process. There are no standards directly relevant to the eligibility of such properties for the National Register. The broad discretion creates great uncertainty, delay, and costs. The rule should contain criteria on designating religiously or culturally significant properties.** This comment is incorrect. These properties must be "historic

properties" and therefore meet the National Register criteria. They must follow the same process as other potentially historic properties.

**Requirement to consult with SHPO regarding the APE should be deleted. It needlessly extends the already protracted consultation process without any concomitant benefits.** The Council believes that consultation with SHPO is valuable at this critical point to avoid later problems. Furthermore, consultation with the SHPO/THPO at this critical decision making point has always been viewed as an important part of the process. The Council decided to retain the duty to consult with the SHPO/THPO since the Council believes that SHPO/THPOs have special expertise as to the historic areas in their jurisdiction and the idiosyncracies of such areas, and can greatly assist the Agency Official, using such expertise, in determining an accurate area of potential effects. Nevertheless, it is noted that the Federal agency is ultimately responsible for making the final determination about the area of potential effect (*i.e.*, the concurrence of the SHPO/THPO in such determination is not required).

**In the case of scattered site housing rehabilitation program, the Agency Official should have the authority to determine that (1) the area of potential effect is limited to the property to be rehabilitated, and (2) any structure to be rehabilitated that is less than 50 years old is not considered eligible. The result would allow scattered site housing rehabilitation to proceed in a responsible manner without adding a time-consuming consultation process with no apparent benefit to the public or environment.** The Council disagrees. Not all scattered site projects are the same. Where a block of properties are to be rehabilitated, the historic district may be affected. The less than 50 years old exemption should be handled during negotiation of a Programmatic Agreement.

**Given that some of the tribes with ancestral interest in a project area are no longer physically located within the state, it is difficult or unfeasible to comply with this provision. The reg needs to set some practical limits on consulting with Tribes in identifying historic properties.** The NHPA does not set such limits on consultation. The location of tribes and the boundaries of tribal lands are consequences of history to which tribes were subjected. Accordingly, the fact that a tribe may not live on or near a significant property should not be an impediment to its participation in consultation. As stated above, this is the subject of a guidance



project currently under way between the Council and the National Park Service.

**The regulations should set forth a process to follow when the SHPO disagrees with an agency determination of the area of potential effects (APE)—similar to the process for determinations of eligibility. Also, we need further guidance on what is considered “documenting” the APE.**

The Council believes the process in the rule regarding APE should remain unchanged. The determination of APE should be ultimately done by the Federal agency in consultation with the SHPO. SHPO can seek informal advice from the Council. Guidance could be developed regarding what is considered “documenting” the APE.

#### **Section 800.4(b)**

**Comments recommended that the provisions of section 106 be extended only to properties formally determined eligible, and that this section should therefore be deleted.** The Council disagrees. Both the Council and the Department of the Interior have interpreted the NHPA to require section 106 consideration of all properties that are listed on the Register, as well as all those that meet the criteria of eligibility on the National Register, regardless of whether a formal determination by the Keeper has been made. Well established Department of the Interior regulations regarding formal determinations of eligibility specifically acknowledge the appropriateness of section 106 consideration of properties that Federal agencies and SHPOs determine meet the National Register criteria. See 36 CFR 63.3. The NHPA specifically defines “historic properties” as those that are “included in, or eligible for inclusion on the National Register.” 16 U.S.C. 470W(5). Not only does the statute allow this interpretation, but it is the only interpretation that reflects (1) the reality that not every single acre of land in this country has been surveyed for historic properties, and (2) the NHPA’s intent to consider all properties of historic significance. It has been estimated that of the approximately 700 million acres under the jurisdiction or control of Federal agencies, more than 85 percent of these lands have not yet been investigated for historic properties. Even in investigated areas, more than half of identified properties have not been evaluated against the criteria of the National Register of Historic Places. These estimates represent only a part of the historic properties in the United States since the section 106 process affects properties both on Federal and non-Federal land. Finally, the fact that a property has never been considered by

the Keeper neither diminishes its importance nor signifies that it lacks the characteristics that would qualify it for the National Register.

**Rule should clarify that the section 106 process does not impose identification burdens upon the private applicant. Although identification obligations are placed on Federal agencies, in reality the burden is often passed on to the applicant through delays or conditioning the agency’s decision until the applicant has funded the identification efforts.** Federal agency ability to shift burden to applicant is dependent on that agency’s independent authority. The section 106 rule does not confer such authority nor relieve Federal agencies of its duties. This may be an appropriate guidance topic to be developed.

**Regulations fail to respect the National Register nomination and listing process and grant unbridled authority to impose section 106 requirements on properties already deemed ineligible.** Properties that are determined ineligible are not subject to section 106 consideration. Revisiting eligibility determinations is encouraged on certain occasions, but not mandatory.

**Any imputation of a new substantive duty under section 106 to discover unidentified properties is negated by the detailed provisions for the discovery of unknown properties contained elsewhere in NHPA.** The Council disagrees. The obligation to identify during planning is different than coming across something during construction. Further obligation is limited in scope, duration and intensity. The “discovery” provisions of the NHPA do impose a continuing duty to survey and identify historic properties. See 16 U.S.C. 470h–2(2)(A). However, the reality is that such an effort has not reached every acre of land of this country that could be affected by a Federal undertaking, and the NHPA seeks to protect historic properties even if they had not been identified prior to the proposition of an undertaking. This is clearly reflected in the statute where it provides, for example, that agency procedures implementing the Council’s section 106 rule would provide a process for identifying historic properties. 16 U.S.C. 470h–2(a)(2)(E)(ii). The NHPA would not contain this language if it believed the other, general surveying provisions were sufficient.

**Since SHPOs are statutorily required to conduct comprehensive statewide surveys of historic properties (section 101(b)(3) of NHPA), Federal agencies and permit applicants should not have to be required to engage in field investigations or surveys. SHPOs**

**should already know what historic properties exist.** No. Agency obligation to “take into account” effects on historic properties necessarily places an affirmative duty to identify historic properties. The Council notes that the rule does not compel shifting of such agency burden to applicants. Also, please refer to the immediately preceding response.

**Although proposed rule on its face may place identification efforts on Federal agencies, the reality is that these burdens are borne by applicants. This is usually done by delaying or conditioning the Federal decision until the applicant has funded the identification effort requested by the SHPO or Council. This tactic is improper and the rule should clarify that the process does not impose the burden upon applicants through either direct or indirect means, including delays.** The rule does not compel shifting of this or other Federal agency burdens to applicants. Section 106 obligations lie with the Federal agency. Although Federal agencies may be requiring submissions, as a basis of accepting applications, this is not compelled by the rule.

**Council only has authority to promulgate rules regarding section 106. Since section 106 does not address the identification of historic properties or evaluation of historic significance, the Council has no authority to regulate these activities. The duty to identify historic properties are placed upon Federal agencies, the Secretary of the Interior, and SHPOs under other sections of the NHPA (namely sections 101 and 110).** The Council disagrees. The NHPA grants the Council the authority to promulgate regulations regarding section 106 “in its entirety,” 16 U.S.C. 470s. It would be impossible for an agency to take into account the effects of its undertakings on historic properties (which include those listed on the Register, as well as those eligible for listing), as section 106 requires, if it does not know what those historic properties are in the first place. Accordingly, the identification and evaluation provisions of this rule are reasonable under the authority. Also, see response to comment above regarding ongoing identification duties.

**This provision for phased identification and evaluation using an MOA is inconsistent with our prior understanding that an MOA should be used exclusively to stipulate mitigation measures for properties that have been identified and fully evaluated. With this change, why would an agency do a project specific PA? Phased identification acknowledges the reality**

of large projects. A programmatic agreement may be an alternative, but this provision expands the flexibility of the rule.

#### Section 800.4(c)

This section should be revised to overcome the current perception that agencies are required to identify every single specific property that may be affected and study each sufficiently to apply the National Register criteria. This drives up the cost of S. 106 consultation, unnecessarily delays the process, discourages consideration of indirect and cumulative effects, and complicates coordination with NEPA. The provision for phased ID and evaluation helps, but § 800.4(a) should be revised to make it clear that it is permissible to address eligibility prospectively, and to focus on “types of properties” rather than to identify every single property. The phased identification provisions of the rule are intended to deal with this issue. The Council intends to provide guidance regarding phasing.

Section 800.4(c)(1) is misleading in stating that tribes have “special expertise in assessing the eligibility of historic properties that may possess religious and cultural significance to them.” Their expertise is not in applying the criteria of eligibility, it is in identifying some kinds of historic properties and in identifying effects that might not be apparent to others. The current wording sets up the tribes to overrule decisions made by agencies and SHPOs. The Council clarifies that tribal expertise is not in applying the eligibility criteria per se, but in bringing a special perspective to how a property possesses religious and cultural significance. This reflects the fact that such Tribes are particularly well placed to provide insights and information on those properties of religious and cultural significance to them. It is common sense to reach out to the Tribes regarding these issues.

Requiring eligibility determination from the Keeper when SHPO disagrees with Agency Official determination gives SHPO a veto over the project. The Keeper eligibility process is so lengthy that applicants have no alternative but to go along with the SHPO’s position regarding time-sensitive projects. SHPO can delay projects simply by claiming not to have sufficient information.

Department of the Interior regulations require a response from the Keeper within 45 days. Those regulations also recognize the concurrent Agency/SHPO determination scheme. See 36 CFR part 63. The section 106 rule does not encourage wrongful delays by any party.

Cases where an abuse of the process is suspected can always be brought to the attention of the Federal agency conducting the review and/or the Council.

Proposed rule gives Tribes the de facto ability to designate any property to which they attach religious and cultural significance as a historic property. Tribes can then pressure the Agency Official to take their concerns into account above all others. Proposed rule effectively requires Federal agencies to defer to Indian tribes on what properties are reached by section 106, and give added (if not dispositive) weight to religious considerations in that determination. The Council disagrees. Properties of religious and cultural significance to Tribes must meet the National Register criteria in order to be considered “historic” and subject to section 106 consideration. The fact that a Tribe attaches religious and cultural significance to them does not make them “historic,” but neither does it preclude them from meeting the National Register criteria. The Federal agency makes the determination of eligibility, and disputes are ultimately resolved by the Keeper based on the secular National Register criteria. The Tribe is consulted but, again, the ultimate decision in the case of a dispute with the Federal agency finding by a SHPO/THPO, is the Keeper.

The NHPA does not empower the Council to require Agency Officials to obtain a determination of eligibility from the Keeper. In fact the NHPA prohibits “any person or local government” from providing a nomination for inclusion of a property on the Register unless such property is located within a State where there is no SHPO. Moreover, this is redundant with 36 CFR part 63. There is no basis for requiring SHPO concurrence or agreement. Finally, the NHPA expressly prohibits the nomination of any historic property for the Register where the owner objects. 16 U.S.C. 470(a)(6). Such prohibition should be integrated into the proposed rule to reflect that when such objection is lodged with a Federal agency, they may terminate their section 106 review. The comment fails to realize that a determination of eligibility is not the same as a nomination/listing on the National Register. The Council also points out that under the NHPA, an owner’s objection to a nomination/listing still can lead to the Secretary of the Interior determining the eligibility of the property. It should also be noted that this rule provides that an owner of an affected property can, and should be, invited as an additional consulting party

in the section 106 process. See § 800.2(c)(6) of the rule. Finally, see responses above to the issue of Agency/SHPO concurrence determinations of eligibility.

Various comments comment suggested that in the last sentence, the word “special” should be changed to “unique.” The Council disagreed. The word “unique” excludes everyone else and gives the incorrect impression that Tribes have the final word that cannot really be challenged by the Agency. Also, see response above regarding the need of properties of “religious and cultural significance” to Tribes to meet National Register criteria in order to be considered “historic.”

#### Section 800.4(d)

The addition of a 30 day waiting period, even when no historic properties are identified, is unreasonable. Suggest that the waiting period after submission to SHPO/THPO be eliminated consistent with previous regulations. The Council disagreed. This period is necessary so the consulting parties and the Council can review the finding responsibly and object if appropriate. Such review also allows mistakes to be caught in time before they potentially lead to costly litigation.

Move this subsection under § 800.5 and re-title § 800.5 to “Assessment of Effects.” The proposed change was rejected since these are outcomes of identification and effect assessments. However, the Council may draft guidance on the topic of assessment of effects.

#### Section 800.5(a)

A tribal comment stated that the exemption of properties of religious and cultural significance from the demolition by neglect provision (§ 800.5(a)(2)(vi)) is so broadly written that it could lead to the loss of National Register districts in pueblos and other Native communities. This provision had been added at the request of Indian tribes. It specifies that the exception only applies where neglect and deterioration are recognized qualities of the property. A further safety valve is that a “no adverse effect” determination is subjected to review by consulting parties (which would include Tribes that attach religious and cultural significance to the historic property at issue). See § 800.5(c). Lastly, the Council is not aware of this provision having been applied inappropriately or over the objections of Tribes.

Criteria of adverse effect too broad, and encompasses activities of benefit to the public. Accordingly, such activities

are delayed. Examples of such activities are: reclamation of abandoned mines, creation of wetlands, "hazardous material remediation" (§ 800.5(a)(2)(ii)), rehabilitation of historic properties, and provision of handicapped access.

Adverse effect criteria are linked specifically to objective National Register criteria published by the National Park Service, which are used to determine characteristics that contribute to a property's historic significance. If those characteristics are adversely affected, then the historic significance is impaired. It is noted that program alternatives under § 800.14 are intended to deal with repetitive or minimal impact situations. Finally, while the listed activities may be of benefit to the public, it does not necessarily follow that such positive activities could not also cause an adverse effect on historic properties. Again, all that the section 106 process requires is that such effects be taken into account. The section 106 process does not prohibit any projects, beneficial or otherwise.

**Proposed rule uses impermissibly vague and overbroad terms, in violation of the Due Process Clause. Its definition of "adverse effects" includes those when an undertaking "may" alter "indirectly" "any" of the characteristics making the property eligible in a way that would diminish the integrity of the property's "feeling" or "association." Such definition does not give fair notice as to what it requires, and is not grounded on intelligible principles. This further complicates, expands, and lengthens the process, adding difficulties, costs and uncertainty.** As stated above, adverse effect criteria are linked specifically to objective National Register criteria published by the National Park Service. The National Register criteria itself expands on the meaning of its terms and provides various examples. These criteria have been fleshed out through consideration and application countless times, over the years, since the program began, and explained through various guidance documents. For example, see National Register Bulletin 15, "How to Apply the National Register Criteria for Evaluation," which includes definitions of the terms "feeling" and "association."

**Criteria of adverse effect should exclude "insignificant" transfers of property. De minimis transfers of property are being subjected to lengthy section 106 process.** The rule provides for an avenue, under § 800.14(c), whereby the appropriate agency can pursue an exemption.

**The criteria of Adverse Effect is devoid of any limitations on the proximity of an undertaking to a historic site, allowing the SHPO to be inconsistent and subjective when evaluating effects.** The standard set forth under section 106 is effect, not proximity. While it is possible that distance separating an undertaking from a particular historic property may remove any effects, such a determination should be made on a case by case basis, and is not suitable for a generalization. Different undertakings simply have different areas of potential effects according to several factors such as the nature of the undertaking itself, the nature of the historic property at issue and topography.

**The current and proposed rule do not take into account the fact the cumulative impact of adding a monopole to areas with modern intrusions would not be an adverse effect. The proposed rules, therefore, will lead to consultative gridlock as the expansion of wireless services continues.** This and several other issues mentioned by the telecommunications industry in this rulemaking process have been or are in the process of being addressed through ongoing discussions with the industry, the FCC and SHPOs. These discussions commenced before the present rulemaking process. Such ongoing discussions are referred hereinafter as "Telecommunications Working Group."

#### Section 800.5(b)

**Final decision regarding adverse effects is charged on the Agency Official. Council has no authority to impose its determination on this matter. Council may comment on the issue, but the final decision is to be made by the Agency Official.** The Council has used its expertise in setting up the criteria of adverse effects on this rule. It therefore has a justifiable role and the expertise in ensuring the correct interpretation of its rule. Section 800.7 of the rule is clear in stating that the Agency Official can terminate consultation on ways to avoid, minimize or mitigate adverse effects, and request Council comments. The Agency Official can then proceed with its undertaking in any way it wants, after taking the Council's expert comments into account.

**There is no basis for mandating consultation regarding adverse effects. To the extent that other sections of the NHPA require Agency Official consultation with the SHPO, these provisions are not to be implemented by section 106 regulations of the Council.** The Council believes this consultation is reasonable and necessary

in that it provides the Federal agency with the information and considerations needed for it to take into account the effects of its undertakings on historic properties. Consulting parties are defined in such a way as to ensure they have the necessary interest and competence in informing Federal agency decisions on historic properties. As elsewhere in the process, consultation ensures that correct and informed decisions are made and that mistakes are not overlooked. See response regarding legal authority, below.

**To address agreements like Community Development Block Grant (CDBG) Programmatic Agreements, the Council should add language which recognizes situations where the specific details of future activities are unknown and the consulting parties agree that adverse effects will be avoided through review and standard mitigation measures.** Such language can, and many times is, used and provided for in the Programmatic Agreements themselves. There is no need to add this language to the process under the rule to reach such agreements. As stated before, the Council has revised the rule to provide for prototype agreements, which could be particularly helpful in the CDBG context.

#### Section 800.5(c)

**Proposed rule gives Tribes power to require further analysis (and therefore delay) under the process whenever they attach religious or cultural significance to a property.** Tribes are provided the same consultative opportunities to review an agency's findings that other consulting parties are provided. The rule only encourages, but clearly does not require, the agency to reach such concurrence. See response above to comments regarding properties of "cultural and religious significance." Also see section 101(d)(6)(B) of the NHPA.

**Subsection (c)(1) is directly contrary to NHPA since NHPA only requires documentation when an adverse effect is found. 16 U.S.C. 470(l).** This comment misreads the statute. Section 110(l) of the NHPA simply indicates that when no solution to adverse effects is reached and embodied in an agreement in accordance with this rule, the Federal agency must document its decision after considering Council comment. This is completely different than providing the documentation necessary for reviewers to understand agency decisions in the normal section 106 process, which is reasonable and not precluded by anything in the statute.

Subsection (c)(2) must clarify that a finding of adverse effect does not require consultation under section 106. The Council is provided a reasonable opportunity to comment under section 106. The Council disagrees. Section 110(l) of the NHPA explicitly indicates its blessing of the Memorandum of Agreement consultation concept when it states that when no such solution is reached in accordance with this rule, then the agency head must document its decision after considering Council comment. Furthermore, the rule clearly states that once a Federal agency has entered into such consultation, it can terminate and proceed to Council comment.

Regarding § 800.5(c)(2)(i), anytime a consulting party objects to a finding, the Federal agency should notify all consulting parties and consult again with all parties prior to seeking consultation with the Council. Regarding 5(c)(3), the Council should also notify all consulting parties of its determination. Regarding the § 800.5(c)(2)(i) point, the Council clarifies that if consultation with the objecting party leads to changes affecting other parties, the Agency should go back to them. The Council also notes that it would notify all consulting parties regarding its § 800.5(c)(3) determination.

#### Section 800.6(a)

The regulations grant an unconstrained authority to require mitigation to avoid adverse effects with no constraints on cost and without requiring any nexus between the mitigation and actual adverse effect. Comment is incorrect. The agency can, based on the applicant's position, refuse any mitigation measures and terminate consultation. Furthermore, the rule is quite clear in that the consultation that may lead to an agreement is to avoid, minimize or mitigate the adverse effects on the historic properties.

Rules should provide that any Adverse Effect comment should include recommendations and core criteria for mitigation to reduce the effects to No Adverse Effect. While this is permissible, the Council believed the rule should not require it as a duty of SHPO/THPO at the determination of adverse effect step. Review at that point is intended to focus on identifying whether adverse effects exist, and not to provide a full range of mitigation options.

#### Section 800.6(b)

Proposed rule inappropriately attempts to require parties to sign an MOA to avoid additional delays from

Council comment on the undertaking. Federal Register Council has no authority to require execution of a binding contractual agreement of any kind. Section 110(l) does not mean that the Council may compel the use of MOAs. This is beyond Council authority and must be deleted from the rule. The rule does not require or compel execution of an MOA. Furthermore, section 110(l) of the NHPA explicitly indicates its endorsement of the Memorandum of Agreement (MOA) consultation concept when it states that (1) when no such solution is reached in accordance with this rule, then the agency head must document its decision after considering Council comment, and (2) when such an agreement is reached, it shall govern the undertaking and all its parts.

There is no specific time period for Council review of a MOA when Council is participating in consultation which can significantly lengthen the section 106 compliance process. Regulatory time limits or guidelines (30–45 days) should be promulgated. Similarly, there is no review time specified for Council response to the submission of an executed MOA. Recommend time limit or guidelines of 30 days. The Council consults regarding MOAs but does not "review" them. The Council does not review executed MOAs, so there are no delays of agency action.

#### Section 800.6(c)

Several comments requested changes to the rule to clarify the issue of invited signatories. The Council agreed that this section needed to be changed. The changes to the rule indicate that the Agency Official is the one that ultimately decides who is an invited signatory, and that the rights to seek amendment or termination of an MOA attach to those that actually sign the MOA.

A comment regarding 36 CFR 800.6(c)(2)(I) supported retention of the permissive "may" in allowing agency to invite an Indian Tribe or Native Hawaiian organization to become a signatory to a MOA, but would find a language such as "should" or "shall" to be unacceptable. Several tribal comments, on the other hand, requested that the tribes be given a signatory right. This was a major issue during the development of the 1999 rule. After careful consideration, the Administration made a policy decision that is reflected in the proposed rule. Indian tribes are not mandatory signatories to an MOA dealing with effects on historic properties off tribal lands. The Council has no new evidence to support changing that position.

SHPOs are given broad discretion to determine appropriate mitigation for an MOA, resulting in the process being unregulated. This comment is incorrect. The Federal agency has the discretion to agree or disagree with SHPO/THPO views regarding an MOA. When an agreement is not reached, the agency goes for Council comment to wrap up the process.

#### Section 800.7(c)

There is no authority for the Council to dictate to Federal agencies how they consider Council comments, how they document or prepare records of decisions, nor how or whether they notify the public, nor require the agency to provide the Council with the decision prior to approving the undertaking. The NHPA specifically grants the Council the authority to promulgate rules to implement section 106 in its entirety. Section 106 requires Federal agencies to give the Council a reasonable opportunity to comment. Section 110(l) of the NHPA explicitly requires the Federal agency to document its decision made pursuant to section 106. The Council is well within its authority to implement these requirements and determine how such opportunity is provided the Council, and how the required documentation is provided.

Time for Council comment should be limited to 30 days, and the Agency Official could decide to grant an extension if it so desired. The Council believes the 45 day comment period is reasonable, takes into account the reality of staff and Council workload and need for adequate consideration, and reflects a shorter time period than previous rules (the section 106 rule adopted in 1986 set a 60 day period).

#### Section 800.8(a)

Rule contravenes NEPA by seeking to require processing under NEPA of undertakings that have no significant or no adverse impact on historic properties. The Council emphasizes that the rule clearly does not require NEPA processing for anything. That is something the Federal agency must decide independently.

Rule contravenes NEPA in that it undermines the categorical exclusion provisions of NEPA by requiring section 106 processing for all categorically excluded Federal actions and failing to provide a compatible process for excluding from section 106 those actions that have small or insignificant impacts, thus causing waste of enormous public and private compliance resources struggling with the least measurable and least

**important Federal actions.** The statement is incorrect. Section 106 of the NHPA covers “undertakings” regardless of NEPA categorical exclusions. The NHPA and NEPA are independent statutes with separate obligations for Federal agencies. Furthermore, § 800.14(c) provides for a way that agencies can request and obtain exemptions.

#### Section 800.8(c)

**Comments suggested need for guidance to facilitate use of provisions allowing substitution of NEPA for section 106 process.** The Council is committed to develop such guidance and assist Federal agencies that desire to follow these provisions of the rule.

**Any integration of the NEPA process with section 106 should allow EAs as well as EISs to constitute full compliance with section 106.** Section 800.8(c) of the rule allows just that when certain reasonable standards are met. Those standards ensure that historic properties are taken into account in a manner consistent with the NHPA.

**Council has no authority to prescribe rules regulating Federal agencies’ use of NEPA to comply with section 106. Such an approach was rejected during the 1992 amendments.** The Council notes that the NEPA coordination provisions of this rule only apply when the Federal agency independently chooses NEPA documents/process to substitute for the regular section 106 process that they would have had to follow otherwise. The Council has the authority to set conditions for an agency to substitute another process for the Council’s government-wide rule.

**Requirement that the NEPA documents include mitigation measures should be deleted. The Supreme Court has stated repeatedly that NEPA mandates that mitigation measures be discussed, but that there is no requirement that a detailed mitigation plan be adopted. The Council has no authority to attach such a requirement to the NEPA process.** Again, the NEPA/106 substitution provisions of this rule apply only when the NEPA process is used to substitute regular section 106 process that the Federal agency would have had to follow otherwise. Nothing in the rule requires adoption of mitigation measures since the option of getting formal Council comments instead is still available.

#### Section 800.9(a)

**It is not the responsibility of the Council to decide whether or not their procedures have been followed regarding Agency determinations. The**

**only Council right is to expect a reasonable opportunity to comment and that its comments will be considered before the agency proceeds with the undertaking.** The rule makes it clear that this is not a binding “decision” by the Council, but an advisory opinion (see section 202 of the NHPA). The Council, as the agency promulgating the section 106 rule, has the specific expertise and interest in opining as to whether its rule has been correctly followed.

#### Section 800.9(b)

**The process in § 800.9(b) regarding the Council’s determination of a foreclosure lies outside of the Council’s authority.** A finding of foreclosure is an advisory opinion within the Council’s authority (see Section 202 of the NHPA). The Council, as the agency promulgating the section 106 rule, has the specific expertise and interest in opining as to whether its rule has been correctly followed.

#### Section 800.9(c)

**Comments questioned the statutory authority for Council to promulgate regulations implementing section 110(k) of the NHPA.** Section 211 of the NHPA authorizes the Council to promulgate regulations to implement section 106 in its entirety. Section 110(k) directly relates to the section 106 and what an agency must do when an applicant’s actions may have precluded section 106 review. Moreover, section 110(k) specifies a requirement that the Council be consulted. The rule simply re-states Section 110(k), sets forth how the Council will be consulted, and reminds agencies of their further section 106 responsibilities.

#### Section 800.9(d)

**Council’s assertion, under § 800.9(d)(2), that it can participate in individual case reviews, however it deems appropriate, finds no support in any section of the NHPA and should be deleted.** The Council changed the rule in response to this comment. The change expressly limits the role of the Council in such reviews to accord with the role already given to the Council under subpart B and parallel to that of SHPO/THPOs.

#### Section 800.10

**A comment questioned the statutory authority for Council to promulgate regulations implementing Section 110 of the NHPA.** Section 211 of the NHPA authorizes the Council to promulgate regulations to implement section 106 in its entirety. The Council notes that undertakings affecting National

Historical Landmarks (NHLs) are subject to section 106 review. NHLs are “historic properties” listed on the National Register. The provisions of § 800.10 lay out how the Council may participate in the section 106 review of these particularly important historic properties, how the Council may request a report from the Secretary of the Interior pursuant to section 213 of the NHPA, and how the Council will provide a report to the Secretary on the outcome of the consultation.

#### Section 800.11(a)

**NHPA section 470k limits the substance and extent of any documentation requirement dependent upon each Federal agency’s authority and funding; therefore the proposed § 800.11 should be revised to clarify that the rules’ documentation requirements are not mandatory but are recommended guidelines consistent with NHPA 470k and the Council’s advisory role.** To better comport with statutory language, § 800.11 was changed by adding language that clarifies that documentation requirements are mandatory but limited “to the extent permitted by law and within available funds.” 16 U.S.C. 470k. The documentation provisions remain mandatory since the Council and other reviewers simply cannot comment without a basis, which can only be provided by adequate documents. The Council believes that the document requirements are not only minimal, but should be readily available to any agency as its record supporting its decisions in the process.

**When a documentation dispute is presented to the Council, it must be resolved in a timely manner.** When documentation disputes are referred to the Council, the Council is committed to expeditiously providing a resolution to them. The resolution provided by the Council will include guidance as to when the relevant party should complete their review of the finding or determination at issue—taking into account how long the party disputing the documentation has had the documentation, particularly in cases where such documentation is deemed by the Council to have been adequate.

**Documentation standards are extremely broad, and likely to create confusion. Specific standards should be included that reference and adopt, at a minimum, documentation sufficient to satisfy the definition of “sacred site” in EO 13007 (“any specific, discrete, narrowly delineated location on Federal land that is identified by” an authoritative Indian tribal source).** Documentation standards are

adequately specific and far more specific than those of past regulations. The matter about defining "sacred sites" is better handled through guidance. Nevertheless, the Council clarifies once more that sites, sacred or otherwise, must meet the National Register criteria in order to be considered in the section 106 process.

**Questions statutory authority for Council to impose extensive documentation requirements. Section 110(l) of the NHPA requires agencies to document their section 106 decisions, but does not authorize Council to elaborate. Section 203 of the NHPA authorizes the Council to obtain information from Federal agencies, but does not require those agencies to provide the information.** Section 203 of the NHPA would be meaningless if it authorized the Council to obtain documents from Federal agencies, but did not require such agencies to comply according to the law. Furthermore, the Council is within its statutory authority to promulgate regulations implementing section 106 in its entirety, in setting the rule's reasonable documentation requirements. Documenting decisions not only assures meaningful compliance with the requirement to take into account effects to historic properties, but it produces the necessary information for consulting parties to assist the Federal agency in meeting its duties. Furthermore, the Council would not have a reasonable opportunity to comment on an undertaking without having adequate documentation on the undertaking and relevant historic properties, as provided in this section of the rule.

#### Section 800.11(c)

**It is too cumbersome for the agency to be required to consult the Secretary of the Interior and the Council every time it wishes to withhold information under this provision.** This consultative process is set forth and mandated by section 304 of the NHPA. The rule simply outlines a reasonable process for the Council participation required by section 304.

**Regarding § 800.11(c)(2), the Agency official should also submit to Council the views of SHPO regarding the confidentiality of information.** The Council agreed and changed the rule to reflect this. SHPOs views as to confidentiality and harm to resources are relevant, and confidentiality is not limited to tribal issues.

#### Section 800.11(d)

**Documentation level for a finding of no Historic Properties Affected is unreasonable.** The Council believes the

level of documentation is more than reasonable, if not minimal, since the agency should already have the listed documentation readily on hand in order to have been able to reach such a decision.

#### Section 800.11(e)

**Section 800.11(e)(5) should require that each criteria of adverse effect be explained, whether found applicable or inapplicable, to ensure consistency in agency documentation.** The Council disagreed with this proposal. Many criteria may have no relevance whatsoever to a particular project. Nevertheless, the Council believes some guidance may be warranted in the future to promote consistency in agency documentation.

#### Section 800.12(a)

**It is not clear how the regulations apply during rehabilitation work, monitoring the emergency from a cultural resources perspective, or when to implement the regulations during emergency situations.** The Council believes the rules are clear that the emergency provisions are triggered when an agency proposes an emergency undertaking in response to a declared disaster. The provisions require notification and a seven day review period.

#### Section 800.12(d)

**Implementation time for emergency procedures should be extended from 30 days for a formally declared event to 90 days in order to allow for limited agency resources to adequately address all the issues that arise from a disaster related event.** The longer an implementation time is extended, the lesser the justification for emergency, abbreviated procedures. Furthermore, the rule already allows requests for extensions of time when needed. The Council has not declined any such extension requests.

#### Section 800.13(b)

**Agencies often do not often want to assume a new find to be National Register eligible. To address this, the comment offered a proposed change.** The Council believed the suggested concept was useful and incorporated changes to the rule. The changes state that the subject of eligibility can be raised (and be considered by agency) in comments. As explained above, section 106 applies to those properties listed or eligible for listing on the National Register. This change acknowledges the importance of National Register eligibility at this point.

**Section 800.13(b)(2) should be removed for the same reason that the data recovery exemption was removed from the 86 regulations.** The Council disagreed. A short cut for these post-review discoveries of archaeological resources of value only for their data is necessary. The Council believes that tribal involvement will provide an adequate safeguard.

#### Section 800.14

**The program alternative provisions are too rigid, intimidating and difficult to apply and create a one-size-fits all approach. The revised regulations should make this provision more useful so that it can be applied more productively to Federal agencies and industry.** What the alternatives under § 800.14 do is to provide vehicles to tailor the section 106 process to the particular needs of each agency, agency program or group of undertakings. While the intent is to provide such flexibility in the final product, it is still essential to maintain the role of the public, preservation officers and other stakeholders in providing necessary input in shaping those products.

#### Section 800.14(a)

**Include a provision for Council monitoring and evaluation of whether Federal agency program alternatives are working or not. Council monitoring of program alternatives should be on a regular basis, including, but not limited to, how agencies implement the "exempted categories" projects. Also, add a provision for the Council to publish a list of acceptable Federal Agency alternative programs and make them available to the public.**

Monitoring measures would be included, as appropriate, in the alternatives' agreements themselves. Regarding a list of Council approved alternatives, the Council does not need a change to its rule to publish such a list.

**Since agency must submit any proposed alternate procedures for review by Council and NCSHPO, requirement for publication in the Federal Register should be eliminated.** The Council disagrees. Federal Register notice of final adoption of these alternatives is needed to notify the public as to these changes in how Federal agencies comply with section 106.

**Regarding all of § 800.14, the Council is granted no rights under the NHPA to be consulted with about Federal agency development of their procedures. Section 110(a)(2) requires consultation with the Secretary of the Interior, but not with the Council. Federal agencies**

may find consultation with the Council desirable, but it is not required by the statute. The comment simply misreads section 110(a)(2) of the NHPA. That section deals with non-binding procedures that agencies may use to implement the Council's binding, section 106 regulations under 36 CFR part 800. The alternatives under section 800.14 directly modify or substitute for the Council's binding regulations regarding certain programs or undertakings, and therefore require our direct involvement. The Council believes it has the internal experience and expertise to make such evaluations. Also, the diversity of its membership ensures that a balanced perspective is brought to final determinations regarding consistency. Section 211 of the NHPA states that the Council "is authorized to promulgate such rules and regulations as it deems necessary to govern implementation of section 106 \* \* \* in its entirety." Section 110(a)(2) of the NHPA states that the "(Federal agency historic preservation) program[s] shall ensure \* \* \* that the agency's procedures for compliance with section 106 \* \* \* are consistent with regulations issued by the Council \* \* \*" (emphasis added). It must be understood, among other things and upon closer examination, that section 110 of the NHPA does not specifically provide for Federal agencies to substitute their programs for the section 106 regulations promulgated by the Council. Through § 800.14 of the rule, the Council is allowing for such substitution, believing this may help agencies in their section 106 compliance. However, the Council will not allow such substitution if the agency procedures are inconsistent with the Council's 106 regulations. The Council, in its expertise, holds that its regulations correctly implement section 106, and that it would therefore be inimical to its mandate and contrary to the spirit and letter of section 100(a)(2)(E) of the NHPA, for the Council to allow inconsistent procedures to substitute the Council's section 106 regulations.

**The Council should seek the views of affected SHPOs and notify them of final adoption when an Indian tribe enters into an agreement with the Council to substitute tribal regulations for Council regs.** The Council notes that section 101(d)(5) of NHPA already requires such consultation with the affected SHPO, and that the Council would obviously notify such affected SHPO as to a final substitution.

#### Section 800.14(b)

**These regulations require more steps, more paperwork, and therefore more time to process routine CDBG Programmatic Agreements. Under the new regulations, the Council must participate more actively in these highly routine and repetitive agreements; and the Council treats the activities covered by CDBG agreements as "adverse effects." We request Council reconsider its procedures for routine PAs.** In response to this comment, the Council agreed to provide a new procedure for routine Programmatic Agreements. See § 800.14(b)(4).

**It is not clear that Programmatic Agreements under § 800.14(b)(3) are developed by an agency official in consultation with the SHPO. Additional guidance is needed beyond simply referencing § 800.6.** The Council notes that the SHPO and other consulting parties must be consulted, just as they would be consulted for a Memorandum of Agreement under § 800.6.

#### Section 800.14(c)

**The Council should modify the proposed rule to accommodate and promote voluntary habitat conservation efforts under the ESA. It should establish as an "exempted category", exempting from section 106 review, all voluntary incidental take and enhancement of survival permits issued by either FWS or NMFS under section 10 of the ESA. Also, approval of and voluntary participation in a "take limitation" or exemption created under a special conservation rule adopted by either the FWS or NMFS under section 4(d) of the ESA should also be exempted from NHPA review.** These and other specific alternatives and exemptions recommended by the commenting public should be decided after the appropriate § 800.14 process is followed, and not through the rulemaking itself. The Council encourages Federal agencies to submit proposed exemptions and other alternatives.

**Under § 800.14(c)(5), the Agency Official should submit the views of SHPO/THPO to the Council along with the other required documentation. The Council should also notify SHPO/THPO of the Council decision. In § 800.14(c)(7), SHPO's and others should be able to request that the Council review an Agency's activities to determine if the exemption no longer meets the criteria.** The Council decided to change this section to explicitly add SHPO/THPO comments to those that need to be submitted. The Council assures the commenting public that it

will notify SHPO/THPOs of final decisions regarding exemption decisions. Finally, the Council notes that anyone can request the Council to conduct a review of a program alternative without need of amendment to the rule.

#### Section 800.14(f)

**Requiring comment from all Indian tribes is unnecessarily broad. Section 800.14(f)(1) should be amended so as to provide an appropriate government-to-government consultation with affected Indian tribes and consultation with Native Hawaiian organizations when a nationwide Programmatic Agreement is being developed, adding language to the effect that "when a proposed program alternative has nationwide applicability, the Agency Official shall identify an appropriate government-to-government consultation with Indian tribes and consultation with Native Hawaiian organizations."** The Council agreed with the concept and rationale of the proposed change. It therefore added language to § 800.14(f) regarding tribal consultation for nationwide agreements, while honoring the underlying intent of meaningful consultation with Indian tribes and Native Hawaiian organizations.

#### Section 800.16(d)

**Rule is unclear, and allows area of potential effect for a one acre wetland permit, to encompass entire development site (which could be over one hundred acres). The area of potential effects should be the one acre of wetland. Vagueness of rule leaves applicants vulnerable to high costs and long permit delays.** The issue of area of potential effects and wetlands permits is one that needs to be worked out between the Council and the Corps of Engineers. The Council notes that section 106 requires Federal agencies to take into account the effects of undertakings on historic properties. An undertaking is defined by the statute to include a "project (or) activity \* \* \* requiring a Federal permit, license or approval." The effects to be considered are those of the "project" that required the permit. Moreover, in most instances the effects of projects are felt by historic properties beyond the immediate footprint of a project. To illustrate, a historic property whose integrity would be affected by increased noise is affected even though it is not itself located on the site of the source of that noise. The Federal agency must take into account such effects. Having said this, the Council understands the need for guidance on the subject of establishing areas of potential effects regarding the

particular concerns reflected in this comment and others. The Council will be developing such guidance.

**Definition of APE is too broad, adding expense for surveys (usually borne by applicants), and unlawfully encompassing private or State lands.** See answer above. Also, section 106 requires Federal agencies to take into account effects on historic properties regardless of whether they are located in private or public lands.

#### Section 800.16(e)

**To the extent the Council seeks to prescribe a role for SHPOs, this definition should include in the alternative the comments of the SHPO.** The comment is incorrect. The term "comment," as used on the rule, means the formal comments by the Council. The SHPO is never entrusted with that responsibility. The SHPO role through the process comes from its assistance responsibilities in the section 106 process (see section 101(b) of the NHPA).

#### Section 800.16(I)

**The definition of effect should be consistent with language used to define area of potential effect (§ 800.16(d)) and the criteria of adverse effect (§ 800.5(a)(1)).** The Council agreed and, for consistency, changed the rule so that the "alterations" is used for both definitions.

#### Section 800.16(w)

**Several comments requested the Council to revise the rule to distinguish between section 101(d)(2), NPS approved THPOs and non-101(d)(2) tribes. They strongly recommend that different terms be used for these two types of tribes in order to more clearly reflect their different authorities on tribal lands.** The Council agreed and changed the rule accordingly. In summary, the Council (1) deleted the reference to non-101(d)(2) tribes from the definition of "THPOs" on this section of the rule, and (2) revised the language regarding these consulting parties under section of § 800.2(c).

#### Section 800.16(x)

**A definition of "dependent Indian communities" for the purposes of this regulation is needed. Folks need a legal definition from the Council.** The Council used the definition of Indian tribes provided by the statute. The Council will bring this issue to the attention of the Department of the Interior and work on clarification.

#### Section 800.16(y)

**The term "undertaking" needs to be better defined within the regulation so as to clearly eliminate actions with no potential to affect historic properties.** Section 800.3(a)(1) provides at the beginning of the process that Federal agencies have no further section 106 responsibilities if the undertaking is not a type of activity that has the potential to affect historic properties.

**Various comments requested in different forms that the Council should clarify that Federal funding is a condition precedent to the application of the section 106 process.** The Council notes that there is case law supporting that position as well as case law stating that funding is not a prerequisite. The Council has maintained the statutory definition of "undertaking," verbatim, in the regulations. The Agency Official is responsible, in accordance with § 800.3(a), for making the determination as to whether a proposed Federal action is an undertaking. As appropriate, an agency should examine the nature of its Federal involvement taking into consideration factors such as the degree of Federal agency control or discretion; the type of Federal involvement or link to the action; and whether or not the action could move forward without Federal involvement. An agency should seek the advice of the Council when uncertain about whether or not its action falls within the definition of an undertaking.

**Do not want incidental take permits (ITPs) under the Endangered Species Act to be subject to section 106 review.** As stated before, the Council notes that this and other specific alternatives and exemptions should be decided after the appropriate § 800.14 process is followed and not through rulemaking itself. The Council encourages Federal agencies to submit proposed exemptions and other alternatives.

**Various comments argued in various forms that Surface Mining Control and Reclamation Act (SMCRA) permits issued by States, after Office of Surface Mining (OSM) delegation of the program, are not subject to the section 106 process.** The Council believes that it is the responsibility of the Federal agency, rather than the State, to comply with section 106. The Council intends to continue working with OSM to develop and finalize a solution to this issue.

**The proposed rule does not apply to the siting of wireless facilities, since the construction of communications towers does not constitute a Federal undertaking.** As stated before, this and several other issues mentioned by the

telecommunications industry in this rulemaking process have been or are in the process of being addressed through ongoing discussions with the industry, the FCC and SHPOs. These discussions commenced before the present rulemaking process. Such ongoing discussions are referred hereinafter as "Telecommunications Working Group."

#### Appendix A

**Various comments stated that Council participation in consultation should be mandatory when requested by a tribe, particularly because tribes are not mandatory signatories off tribal lands.** The Council disagreed. The Council needs to retain discretion, just as it has in any other Section 106 reviews. Such discretion is necessary not only to allow the Council to manage its limited resources, but also to further encourage the goal of Agency and SHPO/THPO independence in the process. We have no evidence that this discretion is not being exercised appropriately.

**The Council should change its rule to allow it to comment on the most important cases, involving the SHPOs/THPOs in an advisory capacity, not a managerial role.** The Council believes the rule accomplishes this. Under the rule, the Council only gets involved in some of the cases meeting Appendix A criteria. The rule requires the Council to explain how such criteria is met before entering consultation, and provides SHPOs/THPOs with an advisory role.

#### General Consultation

**THE COUNCIL'S "HANDBOOK ON TREATMENT OF ARCHAEOLOGICAL PROPERTIES" IS WOEFULLY OUT OF DATE AND SHOULD BE UPDATED AS SOON AS POSSIBLE. ALSO "PREPARING AGREEMENT DOCUMENTS" SHOULD BE REVISED TO REFLECT THE CHANGES IN THE NEW REGULATIONS. THE COUNCIL SHOULD ALSO EXPLORE ESTABLISHING PEER REVIEW SYSTEMS IN RESOLVING DISPUTES THAT INVOLVE THE IDENTIFICATION, EVALUATION AND/OR TREATMENT OF ARCHAEOLOGICAL SITES.** The Council agrees that the mentioned documents should be updated. Regarding the establishment of peer review systems, such an option could be explored.

**Overly burdensome consultation requirements. Commenter cites seven different points of notification or consultation even when there are no historic properties present, and a dozen or more if there should be historic properties, resulting in unnecessary delays for thousands of routine projects. The commenter estimates that implementation and documentation of the numerous consultation points**



requires  $\frac{1}{4}$  to  $\frac{1}{2}$  FTE on every National Forest in the Southwest. The rule provides for ways to tailor the process. The Council notes that a Programmatic Agreement under Section 800.14 should be suggested to the Forest Service. Such Programmatic Agreements have proved effective in the past in further streamlining and fitting the section 106 process to the particular needs of agency programs. The comment also raised an issue on the number of consultation points for situations where there are no historic properties affected. Consultation is necessary for an agency to learn whether historic properties are present or not, and then whether and how those present would be affected. Section 106, again, requires the effects of undertakings on historic properties be taken into account. For that to happen, there has to be a process for identifying the properties and assessing the effects on such properties. As stated before, Section 800.14 presents several options an agency can pursue to advance an alternative way of complying with Section 106 which better fits the realities of their particular programs.

**Some SHPO's have attempted to implement the Council's proposed Part 800 rules by treating the regulations as a springboard for additional, mandatory compliance steps and unreasonable documentation requirements that only serve to delay the review process. Clarify that SHPO's must follow proposed part 800's regulatory deadlines.** Please refer to earlier responses regarding the 30 day time limits, above.

**Proposed rules discourage SHPOs/THPOs from consulting with private sector companies and individuals seeking consultation regarding their projects. Government to government consultation if invoked by Tribes may prevent historic preservation matters from receiving their full consideration.** As stated before, the rule has been changed to facilitate Federal agency authorizations for applicants to initiate the section 106 process. Government-to-government relationships between the Federal Government and Tribes is based on Presidential Memoranda, Executive Order 13084, treaties, and statutes. Furthermore, the Council believes that consultation with Tribes assures full consideration regarding historic properties on tribal lands or of significance to tribes.

**Numerous provisions of proposed rule attempt to confer upon SHPO consultation, agreement (i.e., concurrence) or virtual veto powers. Section 106 does not mention any role for the SHPOs, let alone a requirement that the SHPO concur in agency**

**determinations. SHPO's responsibilities, like the Council, are to assist and to advise. Proposed rule confers unauthorized powers on SHPOs and the Council, and result in additional administrative requirements and delays.** The SHPO's role is limited in the rule to consulting and advising, based in their responsibilities pursuant to section 101(b)(3) of the NHPA. When a step calls for concurrence, SHPO concurrence can end the process from further evaluation. When the SHPO does not concur, a project is not vetoed; rather, the Federal agency is moved to the next, logical step in the process. Nothing in the rule gives anyone veto power over an undertaking. The Federal agency ultimately decides by itself what to do with the undertaking, once it has complied with its Section 106 responsibilities.

**Council should confirm that SHPOs have no legal authority over private parties.** Neither the Council nor this rule gives SHPOs the legal authority to require any action from private parties.

**Nothing in the NHPA requires that every party that finds preservation to be interesting to be given a formal role in the section 106 process, with the ability to delay or derail Federal undertakings.** The Council agrees, and believes that the rule reflects that regarding who are consulting parties and how the Federal agency can control who becomes an additional consulting party.

**Proposed rules provide a mechanism for a Federal agency to proceed over the objections of SHPO/THPO or without an MOA, however, the Federal agency and its regulatees would have already paid a steep price for their efforts through project delays, duplicative legal reviews and other expenses associated with earlier consultation with SHPOs, THPOs, and ACHP.** Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Council a reasonable opportunity to comment. Just as with NEPA and other laws, Federal agency compliance with such obligations necessarily requires effort and time. Through various methods, such as time limits and program alternatives (which give Federal agencies the tools to further streamline and adapt the process to their needs), the Council has provided for cutting down such compliance costs.

**Federal agencies often have no cultural resources expertise and therefore rely on SHPO to make findings for them. Although Council staff has urged SHPO offices not to be forced into this position, it is just too**

**much work to get agencies to obtain the necessary expertise.** This is an important program issue, but not a regulatory one. The Council and the National Park Service should work with agencies in this area.

**Additional guidance may be needed to further clarify the roles of participating parties in the consultation process.** The Council agrees that such guidance should be developed.

**The length of the comment periods are well founded and prudent because they insure that the parties respond in a timely manner. The rule also clarifies and emphasizes opportunities for Tribes, Native American organizations, and the interested public to participate in consultation.** The Council agrees.

#### **General Negative**

**The regulations have strayed from the consultation and advisory process envisioned by Congress for "nationally significant historic sites."** It is evidenced by Congress' enactment of section 101(a) of the NHPA that a site does not have to be of "national" significance in order to meet National Register criteria and be considered under section 106 review (sites of State or local significance can meet the criteria as well).

**Section 106 process is unnecessary because it duplicates an existing local zoning review/approval process for radio towers (a process that considers the impact that proposed towers might have on nearby historic properties). Therefore, it imposes unnecessary costs on carriers, and those costs are invariably passed on to the consumers. Congress has determined that local governments—not the Federal Government—should resolve such issues as the location, height and design of communications facilities.** While certain local zoning measures may address historic preservation concerns, Federal agency undertakings are still subject to section 106. The NHPA does not relieve them of this duty. As stated before, this and several other issues mentioned by the telecommunications industry in this rulemaking process have been or are in the process of being addressed through ongoing discussions with the industry, the FCC and SHPOs. One objective of this exercise is to better coordinate Federal and local review processes. These discussions commenced before the present rulemaking process.

**Instead of imposing overly-detailed proscriptive regulations that are difficult to understand and enforce, the Council should work with agencies and others to develop incentive programs that encourage innovative and effective**

protection and preservation procedures. These could encourage compliance much more efficiently than the present enforcement model. This can be done pursuant to the program alternatives under § 800.14 of the rule.

**Council should suspend this rulemaking, and develop a new rule that contains: (1) Procedures that the Federal and State agencies can process and apply; (2) provisions that assign burdens and responsibilities that non-Federal entities can understand and reasonably support; and (3) an approach to preservation that equitably apportions responsibility and cost, and provides positive incentives for compliance.** The Council believes the rule presents reasonable procedures that Federal agencies can process and apply. The vast majority of the thousands of section 106 reviews under the current and past rules have been conducted and concluded by Federal agencies without serious problems. The fact that disagreements sometimes arise regarding certain findings and determinations does not mean the process cannot be applied but, rather, reflects that it is being applied correctly. Disagreements and working out solutions is simply a part of a consultative process. The Council notes that, like section 106 itself, the rule only place requirements on Federal agencies. The incentive for Federal agency compliance, beyond meeting legal obligations set by the NHPA, is the furtherance of the historic preservation policies of the Federal Government, as expressed in the NHPA.

**I do not think that the 1999 regulations have resulted in, or will in the foreseeable future result in, much streamlining of the process. The reduction in Council involvement has created a void. SHPOs do not carry sufficient respect to fill that authority void. I recommend that the regulations require the Council be notified as soon as either the Agency official or the SHPO expresses an opinion that an effect will be adverse; and that the Council be a signatory to all MOAs and PAs.** The notification requirement is already in the rule (see § 800.6(a)(1)). The Council will not become a signatory to all MOAs, since a decision has been made to streamline the process by relying more on the Federal agency and SHPO/THPO for routine cases.

#### General Positive

General positive comments are summarized below, without a Council response beyond stating its agreement.

A comment asked that the Council refrain from further restricting public participation or "other consulting

party" involvement in any way. It also ask, that the Council not vest any further authority in the SHPO or reduce the involvement of SHPOs, THPOs, and other consulting parties in agency decision making.

Other comments stated that: (1) the elimination of the distinction between "no historic properties" and "no effect" was a move in the right direction; (2) the rule is working well and that positive responses by certain Federal agencies had been noted; (3) the rule is very specific and provides sound guidance for federal agencies and other parties; (4) the rule clearly establishes the roles and responsibilities of the parties; (5) the rule works well and provides an efficient framework for the administration of the Act; (6) project review has been streamlined by reducing the need for Council review; (7) the rule is operating well, has appropriately defined the role of Federal agencies as the responsible party for section 106 compliance, achieves the objective of streamlining the process, and incorporates changes enacted in the 1992 amendments; (8) Federal agencies are beginning to assume their appropriate role as the lead in the process, and the Council can focus on difficult cases and problem agencies; (9) the rules are an improvement over the 1986 regs; (10) the rule offers a constructive framework for consultation among SHPO, tribes and all interested parties.

#### Miscellaneous

**Since implementing NHPA necessarily affects the agencies' regulatees, FCC recommends that the proposed rule include a "reasonable" time period for Federal agencies to develop their own implementing procedures.** Federal agencies have always had the authority to develop implementing procedures pursuant to section 110(a)(2)(E). The Council has no role in setting deadlines for Federal agencies to develop these implementing procedures.

**The deadlines for response from Council and SHPOs (15 days and 30 days) are reasonable—assuming adequate personnel to handle the workload. Because SHPO's are inadequately funded, they are understaffed to meet these time frames. Therefore, a 30 day review period for the Council and a 45-day review period for SHPOs is recommended.** The Council disagrees. The current deadlines adequately balance the project need for expediency and the workloads of the Council and SHPO/THPOs.

#### General Tribal

**In requesting that the role of THPO's and tribal representatives be clarified for those situations affecting properties of religious and cultural significance off tribal land, it is suggested that section 101(d)(2) limits THPO responsibilities and authority to tribal lands and does not require a Federal agency to consult with those tribes regarding properties of religious and cultural significance.** The Council disagrees. Section 101(d)(6)(B) of the NHPA requires tribal consultation regarding historic properties of religious and cultural significance. Nothing in the statute makes a distinction that would limit such consultation to tribal lands.

**It is inappropriate and illegal for Council to implement 1992 amendments regarding Indian Tribes through its proposed rule. Section 106 itself was not amended, and the Secretary of the Interior is the agency charged with promulgating regulations to implement the tribe-related amendments.** The comment misreads the NHPA. The rule appropriately deals with tribal requirements as they directly relate to the section 106 process. The Council is authorized to promulgate rules to govern the implementation of section 106 "in its entirety." This authority necessarily covers all aspects that directly relate to the section 106 process. The 1992 amendments require Federal agencies to consult with tribes and Native Hawaiian Organizations in carrying out their Section 106 responsibilities. While the Department of the Interior provides assistance to tribes and fosters communication among tribes, SHPOs and agencies, it does not oversee the section 106 process nor have the requisite authority. It is noted that the Department of the Interior sits on the Council and voted in favor of adopting this rule.

**Several THPOs have begun to request payment of fees for Section 106 consultation and have asserted THPO powers outside of tribal lands. Council could remove uncertainty and avoid delays by clarifying that THPOs are bound by the same rules as SHPOs and THPO authority extends only over tribal lands.** This is a topic being addressed by the ongoing Telecommunications Working Group. Once the Council reaches a decision on this matter, it will be disseminated.

**Concerned about several THPOs and tribal representatives requesting payment for the section 106 consultation required in the regulations and believes such actions are contrary to the regulations.** This issue was raised by the wireless industry, and will be

addressed by the Telecommunications Working Group.

**We would not support changes to grant expanded authority to tribes off tribal lands. We strongly support current provisions which enable tribes to participate, as appropriate.** The Council agrees with this comment and did not expand the tribal role in this rule.

**The proposed rule will impact us resulting in the consultation with Native Hawaiian organizations. The requirement for consultation with Native Hawaiian organizations will require expenditure of time and funds spent on EIS studies. The rule fails to specify which Hawaiian Native organizations (NHO) we would have to consult with, which may be many.** The statute requires Federal agencies to conduct such consultation. The rule is not the appropriate venue for identifying specific NHOs. That is the responsibility of the Federal agency based on the potential to affect properties of significance to specific organizations.

**E.O. 13084 has language that should be utilized in the section 106 process.** EO 13084 addresses the development of Federal agency policies and regulations. The Council rule addresses individual projects and programs, and not these overall policies and rules developed by other agencies.

**The regulations took a positive step regarding tribal input and participation. It works when the agency is truly in compliance with the regulations. Need to work on how tribes can be more involved; are legally involved in decision making without a specific agreement; and can be funded to conduct the work demanded by agencies and the regulations.** The Council is developing guidance on tribal consultation.

**The regulations conflict with the language and purpose of the Act by creating an artificial distinction between tribal properties depending on their location (on or off tribal lands). Tribes are provided lesser consultation rights where traditional cultural properties are located off tribal lands.** The rule acknowledges tribal sovereignty on tribal lands, which necessarily distinguishes a tribe's role on and off tribal lands. The rule does not distinguish where properties are located, but only the scope of tribal involvement.

**The regulations suggest that tribal governments and the interested public are at the same level of importance. This concept ignores the sovereign status of tribes and, as a result, Federal agencies are disrespecting some tribal**

**treaties. An important statement of the tribal government role is missing. With the public on the same level as tribes, the public can gain access to documents that may compromise the confidentiality provisions of section 106.** The Council disagrees. Section 800.2(c)(3) of the rule provides information for Federal agencies regarding sovereignty and the government-to-government responsibility. The public is simply notified and involved as appropriate but, unlike tribes in their land or regarding historic properties of significance to them, is not an entitled consulting party.

#### Legal Authority

Several comments questioned the Council's legal authority to issue the rule. The main arguments were that: (1) The Council was given advisory functions by the statute, and that the proposed rule transformed the role of the Council from purely advisory to one with substantive regulatory authority over other Federal agencies and parties; (2) the Council could only issue regulations regarding how it issued its comments (from the "reasonable opportunity to comment" provided by section 106); and (3) there was no statutory basis for a rule that dictates how an agency takes into account the effects of its undertakings or the Council's comments.

The Council believes that the rule is properly characterized as one providing a process to be followed. Nowhere does the rule impose an outcome on a Federal agency as to how it will decide whether or not to approve an undertaking, or how. The rule merely provides a process that assures that the Federal agency takes into account the effects of the undertaking on historic properties. It does not impose in any way whatsoever how such consideration will affect the final decision of the Federal agency on the undertaking. The rule does not provide anyone with a veto power over an undertaking.

Furthermore, the Council believes it has the authority to promulgate the present rule. Section 211 of the NHPA states that: "The Council is authorized to promulgate such rules and regulations as it deems necessary to govern the implementation of section 106 of [the NHPA] in its entirety." The phrase "in its entirety" was added by the 1992 amendments to the NHPA. Directly talking to the meaning of the "in its entirety" amendment, the summary of the amendments stated that: "This makes clear that the ACHP has the authority to define not only how agencies will afford the Council a

reasonable opportunity to comment, but also how agencies should take effects on historic properties into account in their planning." Congressional Record, Senate, S 3575, March 19, 1991. This amendment was specifically introduced to address the authority issues raised earlier. Thus, it is clear that Congress has given the Council the authority to promulgate rules, such as the present one, setting forth how Federal agencies are to meet all their section 106 responsibilities to take into account the effects of their undertakings on historic properties, as well as to provide the Council with a reasonable opportunity to comment.

Moreover, the rule is solidly based on the requirements of the statute and, as Congress intended, provides a predictable framework which fleshes out those requirements. As stated before, section 106 specifically requires Federal agencies to take into account the effects of their undertakings on historic properties. 16 U.S.C. 470f. The first general step in the process under the rule requires Federal agencies to identify the historic properties that may be affected by the undertaking. 36 CFR 800.4. It is simply impossible for an agency to take into account the effects of its undertaking on historic properties if it does not even know what those historic properties are in the first place.

The second general step in the process is for the Federal agency to assess the effects of the undertaking on the historic property. 36 CFR 800.5. Again, an agency cannot take into account effects on historic properties if it does not first assess the nature of those effects. The Council has utilized its considered expertise on historic preservation to create the criteria of adverse effect that guides the end of this step.

The third general step in the process under the challenged rule is to consult to attempt resolving adverse effects to historic properties (through what is called a Memorandum of Agreement), if it has been determined the effects are actually adverse. 36 CFR 800.6. Such an approach is explicitly sanctioned by the statute under Section 110(l) of the National Historic Preservation Act. 16 U.S.C. 470h-2(l). Specifically, Section 110(l) of the statute states that:

With respect to any undertaking subject to section 106 which adversely affects any [historic property], and for which a Federal agency has not entered into an agreement pursuant to regulations issued by the Council, the head of such agency shall document any decision made pursuant to section 106. . . . Where a section 106 memorandum of agreement has been executed with respect to an undertaking,

*such memorandum shall govern the undertaking and all its parts.*

*Id.* (emphasis added). It bears mentioning that this section was amended by Congress after the section 106 rule that went into effect in 1999. The amendment further conformed the statute to that 1999 rule, which was used as the proposal in the present rulemaking. Specifically, section 5(a)(8) of HR 834, amended the language of section 110(l) by striking "with the Council" and inserting "pursuant to regulations issued by the Council."

In the last general step in the process, the Council issues comments to the Federal agencies that fail to resolve adverse effects. Such a step is obviously contemplated in the requirements of section 106 that the Council be given "a reasonable opportunity to comment." 16 U.S.C. 470f.

The rule does provide for consultation with various parties throughout the process. Such consultation requirements with State Historic Preservation Officers, Tribal Historic Preservation Officers and certain federally recognized Indian Tribes and Native Hawaiian Organizations are solidly anchored on statutory requirements that Federal agencies consult with such parties. See e.g. 16 U.S.C. 470a(b)(3)(I), 470a(d)(2), and 470a(d)(6)(B). The general public is also given a general role under the rule, although such role does not rise to the level of that of consulting parties. The Council believes this role for the public is reasonable and authorized. The Federal agency's consideration of how its undertaking affects historic properties is enhanced and better informed by the participation of the consulting parties and the general public, for whose enjoyment and enrichment the NHPA seeks to protect historic properties. It must be kept in mind that such public is the one that lives in the communities and areas where the historic properties are located, and therefore may have uniquely informed viewpoints as to such properties. As stated above, the rule specifically states that Federal agencies can use their own procedures for public involvement in lieu of those under subpart B of this rule, so long as they provide adequate opportunities consistent with the rule. Such procedural consistency is no more than what the NHPA requires under 16 U.S.C. 470h-2(a)(2)(E).

#### *Appointments Clause*

Some comments argued that the present rulemaking process violates the Appointments Clause of the Constitution. This argument is summarized as follows: (a) The section

106 rule that went into effect in 1999 (1999 rule) was developed and adopted in violation of the Appointments Clause due to the participation of the Chairman of the National Trust on Historic Preservation (the Trust) and the President of the National Conference of State Historic Preservation Officers (NCSHPO) (both of whom are members of the Council not appointed by the President) in the development and adoption of that 1999 rule; and (b) since the content of that 1999 rule was used as the proposed rule in the present rulemaking, the present rulemaking process is incurably tainted and unconstitutional.

The Council strongly disagrees with such arguments. As has been stated before, the Trust and NCSHPO have not participated in any way whatsoever in the deliberations, decisions, votes, or any other Council activities related to this rulemaking. On June 23, 2000, the Council membership, minus the representatives of the Trust and NCSHPO, took a new vote on the adoption of the 1999 rule. It voted 16-0 in favor of the 1999 rule. As has been stated above, that 1999 rule was the culmination of six years of work by the Council members, Council staff, public comments and public meetings.

Again without the participation of the representatives of the Trust and NCSHPO, the Council proceeded to vote unanimously in favor of proceeding with the present rulemaking process, using the text of the 1999 rule as the proposed rule. Many of these Council members (all Presidential appointees) had participated in the drafting and original, unanimous adoption of the 1999 rule on February of 1999. On June 23, 2000, they decided to use that 1999 rule as the proposed rule. On November 17, 2000, after taking into account public comment and changing the proposed rule as they deemed appropriate, these Presidentially appointed Council members (without the participation of the representatives of the Trust and NCSHPO) voted to adopt the final rule now being published.

Any prior involvement in the rule does not represent the exercise of significant authority pursuant to the laws of the United States contemplated by the Appointments Clause. The Presidential appointees considering the draft, proposed rule during the 2000 rulemaking process were at full liberty to vote against it, amend it, or adopt it. In the end, the final decision to move forward with such draft was in their power.

In the present rulemaking, any act that could arguably be deemed an

exercise of significant authority has been carried out solely by the Council's Presidential appointees.

#### *Other Legal Issues*

Certain comments indicated a belief that the proposed rule violates the Establishment Clause of the Constitution. The arguments stated that to the extent the proposed rule requires Federal agencies to conform their decisionmaking under section 106 based on the "religious and cultural significance" of properties (as determined by Tribes) it results in an excessive entanglement between the government and religion, impermissibly restricts the use of public lands on the basis of religion, and impermissibly establishes or favors religion, in violation of the Establishment Clause.

The Council strongly disagrees. The rule does not require Federal agencies to conform their decisionmaking based on the religious and cultural significance of properties. As stated before, the NHPA and the rule only clarify that properties of religious and cultural significance to Tribes "may be determined to be eligible for inclusion on the National Register." section 101(d)(6)(A) of the NHPA. Like any other property of any kind, in order for properties with such significance to be considered in the section 106 process, they must first meet the established, objective, secular criteria of the National Register of Historic Places. The determination as to whether a property meets that criteria is made by the Federal agency in concurrence with the SHPO/THPO or, in the case of disagreement, by the Keeper of the National Register. Furthermore, once a historic property has been so identified, all that Federal agencies are required to do is to take into account the effects of their undertaking on such property. Nothing whatsoever in the rule imposes an obligation on the Federal agency to change, reject or approve an undertaking based on the religious and cultural significance of a property.

The rule and section 101(d)(6) of the NHPA only require consultation with Indian Tribes regarding those historic properties of significance to them. The Federal agency must consult with such Tribes, but is nowhere required to abide by the opinions expressed by the Tribes in such consultations. Furthermore, such consultation provisions are fully justified and reasonable. They do not provide Tribes with a "special treatment," but rather a rational treatment. Just as it would be common sense for a person to consult, for example, with the Navy in order to seek a better understanding of the history of

Pearl Harbor, it is more than rational to go to Tribes to seek a better understanding of historic properties to which they attach a religious and cultural significance. Due to their history and experience with such properties, such Tribes are in a specially advantageous position to provide valuable information about them. At the very least, the Council believes that these Tribal consultation provisions of the rule and of section 101(d)(6) of the NHPA are tied rationally to the fulfillment of the Federal Government's unique obligations towards Tribes. See *Morton v. Mancari*, 417 U.S. 535 (1974).

#### IV. Description of Meaning and Intent of Specific Sections

The following information clarifies the meaning and intent behind particular sections of the final rule.

##### *Subpart A—Purposes and Participants*

*Section 800.1(b)*. This section makes clear that references in the section 106 regulations are not intended to give any additional authority to implementing guidelines, policies or procedures issued by any other Federal agency. Where such provisions are cited, they are simply to assist users in finding related guidance, which is non-binding, or requirements of related laws, which may be mandatory depending on the particular law itself.

*Section 800.1(c)*. The purpose of this section is to emphasize the flexibility an Agency Official has in carrying out the steps of the section 106 process, while acknowledging that early initiation of the process is essential and that actions taken to meet the procedural requirements must not restrict the effective consideration of alternatives related to historic preservation issues in later stages of the process.

*Section 800.2(a)*. The term "Agency Official" is intended to include those Federal officials who have the effective decision making authority for an undertaking. This means the ability to agree to such actions as may be necessary to comply with section 106 and to ensure that any commitments made as a result of the section 106 process are indeed carried out. This authority and the legal responsibilities under section 106 may be assumed by non-Federal officials only when there is clear authority for such an arrangement under Federal law, such as under certain programs administered by the Department of Housing and Urban Development. This subsection indicates that the Federal Agency must ensure that the Agency Official "takes . . . financial responsibility for section 106 compliance . . ." This phrase is not to

be construed as prohibiting Federal agencies from passing certain section 106 compliance costs to applicants. Such a construction of the regulation would contravene section 110(g) of the NHPA and 16 U.S.C. 469c-2. The intent behind the reference to "financial responsibility" in the regulation is, as stated above, to ensure that the Agency Official has the effective decision making authority for an undertaking.

*Section 800.2(a)(1)*. This reference to the Secretary's professional standards is intended to remind Federal agencies that this independent but related provision of the Act may affect their compliance with section 106.

*Section 800.2(a)(2)*. This provision allows, but does not require, Federal agencies to designate a lead agency for section 106 compliance purposes. The lead agency carries out the duties of the Agency Official for all aspects of the undertaking. The other Federal agencies may assist the lead agency as they mutually agree. When compliance is completed, the other Federal agencies may use the outcome to document their own compliance with section 106 and must implement any provisions that apply to them. This provision does not prohibit an agency to independently pursue compliance with section 106 for its obligations under section 106, although this should be carefully coordinated with the lead agency. A lead agency can sign the Memorandum of Agreement for other agencies, so long as that is part of the agreement among the agencies for creating the lead agency arrangement. It should also be clear in the Memorandum of Agreement.

*Section 800.2(a)(4)*. This section sets forth the general concepts of consultation. It identifies the duty of Federal agencies to consult with other parties at various steps in the section 106 process and acknowledges that consultation varies depending on a variety of factors. It also encourages agencies to coordinate section 106 consultation with that required under other Federal laws and to use existing agency processes to promote efficiency.

*Section 800.2(b)*. The Council will generally not review the determinations and decisions reached in accordance with these regulations by the Agency Official and appropriate consulting parties and not participate in the review of most section 106 cases. However, because the statutory obligation of the Federal agency is to afford the Council a reasonable opportunity to comment on its undertaking's effects upon historic properties, the Council will oversee the section 106 process and formally become a party in individual consultations when it determines there

are sufficient grounds to do so. These are set forth in Appendix A. The Council also will provide participants in the section 106 process with its advice and guidance in order to facilitate completion of the section 106 review.

*Section 800.2(c)*. This section sets a standard for involving various consulting parties. The objective is to provide parties with an effective opportunity to participate in the section 106 process, relative to the interest they have to the historic preservation issues at hand.

*Section 800.2(c)(1)*. This section recognizes the central role of the SHPO in working with the Agency Official on section 106 compliance in most cases. It also delineates the manner in which the SHPO may get involved in the section 106 process when a THPO has assumed SHPO functions on tribal lands.

*Section 800.2(c)(2)*. The role of THPO was created in the 1992 amendments to the Act. This section tracks the statutory provision relating to THPO assumption of the SHPO's section 106 role on tribal lands. In such circumstances, the THPO substitutes for the SHPO and the SHPO participates in the section 106 process only as specified in 800.2(c)(1) or as a member of the public. This section also specifies that in those instances where an undertaking occurs on or affects properties on tribal lands and a tribe has not officially assumed the SHPO's section 106 responsibilities on those lands, the Agency Official still consults with the SHPO, but also consults with a representative designated by the Indian tribe. Such designation is made in accordance with tribal law and procedures. However, if the tribe has not designated such a representative, the Agency Official would consult with the tribe's chief elected official, such as the tribal chairman.

*Section 800.2(c)(3)*. This section embodies the statutory requirement for Federal agencies to consult with Indian tribes and Native Hawaiian organizations throughout the section 106 process when they attach religious and cultural significance to historic properties that may be affected by an undertaking. It is intended to promote continuing and effective consultation with those parties throughout the section 106 process. Such consultation is intended to be conducted in a manner that is fully cognizant of the legal rights of Indian tribes and that is sensitive to their cultural traditions and practices.

*Section 800.2(c)(3)(i)*. This subsection has two main purposes. First, it emphasizes the importance of involving Indian tribes and Native Hawaiian organizations early and fully at all stages of the section 106 process.

Second, Federal agencies should solicit tribal views in a manner that is sensitive to the governmental structures of the tribes, recognizing that confidentiality and communication issues may require Federal agencies to allow more time for the exchange of information. Also, this section states that the Agency Official must make a "reasonable and good faith effort" to identify interested tribes and Native Hawaiian organizations. This means that the Agency Official may have to look beyond reservations and tribal lands in the project's vicinity to seek information on tribes that had been historically located in the area, but are no longer there.

*Section 800.2(c)(3)(iii).* This subsection emphasizes the need to consult with Indian tribes on a government-to-government basis. The Agency Official must consult with the appropriate tribal representative, who must be selected or designated by the tribe to speak on behalf of the tribe. Matters of protocol are important to Indian tribes. Indian tribes and Native Hawaiian organization may be reluctant to share information about properties to which they attach religious and cultural significance. Federal agencies should recognize this and be willing to identify historic properties without compromising concerns about confidentiality. The Agency Official should also be sensitive to the internal workings of a tribe and allow the time necessary for the tribal decision making process to operate.

*Section 800.2(c)(3)(iv).* This subsection reminds Federal agencies of the statutory duty to consult with Indian tribes and Native Hawaiian organizations whether or not the undertaking or its effects occur on tribal land. Agencies should be particularly sensitive in identifying areas of traditional association with tribes or a Native Hawaiian organizations, where historic properties to which they attach religious and cultural significance may be found.

*Section 800.2(c)(3)(v).* Some Federal agencies have or may want to develop special working relationships with Indian tribes or Native Hawaiian organization to provide specific arrangements for how they will adhere to the steps in the section 106 process and enhance the participation of tribes and Native Hawaiian organizations. Such agreements are not mandatory; they may be negotiated at the discretion of Federal agencies. The agreements cannot diminish the rights set forth in the regulations for other parties, such as the SHPO, without that party's express consent.

*Section 800.2(c)(3)(vi).* The signature of tribes is required where a Memorandum of Agreement concerns tribal lands. However, if a tribe has not formally assumed the SHPO's responsibilities under section 101(d)(2) the tribe may waive its signature rights at its discretion. This will allow tribes the flexibility of allowing agreements to go forward regarding tribal land, but without condoning the agreement with their signature.

*Section 800.2(c)(4).* Affected local governments must be given consulting party status if they so request. Under § 800.3(f)(1), Agency Officials are required to invite such local governments to be consulting parties. This subsection provides for that status and also reminds Federal agencies that some local governments may act as the Agency Official when they have assumed section 106 legal responsibilities, such as under certain programs administered by the Department of Housing and Urban Development.

*Section 800.2(c)(5).* Applicants for Federal assistance or for a Federal permit, license or other approval are entitled to be consulting parties. Under § 800.3(f)(1), Agency Officials are required to invite them to be consulting parties. Also, Federal agencies have the legal responsibility to comply with section 106 of the NHPA. In fulfilling their responsibilities, Federal agencies sometimes choose to rely on applicants for permits, approvals or assistance to begin the 106 process. The intent was to allow applicants to contact SHPOs and other consulting parties, but agencies must be mindful of their government-to-government consultation responsibilities when dealing with Indian tribes. If a Federal agency implements its 106 responsibilities in this way, the Federal agency remains legally responsible for the determinations. Applicants that may assume responsibilities under a Memorandum of Agreement must be consulting parties in the process leading to the agreement.

*Section 800.2(c)(6).* This section allows for the possibility that other individuals or entities may have a demonstrated special interest in an undertaking and that Federal agencies and SHPO/THPOs should consider the involvement of such individuals or entities as consulting parties. This might include property owners directly affected by the undertaking, non-profit organizations with a direct interest in the issues or affected businesses. Under § 800.3(f)(3), upon written request and in consultation with the SHPO/THPO and any Indian tribe upon whose tribal

lands an undertaking occurs or affects historic properties, an Agency Official may allow certain individuals under § 800.2(c)(6) to become consulting parties.

*Section 800.2(d)(1).* Public involvement is a critical aspect of the 106 process. This section is intended to set forth a standard that Federal agencies must adhere to as they go through the section 106 process. The type of public involvement will depend upon various factors, including but not limited to, the nature of the undertaking, the potential impact, the historic property, and the likely interest of the public. Confidentiality concerns include those specified in section 304 of the Act and legitimate concerns about proprietary information, business plans and privacy of property owners.

*Section 800.2(d)(2).* This subsection is intended to set the notice standard. Notice, with sufficient information to allow meaningful comments, must be provided to the public so that the public can express its views during the various stages and decision making points of the process.

*Section 800.2(d)(3).* It is intended that Federal agencies have flexibility in how they involve the public, including the use of NEPA and other agency planning processes, as long as opportunities for such public involvement are adequate and consistent with subpart A of the regulations.

#### *Subpart B—The section 106 Process*

*Section 800.3.* This new section is intended to encourage Federal agencies to integrate the section 106 process into agency planning at its earliest stages.

*Section 800.3(a).* The determination of whether or not an undertaking exists is the Agency Official's determination. The Council may render advice on the existence of an undertaking, but ultimately this remains a Federal agency decision.

*Section 800.3(a)(1).* This section explains that if there is an undertaking, but it is not a type of activity that has the potential to affect a historic property, then the agency is finished with its section 106 obligations. There is no consultation requirement for this decision.

*Section 800.3(a)(2).* This is a reminder to Federal agencies that adherence to the standard 106 process in Subpart B is inappropriate where the undertaking is governed by a program alternative established pursuant to § 800.14.

*Section 800.3(b).* This section does not impose a mandatory requirement on Federal agencies. It emphasizes the benefit of coordinating compliance with related statutes so as to enhance

efficiency and avoid duplication of efforts, but the decision is up to the Agency Official. Agencies are encouraged to use the information gathered for these other processes to meet section 106 needs, but the information must meet the standards in these regulations.

*Section 800.3(c).* This sets forth the responsibility to properly identify the appropriate SHPO or THPO that must be consulted. If the undertaking is on or affects historic properties on tribal lands, then the agency must determine what tribe is involved and whether the tribe has assumed the SHPO's responsibilities for section 106 under section 101(d)(2) of the Act. A list of such tribes is available from the National Park Service.

*Section 800.3(c)(1).* This section reiterates that the tribe may assume the role of the SHPO on tribal land and tracks the language of the Act in specifying how certain owners of property on tribal lands can request SHPO involvement in a section 106 case in addition to the THPO.

*Section 800.3(c)(2).* This section is the State counterpart to Federal lead agencies and has the same effect. It allows a group of SHPOs to agree to delegate their authority under these regulations for a specific undertaking to one SHPO.

*Section 800.3(c)(3).* This section reinforces the notion that the conduct of consultation may vary depending on the agency's planning process, the nature of the undertaking and the nature of its effects.

*Section 800.3(c)(4).* This section makes it clear that failure of an SHPO/THPO to respond within the time frames set by the regulation permit the agency to assume concurrence with the finding or to consult about the finding or determination with the Council in the SHPO/THPO's absence. It also makes clear that subsequent involvement by the SHPO/THPO is not precluded, but the SHPO/THPO cannot reopen a finding or determination that it failed to respond to earlier.

*Section 800.3(d).* This section specifies that, on tribal lands, the Agency Official consults with both the Indian tribe and the SHPO when the tribe has not formally assumed the responsibilities of the SHPO under section 101(d)(2) of the Act. It also allows the section 106 process to be completed even when the SHPO has decided not to participate in the process, and for the SHPO and an Indian tribe to develop tailored agreements for SHPO participation in reviewing undertakings on the tribe's lands.

*Section 800.3(e).* This section requires the Agency Official to decide early how and when to involve the public in the section 106 process. It does not require a formal "plan," although that might be appropriate depending upon the scale of the undertaking and the magnitude of its effects on historic properties.

*Section 800.3(f).* This is a particularly important section, as it requires the Agency Official at an early stage of the section 106 process to consult with the SHPO/THPO to identify those organizations and individuals that will have the right to be consulting parties under the terms of the regulations. These include local governments, Indian tribes and Native Hawaiian organizations and applicants for Federal assistance or permits, especially those who may assume a responsibility under a Memorandum of Agreement (see § 800.6(c)(2)(ii)). Others may request to be consulting parties, but that decision is up to the Agency Official.

*Section 800.3(g).* This section makes it clear that an Agency Official can combine individual steps in the section 106 process with the consent of the SHPO/THPO. Doing so must protect the opportunity of the public and consulting parties to participate fully in the section 106 process as envisioned in § 800.2.

*Section 800.4(a).* This section sets forth the consultative requirements involved in the scoping efforts at the beginning stages of the identification process. The Agency Official must consult with the SHPO/THPO in fulfilling the steps in subsections (1) through (4). This section emphasizes the need to consult with the SHPO/THPO at all steps in the scoping process. It also highlights the need to seek information from Indian tribes and Native Hawaiian organizations with regard to properties to which they attach religious and cultural significance, while being sensitive to confidentiality concerns. Where Federal agencies are engaged in an action that is on or may affect ancestral, aboriginal or ceded lands, Federal agencies must consult with Indian tribes and Native Hawaiian organizations with regard to historic properties of traditional religious and cultural significance on such lands.

*Section 800.4(b).* This section sets out the steps an Agency Official must follow to identify historic properties. It is close to the section 106 process under the 1986 regulations, with increased flexibility of timing and greater involvement of Indian tribes and Native Hawaiian organizations in accordance with the 1992 amendments to the Act.

*Section 800.4(b)(1).* This section on level of effort required during the

identification processes has been added to allow for flexibility. It sets the standard of a reasonable and good faith effort on behalf of the agency to identify properties and provides that the level of effort in the identification process depends on numerous factors including, among others listed, the nature of the undertaking and its corresponding potential effects on historic properties.

*Section 800.4(b)(2).* This new section is also intended to provide Federal agencies with flexibility when several alternatives are under consideration and the nature of the undertaking and its potential scope and effect has therefore not yet been completely defined. The section also allows for deferral of final identification and evaluation if provided for in an agreement with the SHPO/THPO or other circumstances. Under this phased alternative, Agency Officials are required to follow up with full identification and evaluation once project alternatives have been refined or access has been gained to previously restricted areas. Any further deferral of final identification would complicate the process and jeopardize an adequate assessment of effects and resolution of adverse effects.

*Section 800.4(c).* This section sets out the process for determining the National Register eligibility of properties not previously evaluated for historic significance.

*Section 800.4(c)(2).* This section provides that if an Indian tribe or Native Hawaiian organization disagrees with a determination of eligibility involving a property to which it attaches religious and cultural significance, then the tribe can ask the Council to request that the Agency Official obtain a determination of eligibility. The Council retains the discretion as to whether or not it should make the request of the Agency Official. This section was intended to provide a way to ensure appropriate determinations regarding properties, located off tribal lands, to which tribes attach religious and cultural significance.

*Section 800.4(d)(1).* This section describes the closure point in the section 106 process where no historic properties are found or no effects on historic properties are found. Consulting parties must be specifically notified of the determination, but members of the public need not receive direct notification; the Federal agency must place its documentation in a public file prior to approving the undertaking, and provide access to the information when requested by the public. Once the consulting parties are notified, the SHPO/THPO has 30 days to object to the determination. The Council may also

object on its own initiative within the time period. Lack of such objection within the 30 day period means that the agency need not take further steps in the Section 106 process.

*Section 800.4(d)(2).* This section requires that the Federal agency proceed to the adverse effect determination step where it finds that historic properties may be affected or the SHPO/THPO or Council objects to a no historic properties affected finding. The agency must notify all consulting parties.

*Section 800.5(a).* This section provides for Indian tribe and Native Hawaiian organization consultation where historic properties to which they attach religious and cultural significance are involved. This section also requires the Agency Official to consider the views of consulting parties and the public that have already been provided to the Federal agency.

*Section 800.5(a)(1).* This section codifies the practice of the Council in considering both direct and indirect effects in making an adverse effect determination. This section allows for consideration of effects on the qualifying characteristics of a historic property that may not have been part of the property's original eligibility evaluation. The last sentence in this section is intended to amplify the indirect effects concept, similar to the NEPA regulations, which calls for consideration of such effects when they are reasonably foreseeable effects.

*Section 800.5(a)(2)(ii).* The list of examples of adverse effects has been modified by eliminating the exceptions to the adverse effect criteria. However, if a property is restored, rehabilitated, repaired, maintained, stabilized, remediated or otherwise changed in accordance with the Secretary's standards, then it will not be considered an adverse effect.

*Section 800.5(a)(2)(iii).* This subsection, along with § 800.5(a)(2)(i), would encompass recovery of archeological data as an adverse effect, even if conducted in accordance with the Secretary's standards. This acknowledges the reality that destruction of a site and recovery of its information and artifacts is adverse. It is intended that in eliminating data recovery as an exception to the adverse effect criteria, Federal agencies will be more inclined to pursue other forms of mitigation, including avoidance and preservation in place, to protect archeological sites.

*Section 800.5(a)(2)(iv).* This section tracks the National Register criteria regarding the relation of alterations to a property's use or setting to the significance of the property.

*Section 800.5(a)(2)(v).* This section tracks the language of the National Register criteria as it pertains to the property's integrity.

*Section 800.5(a)(2)(vi).* This section acknowledges that where properties of religious and cultural significance to Indian tribes or Native Hawaiian organizations are involved, neglect and deterioration may be recognized as qualities of those properties and thus may not necessarily constitute an adverse effect.

*Section 800.5(a)(2)(vii).* If a property is transferred leased or sold out of Federal ownership with proper preservation restrictions, then it will not be considered an adverse effect. Transfer between Federal agencies is not an adverse effect per se; the purpose of the transfer should be evaluated for potential adverse effects, so that they can be considered before the transfer takes place.

*Section 800.5(a)(3).* This section is intended to allow flexibility in Federal agency decision making processes and to recognize that phasing of adverse effect determinations, like identification and evaluation, is appropriate in certain planning and approval circumstances, such as the development of linear projects where major corridors are first assessed and then specific route alignment decisions are made subsequently.

*Section 800.5(b).* This section allows SHPO/THPO's the ability to suggest changes in a project or suggest conditions so that adverse effects can be avoided and thus result in a no adverse effect determination. It is also written to emphasize that a finding of no adverse effect is only a proposal when the Agency Official submits it to the SHPO/THPO for review. This provision also acknowledges that the practice of "conditional No Adverse Effect determinations" is acceptable.

*Section 800.5(c).* The Council will not review "no adverse effect" determinations on a routine basis. The Council will intervene and review no adverse effect determinations if it deems it appropriate based on the criteria listed in Appendix A or if the SHPO/THPO or another consulting party and the Federal agency disagree on the finding and the agency cannot resolve the disagreement. The SHPO/THPO and any consulting party wishing to disagree to the finding must do so within the 30-day review period. If Indian tribes or Native Hawaiian organizations disagree with the finding, they can request the Council's review directly, but this must be done within the 30 day review period. If a SHPO/THPO fails to respond to an Agency Official finding within the

30 day review period, then the Agency Official can consider that to be SHPO/THPO agreement with the finding. When a finding is submitted to the Council, it will have 15 days for review; if it fails to respond within the 15 days, then the Agency Official may assume Council concurrence with the finding. When it reviews no adverse effect determinations, the Council will limit its review to whether or not the criteria have been correctly applied.

*Section 800.5(d).* Agencies must retain records of their findings of no adverse effect and make them available to the public. This means that the public should be given access to the information, subject to FOIA and other statutory limits on disclosure such as section 304 of the NHPA, when they so request. Failure of the agency to carry out the undertaking in accordance with the finding requires the Agency Official to reopen the section 106 process and determine whether the altered course of action constitutes an adverse effect. A finding of adverse effect requires further consultation on ways to resolve it.

*Section 800.6(a)(1).* When adverse effects are found, the consultation must continue among the Federal agency, SHPO/THPO and consulting parties to attempt to resolve them. The Agency Official must notify the Council when adverse effects are found and should invite the Council to participate in the consultation when the circumstances in § 800.6(a)(1)(i)(A)–(C) exist. A consulting party may also request the Council to join the consultation. The Council will decide on its participation within 15 days of receipt of a request, basing its decision on the criteria set forth in Appendix A. Whenever the Council decides to join the consultation, it must notify the Agency Official and the consulting parties. It must also advise the head of the Federal agency of its decision to participate. This is intended to keep the policy level of the Federal agency apprized of those cases that the Council has determined present issues significant enough to warrant its involvement.

*Section 800.6(a)(2).* This section allows for the entry of new consulting parties if the agency and the SHPO/THPO (and the Council, if participating) agree. If they do not agree, it is desirable for them to seek the Council's opinion on the involvement of the consulting party. Any party, including applicants, licensees or permittees, that may have responsibilities under a Memorandum of Agreement must be invited to participate as consulting parties in reaching the agreement.

*Section 800.6(a)(3).* This section specifies the Agency Official's



obligation to provide project documentation to all consulting parties at the beginning of the consultation to resolve adverse effects. Particular note should be made of the reference to the confidentiality provisions.

*Section 800.6(a)(4).* The Federal agency must provide an opportunity for members of the public to express their views on an undertaking. The provision embodies the principles of flexibility, relating the agency effort to various aspects of the undertaking and its effects upon historic properties. The Federal agency must provide them with notice such that the public has enough time and information to meaningfully comment. If all relevant information was provided at earlier stages in the process in such a way that a wide audience was reached, and no new information is available at this stage in the process that would assist in the resolution of adverse effects, then a new public notice may not be warranted. However, this presumes that the public had the opportunity to make its views known on ways to resolve the adverse effects.

*Section 800.6(a)(5).* Although it is in the interest of the public to have as much information as possible in order to provide meaningful comments, this section acknowledges that information may be withheld in accordance with section 304 of the NHPA.

*Section 800.6(b).* If the Council is not a part of the consultation, then a copy of the Memorandum of Agreement must be sent to the Council so that the Council can include it in its files to have an understanding of a Federal agency's implementation of section 106. This does not provide the Council an opportunity to reopen the specific case, but may form the basis for other actions or advice related to an agency's overall performance in the section 106 process.

*Section 800.6(b)(1).* When resolving adverse effects without the Council, the Agency Official consults with the SHPO/THPO and other consulting parties to develop a Memorandum of Agreement. If this is achieved, the agreement is executed between the Agency Official and the SHPO/THPO and filed with required documentation with the Council. This filing is the formal conclusion of the section 106 process and must occur before the undertaking is approved. Standard treatments adopted by the Council may set expedited ways for competing memoranda of agreement in certain circumstances.

*Section 800.6(b)(2).* When the Council is involved, the consultation proceeds in the same manner, but the agreement of the Agency Official, the SHPO/THPO

and the Council is required for a Memorandum of Agreement.

*Section 800.6(c).* This section details the provisions relating to Memoranda of Agreement. This document evidences an agency's compliance with section 106 and the agency is obligated to follow its terms. Failure to do so requires the Agency Official to reopen the section 106 process and bring it to suitable closure as prescribed in the regulations.

*Section 800.6(c)(1).* This section sets forth the rights of signatories to an agreement and identifies who is required to sign the agreement under specific circumstances. The term "signatory" has a special meaning as described in this section, which is the ability to terminate or agree to amend the Memorandum of Agreement. The term does not include others who sign the agreement as concurring parties.

*Section 800.6(c)(2).* Certain parties may be invited to be signatories in addition to those specified in § 800.6(c)(1). They include individuals and organizations that should, but do not have to, sign agreements. It is particularly desirable to have parties who assume obligations under the agreement become formal signatories. However, once invited signatories sign MOAs, they have the same rights to terminate or amend the MOA as the other signatories.

*Section 800.6(c)(3).* Other parties may be invited to concur in agreements. They do not have the rights to amend or terminate an MOA. Their signature simply shows that they are familiar with the terms of the agreement and do not object to it.

*Sections 800.6(c)(4)–(9).* These sections set forth specific features of a Memorandum of Agreement and the way it can be terminated or amended.

*Section 800.7.* This section specifies what happens when the consulting parties cannot reach agreement. Usually when consultation is terminated, the Council renders advisory comments to the head of the agency, which must be considered when the final agency decision on the undertaking is made.

*Section 800.7(a)(1).* This section requires that the head of the agency or an Assistant Secretary or officer with major department-wide or agency-wide responsibilities must request Council comments when the Agency Official terminates consultation. Section 110(l) of the NHPA requires heads of agencies to document their decision when an agreement has not been reached under section 106. If the agency head is responsible for documenting the decision, it is appropriate that the same

individual request the Council's comments.

*Section 800.7(a)(2).* This section allows the Council and the Agency Official to conclude the section 106 process with a Memorandum of Agreement between them if the SHPO terminates consultation.

*Section 800.7(a)(3).* If a THPO terminates consultation, there can be no agreement with regard to undertakings that are on or affect properties on tribal lands and the Council will issue formal comments. This provision respects the tribe's unique sovereign status with regard to its lands.

*Section 800.7(a)(4).* This section governs cases where the Council terminates consultation. In that case, the Council has the duty to notify all consulting parties prior to commenting. The role given to the Federal Preservation Officer is intended to fulfill the NHPA's goal of having a central official in each agency to coordinate and facilitate the agency's involvement in the national historic preservation program.

*Section 800.7(b).* This section allows the Council to provide advisory comments even though it has signed a Memorandum of Agreement. It is intended to give the Council the flexibility to provide comments even where it has agreed to sign an MOA. Such comments might elaborate upon particular matters or provide suggestions to Federal agencies for future undertakings.

*Section 800.7(c).* This section gives the Council 45 days to provide its comments to the head of the agency for a response by the agency head. When submitting its comments, the Council will also provide the comments to the Federal Preservation Officer, among others, for information purposes.

*Section 800.7(c)(4).* This section specifies what it means to "document the agency head's decision" as required by section 110(l) when the Council issues its comment to the agency head.

*Section 800.8.* This major section guides how Federal agencies can coordinate the section 106 process with NEPA compliance. It is intended to allow compliance with section 106 to be incorporated into the NEPA documentation process while preserving the legal requirements of each statute.

*Section 800.8(a)(1).* This section encourages agencies to coordinate NEPA and section 106 compliance early in the planning process. It emphasizes that impacts on historic properties should be considered when an agency makes evaluations of its NEPA obligations, but makes clear that an adverse effect

finding does not automatically trigger preparation of an EIS.

*Section 800.8(a)(2).* This section encourages consulting parties in the section 106 process to be prepared to consult with the Agency Official early in the NEPA process.

*Section 800.8(a)(3).* This section encourages agencies to include historic preservation issues in the development of various NEPA assessments and documents. This is essential for effective coordination between the two processes. It is intended to discourage agencies from postponing consideration of historic properties under NEPA until later initiation of the section 106 process.

*Section 800.8(b).* This section notes that a project, activity or program that falls within a NEPA categorical exclusion may still require section 106 review. An exclusion from NEPA does not necessarily mean that section 106 does not apply.

*Section 800.8(c).* This section offers Federal agencies an opportunity for major procedural streamlining when NEPA and section 106 both apply to a project. It allows the agency, when specific standards are met, to substitute preparation of an EA or an EIS for the specific steps of the section 106 process set out in these regulations.

*Section 800.8(c)(1).* This section lists the standards that must be adhered to when developing NEPA documents that are intended to incorporate 106 compliance. They are intended to ensure that the objectives of the section 106 process are being met even though the specific steps of the process are not being followed.

*Section 800.8(c)(2).* This section provides for Council and consulting party review of the agency's environmental document within NEPA's public comment review time frame. Consulting parties and the Council may object prior to or within this time frame to adequacy of the document.

*Section 800.8(c)(3).* If there is an objection to the NEPA document, the Council has 30 days to state whether or not it agrees with the objection. If the Council agrees with the objection, the Agency Official must complete the section 106 process through development of a Memorandum of Agreement or obtaining formal Council comment (§ 800.6–7). If it does not, then the Agency Official can complete its review under § 800.8.

*Section 800.8(c)(4).* This subsection explains how Agency Officials using NEPA coordination must finalize their section 106 compliance for those cases where an adverse effect is found. The

Agency must document the proposed mitigation measures. A binding commitment with the proposed measures must be adopted. In the case of a FONSI, the binding commitment must be in the form of an MOA, drafted in accordance with § 800.6(c). Although the regulations do not send Agency Officials back to § 800.6(b) regarding consultation towards an MOA, Agency Officials are reminded of the standards they must still follow under § 800.8(c)(1), and specifically the mitigation measures' consultation under § 800.8(c)(1)(v). In the case of an EIS, although a Memorandum of Agreement under § 800.6(c) is not required, an appropriate binding commitment must still be adopted. Finally, the subsection also clarifies the Agency Official's obligation to ensure that its approval of the undertaking is conditioned accordingly.

*Section 800.8(c)(5).* This section requires Federal agencies to supplement their NEPA documents or abide by §§ 800.3 through 800.6 in the event of a change in the proposed undertaking that alters the undertaking's impact on historic properties.

*Section 800.9.* This section delineates the methods the Council will use to oversee the operation of the section 106 process. The Council draws upon its general advisory powers and specific provisions of the NHPA to conduct these actions.

*Section 800.9(a).* This section emphasizes the right of the Council to provide advice at any time in the process on matters related to the section 106 process.

*Section 800.9(b).* A foreclosure means that an agency has gone forward with an undertaking to such an extent that the Council can not provide meaningful comments. A finding of foreclosure by the Council means that the Council has determined that the Federal agency has not fulfilled its section 106 responsibilities with regard to the undertaking. Such a finding does not trigger any specific action, but represents the opinion of the Council as the agency charged by statute with issuing the regulations that implement section 106.

*Section 800.9(c).* This section reiterates the requirements of section 110(k) of the Act added in 1992. It also provides a process by which the Council will comment if the Federal agency decides that circumstances may justify granting the assistance. If after considering the comments, the Federal agency does decide to grant the assistance, then the Federal agency must comply with section 106 for any historic properties that still may be affected.

This does not require duplication of consultation that may have already taken place with the Council in the course of addressing 110(k), but is intended to ensure that the agency has meaningful consultation with the Council as to mitigating adverse effects if the agency decides to proceed with approving the undertaking.

*Section 800.9(d).* As the Council reduces its involvement in routine cases, it will be focusing its efforts more and more on agency programs and overall compliance with the section 106 process. The NHPA authorizes the Council to obtain information from Federal agencies and make recommendations on improving operation of the section 106 process. If the Council finds that an agency or a SHPO/THPO has not carried out its section 106 responsibilities properly, it may enter the section 106 process on an individual case basis to make improvement. The Council may also review agency operations and performance and make specific recommendations for improvement under section 202(a)(6) of the Act.

*Section 800.10.* This section provides a process for how Federal agencies must afford the Council a reasonable opportunity to comment on historic landmarks. It is largely unchanged from the process under previous regulations.

*Section 800.11.* This section sets forth the requirements for documentation at various steps in the section 106 process. It makes documentation requirements clearer and promotes agency use of documentation prepared for other planning requirements.

*Section 800.11(a).* The section allows for the phasing of documentation requirements when an agency is conducting phased identification and evaluation. The Council can advise on the resolution of disputes over adherence to documentation standards. However, the ultimate responsibility for compiling adequate documentation rests with the agency. During the consideration of any disputes over documentation, the process is not formally suspended. However, agencies should resolve significant disputes before going forward too far in the section 106 process in order to avoid subsequent delays.

*Section 800.11(b).* This section allows for the use of documents prepared for NEPA or other agency planning processes to fulfill this provision as long as those documents meet the standards in this section.

*Section 800.11(c).* This section is intended to protect the rights of private property owners with regard to proprietary information, and Indian

tribes and Native Hawaiian organizations with regard to properties to which they attach religious and cultural significance. This section emphasizes that the regulations are subject to any other Federal statutes which protect certain kinds of information from full public disclosure. The role of the Secretary and the process of consultation with the Council are based on the statutory requirements of section 304 of the Act.

*Section 800.11(d)–(f).* These sections specify the documentation standards for various findings or actions in the section 106 process. They are incrementally more detailed as the historic preservation issues become more substantial or complex. Each is intended to provide basic information so that a third-party reviewer can understand the basis for an agency's finding or proposed decision.

*Section 800.12.* This section deals with emergency situations and generally follows the approach of previous regulations.

*Section 800.12(a).* This section encourages Federal agencies to develop procedures describing how the Federal agency will take into account historic properties during certain emergency operations, including imminent threats to life or property. The nature of the consultation required in developing such procedures will vary, depending upon the extent of actions covered by the procedures. The procedures must be approved by the Council if they are to substitute for Subpart B.

*Section 800.12(b).* If there are no agency procedures for taking historic properties into account during emergencies, then the Federal agency may either follow a previously-developed Programmatic Agreement or notify the Council, SHPO/THPO and, where appropriate, an Indian tribe or Native Hawaiian organization concerned with potentially affected resources. If possible, the Federal agency should provide these parties 7 days to comment.

*Section 800.12(c).* This section permits a local government that has assumed section 106 responsibilities to use the provisions of § 800.12(a) and (b). However, if the Council or an SHPO/THPO objects, the local government must follow the normal section 106 process.

*Section 800.12(d).* A Federal agency may use the provisions in § 800.12 only for 30 days after an emergency or disaster has been declared, unless an extension is sought.

*Section 800.13.* This section deals with resources discovered after section 106 review has been completed.

*Section 800.13(a).* This section emphasizes the utility of developing Programmatic Agreements to deal with discoveries of historic properties which may occur during implementation of an undertaking. If there is no Programmatic Agreement to deal with discoveries, and the Agency Official determines that other historic properties are likely to be discovered, then a plan for how discoveries will be addressed must be included in a no adverse effect finding or a Memorandum of Agreement.

*Section 800.13(b)(1).* This section states the procedures that must be followed when construction has not yet occurred or an undertaking has not yet been approved. Because a Federal agency has more flexibility at this stage, adherence to the consultative process as set forth in § 800.6 is appropriate.

*Section 800.13(b)(2).* This section provides that where an archeological site has been discovered and where the Agency Official, SHPO/THPO and any appropriate Indian tribe or Native Hawaiian organization agree that it is of value solely for the data that it contains, the Agency Official can comply with the Archeological and Historic Preservation Act instead of the procedures in this subpart.

*Section 800.13(b)(3).* This section sets forth the procedures that must be followed when the undertaking has been approved and construction has commenced. Development of actions to resolve adverse effects and notification to the SHPO/THPO and the Council within 48 hours of the discovery are required. Comments from those parties are encouraged and the agency must report the actions it ended up taking to deal with the discovery.

*Section 800.13(c).* This section allows an agency to make an expedited field judgment regarding eligibility of properties discovered during construction.

#### *Subpart C—Program Alternatives*

*Section 800.14.* This section lays out a variety of alternative methods for Federal agencies to meet their section 106 obligations. They allow agencies to tailor the section 106 process to their needs.

*Section 800.14(a).* Alternate procedures are a major streamlining measure that allows tailoring of the section 106 process to Agency programs and decisionmaking processes. The procedures would substitute in whole or in part for the Council's section 106 regulations. As procedures, they would include formal Agency regulations, but would also include departmental or Agency procedures that do not go through the formal rulemaking process.

Procedures must be developed in consultation with various parties as set forth in the regulations. The public must have an opportunity to comment on Alternate procedures. If the Council determines that they are consistent with its regulations, the alternate procedures may substitute for the Council's regulations. In reviewing alternate procedures for consistency, the Council will not require detailed adherence to every specific step of the process found under the Council's regulations. The Council, however, will look for procedures that afford historic properties consideration equivalent to that afforded by the Council's regulations and that meet the requirements of section 110(a)(2)(E) of the Act. If an Indian tribe has substituted its procedures for the Council's regulations pursuant to section 101(d)(5) of the NHPA, then the Federal agency must follow the agreement with the Council and the tribe's substitute regulations for undertakings on tribal lands.

*Section 800.14(b).* This section retains the concept of Programmatic Agreements. The circumstances under which a Programmatic Agreement is appropriate are specified. The section places Programmatic Agreements into two general categories: those covering agency programs and those covering complex or multiple undertakings. The section on Agency programs makes clear that the President of NCSHPO must sign a nationwide agreement when NCSHPO has participated in the consultation. If a Programmatic Agreement concerns a particular region, then the signature of the affected SHPOs/THPOs is required. An individual SHPO/THPO can terminate its participation in a regional Programmatic Agreement, but the agreement will remain in effect for the other states in the region. Only NCSHPO can terminate a nationwide Programmatic Agreement on behalf of the individual SHPOs. Language is included to recognize tribal sovereignty while providing flexibility to Federal agencies and tribes when developing Programmatic Agreements. While it does not prohibit the other parties from executing a Programmatic Agreement, the language does limit the effect of the agreement to non-tribal lands unless the tribe executes it. However, the language also authorizes multiple Indian tribes to designate a representative tribe or tribal organization to participate in consultation and sign a Programmatic Agreement on their behalf. Requirements for public involvement and notice are included. The section on complex or multiple undertakings ties

back to § 800.6 for the process of creating such programmatic agreements.

*Section 800.14(c).* Exemptions are intended to remove from section 106 compliance those undertakings that have foreseeable effects on historic properties which are likely to be minimal. Section 214 of the NHPA gives the Council the authority to allow for such exemptions. This section sets forth the criteria, drawn from the statute, for exemptions and a process for obtaining (and terminating) an exemption.

*Section 800.14(d).* Standard treatments provide a streamlined process by which the Council can establish certain acceptable practices for dealing with a category of undertakings, effects, historic properties, or treatment options. A standard treatment may modify the application of the normal section 106 process under certain circumstances or simplify the steps or requirements of the regulations. This section sets forth the process for establishing a standard treatment and terminating it.

*Section 800.14(e).* Program comments are intended to give the Council the flexibility to issue comments on a Federal program or class of undertakings rather than comment on such undertakings on a case-by-case basis. This section sets forth the process for issuing such comments and withdrawing them. The Federal agency is obligated to consider, but not necessarily follow, the Council's comments. If it does not, the Council may withdraw the comment, in which case the agency continues to comply with section 106 on a case-by-case basis.

*Section 800.14(f).* The requirement for consultation program alternatives with Indian tribes and Native Hawaiian organizations is provided for in this section. It is an overlay on each of the Federal program alternatives set forth in § 800.14(a)–(e). It provides for government-to-government consultation with Indian tribes.

*Section 800.15. Tribal, State and Local Program Alternatives.* This section is presently reserved for future use. The Council will proceed with the review of tribal applications for substitution of tribal regulations for the Council's section 106 regulations on tribal lands, pursuant to section 101(d)(5) of the Act, on the basis of informal procedures. With regard to State agreements, the Council will keep in effect any currently valid State agreements until revised procedures for State agreements take effect or until the agreement is otherwise terminated.

*Section 800.16. Definitions.* This section includes new definitions to respond to identified needs for

clarification and to reflect statutory amendments.

The term "Agency" is defined for ease of reference. It tracks the statutory definition in the NHPA.

The definition of "approval of the expenditure of funds" clarifies the intent of this statutory language as it appears in section 106 of the NHPA. This definition addresses the timing of section 106 compliance. A Federal agency must take into account the effects of its actions and provide the Council a reasonable opportunity to comment before the Agency decides to authorize funds, not just before the release of those funds. The intent of this provision is to emphasize the necessity for compliance with section 106 early in the decision making process.

The definition of "area of potential effects" acknowledges that the determination of the area potential effects often depends on the nature and scale of the undertaking and the associated effects.

The definition of "comment" makes it clear that the term refers to the formal comments of the Council members.

The definition of "consultation" describes the nature and goals of this critical aspect of the section 106 review process.

The term "day" was defined to clarify the running of time periods.

The term "effect" is defined because, even though the "no effect" step is not in the rule, the concept of an undertaking's effect is still a part of the "historic properties affected" determination.

"Foreclosure" is a term that has always been a part of the section 106 process. The term describes the finding that is made by the Council when an Agency action precludes the Council from its reasonable opportunity to comment on an undertaking.

The term "head of the Agency" is defined in light of the 1992 amendments in section 110(l) that require that the head of an Agency document a decision where a Memorandum of Agreement has not been reached for an undertaking.

"Indian tribe" is defined exactly as in section 301(4) of the NHPA.

"Native Hawaiian organization" is defined exactly as in section 301(17) of the NHPA.

"Tribal Historic Preservation Officer" is the tribal official who has formally assumed the SHPO's responsibilities under section 101(d)(2) of the NHPA.

"Tribal lands" is defined exactly as in section 301(14) of the NHPA.

"Undertaking" is defined exactly as in section 301(7) of the statute. The Agency Official is responsible, in

accordance with § 800.3(a), for making the determination as to whether a proposed Federal action is an undertaking. As appropriate, an agency should examine the nature of its Federal involvement taking into consideration factors such as the degree of Federal agency control or discretion; the type of Federal involvement or link to the action; and whether or not the action could move forward without Federal involvement. An agency should seek the advice of the Council when uncertain about whether or not its action falls within the definition of an undertaking. The 1986 regulatory definition of undertaking included new and continuing projects, activities, or programs and any of their elements not previously considered under section 106. It is intended that the new definition includes such aspects of a project, activity, or program as undertakings.

#### **Appendix A. Criteria for Council Involvement in Reviewing Individual section 106 Cases**

This appendix sets forth the criteria that will guide Council decisions to enter certain section 106 cases. As § 800.2(b)(1) states, the Council will document that the criteria have been met and notify the parties to the section 106 process as required. Council involvement in section 106 cases is not automatic once a criterion has been met. The Council retains discretion as to whether or not to enter such a case. Likewise, it is not essential that all criteria be met. The point of the criteria is to ensure that the Council has made a thoughtful decision to enter the section 106 process and to give agencies, SHPOs/THPOs and other section 106 participants a clear understanding of the kind of cases that warrant Council involvement.

#### **V. Impact Analysis**

##### *The Regulatory Flexibility Act*

The Council certifies that the final rule will not have a significant economic impact on a substantial number of small entities. Although comments on the proposed rule questioned the validity of such certification, the rule in its proposed and final versions imposes mandatory responsibilities on only Federal agencies. As set forth in section 106 of the NHPA, the duties to take into account the effect of an undertaking on historic resources and to afford the Council a reasonable opportunity to comment on that undertaking are Federal agency duties. Indirect effects on small entities, if any, created in the

course of a Federal agency's compliance with section 106 of the NHPA, must be considered and evaluated by that Federal agency.

#### *The Paperwork Reduction Act*

The final regulations do not impose reporting or recordkeeping requirements or the collection of information as defined in the Paperwork Reduction Act.

#### *The National Environmental Policy Act*

In accordance with 36 CFR part 805, the Council initiated the NEPA compliance process for the Council's regulations implementing section 106 of the NHPA prior to publication of the proposed rule in the **Federal Register** on September 13, 1996. On July 11, 2000, through a notice of availability on the **Federal Register** (65 FR 42850), the Council sought public comment on its Environmental Assessment and preliminary Finding of No Significant Impact. The Council has considered such comments, and has confirmed its finding of no significant impact on the human environment. A notice of availability of the Environmental Assessment and Finding of No Significant Impact has been published in the **Federal Register**.

#### *Executive Orders 12866 and 12875*

The Council is exempt from compliance with Executive Order 12866 pursuant to implementing guidance issued by the Office of Management and Budget's Office of Information and Regulatory Affairs in a memorandum dated October 12, 1993. The Council also is exempt from the documentation requirements of Executive Order 12875 pursuant to implementing guidance issued by the same OMB office in a memorandum dated January 11, 1994. The rule does not mandate State, local, or tribal governments to participate in the section 106 process. Instead, State, local, and tribal governments may decline to participate. State Historic Preservation Officers do advise and assist Federal agencies, as appropriate, as part of their duties under section 101(b)(3)(E) of the NHPA, as a condition of their Federal grant assistance. In addition, in accordance with Executive Order 12875, the rule includes several flexible approaches to consideration of historic properties in Federal agency decision making, such as those under § 800.14 of the rule. The rule promotes flexibility and cost effective compliance by providing for alternate procedures, categorical exemptions, standard treatments, program comments, and programmatic agreements.

#### *The Unfunded Mandates Reform Act of 1995*

The final rule implementing section 106 of the NHPA does not impose annual costs of \$100 million or more, will not significantly or uniquely affect small governments, and is not a significant Federal intergovernmental mandate. The Council thus has no obligations under sections 202, 203, 204 and 205 of the Unfunded Mandates Reform Act.

#### *Executive Order 12898*

The final rule implementing section 106 of the NHPA does not cause adverse human health or environmental effects, but, instead, seeks to avoid adverse effects on historic properties throughout the United States. The participation and consultation process established by this rule seeks to ensure public participation—including by minority and low-income populations and communities—by those whose cultural heritage, or whose interest in historic properties, may be affected by proposed Federal undertakings. The section 106 process is a means of access for minority and low-income populations to participate in Federal decisions or actions that may affect such resources as historically significant neighborhoods, buildings, and traditional cultural properties. The Council considers environmental justice issues in reviewing analysis of alternatives and mitigation options particularly when section 106 compliance is coordinated with NEPA compliance. Guidance and training is being developed to assist public understanding and use of this rule.

#### *Memorandum Concerning Government-to-Government Relations With Native American Tribal Governments*

The Council has fully complied with this Memorandum. A Native American/ Native Hawaiian representative has served on the Council. As better detailed in the preamble to the rule adopted in 1999, the Council has consulted at length with Tribes in developing the substance of what became the proposed rule in this rulemaking. The rule enhances the opportunity for Native American involvement in the section 106 process and clarifies the obligation of Federal agencies to consult with Native Americans. The rule also enhances the Government-to-Government intentions of the memorandum.

#### *Submission to Congress and the Comptroller General*

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small

Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The Council will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective January 11, 2001.

#### **List of Subjects in 36 CFR Part 800**

Administrative practice and procedure, Historic preservation, Indians, Intergovernmental relations.

For the reasons discussed in the preamble, the Advisory Council on Historic Preservation amends 36 CFR chapter VIII by revising part 800 to read as follows:

### **PART 800—PROTECTION OF HISTORIC PROPERTIES**

#### **Subpart A—Purposes and Participants**

Sec.

800.1 Purposes.

800.2 Participants in the Section 106 process.

#### **Subpart B—The Section 106 Process**

800.3 Initiation of the section 106 process.

800.4 Identification of historic properties.

800.5 Assessment of adverse effects.

800.6 Resolution of adverse effects.

800.7 Failure to resolve adverse effects.

800.8 Coordination with the National Environmental Policy Act.

800.9 Council review of Section 106 compliance.

800.10 Special requirements for protecting National Historic Landmarks.

800.11 Documentation standards.

800.12 Emergency situations.

800.13 Post-review discoveries.

#### **Subpart C—Program Alternatives**

800.14 Federal agency program alternatives.

800.15 Tribal, State, and local program alternatives. [Reserved]

800.16 Definitions.

Appendix A to Part 800—Criteria for Council involvement in reviewing individual section 106 cases

**Authority:** 16 U.S.C. 470s.

#### **Subpart A—Purposes and Participants**

##### **§ 800.1 Purposes.**

(a) *Purposes of the section 106 process.* Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Council a

reasonable opportunity to comment on such undertakings. The procedures in this part define how Federal agencies meet these statutory responsibilities. The section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.

(b) *Relation to other provisions of the act.* Section 106 is related to other provisions of the act designed to further the national policy of historic preservation. References to those provisions are included in this part to identify circumstances where they may affect actions taken to meet section 106 requirements. Such provisions may have their own implementing regulations or guidelines and are not intended to be implemented by the procedures in this part except insofar as they relate to the section 106 process. Guidelines, policies, and procedures issued by other agencies, including the Secretary, have been cited in this part for ease of access and are not incorporated by reference.

(c) *Timing.* The agency official must complete the section 106 process "prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license." This does not prohibit agency official from conducting or authorizing nondestructive project planning activities before completing compliance with section 106, provided that such actions do not restrict the subsequent consideration of alternatives to avoid, minimize or mitigate the undertaking's adverse effects on historic properties. The agency official shall ensure that the section 106 process is initiated early in the undertaking's planning, so that a broad range of alternatives may be considered during the planning process for the undertaking.

#### **§ 800.2 Participants in the Section 106 process.**

(a) *Agency official.* It is the statutory obligation of the Federal agency to fulfill the requirements of section 106 and to ensure that an agency official with jurisdiction over an undertaking takes legal and financial responsibility for section 106 compliance in accordance with subpart B of this part. The agency official has approval

authority for the undertaking and can commit the Federal agency to take appropriate action for a specific undertaking as a result of section 106 compliance. For the purposes of subpart C of this part, the agency official has the authority to commit the Federal agency to any obligation it may assume in the implementation of a program alternative. The agency official may be a State, local, or tribal government official who has been delegated legal responsibility for compliance with section 106 in accordance with Federal law.

(1) *Professional standards.* Section 112(a)(1)(A) of the act requires each Federal agency responsible for the protection of historic resources, including archeological resources, to ensure that all actions taken by employees or contractors of the agency shall meet professional standards under regulations developed by the Secretary.

(2) *Lead Federal agency.* If more than one Federal agency is involved in an undertaking, some or all the agencies may designate a lead Federal agency, which shall identify the appropriate official to serve as the agency official who shall act on their behalf, fulfilling their collective responsibilities under section 106. Those Federal agencies that do not designate a lead Federal agency remain individually responsible for their compliance with this part.

(3) *Use of contractors.* Consistent with applicable conflict of interest laws, the agency official may use the services of applicants, consultants, or designees to prepare information, analyses and recommendations under this part. The agency official remains legally responsible for all required findings and determinations. If a document or study is prepared by a non-Federal party, the agency official is responsible for ensuring that its content meets applicable standards and guidelines.

(4) *Consultation.* The agency official shall involve the consulting parties described in paragraph (c) of this section in findings and determinations made during the section 106 process. The agency official should plan consultations appropriate to the scale of the undertaking and the scope of Federal involvement and coordinated with other requirements of other statutes, as applicable, such as the National Environmental Policy Act, the Native American Graves Protection and Repatriation Act, the American Indian Religious Freedom Act, the Archeological Resources Protection Act, and agency-specific legislation. The Council encourages the agency official to use to the extent possible existing agency procedures and mechanisms to

fulfill the consultation requirements of this part.

(b) *Council.* The Council issues regulations to implement section 106, provides guidance and advice on the application of the procedures in this part, and generally oversees the operation of the section 106 process. The Council also consults with and comments to agency officials on individual undertakings and programs that affect historic properties.

(1) *Council entry into the section 106 process.* When the Council determines that its involvement is necessary to ensure that the purposes of section 106 and the act are met, the Council may enter the section 106 process. Criteria guiding Council decisions to enter the section 106 process are found in appendix A to this part. The Council will document that the criteria have been met and notify the parties to the section 106 process as required by this part.

(2) *Council assistance.* Participants in the section 106 process may seek advice, guidance and assistance from the Council on the application of this part to specific undertakings, including the resolution of disagreements, whether or not the Council is formally involved in the review of the undertaking. If questions arise regarding the conduct of the section 106 process, participants are encouraged to obtain the Council's advice on completing the process.

(c) *Consulting parties.* The following parties have consultative roles in the section 106 process.

(1) *State historic preservation officer.*

(i) The State historic preservation officer (SHPO) reflects the interests of the State and its citizens in the preservation of their cultural heritage. In accordance with section 101(b)(3) of the act, the SHPO advises and assists Federal agencies in carrying out their section 106 responsibilities and cooperates with such agencies, local governments and organizations and individuals to ensure that historic properties are taking into consideration at all levels of planning and development.

(ii) If an Indian tribe has assumed the functions of the SHPO in the section 106 process for undertakings on tribal lands, the SHPO shall participate as a consulting party if the undertaking takes place on tribal lands but affects historic properties off tribal lands, if requested in accordance with § 800.3(c)(1), or if the Indian tribe agrees to include the SHPO pursuant to § 800.3(f)(3).

(2) *Indian tribes and Native Hawaiian organizations.*

(i) *Consultation on tribal lands.*

(A) *Tribal historic preservation officer.* For a tribe that has assumed the responsibilities of the SHPO for section 106 on tribal lands under section 101(d)(2) of the act, the tribal historic preservation officer (THPO) appointed or designated in accordance with the act is the official representative for the purposes of section 106. The agency official shall consult with the THPO in lieu of the SHPO regarding undertakings occurring on or affecting historic properties on tribal lands.

(B) *Tribes that have not assumed SHPO functions.* When an Indian tribe has not assumed the responsibilities of the SHPO for section 106 on tribal lands under section 101(d)(2) of the act, the agency official shall consult with a representative designated by such Indian tribe in addition to the SHPO regarding undertakings occurring on or affecting historic properties on its tribal lands. Such Indian tribes have the same rights of consultation and concurrence that the THPOs are given throughout subpart B of this part, except that such consultations shall be in addition to and on the same basis as consultation with the SHPO.

(ii) *Consultation on historic properties of significance to Indian tribes and Native Hawaiian organizations.* Section 101(d)(6)(B) of the act requires the agency official to consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to historic properties that may be affected by an undertaking. This requirement applies regardless of the location of the historic property. Such Indian tribe or Native Hawaiian organization shall be a consulting party.

(A) The agency official shall ensure that consultation in the section 106 process provides the Indian tribe or Native Hawaiian organization a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects. It is the responsibility of the agency official to make a reasonable and good faith effort to identify Indian tribes and Native Hawaiian organizations that shall be consulted in the section 106 process. Consultation should commence early in the planning process, in order to identify and discuss relevant preservation issues and resolve concerns about the confidentiality of information on historic properties.

(B) The Federal Government has a unique legal relationship with Indian tribes set forth in the Constitution of the United States, treaties, statutes, and court decisions. Consultation with Indian tribes should be conducted in a sensitive manner respectful of tribal sovereignty. Nothing in this part alters, amends, repeals, interprets, or modifies tribal sovereignty, any treaty rights, or other rights of an Indian tribe, or preempts, modifies, or limits the exercise of any such rights.

(C) Consultation with an Indian tribe must recognize the government-to-government relationship between the Federal Government and Indian tribes. The agency official shall consult with representatives designated or identified by the tribal government or the governing body of a Native Hawaiian organization. Consultation with Indian tribes and Native Hawaiian organizations should be conducted in a manner sensitive to the concerns and needs of the Indian tribe or Native Hawaiian organization.

(D) When Indian tribes and Native Hawaiian organizations attach religious and cultural significance to historic properties off tribal lands, section 101(d)(6)(B) of the act requires Federal agencies to consult with such Indian tribes and Native Hawaiian organizations in the section 106 process. Federal agencies should be aware that frequently historic properties of religious and cultural significance are located on ancestral, aboriginal, or ceded lands of Indian tribes and Native Hawaiian organizations and should consider that when complying with the procedures in this part.

(E) An Indian tribe or a Native Hawaiian organization may enter into an agreement with an agency official that specifies how they will carry out responsibilities under this part, including concerns over the confidentiality of information. An agreement may cover all aspects of tribal participation in the section 106 process, provided that no modification may be made in the roles of other parties to the section 106 process without their consent. An agreement may grant the Indian tribe or Native Hawaiian organization additional rights to participate or concur in agency decisions in the section 106 process beyond those specified in subpart B of this part. The agency official shall provide a copy of any such agreement to the Council and the appropriate SHPOs.

(F) An Indian tribe that has not assumed the responsibilities of the SHPO for section 106 on tribal lands under section 101(d)(2) of the act may

notify the agency official in writing that it is waiving its rights under § 800.6(c)(1) to execute a memorandum of agreement.

(3) *Representatives of local governments.* A representative of a local government with jurisdiction over the area in which the effects of an undertaking may occur is entitled to participate as a consulting party. Under other provisions of Federal law, the local government may be authorized to act as the agency official for purposes of section 106.

(4) *Applicants for Federal assistance, permits, licenses, and other approvals.* An applicant for Federal assistance or for a Federal permit, license, or other approval is entitled to participate as a consulting party as defined in this part. The agency official may authorize an applicant or group of applicants to initiate consultation with the SHPO/THPO and others, but remains legally responsible for all findings and determinations charged to the agency official. The agency official shall notify the SHPO/THPO when an applicant or group of applicants is so authorized. A Federal agency may authorize all applicants in a specific program pursuant to this section by providing notice to all SHPO/THPOs. Federal agencies that provide authorizations to applicants remain responsible for their government-to-government relationships with Indian tribes.

(5) *Additional consulting parties.* Certain individuals and organizations with a demonstrated interest in the undertaking may participate as consulting parties due to the nature of their legal or economic relation to the undertaking or affected properties, or their concern with the undertaking's effects on historic properties.

(d) *The public.*

(1) *Nature of involvement.* The views of the public are essential to informed Federal decisionmaking in the section 106 process. The agency official shall seek and consider the views of the public in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties, the likely interest of the public in the effects on historic properties, confidentiality concerns of private individuals and businesses, and the relationship of the Federal involvement to the undertaking.

(2) *Providing notice and information.* The agency official must, except where appropriate to protect confidentiality concerns of affected parties, provide the public with information about an undertaking and its effects on historic properties and seek public comment and input. Members of the public may

also provide views on their own initiative for the agency official to consider in decisionmaking.

(3) *Use of agency procedures.* The agency official may use the agency's procedures for public involvement under the National Environmental Policy Act or other program requirements in lieu of public involvement requirements in subpart B of this part, if they provide adequate opportunities for public involvement consistent with this subpart.

### Subpart B—The section 106 Process

#### § 800.3 Initiation of the section 106 process.

(a) *Establish undertaking.* The agency official shall determine whether the proposed Federal action is an undertaking as defined in § 800.16(y) and, if so, whether it is a type of activity that has the potential to cause effects on historic properties.

(1) *No potential to cause effects.* If the undertaking is a type of activity that does not have the potential to cause effects on historic properties, assuming such historic properties were present, the agency official has no further obligations under section 106 or this part.

(2) *Program alternatives.* If the review of the undertaking is governed by a Federal agency program alternative established under § 800.14 or a programmatic agreement in existence before January 11, 2001, the agency official shall follow the program alternative.

(b) *Coordinate with other reviews.* The agency official should coordinate the steps of the section 106 process, as appropriate, with the overall planning schedule for the undertaking and with any reviews required under other authorities such as the National Environmental Policy Act, the Native American Graves Protection and Repatriation Act, the American Indian Religious Freedom Act, the Archeological Resources Protection Act, and agency-specific legislation, such as section 4(f) of the Department of Transportation Act. Where consistent with the procedures in this subpart, the agency official may use information developed for other reviews under Federal, State, or tribal law to meet the requirements of section 106.

(c) *Identify the appropriate SHPO and/or THPO.* As part of its initial planning, the agency official shall determine the appropriate SHPO or SHPOs to be involved in the section 106 process. The agency official shall also determine whether the undertaking may occur on or affect historic properties on

any tribal lands and, if so, whether a THPO has assumed the duties of the SHPO. The agency official shall then initiate consultation with the appropriate officer or officers.

(1) *Tribal assumption of SHPO responsibilities.* Where an Indian tribe has assumed the section 106 responsibilities of the SHPO on tribal lands pursuant to section 101(d)(2) of the act, consultation for undertakings occurring on tribal land or for effects on tribal land is with the THPO for the Indian tribe in lieu of the SHPO. Section 101(d)(2)(D)(iii) of the act authorizes owners of properties on tribal lands which are neither owned by a member of the tribe nor held in trust by the Secretary for the benefit of the tribe to request the SHPO to participate in the section 106 process in addition to the THPO.

(2) *Undertakings involving more than one State.* If more than one State is involved in an undertaking, the involved SHPOs may agree to designate a lead SHPO to act on their behalf in the section 106 process, including taking actions that would conclude the section 106 process under this subpart.

(3) *Conducting consultation.* The agency official should consult with the SHPO/THPO in a manner appropriate to the agency planning process for the undertaking and to the nature of the undertaking and its effects on historic properties.

(4) *Failure of the SHPO/THPO to respond.* If the SHPO/THPO fails to respond within 30 days of receipt of a request for review of a finding or determination, the agency official may either proceed to the next step in the process based on the finding or determination or consult with the Council in lieu of the SHPO/THPO. If the SHPO/THPO re-enters the Section 106 process, the agency official shall continue the consultation without being required to reconsider previous findings or determinations.

(d) *Consultation on tribal lands.* Where the Indian tribe has not assumed the responsibilities of the SHPO on tribal lands, consultation with the Indian tribe regarding undertakings occurring on such tribe's lands or effects on such tribal lands shall be in addition to and on the same basis as consultation with the SHPO. If the SHPO has withdrawn from the process, the agency official may complete the section 106 process with the Indian tribe and the Council, as appropriate. An Indian tribe may enter into an agreement with a SHPO or SHPOs specifying the SHPO's participation in the section 106 process for undertakings occurring on or

affecting historic properties on tribal lands.

(e) *Plan to involve the public.* In consultation with the SHPO/THPO, the agency official shall plan for involving the public in the section 106 process. The agency official shall identify the appropriate points for seeking public input and for notifying the public of proposed actions, consistent with § 800.2(d).

(f) *Identify other consulting parties.* In consultation with the SHPO/THPO, the agency official shall identify any other parties entitled to be consulting parties and invite them to participate as such in the section 106 process. The agency official may invite others to participate as consulting parties as the section 106 process moves forward.

(1) *Involving local governments and applicants.* The agency official shall invite any local governments or applicants that are entitled to be consulting parties under § 800.2(c).

(2) *Involving Indian tribes and Native Hawaiian organizations.* The agency official shall make a reasonable and good faith effort to identify any Indian tribes or Native Hawaiian organizations that might attach religious and cultural significance to historic properties in the area of potential effects and invite them to be consulting parties. Such Indian tribe or Native Hawaiian organization that requests in writing to be a consulting party shall be one.

(3) *Requests to be consulting parties.* The agency official shall consider all written requests of individuals and organizations to participate as consulting parties and, in consultation with the SHPO/THPO and any Indian tribe upon whose tribal lands an undertaking occurs or affects historic properties, determine which should be consulting parties.

(g) *Expediting consultation.* A consultation by the agency official with the SHPO/THPO and other consulting parties may address multiple steps in §§ 800.3 through 800.6 where the agency official and the SHPO/THPO agree it is appropriate as long as the consulting parties and the public have an adequate opportunity to express their views as provided in § 800.2(d).

#### § 800.4 Identification of historic properties.

(a) *Determine scope of identification efforts.* In consultation with the SHPO/THPO, the agency official shall:

(1) Determine and document the area of potential effects, as defined in § 800.16(d);

(2) Review existing information on historic properties within the area of potential effects, including any data



concerning possible historic properties not yet identified;

(3) Seek information, as appropriate, from consulting parties, and other individuals and organizations likely to have knowledge of, or concerns with, historic properties in the area, and identify issues relating to the undertaking's potential effects on historic properties; and

(4) Gather information from any Indian tribe or Native Hawaiian organization identified pursuant to § 800.3(f) to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them and may be eligible for the National Register, recognizing that an Indian tribe or Native Hawaiian organization may be reluctant to divulge specific information regarding the location, nature, and activities associated with such sites. The agency official should address concerns raised about confidentiality pursuant to § 800.11(c).

(b) *Identify historic properties.* Based on the information gathered under paragraph (a) of this section, and in consultation with the SHPO/THPO and any Indian tribe or Native Hawaiian organization that might attach religious and cultural significance to properties within the area of potential effects, the agency official shall take the steps necessary to identify historic properties within the area of potential effects.

(1) *Level of effort.* The agency official shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. The agency official shall take into account past planning, research and studies, the magnitude and nature of the undertaking and the degree of Federal involvement, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the area of potential effects. The Secretary's standards and guidelines for identification provide guidance on this subject. The agency official should also consider other applicable professional, State, tribal, and local laws, standards, and guidelines. The agency official shall take into account any confidentiality concerns raised by Indian tribes or Native Hawaiian organizations during the identification process.

(2) *Phased identification and evaluation.* Where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted, the agency official may use a phased process to

conduct identification and evaluation efforts. The agency official may also defer final identification and evaluation of historic properties if it is specifically provided for in a memorandum of agreement executed pursuant to § 800.6, a programmatic agreement executed pursuant to § 800.14(b), or the documents used by an agency official to comply with the National Environmental Policy Act pursuant to § 800.8. The process should establish the likely presence of historic properties within the area of potential effects for each alternative or inaccessible area through background research, consultation and an appropriate level of field investigation, taking into account the number of alternatives under consideration, the magnitude of the undertaking and its likely effects, and the views of the SHPO/THPO and any other consulting parties. As specific aspects or locations of an alternative are refined or access is gained, the agency official shall proceed with the identification and evaluation of historic properties in accordance with paragraphs (b)(1) and (c) of this section.

(c) *Evaluate historic significance.*

(1) *Apply National Register criteria.* In consultation with the SHPO/THPO and any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to identified properties and guided by the Secretary's standards and guidelines for evaluation, the agency official shall apply the National Register criteria (36 CFR part 63) to properties identified within the area of potential effects that have not been previously evaluated for National Register eligibility. The passage of time, changing perceptions of significance, or incomplete prior evaluations may require the agency official to reevaluate properties previously determined eligible or ineligible. The agency official shall acknowledge that Indian tribes and Native Hawaiian organizations possess special expertise in assessing the eligibility of historic properties that may possess religious and cultural significance to them.

(2) *Determine whether a property is eligible.* If the agency official determines any of the National Register criteria are met and the SHPO/THPO agrees, the property shall be considered eligible for the National Register for section 106 purposes. If the agency official determines the criteria are not met and the SHPO/THPO agrees, the property shall be considered not eligible. If the agency official and the SHPO/THPO do not agree, or if the Council or the Secretary so request, the agency official shall obtain a determination of eligibility from the Secretary pursuant

to 36 CFR part 63. If an Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to a property off tribal lands does not agree, it may ask the Council to request the agency official to obtain a determination of eligibility.

(d) *Results of identification and evaluation.*

(1) *No historic properties affected.* If the agency official finds that either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them as defined in § 800.16(i), the agency official shall provide documentation of this finding, as set forth in § 800.11(d), to the SHPO/THPO. The agency official shall notify all consulting parties, including Indian tribes and Native Hawaiian organizations, and make the documentation available for public inspection prior to approving the undertaking. If the SHPO/THPO, or the Council if it has entered the section 106 process, does not object within 30 days of receipt of an adequately documented finding, the agency official's responsibilities under section 106 are fulfilled.

(2) *Historic properties affected.* If the agency official finds that there are historic properties which may be affected by the undertaking or the SHPO/THPO or the Council objects to the agency official's finding under paragraph (d)(1) of this section, the agency official shall notify all consulting parties, including Indian tribes or Native Hawaiian organizations, invite their views on the effects and assess adverse effects, if any, in accordance with § 800.5.

#### **§ 800.5 Assessment of adverse effects.**

(a) *Apply criteria of adverse effect.* In consultation with the SHPO/THPO and any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to identified historic properties, the agency official shall apply the criteria of adverse effect to historic properties within the area of potential effects. The agency official shall consider any views concerning such effects which have been provided by consulting parties and the public.

(1) *Criteria of adverse effect.* An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all

qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

(2) *Examples of adverse effects.*

Adverse effects on historic properties include, but are not limited to:

- (i) Physical destruction of or damage to all or part of the property;
- (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;
- (iii) Removal of the property from its historic location;
- (iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- (v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- (vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- (vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

(3) *Phased application of criteria.*

Where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted, the agency official may use a phased process in applying the criteria of adverse effect consistent with phased identification and evaluation efforts conducted pursuant to § 800.4(b)(2).

(b) *Finding of no adverse effect.* The agency official, in consultation with the SHPO/THPO, may propose a finding of no adverse effect when the undertaking's effects do not meet the criteria of paragraph (a)(1) of this section or the undertaking is modified or conditions are imposed, such as the subsequent review of plans for rehabilitation by the SHPO/THPO to ensure consistency with the Secretary's standards for the treatment of historic properties (36 CFR part 68) and

applicable guidelines, to avoid adverse effects.

(c) *Consulting party review.* If the agency official proposes a finding of no adverse effect, the agency official shall notify all consulting parties of the finding and provide them with the documentation specified in § 800.11(e). The SHPO/THPO shall have 30 days from receipt to review the finding.

(1) *Agreement with finding.* Unless the Council is reviewing the finding pursuant to § 800.5(c)(3), the agency official may proceed if the SHPO/THPO agrees with the finding. The agency official shall carry out the undertaking in accordance with § 800.5(d)(1). Failure of the SHPO/THPO to respond within 30 days from receipt of the finding shall be considered agreement of the SHPO/THPO with the finding.

(2) *Disagreement with finding.*

(i) If the SHPO/THPO or any consulting party disagrees within the 30-day review period, it shall specify the reasons for disagreeing with the finding. The agency official shall either consult with the party to resolve the disagreement, or request the Council to review the finding pursuant to paragraph (c)(3) of this section.

(ii) The agency official should seek the concurrence of any Indian tribe or Native Hawaiian organization that has made known to the agency official that it attaches religious and cultural significance to a historic property subject to the finding. If such Indian tribe or Native Hawaiian organization disagrees with the finding, it may within the 30-day review period specify the reasons for disagreeing with the finding and request the Council to review the finding pursuant to paragraph (c)(3) of this section.

(iii) If the Council on its own initiative so requests within the 30-day review period, the agency official shall submit the finding, along with the documentation specified in § 800.11(e), for review pursuant to paragraph (c)(3) of this section. A Council decision to make such a request shall be guided by the criteria in appendix A to this part.

(3) *Council review of findings.* When a finding is submitted to the Council pursuant to paragraph (c)(2) of this section, the agency official shall include the documentation specified in § 800.11(e). The Council shall review the finding and notify the agency official of its determination as to whether the adverse effect criteria have been correctly applied within 15 days of receiving the documented finding from the agency official. The Council shall specify the basis for its determination. The agency official shall proceed in accordance with the Council's

determination. If the Council does not respond within 15 days of receipt of the finding, the agency official may assume concurrence with the agency official's findings and proceed accordingly.

(d) *Results of assessment.*

(1) *No adverse effect.* The agency official shall maintain a record of the finding and provide information on the finding to the public on request, consistent with the confidentiality provisions of § 800.11(c). Implementation of the undertaking in accordance with the finding as documented fulfills the agency official's responsibilities under section 106 and this part. If the agency official will not conduct the undertaking as proposed in the finding, the agency official shall reopen consultation under paragraph (a) of this section.

(2) *Adverse effect.* If an adverse effect is found, the agency official shall consult further to resolve the adverse effect pursuant to § 800.6.

**§ 800.6 Resolution of adverse effects.**

(a) *Continue consultation.* The agency official shall consult with the SHPO/THPO and other consulting parties, including Indian tribes and Native Hawaiian organizations, to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties.

(1) *Notify the Council and determine Council participation.* The agency official shall notify the Council of the adverse effect finding by providing the documentation specified in § 800.11(e).

(i) The notice shall invite the Council to participate in the consultation when:

(A) The agency official wants the Council to participate;

(B) The undertaking has an adverse effect upon a National Historic Landmark; or

(C) A programmatic agreement under § 800.14(b) will be prepared;

(ii) The SHPO/THPO, an Indian tribe or Native Hawaiian organization, or any other consulting party may at any time independently request the Council to participate in the consultation.

(iii) The Council shall advise the agency official and all consulting parties whether it will participate within 15 days of receipt of notice or other request. Prior to entering the process, the Council shall provide written notice to the agency official and the consulting parties that its decision to participate meets the criteria set forth in appendix A to this part. The Council shall also advise the head of the agency of its decision to enter the process. Consultation with Council participation

is conducted in accordance with paragraph (b)(2) of this section.

(iv) If the Council does not join the consultation, the agency official shall proceed with consultation in accordance with paragraph (b)(1) of this section.

(2) *Involve consulting parties.* In addition to the consulting parties identified under § 800.3(f), the agency official, the SHPO/THPO and the Council, if participating, may agree to invite other individuals or organizations to become consulting parties. The agency official shall invite any individual or organization that will assume a specific role or responsibility in a memorandum of agreement to participate as a consulting party.

(3) *Provide documentation.* The agency official shall provide to all consulting parties the documentation specified in § 800.11(e), subject to the confidentiality provisions of § 800.11(c), and such other documentation as may be developed during the consultation to resolve adverse effects.

(4) *Involve the public.* The agency official shall make information available to the public, including the documentation specified in § 800.11(e), subject to the confidentiality provisions of § 800.11(c). The agency official shall provide an opportunity for members of the public to express their views on resolving adverse effects of the undertaking. The agency official should use appropriate mechanisms, taking into account the magnitude of the undertaking and the nature of its effects upon historic properties, the likely effects on historic properties, and the relationship of the Federal involvement to the undertaking to ensure that the public's views are considered in the consultation. The agency official should also consider the extent of notice and information concerning historic preservation issues afforded the public at earlier steps in the section 106 process to determine the appropriate level of public involvement when resolving adverse effects so that the standards of § 800.2(d) are met.

(5) *Restrictions on disclosure of information.* Section 304 of the act and other authorities may limit the disclosure of information under paragraphs (a)(3) and (a)(4) of this section. If an Indian tribe or Native Hawaiian organization objects to the disclosure of information or if the agency official believes that there are other reasons to withhold information, the agency official shall comply with § 800.11(c) regarding the disclosure of such information.

(b) *Resolve adverse effects.*

(1) *Resolution without the Council.*

(i) The agency official shall consult with the SHPO/THPO and other consulting parties to seek ways to avoid, minimize or mitigate the adverse effects.

(ii) The agency official may use standard treatments established by the Council under § 800.14(d) as a basis for a memorandum of agreement.

(iii) If the Council decides to join the consultation, the agency official shall follow paragraph (b)(2) of this section.

(iv) If the agency official and the SHPO/THPO agree on how the adverse effects will be resolved, they shall execute a memorandum of agreement. The agency official must submit a copy of the executed memorandum of agreement, along with the documentation specified in § 800.11(f), to the Council prior to approving the undertaking in order to meet the requirements of section 106 and this subpart.

(v) If the agency official, and the SHPO/THPO fail to agree on the terms of a memorandum of agreement, the agency official shall request the Council to join the consultation and provide the Council with the documentation set forth in § 800.11(g). If the Council decides to join the consultation, the agency official shall proceed in accordance with paragraph (b)(2) of this section. If the Council decides not to join the consultation, the Council will notify the agency and proceed to comment in accordance with § 800.7(c).

(2) *Resolution with Council participation.* If the Council decides to participate in the consultation, the agency official shall consult with the SHPO/THPO, the Council, and other consulting parties, including Indian tribes and Native Hawaiian organizations under § 800.2(c)(3), to seek ways to avoid, minimize or mitigate the adverse effects. If the agency official, the SHPO/THPO, and the Council agree on how the adverse effects will be resolved, they shall execute a memorandum of agreement.

(c) *Memorandum of agreement.* A memorandum of agreement executed and implemented pursuant to this section evidences the agency official's compliance with section 106 and this part and shall govern the undertaking and all of its parts. The agency official shall ensure that the undertaking is carried out in accordance with the memorandum of agreement.

(1) *Signatories.* The signatories have sole authority to execute, amend or terminate the agreement in accordance with this subpart.

(i) The agency official and the SHPO/THPO are the signatories to a memorandum of agreement executed

pursuant to paragraph (b)(1) of this section.

(ii) The agency official, the SHPO/THPO, and the Council are the signatories to a memorandum of agreement executed pursuant to paragraph (b)(2) of this section.

(iii) The agency official and the Council are signatories to a memorandum of agreement executed pursuant to § 800.7(a)(2).

(2) *Invited signatories.*

(i) The agency official may invite additional parties to be signatories to a memorandum of agreement. Any such party that signs the memorandum of agreement shall have the same rights with regard to seeking amendment or termination of the memorandum of agreement as other signatories.

(ii) The agency official may invite an Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to historic properties located off tribal lands to be a signatory to a memorandum of agreement concerning such properties.

(iii) The agency official should invite any party that assumes a responsibility under a memorandum of agreement to be a signatory.

(iv) The refusal of any party invited to become a signatory to a memorandum of agreement pursuant to paragraph (c)(2) of this section does not invalidate the memorandum of agreement.

(3) *Concurrence by others.* The agency official may invite all consulting parties to concur in the memorandum of agreement. The signatories may agree to invite others to concur. The refusal of any party invited to concur in the memorandum of agreement does not invalidate the memorandum of agreement.

(4) *Reports on implementation.* Where the signatories agree it is appropriate, a memorandum of agreement shall include a provision for monitoring and reporting on its implementation.

(5) *Duration.* A memorandum of agreement shall include provisions for termination and for reconsideration of terms if the undertaking has not been implemented within a specified time.

(6) *Discoveries.* Where the signatories agree it is appropriate, a memorandum of agreement shall include provisions to deal with the subsequent discovery or identification of additional historic properties affected by the undertaking.

(7) *Amendments.* The signatories to a memorandum of agreement may amend it. If the Council was not a signatory to the original agreement and the signatories execute an amended agreement, the agency official shall file it with the Council.

(8) *Termination.* If any signatory determines that the terms of a memorandum of agreement cannot be or are not being carried out, the signatories shall consult to seek amendment of the agreement. If the agreement is not amended, any signatory may terminate it. The agency official shall either execute a memorandum of agreement with signatories under paragraph (c)(1) of this section or request the comments of the Council under § 800.7(a).

(9) *Copies.* The agency official shall provide each consulting party with a copy of any memorandum of agreement executed pursuant to this subpart.

**§ 800.7 Failure to resolve adverse effects.**

(a) *Termination of consultation.* After consulting to resolve adverse effects pursuant to § 800.6(b)(2), the agency official, the SHPO/THPO, or the Council may determine that further consultation will not be productive and terminate consultation. Any party that terminates consultation shall notify the other consulting parties and provide them the reasons for terminating in writing.

(1) If the agency official terminates consultation, the head of the agency or an Assistant Secretary or other officer with major department-wide or agency-wide responsibilities shall request that the Council comment pursuant to paragraph (c) of this section and shall notify all consulting parties of the request.

(2) If the SHPO terminates consultation, the agency official and the Council may execute a memorandum of agreement without the SHPO's involvement.

(3) If a THPO terminates consultation regarding an undertaking occurring on or affecting historic properties on its tribal lands, the Council shall comment pursuant to paragraph (c) of this section.

(4) If the Council terminates consultation, the Council shall notify the agency official, the agency's Federal preservation officer and all consulting parties of the termination and comment under paragraph (c) of this section. The Council may consult with the agency's Federal preservation officer prior to terminating consultation to seek to resolve issues concerning the undertaking and its effects on historic properties.

(b) *Comments without termination.* The Council may determine that it is appropriate to provide additional advisory comments upon an undertaking for which a memorandum of agreement will be executed. The Council shall provide them to the agency official when it executes the memorandum of agreement.

(c) *Comments by the Council.*

(1) *Preparation.* The Council shall provide an opportunity for the agency official, all consulting parties, and the public to provide their views within the time frame for developing its comments. Upon request of the Council, the agency official shall provide additional existing information concerning the undertaking and assist the Council in arranging an onsite inspection and an opportunity for public participation.

(2) *Timing.* The Council shall transmit its comments within 45 days of receipt of a request under paragraph (a)(1) or (a)(3) of this section or § 800.8(c)(3), or termination by the Council under § 800.6(b)(1)(v) or paragraph (a)(4) of this section, unless otherwise agreed to by the agency official.

(3) *Transmittal.* The Council shall provide its comments to the head of the agency requesting comment with copies to the agency official, the agency's Federal preservation officer, all consulting parties, and others as appropriate.

(4) *Response to Council comment.* The head of the agency shall take into account the Council's comments in reaching a final decision on the undertaking. Section 110(l) of the act directs that the head of the agency shall document this decision and may not delegate his or her responsibilities pursuant to section 106. Documenting the agency head's decision shall include:

(i) Preparing a summary of the decision that contains the rationale for the decision and evidence of consideration of the Council's comments and providing it to the Council prior to approval of the undertaking;

(ii) Providing a copy of the summary to all consulting parties; and

(iii) Notifying the public and making the record available for public inspection.

**§ 800.8 Coordination With the National Environmental Policy Act.**

(a) *General principles.*

(1) *Early coordination.* Federal agencies are encouraged to coordinate compliance with section 106 and the procedures in this part with any steps taken to meet the requirements of the National Environmental Policy Act (NEPA). Agencies should consider their section 106 responsibilities as early as possible in the NEPA process, and plan their public participation, analysis, and review in such a way that they can meet the purposes and requirements of both statutes in a timely and efficient manner. The determination of whether an undertaking is a "major Federal action significantly affecting the quality

of the human environment," and therefore requires preparation of an environmental impact statement (EIS) under NEPA, should include consideration of the undertaking's likely effects on historic properties. A finding of adverse effect on a historic property does not necessarily require an EIS under NEPA.

(2) *Consulting party roles.* SHPO/THPOs, Indian tribes, and Native Hawaiian organizations, other consulting parties, and organizations and individuals who may be concerned with the possible effects of an agency action on historic properties should be prepared to consult with agencies early in the NEPA process, when the purpose of and need for the proposed action as well as the widest possible range of alternatives are under consideration.

(3) *Inclusion of historic preservation issues.* Agency officials should ensure that preparation of an environmental assessment (EA) and finding of no significant impact (FONSI) or an EIS and record of decision (ROD) includes appropriate scoping, identification of historic properties, assessment of effects upon them, and consultation leading to resolution of any adverse effects.

(b) *Actions categorically excluded under NEPA.* If a project, activity or program is categorically excluded from NEPA review under an agency's NEPA procedures, the agency official shall determine if it still qualifies as an undertaking requiring review under section 106 pursuant to § 800.3(a). If so, the agency official shall proceed with section 106 review in accordance with the procedures in this subpart.

(c) *Use of the NEPA process for section 106 purposes.* An agency official may use the process and documentation required for the preparation of an EA/FONSI or an EIS/ROD to comply with section 106 in lieu of the procedures set forth in §§ 800.3 through 800.6 if the agency official has notified in advance the SHPO/THPO and the Council that it intends to do so and the following standards are met.

(1) *Standards for developing environmental documents to comply with Section 106.* During preparation of the EA or draft EIS (DEIS) the agency official shall:

(i) Identify consulting parties either pursuant to § 800.3(f) or through the NEPA scoping process with results consistent with § 800.3(f);

(ii) Identify historic properties and assess the effects of the undertaking on such properties in a manner consistent with the standards and criteria of §§ 800.4 through 800.5, provided that the scope and timing of these steps may be phased to reflect the agency official's

consideration of project alternatives in the NEPA process and the effort is commensurate with the assessment of other environmental factors;

(iii) Consult regarding the effects of the undertaking on historic properties with the SHPO/THPO, Indian tribes, and Native Hawaiian organizations that might attach religious and cultural significance to affected historic properties, other consulting parties, and the Council, where appropriate, during NEPA scoping, environmental analysis, and the preparation of NEPA documents;

(iv) Involve the public in accordance with the agency's published NEPA procedures; and (v) Develop in consultation with identified consulting parties alternatives and proposed measures that might avoid, minimize or mitigate any adverse effects of the undertaking on historic properties and describe them in the EA or DEIS.

(2) *Review of environmental documents.*

(i) The agency official shall submit the EA, DEIS, or EIS to the SHPO/THPO, Indian tribes, and Native Hawaiian organizations that might attach religious and cultural significance to affected historic properties, and other consulting parties prior to or when making the document available for public comment. If the document being prepared is a DEIS or EIS, the agency official shall also submit it to the Council.

(ii) Prior to or within the time allowed for public comment on the document, a SHPO/THPO, an Indian tribe or Native Hawaiian organization, another consulting party or the Council may object to the agency official that preparation of the EA, DEIS, or EIS has not met the standards set forth in paragraph (c)(1) of this section or that the substantive resolution of the effects on historic properties proposed in an EA, DEIS, or EIS is inadequate. If the agency official receives such an objection, the agency official shall refer the matter to the Council.

(3) *Resolution of objections.* Within 30 days of the agency official's referral of an objection under paragraph (c)(2)(ii) of this section, the Council shall notify the agency official either that it agrees with the objection, in which case the agency official shall enter into consultation in accordance with § 800.6(b)(2) or seek Council comments in accordance with § 800.7(a), or that it disagrees with the objection, in which case the agency official shall continue its compliance with this section. Failure of the Council to respond within the 30 day period shall be considered disagreement with the objection.

(4) *Approval of the undertaking.* If the agency official has found, during the preparation of an EA or EIS that the effects of an undertaking on historic properties are adverse, the agency official shall develop measures in the EA, DEIS, or EIS to avoid, minimize, or mitigate such effects in accordance with paragraph (c)(1)(v) of this section. The agency official's responsibilities under section 106 and the procedures in this subpart shall then be satisfied when either:

(i) A binding commitment to such proposed measures is incorporated in:

(A) The ROD, if such measures were proposed in a DEIS or EIS; or

(B) An MOA drafted in compliance with § 800.6(c); or

(ii) The Council has commented under § 800.7 and received the agency's response to such comments.

(5) *Modification of the undertaking.* If the undertaking is modified after approval of the FONSI or the ROD in a manner that changes the undertaking or alters its effects on historic properties, or if the agency official fails to ensure that the measures to avoid, minimize or mitigate adverse effects (as specified in either the FONSI or the ROD, or in the binding commitment adopted pursuant to paragraph (c)(4) of this section) are carried out, the agency official shall notify the Council and all consulting parties that supplemental environmental documents will be prepared in compliance with NEPA or that the procedures in §§ 800.3 through 800.6 will be followed as necessary.

**§ 800.9 Council review of section 106 compliance.**

(a) *Assessment of agency official compliance for individual undertakings.* The Council may provide to the agency official its advisory opinion regarding the substance of any finding, determination or decision or regarding the adequacy of the agency official's compliance with the procedures under this part. The Council may provide such advice at any time at the request of any individual, agency or organization or on its own initiative. The agency official shall consider the views of the Council in reaching a decision on the matter in question.

(b) *Agency foreclosure of the Council's opportunity to comment.* Where an agency official has failed to complete the requirements of section 106 in accordance with the procedures in this part prior to the approval of an undertaking, the Council's opportunity to comment may be foreclosed. The Council may review a case to determine whether a foreclosure has occurred. The Council shall notify the agency official

and the agency's Federal preservation officer and allow 30 days for the agency official to provide information as to whether foreclosure has occurred. If the Council determines foreclosure has occurred, the Council shall transmit the determination to the agency official and the head of the agency. The Council shall also make the determination available to the public and any parties known to be interested in the undertaking and its effects upon historic properties.

(c) *Intentional adverse effects by applicants.*

(1) *Agency responsibility.* Section 110(k) of the act prohibits a Federal agency from granting a loan, loan guarantee, permit, license or other assistance to an applicant who, with intent to avoid the requirements of section 106, has intentionally significantly adversely affected a historic property to which the grant would relate, or having legal power to prevent it, has allowed such significant adverse effect to occur, unless the agency, after consultation with the Council, determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. Guidance issued by the Secretary pursuant to section 110 of the act governs its implementation.

(2) *Consultation with the Council.* When an agency official determines, based on the actions of an applicant, that section 110(k) is applicable and that circumstances may justify granting the assistance, the agency official shall notify the Council and provide documentation specifying the circumstances under which the adverse effects to the historic property occurred and the degree of damage to the integrity of the property. This documentation shall include any views obtained from the applicant, SHPO/THPO, an Indian tribe if the undertaking occurs on or affects historic properties on tribal lands, and other parties known to be interested in the undertaking.

(i) Within thirty days of receiving the agency official's notification, unless otherwise agreed to by the agency official, the Council shall provide the agency official with its opinion as to whether circumstances justify granting assistance to the applicant and any possible mitigation of the adverse effects.

(ii) The agency official shall consider the Council's opinion in making a decision on whether to grant assistance to the applicant, and shall notify the Council, the SHPO/THPO, and other parties known to be interested in the undertaking prior to granting the assistance.

(3) *Compliance with Section 106.* If an agency official, after consulting with the Council, determines to grant the assistance, the agency official shall comply with §§ 800.3 through 800.6 to take into account the effects of the undertaking on any historic properties.

(d) *Evaluation of Section 106 operations.* The Council may evaluate the operation of the section 106 process by periodic reviews of how participants have fulfilled their legal responsibilities and how effectively the outcomes reached advance the purposes of the act.

(1) *Information from participants.* Section 203 of the act authorizes the Council to obtain information from Federal agencies necessary to conduct evaluation of the section 106 process. The agency official shall make documentation of agency policies, operating procedures and actions taken to comply with section 106 available to the Council upon request. The Council may request available information and documentation from other participants in the section 106 process.

(2) *Improving the operation of section 106.* Based upon any evaluation of the section 106 process, the Council may make recommendations to participants, the heads of Federal agencies, and the Secretary of actions to improve the efficiency and effectiveness of the process. Where the Council determines that an agency official or a SHPO/THPO has failed to properly carry out the responsibilities assigned under the process in this part, the Council may participate in individual case reviews conducted under such process in addition to the SHPO/THPO for such period that it determines is necessary to improve performance or correct deficiencies. If the Council finds a pattern of failure by a Federal agency in carrying out its responsibilities under section 106, the Council may review the policies and programs of the agency related to historic preservation pursuant to section 202(a)(6) of the act and recommend methods to improve the effectiveness, coordination, and consistency of those policies and programs with section 106.

#### **§ 800.10 Special requirements for protecting National Historic Landmarks.**

(a) *Statutory requirement.* Section 110(f) of the act requires that the agency official, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to any National Historic Landmark that may be directly and adversely affected by an undertaking. When commenting on such undertakings, the Council shall use the process set forth in §§ 800.6 through 800.7 and give

special consideration to protecting National Historic Landmarks as specified in this section.

(b) *Resolution of adverse effects.* The agency official shall request the Council to participate in any consultation to resolve adverse effects on National Historic Landmarks conducted under § 800.6.

(c) *Involvement of the Secretary.* The agency official shall notify the Secretary of any consultation involving a National Historic Landmark and invite the Secretary to participate in the consultation where there may be an adverse effect. The Council may request a report from the Secretary under section 213 of the act to assist in the consultation.

(d) *Report of outcome.* When the Council participates in consultation under this section, it shall report the outcome of the section 106 process, providing its written comments or any memoranda of agreement to which it is a signatory, to the Secretary and the head of the agency responsible for the undertaking.

#### **§ 800.11 Documentation standards.**

(a) *Adequacy of documentation.* The agency official shall ensure that a determination, finding, or agreement under the procedures in this subpart is supported by sufficient documentation to enable any reviewing parties to understand its basis. The agency official shall provide such documentation to the extent permitted by law and within available funds. When an agency official is conducting phased identification or evaluation under this subpart, the documentation standards regarding description of historic properties may be applied flexibly. If the Council, or the SHPO/THPO when the Council is not involved, determines the applicable documentation standards are not met, the Council or the SHPO/THPO, as appropriate, shall notify the agency official and specify the information needed to meet the standard. At the request of the agency official or any of the consulting parties, the Council shall review any disputes over whether documentation standards are met and provide its views to the agency official and the consulting parties.

(b) *Format.* The agency official may use documentation prepared to comply with other laws to fulfill the requirements of the procedures in this subpart, if that documentation meets the standards of this section.

(c) *Confidentiality.*

(1) *Authority to withhold information.* Section 304 of the act provides that the head of a Federal agency or other public official receiving grant assistance

pursuant to the act, after consultation with the Secretary, shall withhold from public disclosure information about the location, character, or ownership of a historic property when disclosure may cause a significant invasion of privacy; risk harm to the historic property; or impede the use of a traditional religious site by practitioners. When the head of a Federal agency or other public official has determined that information should be withheld from the public pursuant to these criteria, the Secretary, in consultation with such Federal agency head or official, shall determine who may have access to the information for the purposes of carrying out the act.

(2) *Consultation with the Council.* When the information in question has been developed in the course of an agency's compliance with this part, the Secretary shall consult with the Council in reaching determinations on the withholding and release of information. The Federal agency shall provide the Council with available information, including views of the SHPO/THPO, Indian tribes and Native Hawaiian organizations, related to the confidentiality concern. The Council shall advise the Secretary and the Federal agency within 30 days of receipt of adequate documentation.

(3) *Other authorities affecting confidentiality.* Other Federal laws and program requirements may limit public access to information concerning an undertaking and its effects on historic properties. Where applicable, those authorities shall govern public access to information developed in the section 106 process and may authorize the agency official to protect the privacy of non-governmental applicants.

(d) *Finding of no historic properties affected.* Documentation shall include:

(1) A description of the undertaking, specifying the Federal involvement, and its area of potential effects, including photographs, maps, drawings, as necessary;

(2) A description of the steps taken to identify historic properties, including, as appropriate, efforts to seek information pursuant to § 800.4(b); and

(3) The basis for determining that no historic properties are present or affected.

(e) *Finding of no adverse effect or adverse effect.* Documentation shall include:

(1) A description of the undertaking, specifying the Federal involvement, and its area of potential effects, including photographs, maps, and drawings, as necessary;

(2) A description of the steps taken to identify historic properties;

(3) A description of the affected historic properties, including information on the characteristics that qualify them for the National Register;

(4) A description of the undertaking's effects on historic properties;

(5) An explanation of why the criteria of adverse effect were found applicable or inapplicable, including any conditions or future actions to avoid, minimize or mitigate adverse effects; and

(6) Copies or summaries of any views provided by consulting parties and the public.

(f) *Memorandum of agreement.* When a memorandum of agreement is filed with the Council, the documentation shall include, any substantive revisions or additions to the documentation provided the Council pursuant to § 800.6(a)(1), an evaluation of any measures considered to avoid or minimize the undertaking's adverse effects and a summary of the views of consulting parties and the public.

(g) *Requests for comment without a memorandum of agreement.*

*Documentation shall include:*

(1) A description and evaluation of any alternatives or mitigation measures that the agency official proposes to resolve the undertaking's adverse effects;

(2) A description of any reasonable alternatives or mitigation measures that were considered but not chosen, and the reasons for their rejection;

(3) Copies or summaries of any views submitted to the agency official concerning the adverse effects of the undertaking on historic properties and alternatives to reduce or avoid those effects; and

(4) Any substantive revisions or additions to the documentation provided the Council pursuant to § 800.6(a)(1).

#### **§ 800.12 Emergency situations.**

(a) *Agency procedures.* The agency official, in consultation with the appropriate SHPOs/THPOs, affected Indian tribes and Native Hawaiian organizations, and the Council, is encouraged to develop procedures for taking historic properties into account during operations which respond to a disaster or emergency declared by the President, a tribal government, or the Governor of a State or which respond to other immediate threats to life or property. If approved by the Council, the procedures shall govern the agency's historic preservation responsibilities during any disaster or emergency in lieu of §§ 800.3 through 800.6.

(b) *Alternatives to agency procedures.* In the event an agency official proposes

an emergency undertaking as an essential and immediate response to a disaster or emergency declared by the President, a tribal government, or the Governor of a State or another immediate threat to life or property, and the agency has not developed procedures pursuant to paragraph (a) of this section, the agency official may comply with section 106 by:

(1) Following a programmatic agreement developed pursuant to § 800.14(b) that contains specific provisions for dealing with historic properties in emergency situations; or

(2) Notifying the Council, the appropriate SHPO/THPO and any Indian tribe or Native Hawaiian organization that may attach religious and cultural significance to historic properties likely to be affected prior to the undertaking and affording them an opportunity to comment within seven days of notification. If the agency official determines that circumstances do not permit seven days for comment, the agency official shall notify the Council, the SHPO/THPO and the Indian tribe or Native Hawaiian organization and invite any comments within the time available.

(c) *Local governments responsible for section 106 compliance.* When a local government official serves as the agency official for section 106 compliance, paragraphs (a) and (b) of this section also apply to an imminent threat to public health or safety as a result of a natural disaster or emergency declared by a local government's chief executive officer or legislative body, provided that if the Council or SHPO/THPO objects to the proposed action within seven days, the agency official shall comply with §§ 800.3 through 800.6.

(d) *Applicability.* This section applies only to undertakings that will be implemented within 30 days after the disaster or emergency has been formally declared by the appropriate authority. An agency may request an extension of the period of applicability from the Council prior to the expiration of the 30 days. Immediate rescue and salvage operations conducted to preserve life or property are exempt from the provisions of section 106 and this part.

#### **§ 800.13 Post-review discoveries.**

(a) *Planning for subsequent discoveries.*

(1) *Using a programmatic agreement.* An agency official may develop a programmatic agreement pursuant to § 800.14(b) to govern the actions to be taken when historic properties are discovered during the implementation of an undertaking.

(2) *Using agreement documents.*

When the agency official's identification efforts in accordance with § 800.4 indicate that historic properties are likely to be discovered during implementation of an undertaking and no programmatic agreement has been developed pursuant to paragraph (a)(1) of this section, the agency official shall include in any finding of no adverse effect or memorandum of agreement a process to resolve any adverse effects upon such properties. Actions in conformance with the process satisfy the agency official's responsibilities under section 106 and this part.

(b) *Discoveries without prior planning.* If historic properties are discovered or unanticipated effects on historic properties found after the agency official has completed the section 106 process without establishing a process under paragraph (a) of this section, the agency official shall make reasonable efforts to avoid, minimize or mitigate adverse effects to such properties and:

(1) If the agency official has not approved the undertaking or if construction on an approved undertaking has not commenced, consult to resolve adverse effects pursuant to § 800.6; or

(2) If the agency official, the SHPO/THPO and any Indian tribe or Native Hawaiian organization that might attach religious and cultural significance to the affected property agree that such property is of value solely for its scientific, prehistoric, historic or archeological data, the agency official may comply with the Archeological and Historic Preservation Act instead of the procedures in this part and provide the Council, the SHPO/THPO, and the Indian tribe or Native Hawaiian organization with a report on the actions within a reasonable time after they are completed; or

(3) If the agency official has approved the undertaking and construction has commenced, determine actions that the agency official can take to resolve adverse effects, and notify the SHPO/THPO, any Indian tribe or Native Hawaiian organization that might attach religious and cultural significance to the affected property, and the Council within 48 hours of the discovery. The notification shall describe the agency official's assessment of National Register eligibility of the property and proposed actions to resolve the adverse effects. The SHPO/THPO, the Indian tribe or Native Hawaiian organization and the Council shall respond within 48 hours of the notification. The agency official shall take into account their recommendations regarding National

Register eligibility and proposed actions, and then carry out appropriate actions. The agency official shall provide the SHPO/THPO, the Indian tribe or Native Hawaiian organization and the Council a report of the actions when they are completed.

(c) *Eligibility of properties.* The agency official, in consultation with the SHPO/THPO, may assume a newly-discovered property to be eligible for the National Register for purposes of section 106. The agency official shall specify the National Register criteria used to assume the property's eligibility so that information can be used in the resolution of adverse effects.

(d) *Discoveries on tribal lands.* If historic properties are discovered on tribal lands, or there are unanticipated effects on historic properties found on tribal lands, after the agency official has completed the section 106 process without establishing a process under paragraph (a) of this section and construction has commenced, the agency official shall comply with applicable tribal regulations and procedures and obtain the concurrence of the Indian tribe on the proposed action.

### Subpart C—Program Alternatives

#### § 800.14 Federal agency program alternatives.

(a) *Alternate procedures.* An agency official may develop procedures to implement section 106 and substitute them for all or part of subpart B of this part if they are consistent with the Council's regulations pursuant to section 110(a)(2)(E) of the act.

(1) *Development of procedures.* The agency official shall consult with the Council, the National Conference of State Historic Preservation Officers, or individual SHPO/THPOs, as appropriate, and Indian tribes and Native Hawaiian organizations, as specified in paragraph (f) of this section, in the development of alternate procedures, publish notice of the availability of proposed alternate procedures in the **Federal Register** and take other appropriate steps to seek public input during the development of alternate procedures.

(2) *Council review.* The agency official shall submit the proposed alternate procedures to the Council for a 60-day review period. If the Council finds the procedures to be consistent with this part, it shall notify the agency official and the agency official may adopt them as final alternate procedures.

(3) *Notice.* The agency official shall notify the parties with which it has consulted and publish notice of final

alternate procedures in the **Federal Register**.

(4) *Legal effect.* Alternate procedures adopted pursuant to this subpart substitute for the Council's regulations for the purposes of the agency's compliance with section 106, except that where an Indian tribe has entered into an agreement with the Council to substitute tribal historic preservation regulations for the Council's regulations under section 101(d)(5) of the act, the agency shall follow those regulations in lieu of the agency's procedures regarding undertakings on tribal lands. Prior to the Council entering into such agreements, the Council will provide Federal agencies notice and opportunity to comment on the proposed substitute tribal regulations.

(b) *Programmatic agreements.* The Council and the agency official may negotiate a programmatic agreement to govern the implementation of a particular program or the resolution of adverse effects from certain complex project situations or multiple undertakings.

(1) *Use of programmatic agreements.* A programmatic agreement may be used:

(i) When effects on historic properties are similar and repetitive or are multi-State or regional in scope;

(ii) When effects on historic properties cannot be fully determined prior to approval of an undertaking;

(iii) When nonfederal parties are delegated major decisionmaking responsibilities;

(iv) Where routine management activities are undertaken at Federal installations, facilities, or other land-management units; or

(v) Where other circumstances warrant a departure from the normal section 106 process.

(2) *Developing programmatic agreements for agency programs.*

(i) The consultation shall involve, as appropriate, SHPO/THPOs, the National Conference of State Historic Preservation Officers (NCSHPO), Indian tribes and Native Hawaiian organizations, other Federal agencies, and members of the public. If the programmatic agreement has the potential to affect historic properties on tribal lands or historic properties of religious and cultural significance to an Indian tribe or Native Hawaiian organization, the agency official shall also follow paragraph (f) of this section.

(ii) *Public participation.* The agency official shall arrange for public participation appropriate to the subject matter and the scope of the program and in accordance with subpart A of this part. The agency official shall consider

the nature of the program and its likely effects on historic properties and take steps to involve the individuals, organizations and entities likely to be interested.

(iii) *Effect.* The programmatic agreement shall take effect when executed by the Council, the agency official and the appropriate SHPOs/THPOs when the programmatic agreement concerns a specific region or the president of NCSHPO when NCSHPO has participated in the consultation. A programmatic agreement shall take effect on tribal lands only when the THPO, Indian tribe, or a designated representative of the tribe is a signatory to the agreement. Compliance with the procedures established by an approved programmatic agreement satisfies the agency's section 106 responsibilities for all individual undertakings of the program covered by the agreement until it expires or is terminated by the agency, the president of NCSHPO when a signatory, or the Council. Termination by an individual SHPO/THPO shall only terminate the application of a regional programmatic agreement within the jurisdiction of the SHPO/THPO. If a THPO assumes the responsibilities of a SHPO pursuant to section 101(d)(2) of the act and the SHPO is signatory to programmatic agreement, the THPO assumes the role of a signatory, including the right to terminate a regional programmatic agreement on lands under the jurisdiction of the tribe.

(iv) *Notice.* The agency official shall notify the parties with which it has consulted that a programmatic agreement has been executed under paragraph (b) of this section, provide appropriate public notice before it takes effect, and make any internal agency procedures implementing the agreement readily available to the Council, SHPO/THPOs, and the public.

(v) If the Council determines that the terms of a programmatic agreement are not being carried out, or if such an agreement is terminated, the agency official shall comply with subpart B of this part with regard to individual undertakings of the program covered by the agreement.

(3) *Developing programmatic agreements for complex or multiple undertakings.* Consultation to develop a programmatic agreement for dealing with the potential adverse effects of complex projects or multiple undertakings shall follow § 800.6. If consultation pertains to an activity involving multiple undertakings and the parties fail to reach agreement, then the agency official shall comply with the



provisions of subpart B of this part for each individual undertaking.

(4) *Prototype programmatic agreements.* The Council may designate an agreement document as a prototype programmatic agreement that may be used for the same type of program or undertaking in more than one case or area. When an agency official uses such a prototype programmatic agreement, the agency official may develop and execute the agreement with the appropriate SHPO/THPO and the agreement shall become final without need for Council participation in consultation or Council signature.

(c) *Exempted categories.*

(1) *Criteria for establishing.* An agency official may propose a program or category of agency undertakings that may be exempted from review under the provisions of subpart B of this part, if the program or category meets the following criteria:

(i) The actions within the program or category would otherwise qualify as "undertakings" as defined in § 800.16;

(ii) The potential effects of the undertakings within the program or category upon historic properties are foreseeable and likely to be minimal or not adverse; and

(iii) Exemption of the program or category is consistent with the purposes of the act.

(2) *Public participation.* The agency official shall arrange for public participation appropriate to the subject matter and the scope of the exemption and in accordance with the standards in subpart A of this part. The agency official shall consider the nature of the exemption and its likely effects on historic properties and take steps to involve individuals, organizations and entities likely to be interested.

(3) *Consultation with SHPOs/THPOs.* The agency official shall notify and consider the views of the SHPOs/THPOs on the exemption.

(4) *Consultation with Indian tribes and Native Hawaiian organizations.* If the exempted program or category of undertakings has the potential to affect historic properties on tribal lands or historic properties of religious and cultural significance to an Indian tribe or Native Hawaiian organization, the Council shall follow the requirements for the agency official set forth in paragraph (f) of this section.

(5) *Council review of proposed exemptions.* The Council shall review a request for an exemption that is supported by documentation describing the program or category for which the exemption is sought, demonstrating that the criteria of paragraph (c)(1) of this section have been met, describing the

methods used to seek the views of the public, and summarizing any views submitted by the SHPO/THPOs, the public, and any others consulted. Unless it requests further information, the Council shall approve or reject the proposed exemption within 30 days of receipt, and thereafter notify the agency official and SHPO/THPOs of the decision. The decision shall be based on the consistency of the exemption with the purposes of the act, taking into consideration the magnitude of the exempted undertaking or program and the likelihood of impairment of historic properties in accordance with section 214 of the act.

(6) *Legal consequences.* Any undertaking that falls within an approved exempted program or category shall require no further review pursuant to subpart B of this part, unless the agency official or the Council determines that there are circumstances under which the normally excluded undertaking should be reviewed under subpart B of this part.

(7) *Termination.* The Council may terminate an exemption at the request of the agency official or when the Council determines that the exemption no longer meets the criteria of paragraph (c)(1) of this section. The Council shall notify the agency official 30 days before termination becomes effective.

(8) *Notice.* The agency official shall publish notice of any approved exemption in the **Federal Register**.

(d) *Standard treatments.*

(1) *Establishment.* The Council, on its own initiative or at the request of another party, may establish standard methods for the treatment of a category of historic properties, a category of undertakings, or a category of effects on historic properties to assist Federal agencies in satisfying the requirements of subpart B of this part. The Council shall publish notice of standard treatments in the **Federal Register**.

(2) *Public participation.* The Council shall arrange for public participation appropriate to the subject matter and the scope of the standard treatment and consistent with subpart A of this part. The Council shall consider the nature of the standard treatment and its likely effects on historic properties and the individuals, organizations and entities likely to be interested. Where an agency official has proposed a standard treatment, the Council may request the agency official to arrange for public involvement.

(3) *Consultation with SHPOs/THPOs.* The Council shall notify and consider the views of SHPOs/THPOs on the proposed standard treatment.

(4) *Consultation with Indian tribes and Native Hawaiian organizations.* If the proposed standard treatment has the potential to affect historic properties on tribal lands or historic properties of religious and cultural significance to an Indian tribe or Native Hawaiian organization, the Council shall follow the requirements for the agency official set forth in paragraph (f) of this section.

(5) *Termination.* The Council may terminate a standard treatment by publication of a notice in the **Federal Register** 30 days before the termination takes effect.

(e) *Program comments.* An agency official may request the Council to comment on a category of undertakings in lieu of conducting individual reviews under §§ 800.4 through 800.6. The Council may provide program comments at its own initiative.

(1) *Agency request.* The agency official shall identify the category of undertakings, specify the likely effects on historic properties, specify the steps the agency official will take to ensure that the effects are taken into account, identify the time period for which the comment is requested and summarize any views submitted by the public.

(2) *Public participation.* The agency official shall arrange for public participation appropriate to the subject matter and the scope of the category and in accordance with the standards in subpart A of this part. The agency official shall consider the nature of the undertakings and their likely effects on historic properties and the individuals, organizations and entities likely to be interested.

(3) *Consultation with SHPOs/THPOs.* The Council shall notify and consider the views of SHPOs/THPOs on the proposed program comment.

(4) *Consultation with Indian tribes and Native Hawaiian organizations.* If the program comment has the potential to affect historic properties on tribal lands or historic properties of religious and cultural significance to an Indian tribe or Native Hawaiian organization, the Council shall follow the requirements for the agency official set forth in paragraph (f) of this section.

(5) *Council action.* Unless the Council requests additional documentation, notifies the agency official that it will decline to comment, or obtains the consent of the agency official to extend the period for providing comment, the Council shall comment to the agency official within 45 days of the request.

(i) If the Council comments, the agency official shall take into account the comments of the Council in carrying out the undertakings within the category and publish notice in the **Federal**

**Register** of the Council's comments and steps the agency will take to ensure that effects to historic properties are taken into account.

(ii) If the Council declines to comment, the agency official shall continue to comply with the requirements of §§ 800.3 through 800.6 for the individual undertakings.

(6) *Withdrawal of comment.* If the Council determines that the consideration of historic properties is not being carried out in a manner consistent with the program comment, the Council may withdraw the comment and the agency official shall comply with the requirements of §§ 800.3 through 800.6 for the individual undertakings.

(f) *Consultation with Indian tribes and Native Hawaiian organizations when developing program alternatives.* Whenever an agency official proposes a program alternative pursuant to paragraphs (a) through (e) of this section, the agency official shall ensure that development of the program alternative includes appropriate government-to-government consultation with affected Indian tribes and consultation with affected Native Hawaiian organizations.

(1) *Identifying affected Indian tribes and Native Hawaiian organizations.* If any undertaking covered by a proposed program alternative has the potential to affect historic properties on tribal lands, the agency official shall identify and consult with the Indian tribes having jurisdiction over such lands. If a proposed program alternative has the potential to affect historic properties of religious and cultural significance to an Indian tribe or a Native Hawaiian organization which are located off tribal lands, the agency official shall identify those Indian tribes and Native Hawaiian organizations that might attach religious and cultural significance to such properties and consult with them. When a proposed program alternative has nationwide applicability, the agency official shall identify an appropriate government to government consultation with Indian tribes and consult with Native Hawaiian organizations in accordance with existing Executive orders, Presidential memoranda, and applicable provisions of law.

(2) *Results of consultation.* The agency official shall provide summaries of the views, along with copies of any written comments, provided by affected Indian tribes and Native Hawaiian organizations to the Council as part of the documentation for the proposed program alternative. The agency official and the Council shall take those views

into account in reaching a final decision on the proposed program alternative.

**§ 800.15 Tribal, State, and local program alternatives. [Reserved]**

**§ 800.16 Definitions.**

(a) *Act* means the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470–470w-6.

(b) *Agency* means agency as defined in 5 U.S.C. 551.

(c) *Approval of the expenditure of funds* means any final agency decision authorizing or permitting the expenditure of Federal funds or financial assistance on an undertaking, including any agency decision that may be subject to an administrative appeal.

(d) *Area of potential effects* means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

(e) *Comment* means the findings and recommendations of the Council formally provided in writing to the head of a Federal agency under section 106.

(f) *Consultation* means the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the section 106 process. The Secretary's "Standards and Guidelines for Federal Agency Preservation Programs pursuant to the National Historic Preservation Act" provide further guidance on consultation.

(g) *Council* means the Advisory Council on Historic Preservation or a Council member or employee designated to act for the Council.

(h) *Day* or *days* means calendar days.

(i) *Effect* means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register.

(j) *Foreclosure* means an action taken by an agency official that effectively precludes the Council from providing comments which the agency official can meaningfully consider prior to the approval of the undertaking.

(k) *Head of the agency* means the chief official of the Federal agency responsible for all aspects of the agency's actions. If a State, local, or tribal government has assumed or has been delegated responsibility for section 106 compliance, the head of that unit of government shall be considered the head of the agency.

(l)(1) *Historic property* means any prehistoric or historic district, site,

building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

(2) The term *eligible for inclusion in the National Register* includes both properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties that meet the National Register criteria.

(m) *Indian tribe* means an Indian tribe, band, nation, or other organized group or community, including a native village, regional corporation, or village corporation, as those terms are defined in section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

(n) *Local government* means a city, county, parish, township, municipality, borough, or other general purpose political subdivision of a State.

(o) *Memorandum of agreement* means the document that records the terms and conditions agreed upon to resolve the adverse effects of an undertaking upon historic properties.

(p) *National Historic Landmark* means a historic property that the Secretary of the Interior has designated a National Historic Landmark.

(q) *National Register* means the National Register of Historic Places maintained by the Secretary of the Interior.

(r) *National Register criteria* means the criteria established by the Secretary of the Interior for use in evaluating the eligibility of properties for the National Register (36 CFR part 60).

(s)(1) *Native Hawaiian organization* means any organization which serves and represents the interests of Native Hawaiians; has as a primary and stated purpose the provision of services to Native Hawaiians; and has demonstrated expertise in aspects of historic preservation that are significant to Native Hawaiians.

(2) *Native Hawaiian* means any individual who is a descendant of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawaii.

(t) *Programmatic agreement* means a document that records the terms and

conditions agreed upon to resolve the potential adverse effects of a Federal agency program, complex undertaking or other situations in accordance with § 800.14(b).

(u) *Secretary* means the Secretary of the Interior acting through the Director of the National Park Service except where otherwise specified.

(v) *State Historic Preservation Officer (SHPO)* means the official appointed or designated pursuant to section 101(b)(1) of the act to administer the State historic preservation program or a representative designated to act for the State historic preservation officer.

(w) *Tribal Historic Preservation Officer (THPO)* means the tribal official appointed by the tribe's chief governing authority or designated by a tribal ordinance or preservation program who has assumed the responsibilities of the SHPO for purposes of section 106 compliance on tribal lands in accordance with section 101(d)(2) of the act.

(x) *Tribal lands* means all lands within the exterior boundaries of any Indian reservation and all dependent Indian communities.

(y) *Undertaking* means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance;

those requiring a Federal permit, license or approval; and those subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency.

#### **Appendix A to Part 800—Criteria for Council Involvement in Reviewing Individual section 106 Cases**

(a) *Introduction.* This appendix sets forth the criteria that will be used by the Council to determine whether to enter an individual section 106 review that it normally would not be involved in.

(b) *General policy.* The Council may choose to exercise its authorities under the section 106 regulations to participate in an individual project pursuant to the following criteria. However, the Council will not always elect to participate even though one or more of the criteria may be met.

(c) *Specific criteria.* The Council is likely to enter the section 106 process at the steps specified in the regulations in this part when an undertaking:

(1) *Has substantial impacts on important historic properties.* This may include adverse effects on properties that possess a national level of significance or on properties that are of unusual or noteworthy importance or are a rare property type; or adverse effects to large numbers of historic properties, such as impacts to multiple properties within a historic district.

(2) *Presents important questions of policy or interpretation.* This may include questions about how the Council's regulations are being applied or interpreted, including possible foreclosure or anticipatory demolition situations; situations where the outcome will

set a precedent affecting Council policies or program goals; or the development of programmatic agreements that alter the way the section 106 process is applied to a group or type of undertakings.

(3) *Has the potential for presenting procedural problems.* This may include cases with substantial public controversy that is related to historic preservation issues; with disputes among or about consulting parties which the Council's involvement could help resolve; that are involved or likely to be involved in litigation on the basis of section 106; or carried out by a Federal agency, in a State or locality, or on tribal lands where the Council has previously identified problems with section 106 compliance pursuant to § 800.9(d)(2).

(4) *Presents issues of concern to Indian tribes or Native Hawaiian organizations.* This may include cases where there have been concerns raised about the identification of, evaluation of or assessment of effects on historic properties to which an Indian tribe or Native Hawaiian organization attaches religious and cultural significance; where an Indian tribe or Native Hawaiian organization has requested Council involvement to assist in the resolution of adverse effects; or where there are questions relating to policy, interpretation or precedent under section 106 or its relation to other authorities, such as the Native American Graves Protection and Repatriation Act.

Dated: December 4th, 2000.

**John M. Fowler,**

*Executive Director.*

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