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Installation-Wide Multispecies Habitat Management Plan for Fort Ord, California

Prepared by:

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The Installation-wide Multispecies Habitat Management Plan for Fort Ord, California, will be completed and in effect once signed by the Army and the U.S. Fish and Wildlife Service. Other agencies will be asked to sign as concurring parties for implementation of portions of the Habitat Management Plan designated for each agency.

homas F. Elzey, Jr. CoL AV Commanding

The U.S. Fish and Wildlife Service agrees that the Installation-wide Mathispecies Habitat Management Plan for Fort Ord, California, fulfills mitigation requirements described in the Final Environmental Impact Statement and Biological Opinion for Predisposal, Disposal, and Reuse of Fort Ord.

Wayne S. White State Supervisor U.S. Fish and Wildlife Service

Concurring Agencies

California Department of Fish and Game concurs with this plan and agrees that it will be useful in fulfilling the requirements of State programs for conservation of natural resources.

California Department of Fish and Game

The following agencies are concurring agencies that will receive lands having habitat management plan requirements. They will be asked to sign as a concurring party prior to transfer of lands and agree to implement and abide by habitat management plan guidelines on Fort Ord lands received from the Army, to have assignees also implement and abide by habitat management plan guidelines, and will include these requirements in leases or other agreements associated with these lands.

Edward L. Hastey State Director U.S. Bureau of Land Management

Donald W. Murphy Department Director California Department of Parks and Recreation

Pat Connally District Director California Department of Transportation Michael Houlemard Director of Physical and Environmental Planning University of California, Santa Cruz

Barbara Shipnuck Chairwoman of the Monterey County Board of Supervisors

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INTRODUCTION

The installation-wide multispecies habitat management plan (HMP) for Fort Ord establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on Fort Ord land for survival. The HMP was developed with input from federal, state, local, and private agencies and organizations concerned with the natural resources and reuse of Fort Ord. Implementation of the HMP will assist in the orderly disposal and reuse of Fort Ord.

PURPOSE AND NEED FOR THE MULTISPECIES HABITAT MANAGEMENT PLAN

The Department of the Army has been directed to close and dispose of Fort Ord, California. The Army's action is considered a major federal action that could affect seven species of wildlife and plants proposed for listing or listed as threatened or endangered under the federal Endangered Species Act. A biological assessment (BA) has been prepared that identifies the potential loss of populations and habitat of federally listed species, species proposed for listing, and species which are candidates for listing, resulting from caretaker actions, disposal actions, and six reuse alternatives (U.S. Army Corps of Engineers 1993a). A supplement to the draft BA was prepared that describes the loss of populations and habitat of these same species resulting from the preferred reuse alternative (U.S. Army Corps of Engineers 1993b).

The final environmental impact statement (FEIS) for the disposal and reuse of Fort Ord identified the need to develop and implement a multispecies HMP as a mitigation measure for impacts on vegetation and wildlife resources.

The U.S. Fish and Wildlife Service's (USFWSs) final biological opinion on the disposal and reuse of Fort Ord identified the need to develop and implement an HMP to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP addresses impacts resulting from predisposal, disposal, and reuse actions. Reuse actions addressed are those proposed under Modified Alternative 6R, a modified version of the preferred alternative (Alternative 6R) presented in the FEIS.

The HMP is presented in four chapters. Chapter 1, "Purpose of and Need for the Habitat Management Plan", describes the purpose and need, goals and objectives, and procedure followed in developing the HMP. Chapter 2, "Minimum Conservation Area and Corridor System", describes methods used to develop a minimum conservation area and corridor system for Fort Ord. Chapter 3, "Habitat Management for Predisposal Actions", presents habitat management procedures to accompany Army actions taken prior to disposal of Fort Ord land. Chapter 4, "Habitat Management for Disposal and Reuse", describes the habitat management procedures to be taken by recipients of disposed land. Chapter 5, "Citations", lists the sources cited in the HMP. Chapter 6, "List of Preparers and Acknowledgments", describes the contributions of key staff and agency representatives.

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Goals and Objectives

The goals and objectives of the HMP are as follows:

- Preserve, protect, and enhance populations and habitat of federally listed threatened and endangered wildlife and plant species.
- Avoid reducing populations or habitat of federal proposed and candidate (Categories 1 and 2) wildlife and plant species to levels that may result in one or more of these species becoming listed as threatened or endangered.
- Preserve and protect populations and habitat of state-listed threatened and endangered wildlife and plant species.
- Avoid reducing populations or habitat of species listed as rare, threatened, and endangered (List 1B) by the California Native Plant Society (CNPS) with large portions of their range at Fort Ord to levels that may result in one or more of these species becoming listed as threatened or endangered.
- Conduct the disposal of land to public and private entities in a manner that is compatible with the preservation of federally listed threatened and endangered wildlife and plants within the HMP conservation area.
- Inform potential recipients of Fort Ord land and the general public of methods that provide a suitable mechanism for protecting natural resources while allowing implementation of a community-based reuse plan that promotes economic recovery after closure of Fort Ord.
- Provide the basis for recipients of Fort Ord lands to seek Section 10(a) permits pursuant to the federal Endangered Species Act and achieve compliance for conservation of state-listed threatened and endangered species and other special-status species recognized by California Department of Fish and Game (DFG) under the California Endangered Species Act and California Environmental Quality Act (CEQA).
- Serve as a "pre-listing" agreement between USFWS, DFG, and the landowner that reduces the regulatory constraints of future listing in the event that nonlisted species addressed in the HMP become listed during implementation of Alternative 6R and the HMP.

The overall goal of the HMP is to provide for, at a minimum, no net loss of populations or important habitat for any of the subject species of the HMP. This goal can be met through the careful selection of disposal and reuse options that recognize the values and market constraints imposed by the HMP implementation requirements. The beneficial enhancement of habitat by the selected management agencies is essential to the achievement of this goal.

Flexibility of the HMP

Although the HMP is based on conditions that would occur under Modified Alternative 6R, it was designed to accommodate minor changes in parcel boundaries and proposed land uses. Small changes in boundaries or proposed land uses may occur before disposal of Fort Ord in response to revised or modified land requests. These changes would require only minor revisions to the HMP. Substantial changes to modified Alternative 6R would necessitate major revisions to the HMP.

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HABITAT MANAGEMENT PLAN SPECIES AND HABITATS

Wildlife and plant species addressed in the HMP are a subset of the species analyzed in the FEIS. Species addressed in the HMP were included based on their legal protection, current listing status, and the relative importance of populations and habitats at Fort Ord to the continued survival of the species (Tables S-1 and S-2).

Maritime Chaparral

Maritime chaparral is a coastal form of chaparral associated with specific soil conditions. Two forms are recognized at Fort Ord based on the substrate that supports them: sand hill maritime chaparral occurs on relict dunes of the late Pleistocene epoch, and Aromas formation maritime chaparral occurs on weakly consolidated red sandstone that is a relict of mid-Pleistocene epoch dunes. The occurrence of maritime chaparral appears to be limited to the summer fog zone. (Griffin 1976.)

Periodic disturbance or removal of vegetation caused by unstable substrate and fire are important factors in maintaining and rejuvenating the maritime chaparral community. Early successional sites appear to support the highest diversity of shrubs, including the largest number of HMP shrub species.

HMP species occurring in maritime chaparral are black legless lizard, Toro manzanita, sandmat manzanita, Hooker's manzanita, Monterey ceanothus, Eastwood's ericameria, Seaside bird's-beak, sand gilia, Monterey spineflower, coast wallflower, and Yadon's piperia.

Healthy maritime chaparral occurs as a patchwork of stands that have burned at different times and that support vegetation of various ages and structures. This habitat mosaic allows for high species and habitat diversity and provides sources of propagules for dispersal between patches.

Successful conservation of maritime chaparral is dependent on proper management of the habitat by using fire as a management tool and allowing or encouraging some forms of substrate disturbance. The goal of management is to achieve high species and habitat diversity through a program of controlled burning that creates and maintains a mosaic pattern of maritime chaparral of various aged stands. However, sand gilia, Monterey spineflower, and coast wallflower may be dependent on open habitat created by blowing sand rather than by fire. Promoting a dynamic system of moving sand by selective vegetation removal may encourage the formation of habitat for these HMP species.

Coastal Dunes

Coastal strand and dune scrub habitats of the coastal dunes are dynamic plant communities that respond to a moving sand substrate and changing dune configuration. Blowing sand undermines and buries plants, but most dune plants are adapted to shallow burial and blasting by sand. Large areas of destabilized sand, called "blowouts", result in large-scale removal of vegetation and change in dune structure. As plants reinvade the bare sand they stabilize the dune.

The highest diversity of dune habitat and species is best maintained in dunes with conditions ranging from active to stabilized and a variety of topography with foredunes and rear dunes, dune crests, interdune valleys, and north- and south-facing slopes.

	Listing Status*		Approximate Percent of Bange at			Importance of
Plant Species	Federal/State/CNPS	Code ^b	Fort Ord	Habitat	Distribution	Fort Ord Populations
Sand gilia Gilia tenuiflora ssp. arenaria	Е/Т/1В	3-3-3	50-70	Sandy openings in coastal dunes and scrub and maritime chaparral	Occurs around Monterey Bay, Salinas River Beach, Asilomar State Beach, from Point Pinos to Point Joe, and Fort Ord (1, 2, 9) °	Fort Ord provides extensive suitable habitat for sand gilia and con- stitutes a substantial por- tion of its range (at least half)
Monterey spineflower Chorizanthe punger var. pungens	n PE//18 ns	3-3-3	75-95	Colonizes recently disturbed sandy sites in coastal dune, coastal scrub, grassland, and maritime chaparral habitats	Along the coast of southern Santa Cruz and northern Monterey Counties and Inland to the coastal plain of the Salinas Valley (1, 4, 8)	Fort Ord supports the largest populations of Monterey spineflower known (7, 8)
Robust spineflower Chorizanthe robusta var. robusta	PE//4 3	1-1-3	<1	Found on sandy soils in coastal dune and coastal scrub habitats	Historically from Alameda and San Mateo Counties south to Santa Cruz County and near the coast from southern Santa Cruz County to northern Monterey County, much of which is now developed (4, 5, 8)	Several plants of robust spineflower were found at one site on Fort Ord; Fort Ord does not provide important habitat for this species (7)
Seaside bird's-beak Cordylanthus rigidu var. littoralis	C1/E/1B s	2-3-3	30-50 [₫]	Inhabits sandy soils of stabilized dunes, maritime chaparral, coastal scrub, and closed-cone coniferous forests	Monterey and Santa Barbara Counties, including Fort Ord, Monterey Airport, and between Carmel and Elkhorn Slough in Monterey County, and on Burton Mesa in Santa Barbara County (1, 2)	A substantial portion of the range of Seaside bird's- beak is found at Fort Ord

Table S-1. Plant Species Considered in the Habitat Management Plan (HMP Plants)

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				Table S-1. Continued		Page 2 of
	Listing Status*	CNPS	Approximate Percent of			
Plant Species	Federal/State/CNPS	Code ^b	Fort Ord	Habitat	Distribution	Fort Ord Populations
Toro manzanita Arctostaphylos montereyensis	C2/-/1B	3-2-3	70-90	Occurs on stabilized sandy soils and badlands in maritime chaparral	Restricted to several sites In Monterey County, including Fort Ord, Toro Regional Park, and Monterey Airport (1, 3)	Fort Ord supports the largest expanse of Toro manzanita in existence
Sandmat manzanita Arctostaphylos pum	C2//1B ila	3-2-3	70-90	Sand hills of maritime chaparral and coast live oak woodland	Scattered locations around Monterey Peninsula and an extensive area on Fort Ord (1, 3)	A large and Important part of the range of sandmat manzanita is found on Fort Ord
Monterey ceanothus Ceanothus rigidus	C2//4	1-2-3	50-70	Sandy hills and flats of maritime chaparral, closed- cone coniferous forests, and coastal scrub	Monterey County along the coast and Fort Ord, Toro Regional Park, Monterey Airport, and near Prunedale (1, 6)	The most abundant and probably most vigorous population of Monterey ceanothus is found on For Ord (3)
Eastwood's ericameri Ericameria fascicula	a C2//1B nta	3-3-3	70-90	Inhabits coastal dune and scrub, maritime chaparrai, and closed- cone coniferous forest communities	Found in Monterey County, including Del Monte Forest, Monterey Alrport, Toro Regional Park, near Prunedale, and Fort Ord (1)	Fort Ord supports most of the remaining individuals o Eastwood's ericameria (3)
Coast waliflower Erysimum ammophil	C2//1B lum	2-2-3	10-30	Occurs scattered on stabilized coastal dunes	Coastal dunes of Monterey Bay and Santa Rosa Island, and coastal scrub on Fort Ord (10, 11)	Fort Ord provides a moderate amount of suitable habitat for coast wallflower and may consti- tute an important portion of its range because of the limited extent and high degree of disturbance to its habitat in California

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	Listing Status*	CNPS RED Code⁵	Approximate Percent of Range at Fort Ord			
Plant Specles	Federal/State/CNPS			Habitat	Distribution	Importance of Fort Ord Populations
Yadon's piperia Piperia yadoni	C1*//1B	N/A	<1	Occurs on sandy solis in maritime chaparral, coastal scrub, and closed-cone coniferous forest	Occurs in Monterey County from the Pajaro Hills to the Monterey Peninsula	Less than 1% of the indivi- duals of Yadon's piperia are found on Fort Ord; it is noteworthy that its habitat on Ford Ord is inter- mediate between that of its occurrence in chaparral and pine forest habitats (7)
Hooker's manzanita Arctostaphylos hoo	//1B skeri	2-2-3	15-35	Sand hill and Aromas formation maritime chaparral and closed-cone coniferous forest	Del Monte Forest, Monterey Peninsula, Prunedale Hills, Fort Ord, and sand hills in the Larkin Valley	Fort Ord supports large populations of Hooker's manzanita; although it is more common on the Monterey Peninsula and near Prunedale than at Fort Ord, Fort Ord provides important and extensive habitat (3,6)

* Status explanations (see the "Definitions of Special-Status Species" section above for citations):

Federal

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E = listed as endangered under the federal Endangered Species Act.

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PE = proposed for federal listing as endangered under the federal Endangered Species Act.

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C1 = Category 1 candidate for federal listing. Category 1 includes species for which USFWS has on file enough substantial information on biological vulnerability and threats to support proposals to list them.

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- C2 = Category 2 candidate for federal listing. Category 2 includes species for which USFWS has some biological information indicating that listing may be appropriate but for which further biological research and field study are usually needed to clarify the most appropriate status. Category 2 species are not necessarily less rare, threatened, or endangered than Category 1 species or listed species; the distinction relates to the amount of data available and is therefore administrative, not biological.
- -- = no designation.

State

- E = listed as endangered under the California Endangered Species Act.
- T = listed as threatened under the California Endangered Species Act.

California Native Plant Society

- 1B = List tB species: rare, threatened, or endangered in California and elsewhere.
- 4 = List 4 species: plants of limited distribution.

^b CNPS RED Code:

Rarity (R)

- 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.

Endangerment (E)

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

Distribution (D)

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

- 1 = Natural Diversity Data Base 1992.
- 2 = Hillyard 1992.
- 3 = Griffin 1976.
- 4 = Reveal and Hardham 1989.
- 5 = Thomas 1961.
- 6 = Griffin 1978.
- 7 = Morgan 1992.
- 8 = U.S. Fish and Wildlife Service 1991.
- 9 = U.S. Fish and Wildlife Service 1992.

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- 10 = Munz and Keck 1968.
- 11 = Abrams 1940.
- ^d This estimate incorporates locations of Seaside bird's-beak in Santa Barbara County, which may have formed as a result of hybridization; the estimate based on Monterey County above would increase the percent of range at Fort Ord to 60-80%.

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* Listing package is in preparation by USFWS (Rutherford pers. comm.).

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|                                                              | Listing Status <sup>a</sup> | Approximate<br>Percent of |                                                                                                                                                                                                                                                                     |                                                                                                                                                              |                                                                                                                                           | Importance of                                                                                                                                                                                                  |
|--------------------------------------------------------------|-----------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant Species                                                | Federal/State               | Range at<br>Fort Ord      | Habitat                                                                                                                                                                                                                                                             | Distribution                                                                                                                                                 | Occurrence at Fort Ord                                                                                                                    | Fort Ord<br>Population                                                                                                                                                                                         |
| Smith's blue butterfly<br>Euphilotes enoptes smithi          | E/                          | 5-10                      | Uses coastal dunes and hill-<br>sides that support seacliff<br>buckwheat ( <i>Eriogonum</i><br><i>parvifolium</i> ) or coast buck-<br>wheat ( <i>Eriogonum latifolium</i> );<br>these plants are used as a<br>nectar source for adults and<br>host plant for larvae | Restricted to localized<br>populations along the<br>coast of Monterey County;<br>single populations<br>reported in Santa Cruz<br>and San Mateo Counties      | Known to occur near the<br>northern boundary of Fort<br>Ord and from Giggling<br>Siding to the southern base<br>boundary (5) <sup>b</sup> | Fort Ord has been<br>identified as Important<br>to the recovery of<br>Smith's blue butterfly                                                                                                                   |
| California linderiella<br>Linderiella occidentalis           | PE/                         | <1                        | Ephemeral freshwater<br>habitats such as vernal pools,<br>rock outcrop pools, swales,<br>and ponds                                                                                                                                                                  | Found in the Central<br>Valley from Tehema to<br>Madera Counties, and the<br>central and south Coast<br>Ranges from Lake to<br>Riverside County              | Known from five vernal pools at Fort Ord (2)                                                                                              | Fort Ord composes little<br>of the total range of<br>California linderielia;<br>however, vernal pool<br>habitat is relatively rare<br>in the Monterey Bay<br>region                                            |
| California red-legged frog<br>Rana aurora draytoni           | PE/SSC                      | <1                        | Requires coldwater ponds<br>with emergent and<br>submergent vegetation and<br>riparian vegetation at the<br>edges                                                                                                                                                   | Found along the coast<br>and coastal mountain<br>ranges from Humboldt to<br>San Diego Counties, and<br>in the Sierra Nevada from<br>Butte to Fresno Counties | May occur at Ford Ord (1)                                                                                                                 | Fort Ord composes little<br>of the species total<br>range; however, Fort<br>Ord provides potential<br>habitat for California<br>red-legged frog, which is<br>relatively rare within the<br>Monterey Bay region |
| Western snowy plover<br>Charadrius alexandrinus<br>nivosus   | T/SSC                       | 5-10                      | Found along beach above<br>the high tide limit; also uses<br>shores of salt ponds and<br>alkali or brackish inland lakes                                                                                                                                            | Intermittent nesting sites<br>along the Pacific Coast<br>from Washington to Baja<br>California                                                               | Nests along the beaches at<br>Fort Ord north of Stillweil<br>Hall (3)                                                                     | Fort Ord supports one of<br>20 coastal breeding<br>populations of western<br>snowy plovers in<br>California; Monterey<br>Bay as a whole is<br>considered one of eight<br>primary coastal nesting<br>areas      |
| California black legless<br>lizard<br>Anniella pulchra nigra | C2 (LP)/SSC                 | 10-20                     | Requires moist, warm<br>habitats with loose soil for<br>burrowing and prostrate plant<br>cover; may be found on<br>beaches, in chaparral, pine<br>oak woodland, or riparlan<br>areas                                                                                | Restricted to small popu-<br>lations along the coast in<br>Monterey and northern<br>San Luis Obispo<br>Counties; one population<br>in Contra Costa County    | Found in stabilized dunes<br>and maritime chaparral<br>with sandy solls at Fort Ord<br>(2, 4)                                             | Fort Ord supports one of<br>less than 20 confirmed<br>black legless lizard<br>populations                                                                                                                      |

Table S-2. Continued

|                                                                    | Listing Status <sup>a</sup> | Approximate<br>Percent of |                                                                                                                                     |                                                                                                                                                    | Occurrence at Fort Ord                                            | Importance of<br>Fort Ord<br>Population                                                                                                                                     |
|--------------------------------------------------------------------|-----------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant Species                                                      | Federal/State               | Range at<br>Fort Ord      | Habitat                                                                                                                             | Distribution                                                                                                                                       |                                                                   |                                                                                                                                                                             |
| California tiger salamander<br>Ambystoma tigrinum<br>californiense | C2 (LP)/SSC                 | <1                        | Favors open woodlands and<br>grasslands; requires water for<br>breeding and burrows or<br>cracks in the soil for summer<br>dormancy | Occurs only in California<br>from the coastline to the<br>Sierra Nevada crest and<br>from Sonoma to Santa<br>Barbara Counties                      | Occurs in ponds and vernal<br>pools throughout Fort Ord<br>(2, 6) | Fort Ord comprises little<br>of the total range of<br>California tiger sala-<br>mander; however, vernal<br>pool habitat is relatively<br>rare In the Monterey Bay<br>region |
| Monterey ornate shrew<br>Sorex ornatus salarius                    | C2/-                        | 15-25                     | Found in a variety of riparian,<br>woodland, and upland<br>communities where there is<br>thick duff or downed logs                  | Restricted to the Monterey<br>Bay region; historical<br>occurrences at the mouth<br>of the Salinas River and<br>Moss Landing in Monterey<br>County | May occur at Fort Ord (1)                                         | Fort Ord provides abun-<br>dant potential habitat for<br>Monterey ornate shrew<br>within the species'<br>limited range                                                      |

\* Status definitions:

#### Federal

E = listed as endangered under the federal Endangered Species Act.

- T = listed as threatened under the federal Endangered Species Act.
- PE = federally proposed for listing as endangered.
- LP = listing package being reviewed by U.S. Fish and Wildlife Service.
- C2 = Category 2 candidate for federal listing. Category 2 includes species for which USFWS has some biological information indicating that listing may be appropriate but for which further biological research and field study are usually needed to clarify the most appropriate status. Category 2 species are not necessarily less rare, threatened, or endangered than Category 1 species or listed species; the distinction relates to the amount of data available and is therefore administrative, not biological.

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#### State

SSC = considered a State Species of Special Concern by California Department of Fish and Game.

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- = no status.

#### <sup>b</sup> Data sources:

- (1) Not found during field surveys.
- (2) Encountered during field surveys.
- (3) Source: George pers. comm.
- (4) Source: Bury 1985,
- (5) Source: Arnold 1983.
- (6) Source: Stanley pers. comm.

HMP species occurring in coastal strand and dune scrub are Smith's blue butterfly, sand gilia, Monterey spineflower, robust spineflower, black legless lizard, and coast wallflower. Yadon's piperia may occur in these habitats.

#### HABITAT CONSERVATION AND MANAGEMENT FOR PREDISPOSAL ACTIONS

Predisposal actions include placing Fort Ord into a caretaker status, remediating contaminated sites, and supporting interim uses. As the 7th Infantry Division (Light) (IDL) realigns from Fort Ord, the Army will place structures, utilities, and operation and maintenance systems into a caretaker status until property disposal decisions are implemented. Caretaker status is defined by Army regulation as "the minimum required staffing to maintain an installation in a state of repair that maintains safety, security, and health standards".

Cleanup of contaminated sites is required in preparing lands for disposal and proposed future uses. The entire Fort Ord installation is listed on the National Priorities List as a Superfund site. A federal facilities agreement, negotiated under Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), requires the Army to perform the Superfund cleanup process that is described in the Other Physical Attributes Baseline Study of Fort Ord, California (U.S. Army Corps of Engineers, Sacramento District 1992). Cleanup activities that have potential to affect biological resources include contaminated soils treatment, landfill remediation, removal of lead and other heavy metals, and unexploded ordnance removal.

Interim uses, prior to disposal, could affect HMP species and habitats. Interim use is the use of real property through real estate documentation, such as leases, licenses, and permits, before disposal of federal land is accomplished. Interim uses could include leasing of office space, storage space, housing, and other developed facilities; training facilities; and grazing land to non-Army entities. Some public access and recreational use may also be permitted on limited areas of the Fort Ord dunes and beach prior to disposal of property west of State Route 1. Use permits are also possible for scientific and cultural uses. Interim uses on currently developed lands will have no impact on biological resources. Impacts resulting from interim uses on undeveloped land are addressed in the HMP.

#### HABITAT CONSERVATION AND MANAGEMENT FOR DISPOSAL AND REUSE

A general goal of the Fort Ord HMP is to promote preservation, enhancement, and restoration of habitat and populations of HMP species while allowing implementation of a community-based reuse plan that promotes economic recovery after closure of Fort Ord. As an installation-wide plan, all parcels to be disposed of by the Army are addressed in the HMP and are considered in achieving HMP goals. However, management guidelines and specifications for reuse vary from parcel to parcel based on future plans for the parcel associated with the HMP and overall reuse plan.

Some parcels to be disposed of by the Army are intended to promote economic recovery after disposal and will be designated for development with no restrictions or management guidelines described in the HMP. Other parcels will have development designated as the primary use, but recipients of disposed land will be obligated to implement certain management guidelines and/or preserve specific areas through the HMP. Other parcels are designated as habitat preserves or corridors and have specific management guidelines and restrictions on development and uses.

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Figure S-1 shows each parcel proposed for reuse and indicates the general land use planned for the parcel (no HMP habitat preservation requirements, development with reserve areas, habitat corridor, or habitat reserve). Each parcel is numbered in Figure S-1. Titles for each numbered parcel are provided in Table S-3.

Because the HMP will affect future regulatory compliance during reuse, these effects are discussed in the following section. Land use parcels are discussed separately in the HMP. Parcels considered primary conservation areas are discussed first, followed by parcels with conservation and/or management requirements, then parcels with no HMP requirements, as shown in Table S-3. A description of the proposed land use within the parcel is provided, the major habitat features and HMP resources currently within the parcel are identified, and resource conservation and management requirements, if any, are described. The parties responsible for activities to take place within the parcel are also identified in the HMP. Several parcels within the Main Garrison were combined into one parcel for the purpose of the HMP (Parcel LN5). These parcels were combined because no preservation or management requirements associated with the HMP apply to these parcels. Methods for implementing a Coordinated Resource Management Plan (CRMP) and allowing future modifications of the HMP are also described.

#### Future Regulatory Compliance

The HMP does not preclude future landowners from complying with environmental regulations enforced by federal, state, or local agencies. These regulations could include obtaining Section 7 or Section 10(a) permits from USFWS pursuant to the federal Endangered Species Act, complying with measures for conservation of state-listed threatened and endangered species and other special-status species recognized by DFG under the California Endangered Species Act and CEQA, and complying with local land use regulations and restrictions.

However, implementation of the HMP will simplify future regulatory compliance. The HMP will provide a basis for recipients of Fort Ord lands to seek Section 7 and Section 10(a) permits as applicable for the take of federally listed species within the parcel they receive. Because the HMP provides mitigation for impacts on federally listed species, little or no additional mitigation will be required to obtain a Section 7 or 10(a) permit. Also, because the HMP addresses several federal candidate species, the document is considered a prelisting conservation agreement between the USFWS and local agencies. This agreement will preclude the need to develop additional mitigation measures, should the candidate species addressed in the HMP become listed. DFG has reviewed and provided input during HMP development and will consider mitigation described in the HMP when reviewing development plans for compliance with the California Endangered Species Act and CEQA.

#### Impacts of Reuse on HMP Species and Habitats

Impacts of Alternative 6R on HMP species and habitats are described in the EIS and supplemental BA (U.S. Army Corps of Engineers, Sacramento District 1993). Since publication of these documents, Alternative 6R has been modified. The following sections summarize the impacts on HMP resources under this modified reuse alternative.

#### Federally Listed and Proposed Wildlife and Plant Species

**Sand Gilia**. Sand gilia inhabits openings in maritime chaparral and coastal scrub communities. It also prefers disturbed sites, such as the borders of old roads and firebreaks. Based on 1992 survey results

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# This is an oversized document. It will be found at the end of this file.

## Document #<u>Bw-049/</u>

| Parcel<br>Order | Parcel<br>Number                                     | Parcel Title                                                        | Land Use<br>Designation<br>Abbreviation |  |  |  |  |  |  |
|-----------------|------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------|--|--|--|--|--|--|
|                 | Federal Lands with Habitat Reserves and/or Corridors |                                                                     |                                         |  |  |  |  |  |  |
| 1               | FR1                                                  | BLM Natural Resource Management Area                                | NRMA                                    |  |  |  |  |  |  |
|                 |                                                      | State Lands with Habitat Reserves and/or Corridors                  |                                         |  |  |  |  |  |  |
| 2               | SR1                                                  | University Research Area Fritzsche                                  | URAF                                    |  |  |  |  |  |  |
| 3               | SR2                                                  | University Research Area Reservation Road                           | URAR                                    |  |  |  |  |  |  |
| 4               | SR3                                                  | University Research Area Landfill                                   | URAL                                    |  |  |  |  |  |  |
| 5               | SR4                                                  | Habitat Corridor                                                    | HAB3                                    |  |  |  |  |  |  |
| 6               | SR5                                                  | Disturbed Habitat Zone                                              | DHZ                                     |  |  |  |  |  |  |
| 7               | SR6                                                  | Coastal Dune Zone                                                   | CDZ                                     |  |  |  |  |  |  |
| 8               | SR7                                                  | Aquaculture/Marine Research                                         | AQ/MR                                   |  |  |  |  |  |  |
| 9               | SR8                                                  | Highway 1 Corridor                                                  | HIŴAY                                   |  |  |  |  |  |  |
| 10              | SR9                                                  | Caltrans SR 68 Corridor                                             | CALTRANS                                |  |  |  |  |  |  |
|                 | Local Age                                            | ncy and Private Lands with Habitat Reserves and/or 0                | Corridors                               |  |  |  |  |  |  |
| 11              | LR1                                                  | County of Monterey Habitat Area                                     | HAB4                                    |  |  |  |  |  |  |
| 12              | LR2                                                  | Recreational Vehicle Park/Youth Camp                                | RV                                      |  |  |  |  |  |  |
| 13              | LR3                                                  | Agri-Center                                                         | AGRI                                    |  |  |  |  |  |  |
| 14              | LR4                                                  | Marina Salinas River Habitat Area                                   | HAB1                                    |  |  |  |  |  |  |
| 15              | LR5                                                  | Marina Habitat Area #2                                              | HAB2                                    |  |  |  |  |  |  |
| 16              | LR6                                                  | Marina Retail #3                                                    | RET3                                    |  |  |  |  |  |  |
| 17              | LR7                                                  | Natural Area Expansion                                              | NAE                                     |  |  |  |  |  |  |
|                 |                                                      | Federal Lands with HMP Conservation and/or                          |                                         |  |  |  |  |  |  |
|                 |                                                      | Management Requirements                                             |                                         |  |  |  |  |  |  |
| 18              | FM1                                                  | Army Reserve Center                                                 | RC                                      |  |  |  |  |  |  |
| 19              | FM2                                                  | POST Facility                                                       | POST                                    |  |  |  |  |  |  |
| 20              | FM3                                                  | FBI Government Center                                               | GOVT                                    |  |  |  |  |  |  |
|                 |                                                      | State Lands with HMP Conservation and/or<br>Management Requirements |                                         |  |  |  |  |  |  |
| 21              | SM1                                                  | University Science Office #1                                        | USO1                                    |  |  |  |  |  |  |
| 22              | SM2                                                  | University Science Office #2                                        | USO2                                    |  |  |  |  |  |  |
| 23              | SM3                                                  | University Science Office #3                                        | USO3                                    |  |  |  |  |  |  |
| 24              | SM4                                                  | University Science Office #4                                        | USO4                                    |  |  |  |  |  |  |
| 25              | SM5                                                  | California State University                                         | UNIV                                    |  |  |  |  |  |  |
| 26              | SM6                                                  | Multi-Use Area/Asilomar-Type Facility                               | MUA/ATF                                 |  |  |  |  |  |  |
| 27              | SM7                                                  | Potential Beach Through-Road                                        | BTR                                     |  |  |  |  |  |  |
| 28              | SM8                                                  | Proposed Monterey County Fairgrounds Site                           | FAIRa                                   |  |  |  |  |  |  |
| 29              | SM9                                                  | Alternate Monterey County Fairgrounds Site                          | FAIRb                                   |  |  |  |  |  |  |

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#### Table S-3. Fort Ord HMP Parcel Designations

Parcel Parcel Order Number Parcel Title Abbreviation Local Agency and Private Lands with HMP Conservation and/or Management Requirements 30 LM1 County of Monterey Light Industrial #1 LI1 LM2 County of Monterey Light Industrial #2 LI2 31 OP1 LM3 Office Park #1 32 33 LM4 Office Park #2 OP2 LM5 Office Park #3 OP3 34 35 LM6 Office Park #4 OP4 LM7 Office Park #5 OP5 36 37 LM8 County of Monterey Office Park OP6 38 LM9 County of Monterey Community Park CPRK1 39 LM10 Marina Community Park CPRK2 LM11 Community Park #3 40 CPRK3 41 LM12 Recreation Area Expansion #1 RAE1 Recreation Area Expansion #2 42 LM13 RAE2 43 LM14 **Recreation Area Expansion #3** RAE3 44 LM15 Marina Retail Area #1 RET1 Marina Retail Area #2 45 LM16 RET2 46 LM17 Marina Airport North AIRN 47 LM18 Marina Airport South AIRS 48 LM19 Marina Low-Density Residential LR Seaside Medium-Density Residential MR 49 LM20 50 LM21 Seaside Resort Hotel RH Intermodal Transportation Center TC 51 LM22 SE 52 LM23 York School Expansion 53 LM24 School #3 SCH3 Desalination Plant 54 LM25 DS Federal Lands with No HMP Requirements None State Lands with No HMP Requirements 55 SN1 Service Area SA Local Agency and Private Lands with No HMP Requirements LN1 56 School #1 SCH1 57 LN2 Monterey Peninsula College Outdoor Lab SCH2 High-Tech Business Park 58 LN3 TECH 59 LN4 Multi-Modal Corridor MMC 60 LN5 Multiple Parcels with No HMP Restrictions MLTI

#### Table S-3. Continued

Table S-3. Continued

- Parcels: F = Parcels proposed for transfer to a federal agency.

  - S = Parcels proposed for transfer to a state agency.
    L = Parcels proposed for transfer to a local agency or private party.

  - R = Parcels with habitat reserves and/or corridors. M = Parcels with HMP conservation and/or management guidelines.
  - N = Parcels with no HMP requirements.

for all of Fort Ord, approximately 13 acres of maritime chaparral and coastal scrub supporting sand gilia at high densities, 120 acres at medium density, and approximately 600 acres at low density will be removed under Modified Alternative 6R. In 1993 a portion of the base was resurveyed to provided more site specific data on sand gilia distribution and abundance. The 1993 survey focused on sites at Fritzsche Field, the northern portion of the coastal dunes, and areas surrounding Reservation, Old County, and Imjin Roads. In these surveyed, areas approximately 16,000 individual sand gilia plants will be removed by implementing Modified Alternative 6R.

Smith's Blue Butterfly. Smith's blue butterfly is completely dependent on seacliff and coast buckwheat for oviposition and as food sources for larvae and adults. Areas supporting medium or high densities of either buckwheat species are considered potential habitat for Smith's blue butterfly. Under Modified Alternative 6R approximately 15 acres of Smith's blue butterfly habitat will be removed. In addition, approximately 35 acres of dune habitat supporting buckwheat at low density would be removed and could affect populations of Smith's blue butterflies.

Western Snowy Plover. Western snowy plovers are known to nest on the beaches at Fort Ord from the northern installation boundary to Stilwell Hall. They may also nest south of Stilwell Hall. Modified Alternative 6R will not directly remove any western snowy plover nesting habitat. However, increased human presence on the beaches associated with the alternative could negatively affect snowy plover breeding success.

Monterey Spineflower. Implementation of Modified Alternative 6R would result in the loss of approximately 3,760 acres of maritime chaparral, coastal dunes, coastal scrub, and grassland habitats occupied by Monterey spineflower. These habitat areas support Monterey spineflower at high densities on approximately 320 acres, medium densities on about 1,160 acres, and low densities on roughly 2,280 acres. Sand hill maritime chaparral, all coastal dune habitats, and grassland and coastal scrub habitats on sandy soils are potentially suitable habitat for Monterey spineflower. Monterey spineflower occurs in natural and artificial disturbance patches in these habitats.

**Robust Spineflower.** The one population of robust spineflower occurring at Fort Ord is located in the Disturbed Habitat Zone (DHZ) land use described in Modified Alternative 6R. No impacts on this populations are expected to result from implementation of the alternative.

**California Linderiella**. California linderiella occurs in ephemeral freshwater aquatic habitats, such as vernal pools and ponds. Approximately 3 acres of potential California linderiella habitat may be removed at Fort Ord under Modified Alternative 6R.

Seaside Bird's-Beak. Seaside bird's-beak occurs in openings on sandy soils in maritime chaparral and oak woodland habitats. Modified Alternative 6R would result in the removal of roughly 30 acres of maritime chaparral and oak woodlands supporting Seaside bird's-beak at low densities.

Yadon's Piperia. Yadon's piperia occurs near established shrubs in maritime chaparral habitat. Roughly 14 acres of maritime chaparral habitat supporting Yadon's piperia at low density would be removed under Modified Alternative 6R.

**California Red-Legged Frog.** The California red-legged frog typically occupies cold-water ponds with both emergent and submergent vegetation. About 3 acres of potential California red-legged frog habitat would be removed under Modified Alternative 6R.

#### Other HMP Wildlife and Plant Species

**Toro Manzanita**. Toro manzanita is a dominant or associate species of Aromas formation maritime chaparral. About 820 acres of habitat supporting Toro manzanita will be lost under Modified Alternative 6R. This includes approximately 85 acres of high-density occurrences of Toro manzanita, about 200 acres of medium-density, and roughly 530 acres of low-density occurrences.

**Sandmat Manzanita**. Sandmat manzanita is a characteristic species of sand hill formation maritime chaparral. About 2,040 acres of maritime chaparral supporting sandmat manzanita will be removed under Modified Alternative 6R. This includes approximately 470 acres of high-density occurrences of sandmat manzanita, about 825 acres of medium-density, and roughly 745 acres of low-density occurrences.

Hooker's Manzanita. Hooker's manzanita inhabits stabilized sandy soils in maritime chaparral habitat. Under Modified Alternative 6R, about 490 acres of maritime chaparral habitat occupied by Hooker's manzanita will be removed. This includes less than 1 acre of high-density Hooker's manzanita occurrences, about 200 acres of medium-density, and roughly 290 acres of low-density occurrences.

**Monterey Ceanothus**. Monterey ceanothus is a frequently occurring shrub in sand hill and aromas maritime chaparral. Under Modified Alternative 6R, about 2,240 acres of maritime chaparral supporting Monterey ceanothus will be removed. Roughly 450 acres of high-density occurrences of Monterey ceanothus, about 1,080 acres of medium-density, and roughly 720 acres of low-density occurrences will be removed under this alternative.

**Eastwood's Ericameria**. Modified Alternative 6R will result in the loss of approximately 1,160 acres of coastal scrub and maritime chaparral habitats occupied by Eastwood's ericameria. About 25 acres of high-density occurrences of Eastwood's ericameria, approximately 480 acres of medium-density, and roughly 660 acres of low-density occurrences will be removed under this alternative.

**Coast Wallflower**. Coast wallflower occurs on sandy soils, primarily in coastal dune and coastal scrub habitats. Under Modified Alternative 6R, about 400 acres of these habitats supporting coast wallflower will be removed. This includes approximately 20 acres of high-density occurrences of coast wallflower, about 90 acres of medium-density, and roughly 290 acres of low-density occurrences.

**Black Legiess Lizard**. Black legless lizard is found on dune habitats supporting native vegetation and where maritime chaparral and coastal scrub occur on loose sandy soils. Approximately 1,700 acres of potential black legless lizard habitat will be removed under Modified Alternative 6R.

Monterey Ornate Shrew. Riparlan and woodland communities are considered potential habitat for the Monterey ornate shrew at Fort Ord. Approximately 2,080 acres of potential habitat for this species will be removed under Modified Alternative 6R.

**California Tiger Salamander.** The California tiger salamander occurs in ponds and vernal pools throughout Fort Ord. About 3 acres of potential California tiger salamander habitat will be removed under Modified Alternative 6R.

#### HMP Habitats

Maritime Chaparral. Modified Alternative 6R will result in the removal of approximately 2,290 acres of maritime chaparral.

Coastal Dunes. Modified Alternative 6R will result in the removal of approximately 388 acres of coastal dune habitat.

#### Management Guidelines for Recipients of Disposed Land

The HMP describes key resources present and land management responsibilities for each of the recipients of disposed land in the Fort Ord HMP area. The Army will enter into separate memoranda of agreements (MOAs) with recipients of disposed land. Land recipients may also agree to take part in a CRMP. The U.S. Bureau of Land Management (BLM) will be the main point of contact with USFWS and DFG for all agencies responsible for managing HMP species and habitats within the HMP area east of State Route 1 that sign onto the CRMP. California Department of Parks and Recreation (DPR) will be the main point of contact with USFWS and DFG on all lands west of Highway 1. The CRMP is described in detail below.

Habitat management responsibilities of recipients of disposed Fort Ord land are discussed individually in the HMP with each land use parcel discussed in a separate section.

Three main conservation areas will preserve most of the HMP resources at Fort Ord. BLM will manage the largest unit of habitat in its natural resource management area, which covers most of the southern and eastern parts of Fort Ord (Figure S-1). The University of California and County of Monterey will manage natural areas in the northern portion of Fort Ord along Reservation Road (Figure S-1). DPR will manage coastal dune habitats in the western portion of Fort Ord west of State Route 1 (Figure S-1). A habitat corridor between the northern conservation area and the BLM land will be conserved and managed by the County of Monterey. Recipients of parcels contiguous with conservation areas will need to comply with some conservation and management measures specifically stated in the HMP, mainly regarding the creation and maintenance of firebreaks between developed lands and fiammable vegetation and the control of public access to natural areas (Figure S-1). Most of the recipients of parcels that are not contiguous with conservation areas are not required to conduct any resource conservation or management measures under the HMP (Figure S-1).

#### Memoranda of Agreement

Prior to disposal of land, Army will enter into MOAs with all recipients of disposed land with an active role in the HMP. These MOAs will define roles, obligations, authorities, responsibilities, liabilities, benefits, rights, and privileges of all parties. Appropriate HMP guidelines will be included in each MOA, and the MOA will state that the HMP guidelines shall be implemented by the land recipient. The MOAs may contain a reversion clause that states that the land will be returned to the federal government (via BLM) should the land recipient fail to comply with HMP guidelines described in the MOA.

#### Fire Management and Firebreaks

One management goal for the Natural Resource Management Area (NRMA) will be to maintain and enhance natural habitat within the area. Because natural habitat will be maintained, there will be the potential for wildfires in the NRMA to spread to bordering parcels, and for fires that originate within those parcels to ignite wildfires in the NRMA. This is of particular concern in and around areas of maritime chaparral habitat, which can burn very rapidly, and in areas where controlled burning will be used as a management tool by BLM to aid in maintaining high-quality maritime chaparral habitat.

As a condition of transfer of property, recipients of Fort Ord lands will be responsible for developing and maintaining firebreaks and other safety features as described in individual parcel descriptions in the HMP. .....

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#### Monitoring Procedures and Responsibilities

Monitoring of conservation areas and corridors would be the responsibility of BLM, DPR, University of California, Monterey County, City of Marina, Monterey Peninsula Regional Park District, and California Department of Transportation (Caltrans). These agencies would be responsible for ensuring that the HMP guidelines are implemented on parcels under their jurisdictions.

Monitoring results for CRMP participants will be coordinated by BLM, and BLM will consolidate the results into a single monitoring report. DPR will be responsible for developing monitoring reports for areas west of State Route 1. Annual monitoring reports will be filed with USFWS and DFG, as well as with each of the participating agencies.

#### **Program Costs and Funding**

Funding to develop the final HMP will be provided by the Army. Funding to implement the HMP prescribed habitat restoration, management, and monitoring for reuse will be provided by BLM, DPR, University of California, California State University, City of Marina, City of Seaside, City of Del Rey Oaks, City of Monterey, County of Monterey, U.S. Department of Justice, Monterey Peninsula Regional Park District, and Caltrans. These agencies will fund implementation of the HMP by implementing conservation and/or management guidelines specific to parcels they receive. The HMP does not preclude other sources of funding for HMP implementation or preclude these agencies from securing funding from other sources to support their implementation of the HMP guidelines. Requirements for each agency's minimal participation and accomplishments toward implementation of the HMP will be specified in an MOA with the Army that will be completed at the time of land transfer.

#### Coordinated Resource Management Plan

A CRMP is a multi-agency multi-jurisdictional land use plan developed under the sponsorship of the California CRMP memorandum of understanding (MOU). This MOU has been signed by 14 federal and state agencies including the BLM, DFG, U.S. Soil Conservation Service, USFWS, and the University of California. Additional details on the development of this planning process is contained in the California CRMP Handbook (1990).

The BLM plans to use the CRMP process to develop management plans and prescriptions for BLM-managed lands at Fort Ord. The BLM will invite all other public entities having natural resource management or habitat preservation responsibilities applicable to the Fort Ord area to participate in this cooperative planning effort. Participation in the CRMP will not be a requirement of the HMP. The goal of the CRMP will be to develop annual work plans, each being a single multi-jurisdictional management plan for all maritime chaparral habitats that are to be preserved and managed for natural values.

The CRMP would be tiered to the Fort Ord installation-wide HMP. The CRMP would be annually reviewed and would implement the HMP. Most important of all, the CRMP will provide a mechanism for public agencies to share resources to deliver the most efficient habitat protection and public services for the money expended.

#### Modifications to the HMP

All recipients of Fort Ord lands will be required to abide by management guidelines and procedures addressed in the HMP. However, situations may arise during the life of the HMP where changes in the plan's guidelines may be appropriate. Several types of changes may occur. Land recipients may wish to change the boundaries of their parcel or the land use within their parcel. Changes in management guidelines within a land use may be required to better preserve or enhance a resource. These kinds of changes may be made if the landowners and USFWS can reach agreement that the overall goals and objectives of the HMP will not be compromised.

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## Chapter 1.

## Purpose of and Need for the Habitat Management Plan

Smith's Blue Butterfly
## Chapter 1. Purpose of and Need for the Habitat Management Plan

#### INTRODUCTION AND BACKGROUND

The Department of the Army has been directed to close and dispose of Fort Ord, California. The Army's action is considered a major federal action that could affect seven species proposed for listing or listed as threatened or endangered under the federal Endangered Species Act. A biological assessment (BA) has been prepared that identifies the potential loss of populations and habitat of federally listed species, species proposed for listing, and species which are candidates for listing, resulting from caretaker actions, disposal actions, and six reuse alternatives (U.S. Army Corps of Engineers 1993a). A supplement to the draft BA was prepared that describes the loss of populations and habitat of these same species resulting from the preferred reuse alternative (U.S. Army Corps of Engineers 1993b).

The final environmental impact statement (FEIS) for the disposal and reuse of Fort Ord identified the need to develop and implement a multispecies habitat management plan (HMP) as a mitigation measure for impacts on vegetation and wildlife resources. The affected resources include 22 plant and 22 wildlife species that are listed, proposed, or candidates for federal or state listing as threatened or endangered; state species of special concern; and plants listed by the California Native Plant Soclety (CNPS) (U.S. Army Corps of Engineers 1993c). The FEIS described the potential impacts of several of the alternatives as severe enough to result in federal or state listing as threatened or endangered for some of the unlisted species. The U.S. Fish and Wildlife Service's (USFWS's) final biological opinion on the disposal and reuse of Fort Ord identified the need to develop and implement an HMP to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP addresses impacts resulting from predisposal, disposal, and reuse actions. Reuse actions addressed are those proposed under the preferred alternative (Alternative 6R) presented in the FEIS.

Wildlife and plant species addressed in the HMP are a subset of the species analyzed in the FEIS. Species addressed in the HMP were included based on their legal protection, current listing status, and the relative importance of populations and habitats at Fort Ord to the continued survival of the species (Tables 1-1 and 1-2).

The HMP is presented in four chapters. Chapter 1, "Purpose of and Need for the Habitat Management Plan", describes the purpose and need, goals and objectives, and procedure followed in developing the HMP. Chapter 2, "Minimum Conservation Area and Corridor System", describes methods used to develop a minimum conservation area and corridor system for Fort Ord. Chapter 3, "Habitat Management for Predisposal Actions", presents habitat management procedures to accompany Army actions taken prior to disposal of Fort Ord land. Chapter 4, "Habitat Management for Disposal and Reuse", describes the habitat management procedures to be taken by recipients of disposed land. Chapter 5, "Citations", lists the sources cited in the HMP. Chapter 6, "List of Preparers and Acknowledgements", describes the contributions of key staff and agency representatives.

|                                                                | Listing Status*    | CNPS                     | Approximate<br>Percent of                      |                                                                                                                              |                                                                                                                                                                                                                           |                                                                                                                                                          |  |
|----------------------------------------------------------------|--------------------|--------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Plant Species                                                  | Federal/State/CNPS | RED<br>Code <sup>b</sup> | D Range at<br>le <sup>b</sup> Fort Ord Habitat |                                                                                                                              | Distribution                                                                                                                                                                                                              | Importance of<br>Fort Ord Populations                                                                                                                    |  |
| Sand gilia<br>Gilia tenuiflora ssp.<br>arenaria                | E/T/1B             | 3-3-3                    | 50-70                                          | Sandy openings in coastal<br>dunes and scrub and<br>maritime chaparral                                                       | Occurs around Monterey<br>Bay, Salinas River Beach,<br>Asilomar State Beach, from<br>Point Pinos to Point Joe, and<br>Fort Ord (1, 2, 9) <sup>c</sup>                                                                     | Fort Ord provides extensive<br>suitable habitat for sand<br>gilia and constitutes a<br>substantial portion of its<br>range (at least half)               |  |
| Monterey spineflower<br>Chorizanthe pungens<br>var. pungens    | PE//1B             | 3-3-3                    | 75-95                                          | Colonizes recently disturbed<br>sandy sites in coastal dune,<br>coastal scrub, grassland, and<br>maritime chaparral habitats | Along the coast of southern<br>Santa Cruz and northern<br>Monterey Counties and<br>inland to the coastal plain of<br>the Salinas Valley (1, 4, 8)                                                                         | Fort Ord supports the<br>largest populations of<br>Monterey spineflower<br>known (7, 8)                                                                  |  |
| Robust spineflower<br>Chorizanthe robusta<br>robusta           | PE//4<br>var.      | 1-1-3                    | <1                                             | Found on sandy soils in<br>coastal dune and coastal<br>scrub habitats                                                        | Historically from Alameda<br>and San Mateo Counties<br>south to Santa Cruz County<br>and near the coast from<br>southern Santa Cruz County<br>to northern Monterey<br>County, much of which is<br>now developed (4, 5, 8) | Several plants of robust<br>spineflower were found at<br>one site on Fort Ord; Fort<br>Ord does not provide<br>important habitat for this<br>species (7) |  |
| Seaside bird's-beak<br>Cordylanthus rigidus<br>var. littoralis | C1/E/1B            | 2-3-3                    | <b>3</b> 0-50⁴                                 | Inhabits sandy soils of<br>stabilized dunes, maritime<br>chaparral, coastal scrub, and<br>closed-cone coniferous<br>forests  | Monterey and Santa Barbara<br>Counties, including Fort Ord,<br>Monterey Airport, and<br>between Carmel and Elkhorn<br>Slough in Monterey County,<br>and on Burton Mesa in<br>Santa Barbara County (1, 2)                  | A substantial portion of the<br>range of Seaside bird's-beak<br>is found at Fort Ord                                                                     |  |
| Toro manzanita<br>Arctostaphylos<br>montereyensis              | C2//1B             | 3-2-3                    | 70-90                                          | Occurs on stabilized sandy<br>soils and badlands in<br>maritime chaparral                                                    | Restricted to several sites in<br>Monterey County, including<br>Fort Ord, Toro Regional<br>Park, and Monterey Airport<br>(1, 3)                                                                                           | Fort Ord supports the<br>largest expanse of Toro<br>manzanita in existence                                                                               |  |

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| Plant Species                                  | Listing Status <sup>a</sup><br>Federal/State/CNPS | CNPS<br>RED<br>Code⁵ | Approximate<br>Percent of<br>Range at<br>Fort Ord | Habitat                                                                                                  | Distribution                                                                                                              | Importance of<br>Fort Ord Populations                                                                              |
|------------------------------------------------|---------------------------------------------------|----------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Sandmat manzanita<br>Arctostaphylos pumil      | C2//1B                                            | 3-2-3                | 70-90                                             | Sand hills of maritime<br>chaparral and coast live oak<br>woodland                                       | Scattered locations around<br>Monterey Peninsula and an<br>extensive area on Fort Ord<br>(1, 3)                           | A large and important part<br>of the range of sandmat<br>manzanita is found on Fort<br>Ord                         |
| Monterey ceanothus<br>Ceanothus rigidus        | C2//4                                             | 1-2-3                | 50-70                                             | Sandy hills and flats of<br>maritime chaparral, closed-<br>cone coniferous forests, and<br>coastal scrub | Monterey County along the<br>coast and Fort Ord, Toro<br>Regional Park, Monterey<br>Airport, and near Prunedale<br>(1, 6) | The most abundant and<br>probably most vigorous<br>population of Monterey<br>ceanothus is found on Fort<br>Ord (3) |
| Eastwood's ericameria<br>Ericameria fasciculat | a C2//1B<br>a                                     | 3-3-3                | 70-90                                             | Inhabits coastal dune and<br>scrub, maritime chaparral,<br>and closed- cone coniferous                   | Found in Monterey County,<br>including Del Monte Forest,<br>Monterey Airport, Toro                                        | Fort Ord supports most of<br>the remaining individuals of<br>Eastwood's ericameria (3)                             |

forest communities Regional Park, near Prunedale, and Fort Ord (1) Coast wallflower Fort Ord provides a C2/--/1B 10-30 Occurs scattered on Coastal dunes of Monterey 2-2-3 moderate amount of stabilized coastal dunes Bay and Santa Rosa Island, Erysimum ammophilum and coastal scrub on Fort Ord (10, 11)

Fort Ord provides a moderate amount of suitable habitat for coast wallflower and may constitute an important portion of its range because of the limited extent and high degree of disturbance to its habitat in California

Page 2 of !

|                                            | Listing Status*    | CNPS                     | Approximate<br>Percent of |                                                                                                        |                                                                                 |                                                                                                                                                                                                                                           |
|--------------------------------------------|--------------------|--------------------------|---------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant Species                              | Federal/State/CNPS | RED<br>Code <sup>b</sup> | Range at<br>Fort Ord      | Habitat                                                                                                | Distribution                                                                    | Importance of<br>Fort Ord Populations                                                                                                                                                                                                     |
| Yadon's piperia<br>Piperia yadoni          | C1°//1B            | N/A                      | <1                        | Occurs on sandy soils in<br>maritime chaparral, coastal<br>scrub, and closed-cone<br>coniferous forest | Occurs in Monterey County<br>from the Pajaro Hills to the<br>Monterey Peninsula | Less than 1% of the indivi-<br>duals of Yadon's piperia are<br>found on Fort Ord; it is<br>noteworthy that its habitat<br>on Ford Ord is intermediate<br>between that of its occur-<br>rence in chaparral and pine<br>forest habitats (7) |
| Hooker's manzanita<br>Arctostaphylos hooke | //1B<br>ri         | 2-2-3                    | 15-35                     | Sand hill and Aromas formation maritime                                                                | Del Monte Forest, Monterey<br>Peninsula, Prunedale Hills,                       | Fort Ord supports large populations of Hooker's                                                                                                                                                                                           |

\* Status explanations (see the "Definitions of Special-Status Species" section above for citations):

#### Federal

- = listed as endangered under the federal Endangered Species Act. Ε
- = proposed for federal listing as endangered under the federal Endangered Species Act. PE
- C1 = Category 1 candidate for federal listing. Category 1 includes species for which USFWS has on file enough substantial information on biological vulnerability and threats to support proposals to list them.

chaparral and closed-cone

coniferous forest

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manzanita; although it is

Monterey Peninsula and near Prunedale than at Fort Ord, Fort Ord provides important and extensive

more common on the

habitat (3,6)

Fort Ord, and sand hills in

the Larkin Valley



- C2 = Category 2 candidate for federal listing. Category 2 includes species for which USFWS has some biological information indicating that listing may be appropriate but for which further biological research and field study are usually needed to clarify the most appropriate status. Category 2 species are not necessarily less rare, threatened, or endangered than Category 1 species or listed species; the distinction relates to the amount of data available and is therefore administrative, not biological.
- -- = no designation.

#### State

- E = listed as endangered under the California Endangered Species Act.
- T = listed as threatened under the California Endangered Species Act.

#### **California Native Plant Society**

- 1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
- 4 = List 4 species: plants of limited distribution.

#### <sup>b</sup> CNPS RED Code:

Rarity (R)

- 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.

#### Endangerment (E)

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

#### Distribution (D)

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

Table 1-1. Continued

- 1 = Natural Diversity Data Base 1992.
- 2 = Hillyard 1992.
- 3 = Griffin 1976.
- 4 = Reveal and Hardham 1989.
- 5 = Thomas 1961.
- 6 = Griffin 1978.
- 7 = Morgan 1992.
- 8 = U.S. Fish and Wildlife Service 1991.
- 9 = U.S. Fish and Wildlife Service 1992.
- 10 = Munz and Keck 1968.
- 11 = Abrams 1940.
- <sup>d</sup> This estimate incorporates locations of Seaside bird's-beak in Santa Barbara County, which may have formed as a result of hybridization; the estimate based on Monterey County above would increase the percent of range at Fort Ord to 60-80%.

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\* Listing package is in preparation by USFWS (Rutherford pers. comm.).

Table 1-2. Wildlife Species Considered Habitat Management Plan (HMP Species)

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|                                                              | Listing Status <sup>a</sup> | Approximate<br>Percent of |                                                                                                                                                                                                                                                                     |                                                                                                                                                              |                                                                                                                                           | Importance of                                                                                                                                                                                                  |  |
|--------------------------------------------------------------|-----------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Plant Species                                                | Federal/State               | Range at<br>Fort Ord      | Habitat                                                                                                                                                                                                                                                             | Distribution                                                                                                                                                 | Occurrence at Fort Ord                                                                                                                    | Fort Ord<br>Population                                                                                                                                                                                         |  |
| Smith's blue butterfly<br>Euphilotes enoptes smithi          | Е/-                         | 5-10                      | Uses coastal dunes and hill-<br>sides that support seacliff<br>buckwheat ( <i>Eriogonum</i><br><i>parvifolium</i> ) or coast buck-<br>wheat ( <i>Eriogonum latifolium</i> );<br>these plants are used as a<br>nectar source for adults and<br>host plant for larvae | Restricted to localized<br>populations along the coast<br>of Monterey County; single<br>populations reported in<br>Santa Cruz and San Mateo<br>Counties      | Known to occur near the<br>northern boundary of Fort<br>Ord and from Giggling<br>Siding to the southern base<br>boundary (5) <sup>b</sup> | Fort Ord has been identi<br>fied as important to the<br>recovery of Smith's blue<br>butterfly                                                                                                                  |  |
| California linderiella<br>Linderiella occidentalis           | PE/                         | <1                        | Ephemeral freshwater habitats<br>such as vernal pools, rock<br>outcrop pools, swales, and<br>ponds                                                                                                                                                                  | Found in the Central<br>Valley from Tehema to<br>Madera Counties, and the<br>central and south Coast<br>Ranges from Lake to<br>Riverside County              | Known from five vernal pools at Fort Ord (2)                                                                                              | Fort Ord composes little<br>of the total range of<br>California linderiella;<br>however, vernal pool<br>habitat is relatively rare<br>in the Monterey Bay<br>region                                            |  |
| California red-legged frog<br>Rana aurora draytoni           | PE/SSC                      | <1                        | Requires coldwater ponds with<br>emergent and submergent<br>vegetation and riparian<br>vegetation at the edges                                                                                                                                                      | Found along the coast and<br>coastal mountain ranges<br>from Humboldt to San<br>Diego Counties, and in the<br>Sierra Nevada from Butte<br>to Fresno Counties | May occur at Ford Ord (1)                                                                                                                 | Fort Ord composes little<br>of the species total range<br>however, Fort Ord pro-<br>vides potential habitat fo<br>California red-legged<br>frog, which is relatively<br>rare within the Monterey<br>Bay region |  |
| Western snowy plover<br>Charadrius alexandrinus<br>nivosus   | T/SSC                       | 5-10                      | Found along beach above the<br>high tide limit; also uses shores<br>of salt ponds and alkali or<br>brackish inland lakes                                                                                                                                            | Intermittent nesting sites<br>along the Pacific Coast<br>from Washington to Baja<br>California                                                               | Nests along the beaches at<br>Fort Ord north of Stillwell<br>Hall (3)                                                                     | Fort Ord supports one of<br>20 coastal breeding popu-<br>lations of western snowy<br>plovers in California;<br>Monterey Bay as a whole<br>is considered one of eigh<br>primary coastal nesting<br>areas        |  |
| California black legless<br>lizard<br>Anniella pulchra nigra | C2 (LP)/SSC                 | 10-20                     | Requires moist, warm habitats<br>with loose soil for burrowing<br>and prostrate plant cover; may<br>be found on beaches, in<br>chaparral, pine oak woodland,<br>or riparian areas                                                                                   | Restricted to small popula-<br>tions along the coast in<br>Monterey and northern San<br>Luis Obispo Counties; one<br>population in Contra Costa<br>County    | Found in stabilized dunes<br>and maritime chaparral with<br>sandy soils at Fort Ord (2, 4)                                                | Fort Ord supports one or<br>less than 20 confirmed<br>black legless lizard<br>populations                                                                                                                      |  |

Table 1-2. Continued

| Plant Species                                                   | Listing Status <sup>a</sup> Federal/State | Approximate<br>Percent of<br>Range at<br>Fort Ord | Habitat                                                                                                                             | Distribution                                                                                                                                       | Occurrence at Fort Ord                                            | Importance of<br>Fort Ord<br>Population                                                                                                                                     |
|-----------------------------------------------------------------|-------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| California tiger salamander<br>Ambystoma tigrinum californiense | C2 (LP)/SSC                               | <1                                                | Favors open woodlands and<br>grasslands; requires water for<br>breeding and burrows or<br>cracks in the soil for summer<br>dormancy | Occurs only in California<br>from the coastline to the<br>Sierra Nevada crest and<br>from Sonoma to Santa<br>Barbara Counties                      | Occurs in ponds and vernal<br>pools throughout Fort Ord<br>(2, 6) | Fort Ord comprises little<br>of the total range of<br>California tiger sala-<br>mander, however, vernal<br>pool habitat is relatively<br>rare in the Monterey Bay<br>region |
| Monterey ornate shrew<br>Sorex ornatus salarius                 | C2/-                                      | 15-25                                             | Found in a variety of riparian,<br>woodland, and upland commu-<br>nities where there is thick duff<br>or downed logs                | Restricted to the Monterey<br>Bay region; historical<br>occurrences at the mouth<br>of the Salinas River and<br>Moss Landing in Monterey<br>County | May occur at Fort Ord (1)                                         | Fort Ord provides abun-<br>dant potential habitat for<br>Monterey ornate shrew<br>within the species' limited<br>range                                                      |

\* Status definitions:

#### Federal

- Е listed as endangered under the federal Endangered Species Act. =
- Т = listed as threatened under the federal Endangered Species Act.
- = federally proposed for listing as endangered. PE
- LP listing package being reviewed by U.S. Fish and Wildlife Service. =
- = Category 2 candidate for federal listing. Category 2 includes species for which USFWS has some biological information indicating that listing may be appropriate but for which further biological research C2 and field study are usually needed to clarify the most appropriate status. Category 2 species are not necessarily less rare, threatened, or endangered than Category 1 species or listed species; th distinction relates to the amount of data available and is therefore administrative, not biological.

#### State

- SSC = considered a State Species of Special Concern by California Department of Fish and Game.
  - = no status.

#### <sup>b</sup> Data sources.

- Not found during field surveys. (1)
- (2) Encountered during field surveys.

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- Source: George pers. comm. (3)
- Source: Bury 1985. (4)
- (5) Source: Arnold 1983.
- Source: Stanley pers. comm. (6) .

#### GOALS AND OBJECTIVES

The goals and objectives of the HMP are as follows:

- Preserve, protect, and enhance populations and habitat of federally listed threatened and endangered wildlife and plant species.
- Avoid reducing populations or habitat of federal proposed and candidate (Category 1 and 2) wildlife and plant species to levels that may result in one or more of these species becoming listed as threatened or endangered.
- Preserve and protect populations and habitat of state-listed threatened and endangered wildlife and plant species.
- Avoid reducing populations or habitat of species listed as rare, threatened, and endangered by the CNPS (List 1B) with large portions of their range at Fort Ord to levels that may result in one or more of these species becoming listed as threatened or endangered.
- Conduct the disposal of land to public and private entities in a manner that is compatible with the preservation of federally listed threatened and endangered wildlife and plants within the HMP conservation area.
- Inform potential recipients of Fort Ord land and the general public of methods that provide a suitable mechanism for protecting natural resources while allowing implementation of a community-based reuse plan that promotes economic recovery after closure of Fort Ord.
- Provide the basis for recipients of Fort Ord lands to seek Section 10(a) permits pursuant to the federal Endangered Species Act and achieve compliance for conservation of state-listed threatened and endangered species and other special-status species recognized by California Department of Fish and Game (DFG) under the California Endangered Species Act and California Environmental Quality Act.
- Serve as a "pre-listing" agreement between USFWS, DFG, and the land owner that reduces the regulatory constraints of future listing in the event that nonlisted species addressed in the HMP become listed during implementation of Alternative 6R and the HMP.

The overall goal of the HMP is to provide for, at a minimum, no net loss of populations or important habitat for any of the subject species of the HMP. This goal can be met through the careful selection of disposal and reuse options that recognize the values and market constraints imposed by the HMP implementation requirements. The beneficial enhancement of habitat by the selected management agencies is essential to the achievement of this goal.

#### FLEXIBILITY OF HMP

Although the HMP is based on conditions that would occur under Alternative 6R of the FEIS, it was designed to accommodate minor changes in parcel boundaries and proposed land uses. Small changes in boundaries or proposed land uses may occur before disposal of Fort Ord in response to revised or modified land requests. These changes would require only minor revisions to the HMP. Substantial changes to Alternative 6R would necessitate major revisions to the HMP.

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#### HABITAT MANAGEMENT PLAN STEPWISE ANALYSIS

The HMP was developed following a stepwise analysis to evaluate and minimize the loss of specific wildlife and plant species and their habitats resulting from implementation of Alternative 6R. A description of the steps is provided in the following sections.

#### Step 1: Identify Species and Habitats to Be Considered in the Habitat Management Plan

Wildlife and plant species analyzed in the HMP were chosen based on their legal protection under the state and federal Endangered Species Acts, their current listing status, and the relative importance of existing populations and habitats at Fort Ord to the continued survival of the species. CNPS-listed species with more than 10% of their known range at Fort Ord were also analyzed in the HMP. Habitats analyzed in the HMP were chosen based on their importance to the species chosen for analysis.

The following species were analyzed in the HMP:1

- federally proposed and listed threatened and endangered species (Smith's blue butterfly [E], sand gila [E], Monterey spineflower [PE], robust spineflower [PE], western snowy plover [T], California linderiella [PE], California red-legged frog [PE]);
- species for which the USFWS is preparing listing packages for advancing species to proposed threatened or endangered status (California black legless lizard [C2 and listing package in progress], California tiger salamander [C2 and listing package in progress], Seaside bird's-beak [C1 and listing package in progress], Yadon's piperia [listing package in progress]);
- federal candidate (C1 and C2) species if Fort Ord provides more than 10% of their known range (Monterey ornate shrew [C2], Toro manzanita [C2], sandmat manzanita [C2], Monterey ceanothus [C2], Eastwood's ericameria [C2], and coast wallflower [C2]);
- state-listed threatened and endangered species (sand gila [T], Seaside bird's-beak [E]); and
- CNPS list 1B species with extensive portions (>10%) of known range at Fort Ord (Hooker's manzanita).

These species are referred to as "HMP species" in this report.

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<sup>&</sup>lt;sup>1</sup>Status explanations: Federal - E = listed as endangered under the federal Endangered Species Act; T = listed as threatened under the federal Endangered Species Act; PE = proposed for federal listing as endangered under the federal Endangered Species Act; C1 = Category 1 candidate for federal listing. Category 1 includes species for which USFWS has on file enough substantial information on biological vulnerability and threat to support proposals to list them. Species that are possibly extinct are indicated with an asterisk (\*); and C2 = Category 2 candidate for federal listing. Category 2 includes species for which USFWS has some biological information indicating that listing may be appropriate but for which further biological research and field study are usually needed to clarify the most appropriate status. Species that are possibly extinct are indicated with an asterisk (\*). Category 2 species are not necessarily less rare, threatened, or endangered than Category 1 species or listed species; the distinction relates to the amount of data available and is therefore administrative, not biological. State - E = listed as endangered under the California Endangered Species Act; and T = listed as threatened under the California Endangered Species Act. California Native Plant Society - 1B = List 1B species: rare, threatened, or endangered in California and elsewhere.

The following habitats were analyzed in the HMP because they support large concentrations of HMP species:

- maritime chaparral;
- coastal strand;

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- dune scrub; and
- beaches, bluffs, and blowouts.

The following habitats were analyzed in the HMP because they occur at sites that could be restored to high-quality HMP species habitat:

- ice plant mats and
- disturbed dunes.

Vernal pools and ponds are habitat for California linderiella, red-legged frog, and California tiger salamander but were not analyzed in this initial stepwise analysis. Specific mitigation measures for impacts on fairy shrimp, red-legged frog, California tiger salamander, vernal pools, and ponds are included in Chapters 3 and 4. Protection or replacement for these waters of the United States will also be provided through implementation of the federal Clean Water Act of 1972.

#### Step 2: Develop a Conservation Area and Corridor System

A preliminary conservation area and corridor system was developed during preparation of the EIS to define the minimal area necessary to preserve HMP species populations and habitats according to ecological principles and the known biological resource distributions at Fort Ord.

The conservation area developed for the EIS provided a benchmark for subsequent analysis and defined these more valuable areas of habitat that could be given priority for conservation and protection from development impacts. The benchmark is used to identify biologically important habitat and the minimum area required to protect the most species. The conservation areas were planned to protect sufficient habitat for listed and proposed species to avoid a jeopardy opinion by USFWS and to protect representative populations and habitats of the other HMP species. Where necessary, corridors were identified to maintain connections between conservation areas. Habitat values within corridors may be less than in conservation areas; however, corridors are important for maintaining the ecological integrity of conservation areas.

#### Step 3: Compare Land Requests with Conservation Area and Corridor System

The locations of land requests and proposed land uses under Alternative 6R were compared with the locations of minimum conservation areas and corridors. The boundaries of the initial conservation areas and corridors were designed to be flexible, with some adjustments made to accommodate the land uses prescribed under Alternative 6R. The loss of some valuable habitat within the conservation areas would be replaced by expanding the conservation areas to other locations, preserving usable habitat in other locations, or improving and restoring disturbed habitat. Certain land uses would be allowed within corridor areas if these uses are compatible with proper corridor functioning.

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#### Step 4: Create Final Conservation Area and Corridor System

The conservation area and corridor system was modified to create a final conservation area and corridor system that incorporates the land uses proposed under Alternative 6R and includes sites necessary for mitigation of impacts on HMP species.

#### Step 5: Develop Habitat Management Plan Guidelines

Protection, enhancement, mitigation, monitoring, management, and funding guidelines were developed to allow for an installation-wide means of accomplishing mitigation.

#### Step 6: Implement HMP

The HMP will be signed by all responsible parties, and conservation, management guidelines, monitoring, and enforcement will be implemented by each party as described in Chapter 4, "Habitat Management for Disposal and Reuse".

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## Chapter 2.

# Minimum Conservation Area and Corridor System

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## Chapter 2. Minimum Conservation Area and Corridor System

#### SPECIES AND COMMUNITY BIOLOGICAL DATA

Tables 2-1 and 2-2 present ecological characteristics of HMP wildlife and plant species that are pertinent to development of conservation areas and corridors. Additional information on species distributions and endangerment status is in the Flora and Fauna Baseline Study of Fort Ord, California (U.S. Army Corps of Engineers, Sacramento District 1992) and the supplement to the draft BA (U.S. Army Corps of Engineers, Sacramento District 1993b).

#### HABITAT MANAGEMENT PLAN HABITATS

The following sections briefly describe the community ecology of maritime chaparral and coastal dunes that is pertinent to development of conservation areas and corridors.

#### Maritime Chaparral

Maritime chaparral is a coastal form of chaparral associated with specific soil conditions. Two forms are recognized at Fort Ord based on the substrate that supports them: sand hill maritime chaparral occurs on relict dunes of the late Pleistocene Epoch and Aromas formation maritime chaparral occurs on weakly consolidated red sandstone that is a relict of mid-Pleistocene dunes. The occurrence of maritime chaparral appears to be limited to the summer fog zone. (Griffin 1976.)

Periodic disturbance or removal of vegetation caused by unstable substrate and fire are important factors in maintaining and rejuvenating the maritime chaparral community.

Important shrubs in maritime chaparral are shaggy-barked manzanita, chamise, Toro manzanita, sandmat manzanita, Hooker's manzanita, Monterey ceanothus, toyon, black sage, bush monkeyflower, coyote bush, Eastwood's ericameria, polson-oak, dwarf ceanothus, coast silk tassel, rush rose, California sagebrush, blue-blossom ceanothus, and mock heather. HMP species occurring in maritime chaparral are black legless lizard, Toro manzanita, sandmat manzanita, Hooker's manzanita, Monterey ceanothus, Eastwood's ericameria, Seaside bird's-beak, sand gilia, Monterey spineflower, coast wallflower, and Yadon's piperia.

Windblown sand in the sand hills and water erosion in the Aromas formation create open substrate where herbaceous species and a high diversity of shrubs make up the vegetative cover. Without disturbance in sand hill maritime chaparral, shaggy-barked manzanita and chamise tend to dominate the shrub cover and form a closed canopy that excludes herbaceous species. Without disturbance in Aromas formation maritime chaparral, chamise or Toro manzanita tend to form nearly monotypic stands and a closed canopy that excludes herbaceous species. After a fire, shaggy-barked manzanita and chamise resprout from their base while other shrubs and herbs recolonize from seed. Early successional sites appear to support the highest diversity of shrubs, including the largest number of HMP shrub species. On

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#### Table 2-1. Ecological Characteristics of HMP Wildlife

| Species                                                                               | Life Cycle                                                                                                                                                                                                           | Dispersal<br>Migration                                                                                                          | Reproduction                                                                                                     | Mating<br>Behavior                                                                        | Breeding<br>Periods                                                                                 | Habitat<br>Requirements                                                                                                                                              |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Smith's blue butterfly<br>(Euphilotes enoptes smithl)                                 | 1-year lifespan; egg laying, five<br>lasval Instars and adult stage are<br>associated with peak blooming<br>period of coastal and seacliff<br>buckwheat; pupal stage is dormant<br>stage during nonflowering periods | Limited flight dispersal; migration<br>unknown                                                                                  | Emergence from pupae and<br>mating associated with peak<br>Nowering period of coastal<br>buckwheat species       | Mate location, copulation, and<br>oviposition occur on Nowerheads<br>of buckwheat species | Breeding occurs June-September<br>tied to peak flowering periods of<br>coast and seacliff buckwheat | Coastal sand dunes and ravines<br>associated with coast and seacliff<br>buckwheat; completely dependent<br>on buckwheat during all lifestages                        |
| Western snowy plover (coastal<br>populations)<br>(Charadrius alexandrinus<br>niuosus) | Young are precocial; fledge in 27-<br>47 days                                                                                                                                                                        | Migrate north and south, from<br>Washington to Baja California                                                                  | Nest on sandy, open ground; both<br>adults incubate eggs; multiple<br>clutches per year; 2-6 eggs per<br>clutch  | Colonial nesting; monogamous by<br>clutch                                                 | Breeding and nesting occurs mid-<br>March through mid-September                                     | Flat sandy beach above the high<br>tide level; highly sensitive to<br>human disturbance; may abandon<br>nests if disturbed                                           |
| California linderiella<br>(Linderiella occidenialis)                                  | 1-year lifecycle; egg stage is<br>dormant in soil during dry season;<br>larvae and adult develop during<br>winter rains                                                                                              | Possible dispersal of eggs borne in<br>mud adhered to feet of animals;<br>wind may also disperse eggs<br>during dry season      | Breed in winter when pools and<br>ponds are full; lay eggs as ponds<br>dry in spring                             | Male grasps female with specially elongated antennae                                      | Adult linderiells observed from<br>mid-October to May                                               | Vernai pools, ponds, and swales                                                                                                                                      |
| California black-legless lizard<br>(Anniella pulchra nigra)                           | Young born live; adults and young<br>remain near soil surface in spring;<br>burrow to unknown depths during<br>rest of year                                                                                          | Presume all habitat requirements<br>are found in activity areas; no<br>migration patterns known;<br>dispersal highly restricted | 1-4 born live                                                                                                    | Unknown                                                                                   | Unknown                                                                                             | Moist, warm habitat with loose<br>soil and prostate plant cover<br>located on beaches and chaparral<br>with sandy soils                                              |
| Monterey ornate shrew<br>(Sorex ornatus talarius)                                     | Most do not live beyond 1 year                                                                                                                                                                                       | No dispersal patterns known;<br>probably highly restricted; no<br>migration patterns known                                      | Up to 6 bom in a litter, multiple<br>litters produced per year                                                   | Unknown                                                                                   | Believed to be February to<br>October                                                               | Found in a variety of riparlan,<br>woodland, and upland communi-<br>tics where there is thick duff or<br>downed logs                                                 |
| California red-legged frog<br>(Rama aurora drayioni)                                  | Egg and tadpole stages aquatic;<br>adult amphibians                                                                                                                                                                  | Travel overland during rains                                                                                                    | Female lays egg masses; after<br>fertilization, eggs are left<br>unprotected                                     | Copulate in breeding ponds                                                                | Eggs laid from December to early<br>April                                                           | Cold water ponds or river pools<br>with emergent and submergent<br>vegetation with riparian vegetation<br>along the edges                                            |
| California tiger salamander<br>(Ambystoma tigrinum<br>californiense)                  | Eggs and larval stages occur in<br>temporary pools; adults are<br>sublerranean, except during<br>breeding                                                                                                            | Travels overland; may migrate up<br>to 1 mile from burrow to breeding<br>ponds                                                  | Females lay numerous clutches of<br>eggs in temporary pools and<br>ponds on submerged and<br>emergent vegetation | Unknown                                                                                   | Breeding occurs from December<br>to February, mainly in vernal<br>pools                             | Open woodlands and grasslands;<br>requires water to breed and uses<br>burrows or cracks in soil at<br>upland sites up to 1 mile from<br>breeding ponds during summer |

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#### Table 2-2. Ecological Characteristics of HMP Plants

|                                                                          |                                                                      |                                                                                                                                                      | · · · · · · · · · · · · · · · · · · ·                                            |                                                               |                                                                  |                                                                                                                                                                                                          |
|--------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensitive<br>Plant Species                                               | Life Cycle/<br>Habii                                                 | Seed or Fruit<br>Dispersal Mechanism                                                                                                                 | Regeneration<br>Mechanisms                                                       | Poliination<br>Biołogy                                        | Response to<br>Disturbance                                       | Habitat<br>Requirements                                                                                                                                                                                  |
| Sand gišia<br>(Gilia tenuiflora sep. arenaria)                           | Annual herb; flowers in spring                                       | Small sceds dropped or shaken by<br>wind from capsule; may disperse<br>with blowing sand                                                             | Annual seed production; seed<br>bank in soil                                     | Insect pollinated; bee flies may be<br>important              | Colonizes open sand                                              | Coastal sand dunes below 30<br>meters elevation; fog belt area;<br>Monterey Bay; needs open, sandy<br>sites for establishment; Baywood<br>sands and costal dunes                                         |
| Monterey spineflower<br>(Chorizanuhe pungens vas.<br>pungens)            | Annual herb; Nowers in summer                                        | Small seeds dropped or shaken by<br>wind from capsule; spiny fruits<br>may be carried by fur-bearing<br>animats or may disperse with<br>blowing sand | Annual seed production; seed<br>bank in soit                                     | Insect politinated; self-politination<br>likely common        | Colonizes open sand; invades<br>roadsides and firebreaks         | Coastal strand, coastal scrub,<br>maritime chaparral, and disturbed<br>sites in grassiand; below 450<br>meters elevation; fog belt area;<br>sandy solis (Baywood sands,<br>Oceano, Amold, coastal dunes) |
| Robust spineforwer<br>(Chorizanthe robusta var.<br>robusta)              | Annual herb; flowers in summer                                       | Small seeds dropped or shaken by<br>wind from capsule; spiny fruits<br>may be carried by fur-bearing<br>animals or may disperse with<br>blowing sand | Annual seed production; seed<br>bank in soit                                     | Insect pollinated; self-pollination<br>likely common          | Colonizes open sand                                              | Coastal strand, coastal scrub sress<br>below 300 meters elevation                                                                                                                                        |
| Seaside bird's-beak<br>(Cordylanthus rigidus var.<br>littoralis)         | Annual herb; flowers in summer;<br>hemiparasitic                     | Small seeds dropped or shaken by wind from capsule                                                                                                   | Annual seed production; seed<br>bank in soil; must attach roots to<br>host plant | Insect pollinated                                             | Does not tolerate disturbance                                    | Coastal duries, coastal acrub, and<br>maritime chaparral, below 200<br>meters elevation; must have host<br>plant in vicinity                                                                             |
| Toro manzanita<br>(Arctostaphylos montercycrisis)                        | Shrub, flowers in late winter-early<br>spring                        | Fruits with large seeds eaten and<br>dispersed by mammals and birds                                                                                  | Annual seeds produced; need fire to crack seed coat                              | Insect pollinated; bees, flies,<br>moths                      | Seedlings colonize areas after fire<br>and open eroded sandstone | Chaparmi in andy soils below 350<br>meters elevation, especially on<br>Aromas formation sandstone                                                                                                        |
| Sandmat manzanita<br>(Arctostapoitylos pumila)                           | Shrub, mat and mound forming;<br>flowers in late winter-early spring | Fruits with large seeds caten and dispersed by mammals and birds                                                                                     | Annual seeds produced; need fire<br>to crack seed coat                           | Insect pollinated; bees, files, moths                         | Seedlings colonize areas after fire                              | Sandy soils, hills, chaparral,<br>woodland, coniferous forest below<br>200 meters elevation                                                                                                              |
| Hooker's manzanita<br>(Arctostaphylos hookeri ssp.<br>hookeri)           | Shrub, mat and mound forming;<br>flowers in late winter-early spring | Pruits with large seeds eaten and<br>dispersed by mammals and birds                                                                                  | Annual seeds produced; need fire to crack seed cost                              | Insect pollinated; bees, flies, moths                         | Seedlings colonize areas after fire                              | Sandy solis, sandy shales,<br>sandstone outcrops, chaparzal,<br>below 300 meters elevation                                                                                                               |
| Monterey ceanothus<br>(Ceanothus rigidus = C.<br>curreatus var. ridigus) | Shrub, flowers in early spring                                       | Seeds ejected mechanically from<br>capsule as fruit drys in summer<br>sun                                                                            | Annual seeds produced; need fire to crack seed cost                              | Insect pollinated                                             | Seedlings colonize areas after fire                              | Sandy hills, flats, chaparral, close-<br>cone-pine forests below 200<br>meters elevation                                                                                                                 |
| Eastwood's ericameria or golden<br>bush<br>(Ericameria fasciculata)      | Shrub, flowers in late spring-early<br>summer                        | Seeds dispersed by wind                                                                                                                              | Annual seed production; seed bank in soil                                        | Insect pollinated; beetles,<br>butterflies, bees, flies, etc. | Likely colonizes after fire                                      | Dunes, coastal chéparral, closed-<br>cone-pine forest below 100 meters<br>elevation                                                                                                                      |

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|-------------------------------------------|------------------------------------------------|-----------------------------------------------|----------------------------------------------|------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Sensitive<br>Plant Species                | Life Cycle/<br>Habit                           | Seed or Fruit<br>Dispersal Mechanism          | Regeneration<br>Mechanisms                   | Pollination<br>Biology                         | Response to<br>Disturbance       | Habitat<br>Requirements                                                                                                                |
| Coast waliflower<br>(Erysimum ammophilum) | Annual or blennial herb; flowers<br>in spring  | Seeds dropped or shaken by wind<br>from fruit | Annual seed production; seed<br>bank in soil | Insect pollinated; likely bees and butterflies | Colonizes open (stabilized) sand | Coastal dunes below 50 meters elevation                                                                                                |
| Yadon's piperia<br>(Piperia yadoni)       | Perennial herb from corm; flowers<br>in spring | Tiny seeds dropped from capsule               | Annual seed production; seed<br>bank in soil | Insect pollinated                              | Resprouts from roots after fire  | Generally sendy soit or sendstone,<br>coastal shrubland, Monterey pine<br>forest and maritime chaparral,<br>below 150 meters elevation |
|                                           |                                                |                                               | <del></del>                                  | ·····                                          |                                  |                                                                                                                                        |
|                                           |                                                |                                               |                                              |                                                |                                  |                                                                                                                                        |

 $\sum_{i=1}^{N} |1|^{-1} = \sum_{i=1}^{N} |1|^{-1}$ 

some sites, coast live oak may form a canopy over maritime chaparral if the site has not burned in a very long time.

Healthy maritime chaparral occurs as a patchwork of stands that have burned at different times and that support vegetation of various ages and structures. This habitat mosaic allows for high species and habitat diversity and provides sources of propagules for dispersal between patches.

Successful conservation of maritime chaparral is dependent on proper management of the habitat by using fire as a management tool and allowing or encouraging some forms of substrate disturbance. The goal of management is to achieve high species and habitat diversity through a program of controlled burning that creates and maintains a mosaic pattern of maritime chaparral of various aged stands. However, sand gilia, Monterey spineflower, and coast wallflower may be dependent on open habitat created by blowing sand rather than by fire. Destabilized sand from firebreaks and roads in maritime chaparral apparently creates habitat for these species. Promoting a dynamic system of moving sand by selective vegetation removal may encourage the formation of habitat for the above-mentioned HMP species.

#### Coastal Dunes

Coastal strand and dune scrub habitats of the coastal dunes are dynamic plant communities that respond to a moving sand substrate and changing dune configuration. Blowing sand undermines and buries plants, but most dune plants are adapted to shallow burial and blasting by sand. Large areas of destabilized sand, called "blowouts," result in large-scale removal of vegetation and change in dune structure. As plants reinvade the bare sand they stabilize the dune. Dune structure creates a variety of habitats. The foredune is more exposed to wind and salt spray than the rear dune. Dune crests are subject to high winds and substrate removal, while interdune valleys are protected from wind, have higher soil moisture, and experience sand deposition. North-facing dune slopes are usually moister and cooler than south-facing dune slopes.

The highest diversity of dune habitat and species is best maintained in dunes with conditions ranging from active to stabilized and a variety of topography with foredunes and rear dunes, dune crests, interdune valleys, and north- and south-facing slopes.

Native plants likely to be found in healthy coastal strand habitat on Monterey Bay include coastal sand verbena, pink sand verbena, beach sagewort, beach bursage, beach evening primrose, beach morningglory, live-forever, woolly paintbrush, coastal paintbrush, sea rocket, Douglas' bluegrass, mock heather, sea thrift, wild buckwheat, seacliff buckwheat, and cudweed aster. Healthy dune scrub at Fort Ord is dominated by mock heather, bush lupine, Chamisso bush lupine, poison-oak, coyote bush, bracken fern, and deer weed.

HMP species occurring in coastal strand and dune scrub are Smith's blue butterfly, sand gilia, Monterey spineflower, robust spineflower, black legless lizard, and coast walfflower. Yadon's piperia may occur in these habitats.

#### ECOLOGICAL CONCEPTS FOR CONSERVATION AREA AND CORRIDOR SYSTEM DESIGN

Habitat loss and resultant habitat fragmentation are considered the primary causes of the loss of biodiversity in many regions (Norton 1988, Noss 1991). Conservation of many species of plants and animals is now dependent on proper management of the remaining fragmented habitat patches or habitat islands. Management of these fragmented habitats must consider several factors, including the size and shape of

the patch, location of the patch in relation to other patches, species present, and the connectivity of the patch to adjacent patches (Doak et al. 1992, Pulliam and Danielsen 1991). The following sections describe ecological concepts used to design conservation area and corridor systems.

#### **Conservation Area Size**

Isolated habitat patches will generally contain fewer species than will large, continuous tracts of the same habitat. Additionally, the populations present in habitat patches are more vulnerable to extinction than populations present in continuous tracts: vulnerability to extinction is area dependent (Terbough and Winter 1980, Soulé 1987). Small populations are highly susceptible to random changes in their environment and in their recruitment rates. Small, isolated populations are also vulnerable to inbreeding and to "genetic drift", the random loss of genetic diversity (Gilpin and Soulé 1986). For long-term conservation, minimal viable population sizes must be maintained to provide for sufficient genetic diversity to overcome genetic drift and allow the species to continue to naturally evolve and adapt.

The effective area of a habitat patch is smaller than the total area of the patch for many species (Soulé 1987). The edges of habitat patches are vulnerable to invasion by new species of plants and animals and to changes in biotic structure or composition due to edge effects such as windthrow or desiccation. Many species of plants and animals are considered "interior species" because of their susceptibility to edge effects (Jensen et al. 1990).

Small, isolated habitats do not allow the populations contained within them to escape changing environmental conditions. Seasonal fluctuations in the environment, such as changes in temperature, water regime, or vegetation, may require seasonal changes in the distribution of a population over a region. Catastrophic natural or humanmade disturbances may require major spatial shifts by populations or individuals for survival. The inability to escape temporally occurring events will result in high extinction rates for the populations confined to small habitat patches.

Natural communities are a complex of small populations that vary in structure or composition. This variability provides stability in the face of environmental stochasticity (random events) or catastrophes (Jensen et al. 1990). Small habitat patches cannot maintain the natural variability inherent in larger systems, nor can they maintain adequate amounts of microhabitats to provide for long-term viability for species or populations dependent on specific microhabitats.

#### Conservation Area Shape

The shape of a habitat patch influences the effective size of the habitat. A long, thin strip of habitat is smaller in effective size than a more geometric-shaped habitat because of the high edge-to-interior ratio in long, thin shapes. As mentioned above, the habitat at the edge of a patch is often substantially different in structure and composition than that found in the interior. This edge habitat is unsuitable for many species of plants and animals that may require interior habitats. Edge habitat is vulnerable to environmental effects from wind pruning, desiccation, invasions by weed and pest species, and disturbances associated with human activities. The type and intensity of effects from human activity on habitat. Increased susceptibility to invasions by disease, competitors, and predators also occurs in habitat patches that have a high edge-to-interior ratio. The theoretical optimal shape for a preserve would be circular, thus having minimal edge habitat (Temple 1983, Samson et al. 1991).

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#### **Conservation Area Location**

The location of a habitat patch is important at several scales. At the landscape level, the location in relation to other habitat patches and populations is critical for the long-term viability of the populations. Because a population at the extreme edge of its species' distribution is as vulnerable to extinction as is a small population (Weaver 1993), a conservation area located in the center of a species' range may have higher potential for maintenance of viable populations. At the population level, the location of a conservation area in an area of high habitat suitability for healthy populations would be advantageous. Preservation of large tracts of marginal habitats may have only minimal benefits for a species. Marginal habitats often do not support viable populations because recruitment rates are below mortality or dispersal rates. Individual species present in marginal or disturbed habitats are more likely to be only temporary residents or to have reduced reproductive success (Doak et al. 1992). However, marginal habitats may be critical to long-term viability of a regional population by providing for corridors of dispersal or areas of temporary residency during catastrophes or times of high population levels (Leftkovich and Fahrig 1985, Pulliam and Danielsen 1991). Marginal habitats may also function as areas where pressures from natural selection may be more intense or differ from high-quality habitat areas. These increased or varying selection pressures may assist in maintaining the long-term genetic variability of a population and allow for establishment of new traits that contribute to the species' overall genetic variability.

#### **Conservation Area Connectivity**

Small populations in habitat patches are highly susceptible to extinction due to environmental and demographic stochasticity. This susceptibility is greatly reduced if the population is not isolated from other populations. Connections or corridors between populations can effectively create a dynamic regional population, often called a metapopulation. The exchange of individuals between populations lessens the effect of natural fluctuations on small populations, allows for recolonization of habitats when local extinction occurs, and maintains genetic diversity. The ability of the metapopulation to function dynamically is related to the proximity of the individual habitat patches and the dispersal capabilities of the species (Pulliam and Danielsen 1991, Doak et al. 1992). If the habitat patches are small and widely dispersed, the rate of successful immigration will probably be low. More individuals will be lost or will settle in the unsuitable habitats surrounding each patch, and will not be available or productive members of the metapopulation.

The loss of individuals to unsuccessful dispersal is lessened when habitats patches are connected by corridors of suitable habitat. Corridors are not necessarily optimal habitats, but do provide the dispersing individuals with minimal life requirements. Corridor habitats also may play a critical role in population viability during catastrophes by providing escape routes, as well as temporary refuge habitat (Pulliam and Danlelsen 1991).

Different species have different dispersal capabilities and habitat requirements. Generally, a species' survival rate will be higher if the species disperses through habitats similar to its preferred habitat. Species differ in their habitat requirements and flexibility, and a corridor for one species will be a barrier to dispersal to another (i.e., a forest species may not be able to cross grassland successfully). To optimize survival, a conservation area should have a network of adjacent corridor habitats of various types within which many species could disperse. To connect habitat patches, a single corridor may have to provide the only route of movement for the populations. Corridors of poor-quality habitats may result in high dispersal mortality rates and reduced effectiveness of the regional dynamics to stabilize the metapopulation.

#### Management Considerations for Conservation Areas and Corridors

Active management practices often are required to maintain the ecological integrity of habitats within conservation areas and corridors. Controlled burns in chaparral and scrub may be necessary to provide a mosaic of successional stages and maintain high species diversity. Active management may also entail limiting public access or controlling various uses in the conservation area to prevent habitat degradation.

Management requirements may be constrained or aggravated by land uses adjacent to a conservation area. Urban or residential uses close to conservation areas or corridors may limit fire management capabilities; result in the need for added law enforcement to prevent unauthorized use; and require control of introduced species, pets, and pest species tolerant of human disturbance.

To minimize potential conflicts between adjacent land use and management activities within conservation areas and corridors, conservation areas should be established where adjacent land uses are compatible with management actions necessary within the conservation area. Also, management requirements within a conservation area should be considered before development is planned near the conservation area.

Potential conflicts between management and adjacent land uses may also be minimized by limiting the edge-to-interior ratio of the conservation area and reducing the amount of edge in contact with incompatible land uses.

#### METHODS USED TO DEVELOP MINIMUM CONSERVATION AREA AND CORRIDOR SYSTEM

The distributions of several HMP resources were analyzed to develop a minimum conservation area and corridor system. This system was used as a stepping stone toward development of the final conservation area and corridor system described in Chapter 4. Existing and potential land uses, opportunities for habitat restoration, and habitat enhancement were not factored into this preliminary analysis.

The analysis of HMP species distributions resulted in selection of four conservation areas and three corridors. The four conservation areas were created by combining the distributions of the following resources:

- sites supporting high or medium densities of known populations of sand gilia,
- sites supporting high- and medium-quality habitat (as defined by the density of buckwheat) or known occurrences of Smith's blue butterfly,
- sites supporting potential or known coastal nesting habitat for western snowy plover, and
- study polygons supporting the highest richness of HMP species (seven or more species or suitable habitat occurrences).

#### Habitat Management Plan Species Richness Study

The distribution and abundance of botanical resources at Fort Ord were initially identified in 1992 through surveys of a series of irregularly shaped and sized polygons (survey polygons) of uniform habitat (U.S. Army Corps of Engineers, Sacramento District 1992a). To conduct an appropriate analysis of richness patterns of HMP species at Fort Ord, land units of similar size had to be used. Because the size of the survey polygons varied greatly, these smaller survey polygons were aggregated into larger land units (richness study polygons) with a smaller variance in size. Richness study polygons were created to contain approximately 300-400 acres and to incorporate blocks of similar habitat where possible. The total number of HMP species that occurred in each study polygon was then calculated. Of the total of 18 HMP species, the number in any polygon ranged from one to nine.

#### Mapping the Minimum Conservation Area

A map was produced of high- and medium-density habitat for Smith's blue butterfly, high- and medium-density occurrences of sand gilia, known and potential nesting habitat for Western snowy plover and richness study polygons that support seven or more HMP species (Figures 2-1 and 2-2). The selection of a threshold of seven species was arbitrary. Mapping the resources in this manner resulted in identification of four discrete areas of Fort Ord that would protect the most HMP species with the least amount of habitat (Figure 2-3). These areas were then connected with potential habitat corridors to ensure that genetic migration could be maintained between the conservation areas (Figure 2-3). The conservation areas and corridors are described below.

#### DESCRIPTIONS OF MINIMUM CONSERVATION AREAS AND CORRIDORS

#### Inter-Garrison - Fritzsche Field Conservation Area

The Inter-Garrison-Fritzsche Field conservation area is a roughly triangular area approximately bounded by Inter-Garrison Road on the south, State Highway (SR) 1 and the City of Marina on the west, and Fritzsche Army Airfield and Reservation Road on the north (Figure 2-3). Dominant habitats are coast live oak woodland, coastal scrub, maritime chaparral, and annual grassland. Housing and other developments also exist in the conservation area. The area provides important habitat for the black legless lizard, sand gilia, and Monterey spineflower. The highest densities of sand gilia at Fort Ord exist in this conservation area. Areas of high species richness occur along Inter-Garrison Road and Reservation Road and between Fritzsche Army Airfield and the City of Marina.

#### **Coastal Dunes Conservation Area**

The Coastal Dunes conservation area occupies the western half of the Fort Ord dunes west of SR 1 (Figure 2-3). The Coastal Dunes conservation area provides important habitat for Smith's blue butterfly, Western snowy plover, black legless lizard, Monterey spineflower, and several small populations of sand gilia.



## Figure 2-1 High- and Medium-Density Occurrences of Federally Listed Species



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## *Figure 2-3* Conceptual Conservation Areas and Corridors



#### **Eucalyptus Road Conservation Area**

The Eucalyptus Road conservation area is a large conservation area located in the central portion of the installation surrounding Eucalyptus Road (Figure 2-3). Dominant habitats are maritime chaparral and coast live oak woodlands and savannas, with inclusions of grasslands. The area generally supports listed and proposed species at low densities, but supports a high richness of HMP species, particularly plants that characterize the sand hill and Aromas maritime chaparral subtypes. Vernal pools providing habitat for California linderiella are also present in the conservation area.

#### North-South Road Conservation Area

The North-South Road conservation area is located along the east side of North-South Road south of the cantonment area (Figure 2-3). The dominant habitat is maritime chaparral, which supports sand gilia and Monterey spineflower at low densities and a high richness of HMP species, particularly plants that characterize the sand hill maritime chaparral subtype.

#### Corridors

Habitat corridors were developed to provide avenues for wildlife and plant dispersal and genetic Interchange among the larger habitat blocks of the conservation areas (Figure 2-3). One corridor would link the North-South Road conservation area with the Eucalyptus Road conservation area and another would link the Eucalyptus Road conservation area with the Inter-Garrison-Fritzsche Field conservation area.

An additional corridor could link plant populations of the Inter-Garrison-Fritzsche Field and Coastal Dunes conservation areas. The link would have to be provided by habitat on the roadside and center median of SR 1. Sand gilia and Monterey spineflower occur on both sides of SR 1 where this corridor is located.

#### RELATIONSHIP OF FORT ORD TO OTHER MARITIME CHAPARRAL AND DUNE HABITATS

Fort Ord is mostly surrounded by developed and agricultural land, but protected and unprotected land supporting maritime chaparral and coastal dune habitats and HMP species occurs nearby (Figure 2-4).

#### Coastal Dune Habitat

Coastal dune habitat on private and public lands along the coast north and south of Fort Ord are known to support or have potential to support Smith's blue butterfly, sand gilia, Monterey spineflower, robust spineflower, coast wallflower, black legless lizard, and western snowy plover (Figure 2-4).

## *Figure* 2-4 Maritime Chaparral and Coastal Dune Habitats in the Vicinity of Fort Ord



#### Marina State Beach

Marina State Beach is contiguous with the north end of the coastal dunes of Fort Ord. The coastal strand habitat at Marina State Beach is known to support Smith's blue butterfly, sand gilia, Monterey spineflower, robust spineflower, coast wallflower, and black legless lizard. Beaches support western snowy plover nesting tastitat.

#### Sand City, Seaside, and Monterey

Dune habitats in Sand City, Seaside, and Monterey are contiguous with the south end of the coastal dunes at Fort Out (Figure 2-4). These dune habitats are heavily disturbed and fragmented by water treatment plants, hotel and residential development, sand mining operations, and roads.

#### Monterey State Beach

Monterey State Beach is divided into two parcels within the City of Monterey (Figure 2-4). The north parcel supports degraded dune habitat. The south parcel supports a narrow strip of beach with only a small amount of degraded coastal strand habitat between the beach and developed sites.

#### U.S. Naval Postgraduate School

The U.S. Naval Postgraduate School supports coastal dune habitats, including degraded and native coastal strand. These dunes are known to support many sand gilia.

#### Maritime Chaparral

Maritime chaparral habitat occurs on private and public lands to the east and south of Fort Ord and Is known to support or could potentially support sand gilia, Monterey spineflower, California linderiella, Seaside bird's-beak, Yadon's piperia, black legless lizard, Toro manzanita, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, coast wallflower, and Hooker's manzanita (Figure 2-4).

#### Toro Regional Park and Adjacent Private Land

Toro Regional Park supports stands of Aromas formation maritime chaparral disjunct from that on Fort Ord. The park is known to support Toro manzanita, Monterey ceanothus, and Eastwood's ericameria. Urban development, State Route 68, oak woodland, and grassland separate the maritime chaparral at Toro Regional Park from that at Fort Ord.

#### Monterey Peninsula Airport and Adjacent Private Land

Southwest of Fort Ord, Monterey Peninsula Airport and adjacent private property support maritime chaparral. These sites are known to support Seaside bird's-beak, Toro manzanita, sandmat manzanita, and Eastwood's ericameria. The maritime chaparral at the airport is separated from Fort Ord by State Route 68 and a narrow strip of oak woodland.

#### City of Monterey-Owned Ryan Ranch and Ryan Ranch of Monterey County

City of Monterey-owned Ryan Ranch and Ryan Ranch of Monterey County border Fort Ord on the south and support small patches of maritime chaparral. Some of these maritime chaparral patches are contiguous with Fort Ord maritime chaparral and others are separated by areas of grassland. Maritime chaparral at the west end of the city-owned Ryan Ranch forms a partial corridor between Fort Ord and the Monterey Peninsula Airport. Development already exists on both Ryan Ranch properties and additional development is proposed for these sites.

#### Laguna Seca Park

Small patches of maritime chaparral occur at the north edge of Laguna Seca Park contiguous with the maritime chaparral at the southwest corner of Fort Ord.

#### Laguna Seca Office Park and Laguna Ranch

Laguna Seca Office Park and Laguna Ranch support large areas of maritime chaparral contiguous with the south boundary of Fort Ord. This site likely supports sandmat manzanita, Monterey ceanothus, and Hooker's manzanita, based on occurrences of these species abutting the Fort Ord side of the boundary. Low-density residential development occurs within the maritime chaparral habitat at Laguna Ranch.

#### Sand City

Approximately 60 acres of sand hill maritime chaparral occurs in Sand City between SR 1 and Del Monte Boulevard. This site supports transitional habitat between sand hill maritime chaparral on Baywood sands and coastal strand habitat on coastal dunes. Large populations of sand gilia are known to occur at this site.

## Chapter 3.

# Habitat Management for Predisposal Actions

#### Western Snowy Plover

## Chapter 3. Habitat Management for Predisposal Actions

Predisposal actions include placing Fort Ord into a caretaker status, remediating contaminated sites, and supporting interim uses. As the 7th Infantry Division (Light) (IDL) realigns from Fort Ord, the Army will place structures, utilities, and operation and maintenance systems into a caretaker status until property disposal decisions are implemented. Caretaker status is defined by Army regulation as "the minimum required staffing to maintain an installation in a state of repair that maintains safety, security, and health standards".

Cleanup of contaminated sites is required in preparing lands for disposal and proposed future uses. The entire Fort Ord installation is listed on the National Priorities List as a Superfund site. A federal facilities agreement, negotiated under Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), requires the Army to perform the Superfund cleanup process that is described in the Other Physical Attributes Baseline Study of Fort Ord, California (U.S. Army Corps of Engineers, Sacramento District 1992). Cleanup activities that have potential to affect biological resources include contaminated soils treatment, landfill remediation, removal of lead and other heavy metals, and unexploded ordnance removal. Impacts resulting from each of these actions are discussed separately in this chapter.

HMP guidelines for the cleanup of contaminated sites have been developed based on the best available information. Mitigation for cleanup acitivities may be modified in the future based on the findings and conclusions in the Fort Ord Basewide Remedial Investigation/Feasibility Study, which is currently in preparation. Other mitigation measures may be considered based on site-specific information, results of human health and ecological resk assessment, and the development and screening of remedial alternatives. Any modifications to the HMP based on new information must be reviewed and approved by USFWS.

Interim uses, prior to disposal, could affect HMP species and habitats. Interim use is the use of real property through real estate documentation, such as leases, licenses, and permits, before disposal of federal land is accomplished. Interim uses could include leasing of office space, storage space, housing, and other developed facilities; training facilities; and grazing land to non-Army entities. Some public access and recreational use may also be permitted on limited areas of the Fort Ord dunes and beach prior to disposal of property west of Highway 1. Use permits are also possible for scientific and cultural uses. Interim uses on currently developed lands will have no impact on biological resources. Impacts resulting from interim uses on undeveloped land are addressed in this chapter.

#### **CONTAMINATED SOILS TREATMENT**

#### Impacts

Cleanup and remediation of contaminated soils will take place in developed areas of the Main Garrison that do not support natural habitat. No impacts on biological resources result at these sites.

February 2, 1994

#### Mitigation

No mitigation is required.

#### LANDFILL REMEDIATION

#### Impacts

Capping the landfills on the north and south sides of Imjin Road and remediating groundwater beneath the landfills will result in the loss of populations of Monterey spineflower and may result in the loss of sand gilia populations. The landfill north of Imjin Road encompasses approximately 30 acres and does not support Monterey spineflower or sand gilia; the landfill south of Imjin Road occupies approximately 120 acres and contains low-density populations of Monterey spineflower (Figure 3-1).

Capping the landfills will involve stripping existing vegetation from the landfill surfaces, which includes populations of Monterey spineflower. The placement of fill material will bury sites supporting low-density occupied habitat of Monterey spineflower and could eliminate small populations of sand gilia and medium-density occurrences of Monterey spineflower at the periphery of the landfill. Vehicle traffic bringing fill to the site could eliminate populations of these species at sites adjacent to the landfill. Constructing aboveground treatment facilities for contaminated groundwater will involve removing existing vegetation adjacent to the landfills and grading the ground surface, which could eliminate populations of sand gilia and Monterey spineflower.

#### Mitigation

Prior to landfill remediation, sand gilia and Monterey spineflower populations will be inventoried to estimate the number of plants to be removed by the action. Capping of landfills will not be initiated until midsummer, following seed production of sand gilia and Monterey spineflower. Seed from these species will be collected and stored before landfill remediation actions. Topsoil will be salvaged at sites supporting populations of these plants to recover seeds in the soil seed bank. Sand gilia and Monterey spineflower and seedbearing topsoil will be distributed in suitable habitat at sites adjacent to the landfill that are within the University of California landfill research area footprint (see Chapter 4, "University Research Area Landfill") (Figure 3-1). Aboveground treatment facilities for contaminated groundwater at the landfills will be sited to avoid all populations of sand gilia and Monterey spineflower and high-quality habitat.

#### Success Criteria

The restoration efforts will be considered successful if self-sustaining populations of sand gilia and Monterey spineflower result within naturally functioning maritime chaparral habitat at the University landfill research area.

### Figure 3-1 Locations of Sand Gilia and Monterey Spineflower Populations in and Adjacent to the Landfill Site



#### Monitoring

A monitoring program will be implemented to evaluate the success of restoring populations of sand gilia and Monterey spineflower and suitable maritime chaparral habitat for these species. Surveys of restoration sites will be conducted annually in late spring for 5 consecutive years following restoration. Annual monitoring procedures are as follows:

- Conduct surveys throughout each site to locate sand gilia and Monterey spineflower populations.
- Estimate the number of individuals of sand gilla and Monterey spineflower in populations found during surveys using direct counts, randomly spaced quadrats, or line transects, whichever is appropriate.
- Map the locations of populations and the extent of suitable habitat on an aerial photograph or topographic map at 1:12,000 or larger scale.
- Record changes in habitat conditions that may result in the conversion of suitable habitat to nonsuitable habitat for sand gilia and Monterey spineflower (e.g., overgrowth by shrubs or dense herbaceous cover).
- Take photographs of restored populations and habitat each year.

#### **Corrective Measures**

If success criteria are not met, modification of the habitat will be conducted to improve the maritime chaparral for sand gilia and Monterey spineflower habitat requirements. Examples of habitat modifications that could promote sand gilla and Monterey spineflower include vegetation thinning to open up sites between chaparral shrubs and minor ground disturbance to create loose, sandy habitat. The populations will be monitored annually for an additional 3-year period until success criteria are met.

#### REMOVAL OF LEAD AND OTHER HEAVY METALS

#### Impacts

Lead and other heavy metals may need to be removed at the beach firing ranges. Lead projectiles may be sifted out of sand at the firing ranges. Soils contaminated with dissolved metals would likely be excavated and disposed of offsite, incinerated onsite or offsite, or encapsulated to prevent leaching or future contact with other soils. In locations where these remediation measures are conducted, Monterey spine-flower, coast wallflower, Smith's blue butterfly, western snowy plover, and black legless lizard may be adversely affected through direct mortality and long-term loss of habitat.

Sands contaminated with heavy metals could be disturbed or removed in areas supporting up to 5% of the occupied habitat of Monterey spineflower at Fort Ord. The number of individuals and amount of habitat affected cannot be determined because the extent of lead removal is unknown. The coastal dune areas of Fort Ord support approximately 3-4% of the entire known range of Monterey spineflower.

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Smith's blue butterfly requires seacliff or coast buckwheat as host plants. If remediation of the beach firing ranges is required, remediation activities could involve soil excavation and removal of host plants used by the Smith's blue butterfly. Removal of host plants could also result in direct mortality to adults, larvae, or pupae depending on the time of year remediation takes place.

Coastal populations of western snowy plover nest on Pacific coast beaches above the high tide line. Western snowy plovers are highly sensitive to human disturbance. If lead removal is required on the beaches at Fort Ord, disturbance from remediation activities could cause nest failures for western snowy plovers, resulting in direct mortality.

The black legless lizard occurs in areas of loose, sandy soils supporting native dune, coastal scrub, or maritime chaparral vegetation. Soil excavation associated with lead removal on the dunes could result in mortality and loss of habitat for black legless lizards. The range of the black legless lizard is restricted to the Monterey Bay region. Intergrades between black and silvery legless lizards have been found elsewhere along the California coast from the east side of the San Francisco Bay to San Luis Obispo County, but the status and distribution of these varieties are unresolved.

Because of the limited range of the black legless lizard and the scarcity of suitable habitat in the Monterey Bay region, loss of habitat and individual animals at Fort Ord should substantially reduce the range of the species and could result in state or federal listing as threatened or endangered.

#### Mitigation

Studies are currently being conducted to determine if lead in the dunes at Fort Ord constitutes a potential risk to human health or biological resources. If the lead is found to be of no risk to humans, vegetation, or wildlife, lead removal will not take place or a limited lead removal program may be undertaken. If lead must be removed from the dunes at Fort Ord, the biological resources of all areas potentially affected should be examined as one unit rather than site by site. If all affected dunes are considered together, lead removal and mitigation can be planned in a manner that will minimize impacts on sensitive plant and wildlife species and increase the effectiveness and efficiency of dune restoration efforts. A comprehensive lead removal and dune restoration program will be developed that will provide guidelines for timing and location of lead removal and methods and priorities for restoration efforts. In addition to HMP species and habitat considerations, the timing and method of lead removal at specific sites will be adjusted based on the level of human health risk associated with each site.

#### Minimize Disturbance Associated with Lead Removal

Lead removal sites will be limited to the smallest area possible that will still ensure effective cleaning of the site. A temporary fence will be installed around the perimeter of all lead removal sites to retain activity within the designated area. Placement of all access roads, staging areas, and other appurtenant facilities will avoid areas containing HMP plant and wildlife species and native dune vegetation. Temporary fences or construction barriers will be installed around all appurtenant facilities.

#### Identify Resources and Restoration Potential Prior to Lead Removal

Once the Army has identified all sites where lead must be removed, these sites will be surveyed for plant and wildlife resources and the restoration potential for each area will be estimated. Before lead removal actions are initiated, each lead removal site will be surveyed for populations of sand gilia, Monterey spineflower, coast wallflower, and black legless lizard and for populations of or suitable habitat (buckwheat

populations) for Smith's blue butterfly. Beach areas within or near lead removal sites will be surveyed for western snowy plover nesting activity. The number of individuals of each of these species will be estimated for each lead removal site by direct counts or by using appropriate field sampling methods (e.g., quadrat or transect methods). These data will be used to establish mitigation success criteria.

Estimates of restoration potential will indicate plant and wildlife species that could be established and the population densities expected at each site following lead removal. Restoration potential should be estimated for native dune vegetation, sand gilla, Monterey spineflower, coast wallflower, black legless lizard, and Smith's blue butterfly. Estimates will be based on occurrences of these resources before lead removal, occurrence of non-native vegetation, current soil conditions, expected soil conditions after lead removal, slope, aspect, specific microhabitat conditions, proximity to existing populations of each species, and habitat associations of all species considered.

#### Develop Restoration Plans for Each Site Where Lead Will Be Removed

A restoration plan will be developed for each lead removal site. The Army may work cooperatively with California Department of Parks and Recreation (DPR) during development of restoration plans. The restoration plan will include plant and wildlife species to be established at the site, target densities for all species, a monitoring plan, and corrective measures if goals are not met. At a minimum, native dune vegetation will be established at each site, as well as HMP species populations equitable with those that were removed. Specific success criteria for restoration of vegetation and wildlife populations are described in the "Success Criteria" section following the mitigation section.

Recontouring of sand dunes following lead excavation activities will be included in restoration plans. All restored areas will be recontoured to create a natural dune landscape that grades smoothly into existing topography.

Seed and/or cuttings for revegetation will be collected from Fort Ord or from other dune areas less than 10 miles from the installation. Plants that may be transplanted will be removed from areas before cleanup and transferred to restoration areas. Seed will be collected from plants within Fort Ord or from adjacent dunes and used for restoration. Seed may be either directly broadcast in restoration areas or propagated in nurseries and transplanted, depending on which method is most successful for each species. Purchased nursery stock of local origin will be used only if at least three attempts to use transplants and seed collected from local dunes prove insufficient to meet restoration success criteria.

The Army and DPR may work cooperatively on restoration efforts. The Army will be responsible for restoring biological resources lost during lead removal so that criteria described in the "Success Criteria" section are met. DPR will be responsible for additional restoration and/or enhancement outside of lead removal areas required to compensate for impacts associated with reuse of Fort Ord. Success criteria for restoration efforts to be completed by DPR are described in Chapter 4.

DPR may complete its restoration and enhancement responsibilities in conjunction with Army restoration efforts or after Army restoration activities are complete. The Army will coordinate with DPR to ensure that Army restoration activities are compatible with future DPR restoration and enhancement goals. The Army may also contract with DPR or other appropriate agencies to develop and implement dune restoration plans associated with lead removal.

Restoration of HMP species populations after lead removal will not be conducted in areas designated by DPR for future development. After lead removal, sand will be stabilized in these areas using straw plugs or other suitable techniques. Biological resources removed in these areas during lead removal will be compensated for at other dune restoration sites where development is not proposed.

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#### Remove Lead

The order of lead removal from cleanup sites will be based primarily on the public health risk associated with each site. Sites with the greatest potential health risk will be cleaned first. However, the total dune area disturbed by lead removal at any one time may also be limited to protect biological resources. No more than 10% of the coastal Fort Ord occurrence of HMP species populations or habitat may be disturbed at any one time. Restored populations and habitat for each species can be included as part of the total coastal occurrence when restoration success criteria have been fulfilled.

Before an area is disturbed for lead removal, all plants that may be transplanted will be removed and planted in an area that has been cleaned previously. Seed also will be collected from all available plants and used for propagation of new material and restoration.

Immediately after lead removal procedures have been completed in an area, straw will be plugged and spread over the location to stabilize the loose sand and the restoration plan for that site will be implemented. Lead will not be removed in a new area until resources are available to begin restoration in the previously cleaned location.

Mitigation for Impacts on wildlife species may alter the timing of lead removal in certain areas. Specific mitigation measures for vegetation and wildlife species are described below.

#### **Erosion Control**

The loose, sandy texture of the dune soils at Fort Ord (U.S. Army Corps of Engineers 1992), the temporary removal of protective vegetation during lead removal, the lack of particle-binding organic matter in the soil, and the presence of strong prevailing winds off the Pacific Ocean are all factors that combine to create a high potential for wind erosion during lead cleanup.

Use of straw plugs and straw mulch has been shown to be an effective wind erosion control technique at Marina State Beach and other coastal dunes in the Monterey Bay area. Four-foot-high wood lath and wire or plastic snow fences can be used to reduce wind erosion in the most severe sites. Snow fences are placed perpendicular to the prevailing wind direction in parallel rows approximately 100 feet apart.

Control of windblown sand can best be achieved by controlling the movement of sand over an entire area of bare sand. Problems often occur when stabilization is attempted downwind from an area of drifting, unstable sand. The blowing sand from the unstable upwind area will continually cover the mulch and/or seedling plants on the treatment site. If an entire area can be stabilized, straw plugs or straw mulch is an inexpensive, effective technique.

#### Native Vegetation

In accordance with the overall restoration plan, native dune vegetation will be reestablished at each lead removal site following cleanup actions. The procedure given below will be followed to restore native dune vegetation. Restoration techniques may be modified if necessary to better accommodate site-specific conditions or if previous restoration efforts at Fort Ord indicate different techniques may be more successful. USFWS must approve all major modifications of restoration procedures. This procedure is based on a similar, nearby restoration effort at Marina State Beach, where various methods were used to determine the most successful procedure for restoring coastal dune habitat (Ferreira and Gray 1987):

 Collect seeds of native plants onsite and from other local dune populations in the Monterey Bay region.

- Recontour sand following lead excavation activities to create a natural dune landscape that grades smoothly into the existing dune topography. This measure will be included in the restoration plans for each lead removal area.
- Remove ice plant by hand and dispose of the plants offsite, remove by hand and lay the plant
  upside down on the sand or in compost piles, or apply Roundup or other appropriate herbicides
  and leave dead plants in place to hold substrate.
- Promote dune stabilization where sand is exposed. The "straw planting" technique described in Ferreira and Gray (1987) is a method that could be used.
- Prepare two types of seed mix that reflect the species compositions characteristic of coastal strand and dune scrub habitats, depending on where restoration activities are to occur on the dunes. Table 3-1 illustrates possible seed mixes. Species may be planted as seeds or seed-lings, depending on which method is most effective.
- Apply seed mixes to coastal strand restoration sites in the fore dune and mid-dune habitats, and dune scrub restoration sites in the rear dune habitat, at approximately 40 pounds per acre (lbs/ac). Irrigation is not usually necessary for dune restoration. Summer irrigation should not be conducted because of its high potential to promote the growth of weedy, non-native species, and to alter the life cycle of native plants.
- Plant nursery propagated seedlings in locations with appropriate microhabitat conditions for each species.
- Control human access to dunes and implement a beach access plan during the interim period between closure and disposal of Fort Ord.

Potential sources of labor that may be employed in implementing the restoration procedures described above include the California Conservation Corps (CCC), the Monterey County Court Work Alternative Program, and CNPS volunteers. The Army may also contract with DPR to implement restoration procedures.

Specific mitigation actions described below for sand gilia, Monterey spineflower, coast wallflower, Smith's blue butterfly, and black legless lizard will be conducted in conjunction with the restoration procedures described above.

#### Sand Gilia, Monterey Spineflower, and Coast Wallflower

In conjunction with and following establishment of native dune vegetation, establishment of populations and habitat for sand gilia, Monterey spineflower, and coast wallflower will be encouraged within the dune restoration sites. The following measures will be taken to establish sand gilia, Monterey spineflower, and coast wallflower in the dunes:

- Collect and store all seed from populations of sand gilia, Monterey spineflower, and coast wallflower to be removed by lead removal activities.
- Collect seed from other populations of these species on the Fort Ord dunes or other Monterey Bay dune sites. Seed should be collected from no more than 10% of plants in these populations to prevent adverse effects on local reproduction.

#### **Coastal Strand**

Abronia latifolia Abronia umbellata Ambrosia chamissonis Armeria maritima Artemesia pycnocephala Atriplex leucophylla Cakile maritima Calystegia soldanella Camissonia cheiranthifolia Castilleja affinis Castilleja latifolia Dudleya caespitosa Ericameria ericoides Eriogonum latifolium<sup>a</sup> Eriogonum parvifolium<sup>a</sup> Eriophyllum staechadifolium Lessingia filaginifolia Phacelia ramosissima Poa douglasii Vulpia octoflora

#### Dune Scrub

Baccharis pilularis vat. consanguinea Baccharis pilularis vat. pilularis Ericameria ericoides Lupinus arboreous Lupinus chamissonis

<sup>\*</sup> Emphasize at Smith's blue butterfly restoration sites.

Distribute seed into suitable habitat for each of these species within the restoration sites following restoration of dune topography and dune vegetation. Plants may be germinated in a nursery and whole plants transferred to the restored dune habitat if this method is found to be more successful than broadcasting seed.

Restoring lead cleanup sites to dune contours with native vegetation is expected to result in microhabitat conditions favoring the establishment of at least small, localized populations of sand gilia; larger, widespread populations of Monterey spineflower; and scattered individuals of coast wallflower. Sand gilia and Monterey spineflower typically occur in small openings in stabilized dune vegetation.

#### Smith's Blue Butterfly Habitat and Populations

The Smith's blue butterfly is completely dependent on seacliff buckwheat and coast buckwheat for oviposition, food for larvae, and as a nectar source for adults. Both seacliff and coast buckwheat occur at Fort Ord.

The ranges of seacliff and coast buckwheat overlap in Monterey and San Luis Obispo Counties (Munz 1959). This range overlap allows both these food plants to be used by Smith's blue butterfly at Fort Ord. However, variations in the life histories for both buckwheat species have resulted in differences in timing of breeding for Smith's blue butterfly at Fort Ord. Coast buckwheat blooms up to 1 month before seacliff buckwheat. Adult Smith's blue butterflies emerge to breed as host plants bloom. The difference in blooming times between seacliff and coast buckwheat has instigated a temporal breeding separation between Smith's blue butterflies using each species of buckwheat, resulting in two relatively distinct races of butterflies (Arnold 1980). One race occurs primarily in the northern portion of the dunes and favors coast buckwheat, and the other occurs primarily in the southern portion of the dunes and favors seacliff buckwheat (Arnold 1980). Natural speciation may be occurring between the two races of Smith's blue butterfly (Arnold pers. comm.). Maintaining spatial separation of coast and seacliff buckwheat at Fort Ord will allow this process to continue.

No more than 10% of the coastal Fort Ord occurrence of medium- and high-density seacliff and coast buckwheat and Smith's blue butterfly may be disturbed at any one time during lead removal. If more than 10% of the total population is to be disturbed, the additional buckwheat or butterfly populations cannot be removed until restoration sites that fully compensate for the affected areas have been successfully established.

Buckwheat will be planted as seedlings in restoration areas. Seed will be collected from seacliff and coast buckwheat plants at Fort Ord and cultivated in a nursery for up to 9 months. This method was chosen because success rates are higher for planting seedlings than for broadcasting seed, and buckwheat plants reach maturity faster if initially grown in greenhouse conditions (Kreiberg pers. comm.).

The two races of Smith's blue butterfly and species of buckwheat at Fort Ord should be treated separately during dune restoration efforts. Coast buckwheat affected by lead removal should be replaced with coast buckwheat, and seacliff buckwheat should be replaced with seacliff buckwheat. Plantings of these two species should not be mixed in the same area because densities of favorable plants for each race of Smith's blue butterfly would be diluted at the site and because favorable habitat conditions differ for each plant. Coast buckwheat occurs primarily in fore dune habitat where there is more coastal influence, and seacliff buckwheat occurs primarily in more sheltered rear dune habitat (Arnold pers. comm.). Revegetation efforts should mimic this trend.

If a Smith's blue butterfly population occurs at a cleanup site, the larvae (caterpillars) of the butterflies will be moved to areas of existing occupied habitat before cleanup begins to minimize mortality during lead removal. Once a week during the time larvae are present (early August to mid-September), larvae will be removed from flowering heads of buckwheat at sites to be disturbed and placed on existing flowering heads in restored areas where adult Smith's blue butterflies have bred previously. Larvae must be placed directly on the flowering heads of each plant because they do not appear to disperse well and would probably not find the heads if placed elsewhere on the plant or on the ground (Arnold pers. comm.). Larvae from coast buckwheat plants should be placed on coast buckwheat plants, and larvae from seacliff buckwheat plants should be placed on seaciff buckwheat plants.

Larvae should be moved to areas where adults have been successful previously because all areas that support buckwheat may not necessarily be suitable for Smith's blue butterfiles. Adult butterfiles require specific microhabitat conditions associated with aspect, protection from wind, and other factors (Arnold pers. comm.). Although moving larvae to sites where adults have bred previously may potentially stress the carrying capacity for the area, this technique should maximize the potential for relocated larvae to reach adulthood and breed successfully.

The larvae of Smith's blue butterfly was chosen for relocation rather than pupae or adults for several reasons. Pupae are fragile and often difficult to find when they occur on the ground within leaf litter. Finding, collecting, and handling pupae during relocation could result in high levels of mortality (Arnold pers. comm.). Adult butterflies are also fragile and could suffer injury during capture and handling. Additionally, moving adults could disrupt mating activities, and females that have already mated and laid eggs before being captured would not contribute to population establishment at the restoration site. Although larvae are also fragile, finding, collecting, and handling does not appear to present as much risk of damage or mortality to larvae as to pupae or adults.

#### Western Snowy Plover

Coastal populations of western snowy plovers breed on the upper portions of flat sandy beaches above the high tide line (Grinnell and Miller 1944). Breeding western snowy plovers are very sensitive to human disturbance, and nesting success can be significantly reduced by human intrusion (57 FR 1443, January 14, 1992).

To prevent disturbance to western snowy plovers, restrictions will be placed on timing of lead removal and restoration activities in some areas. If lead removal or restoration operations can be seen or heard from the shoreline where snowy plovers nest, all activities will be conducted between October and February (avoiding the snowy plover breeding and nesting season). Cleanup and restoration personnel will not be permitted on the beach during the breeding and nesting season.

Surveys for western snowy plovers may be conducted in May to determine exact nesting locations. If no nesting birds are found near an area proposed for lead removal or restoration, these activities may proceed through the nesting season and personnel may use that portion of the beach during that time.

#### Black Legless Lizard Habitat and Populations

Black legless lizards occur at Fort Ord in areas with sandy soils and native dune, coastal scrub, and maritime chaparral vegetation. Black legless lizards appear to be more abundant in dune habitats than in other habitats.

Although restoration of dune habitat will mitigate impacts on black legless lizards, a relocation plan has been developed to minimize losses of individual animals. If black legless lizards occur at a site proposed for lead removal, they will be captured and relocated to a previously cleaned and restored area before lead removal activities begin. However, relocation efforts will not be required in areas of poor quality habitat, such as iceplant mats, where black legless lizards may occur but only in very low densities. The initial resource surveys will determine where black legless lizards occur. Areas where black legless lizards are found will not be cleaned until habitat conditions in restored sites are adequate to support black legless lizards to be relocated. Necessary habitat conditions include moderate to high densities of mock heather, bush lupine, and other shrubby plant species; accumulations of leaf litter at the base of vegetation; and abundant invertebrate populations. The restoration of native dune habitat sufficient to satisfy success criteria described in the next section, especially of dune scrub of the rear dune habitat, will result in suitable habitat for black legless lizard.

Capture and relocation efforts will take place in April when black legless lizards are most likely to be near the soil surface (Bury 1985). All appropriate habitat will be thoroughly surveyed once a week during the month of April. If more lizards are found in the last week than in any previous week, surveys will continue for 2 more weeks. Surveys will consist of raking the leaf litter and sand under each shrub within the area to be disturbed to a minimum depth of 8 inches. Surveys will take place in the mornings and evenings when black legless lizards have been most frequently captured in the Monterey Bay region (Bury 1985). In addition to raking, "coverboards" may be used to capture black legless lizards. Coverboards are places of untreated lumber, sheet metal, corrugated steel, or other flat material used to survey for reptiles and amphibians. The coverboards are placed flat on the ground in survey areas and checked periodically. Reptiles and amphibians congregate under the boards to seek cover, because of the favorable thermal environment under the boards, and to feed on invertebrates that are also attracted to the boards. If used, coverboards will be placed in the survey area 2 weeks before surveys begin and will be checked once a week during raking surveys. Captured lizards will be put Immediately into containers containing moist paper towels and released at the base of bush lupines or mock heather in the designated restoration area no more than 3 hours after capture.

Additional surveys may also be conducted in conjunction with vegetation removal for lead cleanup. Bush lupine, mock heather, and other shrubby species may be removed individually by hand or mechanically. As each plant is removed, the disturbed soil can be searched for black legless lizards.

Release areas will be surveyed the following April to determine whether relocation areas remain occupied. Capture and relocation methods will be modified if necessary based on followup survey results.

Only coverboards will be used during followup surveys to prevent disturbance to leaf litter and plant root systems caused by raking in restoration areas. Because black legless lizards have very low dispersal ability, any lizards present in restoration areas will likely be relocated animals, not immigrants from other areas.

#### Success Criteria

#### Native Dune Vegetation

Healthy native coastal dune habitat is described in Chapter 2 in the "Habitat Management Plan Habitats" section. This description and comparisons with other sites supporting coastal strand and dune scrub should be used to measure the success of restored habitat. The restored habitat will consist of naturally regenerating native coastal strand and dune scrub habitats. After 5 years, the vegetative cover and species diversity should be similar to existing occurrences of these habitats in the Monterey Bay area. The extent of non-native, weedy species (e.g., African ice plant and European beach grass) shall be no more than 20% of vegetative cover.

#### Sand Gilia, Monterey Spineflower, and Coast Wallflower

Restoration efforts for sand gilia, Monterey spineflower, and coast wallflower will be considered successful if:

- self-sustaining populations of these species result within naturally functioning coastal strand habitat,
- suitable habitat for these species is created within the coastal strand habitat that is at least as
  extensive as that present prior to site remediation, and
- annual reproduction and soil seed bank of restored populations are comparable to that of existing populations nearby.

#### Smith's Blue Butterfly

To mitigate for removal of potential but unoccupied Smith's blue butterfly habitat, new populations of seacliff and coast buckwheat will be established at dune restoration sites. Mitigation will be considered successful if buckwheat populations established in restoration areas are of at least equal size and density as populations lost during lead removal. These populations must also produce at least equal densities of flowering heads as do removed populations. Populations of seacliff and coast buckwheat should not be mixed in restoration areas.

If occupied Smith's blue butterfly habitat is removed during lead cleanup, both buckwheat populations and butterfly populations must be established in restoration areas. Success criteria for buckwheat populations are the same as those described above for unoccupied habitat. Mitigation for removal of butterfly populations will be considered successful if restored areas support Smith's blue butterfly populations of at least equal size and density as pre-lead-removal populations for at least 2 of 5 years.

Two methods may be used to determine size and density of pre-lead-removal populations of Smith's blue butterfly. Under Option 1, Smith's blue butterfly populations to be removed during lead cleanup should be monitored for 3 years prior to cleanup activities. Data on population size and density will be collected each year during the adult flight period. An average population size and density based on the 3 years of monitoring will be used as the baseline population condition.

Option 2 will be applied if existing Smith's blue butterfly populations cannot be monitored for 3 years prior to lead removal. Under this option a complete survey of the dunes at Fort Ord will be conducted the year prior to the beginning of lead removal. Estimates of population size and density for all Smith's blue butterfly populations at Fort Ord will be combined to provide an average population density for the area. Successful establishment of Smith's blue butterfly populations will be demonstrated if restored areas support butterfly populations at least equal in density to the average preproject density for the total dune area.

#### Western Snowy Plover

Mitigation for potential impacts on nesting western snowy plovers are designed to prevent disturbance to the nesting population. Mitigation will be considered successful if lead removal activities are not visible or audible from the beach at Fort Ord during the western snowy plover breeding and nesting season.

#### Black Legless Lizard

Losses of black legless lizard populations during lead removal will be mitigated for by establishing new black legless lizard populations in restored dune habitat. Mitigation will be considered successful if, after black legless lizard relocation, adult lizards are found every year for 5 years, with numbers of lizards encountered during monitoring remaining stable or increasing for at least 2 of the 5 years.

#### Monitoring

A monitoring program will be conducted to evaluate the success of restoration efforts for native dune vegetation, sand gilia, Monterey spineflower, coast wallflower, Smith's blue butterfly, western snowy plover, and black legless lizard. The following monitoring procedures will be conducted annually, or more often as stated.

#### Native Dune Vegetation, Sand Gilia, Monterey Spineflower, and Coast Wallflower

Monitoring of restored dune vegetation, sand gilia, Monterey spineflower, and coast wallflower will include the following actions:

- Conduct releves or transects of random samples of restored coastal dune vegetation and gather data on species composition, cover, and reproduction of dune plants. Estimate cover of nonnative, weedy plant species.
- Estimate the number of individuals of and amount of suitable habitat for sand gilia, Monterey spineflower, and coast wallflower on restoration sites. Map the locations of populations and habitat.
- Measure reproduction in populations of sand gilia, Monterey spineflower, and coast wallflower at restoration sites and at nearby existing population sites.
- Estimate relative amounts of viable seed in the soil seed bank between restoration and existing
  populations of sand gilia, Monterey spineflower, and coast wallflower.
- Record vegetation establishment with color photographs from fixed locations.

#### Smith's Blue Butterfly

A monitoring program will be implemented to evaluate the success of restoring potential and occupied Smith's blue butterfly habitat. Monitoring for the first 2 years after planting will determine whether buckwheat plants are surviving in adequate numbers to potentially fulfill success criteria. Monitoring for quality of Smith's blue butterfly habitat will be conducted for 5 years and will begin 2 years after planting to allow buckwheat seedlings to reach a mature state. The monitoring procedures for potential habitat are as follows:

 Conduct annual surveys of seacliff and coast buckwheat populations for 2 years after planting to determine densities and survivorship of newly established seedlings.

- Conduct annual surveys of seacliff and coast buckwheat populations at restoration sites for 5 consecutive years starting 2 years after planting of buckwheat seedlings to determine quality of habitat for Smith's blue butterfly.
- Use randomly placed quadrats of appropriate size and number to accurately estimate the density of seacliff and coast buckwheat plants in restoration areas during both the 2-year and 5-year monitoring periods. During the 5-year monitoring period the same quadrats will also be used to determine vegetative cover of these species and average number of flowering heads per plant.
- Each year plot on the ground and map the boundaries of seacliff and coast buckwheat populations surveyed to determine if populations size is expanding, contracting, or remaining stable.

The vegetation monitoring procedures for occupied habitat will be the same as for potential habitat. In addition Smith's blue butterfly populations will be monitored where occupied habitat is to be restored. Monitoring procedures for butterfly populations are:

- Conduct annual surveys for Smith's blue butterfly for 5 consecutive years, starting 2 years after buckwheat seedlings have been planted.
- Sufficient surveys will be conducted during the adult flight period (mid-June to early August for populations using coast buckwheat and mid-July to early September for populations using seacliff buckwheat) to accurately estimate the peak and average population densities during the flight period, length of flight period, and total number of adults present each season.
- Use randomly placed quadrats of appropriate size and number to accurately estimate the density of Smith's blue butterflies in the restored area.

#### Western Snowy Plover

A monitoring program will be implemented to evaluate whether lead removal activities could potentially disturb nesting western snowy plovers. The monitoring procedures are as follows:

- In mid-February during each year that lead removal activities are taking place, an observer will walk the coastline along Fort Ord.
- The observer will record all locations where lead removal activities are visible or audible.
   Activities that can be seen or heard from the coastline will be stopped between March 1 and September 30.
- If lead removal is to begin in a new area between March 1 and September 30, the location will be assessed for potential to be seen or heard from the beach. If it appears activities will be visible or audible from the beach, lead removal in that area will not begin until October 1. If it does not appear that activities will be seen or heard from the beach, lead removal will be permitted on a trial basis. Once removal activities have begun in the new area, the beach will be walked to determine whether activities are visible or audible from the beach.
- If for reasons of public health or safety lead removal must take place in an area where the activity will be visible or audible from the beach during the western snowy plover nesting season, the portion of beach to be affected will be surveyed thoroughly for snowy plovers in late April. If no snowy plovers are observed, lead removal activities may proceed. If snowy plovers are observed, USFWS will be notified and will be asked to suggest appropriate actions.

#### **Black Legless Lizard**

Annual black legless lizard surveys will be conducted for 5 years after lizard relocation into restoration areas. To avoid disturbing vegetation in restoration areas, raking will not be used as a survey technique. Coverboards will be placed under shrubs in the restoration area in early March. Sufficient numbers of boards will be used to adequately assess black legless lizard population trends in the area. Boards will be checked once a week during the month of April. If more lizards are found in the last week than any previous week, surveys will continue for 2 more weeks. Numbers of lizards found and size class (snout-vent length) will be recorded.

In addition to this monitoring, the Army will allow appropriate agencies (i.e., University of California, California State University, or USFWS) to conduct research on relocated black legless lizards in conjunction with Army relocation and monitoring efforts. Research studies may include but are not limited to marking and tracking individual lizards, using monitoring data for mark-recapture analysis, and measuring specific habitat conditions in restoration sites. Agencies conducting the research will be responsible for research costs.

#### **Corrective Measures**

If monitoring indicates success criteria are not met for native dune vegetation or any HMP species, correction measures will be implemented as described below.

#### Native Dune Vegetation, Sand Gila, Monterey Spineflower, and Coast Wallflower

Based on the results of each year's monitoring, the restored dune habitat will be supplementally recontoured, weeded, replanted, or reseeded as needed to meet the established success criteria.

Improvement of sand gilia, Monterey spineflower, and coast wallflower habitat will be conducted if success criteria for these species are not met.

#### Smith's Blue Butterfly

If during the first 2 years after planting buckwheat seedlings it appears densities or survivorship of young plants will not be adequate to eventually fulfill success criteria for restoration of potential Smith's blue butterfly habitat, additional plantings of coast or seacliff buckwheat seedlings will be attempted in the restoration area to increase densities of individual plants. If after two attempted plantings densities of young plants are still not sufficient to eventually meet success criteria for densities of mature plants, a new area will be used as a restoration site and will be monitored using the same procedures as for the original restoration site.

If sufficient densities of mature plants are present after the 2-year monitoring period to fulfill success criteria, but densities of flowering heads are inadequate, one additional planting of buckwheat seedlings will be attempted to increase densities of flowering heads available in restoration sites. If 2 years after the supplemental planting densities of flowering heads still do not fulfill the success criteria, a new area will be used as a restoration site and will be monitored using the same procedures as for the original restoration site.

If the restoration area is intended to support Smith's blue butterfly populations, but size or density of butterfly populations does not fulfill the success criteria for the site, additional seacliff or coast buckwheat will be planted to attempt to improve the habitat quality. Areas of additional plantings will be monitored for 5 years to determine whether Smith's blue butterfly populations increase in size or density to sufficiently fulfill the success criteria. If after one attempted planting success criteria are not met, a new area will be used as a restoration site. The new area must meet the same success criteria and will be monitored in the same manner as the original restoration site.

If a restored area intended to replace occupied Smith's blue butterfly habitat satisfies success criteria for buckwheat populations, but supports no Smith's blue butterflies, a new restoration site will be developed within 40 meters of an existing Smith's blue butterfly population. [Average daily movements for female Smith's blue butterflies are roughly 47.5 meters, and approximately 34.4 meters for males (Arnold 1983)]. The new site will be monitored in the same manner as the original site to determine if success criteria are met.

An alternative corrective measure could be transplanting Smith's blue butterfly larvae to the existing restoration site instead of creating a new restoration site. Moving Smith's blue butterfly larvae must be approved by USFWS before this measure is attempted. If larvae are to be transplanted, trial studies will be conducted with a small number of larvae to test whether larvae pupate and metamorphose into adults at the site. If trials are successful, more larvae may be moved. All transplanted farva will be monitored to determine if adults breed successfully. Larvae will not be transplanted to sites where butterfly populations already exist within 40 meters of the site. This would indicate that microhabitat conditions are not suitable for Smith's blue butterflies in the restoration area.

#### Western Snowy Plover

If at any time between March 1 and September 30 lead removal activities are audible or visible from the coastline, those activities will be stopped until after October 1. If for reasons of public health or safety lead removal must take place in an area where the activities will be seen or heard from the beach, the monitoring procedures described above will be followed.

#### **Black Legless Lizard**

If success criteria are not met after 5 years, but the number of legless lizards encountered during monitoring increases in the final year, monitoring may continue for 3 more years. If success criteria are not met after the additional 3 years or after the first 5 years because the number of lizards encountered remains low or declines, a new restoration site will be created.

Data gathered during monitoring of the unsuccessful restoration site will be used to better design and implement a restoration plan for the new site. The new restoration site will connect with an existing black legless lizard population and will be monitored for 5 years after it is determined that microhabitat conditions are suitable for black legless lizards (sufficient shrub size, leaf litter, and invertebrate populations). Success criteria for the new site will be the same as for the original restoration site.

#### UNEXPLODED ORDNANCE REMOVAL

#### Background

Fort Ord contains a approximately 8,000-acre inland range area with unexploded ordnance, plus additional training areas which may contain unexploded ordinance. Figure 3-2 illustrates the present inland

firing ranges, historic firing ranges, and other known sources or potential source areas of unexploded ordnance. The highest density of unexploded ordnance and spent ammunition is expected in the central portion of the inland range area. Lower densities of unexploded ordnance are expected in the outer portions of the inland range area and in the training areas to the north and east of the inland range area.

Surface clearance of unexploded ordnance may involve selectively removing vegetation, possibly by burning to clear the ground surface. Burning may be infeasible in overly dense or high-moisture content vegetation in some areas of the inland range area, in which case, vegetation may be cut and chipped by a "brush hog" or other mechanical means. Where burning or chipping may be used, burning will be the preferred method because of the beneficial effects of fire on HMP species associated with maritime chaparral. Areas that are chipped will be burned as soon as conditions are appropriate.

After vegetation clearing, unexploded ordnance will then be located by visual and electromagnetic means (metal detectors), identified, and disposed of. During the location process, inert ordnance and ordnance scrap will be collected and properly disposed of. Removal of unexploded ordnance may require excavation of soil from around the ordnance. Excavations could range in size from a single square foot to several square feet, depending on the type, location, and position of unexploded ordnance. A potential method of disposal of unexploded ordnance is *in situ* detonation, which would increase the amount of soil disturbed.

Subsurface investigation and clearance activities may be conducted in areas where historical record reviews and interviews indicate the possible presence of buried ammunition or in impact areas where the velocity, trajectory, and momentum of munitions are likely to cause them to penetrate the ground's surface. Subsurface unexploded ordnance is located by use of metal detectors, ground-penetrating radars, or other appropriate methods, and then the area is excavated to determine the source of the magnetic or radio wave anomaly. Depending on the type and means of delivery, excavations could reach depths greater than 10 feet and have surface areas ranging in size from several square feet to tens of square feet. The preferred disposal method for subsurface unexploded ordnance is *in situ* detonation, which would increase the amount of soil disturbed.

#### Impacts

Surface clearance from the inland range area and other live fire areas could result in the loss of portions of sand gilia and Monterey spineflower populations. Sand gilia and Monterey spineflower plants would be removed by vegetation burning and cutting, whole plant excavation, crushing or trampling from movement of excavation equipment and removal team foot traffic, and onsite ordnance detonation. The maritime chaparral habitat that support these species would be removed by burning and cutting.

Surface clearance of unexploded ordnance could occur in areas supporting approximately 75% of the occupied habitat of sand gilia and Monterey spineflower at Fort Ord. The number of individuals and amount of habitat affected cannot be determined because the locations and amount of unexploded ordnance is unknown. Approximately 50-70% of the entire range of sand gilia and about 75-95% of the entire range of Monterey spineflower are located on Fort Ord.

California linderiella and California tiger salamanders occur in ephemeral, freshwater aquatic habitats, such as vernal pools, swales, and ponds. California linderiella eggs are laid by adults when water bodies are full and remain in the soil after vernal pools and ponds have dried until the following rainy season. California tiger salamanders breed and lay eggs in these water bodies where the young develop from aquatic larvae to adults and leave the area by late spring. The excavation necessary for removal of subsurface unexploded ordnance could fill or severely disrupt six ponds and 10 vernal pools that are considered to be habitat for California linderiella and California tiger salamanders. If unexploded ordnance

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is found inside a vernal pool or pond, *in situ* detonation of the ordnance may disrupt a significant portion of the soil in the area and potentially destroy California linderiella and California tiger salamander habitat and California linderiella eggs in the soil. Soil disruption during excavation or *in situ* detonation could also cover California linderiella eggs with sufficient soil to prevent them from hatching, resulting in direct mortality.

Ponds provide the only potential habitat for California red-legged frogs at Fort Ord because the adult frogs require a relatively permanent water source. Although no California red-legged frogs were found at Fort Ord during wetland surveys (Flora and Fauna Baseline Study of Fort Ord, California), the installation is within the range of the species and potential habitat is available. Excavation or *in situ* detonation of unexploded ordnance would require ponds to be drained and thus could degrade the habitat quality of the ponds for this species.

The six ponds and 10 vernal pools described above constitute wetland habitat. Unexploded ordnance that must be detonated onsite could adversely alter the hydrological functioning of these wetlands. The exact amount of surface clearing that will occur in wetlands is unknown. Vernal pools and freshwater marshes potentially are jurisdictional wetlands regulated under the Clean Water Act. Placing dredged or fill material in wetlands would require a permit from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Surface clearance of unexploded ordnance could result in the loss of portions of populations and habitat of other HMP plant species occurring at Fort Ord. Potential impact mechanisms are the same as those described above for sand gilia and Monterey spineflower. Surface clearance could result in the loss of Individual plants and reduction of suitable habitat for Seaside bird's-beak, Eastwood's ericameria, coast wallflower, Toro manzanita, sandmat manzanita, and Monterey ceanothus. The amount of loss of these species cannot be estimated because the amount of buried ordnance has not been determined. Large reductions in numbers and habitat for Seaside bird's-beak, Eastwood's ericameria, sandmat manzanita, and Monterey ceanothus could result in their eligibility for federal listing as threatened or endangered.

Surface clearance of unexploded ordnance in the inland range area and other live firing areas could result in adverse effects on the habitat of black legless lizards at Fort Ord and direct mortality to individual animals.

The black legless lizard occurs in areas of loose sandy soils supporting native dune, coastal scrub, or maritime chaparral vegetation. The range of the black legless lizard is restricted to the Monterey Bay region. Intergrades between black and silvery legless lizards have been found elsewhere along the California coast from the east side of San Francisco Bay to San Luis Obispo County, but the status and distribution of these varieties are unresolved.

Surface clearance of unexploded ordnance could result in the long-term loss of extensive areas of habitat occupied by maritime chaparral. Approximately 80% of the maritime chaparral on Fort Ord may contain unexploded ordnance. The amount of vegetation removed for surface clearing, however, cannot be estimated because the specific location and amount of ordnance in the ground is unknown.

#### Mitigation

Mitigation measures for impacts on HMP species and habitats resulting from unexploded ordnance sampling and cleanup activities will be implemented at all sites not planned for development (see Chapter 4). The primary objective of mitigation efforts is to reestablish healthy, high-diversity maritime chaparral habitat that has a variety of seral stages and age classes and that includes microhabitat for sand gilia, Monterey spineflower, Seaside bird's beak, and black legless lizard.

The health of maritime chaparral is marked by successful establishment of this community's component species, many of which are HMP species (i.e., sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, Toro manzanita, and Hooker's manzanita).

Specific mitigation measures for vernal pools and ponds are also provided to minimize potential impacts on California linderiella, California tiger salamander, and red-legged frog.

#### Avoid Disturbance of Sand Gilia and Seaside Bird's-Beak Populations

Where feasible, avoid populations of sand gilla and Seaside bird's-beak. Fence or flag known populations and educate ordnance clearing crews as to the location and identification of these species.

#### Coordinate Vegetation Management and Restoration with Ordnance Removal

A vegetation burning and restoration program will be developed to coordinate with ordnance cleanup activities. The program should consist of a series of feedback mechanisms to allow for testing of burning and restoration methods on sites cleared early to be used to direct the burning and restoration program and maximize revegetation success on sites cleared later in the process.

Clearing or burning vegetation for the cleanup of unexploded ordnance in maritime chaparral will initially be conducted at sites ranging in size from 25 to 100 acres. Cleanup sites should be separated by undisturbed chaparral, in patches greater than 25 acres, to create a mosaic of patches burned or cleared at different times. No more than 800 acres of maritime chaparral per year should be cleared or burned. The cleanup site sizes and yearly acreage limit can be adjusted as better techniques and more understanding of maritime chaparral reestablishment are developed during early ordnance cleanup efforts.

#### Conduct Employee Education Program

Before unexploded ordnance removal or sampling activities begin, all supervisors and field personnel must attend a brief environmental training program. The training program will be presented by a qualified biologist familiar with the HMP plant and wildlife resources at Fort Ord. As the project proceeds, all new personnel must attend an environmental training session before working on the site. Topics to be covered in the training session include:

- a description of HMP plant and wildlife species that could be encountered in the project area,
- pertinent state and federal laws relating to the conservation of these species,
- guidelines that personnel must follow to reduce or avoid impacts on HMP species, and
- the appropriate contacts to report unforeseen impacts on HMP species.

### Minimize and Compensate for Impacts on California Linderiella, California Tiger Salamander, and California Red-Legged Frog

Vernal pools are considered potential habitat for California linderiella and California tiger salamander. Ponds also provide potential habitat for these two species, as well as for the California red-legged frog. Vernal pools and ponds will be avoided whenever possible during cleanup of unexploded ordnance. However, if these habitats must be disturbed during removal of unexploded ordnance (i.e., during excavation or *in situ* detonation of unexploded ordnance), a mitigation and habitat restoration plan will be developed and implemented for each vernal pool or pond that is affected.

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Mitigation and habitat restoration plans will include measures to minimize disturbance to ponds and vernal pools during ordnance removal. Methods for reducing disturbance include minimizing excavation area and depth, completing *in situ* detonation in a manner that minimizes soil disturbance, and setting aside topsoil during excavation to salvage plant seeds and California linderiella eggs. Before any vernal pool or pond is disturbed, it will be surveyed and all data described in the monitoring section below will be collected.

The goal of restoration plans will be to restore affected wetlands so that they are of the same acreage and provide the same functions as before clearing of ordnance. Restoration objectives would include establishment of self-sustaining populations of California linderiella, California tiger salamander, and California red-legged frogs similar to those that existed before ordnance removal.

#### Minimize Impacts on Black Legless Lizards

Potential habitat for black legless lizards has been identified in the western portion of the inland range area (Flora and Fauna Baseline Study of Fort Ord, California; Figure H-6). Designation of suitable habitat was based on soil and vegetation conditions favorable to black legless lizards; however, the area has not been surveyed for the species.

Several steps will be taken to minimize potential impacts on black legless lizards from removal of unexploded ordnance. Surveys will be conducted in areas considered potential habitat prior to removal activities to determine if the species is present. Only coverboard surveys will be used (as described in the Monitoring section for removal of lead and other heavy metals) to avoid the potential of disturbing unexploded ordnance during raking surveys. If no black legless lizards are found during one survey season, the area will be considered unoccupied and no mitigation for legless lizards will be required.

If any black legless lizards are found during coverboard surveys, the area will be considered occupied habitat. These areas will be burned and cleared of unexploded ordnance only between June 1 and February 1 so that burning and ground disturbance take place when legless lizards have burrowed deep into the soil where they should not be affected by the fire and are less likely to be encountered during shallow excavations.

If a legless lizard is encountered during excavation of unexploded ordnance, maximum effort will be made to preserve the animal without unreasonably delaying excavation activities. The lizard will be captured by hand, making all efforts possible not to injure the animal. The lizard will then be placed in a plastic container loosely filled with moist paper towels. A predetermined contact from USFWS or DFG will be immediately notified and may receive the specimen or recommend an appropriate person to give the specimen to. The live lizard will be kept in captivity until the following April and released in suitable habitat as near as possible to the point of capture. If the lizard encountered is dead, the person receiving the specimen will identify the species of legless lizard and give the specimen to an appropriate agency or institution.

#### Success Criteria

Healthy maritime chaparral habitat is described in Chapter 2 in the "Habitat Management Plan Habitats" section. This description and comparisons with undisturbed sites supporting maritime chaparral should be used to measure the success of restored habitat. The restored habitat will consist of naturally regenerating maritime chaparral that is managed using controlled burning and other techniques that maximize the habitat value for HMP species. The acreages of habitat occupied by sand gilia, Monterey spineflower, and Seaside bird's-beak at low, medium, and high densities in areas in the inland range expected to require some level of ordnance removal are shown in Table 3-2 (based on 1992 field surveys). Based on rough estimates of plant densities, the occupied habitat identified in Table 3-2 may represent about 8,000-12,000 individual sand gilia plants, 5,000-10,000 Seaside bird's-beak plants, and 4-7 million Monterey spineflower plants in the inland range area. This does not include areas outside of the inland range where there is potential for unexploded ordnance. Restoration for these species will be considered successful if, at the end of 5 years:

- self-sustaining populations result within a mosaic of maritime chaparral habitat in different stages of succession,
- the amount of occupied habitat varies over time within a range that includes amounts similar to the amount of habitat estimated for these species in 1992, and
- population sizes vary from year to year within a range that includes annual populations similar in size to those estimated for these species in 1992.

In many instances suitable habitat, occupied habitat, and populations of two or all three of these species will occur on the same site. Mitigation for black legless lizards will be considered successful if, in areas determined to be occupied prior to ordnance removal, black legless lizards are encountered for 3 of 5 years after removal of unexploded ordnance.

Vernal pool and pond restoration will be considered successful if affected wetlands are of the same acreage and provide the same functions as before clearing of ordnance. Also, if affected wetlands supported California linderiella, California tiger salamander, or California red-legged frogs before ordnance removal, they must support self-sustaining populations of these species for 5 years after restoration is complete.

#### Monitoring

Each patch of maritime chaparral cleared of ordnance will be monitored annually for 5 years beginning with the year of ordnance removal activities. In most cases, the monitored site will be delineated by the edge of a controlled burn area established prior to ordnance removal. Because ordnance removal will occur over several years, the 5-year monitoring period for groups of ordnance removal sites will be initiated in different years. The reestablishment of vegetation will be measured at each ordnance removal site, using releve, quadrat, transect, or a combination of vegetation survey methods. Each monitoring year, the following information will be recorded for each ordnance removal site:

- size of the site in acres (first year only);
- method used to clear vegetation (e.g., burning, chipping, none) (first year only);
- extent of soil disturbance from ordnance removal (first year only);
- percent absolute vegetative cover;
- percent cover of each woody plant species present (including HMP shrubs);
- percent herbaceous cover and list of dominant herbaceous species;
- percent cover by non-native weedy plants;

|                                                   | Unexploded Ordnance<br>Expected to<br>Occur <sup>a</sup> | High Densities of<br>Unexploded Ordnance<br>Expected to<br>Occur <sup>*</sup> |
|---------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------|
| Sand gilia <sup>b</sup>                           |                                                          |                                                                               |
| Low density                                       | 947                                                      | 168                                                                           |
| Medium density                                    | 21                                                       | 0                                                                             |
| High density                                      | 0                                                        | 0                                                                             |
| Monterey spineflower <sup>b</sup>                 |                                                          |                                                                               |
| Low density                                       | 1,379                                                    | 756                                                                           |
| Medium density                                    | 1,270                                                    | 512                                                                           |
| High density                                      | 106                                                      | 303                                                                           |
| Seaside bird's-beak <sup>b</sup>                  |                                                          |                                                                               |
| Low density                                       | 382                                                      | 8                                                                             |
| Medium density                                    | 13                                                       | 0                                                                             |
| High density                                      | 0                                                        | 0                                                                             |
| As shown in Figure 3-1.<br>From 1992 survey data. |                                                          |                                                                               |

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#### Table 3-2. Acres of Habitat Supporting Sand Gilia, Monterey Spineflower, and Seaside Bird's-Beak in Areas in the Inland Range Expected to Contain Unexploded Ordnance

- estimated number of plants and mapped location of sand gilia, Monterey spineflower, Seaside bird's-beak, and coast wallflower;
- general wildlife use;
- presence of black legless lizard (if the site was previously considered occupied habitat); and
- vegetation establishment record through color photographs.

With ordnance removal sites varying from 25 to 100 acres in size and the inland range comprising approximately 8,000 acres, there should be between 80 and 320 sites to be monitored for habitat reestablishment. This information will be analyzed and compiled into annual monitoring reports. Conclusions drawn from the data in monitoring reports will be used to modify subsequent burning and ordnance clearing actions to promote more effective restoration of healthy, diverse maritime chaparral and habitat and populations of HMP species. The level of detail of monitoring data for maritime chaparral and associated HMP species may be adjusted over time, as the level of detail necessary to judge mitigation success is better understood through the results of monitoring the initial sites of vegetation clearing, ordnance cleanup, and vegetation reestablishment.

Restored vernal pools and ponds will be monitored during each rainy season for 5 years after restoration is completed. Each monitoring year, the following information will be recorded for each restored vernal pool or pond:

- dates each pool or pond begins to fill and when it dries relative to timing and abundance of yearly rainfall;
- water conditions including depth, surface area, turbidity, and pH;
- percent submergent, floating, and emergent vegetative cover (estimated using transects, quadrats, or other appropriate techniques) and species composition; and
- occurrence and relative abundance of California linderiella adults and adults and larvae of California tiger salamander and California red-legged frog.

This information will be analyzed and compiled into annual monitoring reports. Conclusions drawn from the data in monitoring reports will be used to modify subsequent ordnance removal practices in wetland habitats and implementation of future vernal pool and pond restoration plans. The level of detail of monitoring data for vernal pools and ponds may be adjusted over time, as the level of detail necessary to judge mitigation success is better understood through the results of monitoring the initial sites of vernal pool and pond restoration.

#### **Corrective Measures**

Based on the results of each year's monitoring, the restored maritime chaparral habitat management will be modified, if necessary, to meet success criteria. In some instances supplemental weeding, planting, or seeding may be needed to meet the established success criteria.

Improvement of sand gilia, Monterey spineflower, and Seaside bird's-beak habitat will be conducted if populations levels for these species do not meet the success criteria.

If success criteria for black legless lizards are not satisfied, legless lizard monitoring data from both before and after ordnance removal will be analyzed to determine specific microhabitat conditions in maritime chaparral habitat that are favorable to black legless lizards. Based on this data, habitat within the mitigation area will be modified to provide more favorable conditions for black legless lizards. Monitoring will continue for an additional 3 years. If after this time success criteria are still not satisfied, an area of potential black legless lizard habitat twice the size of the original restoration area will be enhanced to promote black legless lizard populations.

If success criteria for vernal pool and pond restoration are not satisfied, corrective measures will be developed on a case-by-case basis to identify the cause of failure. Previous monitoring data will be analyzed, and, if necessary, specific studies will be undertaken to determine the reason for failure to meet success criteria. Corrective measure will be developed to respond to the cause of non-compliance determined from these data. An appropriate corrective measure must be implemented within 1 year of determination that success criteria will not be satisfied, and the vernal pool or pond will be monitored for additional 3 years after implementation.

USFWS, DFG, and the Corps will review all proposed wetland corrective measures before they are implemented. If after two attempted corrective measure success criteria are still not satisfied, another mitigation site will be chosen for vernal pool or pond enhancement or creation.

#### INTERIM USES

Before final disposal of some Fort Ord lands, property and structures will be made available for interim uses to various agencies. Use of existing structures in the developed portions of Fort Ord will have no impact on biological resources. Other potential interim uses such as grazing and recreational use could have a potential adverse effect on HMP species if not managed properly.

#### Grazing

#### Impacts

Livestock have been grazed on Fort Ord for the last 50 years. Cattle were grazed initially; however, sheep have been grazed since the mid-1950s. The livestock grazing capacity was estimated approximately 20 years ago by range specialists and adjusted to fit changes in range productivity. Approximately 7,500 acres are available for sheep grazing on the east side of Fort Ord (Figure 3-3); however, sheep remain primarily in the grasslands east of Pilarcitos Canyon.

Current grazing practices at Fort Ord do not appear to have a substantial negative impact on HMP species (U.S. Army Corps of Engineers, Sacramento District 1992; Jones & Stokes Associates 1993). No HMP plant species are regularly associated with grassland habitats. Wetland-associated wildlife species (California linderiella, California tiger salamander, and California red-legged frog) could be affected by grazing. Sheep may graze on or trample wetland vegetation in ponds within the grazing lease and alter habitat conditions for these species. However, ponds utilized by sheep at Fort Ord currently support productive wetland ecosystems with abundant invertebrates, Pacific treefrogs, California tiger salamander breeding pond were found within the area leased for grazing. Livestock use of the permanent corral on Toro Creek may result in localized degradation of riparian habitat potentially utilized by Monterey ornate shrew. However, none of these impacts substantially affect HMP wildlife species at Fort Ord under current grazing conditions.

### *Figure 3-3.* Current Sheep Grazing Lease at Fort Ord



If grazing levels are increased at Fort Ord, if livestock are grazed more frequently in areas west of Pilarcitos Canyon, or if cattle are grazed, several HMP species may be adversely affected. Increased numbers of sheep or introduction of cattle could degrade wetland habitats. Ponds not previously used by livestock may be substantially altered if grazing is encouraged west of Pilarcitos Canyon. Also, encouraging grazing in habitats other than open grasslands could affect HMP species associated with oak woodland and potentially affect species associated with maritime chaparral; although to a much lesser degree because maritime chaparral provides low-quality livestock forage.

#### Mitigation

If Interim grazing leases similar to those previously issued are made available before disposal, grazing practices should not adversely affect HMP species. Current grazing practices are described in the Fiora and Fauna Baseline Study of Fort Ord, California (U.S. Army Corps of Engineers, Sacramento District 1992); the Preliminary Draft Environmental Assessment for Livestock Grazing on Fort Ord, Monterey County, California (Jones & Stokes Associates 1993); and In previous grazing leases on file at the U.S. Army Corps of Engineers district office in Sacramento.

An Army representative should inspect grazing areas weekly when livestock are present to ensure lease requirements are being followed. The representative should be present when livestock are put onto and taken off of Fort Ord to ensure the correct number of animals are being grazed. Livestock should be moved as quickly as possible to and from the coral near Toro Creek to minimize potential impacts on riparian habitat that is considered potential habitat for the Monterey ornate shrew.

#### Success Criteria

The goal of mitigation measures for interim use grazing is to permit grazing while minimizing impacts on HMP species and riparian habitat. Mitigation will be considered successful if:

- grazing practices do not result in additional impacts on HMP species,
- livestock are moved as quickly as possible to and from the corral near Toro Creek to minimize impacts on riparian habitat, and
- all prescribed grazing practices are followed by lessees and strictly enforced by the Army.

#### Monitoring

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A representative from the Army will inspect grazing areas at least once a week during the time livestock are on Fort Ord. The Army representative will determine whether all grazing practices and limitations described in the grazing lease are followed by the lessee. The representative will also be present during the time livestock are being put onto and taken off of Fort Ord to ensure that the correct number of livestock are being grazed and that livestock spend only a minimum amount of time in riparian areas near the corral.

#### Corrective Measures

If, during weekly inspections, the Army finds that any grazing practices described in the grazing lease are not followed by the lessee, the Army will notify the lessee verbally and in writing of the problem within 5 working days of the inspection. The lessee will be given 1 week from the time of first notification

to correct the problem. Warnings and correction of problems will be documented by the Army representative and kept on file with the lease.

Each lease will contain a clause that states if a lessee receives more than three notifications of noncompliance within one grazing season the lease may be terminated and the lessee may have to remove livestock from Fort Ord.

#### Public Access to Dunes and Beaches

#### Impacts

Removal of lead from the dunes at Fort Ord (if necessary) may require phasing of cleanup over several years. These lands cannot be transferred until the lead has been removed. However, some public recreation uses may be permitted on the Fort Ord dunes in areas that do not require lead removal, or where lead has already been removed, prior to the transfer of land to DPR.

If not properly managed, public use of the beaches and dunes could have adverse effects on sand gilia, Monterey spineflower, Smith's blue butterfly, western snowy plovers, and black legless lizards. Populations of sand gilia, Monterey spineflower, Smith's blue butterfly, and black legless lizards could potentially be eliminated by repeated foot traffic or unauthorized off-road vehicle use. Potential habitat for these species could also be lost through the same mechanisms. Nesting western snowy plovers may be sufficiently disturbed by recreational uses on the beach to abandon nests.

#### Mitigation

If the beaches and dunes at Fort Ord are open for recreational use prior to disposal, measures will be taken to control and channel public access and uses.

The Army will coordinate with DPR to prevent foot and vehicle access to:

- sites supporting Smith's blue butterfly populations and habitat;
- existing populations of sand gilia and medium- and high-density occurrences of Monterey spineflower;
- beach areas supporting western snowy plover breeding habitat during the breeding season; and
- dune restoration areas.

Temporary signing and barriers will be installed, and sufficient law enforcement personnel will be present to ensure that the public does not degrade or damage these resources prior to the transfer of land to DPR.

The Army and DPR will also work cooperatively to ensure the public does not have access to current and future lead removal sites until lead removal activities are complete.

#### Success Criteria

Mitigation for potential impacts on HMP resources from interim public use of beaches and dunes at Fort Ord will consist of various means of directing, restricting, and controlling public access to areas of beaches and dunes where HMP resources occur. Mitigation will be considered successful if no individuals of HMP species are disturbed or removed and no destruction of potential or occupied habitat for these species results from public use of the beaches and dunes at Fort Ord.

#### Monitoring

The Army and DPR will coordinate to provide sufficient law enforcement staff on the beaches and dunes at Fort Ord to adequately patrol all areas west of Highway 1. These personnel will record any disturbance or evidence of disturbance of HMP species. The Army and USFWS will be notified immediately of the incident. The Army, USFWS, and DPR will work cooperatively to determine whether the impacts on HMP species are attributable to recreational use of the beaches and dunes at Fort Ord and appropriate actions to prevent future impacts. The same process will be followed if destruction of potential or occupied habitat for HMP species is encountered. All other personnel working on the dunes (e.g., lead removal personnel, restoration crews, or biologists) will also report any incidents or evidence of impacts on HMP species or destruction of potential or occupied habitat to the Army and DPR.

#### **Corrective Measures**

If removal of any HMP species or destruction of potential or occupied habitat of any HMP species can be attributed to interim public use on the dunes at Fort Ord, DPR, the Army, and USFWS will coordinate development of suitable corrective measures. Potential corrective measures include restoration or enhancement of dune habitat to compensate for lost habitat, increased monitoring effort, installation of additional temporary barriers and signing, or installation of permanent barriers and signing.

## Chapter 4.

## Habitat Management for Disposal and Reuse

**Monterey Spineflo** 

#### INTRODUCTION AND BACKGROUND

A general goal of the Fort Ord HMP is to promote preservation, enhancement, and restoration of habitat and populations of HMP species while allowing implementation of a community-based reuse plan that promotes economic recovery after closure of Fort Ord. (Specific HMP goals are described in Chapter 1.) As an installation-wide plan, all parcels to be disposed of by the Army are addressed in the HMP and are considered in achieving HMP goals. However, management guidelines and specifications for reuse vary from parcel to parcel based on future plans for the parcel associated with the HMP and overall reuse plan.

Some parcels to be disposed of by the Army are intended to promote economic recovery after disposal and will be designated for development with no restrictions or management guidelines described in the HMP. Other parcels will have development designated as the primary use, but recipients of disposed land will be obligated to implement certain management guidelines and/or preserve specific areas through the HMP. Other parcels are designated as habitat preserves or corridors and have specific management guidelines and restrictions on development and uses.

The HMP includes consideration of specific transportation corridors that have been requested for transfer from the Army. The local community is developing a transportation plan and further coordination may be required to address this plan as it is developed.

Figure 4-1 shows each parcel proposed for reuse and indicates the general land use planned for the parcel (no HMP habitat preservation requirements, development with reserve areas, habitat corridor, or habitat reserve). Each parcel is numbered in Figure 4-1. Titles for each numbered parcel are provided in Table 4-1. Each parcel is given a two letter code based on the expected type of agency to recieve the parcel; Federal (F); State (S); and Local (L); and habitat guidelines for the parcel; Habitat Reserves and/or Corridors (R); Conservation and/or management requirements (M); or No HMP requirements (N). Parcels are then grouped together based on the letter codes and assigned a number.

Because the HMP will affect future regulatory compliance during reuse, these effects are discussed in the following section. Total impacts on each HMP species from this reuse plan are then described. Overall management guidelines for recipients of disposed land are also described. Land use parcels are then discussed separately in this chapter. Parcels considered primary conservation areas are discussed first, followed by parcels with conservation and/or management requirements, then parcels withno HMP requirements as shown in Table 4-1. A description of the proposed land use within the parcel is provided, the major habitat features and HMP resources currently within the parcel are identified, and resource conservation and management requirements, if any, are described. The resource conservation section describes areas of natural habitat that must be preserved in a parcel. The management requirements section describes management actions necessary to assist in conserving HMP resources within a parcel or in adjacent parcels. The parties responsible for activities to take place within the parcel are also identified at the end of each section. Several parcels within the Main Garrison were combined into one parcel for the purpose of the HMP (Parcel LN5). These parcels were combined because no preservation or management requirements associated with the HMP apply to these parcels. After all parcels have been addressed, methods for implementing a Coordinated Resource Management Plan and allowing future modifications of the HMP are described.

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| Parcel<br>Order | Parcel<br>Number | Parcel Title                                                        | Land Use<br>Designation<br>Abbreviation |
|-----------------|------------------|---------------------------------------------------------------------|-----------------------------------------|
|                 | F                | ederal Lands with Habitat Reserves and/or Corridors                 |                                         |
| 1               | FR1              | BLM Natural Resource Management Area                                | NRMA                                    |
|                 |                  | State Lands with Habitat Reserves and/or Corridors                  |                                         |
| 2               | SR1              | University Research Area Fritzsche                                  | URAF                                    |
| 3               | SR2              | University Research Area Reservation Road                           | URAR                                    |
| 4               | SR3              | University Research Area Landfill                                   | URAL                                    |
| 5               | SR4              | Habitat Corridor                                                    | HAB3                                    |
| 6               | SR5              | Disturbed Habitat Zone                                              | DHZ                                     |
| 7               | SR6              | Coastal Dune Zone                                                   | ĊDZ                                     |
| 8               | SR7              | Aquaculture/Marine Research                                         | AQ/MR                                   |
| 9               | SR8              | Highway 1 Corridor                                                  | HIWAY                                   |
| 10              | SR9              | Caltrans SR 68 Corridor                                             | CALTRANS                                |
|                 | Local Age        | ncy and Private Lands with Habitat Reserves and/or Co               | orridors                                |
| 11              | LR1              | County of Monterey Habitat Area                                     | HAB4                                    |
| 12              | LR2              | Recreational Vehicle Park/Youth Camp                                | RV                                      |
| 13              | LR3              | Agri-Center                                                         | AGRI                                    |
| 14              | LR4              | Marina Salinas River Habitat Area                                   | HAB1                                    |
| 15              | LR5              | Marina Habitat Area #2                                              | HAB2                                    |
| 16              | LR6              | Marina Retail #3                                                    | RET3                                    |
| 17              | LR7              | Natural Area Expansion                                              | NAE                                     |
|                 |                  | Federal Lands with HMP Conservation and/or                          |                                         |
|                 |                  | Management Requirements                                             |                                         |
| 18              | FM1              | Army Reserve Center                                                 | RC                                      |
| 19              | FM2              | POST Facility                                                       | POST                                    |
| 20              | FM3              | FBI Government Center                                               | GOVT                                    |
|                 |                  | State Lands with HMP Conservation and/or<br>Management Requirements |                                         |
| 21              | 0144             | University Selence Office #1                                        | 1004                                    |
| 21              | OM I<br>OM I     | University Science Unice #1                                         | 0501                                    |
| 22              | OMZ<br>CMO       | University Science Unice #2                                         | 0502                                    |
| 23              | 5M3              | University Science Unice #3                                         | USO3                                    |
| 24<br>05        | 5M4              | University Science Unice #4                                         | USO4                                    |
| 20              | 5M5              | California State University                                         | UNIV                                    |
| 20              | SM6              | Muni-Use Area/Asilomar-Type Facility                                | MUA/ATF                                 |
| 2/              | SM7              | Potential Beach Through-Road                                        | BTR                                     |
| 28              | SMB              | Proposed Monterey County Fairgrounds Site                           | FAIRa                                   |
| 29              | SM9              | Alternate Monterey County Fairgrounds Site                          | FAIRb                                   |

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#### Table 4-1. Fort Ord HMP Parcel Designations

| Parcel<br>Order | Parcel<br>Number | Parcel Title                                                                     | Abbreviatio |
|-----------------|------------------|----------------------------------------------------------------------------------|-------------|
| <u>i</u>        | Local            | Agency and Private Lands with HMP Conservation and/or<br>Management Requirements |             |
| 30              | LM1              | County of Monterey Light Industrial #1                                           | Ш1          |
| 31              | LM2              | County of Monterey Light Industrial #2                                           | LI2         |
| 32              | LM3              | Office Park #1                                                                   | OP1         |
| 33              | LM4              | Office Park #2                                                                   | OP2         |
| 34              | LM5              | Office Park #3                                                                   | OP3         |
| 35              | LM6              | Office Park #4                                                                   | OP4         |
| 36              | LM7              | Office Park #5                                                                   | OP5         |
| 37              | LM8              | County of Monterey Office Park                                                   | OP6         |
| 38              | LM9              | County of Monterey Community Park                                                | CPRK1       |
| 39              | LM10             | Marina Community Park                                                            | CPRK2       |
| 40              | LM11             | Community Park #3                                                                | CPRK3       |
| 41              | LM12             | Recreation Area Expansion #1                                                     | RAE1        |
| 42              | LM13             | Recreation Area Expansion #2                                                     | RAE2        |
| 43              | LM14             | Recreation Area Expansion #3                                                     | RAE3        |
| 44              | LM15             | Marina Retail Area #1                                                            | RET1        |
| 45              | LM16             | Marina Retail Area #2                                                            | RET2        |
| 46              | LM17             | Marina Airport North                                                             | AIRN        |
| 47              | LM18             | Marina Airport South                                                             | AIRS        |
| 48              | LM19             | Marina Low-Density Residential                                                   | LR          |
| 49              | LM20             | Seaside Medium-Density Residential                                               | MR          |
| 50              | LM21             | Seaside Resort Hotel                                                             | RH          |
| 51              | LM22             | Intermodal Transportation Center                                                 | TC          |
| 52              | LM23             | York School Expansion                                                            | SE          |
| 53              | LM24             | School #3                                                                        | SCH3        |
| 54              | LM25             | Desalination Plant                                                               | DS          |
|                 |                  | Federal Lands with No HMP Requirements                                           |             |
|                 |                  | None                                                                             |             |
|                 |                  | State Lands with No HMP Requirements                                             |             |
| 55              | SN1              | Service Area                                                                     | SA          |
|                 | Loc              | al Agency and Private Lands with No HMP Requirements                             |             |
| 56              | LN1              | School #1                                                                        | SCH1        |
| 57              | LN2              | Monterey Peninsula College Outdoor Lab                                           | SCH2        |
| 58              | LN3              | High-Tech Business Park                                                          | TECH        |
| 59              | LN4              | Multi-Modal Corridor                                                             | MMC         |
| 60              | LNE              | Multiple Parcels with No HMP Restrictions                                        |             |

Table 4-1. Continued

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| E - | Parcols proposed for transfer to a federal agonov                 |
|-----|-------------------------------------------------------------------|
| . – | Farceis proposed for transfer to a federal agency.                |
| S = | Parcels proposed for transfer to a state agency.                  |
| L ≃ | Parcels proposed for transfer to a local agency or private party. |
| R = | Parcels with habitat reserves and/or corridors.                   |
| M = | Parcels with HMP conservation and/or management guidelines.       |
| N = | Parcels with no HMP requirements.                                 |
|     | F =<br>S =<br>L =<br>R =<br>N =                                   |

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# This is an oversized document. It will be found at the end of this file.

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#### FUTURE REGULATORY COMPLIANCE

The HMP does not preclude future landowners from complying with environmental regulations enforced by federal, state, or local agencies. These regulations could include obtaining Section 7 or Section 10(a) permits from USFWS pursuant to the federal Endangered Species Act, complying with measures for conservation of state-listed threatened and endangered species and other special-status species recognized by DFG under the California Endangered Species Act and CEQA, and complying with local land use regulations and restrictions.

However, implementation of the HMP will simplify future regulatory compliance. The HMP will provide a basis for recipients of Fort Ord lands to seek Section 7 and Section 10(a) permits as applicable for the take of federally listed species within the parcel they receive. Because the HMP provides mitigation for impacts on federally listed species, little or no additional mitigation will be required to obtain a Section 7 or 10(a) permit. Also, because the HMP addresses several federal candidate species, the document is considered a prelisting conservation agreement between the USFWS and local agencies. This agreement will preclude the need to develop additional mitigation, should the candidate species addressed in the HMP become listed. DFG has reviewed and provided input during HMP development and will consider mitigation described in the HMP when reviewing development plans for compliance with the California Endangered Species Act and CEQA.

#### IMPACTS ON HABITAT MANAGEMENT PLAN SPECIES AND HABITATS

Impacts of Alternative 6R on HMP species and habitats are described in the EIS and supplemental BA (U.S. Army Corps of Engineers, Sacramento District 1993). Since publication of these documents, Alternative 6R has been modified. The following sections summarize the impacts on HMP resources under this modified reuse alternative.

#### Federally Listed and Proposed Threatened and Endangered Wildlife and Plant Species

#### Sand Gilia

Sand gilia inhabits openings in maritime chaparral and coastal scrub communities. It also prefers disturbed sites, such as the borders of old roads and firebreaks. Based on 1992 survey results for all of Fort Ord, approximately 13 acres of maritime chaparral and coastal scrub supporting sand gilia at high densities, 120 acres at medium density, and approximately 600 acres at low density will be removed under Modified Alternative 6R. In 1993 a portion of the base was resurveyed to provided more site specific data on sand gilia distribution and abundance. The 1993 survey focused on sites at Fritzsche Army Airfield, the northern portion of the coastal dunes, and areas surrounding Reservation, Old County, and Imjin Roads. In these surveyed areas approximately 16,000 individual sand gilia plants will be removed by implementing Modified Alternative 6R. Sand gilia populations in the northern portion of Fort Ord are shown in Figure 4-2.

#### Smith's Blue Butterfly

Smith's blue butterfly is completely dependent on seacliff and coast buckwheat for oviposition and as food sources for larvae and adults. Areas supporting medium or high densities of either buckwheat

species are considered potential habitat for Smith's blue butterfly. Under Modified Alternative 6R approximately 15 acres of Smith's blue butterfly habitat will be removed. In addition, approximately 35 acres of dune habitat supporting buckwheat at low density would be removed and could potentially affect populations of Smith's blue butterflies.

#### Western Snowy Plover

Western snowy plovers are known to nest on the beaches at Fort Ord from the northern installation boundary to Stilwell Hall. They may also nest south of Stilwell Hall. Modified Alternative 6R will not directly remove any western snowy plover nesting habitat. However, increased human presence on the beaches associated with the alternative could negatively affect snowy plover breeding success.

#### **Monterey Spineflower**

Implementation of Modified Alternative 6R would result in the loss of approximately 3,760 acres of maritime chaparral, coastal dunes, coastal scrub, and grassland habitats occupied by Monterey spineflower. These habitat areas support Monterey spineflower at high densities on approximately 320 acres, medium densities on about 1,160 acres, and low densities on roughly 2,280 acres. Sand hill maritime chaparral, all coastal dune habitats, and grassland and coastal scrub habitats on sandy soils are potentially suitable habitat for Monterey spineflower. Monterey spineflower occurs in natural and artificial disturbance patches in these habitats.

#### **Robust Spineflower**

The one population of robust spineflower occurring at Fort Ord is located in the Disturbed Habitat Zone (DHZ) land use described in Modified Alternative 6R. No impacts on this population is expected to result from implementation of the alternative.

#### California Linderiella

California linderiella occurs in ephemeral freshwater aquatic habitats, such as vernal pools and ponds. Approximately 3 acres of potential California linderiella habitat may be removed at Fort Ord under Modified Alternative 6R.

#### California Red-Legged Frog

The California red-legged frog typically occupies cold-water ponds with both emergent and submergent vegetation. About 3 acres of potential California red-legged frog habitat would be removed under Modified Alternative 6R.

#### Seaside Bird's-Beak

Seaside bird's-beak occurs in openings on sandy soils in maritime chaparral and oak woodland habitats. Modified Alternative 6R would result in the removal of roughly 30 acres of maritime chaparral and oak woodlands supporting Seaside bird's-beak at low densities.

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#### Yadon's Piperia

Yadon's piperia occurs near established shrubs in maritime chaparral habitat. Roughly 14 acres of maritime chaparral habitat supporting Yadon's piperia at low density would be removed under Modified Alternative 6R.

#### Other Habitat Management Plan Wildlife and Plant Species

#### Toro Manzanita

Toro manzanita is a dominant or associate species of Aromas formation maritime chaparral. About 815 acres of habitat supporting Toro manzanita will be lost under Modified Alternative 6R. This includes approximately 85 acres of high-density occurrences of Toro manzanita, about 200 acres of medium-density, and roughly 530 acres of low-density occurrences.

#### Sandmat Manzanita

Sandmat manzanita is a characteristic species of sand hill formation maritime chaparral. About 2,040 acres of maritime chaparral supporting sandmat manzanita will be removed under Modified Alternative 6R. This include approximately 470 acres of high-density occurrences of sandmat manzanita, about 825 acres of medium-density, and roughly 745 acres of low-density occurrences.

#### Hooker's Manzanita

Hooker's manzanita inhabits stabilized sandy soils in maritime chaparral habitat. Under Modified Alternative 6R, about 490 acres of maritime chaparral habitat occupied by Hooker's manzanita will be removed. This includes less than 1 acre of high-density Hooker's manzanita occurrences, about 200 acres of medium-density, and roughly 290 acres of low-density occurrences.

#### Monterey Ceanothus

Monterey ceanothus is a frequently occurring shrub in sand hill and aromas maritime chaparral. Under Modified Alternative 6R, about 2,250 acres of maritime chaparral supporting Monterey ceanothus will be removed. Roughly 450 acres of high-density occurrences of Monterey ceanothus, about 1,080 acres of medium-density, and roughly 720 acres of low-density occurrences will be removed under this alternative.

#### Eastwood's Ericameria

Modified Alternative 6R will result in the loss of approximately 1,165 acres of coastal scrub and maritime chaparral habitats occupied by Eastwood's ericameria. About 25 acres of high-density occurrences of Eastwood's ericameria, approximately 480 acres of medium-density, and roughly 660 acres of low-density occurrences will be removed under this alternative.

February 2, 1994

#### Coast Wallflower

Coast wallflower occurs on sandy soils, primarily in coastal dune and coastal scrub habitats. Under Modified Alternative 6R, about 400 acres of these habitats supporting coast wallflower will be removed. This includes approximately 20 acres of high-density occurrences of coast wallflower, about 90 acres of medium-density, and roughly 290 acres of low-density occurrences.

#### Black Legless Lizard

The California black legless lizard is found on dune habitats supporting native vegetation and where maritime chaparral and coastal scrub occur on loose sandy soils. Approximately 1,700 acres of potential black legless lizard habitat will be removed under Modified Alternative 6R.

#### Monterey Ornate Shrew

Riparian and woodland communities are considered potential habitat for the Monterey ornate shrew at Fort Ord. Approximately 2,080 acres of potential habitat for this species will be removed under Modified Alternative 6R.

#### California Tiger Salamander

The California tiger salamander occurs in ponds and vernal pools throughout Fort Ord. About 3 acres of potential California tiger salamander habitat will be removed under Modified Alternative 6R.

#### Habitat Management Plan Habitats

#### Maritime Chaparral

Modified Alternative 6R will result in the removal of approximately 2,290 acres of maritime chaparral habitat.

#### **Coastal Scrub**

About 350 acres of coastal scrub habitat will be removed under Modified Alternative 6R.

#### Coastal Strand

Under Modified Alternative 6R, approximately 20 acres of coastal strand habitat will be removed. Additional small patches of coastal strand habitat occurring within larger patches of iceplant mats will also be removed.

#### Dune Scrub

About 8 acres of dune scrub habitat will be removed by implementing Modified Alternative 6R.

#### Beaches, Bluffs, and Blowouts

Modified Alternative 6R will result in the removal of approximately 10 acres of blowouts above the bluffs at Fort Ord. The beaches below the bluffs and the bluffs themselves will not be adversely affected under Modified Alternative 6R.

#### MANAGEMENT GUIDELINES FOR RECIPIENTS OF DISPOSED LAND

This section describes key resources, expected impacts on resources, and land management responsibilities for each of the recipients of disposed land in the Fort Ord HMP area. The Army will enter into separate memoranda of agreement (MOAs) with recipients of disposed land. Land recipients may also agree to take part in a Coordinated Resource Management Plan (CRMP). The U.S. Bureau of Land Management (BLM) will be the main point of contact with USFWS and DFG for all agencies responsible for managing HMP species and habitats within the HMP area east of Highway 1 that sign onto the CRMP. DPR will be the main point of contact with USFWS and DFG on all lands west of Highway 1. The CRMP is described in detail near the end of this chapter. Methods for updating or modifying the HMP after agencies or private parties have received Fort Ord lands are described after the CRMP section.

Habitat management responsibilities of recipients of disposed Fort Ord land are discussed individually with each land use parcel discussed in a separate section.

#### Implementation Strategies

#### Memoranda of Agreement

Prior to disposal of land, the Army will enter into MOAs with all recipients of disposed land with an active role in the HMP. These MOAs will define roles, obligations, authorities, responsibilities, liabilities, benefits, rights, and privileges of all parties. Appropriate HMP guidelines will be included in each MOA and the MOA will state that the HMP guidelines shall be implemented by the land recipient. The MOAs will contain a reversion clause that states that the land will be returned to the federal government should the land recipient fail to comply with HMP guidelines described in the MOA.

#### Fire Management and Firebreaks

One management goal for the NRMA will be to maintain and enhance natural habitat within the area. Because natural habitat will be maintained, there will be the potential for wildfires in the NRMA to spread to bordering parcels, and for fires that originate within those parcels to ignite wildfires in the NRMA. This is of particular concern in and around areas of maritime chaparral habitat, which can burn very rapidly, and in areas where controlled burning will be used as a management tool by BLM to aid in maintaining highquality maritime chaparral habitat.

As a condition of transfer of property, recipients of Fort Ord lands will be responsible for developing and maintaining firebreaks as described in this section and in individual parcel descriptions in the HMP. To minimize the potential for fires to spread between the NRMA and other parcels, all development in parcels bordering the NRMA will be subject to the following guidelines:

- firebreaks will be installed where any parcel borders the NRMA (potential firebreaks include green strips, fuel reduction zones, fire roads, paved roads, tilled firebreaks, and parking lots);
- all firebreaks will be at the development habitat boundary and not necessarily at the parcel boundary;
- firebreaks will be considered as a part of development within parcels bordering the NRMA and, as such, will be on the development side of the shared boundary;
- firebreaks on adjacent parcels will be contiguous;
- BLM will be provided immediate emergency access to all firebreaks;
- BLM must approve all firebreaks; and
- appropriate agencies will coordinate fire management and suppression actions with BLM through the CRMP.

#### Monitoring Procedures and Responsibilities

Monitoring of conservation areas and corridors would be the responsibility of BLM, DPR, University of California, Monterey County, City of Marina, Monterey Peninsula Regional Park District, and Caltrans. These agencies would be responsible for ensuring that the HMP guidelines are implemented on parcels under their jurisdictions.

Monitoring results for CRMP participants will be coordinated by BLM, and BLM will consolidate the results into a single monitoring report. DPR will be responsible for developing monitoring reports for areas west of Highway 1. Annual monitoring reports will be filed with USFWS and DFG, as well as with each of the participating agencies.

#### Program Costs and Funding

Funding to develop the final HMP will be provided by the Army. Funding to implement the HMP prescribed habitat restoration, management, and monitoring for reuse will be provided by BLM, DPR, University of California, California State University, City of Marina, City of Seaside, City of Del Rey Oaks, City of Monterey, County of Monterey, U.S. Department of Justice, Monterey Peninsula Regional Park District, and California Department of Transportation (Caltrans). These agencies will fund implementation of the HMP by implementing conservation and/or management guidelines specific to parcels they receive. The HMP does not preclude other sources of funding for HMP implementation or preclude these agencies from securing funding from other sources to support their implementation of the HMP guidelines. Requirements for each agency's minimal participation and accomplishments toward implementation of the HMP will be specified in an MOA with the Army that will be completed at the time of land transfer.

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### PARCEL FR1 - U.S. BUREAU OF LAND MANAGEMENT NATURAL RESOURCE MANAGEMENT AREA

#### Land Use Description

The modified reuse alternative identifies approximately 14,000 acres of Fort Ord lands to be transferred to BLM (Parcel FR1 in Figure 4-1). The Fort Ord EIR describes this area as the natural resource management area (NRMA). The NRMA includes areas designated as conservation areas and habitat corridors, as well as other habitat areas of importance to HMP plant and wildlife species.

The proposed Highway 68 corridor passes through the southern portion of the NRMA. This corridor is treated separately under the section for Parcel SR9.

BLM is a land management agency experienced in managing natural resources, including threatened and endangered species and fire-maintained natural communities. BLM will manage the NRMA for the benefit of natural resources with priority given to conservation, enhancement, and restoration of habitat used by HMP species. Other land uses may also be permitted, such as recreation facilities, fire and law enforcement training, and education and research related to natural resources in the area.

#### **Resources Present**

#### Major Habitat Features

Twelve habitat types occur within the NRMA. The most abundant habitat type is maritime chaparral, covering approximately 10,089 acres. Amounts of other dominant habitat types include approximately 2,124 acres of annual grasslands, 1,198 acres of inland coast live oak woodland, and 415 acres of coastal coast live oak. Habitats of special interest within the NRMA include riparian forests, perennial grasslands, and vernal pools.

### Threatened and Endangered Listed and Proposed Species

**Sand Gilia**. Based on 1992 surveys, approximately 2,000 acres of low-density sand gilia populations and roughly 20 acres of medium-density populations occur within the NRMA. Most of these populations occur in the northern half of the area. The 1993 surveys found sand gilia populations in the NRMA totaling roughly 5,020 individuals. However, some areas, such as the inland range, were not resurveyed in 1993.

**Monterey Spineflower**. Approximately 3,000 acres within the NRMA support low-density Monterey spineflower populations, 1,500 acres support medium-density populations, and roughly 400 acres support high-density populations. Almost all of the Monterey spineflower in the NRMA occurs within the inland range area.

**California Linderiella**. Approximately 19 ponds and 23 vernal pools occur within the NRMA. These are all considered potential habitat for California linderiella. All five of the known populations of California linderiella at Fort Ord occur in the NRMA.

Califronia Red-Legged Frog. Ponds at Fort Ord are considered potential habitat for the California red-legged frog. Approximately 19 ponds occur within the NRMA. Most ponds are concentrated in the

grasslands in the southeast portion of the installation. California red-legged frogs were not observed at Fort Ord during wildife surveys in 1992.

## Other HMP Species

Seaside Bird's-Beak. Approximately 1,000 acres of low-density Seaside bird's-beak populations and roughly 15 acres of medium-density populations occur within the NRMA. All of these Seaside bird's-beak populations occur in the northern portion of the NRMA.

**Toro Manzanita**. Approximately 1,500 acres of low-density Toro manzanita populations, 2,000 acres of medium-density populations, and roughly 1,500 acres of high-density populations occur within the NRMA. Almost all of the Toro manzanita in the NRMA occurs within the northeastern and central portions of the area.

**Sandmat Manzanita**. Approximately 1,000 acres of low-density sandmat manzanita populations, 2,000 acres of medium-density populations, and roughly 2,500 acres of high-density populations occur within the NRMA. Most of the sandmat manzanita in the NRMA occurs within the inland range area.

**Monterey Ceanothus.** Approximately 1,500 acres of low-density Monterey ceanothus populations, 5,500 acres of medium-density populations, and roughly 1,500 acres of high-density populations occur within the NRMA. Monterey ceanothus occurs throughout the NRMA, except in the grassland area in the southeast.

**Eastwood's Ericameria**. Approximately 2,500 acres of low-density Eastwood's ericameria populations and roughly 1,500 acres of medium-density populations occur within the NRMA. Most of these populations occur along the western edge and in the northeastern corner of the NRMA.

**Coast Wallflower**. Approximately 100 acres of low-density coast wallflower populations occur within the NRMA. Most of this area is along the western edge of the NRMA.

Hooker's Manzanita. Approximately 1,000 acres of low-density Hooker's manzanita populations, 2,000 acres of medium-density populations, and roughly 1,000 acres of high-density populations occur within the NRMA. Hooker's manzanita occurs primarily within the central portion of the NRMA.

Black Legless Lizard. Approximately 1,000 acres within the NRMA yard contain appropriate soils and vegetation to provide potential habitat for black legless lizard. This area occurs along the western edge of the NRMA. The NRMA has not been surveyed for the presence of black legless lizards.

Monterey Ornate Shrew. Microhabitat conditions necessary for Monterey ornate shrews include areas with thick groundcover, such as duff, dead and downed logs, or dense grasses, and abundant invertebrate populations as prey. Inland and coastal oak woodlands and riparian forests are all habitats where these microhabitat conditions are expected to occur, and the woodlands and forests are considered potential habitat for Monterey ornate shrew. A total of approximately 1,500 acres of these four habitat types occur within the NRMA. Most of this area is within the eastern half of the land use area.

**California Tiger Salamander.** Both vernal pools and ponds are considered potential habitat for the California tiger salamander at Fort Ord. Approximately 23 vernal pools and 19 ponds occur within the NRMA. Most vernal pools are in the inland range area, and ponds are found primarily in the grasslands in the southeast corner. Five water bodies within the inland range area are known breeding sites for California tiger salamanders.

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#### Resource Conservation

Overall, undeveloped areas in the NRMA will be maintained in their natural state. No more than 2% of the areas with natural vegetation may be converted to areas having buildings or other developmentoriented uses. Only land management consistent with the conservation of biological resources will be conducted in the NRMA. Potential land uses in the NRMA include public access, grazing, police and fire training, education and research, and implementation of a Natural Resources Management Plan to be developed for the area. Restoration and enhancement efforts described in the next section will also be conducted.

## Management Requirements

NRMA is separated into two portions for management of maritime chaparral. Initial management of the NRMA will be different in the portion within the inland range, and any other areas requiring unexploded ordnance clearing, from the portions outside the inland range. After the clearing of ordnance by the Army, the management of maritime chaparral in the NRMA will be not be separated into these two units.

## NRMA within the Inland Range

During the Army's actions to clear unexploded ordnance from the inland range and other sites within the NRMA, BLM will provide advice and guidance to the Army as the Army carries out the following actions:

- develop the spatial pattern of vegetation burning and ordnance cleaning to promote healthy maritime chaparral and HMP species habitat;
- monitor the recovery and succession of maritime chaparral over the long term and short term;
- study the establishment, persistence, and habitat requirements of sand gilia, Monterey spineflower, and Seaside bird's-beak;
- develop management procedures that encourage and maintain sand gilia, Monterey spineflower, and Seaside bird's-beak populations and habitat; and
- develop management procedures that encourage and maintain populations of other specialstatus maritime chaparral species.

At heavily disturbed sites requiring maritime chaparral restoration (e.g., paved sites, sites of compacted soils), BLM and the Army will conduct portions of the restoration effort. The Army, or others, will prepare the site surface for restoration by removing structures, asphalt, cement, and other materials; ripping compacted soils; restoring natural relief and landform conditions; and using other techniques. Caltrans may assist the Army in these efforts to the extent that funding is negotiated. BLM will conduct revegetation of maritime chaparral at these sites immediately following site preparation to meet the habitat success criteria described below.

### **NRMA Management**

The following management actions will be taken by BLM in the NRMA. These actions will be taken outside the inland range prior to ordnance clearing and within the inland range after ordnance clearing.

Maritime Chaparral Habitat Restoration Success Criteria. Healthy maritime chaparral habitat is described in Chapter 2 in the "Habitat Management Plan Habitats" section. This description and comparisons with undisturbed sites supporting maritime chaparral should be used to measure the success of restored habitat. Restored habitat will consist of naturally regenerating maritime chaparral that is managed to maximize the habitat value for HMP shrub species associated with the habitat.

Sand gilia, Monterey spineflower, and Seaside bird's-beak will also be considered when restoring maritime chaparral habitat. Habitat conditions will be modified in restoration sites to promote favorable conditions for these species. Sand gilia, Monterey spineflower, and Seaside bird's-beak are annuals and locations of populations may vary from year to year. Because population occurrences may vary and restoration sites will be relatively small (typically 1-5 acres), it cannot be expected that each restoration site will support any one of these species every year.

Maritime chaparral restoration will be considered successful if restored sites support naturally regenerating maritime chaparral that becomes a functioning part of the entire dynamic, managed maritime chaparral habitat of the NRMA. These restored maritime chaparral sites should also provide habitat for, and in some years support populations of, sand gilia, Monterey spineflower, and Seaside bird's-beak.

Most potential maritime chaparral restoration sites occur within the inland range area. There are some denuded areas outside of the inland range with potential for maritime chaparral restoration. However, soil conditions at many of these sites (exposed sandstone) would make site preparation and restoration efforts exceptionally costly and labor intensive. These areas are not considered in the HMP as locations where BLM is obligated to restore maritime chaparral habitat.

Maritime Chaparral Enhancement. BLM will enhance maritime chaparral habitat wherever it occurs in a degraded condition in the NRMA. Specific actions will be determined based on the results of monitoring and test study sites. Success criteria will be the same as those for maritime chaparral restoration.

**Monitoring.** BLM will monitor populations of all special-status species within the NRMA and may conduct population viability studies. BLM will maintain records of the location, timing, intensity, and extent of wildfires and controlled fires and will monitor post fire recovery and succession of maritime chaparral.

**Controlled Burning**. BLM will control burn approximately 500 acres per year on a rotational basis (about a 12- to 15-year rotation). Specific seasonal timing, patch size, yearly total, and rotational time for maritime chaparral burns will be determined based on the results of studies of maritime chaparral burning and recovery in the NRMA.

Access Control. Existing roads, necessary for land management, will be maintained by BLM in the NRMA. BLM will close all nonmaintained roads and trails to motor vehicle access. Approximately 240 roads will need to be closed. Permanent barriers will be erected and regular ranger patrols conducted.

**Erosion Control.** BLM will conduct erosion control measures at sites in greatest need of stabilization. These sites are along roads where the road, an adjacent road, or riparian habitat is threatened. BLM estimates that approximately 60 sites will need immediate action to be stabilized.

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#### Responsible Parties

The BLM is responsible for ensuring that habitat enhancement is conducted and that natural vegetation is managed to maintain high habitat value for HMP species.

### PARCEL SR1 - UNIVERSITY OF CALIFORNIA NATURAL RESERVE SYSTEM RESEARCH AREA FRITZSCHE ARMY AIRFIELD

#### Land Use Description

The University Research Area (URA) sites will be managed by the University of California's Natural Reserve System (UCNRS). The mission of the UCNRS is to contribute to the understanding and wise management of the earth and its natural systems by supporting university-level teaching, research, and public service at protected natural areas throughout California. Consistent with this mission, the University of California, through the UCNRS, agrees to protect and maintain viable populations of listed and proposed species on the URA sites via a management program. Research and teaching activities for the study of existing natural resources will be conducted on the URA sites. The URA site at Fritzsche Army Airfield (URAF) is shown as Parcel SR1 in Figure 4-1.

#### **Resources Present**

#### Major Habitat Features

Two habitat types occur within the 273-acre URAF site. The most abundant habitat type is maritime chaparral, covering approximately 171 acres. The second habitat type, coastal coast live oak woodland, covers approximately 101 acres.

### Listed and Proposed Threatened and Endangered Species

**Sand Gilia**. During spring 1993 surveys, 14 sand gilia populations were found to occur entirely within the URAF, and most of one large population was within the URAF boundary (Figure 4-2). The 14 populations completely encompassed by the URAF range from approximately 15 to 4,500 individual plants each. Approximately 90% of the areal extent of the large population occurs within the URAF. This large population supports about 12,500 of sand gilia plants with an estimated 11,250 of these individuals within the URAF parcel. The estimated total number sand gilia plants within the URAF parcel in spring 1993 was 18,175.

Monterey Spineflower. Approximately 200 acres of habitat within the URAF parcel supports medium-density populations of Monterey spineflower, and approximately 50 acres support high-density populations. Areas supporting high-density populations occur in the northeastern and southwestern corners of the URAF parcel, and medium-density population areas cover the remainder of the site.

#### Other HMP Species

**Black Legless Lizard.** Approximately 150 acres within the URAF parcel contain appropriate soils and vegetation to provide potential habitat for black legless lizard. This area occurs in the southern half of the URAF parcel. One black legless lizard was found in the URAF parcel during 1992 surveys.

Sandmat Manzanita. Approximately 70 acres of habitat within the URAF parcel support mediumdensity populations of sandmat manzanita populations, and roughly 150 acres support high-density populations. The area supporting medium-density populations occurs in the northwestern portion of the URAF parcel and high-density populations cover the remainder of the land use area.

Monterey Ceanothus. Approximately 100 acres of habitat within the southern half of the URAF parcel support low-density populations of Monterey ceanothus and roughly 130 acres support medium-density populations.

**Eastwood's Ericameria**. Approximately 60 acres of habitat within the eastern portion of the URAF parcel support low-density populations of Eastwood's ericameria.

**Coast Wallflower**. Approximately 10 acres of habitat within the URAF parcel support low-density populations of coast wallflower and roughly 70 acres support medium-density populations. Both areas occur in the eastern portion of the URAF parcel.

Monterey Ornate Shrew. Microhabitat conditions necessary for Monterey ornate shrews include areas with thick groundcover, such as duff, dead and downed logs, or dense grasses, and abundant invertebrate populations as prey. Coastal coast live oak woodland is one of several habitat types in which these microhabitat conditions are expected to occur, and the woodland is considered potential habitat for Monterey ornate shrew. A total of approximately 100 acres of coastal coast live oak woodland occur in the northern portion of the URAF parcel.

**Toro Manzanita**. Approximately 2 acres of habitat within the URAF parcel support low-density populations of Toro manzanita. This area occurs near the southern boundary of the land use area.

### **Resource Conservation**

Research and teaching activities for the study of existing natural resources will be conducted on the URA sites and natural habitats will be preserved and protected. Development will be limited within the URA sites to that needed to support scientific research and teaching and to manage the habitat with priority given to HMP plant and wildlife species. Development will not affect more than 1% of the total natural habitat within the parcel.

### Management Requirements

The following sections describe management principles and procedures that will guide management of sites designated as URA.

#### **Baseline Inventory and Mapping**

The UCNRS will conduct a detailed, site-specific inventory and mapping of species and habitats on the URAF site, with an emphasis on special-status species that have significant habitat at the URAF site.

#### Environmental Monitoring

The UCNRS will design and implement an ongoing environmental monitoring program for both abiotic (e.g., climate and hydrology) and biotic (e.g., special-status species) components at URA sites. Monitoring data will be used to guide species and habitat management programs.

#### Active Management

The UCNRS will actively manage species and habitats, with an emphasis on maintaining viable populations and habitats of listed, proposed, and candidate species, including the maintenance of necessary disturbance regimes and ecosystem processes, as appropriate.

### Management-Oriented Research

The UCNRS will foster targeted research to address species and habitat management issues and to provide a base for informed management.

### Land Use Monitoring

As a trustee agency under CEQA, the University of California is required to be notified when land use activities on adjacent lands have the potential to adversely affect environmental resources managed by the UCNRS in the public trust. Trustee agencies may require early consultation with project proponents, identify significant impacts on public trust resources, and recommend mitigation and mitigation monitoring requirements for project approval.

## **Responsible Parties**

The University of California will be responsible for ensuring that natural resources are protected and properly managed at the URAF site.

## PARCEL SR2 - UNIVERSITY OF CALIFORNIA NATURAL RESERVE SYSTEM UNIVERSITY RESEARCH AREA RESERVATION ROAD

### Land Use Description

The University Research Area Reservation Road (URAR) area is shown as Parcel SR2 in Figure 4-1. The land use for the URAR parcel will be the same as for the URAF parcel.

A proposed Multi-Modal Corridor passes through the western section of the URAF parcel. This corridor is treated separately under the section for Parcel LN3.

### **Resources Present**

## Major Habitat Features

Four habitat types occur within the URAR parcel. The most abundant habitat type is maritime chaparral, covering approximately 102 acres. Other habitat types include approximately 65 acres of coastal coast live oak woodland, 7 acres of annual grassland, and 1 acre of coastal scrub.

## Listed and Proposed Threatened and Endangered Species

**Sand Gilia**. Three sand gilia populations and portions of two other populations were found in the URAR during spring 1993 surveys. The three full populations consist of approximately 4,000, 1,500, and 300 Individual plants each for a total of 5,800 sand gilia plants. The total number of sand gilia plants in the URAR is greater than 5,800 because small portions of two other populations (of 1,000 and 750 individuals each) are also encompassed by the URAR.

**Monterey Spineflower**. Approximately 6 acres of habitat within the URAR parcel support lowdensity Monterey spineflower populations, 60 acres support medium-density populations, and roughly 100 acres support high-density populations of Monterey spineflower. High-density populations of Monterey spineflower occur primarily in the western portion of the URAR parcel, and medium-density populations occur in the eastern portion of the URAR parcel.

## Other HMP Species

**Toro Manzanita**. Approximately 40 acres of habitat within the western portion of the URAR parcel support low-density populations of Toro manzanita.

**Sandmat Manzanita**. Approximately 4 acres of habitat within the URAR parcel support low-density populations of sandmat manzanita populations, 60 acres support medium-density populations, and roughly 40 acres support high-density sandmat manzanita populations. Low-density populations occur in the eastern portion of the URAR parcel, medium-density populations occur in the central portion of the URAR parcel, and high-density populations occur in the western portions of the land use area.

**Monterey Ceanothus.** Approximately 40 acres of habitat within the URAR parcel support lowdensity populations of Monterey ceanothus and roughly 60 acres support medium-density populations. Lowdensity populations occur in the western portion of the URAR parcel, and medium-density populations occur in the central portion of the URAR parcel.

**Eastwood's Ericameria**. Approximately 40 acres of habitat within the western portion of the URAR parcel support low-density populations of Eastwood's ericameria.

**Coast Wallflower.** Approximately 60 acres of habitat within the URAR parcel support low-density populations of coast wallflower and 1 acre supports high-density populations. Low-density populations occur in the western and eastern portions of the URAR parcel, and the 1 acre of high-density population occurs along the northern border of the land use area.

Black Legless Lizard. Approximately 100 acres within the western portion of the URAR parcel contain appropriate soils and vegetation to provide potential habitat for black legless lizard.

Monterey Ornate Shrew. Microhabitat conditions necessary for Monterey ornate shrews include areas with thick groundcover, such as duff, dead and downed logs, or dense grasses, and abundant invertebrate populations as prey. Coastal coast live oak woodland is one of several habitat types in which these microhabitat conditions are expected to occur, and the woodland is considered potential habitat for Monterey ornate shrew. Approximately 65 acres of coastal coast live oak woodland occur in the eastern portion of the URAR parcel.

## Resource Conservation

Resource conservation will be the same for the URAR parcel as for the URAF parcel.

### Management Requirements

Management requirements for the URAR parcel are the same as for the URAF parcel.

### Responsible Parties

The University of California will be responsible for ensuring that natural resources are protected and properly managed on the URAR parcel.

### PARCEL SR3 - UNIVERSITY OF CALIFORNIA RESEARCH AREA LANDFILL

### Land Use Description

The University Research Area Landfill (URAL) parcel occurs on the existing landfill site located northeast of the Main Garrison just south of Imjin Road. This area would be used as a research area that would be affiliated with the adjacent California State University campus (shown as Parcel SR3 in Figure 4-1). Research activities would include both studies of the landfill relating to hazardous and toxic waste, and studies of existing natural resources. Both the landfill and natural areas will also be used for teaching opportunities. There may be limited development to support research and teaching activities. Regulatory agencies may negotiate and implement land use restrictions within the URAL parcel to ensure that proposed research activities meet established guidelines for the protection of human health and the environment.

### **Resources Present**

### Major Habitat Features

Three habitat types occur within the URA at the landfill. The most abundant habitat type is coastal coast live oak woodland, covering approximately 175 acres. Other habitat types include about 100 acres of annual grassland and roughly 90 acres of maritime chaparral. Approximately 8 acres are developed.

## Listed and Proposed Threatened and Endangered Species

Sand Gilia. Five sand gilia populations were found in the URAL parcel during spring surveys in 1993. Populations range from approximately 2 to 300 individual sand gilia plants each (Figure 4-2). Therefore, a total of about 720 sand gilia plants occurred in the URAL parcel in 1993.

Monterey Spineflower. Approximately 200 acres of habitat throughout the URAL parcel support low-density Monterey spineflower populations and roughly 80 acres support medium-density populations.

## **Other HMP Species**

Sandmat Manzanita. Approximately 250 acres of habitat within the URAL parcel support lowdensity populations of sandmat manzanita and roughly 100 acres support medium-density populations. Medium-density populations occur in the northeastern and northwestern portions of the URAL parcel and low-density populations occur primarily in the southern and central portions of the URAL parcel.

**Monterey Ceanothus**. Approximately 200 acres of habitat primarily within the northwestern portion of the URAL parcel support low-density populations of Monterey ceanothus.

**Coast Wallflower**. Approximately 10 acres of habitat within the northeastern portion of the URAL parcel support medium-density populations of coast wallflower.

Black Legless Lizard. Approximately 90 acres within the eastern portion of the URAL parcel contain appropriate soils and vegetation to provide potential habitat for black legless lizard.

Monterey Ornate Shrew. Microhabitat conditions necessary for Monterey ornate shrews include areas with thick groundcover, such as duff, dead and downed logs, or dense grasses, and abundant invertebrate populations as prey. Coastal coast live oak woodland is one of several habitat types in which these microhabitat conditions are expected to occur, and the woodland is considered potential habitat for Monterey ornate shrew. A total of approximately 175 acres of coastal coast live oak woodland occur primarily in the southern portion of the URAL parcel.

## Resource Conservation

Landfill areas in the URAL parcel will have been capped by the Army prior to University of California (UC) receiving the property. The HMP will not require UC to perform any resource conservation measures in these capped areas. Other portions of the URAL parcel support natural vegetation and populations and potential habitat for HMP species. Sand gilia and Monterey spineflower populations will also have been established by the Army in these areas as mitigation for impacts from landfill remediation (as described in Chapter 3).

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Areas of natural habitat remaining in the URAL parcel after landfill remediation will be preserved and protected. Research and teaching activities for the study of existing natural resources will also be conducted on the URAL site. Development will be limited within the URAL parcel to that needed to support scientific research on both the landfill and remaining natural habitats, to support teaching, and to manage the habitat with priority given to HMP plant and wildlife species.

#### **Management Requirements**

Management requirements for HMP resources in areas of natural vegetation in the URAL parcel will be the same as for the URAF parcel. If the Army has not completed establishment and monitoring requirements for sand gilia and Monterey spineflower mitigation before UC receives the landfill parcel, UC will cooperate with the Army and potentially assist the Army in completing the mitigation success criteria.

#### PARCEL SR4 - HABITAT CORRIDOR

#### Land Use Description

The Habitat Corridor Parcel (HAB3) is shown as Parcel SR4 in Figure 4-1. The corridor is intended as a connector between the URAF (Parcel SR1) and the URAR parcel (Parcel SR2) to assist in maintaining the long-term viability of HMP species populations in these areas. (The importance of habitat corridors is described in detail in the "Ecological Concepts for Conservation Area and Corridor System Design" section in Chapter 2.)

The HAB3 parcel will be managed by the UCNRS, and land use in the parcel will be the same as for the URAF.

#### **Resources Present**

#### Major Habitat Features

The entire HAB3 parcel contains maritime chaparral habitat.

#### Listed and Proposed Threatened and Endangered Species

Sand Gilia. Portions of two sand gilia population occur in the HAB3, totaling approximately 700 individual plants within the parcel (1993 surveys).

Monterey Spineflower. The entire HAB3 parcel supports medium-density occurrences of Monterey spineflower.

#### Other HMP Species

Sandmat Manzanita. The entire HAB3 parcel supports medium-density occurrences of sandmat manzanita.

Monterey Ceanothus. The entire HAB3 parcel supports medium-density occurrences of Monterey ceanothus.

Eastwood's Ericameria. The entire HAB3 parcel supports medium-density occurrences of Eastwood's ericameria.

Black Legless Lizard. The maritime chaparral within the HAB3 parcel is considered potential habitat for black legless lizards.

### Resource Conservation

Resource conservation requirements for the HAB3 parcel will be the same as for the URAF. Any development necessary for scientific research, teaching, or maintenance activities will be sited and constructed so that it does not impede the area's function as a habitat corridor for HMP species.

## Management Requirements

Management requirements for the HAB3 parcel will be the same as for the URAF parcel. In addition, all artificially created landscape features within the HAB3 parcel (i.e., lawns, sports fields) will be removed and the area restored to sand hill maritime chaparral.

## **Responsible Parties**

The University of California will be responsible for conservation and management requirements in the HAB3 parcel.

## PARCEL SR5 - CALIFORNIA DEPARTMENT OF PARKS AND RECREATION DISTURBED HABITAT ZONE

### Land Use Description

The Disturbed Habitat Zone is divided into three sections (Parcel SR5 in Figure 4-1): an area north of the Aquaculture/Marine Research Facility (AQ/MR), a small area between the AQ/MR and the Multi-Use Area/Asilomar-Type Facility (MUA/ATF), and a large area south of the MUA/ATF.

The DHZ would be used for preservation of restored coastal dune habitats and for visitor service facilities. Day use facilities could include hiking trails, interpretive displays, and group picnic areas. Overnight facilities could include family/group and hike-in/bike-in campgrounds, a hostel facility, and a campfile center for interpretive programs. Creation of vernal ponds is also being considered within the DHZ. Public access will be on existing roads and new hiking trails.

Trail construction would involve minimal grading and the use of guide railings for pedestrian control. Interpretive signs would be provided around the natural resources of the zone.

A beach through-road connecting the City of Marina to Sand City has been proposed along the existing beach frontage road west of Highway 1 and would pass through the north and south segments of the DHZ. This road is treated separately under the section for Parcel SM7.

#### Resources Present

#### Major Habitat Features

Four habitat types occur in the DHZ. The dominant habitat type consists of ice plant mats, which are present throughout the parcel. Other habitat types include disturbed dunes, which occur in the northern and southern portions of the parcel, and small areas of dune scrub and coastal strand.

#### Listed and Proposed Threatened and Endangered Species

Smith's Blue Butterfly. Smith's blue butterflies are completely dependent on seacliff and coast buckwheat for oviposition and as food sources for larva and adults. Areas supporting medium or high densities of either buckwheat species are considered potential habitat for Smith's blue butterfly. These areas occur primarily in the northern portion of the DHZ.

Sand Gilia. Sand gilia was not found during surveys of the DHZ; however, sand gilia will be included in restoration plans for the area.

Monterey Spineflower. Approximately 300 acres within the DHZ support low-density Monterey spineflower populations, 70 acres support medium-density populations, and roughly 60 acres support high-density populations. High-density populations occur in the northern portion of the DHZ, medium-density populations occur primarily in the central DHZ, and low-density populations occur throughout the DHZ except in the extreme northern and southern regions.

#### Other HMP Species

**Coast Wallflower**. Approximately 20 acres of area within the DHZ support low-density coast wallflower populations, 4 acres support medium-density populations, and roughly 10 acres support high-density populations. High-density populations occur near the northern installation boundary, medium-density populations occur south of the high-density populations, and low-density populations occur in the central DHZ.

Black Legless Lizard. Areas that support native dune vegetation are considered potential habitat for coastal populations of black legless lizards. Approximately 100 acres of potential black legless lizard habitat occur in the DHZ.

#### Resource Conservation

Large areas in the DHZ will be restored to native vegetation and HMP species habitat. These actions are described below. Outside of the sites disturbed by providing designated visitor services and facilities, all HMP resources within the DHZ will be preserved.

## Management Requirements

### Inventory

DPR will inventory both the DHZ and Coastal Dunes Zone (CDZ) (the CDZ is described following the DHZ section) to identify dune habitat restoration sites. DPR will use the Army's inventory data for lead removal sites where applicable and will not be required to reinventory these sites. Degraded habitat supporting dense mats of African ice plant and heavily disturbed habitat dominated by non-native weeds that are most suitable for restoration of native coastal stand habitat will be identified. The location, physical condition, and biological condition of each restoration site will be recorded and mapped.

## Dune Habitat Restoration

All disturbed and degraded sites within the DHZ and CDZ that are not developed for visitor services or other uses will be restored and enhanced to native coastal strand and dune scrub. This will total approximately 700 acres. Within these roughly 700 acres, DPR will be responsible for restoration and enhancement of habitat not previously restored by the Army following removal of lead and other heavy metals. It is an objective of the HMP that at least 250 acres of the total dune habitat restoration be completed by DPR within 7 years of land transfer to DPR (subject to availability of funds). Habitat restoration will involve the removal of African ice plant, dune stabilization, and establishment of native dune plants. The restored habitat will include suitable habitat for sand gilia and Monterey spineflower. Successful dune habitat restoration techniques used at Marina and Asilomar State Beaches should be used at Fort Ord.

## Monitoring and Management

DPR will monitor the success of native coastal strand and dune scrub habitat restoration with specific monitoring of the establishment and persistence of sand gilia and Monterey spineflower populations. Management of dune habitats will be conducted as needed to maintain viable populations of sand gilia and Monterey spineflower. Monitoring data will be used to guide species and habitat management programs. Target levels for average yearly population sizes are 14,000-18,000 individuals of sand gilia and 375-475 acres of habitat occupied by high densities of Monterey spineflower.

## Access Control

DPR will restrict foot and vehicle access in areas that:

- support Smith's blue butterfly populations or habitat,
- contain existing populations of sand gilia and medium- and high-density occurrences of Monterey spineflower, and
- support western snowy plover breeding habitat during the breeding season.

DPR may create opportunities for controlled interpretive trails or guided events at these sites.

Boardwalks and/or railed trails will be constructed to channel foot traffic across the DH2 to the CDZ. Interpretative signs will be placed at the entrance to and along each trail/boardwalk describing the sensitive species present and the need to restrict foot traffic on the dunes. Trail/boardwalk siting will avoid as much as possible areas currently supporting native dune vegetation.

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Visitor service facilities will be sited, to the extent possible, to avoid areas currently supporting sensitive resources.

### Responsible Parties

DPR will be responsible for implementing all management responsibilities.

## PARCEL SR6 - CALIFORNIA DEPARTMENT OF PARKS AND RECREATION COASTAL DUNE ZONE

## Land Use Description

The CDZ (Parcel SR6 in Figure 4-1) would be used for the preservation of restored coastal dunes habitat, with public access limited to hiking trails and beach access. The sandy beach area would provide the prime public recreation opportunities in the coastal zone, including wading, surfing, fishing, sunbathing, and picnicking. Creation of vernal ponds is also being considered in the CDZ. Public access would be by pedestrian means only.

Trail construction would involve minimal grading and the use of boardwalks, sand ladders, and guide railings for pedestrian control. Interpretive signs about the natural resources of the zone would be provided for public education.

#### **Resources Present**

### Major Habitat Features

Five habitat types occur in the CDZ. The dominant habitat type is beaches, bluff, and blowouts. Other habitat types include iceplant mats, coastal strand, disturbed dunes, and dune scrub.

### Listed and Proposed Threatened and Endangered Species

**Sand Gilia**. Two populations of sand gilia occur in the CDZ near the northern base boundary. One population supports approximately 500 plants and one supports approximately 100 plants.

Smith's Blue Butterfly. Smith's blue butterflies are completely dependent on seacliff and coast buckwheat for oviposition and as food sources for larva and adults. Areas supporting medium or high densities of either buckwheat species are considered potential habitat for Smith's blue butterfly. Areas of potential habitat occur in the northern CDZ and just south of the center of the area. Populations of Smith's blue butterfly have been reported in the northern, central, and southern CDZ.

Monterey Spineflower. Approximately 100 acres of low-density Monterey spineflower populations, 5 acres of medium-density populations, and roughly 30 acres of high-density populations occur within the CDZ. High-density populations occur in the northern portion of the CDZ, medium-density populations occur primarily in the central CDZ, and low-density populations occur throughout the CDZ except in the extreme northern and southern regions.

Western Snowy Plover. Flat beach areas above the high tide line are considered potential nesting habitat for coastal populations of western snowy plover. The acres of potential nesting habitat in the CDZ cannot accurately be estimated; however, the entire coast line is considered potential habitat. Western snowy plovers have been recorded nesting between Stilwell Hall and the northern base boundary.

## Other HMP Species

**Coast Wallflower.** Approximately 60 acres of area within the CDZ support low-density coast wallflower populations, 30 acres support medium-density populations, and roughly 25 acres support high-density populations. High-density populations occur near the northern installation boundary, medium-density populations occur south of the high-density populations, and low-density populations occur in the central CDZ.

Black Legless Lizard. Areas that support native dune vegetation are considered potential habitat for coastal populations of black legless lizards. Approximately 100 acres of potential black legless lizard habitat occur in the CDZ. Populations of black legless lizards have been reported in the southern portion of the CDZ.

## Resource Conservation

Except for areas disturbed by boardwalk and/or sand ladder construction, all HMP resources within the CDZ will be preserved.

## Management Requirements

Boardwalks and/or sand ladders will be constructed to channel foot traffic from the DHZ to the beach. Interpretative signs will be placed along each boardwalk/sand ladder describing the sensitive species present and the need to restrict foot traffic on the dunes. Boardwalk/sand ladder siting will avoid areas currently supporting native dune vegetation.

Beach access will be restricted at all western snowy plover nesting areas (including an acceptable buffer distance) during the snowy plover breeding and nesting season (March through September). If snowy plovers are found nesting in other areas, beach access will be restricted there as well. Beach raking will not be used as a method to remove trash in areas where western snowy plovers are nesting.

## **Responsible Parties**

DPR is responsible for implementing all management requirements after Army lead removal and restoration requirements are complete and DPR has received the property.

### PARCEL SR7 - AQUACULTURE/MARINE RESEARCH

Land Use Description

The aquaculture/marine research parcel (AQ/MR) is located at and surrounds the existing wastewater treatment plant (Parcel SR7 on Figure 4-1). The AQ/MR would include facilities for raising fish and shellfish on land in tanks and research facilities oriented toward oceanographic studies.

### **Resources Present**

### Major Habitat Features

The AQ/MR parcel supports disturbed dune and ice plant mat habitats in the northern section and ice plant mats at the southern edge. Developed sites of the old treatment plant and three treatment ponds are present in the southern portion of the parcel. The northeastern edge of the parcel is a firing range.

### Listed and Proposed Threatened and Endangered Species

Smith's Blue Butterfly. Potential habitat for Smith's blue butterfly occurs along the western edge and at the northern end of the AQ/MR parcel.

**Monterey Spineflower.** Low- and medium-density occurrences of Monterey spineflower are found in disturbed dune and ice plant mat habitats throughout the AQ/MR parcel.

### Other HMP Species

Sandmat Manzanita. The northern end of the AQ/MR parcel supports a small patch of ice plant mat habitat with sandmat manzanita at low density.

Coast Wallflower. Low-density occurrences of coast wallflower occur at the northern end and western edge of the AQ/MR parcel.

Black Legless Lizard. The northern end of the AQ/MR parcel supports potential habitat for black legless lizard.

### Resource Conservation

New development at the AQ/MR parcel will be restricted to the existing treatment plant and abandoned ponds. Populations or habitat of Smith's blue butterfly will not be disturbed.

## Management Requirements

To prevent potential degradation of habitat in the AQ/MR parcel and in adjacent parcels from unauthorized vehicle entry, a barrier will be installed around all developed areas where topography would allow vehicle access. The design of the barrier and the materials used will be sufficient to prevent vehicles from leaving developed areas.

Measures will also be taken to minimize the potential for erosion in natural areas of the parcel or on adjacent parcels from stormwater runoff, which may originate from developed portions of the AQ/MR parcel.

## **Responsible Parties**

University of California and other parties which have not been determined will be responsible for ensuring that HMP guidelines are followed at the AQ/MR and OP5 parcels.

## PARCEL SR8 - CALTRANS HIGHWAY 1 CORRIDOR

## Land Use Description

The Caltrans Highway 1 corridor (HIWAY) comprises the exiting Highway 1 right-of-way (Parcel SR8 in Figure 4-1). This parcel will continue to be used for transportation purposes and may be used for expansion or improvements of transportation systems.

### Resources Present

### Major Habitat Features

The road shoulders and medians of Highway that the HIWAY parcel support mostly disturbed dune, ice plant mat, and annual grassland habitats with remnant patches of coastal strand, dune scrub, and sand hill maritime chaparral. Sand hill maritime chaparral is best developed at the northern end of the parcel. Horticultural tree plantings are also present.

### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. Monterey spineflower occurs at scattered locations throughout the HIWAY parcel, mostly at low density.

### Other HMP Species

Sandmat Manzanita. Sandmat manzanita occurs in sand hill maritime chaparral and ice plant mat habitats at the north end of the HIWAY parcel.

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Monterey Ceanothus. Low- and medium-density populations of Monterey ceanothus occur in sand hill maritime chaparral habitat at the north end of the HIWAY parcel.

Eastwood's Ericameria. Scattered individuals of Eastwood's ericameria may occur in sand hill maritime chaparral habitat at the north end of the HIWAY parcel.

**Coast Wallflower.** Scattered individuals of coast wallflower may occur in sand hill maritime chaparral habitat at the north end of the HIWAY parcel.

Black Legless Lizard. The HIWAY parcel supports potential habitat for black legless lizard in the maritime chaparral at the northern end of the parcel.

### Resource Conservation

Caltrans will preserve existing patches of native coastal strand, dune scrub, and sand hill maritime chaparral habitats in the road shoulders and medians in areas that will not conflict with anticipated highway expansion, improvements, operations, or maintenance.

## **Management Requirements**

Caltrans will restore and enhance native coastal strand, dune scrub, and sand hill maritime chaparral habitats in the road shoulders and medians in areas that will not conflict with anticipated highway expansion, improvements, operations, or maintenance.

### **Responsible Parties**

Caltrans is responsible for ensuring that HMP conservation and management guidelines are followed in the HIWAY parcel.

## PARCEL SR9 - CALTRANS STATE ROUTE 68 CORRIDOR

### Land Use Description

The Caltrans SR 68 corridor is a 1,000-foot-wide study corridor for a proposed new route for SR 68. The corridor would include easements to the Caltrans from BLM and Monterey County. The Caltrans parcel is identified as Parcel SR9 in Figure 4-1 and it crosses the following parcels: Parcel FR1 (NRMA), Parcel LM11 (CPRK3), Parcel LM7 (OP5), Parcel LM23 (SE), and Parcel LM13 (RAE2). The developed portion of this right-of-way would be approximately 300 feet wide.

As an alternative to a new SR 68 corridor, Caltrans is studying improvements to the existing SR 68 corridor.

### **Resources Present**

### Major Habitat Features

Several habitat types occur in the transportation corridor. Maritime chaparral is the dominant habitat type, with annual grassland and valley needlegrass grassland also prevalent. Some mixed riparian forest, inland coast live oak woodland, coast live oak savanna, and vernal pool habitat also occur.

## Listed and Proposed Threatened and Endangered Species

Sand Gilia. Maritime chaparral supporting a low density occurrence of sand gilia is crossed by the the transportation corridor north of Laguna Seca.

**California Linderiella**. California linderiella inhabits vernal pools. One vernal pool is found in the CALTRANS parcel.

Monterey Spineflower. The western portion of the CALTRANS parcel supports medium-density occurrences of Monterey spineflower.

## Other HMP Species

Toro Manzanita. Low-, medium-, and high-density patches of Toro manzanita are found in the western and central portions of the CALTRANS right-of-way.

**Sandmat Manzanita**. The CALTRANS right-of-way contains medium- and low-density occurrences of sandmat manzanita in the western and central segments of the parcel.

**Monterey Ceanothus.** Medium- and high-density occurrences of Monterey ceanothus are present in the western and central segments of the CALTRANS parcel.

Hooker's Manzanita. Low-, medium-, and high-density occurrences of Hooker's manzanita are present in the western and central sections of the CALTRANS footprint.

Monterey Ornate Shrew. Microhabitat conditions necessary for Monterey ornate shrew include areas with thick groundcover such as duff, dead and downed logs, or dense grasses, and abundant invertebrate populations as prey. Mixed riparian and cak woodland habitats support these microhabitat conditions and are considered potential habitat for Monterey ornate shrew. Small amounts of mixed riparian and oak woodland habitats occur in the CALTRANS right-of-way.

## Resource Conservation

BLM will conserve HMP habitats and species in the CALTRANS parcel in the same manner as other parts of the NRMA, until such time as a new highway is planned and constructed.

Caltrans will design and construct the highway to avoid impacts on all vernal pools and vernal pool watersheds. Caltrans will design and construct the highway to minimize impacts on all natural habitats and HMP species populations. Caltrans will conserve or restore natural habitats in the road shoulders and medians.

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There are no resource conservation requirements for the CALTRANS parcel where it crosses the CPRK3, OP5, SE, and RAE2 parcels.

#### **Management Requirements**

BLM will manage the CALTRANS parcel in the same manner as other parts of the NRMA. However, because new highway construction could occur in the parcel, no restoration or enhancement of habitat or HMP species will be conducted.

Caltrans will coordinate with BLM regarding interim management of the proposed state right-of-way until such time that a project could be constructed. If the project is to be constructed, Caltrans will continue to coordinate management of natural habitats and HMP species with BLM prior to, during, and following construction. Caltrans may participate in the CRMP.

There are no HMP resource management requirements for the CALTRANS parcel where it crosses the CPRK3, OP5, SE, and RAE2 parcels.

If the proposed SR 68 corridor through Fort Ord is not used by Caltrans, money spent toward mitigation associated with this parcel may be applied toward mitigation for other potential Caltrans projects within the Fort Ord boundaries, based on review and approval by USFWS and DFG.

### Responsible Parties

Caltrans will be responsible for implementing all management requirements in the Caltrans' SR 68 parcel. Caltrans will coordinate with BLM and the County of Monterey on HMP species and habitat conservation and management when planning and constructing of the State Route 68 corridor.

### PARCEL LR1 - COUNTY OF MONTEREY HABITAT AREA

### Land Use Description

The County of Monterey Habitat Area (HAB4) is shown as Parcel LR1 in Figure 4-1. This parcel will be a protected open space area with limited or no public access. The County of Monterey will have jurisdiction over this parcel.

#### **Resources Present**

#### Major Habitat Features

The entire HAB4 parcel supports coastal coast live oak woodland.

## Listed and Proposed Threatened and Endangered Species

Sand Gilia. Two sand gilla populations, one supporting approximately 1,000 plants and the second supporting 50 plants, occur in the HAB4 parcel (1993 surveys). Scattered individuals also occur along roads and firebreaks in the parcel.

Monterey Spineflower. The northwestern portion of the HAB4 parcel supports medium-density occurrences of Monterey spineflower, and the southeastern portion supports low-density occurrences.

### Other HMP Species

No other botanical HMP species are known to occur in the HAB4 parcel. Potential suitable habitat for the following HMP wildlife species occurs at the HAB4.

**Monterey Ornate Shrew.** The coastal coast live oak woodlands in the HAB4 parcel are considered potential habitat for the Monterey ornate shrew.

## **Resource Conservation**

All habitat within the HAB4 parcel will be preserved in perpetuity.

## Management Requirements

The HAB4 parcel will be managed to maintain existing habitat values for HMP species. Management will include maintaining small amounts of area with disturbed sandy soils to support sand gilia and Monterey spineflower habitat.

Two populations of sand gilia and scattered individuals were found in the HAB4 parcel during 1993 surveys. In addition to providing habitat for sand gilia, the HAB4 parcel, in conjunction with the RV parcel (Parcel LR2), are important as a corridor for sand gilia movement between the URAR parcel (Parcel SR2) and the NRMA (Parcel FR1). Sand gilia habitat should be maintained in the HAB4 parcel to retain and Improve the areas function as a corridor for sand gilia movement. Special attention should be given to maintaining north-south trending linear habitat, such as dirt roads and firebreaks, to enhance the potential for sand gilia populations from the NRMA and URAR parcel to occasionally intermix.

The County of Monterey may contract with an appropriate and qualified CRMP agency or other appropriate and qualified agency, as approved by the USFWS, to manage, or assist in managing, natural resources within the HAB4 parcel.

## **Responsible Parties**

The County of Monterey will be responsible for ensuring that all conservation and management requirements for the HAB4 parcel are fulfilled.

## PARCEL LR2 - MONTEREY COUNTY RECREATIONAL VEHICLE PARK/YOUTH CAMP

#### Land Use Description

The recreational vehicle park/youth camp parcel (RV) is shown as Parcel LR2 in Figure 4-1. The RV parcel is near the East Garrison and includes the existing RV park/family camp. The existing campground (35 RV sites and 75 campsites) will be improved and potentially expanded. Future expansion of these facilities will not be undertaken without review and approval by USFWS and DFG to insure the continued integrity of the habitat corridor through the RV parcel. The remaining acreage will be used for minor development related to low-impact programs for youth, outdoor nature education, resource management, and trails. These minor developments will also be subject to review and approval by USFWS and DFG. No more than 250 children may camp at any one time outside of the area designated existing RV Park and Associated Facilities (Figure 4-3).

#### **Resources Present**

#### Major Habitat Features

Approximately 221 acres of oak woodland occur within the RV park. No maritime chaparral occurs within the land use footprint. Coastal coast live oak woodland occurs over the majority of the RV parcel. A segment of grassland also occurs in the southeast section of the footprint.

The western portion of the county RV park is within a corridor connecting two conservation areas.

### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. Monterey spineflower occurs in roughly half of the RV land use area. Lowdensity populations are concentrated in the western section and medium-density populations in the eastern section.

**California Linderiella**. One pond, approximately 1 acre in size, occurs within the RV parcel. Ponds are considered potential habitat for California linderiella at Fort Ord. However, the RV pond is artificial and stocked for recreational fishing. It is unlikely that California linderiella occur.

**California Red-Legged Frog.** The same pond described above for California linderiella is also considered potential habitat for California red-legged frogs. The California red-legged frog is highly susceptible to predation by fish and is not expected to occur in a pond stocked for recreational fishing.

#### Other HMP Species

**Sandmat Manzanita**. Low-density sandmat manzanita populations cover about one-quarter of the RV parcel. Populations are restricted to the southeastern portion of the area.

Monterey Ornate Shrew. Microhabitat conditions necessary for Monterey ornate shrews include areas with thick ground cover such as duff, dead and downed logs, or dense grasses, and abundant invertebrate populations as prey. Oak woodlands are one of several habitats where these microhabitat conditions are expected to occur and are considered potential habitat for Monterey ornate shrew. The coastal coast live oak woodland habitat in the RV parcel are considered potential habitat for Monterey ornate shrews.

**California Tiger Salamander.** The same pond described previously under "California linderiella" is also considered potential habitat for California tiger salamander. The California tiger salamander is highly susceptible to predation by fish and is not expected to occur in a pond stocked for recreational fishing.

## **Resource Conservation**

Based on the description of proposed land uses within the RV park, development will be concentrated in the existing campground, with potential future expansion of the campground based on USFWS and DFG approval. Uses such as low-impact programs for youth, outdoor nature education, resource management activities, and trails will occur outside of the developed campground (Figure 4-3).

Except for possibly small pockets of native vegetation within the existing campground, no HMP species or other sensitive biological resources will be removed by development. All vegetation will be preserved outside of the existing campground; although, habitat values may be degraded by youths camping in undeveloped areas.

Although the existing pond is considered potential habitat for California linderiella, California tiger salamander, and California red-legged frog continued use for recreational fishing is not considered as either a loss or conservation of a resource because existing conditions will be maintained.

## Management Requirements

The RV parcel is considered part of a habitat corridor connecting two conservation areas. Habitat values within this corridor will be retained at high levels to allow movement of wildlife and dispersal of plant seeds and pollen by various methods.

Management actions to maintain habitat values will include special-status species monitoring, controlled burning and firebreak construction and maintenance as appropriate, vehicle access controls, erosion control, and regular patrol to assure that passive public use and/or unauthorized actions are not impacting natural habitats. A resource management plan will be developed to execute this strategy and will be reviewed by USFWS and DFG. The County of Monterey may implement the RV resource management plan, or the county may contract with an appropriate and qualified CRMP agency or other appropriate and qualified agency, as approved by USFWS, to implement the RV management plan.

In addition, to prevent habitat degradation from youth camping and other activities, several specific management requirements will be included in the overall resource management plan. Interpretive signs and displays will be installed at the RV park entrance and in selected locations throughout the park and camping areas. Displays should describe the importance of the area as a wildlife corridor and methods for maintaining habitat values such as removing trash, limiting ground disturbance, restraining pets, and discouraging capture or harassment of wildlife. Campers should also be informed that rare plants occur at the site and should not be collected.

Surveys will be conducted for Monterey ornate shrews. If Monterey ornate shrews are found in the RV parcel, the following management practices will also be implemented. To preserve dead and downed wood for Monterey ornate shrew wood collection for campfires will not be permitted. Wood for fires will be

# Figure 4-3 Development and Conservation Areas in the Recreational Vehicle Park/Youth Camp Parcel



provided at the campground entrance. If trees or snags must be cut down for public safety reasons the trunk will be left on the ground as potential habitat for Monterey ornate shrew.

Landscaping installed within the campground will consist of species native to the project site.

The county will coordinate with California Department of Forestry and Fire Protection (CDF) and DFG to determine suitable habitat management practices to retain and potentially enhance habitat values within the oak woodlands.

## Responsible Parties

Monterey County will be responsible for ensuring that all conditions described above are followed.

## PARCEL LR3 - MONTEREY COUNTY AGRI-CENTER

### Land Use Description

The Agri-Center (AGRI) is shown as Parcel LR3 in Figure 4-1. The AGRI parcel would include approximately 2 million square feet of agri-business center uses such as shipping, growing, cooling, packaging, and distribution facilities. Additionally, this area would include up to 200 dwelling units for farm labor housing and 50 dwelling units for transitional family housing. The total developed area will not exceed 200 acres within the total AGRI parcel.

As much of the 200 acres to be development as possible will be sited within the existing East Garrison area and Ammo Supply Point (ASP). Development that cannot be accommodated in the East Garrison and ASP will be constructed in areas with less than 30% slope, and will be sited to minimize impacts on HMP plant and animal species.

### Resources Present

### Major Habitat Features

The AGRI parcel is dominated by both the Inland and coastal forms of coast live oak woodland. Grassland habitat occurs in the northwest section of the parcel, and the developed East Garrison occupies the northeast section. Maritime chaparral habitat and a small developed area supporting the Ammo Supply Point occur in the southern portion of the AGRI.

### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. Two small areas of low-density Monterey spineflower populations occur in the western and northern segments of the AGRI parcel.

#### Other HMP Species

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Toro Manzanita. Low-, medium-, and high-density populations of Toro manzanita occur in the southern half of the AGRI parcel.

Sandmat Manzanita. The AGRI parcel supports a small area of low-density occurrences of sandmat manzanita in the western section of the footprint.

Monterey Ceanothus. Medium- and high-density populations of Monterey ceanothus occur in the southern and eastern portions of the AGRI parcel.

Eastwood's Ericameria. Medium-density populations of Eastwood's ericameria occur in the southern portion of the AGRI parcel.

Hooker's Manzanita. The AGRI parcel supports a small area of medium-density occurrences of Hooker's manzanita in the southern tip of the footprint.

Monterey Ornate Shrew. The coast live oak woodlands in the AGRI parcel are considered potential habitat for Monterey ornate shrews.

#### **Resource Conservation**

Development within the AGRI parcel will not exceed 200 acres. As much of this area as possible will be contained within the existing developed East Garrison and ASP. Remaining development will be sited in areas that will minimize impacts on HMP species and have less than 30% slope. All areas within the AGRI parcel that are not developed will be retained as natural habitat.

#### Management Requirements

Undeveloped areas will be retained as natural habitat. Site development will consider options to retain undeveloped areas that are contiguous with natural habitats within the parcel, and with natural habitats in adjacent parcels. Management will include special-status species monitoring, development and maintenance of fire breaks, controlled burning as appropriate, vehicle access controls, erosion control, and regular patrol to assure that passive public use and/or unauthorized actions are not adversely affecting natural habitats. A management plan will be developed to execute this strategy. The management plan will be implemented by the County of Monterey or the county may contract with an appropriate and qualified CRMP agency or other appropriate and qualified agency, as approved by the USFWS, to manage natural resources within the AGRI parcel.

Monterey County will also coordinate with CDF and DFG to determine suitable habitat management practices to retain and potentially enhance habitat values within the oak woodlands in the AGRI.

#### **Responsible Parties**

Monterey County will be responsible for Implementing all conservation and management guidelines described above.

## PARCEL LR4 - MARINA SALINAS RIVER HABITAT AREA

## Land Use Description

The Marina Salinas River Habitat Area (HAB1) is shown as Parcel LR4 in Figure 4-1. The parcel is divided into three areas that occur between the bluffs adjacent to Parcels LM17 and LN3 and the Fort Ord boundary. This parcel will be a protected open space area with limited or no public access. The City of Marina will have jurisdiction over this parcel.

### **Resources Present**

### Major Habitat Features

The southern segment of the HAB1 parcel contains only coastal scrub habitat. The middle and northern segments are dominated by inland coast live oak woodland habitat and also contain small amounts of annual grassland. Some riparian habitat occurs where the Salinas River passes through the northern segment.

### Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower.** The southern HAB1 segment is dominated by medium-density occurrences of Monterey spineflower. The middle segment contains a small area of low-density occurrences and the northern segment contains a small area of medium-density occurrences of Monterey spineflower.

**California Red-Legged Frog.** The Salinas River, where it passes through the HAB1 parcel, is considered potential habitat for the California red-legged frog.

### Other HMP Species

No other botanical HMP resources are found in the HAB1 parcel. Potential suitable habitat is present for the following HMP wildlife species.

**Monterey Ornate Shrew.** The inland coast live oak woodlands, and riparian woodlands within the HAB1 parcel are considered potential habitat for the Monterey ornate shrew.

### **Resource Conservation**

All habitat within the HAB1 parcel will be preserved in perpetuity.

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The HAB1 parcel will be managed to maintain existing habitat values for HMP species. The City of Marina may contract with an appropriate and qualified CRMP agency or other appropriate and qualified agency, as approved by the USFWS, to manage natural resources within the HAB1 parcel.

### Responsible Parties

The City of Marina will be responsible for ensuring that existing habitat values are retained within the HAB1 parcel.

#### PARCEL LR5 - MARINA HABITAT AREA #2

#### Land Use Description

Marina Habitat Area #2 (HAB2) is shown as Parcel LR5 in Figure 4-1. This parcel will contain limited development for construction of FAA-required airport support facilities (navigational aids, access, and utilities), a proposed six-lane road, as well as areas set aside for habitat preservation. The City of Marina will have jurisdiction over this parcel.

#### **Resources Present**

#### Major Habitat Features

The HAB2 parcel is dominated by annual grassland habitat with small inclusions of coastal scrub in the southern and central portions of the area.

#### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. The coastal scrub within the central portion of the HAB2 parcel supports high-density occurrences of Monterey spineflower. Medium-density occurrences are found in the northern and far southern portions of the parcel along roads and in other disturbed areas.

#### Other HMP Species

No other botanical HMP species are found in the HAB2 parcel. Potential suitable habitat is present for the following HMP wildlife species.

**Black Legless Lizard.** The coastal scrub habitat within the HAB2 parcel occurs on suitable soil to **be considered** potential habitat for black legless lizards.

## Resource Conservation

FAA-required airport support facilities (navigational aids, access, and utilities) may be constructed in the HAB2 parcel, as well as a proposed six-lane road. All remaining habitat within the HAB2 parcel after construction of these facilities will be preserved in perpetuity.

### Management Requirements

Gates or vehicle barriers will be constructed along access roads as necessary to prevent unauthorized off-road vehicle traffic in the HAB2 parcel. Habitat remaining in the HAB2 parcel after development will be managed to maintain existing habitat values for HMP species. Management will include maintaining small amounts of area with disturbed sandy soils to support Monterey spineflower habitat. The City of Marina may contract with an appropriate and qualified CRMP agency or other appropriate and qualified agency, as approved by the USFWS, to manage natural resources within the HAB2 parcel.

## **Responsible Parties**

The City of Marina will be responsible for ensuring that resource conservation and management requirements are followed within the HAB2 parcel.

## PARCEL LR6 - MARINA RETAIL AREA #3

### Land Use Description

The City of Marina Retail Area #3 (RET3) land use would consist of retail or commercial uses that involve the sale of commodities or goods in small quantities to consumers (Parcel LR6 in Figure 4-1). Highway 1 (HIWAY parcel) crosses Parcel LR6 near its western edge and residential development is present at the east edge. Conservation and management requirements for the HIWAY parcel that bisects the RET3. parcel are provided in a separate section (see Parcel SR8).

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### Resources Present

### Major Habitat Features

Most of the RET3 parcel supports sand hill maritime chaparral habitat. Two areas of grassland occur within the maritime chaparral. East of Highway 1, the parcel supports degraded coastal dune habitats consisting of disturbed dunes and ice plant mats.

### Listed and Proposed Threatened and Endangered Species

Sand Gilia. Two populations of sand gilia were located during 1993 surveys in the northern portion of the RET3 parcel east of Highway 1. These populations supported approximately 500 and 15 individual plants in 1993.

Monterey Spineflower. Monterey spineflower occurs over most of the RET3 parcel at low density in maritime chaparral and grasslands east of Highway 1, and at low to high density in the coastal dune habitats west of Highway 1.

### Other HMP Species

Sandmat Manzanita. Sandmat manzanita occurs at varying densities throughout the RET3 parcel on both sides of Highway 1, with high-density occurrences in maritime chaparral in the central portion of the parcel.

Monterey Ceanothus. Monterey ceanothus occurs at low to medium density throughout the RET3 parcel east of Highway 1.

**Eastwood's Ericameria**. Low-density occurrences of Eastwood's ericameria are present in maritime chaparral in the central and northern portions of the RET3 parcel.

**Coast Wallflower**. Coast wallflower occurs at low to medium density throughout the RET3 parcel east of Highway 1.

Yadon's Piperia. The only occurrence of Yadon's piperia at Fort Ord is at the northeast corner of the RET3 parcel. This population supported fewer than a dozen individuals during 1992 surveys.

Black Legless Lizard. Most of the RET3 parcel is potential habitat for black legless lizards. East of Highway 1 the sand hill maritime chaparral provides potential habitat, and west of Highway 1 the disturbed dune habitat also provides potential habitat for black legless lizard.

## **Resource Conservation**

The population of Yadon's piperia in the northern portion of the parcel will be preserved. Where possible, habitat may be preserved within and around developed areas.

### Management Requirements

Vehicle access to the habitat supporting Yadon's piperia will be restricted to prevent potential impacts on the population.

Drainage from the development in the RET3 parcel will not be allowed to flow into the habitat supporting Yadon's piperia.

## **Responsible Parties**

The RET3 parcel is within the jurisdiction of the City of Marina. The City of Marina will be responsible for ensuring that conservation and management requirements are fulfilled.

## PARCEL LR7 - MONTEREY PENINSULA REGIONAL PARKS NATURAL AREA EXPANSION

## Land Use Description

The Monterey Peninsula Regional Parks NAE is shown as Parcel LR7 in Figure 4-1. The NAE would be an expansion of the existing Frogpond Natural Area, which is located near the Fort Ord installation boundary. The NAE would add several additional habitat types to the Frogpond Natural Area. This would provide an area for interpretive trails, biological research, and other appropriate uses where several different habitat types may be observed in a small area.

### Major Habitat Features

The NAE land use footprint is dominated by coastal coast live oak woodland habitat. The ephemeral drainage that feeds the frogpond area passes through the NAE parcel and supports some willow riparian habitat. A very small amount of maritime chaparral habitat also occurs in the NRMA.

Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. The entire NAE footprint supports Monterey spineflower at medium density.

## Other HMP Species

Seaside Bird's-beak. A population of Seaside bird's-beak occurs along North-South Road in the northern portion of the NAE parcel.

Sandmat Manzanita. Sandmat manzanita occurs across the entire NAE parcel at medium density.

Monterey Ceanothus. High-density Monterey ceanothus is found over the entire NAE parcel.

Eastwood's Ericameria. Eastwood's ericameria occurs at medium density over the entire NAE parcel.

## Resource Conservation

No resource conservation requirements are associated with the HMP for the NAE parcel. However, Monterey Peninsula Regional Parks plans to preserve natural habitat within the NAE parcel in perpetuity. -)

#### Management Requirements

Members of the California Native Plant Society (CNPS) will be given access to the CNPS native plant reserve within the NAE boundary for research and other purposes.

#### **Responsible Parties**

Monterey Peninsula Regional Parks District will be responsible for development and management of the NAE parcel.

#### PARCEL FM1 - ARMY RESERVE CENTER

#### Land Use Description

The Army Reserve Center (RC) is shown as Parcel FM1 in Figure 4-1. This area represents the 12-acre parcel at Imjin Gate on Reservation Road. Most of the RC parcel is developed and includes a 337-person reserve center supporting a hospital unit and an engineering company. A small area of natural habitat occurs in the southwest corner of the parcel.

#### **Resources Present**

#### Major Habitat Features

The small area of natural vegetation in the southwest corner of the RC parcel supports maritime chaparral habitat.

#### Listed and Proposed Threatened and Endangered Species

Sand Gilia. A small portion of one sand gilia population occurs in the southwest corner of the RC parcel. The total population supported approximately 300 individual plants in 1993. Based on the percentage of the population area that occurs in the RC parcel, approximately 20-50 individual plants of the 300 total individuals occur in the RC (1993 surveys).

**Monterey Spineflower.** The RC supports high-density occurrences of Monterey spineflower within the maritime chaparral habitat in the parcel.

#### Other HMP Species

**Toro Manzanita.** The maritime chaparral within the RC parcel supports low-density occurrences of Toro manzanita.

Sandmat Manzanita. The maritime chaparral within the RC parcel supports high-density occurrences of sandmat manzanita.

Monterey Ceanothus. The maritime chaparral within the RC parcel supports low-density occurrences of Monterey ceanothus.

**Eastwood's Ericameria.** The RC supports low-density occurrences of Eastwood's ericameria within the maritime chaparral habitat in the parcel.

**Coast Wallflower.** The RC supports low-density occurrences of coast wallflower within the maritime chaparral habitat in the parcel.

**Black Legless Lizard.** The maritime chaparral habitat within the RC parcel is considered potential habitat for black legless lizards.

## Resource Conservation

No resource conservation requirements are associated with the HMP for the RC parcel.

## Management Requirements

Because the RC will continue to be administered by the Army, the same regulations currently followed by the Army concerning federally protected wildlife and plant species must be followed during development and operation of the RC. If any new development is undertaken in the RC parcel, the Army must consult with the USFWS before any action is taken that may threaten a federally listed or proposed species or adversely affect species that are candidates for federal listing.

BMPs will be used to protect and maintain natural resources that may be retained in the RC parcel, protect public safety, and prevent adverse impacts on the URAR parcel (Parcel SR2) adjacent to the RC. The Army may contract with an appropriate and qualified CRMP agency or other appropriate and qualified agency, as approved by the USFWS, to manage natural resources which may be retained in the RC parcel.

## PARCEL FM2 - U.S. DEPARTMENT OF JUSTICE POST FACILITY

## Land Use Description

The U.S. Department of Justice Peace Officer Standard and Training (POST) academy will be established on the location of the current MOUT facility at Fort Ord (Parcel FM2 is in Figure 4-1). POST will use the facility in a similar manner as the Army. POST training facilities will include handgun and shotgun training, defense tactics, scenario training and testing, and chemical (tear gas) courses. Most uses will occur within existing developed training facilities. Land disturbance will be minimal and may include storage facilities for ammunition, firearms, and vehicles.

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#### **Resources Present**

#### Major Habitat Features

Three habitat types occur within the POST facility area; approximately 17 acres of inland coast live oak woodland, 10 acres of maritime chaparral, and roughly 10 acres of annual grassland.

The POST facility falls within an area designated as a conservation area. Conservation areas either support threatened, endangered or proposed species, or very high species richness. Because the corporate yard falls within a conservation area, potential impacts on HMP species may be greater than in other locations.

### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. Approximately 10 acres of area within the POST support low-density Monterey spineflower.

#### Other HMP Species

**Toro Manzanita**. Approximately 24 acres within the POST support low-density Toro manzanita populations, 7 acres support medium-density populations, and roughly 6 acres support high-density populations.

**Monterey Ceanothus.** Approximately 4 acres of area within the POST supports low-density **Monterey ceanothus**, and roughly 10 acres support medium-density Monterey ceanothus.

Monterey Ornate Shrew. Microhabitat conditions necessary for Monterey ornate shrews include areas with thick groundcover such as duff, dead and downed logs, or dense grasses, and abundant invertebrate populations as prey. Oak woodlands are one of several habitats where these microhabitat conditions are expected to occur and are considered potential habitat for Monterey ornate shrew. Seventeen acres of inland coast live oak woodland habitat occur in the POST land use footprint.

### **Resource Conservation**

No resources conservation requirements are associated with the HMP for the POST parcel.

### Management Requirements

As a federal agency the U.S. Department of Justice must follow the same regulations concerning protection of sensitive species as the Army. Department of Justice must consult with the U.S. Fish and Wildlife Service before any action that may threaten a federally listed or proposed species.

Department of Justice may participate in the CRMP. DOJ will contract with BLM to manage the natural resources within the POST boundary. BLM will manage the area to maintain and enhance natural resource values while protecting public safety.

Range fans will be determined for all areas where live ammunition will be fired. If range fans extend into the NRMA, the Department of Justice will coordinate with BLM to restrict access to these areas.

DOJ will be financially responsible for maintaining fire breaks, other pre-suppression activities, and fire suppression within the POST facility. DOJ will also be financially responsible for wildlife suppression costs outside of the POST if fires originate within the facility.

### **Responsible Parties**

Department of Justice is responsible for consulting with USFWS concerning potential impacts federally listed or proposed species; taking any other actions necessary to follow federal regulations concerning protection of sensitive species; initiating coordination with BLM concerning management of natural areas in and around the POST facility, and maintenance of fire suppression equipment onsite.

## PARCEL FM3 - FEDERAL BUREAU OF INVESTIGATION GOVERNMENT CENTER

### Land Use Description

The Federal Bureau of Investigation (FBI) will be the only occupant of the Government Center (GOVT) parcel. The GOVT parcel is shown as Parcel FM3 on Figure 4-1. The center will include space for training and administrative uses and housing for approximately 250 individuals and may also include a library and other support facilities. Only existing buildings will be used, and no new land disturbance is planned.

### **Resources Present**

### Major Habitat Features

The GOVT parcel occupies a small area that is dominated by coastal coast live oak woodland, developed lands, and coastal scrub habitat.

### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. A small patch of habitat supporting low-density Monterey spineflower occurs in the southeastern portion of the GOVT parcel.

### Other HMP Species

Eastwood's Ericameria. Eastwood's ericameria occurs in low density in the southeastern section of the GOVT parcel.

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Black Legless Lizard. The small patch of coastal scrub in the southwest corner of the GOVT parcel is considered potential habitat for the black legless lizard.

Monterey Ornate Shrew. Microhabitat conditions necessary for Monterey ornate shrews include areas with thick groundcover such as duff, dead and downed logs, or dense grasses and the availability abundant invertebrate populations as prey. Coastal coast live oak woodlands are one of several habitats where these microhabitat conditions are expected to occur. The coastal coast live oak woodlands within the GOVT parcel are considered potential habitat for Monterey ornate shrews.

### Resource Conservation

No resource conservation requirements are associated with the HMP for the GOVT parcel. However, because no new land disturbance is planned for the parcel, all existing natural resources within the parcel are likely to be preserved.

## Management Requirements

As a federal agency, the FBI must follow the same regulations concerning protection of federally protected wildlife and plant species as the Army. The FBI must consult with the USFWS before any action is taken that may threaten a federally listed or proposed species and should coordinate with USFWS concerning actions that would adversely affect species that are candidates for federal listing.

Best management practices will be used to protect public safety and to protect and maintain natural resources in the GOVT parcel. The FBI may participate in the CRMP and may contract with an appropriate and qualified CRMP agency or other appropriate and qualified agency, as approved by the USFWS, to manage natural resources in the GOVT parcel.

# Responsible Parties

The FBI is responsible for ensuring that all management guidelines for the GOVT parcel are followed.

# PARCEL SM1 - UNIVERSITY OF CALIFORNIA SCIENCE OFFICE #1

### Land Use Description

University Science Office #1 (USO1) is shown as Parcel SM1 in Figure 4-1. The area is proposed for construction on approximately 300 acres of undeveloped land bounded by Blanco Road to the west, Reservation Road to the south, and the Salinas River to the northeast. USO1 would include a computer laboratory, computer visualization center, a national library for the environment, and a small conference center with meeting room facilities. This facility would allow a cluster of research groups to develop shared facilities and scientific collaborations and could evolve into a national environmental research center whose staff could work cooperatively with the CSU Monterey Bay campus proposed in the Main Garrison.

### **Resources Present**

## Major Habitat Features

The majority of the USO1 parcel is supports annual grassland. Two small patches of coastal scrub and one patch of inland coast live oak woodland also occur in the footprint.

# Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. About one-third of the USO1 footprint is supports low-density occurrences of Monterey spineflower. These populations are concentrated in the southwestern section of the parcel. A small patch of high-density Monterey spineflower is also located in this area. A thin strip of medium-density populations occur along Blanco Road in the northwest corner.

## Other HMP Species

No other botanical HMP species exist in the USO1 land use footprint. The USO1 supports potential suitable habitat for the following HMPO wildlife species.

Black Legless Lizard. The small patches of coastal scrub in the USO1 parcel are considered potential habitat for black legless lizards.

Monterey Ornate Shrew. The small patch of inland coast live oak woodland in the northeast portion of the USO1 parcel is considered potential habitat for Monterey ornate shrews.

# **Resource Conservation**

No resource conservation requirements are associated with the HMP for the USO1 parcel; where possible, small pockets of habitat may be preserved within and around developed areas.

UC will develop a landscaping plan for the USO1 site that will help maintain to the maximum extent possible a habitat corridor for populations of HMP species in adjacent URA parcels. Vegetation native to the region and suited to the site will be used in landscape management plans for developed areas.

### Management Requirements

No management requirements are associated with the HMP for the USO1 parcel.

# **Responsible Parties**

The University of California will be responsible for development and management of the USO1 parcel.

#### PARCEL SM2 - UNIVERSITY OF CALIFORNIA SCIENCE OFFICE #2

### Land Use Description

The University Science Office #2 (USO2) parcel is shown as Parcel SM2 in Figure 4-1. It is situated just south of the proposed AIRS parcel and TECH parcel. The USO2 area could include various uses such as a computer laboratory, computer visualization center, a national library for the environment, and a small conference center with meeting room facilities. This facility would be a clustering of research entities for the purpose of developing shared facilities and scientific collaborations, and could evolve into a national environmental research center that is intended to work cooperatively with the CSU Monterey Bay campus proposed in the Main Garrison.

#### **Resources Present**

#### Major Habitat Features

The USO2 parcel is dominated by maritime chaparral in the west and by coastal scrub over the central portion. Grassland and coastal coast live oak woodland occur in small areas in the southern and western sections of the parcel. A small amount of the area is developed.

#### Listed and Proposed Threatened and Endangered Species

Sand Gilia. Eleven sand gilia populations and a portion of one large population occur throughout the USO2 parcel. The number of individual sand gilia plants in the parcel totals approximately 8,590 (1993 surveys).

**Monterey Spineflower**. High-density populations of Monterey spineflower occur throughout most of the central portion of the USO2 parcel. Medium-density populations are found across the western section of the area, and low-density populations occur in the in the northeastern corner.

#### Other HMP Species

Sandmat Manzanita. High-density populations of sandmat manzanita occur over roughly onequarter of the USO2 parcel, in the western section. A small low-density population occurs along the southern border of the parcel.

Monterey Ceanothus. Monterey ceanothus occurs at low-density across roughly one-quarter of the USO2 parcel, in the western portion.

**Coast Wallflower**. Small areas of low- and high-density coast wallflower populations occur in the southeastern corner of the USO2 parcel. In addition, an area in the northwestern corner supports medium-density populations.

Black Legless Lizard. The maritime chaparral and coastal scrub that dominate the western and southern portions of the USO2 parcel are considered potential habitat for black legless lizards.

Monterey Ornate Shrew. The small areas of coastal coast live oak woodland in the southern portions of the USO2 parcel are considered potential habitat for Monterey ornate shrews.

## **Resource Conservation**

No resource conservation requirements are associated with the HMP for the USO2. However, small pockets of habitat may be preserved within and around developed areas. The clustered development proposed for this parcel may be sited to avoid populations of sand gilia and populations and habitat of HMP species.

UC will develop a landscaping plan for the USO2 site that will help maintain to the maximum extent possible a habitat corridor for populations of HMP species in adjacent URA parcels. Vegetation native to the region and suited to the site will be used in the landscape management plan for developed areas.

### **Management Requirements**

No management requirements are associated with the HMP for the USO2 parcel.

## Responsible Parties

The University of California will be responsible for development and management of the USO2 parcel.

### PARCEL SM3 - UNIVERSITY OF CALIFORNIA UNIVERSITY SCIENCE OFFICE #3

### Land Use Description

The University Science Office #3 (USO3) parcel is shown as Parcel SM3 in Figure 4-1. The USO3 parcel is situated just south of the USO2 parcel (Parcel SM2) on the other side of Reservation Road, and is bordered by the URAR parcel (Parcel SR2) on the south and east. The USO3 parcel could support various uses such as a computer laboratory, computer visualization center, a national library for the environment, and a small conference center with meeting room facilities. This facility would be a clustering of research entities for the purpose of developing shared facilities and scientific collaborations, and could evolve into a national environmental research center that is intended to work cooperatively with the CSU Monterey Bay campus proposed in the Main Garrison.

### **Resources Present**

### Major Habitat Features

The USO3 parcel supports maritime chaparral habitat throughout most of the area. The far eastern end of the parcel is occupied by coastal coast live oak woodland.

### Listed and Proposed Threatened and Endangered Species

Sand Gilia. Portions of two sand gilia population occur within the USO3 parcel boundaries (1993 surveys). Approximately 1,900 individual sand gilia plants from these populations occur within the USO3 parcel along the southern boundary. The remainder of these populations occur in the URAR parcel.

Monterey Spineflower. Monterey spineflower occurs throughout the USO3 parcel. All populations occur at high density except for a small area of medium-density populations at the far eastern end of the parcel.

### Other HMP Species

Toro Manzanita. Low-density Toro manzanita occurs in the western half of the USO3 parcel.

Sandmat Manzanita. Sandmat manzanita occurs at high density in the western half of the USO3 parcel and at medium density in the eastern half.

**Monterey Ceanothus.** The western half of the USO3 parcel supports low-density Monterey ceanothus populations, and the eastern half supports medium-density populations.

**Eastwood's Ericameria.** Eastwood's ericameria is found at low density in the western half of the USO3 parcel.

Coast Wallflower. Low-density populations of coast wallflower occurs in the western section of the USO3 parcel.

Black Legless Lizard. Only maritime chaparral in the far western portion of the USO3 parcel occurs on appropriate soils to be considered potential habitat for black legless lizards.

Monterey Ornate Shrew. The coastal coast live oak woodland on the eastern tip of the USO3 parcel is considered potential habitat for Monterey ornate shrews.

# Resource Conservation

No resource conservation requirements are associated with the HMP for the USO3 parcel. However, small pockets of habitat may be preserved within and around developed areas. The clustered development proposed for this parcel may be sited to avoid populations of sand gilia and population and habitat of other HMP species.

UC will develop a landscaping plan for the USO3 site that will help maintain to the maximum extent possible a habitat corridor for populations of HMP species in adjacent URA parcels. Vegetation native to the region and suited to the site will be used in the landscape management plan for developed areas.

### Management Requirements

No management requirements are associated with the HMP for the USO3 parcel.

# **Responsible Parties**

The University of California will be responsible for development and management of the USO3.

# PARCEL SM4 - UNIVERSITY OF CALIFORNIA SCIENCE OFFICE #4

## Land Use Description

The University Science Office #4 parcel (USO4) is shown as Parcel SM4 in Figure 4-1. It is situated just west of the URAL (Parcel SR3). The various uses of the USO4 could include facilities to support research on the landfill, a computer laboratory, a small conference center with meeting room facilities, and administrative buildings. This facility would be a clustering of research entities for the purpose of developing shared facilities and scientific collaborations, and could evolve into a national environmental research center that is intended to work cooperatively with the CSU Monterey Bay campus proposed in the Main Garrison.

### **Resources Present**

#### Major Habitat Features

The USO4 parcel supports coastal coast live oak woodland habitat in the southern half of the parcel and a small amount of maritime chaparral in the northern portion. Some developed areas also occur in the land use footprint.

### Listed and Proposed Threatened and Endangered Species

**Sand Gilia**. Two sand gilia populations, one supporting approximately 30 and the other approximately 200 individual plants, occur in the northeastern corner of the USO4 parcel (1993 surveys).

**Monterey Spineflower**. The central portion of the USO4 parcel supports low-density occurrences of Monterey spineflower. The northern part of the parcel supports medium- density occurrences.

Other HMP Species

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**Sandmat Manzanita.** The central portion of the USO4 parcel supports low-density occurrences of sandmat manzanita. The northern part of the parcel supports medium- density occurrences.

Monterey Ceanothus. The northern portion of the USO4 parcel supports low-density occurrences of Monterey ceanothus.

Black Legless Lizard. The maritime chaparral in the northern portion of the USO4 parcel is considered potential habitat for black legless lizards.

Monterey Ornate Shrew. The coastal coast live oak woodland in the USO4 parcel is considered potential habitat for Monterey ornate shrews.

## Resource Conservation

No resource conservation requirements are associated with the HMP for the USO4 parcel. Small pockets of habitat may be preserved within and around developed areas, however. The clustered development proposed for this parcel may be sited to avoid populations of sand gilia as well as populations and habitats of other HMP species.

UC will develop a landscaping program for the USO4 site that will help maintain populations of HMP species in the USO parcel and adjacent URAL parcel to the maximum extent possible. Natural vegetation will be used in the landscape management plan for developed areas.

## Management Requirements

No management requirements are associated with the HMP for the USO4 parcel.

## Responsible Parties

The University of California will be responsible for developing and managing the USO4 parcel.

# PARCEL SM5 - CALIFORNIA STATE UNIVERSITY

# Land Use Description

The California State University (UNIV) is shown as Parcel SM5 in Figure 4-1. The university would be constructed on both currently developed lands in the Main Garrison and natural areas east of the Main Garrison. The university would be a full-service campus on approximately 1,000-2,000 acres, developed in three phases, providing educational opportunity for up to approximately 33,000 students. It would include approximately 1,400 housing units and would be primarily residential in nature; several thousand students would live in residence halls and individual houses, with many of the faculty and staff living on campus as well. Developed facilities proposed for the university include barracks that would provide immediate housing for approximately 1,800 students, two fitness centers, a sports club, an 800-seat theater, an Olympic-size swimming pool, dental and medical clinics, a childcare center, and many buildings to be used as academic (lecture/laboratory) and administrative space. The proposed housing areas include Schoonover Park, Frederick Park, and the portion of Abrams Park east of Imjin Road.

### Resources Present

### Major Habitat Features

Coastal coast live oak woodland dominates the eastern portion of the UNIV parcel. Patches of maritime chaparral, coastal scrub, and annual grasslands occur within the oak woodlands. The western section of the land use footprint falls within the existing Main Garrison and is largely developed.

## Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower.** The majority of the eastern section of the UNIV parcel is occupied by medium- and low-density Monterey spineflower populations.

## Other HMP Species

Sandmat Manzanita. The maritime chaparral in the northeastern portion of the UNIV parcel supports low-, medium-, and high-density occurrences of sandmat manzanita.

**Monterey Ceanothus.** The maritime chaparral in the northeastern portion of the UNIV parcel supports low- and medium-density occurrences of Monterey ceanothus.

Eastwood's Ericameria. The northeastern segment of the UNIV parcel supports several small patches of low-density occurrences of Eastwood's ericameria, and one small patch of medium-density occurrence.

**Coast Wallflower.** The northeastern portion of the UNIV parcel supports patches of low- and medium-density occurrences of coast wallflower.

Black Legless Lizard. The patches of maritime chaparral and coastal scrub in the eastern portion of the UNIV parcel are considered potential habitat for black legless lizards.

**Monterey Ornate Shrew.** The coastal coast live oak woodland in the eastern section of the UNIV parcel is considered potential habitat for Monterey ornate shrew.

## Resource Conservation

No resource conservation requirements are associated with the HMP for the UNIV parcel. Small pockets of habitat may be preserved within and around developed areas.

### Management Requirements

California State University will coordinate with UCNRS and Monterey County concerning potential pedestrian, bicycle, and vehicle access to the URAR (Parcel SR2), URAL (Parcel SR3), HAB4 (Parcel LR1), and RV (Parcel LR2). Potential methods and points of access from the UNIV parcel to these areas will be designed to minimize the potential for HMP species to be adversely affected by human activity associated with access.

### **Responsible Parties**

California State University at Monterey will be responsible for development and management of the UNIV parcel.

### PARCEL SM6 - MULTI-USE AREA/ASILOMAR-TYPE FACILITY

## Land Use Description

The multi-use area/Asilomar-type facility (MUA/ATF) is Parcel SM6 in Figure 4-1. The multi-use area is in the coastal zone and includes the existing Stilwell Hall, which could house a multi-agency funded visitor center. The MUA/ATF would consist of approximately 300 rooms for attendees, 50 meeting rooms, a dining hall, and parking area. This use would be designed to be compatible with the visual and physical environment.

### **Resources Present**

### Major Habitat Features

The MUA/ATF parcel supports ice plant mat habitat. Developed areas include Stilwell Hall and parking lots and paved roads.

### Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower**. Monterey spineflower occurs at medium density throughout undeveloped areas of the parcel.

Other HMP Species

**Coast Wallflower**. Scattered individuals of coast wallflower may be present in the MUA/ATF parcel at the top of the bluffs south of Stilwell Hall.

# Resource Conservation

HMP resources will be preserved where possible in the MUA/ATF through sensitive design and placement of facilities in the parcel.

### Management Requirements

The design, siting, and management practices of the MUA/ATF facilities will be sensitive to preservation and enhancement of native dune vegetation and of HMP plant and wildlife species. Special concern will be given to minimizing impacts on Smith's blue butterfly, western snowy plover, and sand gilia. The existing Asilomar facility near Pacific Grove provides a suitable model for these goals.

In the event that the California Department of Parks and Recreation general plan process determines that an ATF is appropriate for the area, and the California Coastal Commission approves the project, then CDPR will coordinate with USFWS during design, construction, and operation of the ATF to develop and implement appropriate mitigation measures.

# **Responsible Parties**

CDPR will be responsible for ensuring that HMP guidelines are followed at the MUA/ATF parcel.

# PARCEL SM7 - POTENTIAL BEACH THROUGH-ROAD

# Land Use Description

The potential beach through-road (BTR) follows the existing frontage road to the west of Highway 1 and Is identified as Parcel SM7 in Figure 4-1. The BTR crosses the eastern portions of the following parcels: Parcel SR5 (DHZ), Parcel SM6 (MUA/ATF), and Parcel SR7 (AQ/MR).

## **Resources Present**

## Major Habitat Features

The BTR parcel is an existing paved road. The road passes through disturbed dune and ice plant mat habitats.

## Listed and Proposed Threatened and Endangered Species

No listed or proposed threatened or endangered plant or wildlife species occur in the BTR; however, Monterey spineflower occurs adjacent to the road for most of its length.

# Other HMP Species

No other HMP plant or wildlife species occur in the BTR; however, some HMP plant species and potential habitat for HMP wildlife occur adjacent to the road. Low-density populations of sandmat manzanita and potential habitat for black legless lizard occur along the roadside at the northern end of the BTR.

# **Resource Conservation**

No resource conservation requirements for the BTR parcel are associated with the HMP.

# Management Requirements

An unregulated through-road along the dunes west of Highway 1 would allow an unacceptable potential for habitat degradation and destruction through unregulated public use of the dunes. A regulated through-road, controlled by CDPR at the northern and southern ends and all other possible entrances, would be acceptable. The preferred method for public access to the dunes would be a single entrance and exit

monitored by CDPR. The through-road is not considered suitable by CDPR for a scenic road because ocean views are shielded by the dunes along most of its length.

#### **Responsible Parties**

CDPR will be responsible for ensuring that HMP guidelines are followed at the BTR parcel.

#### PARCEL SM8 - PROPOSED MONTEREY COUNTY FAIRGROUNDS SITE

#### Land Use Description

The proposed Monterey Fairgrounds and Exposition Park (FAIRa) is shown as Parcel SM8 in Figure 4-1. The FAIRa parcel would support recreation uses, including the county fair, musical and community events, horse and livestock shows, and viewing horse races via satellite.

The large portion of the footprint for the FAIRa overlaps with the Office Park #5 (Parcel LM7) footprint and the proposed uses pose a conflict. This conflict will be resolved at a later date. However, because the FAIRa parcel may be developed as shown, it is analyzed in the HMP. An alternate Monterey Fairgrounds Site (FAIRb) is also analyzed in the section for Parcel SM9.

#### **Resources Present**

#### Major Habitat Features

The entire FAIR parcel is dominated by maritime chaparral habitat.

#### Listed and Proposed Threatened and Endangered Species

No listed or proposed threatened or endangered species are known to occur in the FAIRa parcel.

#### Other HMP Species

Sandmat Manzanita. A patch of medium-density sandmat manzanita exists in the southern part of the landuse footprint.

Monterey Ceanothus. Low-density occurrences of Monterey ceanothus occur over most of the FAIRa parcel. Some high- and medium-density occurrences are found in the northern and southern sections of the parcel.

**Eastwood's Ericameria.** Approximately half of the FAIRa parcel is occupied by low-density occurrences of Eastwood's ericameria. A small amount of Eastwood's ericameria occurs at medium density in the northern portion of the parcel.

**Coast Wallflower.** Coast wallflower occurs at low density over a small area in the northern section of the FAIRa parcel.

Black Legless Lizard. The maritime chaparral in the northern half of the FAIRa parcel occurs on soils considered to be appropriate potential habitat for black legless lizards.

## Resource Conservation

No resource conservation requirements are associated with the HMP for the FAIRa parcel.

## Management Requirements

To minimize the potential for damage to structures in the FAIRa parcel from potential wildfires in the NRMA (Parcel FR1), parking lots, greenbelts, or another nonflammable or fire resistant land use will be located at the boundary between the FAIRa parcel and the NRMA to act as a firebreak. Structures will be located entirely behind the land use that is developed as a firebreak.

To prevent potential degradation of habitat in the NRMA from unauthorized vehicle entry, a barrier will be installed along the border of the FAIRa parcel and the NRMA where topography would allow vehicle access. The design of the barrier and the materials used will be sufficient to prevent vehicle access to the NRMA. Gates will be provided in the barrier to allow emergency access to the NRMA. Keys to gates will be provided to BLM and other appropriate agencies. The barrier will be maintained and repaired as necessary in perpetuity.

Measures will also be taken to minimize the potential for erosion in the NRMA parcel from stormwater runoff that may originate from the FAIRa.

A permanent interpretive display will be included in the fairground plans that describes the natural resources within Fort Ord and their importance to the Monterey Bay region.

# Responsible Parties

The California 7th District Agriculture Association will be responsible for development and management of the FAIR parcel.

## PARCEL SM9 - ALTERNATIVE MONTEREY COUNTY FAIRGROUNDS SITE

### Land Use Description

FAIRb is shown as Parcel SM9 in Figure 4-1. The fairgrounds would support recreation uses, including the county fair, musical and community events, horse and livestock shows, and viewing horse races via satellite.

#### **Resources Present**

#### Major Habitat Features

The FAIRb parcel is dominated by grassland in the western quarter of the parcel and maritime chaparral over the remainder of the parcel.

### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. High-density occurrences of Monterey spineflower occur in the western section of the FAIRb parcel, low-density occurrences in the middle of the parcel, and medium-density occurrences in the eastern segment of the parcel.

### Other HMP Species

Seaside Bird's-Beak. Two small patches of Seaside bird's-beak are found in the southern and eastern sections of the FAIRb parcel.

**Sandmat Manzanita.** Most of the FAIRb parcel is covered by high-density occurrences of sandmat manzanita. A small amount of medium-density sandmat manzanita also exists in the northeastern segment of the parcel.

**Monterey Ceanothus.** Most of the FAIRb parcel is covered by high density occurrences of Monterey ceanothus. A small amount of Monterey ceanothus occurs at medium density in the northeastern segment of the parcel.

**Eastwood's Ericameria.** Low-density occurrences of Eastwood's ericameria exist over most of the FAIRb parcel.

**Black Legless Lizard.** The maritime chaparral in the FAIRb parcel is considered potential habitat for black legless lizards.

# **Resource Conservation**

No resource conservation requirements are associated with the HMP for the FAIRb parcel.

### Management Requirements

Management requirements for the FAIRb parcel would be the same as for the FAIRa parcel.

### Responsible Parties

The California 7th District Agriculture Association will be responsible for development and management of the FAIR parcel.

# PARCEL LM1 - COUNTY OF MONTEREY LIGHT INDUSTRIAL AREA #1

# Land Use Description

The County of Monterey Light Industrial Area #1 (L1) is shown as Parcel LM1 in Figure 4-1. This parcel is contiguous with a light industrial area to the west that was included in Parcel LN4. Uses in the L1 parcel would involve clean industry and could include a trade center and research and development facilities.

### Resources Present

### Major Habitat Features

The L1 parcel is dominated by coastal coast live oak woodlands. Some maritime chaparral occurs in the southwestern portion of the parcel, and a small area of annual grassland is present in the northeastern corner.

### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. The western portion of the L11 parcel supports low-density occurrences of Monterey spineflower.

### Other HMP Species

**Toro Manzanita**. The south-central portion of the Ll1 parcel supports low-density occurrences of Toro manzanita.

Hooker's Manzanita. The south-central portion of the L11 parcel supports low- density occurrences of Hooker's manzanita.

Black Legless Lizard. Portions of the maritime chaparral in the southwestern portion of the L1 parcel occur on potential black legless lizard habitat.

Monterey Ornate Shrew. The coastal coast live oak woodlands in the Ll1 parcel are considered potential habitat for the Monterey ornate shrew.

### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the LI1 parcel. Where possible, however, small pockets of habitat may be preserved within and around developed areas.

#### **Management Requirements**

The RV parcel (Parcel LR2) east of the L1 parcel is an important corridor for movement of wildlife, plant seeds, and pollen between the habitat preserve areas north of Inter-Garrison Road and the NRMA. This corridor will help preserve the long-term viability of HMP plant and wildlife resources in the HAB and URA parcels and the NRMA.

To prevent potential degradation of habitat in the RV parcel, a barrier will be installed where the L1 parcel borders the RV parcel. The design of the barrier and the materials used will be sufficient to prevent vehicle access and strongly discourage pedestrian access to the RV parcel. The barrier will be maintained and repaired as necessary in perpetuity. A barrier will not be required if topographical conditions prevent vehicle passage between the L1 and RV parcels.

A similar barrier will be constructed as needed at the boundary between the LI1 and the NRMA (Parcel FR1).

Large areas of natural habitat will be retained in the RV and NRMA parcels. To reduce the potential for damage to structures in the L1 parcel from wildfires that could occur in the RV and NRMA parcels, parking lots, greenbelts, or another nonflammable or fire-resistant land use will be located at the boundary between L1 and the NRMA and RV parcels. No structures will be constructed immediately along this boundary. If natural habitat is retained in the L1 parcel adjacent to the NRMA or RV parcel, the nonflammable surface will be constructed where development and natural habitat meet.

Two vernal pools occur in the NRMA parcel just south of the boundary with the L1 parcel. One of these pools is a breeding site for California tiger salamanders. Construction in the L1 parcel may not be allowed to interfere with the flow to or quality of water in these ponds. Measures will also be taken to reduce the potential for erosion in the RV and NRMA parcels from stormwater runoff that may naturally enter these areas from the L1 parcel.

### **Responsible Parties**

The County of Monterey will be responsible for ensuring that all management requirements for the L1 parcel are implemented.

# PARCEL LM2 - COUNTY OF MONTEREY LIGHT INDUSTRIAL AREA #2

### Land Use Description

The County of Monterey Light Industrial Area #2 (LI2) is shown as Parcel LM2 on Figure 4-1. Uses in the LI2 parcel would involve clean industry and could include a trade center and research and development facilities.

#### **Resources Present**

### Major Habitat Features

The LI2 parcel is dominated by maritime chaparral habitat. A fairly large area of coastal coast live oak woodland occurs in the western portion of the LI2 parcel, as well as some small areas of annual grassland.

## Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. The eastern half of the LI2 parcel supports low-density occurrences of Monterey spineflower. The westernmost end of the parcel supports medium- and high-density occurrences.

## Other HMP Species

**Toro Manzanita**. The eastern half of the LI2 parcel supports low- and medium-density occurrences of Toro manzanita.

Sandmat Manzanita. The eastern half of the Li2 parcel supports low- and medium- density occurrences of sandmat manzanita. The westernmost end of the parcel supports mostly high-density occurrences, as well as a small area of medium-density occurrences, of sandmat manzanita.

Monterey Ceanothus. The eastern half of the LI2 parcel supports low- and medium- density occurrences of Monterey ceanothus, as well as a small area of high-density occurrences along the northern boundary. The westernmost end of the parcel supports mostly high-density occurrences, as well as a small area of medium-density occurrences, of Monterey ceanothus.

Eastwood's Ericameria. The eastern, central, and westernmost sections of the Li2 parcel all support patches of low-density occurrences of Eastwood's ericameria.

Hooker's Manzanita. The eastern half of the Li2 parcel supports low-density occurrences of Hooker's manzanita, with one patch of medium density in the central part of the parcel.

Black Legless Lizard. Only maritime chaparral in the easternmost and westernmost portions of the LI2 parcel occur on potential black legless lizard habitat.

Monterey Ornate Shrew. The coastal coast live oak woodlands in the LI2 parcel are considered potential habitat for the Monterey omate shrew.

### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the LI2 parcel. Where possible, however, small pockets of habitat may be preserved within and around developed areas.

#### Management Requirements

The County of Monterey will initially receive ownership of the Li2 parcel. When the County of Monterey turns over ownership of property in this parcel to a private entity, as a condition of transfer, an identifiable boundary in the form of a firebreak or road must be constructed around the perimeter of the Li2 parcel. This boundary must function as a firebreak and must be approved by BLM. The location of the firebreak may be modified based on expected future land uses and approval by BLM. The firebreak will be maintained in perpetuity.

To reduce the potential for damage to structures in the LI2 parcel from wildfires that could occur in the NRMA (FR1), parking lots, greenbelts, or another nonflammable or fire- resistant land use will be located at the boundary between the LI2 parcel and the NRMA. No structures will be constructed immediately along this boundary. If natural habitat is retained in the LI2 parcel adjacent to the NRMA, the nonflammable surface will be constructed where development and natural habitat meet.

To prevent potential degradation of habitat in the NRMA from unauthorized vehicle entry, a barrier will be installed along the border of the LI2 parcel and the NRMA where topography would allow vehicle access. The design of the barrier and the materials used will be sufficient to prevent vehicle access to the NRMA. The barrier will be maintained and repaired as necessary in perpetuity.

Measures will also be taken to reduce the potential for erosion in the NRMA parcel from stormwater runoff that may originate in the LI2 parcel.

#### Responsible Parties

The County of Monterey will be responsible for ensuring that all management requirements for the LI2 parcel are implemented.

#### PARCEL LM3 - OFFICE PARK #1

#### Land Use Description

The Office Park #1 (OP1) parcel is shown as Parcel LM3 in Figure 4-1. The OP1 would include a group of office buildings or businesses and related commercial uses in a campuslike or parklike setting in the southern portion of Fort Ord.

#### **Resources Present**

#### Major Habitat Features

The OP1 parcel is entirely occupied by maritime chaparral. An ephemeral drainage also passes through the parcel.

Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower.** The entire OP1 parcel supports medium-density occurrences of Monterey spineflower.

## Other HMP Species

Sandmat Manzanita. Sandmat manzanita occurs across the entire OP1 parcel at medium density.

Monterey Ceanothus. High-density occurrences of Monterey ceanothus are found over the entire OP1 footprint.

Eastwood's Ericameria. Eastwood's ericameria occurs at medium density over the entire OP1 footprint.

**Black Legless Lizard.** All the maritime chaparral in the OP1 parcel, except for a thin strip along the installation boundary, occurs on appropriate soils to be considered potential habitat for black legless lizards.

# **Resource** Conservation

No resource conservation requirements are associated with the HMP for the OP1 parcel.

# Management Requirements

Measures will be taken to control and prevent erosion and prevent degradation and siltation of the ephemeral drainage that passes through the OP1 parcel and other parcels in the vicinity.

# Responsible Parties

The OP1 parcel is within the jurisdiction of the County of Monterey. The County of Monterey will be responsible for development and management of the OP1 parcel.

# PARCEL LM4 - OFFICE PARK #2

# Land Use Description

The Office Park #2 (OP2) parcel is shown as Parcel LM4 in Figure 4-1. The OP2 would include a group of office buildings or businesses and related commercial uses in a campuslike or parklike setting in the southern portion of Fort Ord.

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#### **Resources Present**

#### Major Habitat Features

Maritime chaparral occupies the entire OP2 parcel. An ephemeral drainage also passes through the parcel.

## Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower.** The entire OP2 footprint supports medium-density occurrences of Monterey spineflower.

### **Other HMP Species**

Sandmat Manzanita. Sandmat manzanita occurs across the entire OP2 parcel at medium density.

Monterey Ceanothus. High-density occurrences of Monterey ceanothus are found over the entire OP2 parcel.

Eastwood's Ericameria. Eastwood's ericameria occurs at medium density over the entire OP2 parcel.

**Black Legless Lizard.** The maritime chaparral in the northeastern portion of the OP2 parcel occurs on soils considered to be appropriate habitat for black legless lizards.

### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the OP2 parcel.

# Management Requirements

Measures will be taken to control and prevent erosion and prevent degradation and siltation of the ephemeral drainage that passes through the OP2 parcel and other parcels in the vicinity.

# **Responsible Parties**

The City of Del Rey Oaks is responsible for development and management of the OP2 parcel.

# PARCEL LM5 - OFFICE PARK #3

## Land Use Description

Office Park #3 (OP3) shown as Parcel LM5 in Figure 4-1. The OP3 would include a group of office buildings or businesses and related commercial uses in a campuslike or parklike setting in the southern portion of Fort Ord.

### **Resources Present**

### Major Habitat Features

Maritime chaparral dominates the entire QP3 parcel. An ephemeral drainage also runs through the center of the parcel.

### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. Medium-density occurrences of Monterey spineflower are found across the southwestern boundary of the OP3 parcel.

#### Other HMP Species

**Toro Manzanita.** The eastern portion of the OP3 parcel supports low-density occurrences of Toro manzanita.

Sandmat Manzanita. The eastern and southwestern sections of the OP3 parcel support mediumdensity occurrences of sandmat manzanita.

Monterey Ceanothus. The southwestern section of the OP3 parcel support high-density occurrences of Monterey ceanothus. The remainder of the parcel is occupied by medium-density occurrences of Monterey ceanothus.

Eastwood's Ericameria. Eastwood's ericameria is found at medium densities along the southwestern edge of the OP3 parcel.

Black Legless Lizard. Only the maritime chaparral in the northwest corner of the OP3 parcel occurs on soils considered to be appropriate potential habitat for black legless lizards.

### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the OP3 parcel.

#### Management Requirements

To minimize the potential for damage to structures in the OP3 parcel from potential wildfires in the NRMA (Parcel FR1), parking lots, greenbelts, or another nonflammable or fire-resistant land use will be located at the boundary between the OP3 and the NRMA to act as a firebreak. Structures will be sited entirely behind the land use that is developed as a firebreak. This measure also applies where the OP3 borders areas where natural habitat may be retained in the adjacent SE parcel (Parcel LM23).

To prevent potential degradation of habitat in the NRMA from unauthorized vehicle entry, a barrier will be installed along the border of the OP3 and the NRMA where topography would allow vehicle access. The design of the barrier and the materials used will be sufficient to prevent vehicle access to the NRMA. Gates will be provided in the barrier to allow emergency access to the NRMA. Keys to gates will be provided to BLM and other appropriate agencles. The barrier will be maintained and repaired as necessary in perpetuity.

Measures will also be taken to minimize the potential for erosion in the NRMA parcel from stormwater runoff that may originate from the OP parcel. Measures to control and prevent erosion will also be taken to prevent degradation and siltation of the ephemeral drainage that passes through the OP3 parcel and other parcels in the vicinity.

### Responsible Parties

The OP3 parcel is within the jurisdiction of the County of Monterey. The County will be responsible for ensuring that HMP guidelines are followed within the OP3 parcel.

### PARCEL LM6 - OFFICE PARK #4

#### Land Use Description

The Office Park #4 (OP4) parcel is shown as Parcel LM6 in Figure 4-1. This parcel would contain a hotel and conference facilities that would support the adjoining office parks in the southwestern corner of Fort Ord.

#### **Resources Present**

#### Major Habitat Features

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The OP4 parcel is dominated by maritime chaparral habitat. An ephemeral drainage that feeds the Frogpond Natural Area outside the Fort Ord boundary passes through this parcel.

#### Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower.** The entire OP4 parcel supports medium-density occurrences of Monterey spineflower.

Other HMP Species

Sandmat Manzanita. The whole OP4 parcel supports medium-density occurrences of sandmat manzanita.

Monterey Ceanothus. High-density occurrences of Monterey ceanothus are found throughout the OP4 parcel.

**Eastwoods Ericameria.** Medium-density occurrences of Eastwood's ericameria are found throughout the OP4 parcel.

## Resource Conservation

No resource conservation requirements are associated with the HMP for the OP4 parcel.

# Management Requirements

The direct discharge of stormwater or other drainage into the ephemeral drainage in the OP4 parcel will be prohibited. To maintain the quality of habitat in the adjoining Natural Area Expansion (NAE) (Parcel LR7) and Frogpond Natural Area, which is fed by this drainage, appropriate measures will be taken to prevent erosion, degradation, and siltation of the ephemeral drainage.

To minimize the potential for damage to structures in the OP4 parcel from potential wildfires in the NAE parcel, parking lots, greenbelts, or another nonflammable or fire-resistant land use will be located at the boundary between the OP4 parcel and the NAE to act as a firebreak. Structures will be located entirely behind the land use that is developed as a firebreak.

To prevent potential degradation of habitat in the NAE from unauthorized vehicle entry, a barrier will be installed along the border of the OP4 parcel and the NAE parcel where topography would allow vehicle access. The design of the barrier and the materials used will be sufficient to prevent vehicle access to the NAE parcel. Gates will be provided in the barrier to allow emergency access to the NAE parcel. The barrier will be maintained and repaired as necessary in perpetuity.

### **Responsible Parties**

The City of Del Rey Oaks will be responsible for development and management of the OP4 parcel.

# PARCEL LM7 - OFFICE PARK #5

# Land Use Description

Office Park #5 (OP5) is shown as Parcel LM7 in Figure 4-1. The OP5 would include a group of office buildings or businesses and related commercial uses in a campuslike or parklike setting in the

southern portion of Fort Ord. The OP5 parcel covers a large L-shaped area that is within jurisdictions of both the County of Monterey and the City of Marina.

The OP5 parcel overlaps a county fairground parcel (Parcel SM8) and this land use conflicts with a requested use of Parcel 44a by the California 7th District Agricultural Association. This conflict will not be resolved at this time; therefore, both parcels are analyzed in the HMP.

### **Resources Present**

### Major Habitat Features

Maritime chaparral dominates the entire OP5 parcel. A small potential wetland, which appears to be an abandoned quarry site, is in the southern leg of the parcel.

## Listed and Proposed Threatened and Endangered Species

Sand Gilia. The northern end of the northern leg of the OP5 parcel supports low-density occurrences of sand gilia (1992 surveys).

Monterey Spineflower. Medium-density occurrences of Monterey spineflower are found throughout the northern leg of the OP5 parcel. A small area of medium density occurrences are found in the central portion of the parcel.

**California Linderiella**. The potential wetland in the southern leg of the parcel is considered potential habitat for California linderiella.

### Other HMP Species

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**Sandmat Manzanita.** The northern leg of the OP5 parcel supports high-density occurrences of sandmat manzanita. Small areas of medium-density occurrences are found in the central part of the parcel.

**Monterey Ceanothus.** Monterey ceanothus occurs throughout the OP5 parcel. The northern and southern legs both support low- and medium-density occurrences of Monterey ceanothus. A small area of high-density occurrences is found in the central portion of the OP5.

Eastwood's Ericameria. The northern leg of the OP5 supports both medium- and low-density occurrences of Eastwood's ericameria.

**Coast Wallflower.** The northern leg of the OP5 parcel supports some low-density occurrences of coast wallflower.

Black Legless Lizard. Most of the maritime chaparral in the OP5 parcel occurs on soils considered to be appropriate potential habitat for black legless lizards.

**California Tiger Salamander**. The potential wetland in the southern leg of the parcel is considered potential habitat for the California tiger salamander.

## **Resource Conservation**

No resource conservation requirements are associated with to the HMP for the OP5 parcel.

### Management Requirements

To minimize the potential for damage to structures in the OP5 parcel from potential wildfires in the NRMA (Parcel FR1), parking lots, greenbelts, or another nonflammable or fire-resistant land use will be located at the boundary between the OP5 and the NRMA to act as a firebreak. Structures will be sited entirely behind the land use that is developed as a firebreak.

To prevent potential degradation of habitat in the NRMA from unauthorized vehicle entry, a barrier will be installed along the border of the OP5 and the NRMA where topography would allow vehicle access. The design of the barrier and the materials used will be sufficient to prevent vehicle access to the NRMA. Gates will be provided in the barrier to allow emergency access to the NRMA. Keys to gates will be provided to BLM and other appropriate agencies. The barrier will be maintained and repaired as necessary in perpetuity.

Measures will also be taken to minimize the potential for erosion in the NRMA parcel from stormwater runoff that may originate from the OP5 parcel.

Any conservation, management, or mitigation required for impacts on the potential wetland site will be determined during reviews for compliance with Section 404 of the Clean Water Act.

### Responsible Parties

Portions of the OP5 parcel are within the jurisdictions of both the County of Monterey and the City of Seaside. These agencies will be responsible for ensuring that HMP guidelines are followed in the portions of the OP5 parcel within their jurisdiction.

# PARCEL LM8 - COUNTY OF MONTEREY OFFICE PARK

### Land Use Description

The County of Monterey Office Park (OP6) is shown as Parcel LM8 in Figure 4-1. The OP6 parcel would include a group of office buildings or businesses and related commercial uses in a campus-like or parklike setting in the middle portion of Fort Ord.

### **Resources Present**

### Major Habitat Features

The OP6 parcel comprises several habitats, primarily coastal coast live oak woodland. Two large patches of grassland also occur in the parcel, and a small region in the north-central portion of the footprint is dominated by maritime chaparral.

#### Listed and Proposed Threatened and Endangered Species

**Monterey Ceanothus**. High-, medium-, and low-density occurrences of Monterey spineflower occur over most of the OP6 parcel. No Monterey spineflower populations were observed in a small area of potential habitat in the southeastern portion of the parcel.

#### Other HMP Species

Sandmat Manzanita. The southwestern portion of the OP6 parcel supports low- density occurrences of sandmat manzanita.

Black Legless Lizard. The maritime chaparral habitat in the north-central portion of the OP6 parcel is considered potential habitat for black legless lizards.

**Monterey Ornate Shrew**. The coastal coast live oak woodlands in the OP6 parcel are considered potential habitat for the Monterey ornate shrew.

### Resource Conservation

No resource conservation requirements are associated with the HMP for the OP6 parcel. Where possible, however, small pockets of habitat may be preserved within and around developed areas.

### Management Requirements

The RV parcel (LR2) east of the OP6 parcel is an important corridor for movement of wildlife, plant seeds, and pollen between the habitat preserve areas north of Inter-Garrison Road and the NRMA (FR1). This corridor will help preserve the long-term viability of HMP plant and wildlife resources in the HAB and URA parcels, and the NRMA.

To prevent potential degradation of habitat in the RV parcel, a barrier will be installed along the small area where the OP6 borders the RV parcel. The design of the barrier and the materials used will be sufficient to prevent vehicle access and strongly discourage pedestrian access to the RV parcel. The barrier will be maintained and repaired as necessary in perpetuity.

Large areas of natural habitat will be retained in the RV parcel. To reduce the potential for damage to structures in the OP6 parcel from wildfires that could occur in the RV parcel, parking lots or another nonflammable surface will be located at the boundary between OP6 and the RV parcel. No structures will

be constructed immediately along this boundary. If natural habitat is retained in this corner of the OP6 parcel, the nonflammable surface will be constructed where development and natural habitat meet.

Drainage from the OP6 parcel will not be allowed to flow into the RV parcel. Stormwater runoff and other drainage will be channeled away from the RV parcel to minimize the potential for erosion problems.

### Responsible Parties

The County of Monterey will be responsible for ensuring that all management requirements for the OP6 parcel are implemented.

## PARCEL LM9 - COUNTY OF MONTEREY COMMUNITY PARK

## Land Use Description

The County of Monterey Community Park (CPRK1) is shown as Parcel LM9 in Figure 4-1. The park would serve the local community and would include playing fields, playgrounds, and other recreational opportunities and restroom facilities.

### Resources Present

### Major Habitat Features

The CPRK1 parcel is dominated by coastal coast live oak woodland. A small patch of grassland habitat is found on the western edge of the parcel.

### Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower.** The entire CPRK1 parcel supports low-density occurrences of Monterey spineflower.

### Other HMP Species

No other botanical HMP species occur in the CPRK footprint. The CPRK supports potential suitable habitat for the following HMP wildlife species.

**Monterey Ornate Shrew.** All the coastal coast live oak woodland in the CPRK parcel is considered potential habitat for the Monterey ornate shrew.

### Resource Conservation

No resource conservation requirements are associated with the HMP for the CPRK1 parcel.

The CPRK1 is adjacent to the RV parcel, which is identified as a habitat corridor for HMP species. The importance of the corridor will be taken into consideration during park design, construction, and operation. Best management practices will be used to minimize the potential for the CPRK1 to impede the function of the RV as a habitat corridor.

Where possible, vegetation native to Fort Ord will be used for landscaping. Native vegetation used for landscaping may either be preserved during construction, or planted as part of a landscaping plan.

Permanent interpretive displays will be included in the community park design that describe the natural resources within Fort Ord and their importance to the Monterey Bay region.

## **Responsible Parties**

The County of Monterey will be responsible for development and management of the CPRK1.

## PARCEL LM10 - MARINA COMMUNITY PARK

### Land Use Description

The City of Marina Community Park (CPRK2) is shown as Parcel LM10 in Figure 4-1. The park would serve the local community and would include playing fields, playgrounds, and other recreational opportunities and restroom facilities.

### Resources Present

### Major Habitat Features

The northern portion of the CPRK2 parcel is developed. The southern portion is dominated by annual grasslands habitat. Small patches of maritime chaparral also occur in the northeastern and southwestern corners of the parcel.

# Listed and Proposed Threatened and Endangered Species

No listed and proposed threatened and endangered species are known to occur in the CPRK parcel.

# Other HMP Species

Sandmat Manzanita. A small area of maritime chaparral in the northeastern corner of the CPRK2 parcel supports medium-density occurrences of sandmat manzanita.

**Black Legless Lizard.** The maritime chaparral within the CPRK2 parcel is considered potential habitat for black legless lizards.

# Resource Conservation

No resource conservation requirements are associated with the HMP for the CPRK2 parcel.

# Management Requirements

Where possible, vegetation native to Fort Ord will be used for landscaping. Native vegetation used for landscaping may either be preserved during construction or planted as part of a landscaping plan after construction.

Permanent interpretive displays that describe the natural resources within Fort Ord and their importance to the Monterey Bay region will be included in the community park design.

# Responsible Parties

The City of Marina will be responsible for developing and managing the CPRK2.

## PARCEL LM11 - COMMUNITY PARK #3

### Land Use Description

The Community Park #3 (CPRK3) is shown as Parcel LM11 in Figure 4-1. The park would serve the local community and would include playing fields, playgrounds, and other recreational opportunities and restroom facilities.

The proposed Caltrans SR 68 corridor (Caltrans) crosses the CPRK3 parcel along the southeastern portion of the area. Conservation and management requirements for the Highway 68 corridor are provided in a separate section (Parcel SR9).

### Resources Present

### Major Habitat Features

The CPRK3 site is dominated by maritime chaparral habitat. An ephemeral drainage passes through the parcel.

#### Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower.** The entire CPRK3 parcel supports medium-density occurrences of Monterey spineflower.

#### Other HMP Species

Sandmat Manzanita. Medium-density occurrences of sandmat manzanita are found across the entire CPRK3 parcel.

Monterey Ceanothus. High-density occurrences of Monterey ceanothus are found over the entire CPRK3 parcel.

Eastwood's Ericameria. The entire CPRK3 parcel supports medium-density occurrences of Eastwood's ericameria.

Black Legless Lizard. The maritime chaparral along the southwestern boundary of the CPRK3 occurs on appropriate soils to be considered potential habitat for black legless lizards.

#### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the CPRK3 parcel.

### Management Requirements

Where possible, vegetation native to Fort Ord will be used for landscaping. Native vegetation used for landscaping may either be preserved during construction or planted as part of a landscaping plan.

Permanent interpretive displays will be included in the community park design that describe the natural resources within Fort Ord and their importance to the Monterey Bay region.

Measures will be taken to control and prevent erosion, degradation, and siltation of the ephemeral drainage that passes through the CPRK#3 parcel and other parcels in the vicinity.

### **Responsible Parties**

The CPRK3 parcel falls within the jurisdiction of the County of Monterey. The County will ensure that all HMP guidelines for the CPRK3 parcel are followed.

# PARCEL LM12 - RECREATION AREA EXPANSION #1

# Land Use Description

The Recreation Area Expansion #1 (RAE1) parcel is shown as Parcel LM12 in Figure 4-1. The RAE1 parcel would be used for overflow parking during major events at Laguna Seca. Shuttle busses would carry patrons between the RAE1 parcel and Laguna Seca.

# **Resources Present**

### Major Habitat Features

The RAE1 parcel is dominated by annual grassland habitat. A patch of blue wildrye grassland occurs in the middle of the parcel.

## Listed and Proposed Threatened and Endangered Species

No listed or proposed threatened or endangered species occur in the RAE1 parcel.

## Other HMP Species

No other botanical HMP species or potential or occupied habitat for other HMP wildlife species occur in the RAE1 parcel.

# Resource Conservation

No resource conservation requirements are associated with the HMP for the RAE1 parcel.

### Management Requirements

Grass will be maintained over a majority of the RAE1 parcel to prevent erosion problems that may degrade habitat in the surrounding NRMA (Parcel FR1). This grass will be mowed before being used for parking to minimize fire hazards.

Other measures will also be taken as necessary to minimize the potential for erosion or accelerated sedimentation in the adjacent NRMA parcel.

A firebreak will be constructed along the inside perimeter of the RAE1 parcel to prevent fires that may start in the RAE1 parcel from spreading to the NRMA. The firebreak will be inspected before each event where the RAE1 parcel will be used and will be improved as necessary to ensure its effectiveness. After each event where the RAE1 parcel is used, all trash will immediately be removed from the site. Signs will be posted in the RAE1 parcel during each event stating that no off-road vehicle use in permitted in the RAE1 parcel and surrounding NRMA.

The stockpond just east and downslope of the RAE1 parcel will be inspected after each event. If adverse impacts on the pond from use of the RAE1 parcel are noted, appropriate actions will be taken to prevent these impacts during future use of the RAE1 parcel.

#### **Responsible Parties**

Monterey County Parks is responsible for ensuring all management requirements for the RAE1 parcel are completed.

#### PARCEL LM13 - RECREATION AREA EXPANSION #2

#### Land Use Description

The Recreation Area Expansion #2 (RAE2) parcel is shown as Parcel LM13 in Figure 4-1. The RAE2 parcel would be used for overflow parking during major events at Laguna Seca. Some existing maritime chaparral would be removed to create areas suitable for parking.

#### **Resources Present**

#### Major Habitat Features

The RAE2 parcel contains maritime chaparral, and one small area of annual grasslands exists in the western portion of the parcel. Inland coast live oak woodland and coast live oak savanna occur along Barloy Canyon. The western portion of the parcel is dominated by annual grassland habitat with inclusions of coast live oak savanna. Two areas of coastal scrub habitat occur in the southwestern portion of the RAE2 parcel.

#### Listed and Proposed Threatened and Endangered Species

Sand Gilia. Sand gilia occurs at low density in a small area of the western section of the RAE2 parcel (1992 surveys).

**California Linderiella**. A small pond within the central portion of the RAE2 parcel is known to support California linderiella (1992 surveys).

#### Other HMP Species

**Toro Manzanita**. The western portion of the RAE2 parcel supports both high- and medium-density occurrences of Toro manzanita.

Monterey Ceanothus. a medium-density occurrence of Monterey ceanothus occupies the western segment of the RAE2 parcel.

Hooker's Manzanita. A small amount of medium-density Hooker's manzanita is found in the western segment of the RAE2 parcel.

**Monterey Ornate Shrew**. The inland coast live oak woodlands in the RAE2 parcel are considered potential habitat for the Monterey ornate shrew.

**California Tiger Salamander.** The pond (in which California linderiella occur) in the central portion of the RAE2 parcel is also a known breeding pond for California tiger salamander.

# **Resource Conservation**

The California linderlella and California tiger salamander breeding pond and its watershed will be preserved.

## Management Requirements

To prevent erosion problems that may degrade habitat in the surrounding NRMA (Parcel FR1), grass will be maintained over areas where maritime chaparral or other vegetation is removed to allow for parking. This grass will be mowed before being used for parking to minimize fire hazards.

Other measures will also be taken as necessary to minimize the potential for erosion or accelerated sedimentation in the adjacent NRMA parcel.

A firebreak will be constructed along the inside perimeter of the RAE2 parcel to prevent fires that may start in the RAE2 parcel from spreading to the NRMA. The firebreak will be inspected before each event where the RAE2 parcel will be used and will be improved as necessary to ensure its effectiveness. After each event where the RAE2 parcel is used, all trash will immediately be removed from the site.

Signs will be posted in the RAE2 parcel during each event stating that no off-road vehicle used is permitted in the RAE2 parcel and surrounding NRMA.

The pond where California linderiella and California tiger salamander occur and its watershed will be preserved. The pond will be inspected after each event where the RAE2 parcel is used. If adverse impacts on the pond from use of the RAE2 parcel are noted, appropriate actions will be taken to prevent these impacts during future use of the area.

### Responsible Parties

Monterey County Parks is responsible for ensuring all management requirements for the RAE2 parcel are completed.

## PARCEL LM14 - RECREATION AREA EXPANSION #3

## Land Use Description

The Recreation Area Expansion #3 (RAE3) parcel is shown as Parcel LM14 in Figure 4-1. The RAE3 parcel is located between the Laguna Seca race track and Highway 68 and would be used as an entrance road to Laguna Seca Recreation Area for special-event traffic, alleviating special-event traffic on Highway 68. The parcel could also support uses similar to a community park and could be used as overflow parking during major events at Laguna Seca.

#### Resources Present

#### Major Habitat Features

Coastal scrub dominates the western portion of the RAE3 parcel. Inland coast live oak woodland and coast live oak savanna occur in the eastern portion. A small patch of annual grassland occurs in the center of the RAE3 parcel.

## Listed and Proposed Threatened and Endangered Species

No listed or proposed threatened or endangered species occur in the RAE3 parcel.

## Other HMP Species

No other botanical HMP species exist in the RAE3 parcel. However, potentially suitable habitat exists for the following HMP wildlife species.

Monterey Ornate Shrew. The inland coast live oak woodlands in the eastern portion of the RAE3 parcel are considered potential habitat for the Monterey ornate shrew.

### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the RAE3 parcel.

### Management Requirements

To prevent potential erosion problems, grass will be maintained over areas that may be used for overflow parking. The grass will be mowed before being used for parking to minimize the fire hazards.

A firebreak will be constructed along the boundary of the RAE3 parcel and the NRMA to prevent fires that may start in the RAE3 parcel from spreading to the NRMA. The firebreak will be inspected and maintained regularly to ensure its effectiveness.

Signs will be posted in the RAE3 parcel stating that no off-road vehicle use is permitted in the adjacent NRMA. If unauthorized off-road vehicle use originating in the RAE3 parcel occurs frequently in the NRMA, a barrier or fence will be constructed and maintained along the boundary between the RAE3 parcel and the NRMA to prevent off-road vehicles from entering the NRMA.

### Responsible Parties

Monterey County Parks is responsible for ensuring all management requirements for the RAE3 parcel are completed.

# PARCEL LM15 - MARINA RETAIL AREA #1

## Land Use Description

The City of Marina Retail Area #1 (RET1) land use area would contain retail or commercial uses that involve the sale of commodities or goods in small quantities to consumers. The RET1 is shown as Parcel LM15 in Figure 4-1.

### **Resources Present**

### Major Habitat Features

Maritime chaparral dominates the RET1 land use footprint.

### Listed and Proposed Threatened and Endangered Species

Sand Gilia. Two moderate-sized populations of sand gilia, one consisting of about 550 individuals and the other of 150 individuals, were found in the RET1 parcel during the 1993 spring field survey.

Monterey Spineflower. Monterey spineflower occurs across the entire RET1 parcel at medium density.

### Other HMP Species

Toro Manzanita. A few individuals of Toro manzanita occur on the RET1 parcel.

Sandmat Manzanita. Sandmat manzanita occurs over the entire RET1 parcel at high density.

Monterey Ceanothus. Monterey ceanothus occurs over the entire RET1 parcel at medium density.

Eastwood's Ericameria. Eastwood's ericameria occurs on the RET1 parcel at low density.

Black Legless Lizard. The entire RET1 parcel is considered potential habitat for black legless lizards.

### Resource Conservation

No resource conservation requirements are associated with the HMP for the RET1 parcel.

### Management Requirements

The habitat corridor parcel (HAB3) (Parcel SR4) to the east of the RET1 parcel is an Important corridor for movement of wildlife and plant seeds and pollen between the URAF (Parcel SR1) and the URAR (Parcel SR2). This corridor will aid in preserving the long term viability of HMP plant and wildlife resources in both URA parcels.

To prevent potential degradation of habitat in the HAB3 parcel, a barrier will be installed along the perimeter of the RET1 where it borders the HAB3 parcel. The design of the barrier and the materials used will be sufficient to prevent vehicle access and strongly inhibit pedestrian access to the HAB3 parcel. The barrier will be maintained and repaired as necessary in perpetuity.

The HAB3 parcel is dominated by maritime chaparral habitat. Because maritime chaparral habitat is prone to burning, parking lots or another nonflammable surface will be sited on the RET1 parcel at the boundary between RET1 and the HAB3 parcel. Structures will not be constructed along this boundary.

Drainage from the RET1 parcel will not be allowed to flow into the HAB3 parcel. Stormwater runoff and other drainage will be channeled away from the HAB3 parcel to minimize the potential for erosion problems.

### **Responsible Parties**

The City of Marina will be responsible for the ensuring that all management guidelines are implemented.

# PARCEL LM16 - MARINA RETAIL AREA #2

### Land Use Description

The City of Marina Retail #2 (RET2) land use area would contain retail or commercial uses that involve the sale of commodities or goods in small quantities to consumers. The RET2 is shown as Parcel LM16 in Figure 4-1.

### **Resources Present**

# Major Habitat Features

The entire RET2 parcel is occupied by maritime chaparral habitat.

# Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower.** The entire RET2 parcel supports medium-density occurrences of Monterey spineflower.

# Other HMP Species

Sandmat Manzanita. The entire RET2 parcel supports medium-density occurrences of sandmat manzanita.

Monterey Ceanothus. The entire RET2 parcel supports medium-density occurrences of Monterey ceanothus.

Eastwood's Ericameria. The entire RET2 parcel supports medium-density occurrences of Eastwood's ericameria.

**Black Legless Lizard.** The maritime chaparral within the RET2 parcel is considered potential habitat for black legless lizards.

## Resource Conservation

No resource conservation requirements are associated with the HMP for the RET2 parcel.

## Management Requirements

Management requirements for the RET2 parcel would be the same as for the RET1 parcel (Parcel LM15).

# **Responsible Parties**

The City of Marina will be responsible for ensuring that all management guidelines are implemented.

# PARCEL LM17 - MARINA AIRPORT NORTH

### Land Use Description

The northern parcel designated as Marina Airport (AIRN) occurs within the jurisdiction of the City of Marina. It is shown as Parcel LM17 in Figure 4-1. This portion of the total airport facility may include an air freight transportation center, which would include foreign freight forwarders, custom house brokers, and other ancillary service group facilities, as well as provisions for an industrial/commercial business park.

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#### **Resources Present**

#### Major Habitat Features

Three habitat types occur in the AIRN land use footprint. Grassland dominates the majority of the site. Several isolated patches of coastal scrub occur in the northeastern and southwestern portions of the AIRN parcel, and a small amount of inland coast live oak woodland occurs in the mideastern section of the parcel.

#### Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower**. Low-density occurrences of Monterey spineflower are found over most of the AIRN footprint. A small patch of medium-density Monterey spineflower is found in the eastern part of the footprint. Most of the Monterey spineflower populations are found along dirt roads and firebreaks. No populations exist in the small portion of the footprint adjacent to the Salinas River.

#### Other HMP Species

No other botanical HMP species occur in the AIRN land use footprint. Potential suitable habitat is present for the following HMP wildlife species.

Black Legless Lizard. Several isolated patches of potential black legless lizard habitat occur in the northeastern and southwestern portions of the AIRN within patches of coastal scrub.

Monterey Ornate Shrew. Microhabitat conditions necessary for Monterey ornate shrews include areas with thick groundcover such as duff, dead and downed logs, or dense grasses, and with abundant invertebrate populations as prey. Inland coast live oak woodlands are one of several habitats where these microhabitat conditions are expected to occur and are considered potential habitat for Monterey ornate shrew. A small amount of inland coast live oak woodland occurs in the mideastern section of the parcel.

#### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the AIRN area; however, small pockets of habitat may be preserved within and around developed areas.

#### Management Requirements

The only management requirement associated with the HMP for this parcel is that development be restricted to the area above the bluffs that border the Salinas River.

#### **Responsible Parties**

The City of Marina is responsible for ensuring that HMP guidelines are followed within the AIRN parcel.

#### PARCEL LM18 - MARINA AIRPORT SOUTH

#### Land Use Description

The Marina Airport south (AIRS) parcel would be a general aviation facility for small planes. The AIRS is shown as Parcel LM18 in Figure 4-1. The aviation facility may include an air freight transportation center, which would include foreign freight forwarders, custom house brokers, and other ancillary service group facilities, as well as provisions for an industrial/commercial business park. Sixty thousand annual operations or flights (which is similar to existing use) have been assumed.

#### Resources Present

#### Major Habitat Features

The majority of the AIRS parcel is currently developed. A large strip of grassland occurs along the eastern and northern portions of the land use footprint. Some coastal coast live oak woodland and coastal scrub habitat also occur in the AIRS parcel.

#### Listed and Proposed Threatened and Endangered Species

Sand Gilia. The results of surveys conducted in 1993 indicate no populations of sand gilia in the AIRS parcel.

Monterey Spineflower. Small amounts of high-, medium-, and low-density Monterey spineflower populations occur in the AIRS land use area, primarily on the outer edges of the parcel.

#### Other HMP Species

No other botanical HMP species occur in the AIRS area. Potential suitable habitat for the following HMP wildlife species occurs at the AIRS.

**Black Legless Lizard.** The small areas of coastal scrub habitat within the AIRS parcel are considered potential habitat for black legless lizards.

Monterey Ornate Shrew. The small areas of coastal coast live oak woodland within the AIRS parcel are considered potential habitat for Monterey ornate shrews.

#### Resource Conservation

No resource conservation requirements are associated with the HMP for the AIRS parcel; where possible, small pockets of habitat may be preserved within and around developed areas.

The only management requirements associated with the HMP for this parcel is that development be restricted to the area above the bluffs that border the Salinas River.

#### **Responsible Parties**

The City of Marina is responsible for ensuring that HMP guidelines are followed within the AIRS area.

#### PARCEL LM19 - CITY OF MARINA LOW-DENSITY RESIDENTIAL

#### Land Use Description

The Low-Density Residential (LR) parcel (Parcel LM19 in Figure 4-1) would consist of residential housing units at a density of 1-7 du/acre.

#### **Resources Present**

#### Major Habitat Features

The LR land use footprint is largely developed with residential housing. Small- to moderate-size patches of natural maritime chaparral habitat remain. One isolated patch of coastal coast live oak woodland occurs in the central part of the land use footprint, and a small linear patch of coastal scrub exists along Imjin Road in the southeastern portion of the parcel.

#### Listed and Proposed Threatened and Endangered Species

**Sand Gilia**. Three small sand gilia populations and a portion of another small population occur in the LR parcel, totaling approximately 50 individual plants (1993 surveys).

**Monterey Spineflower**. Several low-density occurrences of Monterey spineflower are found in areas of natural habitat between existing houses and structures in the central and northwestern portions of the LR parcel. Two small patches of habitat supporting Monterey spineflower at medium density occur in the eastern portion of the parcel, one along Imjin Road and one along the installation boundary.

#### Other HMP Species

Sandmat Manzanita. High-, medium-, and low-density occurrences of sandmat manzanita are scattered throughout most of the undeveloped portions of the LR parcel.

Monterey Ceanothus. Numerous low-, medium-, and high-density occurrences of Monterey ceanothus occur in many of the undeveloped portions of the LR parcel.

**Eastwood's Ericameria**. Eastwood's ericameria occurs frequently in the LR footprint. It is primarily present at low density, but some small areas of medium- and high-density occurrences are present.

**Coast Wallflower.** One population of coast wallflower occurs at low density in a linear strip of habitat along the boundary of Fort Ord and Marina.

Black Legless Lizard. Areas of potential black legless lizard habitat occur throughout the LR parcel in the small- to moderate-size maritime chaparral patches which remain between houses and other structures.

Monterey Ornate Shrew. The one isolated patch of coastal coast live oak woodland in the central part of the land use footprint is considered potential habitat for Monterey ornate shrew.

#### **Resource Conservation**

There are no resource conservation requirements for the LR parcel associated with the HMP. Where possible, small pockets of habitat and populations of HMP species may be preserved within and around developed areas.

#### **Management Requirements**

The habitat corridor parcel (HAB3) to the northeast of the LR parcel supports HMP habitats and species and is an important corridor for movement of wildlife and plant seeds and pollen between the URAF parcel and the URAR parcel. This habitat corridor will aid in preserving the long-term viability of the HMP plant and wildlife species in both URA parcels. Of particular concern is maintaining a genetic connection between sand gilia populations at the URAF and URAR parcels.

To prevent potential degradation of habitat in the HAB3 parcel, a barrier will be installed along the perimeter of the LR parcel where it borders the HAB3 parcel. The design of the barrier and the materials used will be sufficient to prevent vehicle access and strongly inhibit pedestrian access to the HAB3 parcel. The barrier will be maintained and repaired as necessary in perpetuity.

The HAB3 parcel is dominated by maritime chaparral habitat. Because maritime chaparral habitat is prone to burning, no structures will be permitted directly against the boundary of the HAB3 parcel. A greenbelt; park; or other fire-resistant, nonresidential land use may be developed at the boundary between the LR and HAB3 parcels.

Drainage from the LR parcel will not be released into the HAB3 parcel. Stormwater runoff and other drainage will be channeled away from the HAB3 parcel to minimize potential for hydrologic modifications and erosion problems of the HAB3 parcel.

#### **Responsible Parties**

The City of Marina will be responsible for ensuring that all management guidelines are implemented.

#### PARCEL LM20 - SEASIDE MEDIUM-DENSITY RESIDENTIAL

Land Use Description

The City of Seaside Medium-Density Residential (MR) parcel is shown as Parcel LM20 in Figure 4-1. The MR parcel would consist of residential housing at a density of 8-10 dwelling units (du)/acre.

#### **Resources Present**

#### Major Habitat Features

The MR parcel is dominated by two major habitat types: coastal coast live oak woodland in the western and eastern sections and maritime chaparral in the central portion.

Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. The western and eastern portions of the MR parcel support low-density occurrences of Monterey spineflower. The central portion supports medium-density occurrences.

#### Other HMP Species

Sandmat Manzanita. The central portion of the MR parcel supports medium-density occurrences of sandmat manzanita.

Monterey Ceanothus. The central portion of the MR parcel supports medium-density occurrences of Monterey ceanothus.

**Eastwood's Ericameria**. A small section in the eastern end of the MR parcel supports Eastwood's ericameria in low densities.

Black Legless Lizard. The maritime chaparral within the MR parcel is considered potential habitat for black legless lizard.

Monterey Ornate Shrew. The coastal coast live oak woodlands within the MR parcel are considered potential habitat for Monterey ornate shrews.

#### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the MR parcel. However, where possible, small pockets of habitat may be preserved within and around developed areas.

To minimize the potential for damage to structures in the MR parcel from potential wildfires in the NRMA (Parcel FR1), parking lots, green belts, or some other nonflammable or fire resistant land use will be sited at the boundary between the MR and the NRMA. Structures will not be constructed along this boundary. If natural habitat is retained in the MR parcel adjacent to the NRMA, the nonflammable surface will be constructed at the interface between development and natural habitat.

To prevent potential degradation of habitat in the NRMA from unauthorized vehicle entry, a barrier will be installed along the border of the MR and the NRMA where topography would allow unauthorized vehicle access. The design of the barrier and the materials used will be sufficient to prevent vehicle access to the NRMA. The barrier will be maintained and repaired as necessary in perpetuity.

If the Monterey County Fairgrounds or another land use is constructed in Parcel SM9 (Figure 4-1) firebreaks and vehicle barriers will not be necessary in the MR parcel.

Additional measures will be taken to minimize the potential for erosion in the NRMA parcel caused by stormwater runoff that may originate from the MR parcel.

#### Responsible Parties

The City of Seaside will be responsible for ensuring that all management requirements for the MR parcel are implemented.

#### PARCEL LM21 - SEASIDE RESORT HOTEL

#### Land Use Description

The City of Seaside Resort Hotel (RH) is shown as Parcel LM21 in Figure 4-1. The RH would consist of luxury lodging facilities, health spas, and commercial uses to serve the resort.

#### **Resources Present**

#### Major Habitat Features

The RH parcel is completely occupied by maritime chaparral habitat.

#### Listed and Proposed Threatened and Endangered Species

No listed or proposed threatened or endangered species occur in the RH parcel.

#### Other HMP Species

Sandmat Manzanita. The entire RH parcel supports medium-density occurrences of sandmat manzanita.

Monterey Ceanothus. The entire RH parcel supports medium-density occurrences of Monterey ceanothus.

**Eastwood's Ericameria**. The entire RH parcel supports medium-density occurrences of Eastwood's ericameria.

Black Legless Lizard. The entire RH parcel supports maritime chaparral on suitable soils that are considered potential habitat for black legless lizard.

#### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the RH parcel.

#### Management Requirements

To minimize the potential for damage to structures in the RH parcel from potential wildfires in the NRMA (Parcel FR1), parking lots, green belts, or some other non-flammable or fire-resistant land use will be sited at the boundary between the RH and the NRMA to act as a fire break. Structures will be sited entirely behind the land use that is developed as a firebreak.

To prevent potential degradation of habitat in the NRMA from unauthorized vehicle entry, a barrier will be installed along the border of the RH and the NRMA where topography would allow vehicle access. The design of the barrier and the materials used will be sufficient to prevent vehicle access to the NRMA. The barrier will be maintained and repaired as necessary in perpetuity.

Additional measures will be taken to minimize the potential for erosion in the NRMA parcel caused by stormwater runoff that may originate from the RH parcel.

#### **Responsible Parties**

The City of Marina will be responsible for ensuring that all management requirements for the RH parcel are implemented.

#### PARCEL LM22 - INTERMODAL TRANSPORTATION CENTER

#### Land Use Description

The Intermodal Transportation Center (TC) is shown as Parcel LM22 in Figure 4-1. Portions of the TC are proposed on both sides of Imjin Road. The portion on the western side of Imjin Road is included

in Parcel LN4 and has no conservation or management requirements associated with the HMP. This discussion for Parcel LM22 applies to the TC area on the eastern side of Imjin Road. The TC would include various transportation facilities for commuter rail, private automobiles, buses, Amtrak service, and additional local transportation uses. Automobile parking facilities, including park-and-ride facilities, and bus parking and maintenance facilities would also be included. In addition, the transit center would support some commercial establishments.

#### **Resources Present**

#### Major Habitat Features

Maritime chaparral habitat dominates the TC parcel.

#### Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower**. The entire TC parcel supports medium-density occurrences of Monterey spineflower.

#### Other HMP Species

Sandmat Manzanita. Medium-density occurrences of sandmat manzanita occur over the entire TC parcel.

Monterey Ceanothus. The entire TC parcel supports low-density occurrences of Monterey ceanothus.

**Black Legless Lizard.** The maritime chaparral within the TC parcel is considered potential habitat for black legless lizards.

#### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the TC parcel.

#### Management Requirements

To prevent potential degradation of habitat in the URAL parcel adjacent to the TC, a barrier will be installed along the perimeter of the TC where it borders the URAL. The design of the barrier and the materials used will be sufficient to prevent vehicle access and strongly discourage pedestrian access to the URAL. The barrier will be maintained and repaired as necessary in perpetuity.

Drainage from the TC parcel will not be released into the URAL parcel. Stormwater runoff and other drainage will be channeled away from the URAL parcel to reduce the potential for erosion problems.

#### Responsible Parties

The TC parcel is within the jurisdiction of the City of Marina. The City of Marina will ensure that all management requirements are followed.

#### PARCEL LM23 - YORK SCHOOL EXPANSION

#### Land Use Description

The York School Expansion (SE) is shown as Parcel LM23 in Figure 4-1. The SE would consist of development of athletic facilities adjacent to the existing York School, a nonprofit secondary day school. Expected development includes a sports field and cross-country track.

The Caltrans Highway 68 corridor passes through the SE parcel. The Caltrans corridor is treated separately in the section for Parcel SR9.

#### **Resources Present**

The entire SE area contains maritime chaparral habitat.

#### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. The SE supports medium-density occurrences of Monterey spineflower in the eastern two-thirds of the parcel.

#### Other HMP Species

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Toro Manzanita. Low-density Toro manzanita occurs in the western portion of the SE parcel.

Sandmat Manzanita. Sandmat manzanita occurs at medium densities over most of the SE parcel.

Monterey Ceanothus. The western half of the SE parcel is occupied by medium-density occurrences of Monterey ceanothus, and the eastern portion is dominated by high-density occurrences of Monterey ceanothus.

Hooker's Manzanita. Hooker's manzanita occurs at medium density in the eastern half of the SE parcel.

#### Resource Conservation

No resource conservation requirements for the SE parcel are associated with the HMP. Where possible, natural habitat and populations of HMP species may be preserved within and around developed areas.

To minimize the potential for damage to structures in the SE parcel from potential wildfires in the NRMA (Parcel 35) and in maritime chaparral retained in the SE parcel, parking lots, greenbelts, or another nonflammable or fire-resistant land use will be sited at the interface between all structures in the SE and maritime chaparral habitat.

#### Responsible Parties

The York School, a local private school, will be responsible for developing and managing SE parcel.

#### PARCEL LM24 - SCHOOL #3

#### Land Use Description

The School #3 site (SCH3) would be used by the Monterey Peninsula Unified School District as a future school site.

#### **Resources Present**

#### Major Habitat Features

The SCH3 land use area is currently developed. No significant areas of natural habitat exist.

#### Threatened, Endangered, and Proposed Species

Because no natural habitat occurs at the SCH3 site, no populations or habitat exists for threatened, endangered, or proposed species.

#### Other HMP Resources

The lack of natural habitat precludes the occurrence of any HMP resources at the SCH3 site.

#### Resource Conservation

There are no resource conservation requirements for the SCH3 parcel.

The value and importance of the adjacent URAR parcel (Parcel SR2) to HMP species will be taken Into consideration during design, construction, and operation of the SCH3. Best management practices will be used to minimize the potential for the SCH3 to adversely affect HMP species in the URAR. The Monterey Peninsula Unified School District will coordinate with the UCNRS and the California State University during planning and construction of the SCH3.

#### **Responsible Parties**

The Monterey Peninsula Unified School District will be responsible for development and management of the SCH3 parcel.

#### PARCEL LM25 - DESALINATION PLANT

#### Land Use Description

A desalination plant (DS) could be constructed in the coastal dunes on a previously developed site identified as Parcel LM25 in Figure 4-1. The facility would remove salts from seawater and convert it to freshwater. The DS could be constructed in the AQ/MR parcel or another appropriate location rather than the DS parcel.

#### **Resources Present**

#### Major Habitat Features

The DS parcel occupies a very small area that includes abandoned developed land surrounded by ice plant mats.

#### Listed and Proposed Threatened and Endangered Species

No listed or proposed threatened, endangered, or proposed species occur in the DS area.

#### Other HMP Species

No other HMP wildlife or plants are located within the DS footprint.

#### **Resource Conservation**

No resource conservation requirements for the DS parcel are associated with the HMP.

To prevent potential degradation of habitat in the adjacent CDZ parcel from unauthorized vehicle entry, a barrier will be installed around all developed areas where topography would allow vehicle access. The design of the barrier and the materials used will be sufficient to prevent vehicles from leaving developed areas of the DS parcel.

Measures will also be taken to minimize the potential for erosion in natural areas of the parcel or on adjacent parcels from stormwater runoff, which may originate from developed portions of the DS parcel.

#### **Responsible Parties**

It is not known who would be responsible for developing and managing the DS parcel.

#### PARCEL SN1 - SERVICE AREA

#### Land Use Description

The Service Area (SA) parcel is located in Fort Ord's coastal zone and will be used to service and store equipment and materials (Parcel SN1 in Figure 4-1). The site includes the abandoned coastal ammunition supply point (ASP).

#### Resources Present

#### Major Habitat Features

The SA occupies a small area that is partially developed, partly ice plant mats, and partly dune scrub.

#### Listed and Proposed Threatened and Endangered Species

Monterey Spineflower. Monterey spineflower occurs at low density in a small area over a part of the SA land use footprint.

#### **Other HMP Species**

Black Legless Lizard. The dune scrub on the northern edge of the SA is potential habitat for black legless lizard.

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#### Resource Conservation

No resource conservation requirements for the SA parcel are associated with the HMP. Where possible, small pockets of habitat and populations of HMP species may be preserved within and around developed areas.

#### Management Requirements

No management requirements are associated for the SA parcel with the HMP.

#### Responsible Parties

CDPR is responsible for developing and managing the SA parcel.

#### PARCEL LN1 - SCHOOL #1

#### Land Use Description

An elementary school already exists in the parcel designated School #1 (SCH1) (Parcel LN1 in Figure 4-1). This school would be transferred by public benefit conveyance to the Monterey Peninsula Unified School District (MPUSD) after the existing lease expires. The school would continue operating under the current program with no interruption in use.

#### **Resources Present**

#### Major Habitat Features

The parcel designated SCH1 covers a relatively small area that is currently developed. No natural habitat features occur in the parcel.

#### Listed and Proposed Threatened and Endangered Species

Because no natural habitat occurs at the SCH1 site, no populations or habitat exist for threatened, endangered, or proposed species.

#### Other HMP Species

Because no natural habitat occurs at the SCH1 site, no populations or habitat exist for any species addressed in the HMP.

#### Resource Conservation

There are no resource conservation requirements for the SCH1 parcel.

#### Management Requirements

There are no management requirements associated with the HMP for the SCH1 parcel.

#### Responsible Parties

The Monterey Peninsula Unified School District will be responsible for development and management of the SCH1 parcel.

#### PARCEL LN2 - MONTEREY PENINSULA COLLEGE OUTDOOR LAB

#### Land Use Description

The Monterey Peninsula College Outdoor Lab (SCH2) is shown as Parcel LN2 on Figure 4-1. The SCH2 parcel has historically been used as an outdoor lab for Monterey Peninsula College where students can study natural resources in the area. This use would be continued after disposal.

#### Resources Present

#### Major Habitat Features

One habitat type, maritime chaparral, occupies the SCH2 parcel.

#### Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower**. The entire SCH2 parcel is occupied by medium-density occurrences of Monterey spineflower.

Other HMP Species

Sandmat Manzanita. Medium-density sandmat manzanita occurs throughout the SCH2 parcel.

Monterey Ceanothus. Monterey ceanothus occurs at medium density throughout the SCH2 parcel.

#### **Resource Conservation**

There are no resource conservation requirements associated with the HMP for the SCH2 parcel. However, the area is planned for use as an outdoor lab where natural resources in the area can be studied and HMP resources in the parcel are expected to be preserved.

#### **Management Requirements**

No management requirements are associated with the HMP for the SCH2 parcel.

#### **Responsible Parties**

Monterey Peninsula College will be responsible for development and management of the SCH2 parcel.

#### PARCEL LN3 - HIGH-TECH BUSINESS PARK

#### Land Use Description

The City of Marina high-tech business park (TECH) parcel would include highly technical businesses or research facilities, such as airport-related research. The TECH parcel is shown as Parcel LN3 in Figure 4-1.

#### **Resources Present**

#### Major Habitat Features

The TECH parcel is dominated by annual grassland habitat. Two small areas of coastal scrub also exist.

#### Listed and Proposed Threatened and Endangered Species

**Monterey Spineflower**. Monterey spineflower occurs over most of the TECH land use footprint. Low-density occurrences of Monterey spineflower dominates the southern portion of the parcel and mediumdensity occurrences in the northern section. A small patch of high-density Monterey spineflower occurs near the center of the TECH area.

#### Other HMP Species

No other botanical HMP species are found in the TECH footprint. Potential suitable habitat is present for the following HMP wildlife species.

Black Legless Lizard. The two small areas of coastal scrub within the TECH parcel are considered potential habitat for black legless lizards.

#### **Resource Conservation**

No resource conservation requirements are associated with the HMP for the TECH parcel.

#### Management Requirements

No management requirements are associated with the HMP for the TECH parcel.

#### Responsible Parties

The City of Marina will be responsible for the TECH parcel.

#### PARCEL LN4 - MULTI-MODAL CORRIDOR

#### Land Use Description

The Multi-Modal transportation corridor (MMC) is a transportation corridor that will provide a means of public access primarily for those traveling from Salinas to Fort Ord, but also for those traveling further south to Monterey. The MMC follows existing Blanco Road and Imjin Road over much of its route. The width of the MMC will be up to 500 feet. The MMC includes portions of the following parcels: Parcel 6 (TECH), Parcel 1 (USO1), Parcel 7 (USO2), Parcel 13 (USO3), Parcel 14 (URA2), Parcel 19 (UNIV), Parcel 20 (URA3), Parcel 24 (LR), Parcel 23 (CPRK2), Parcel 22 (TC) and Parcel 27 (multiple land use parcels)

#### **Resources Present**

#### Major Habitat Features

Habitats in the MMC are maritime chaparral, coastal coast live oak woodland, annual grassland, and coastal scrub.

#### Listed and Proposed Threatened and Endangered Species

Sand Gilia. The MMC passes through or near sand gilia populations that supported a total of over 4,000 individual plants in spring 1993.

Monterey Spineflower. The MMC route passes through low- to high-density occurrences of Monterey spineflower along the entire route between the Salinas River and the Main Garrison.

#### Other HMP Species

**Toro Manzanita**. A few individuals of Toro manzanita may occur within the MMC just south of Reservation Road.

Sandmat Manzanita. The MMC crosses sand hill maritime chaparral supporting low to high densities of sandmat manzanita between Reservation Road and the Main Garrison.

**Monterey Ceanothus.** The MMC crosses sand hill maritime chaparral supporting low to medium **densities of Monterey ceanothus** between Reservation Road and the Main Garrison.

**Eastwood's Ericameria**. The MMC passes through low-density populations of Eastwood's ericameria in the eastern segment of the URA2 parcel.

**Coast Wallflower**. Low- to medium-density occurrences of coast wallflower occur in the USO, URA2, and UNIV parcels where the MMC passes through them.

Black Legless Lizard. Maritime chaparral and coastal scrub in the MMC is potential habitat for black legless lizard.

Monterey Ornate Shrew. Coastal coast live oak woodlands in the MMC is potential habitat for Monterey ornate shrew.

#### Resource Conservation

No resource conservation requirements for the MMC parcel are associated with the HMP.

#### Management Requirements

No management requirements for the MMC parcel are associated with the HMP.

#### **Responsible Parties**

The Transportation Agency for Monterey County (TAMC) will be responsible fop developing and managing the MMC parcel.

#### PARCEL LN5 - CONTIGUOUS BLOCK OF LAND USE PARCELS WITH NO HMP HABITAT CONSERVATION OR MANAGEMENT REQUIREMENTS

#### Land Use Description

Parcel LN5 (MLTI) is a composite of reuse parcels with development-oriented land uses, including central business district, light industrial, high-tech business park, transit center, retail, medium- and high-

density residential, and school (Figure 4-1). Also included in the MLTI parcel is a large parcel to be retained by the Army. Most of MLTI comprises existing development of the Fort Ord Main Garrison.

#### **Resources Present**

#### Major Habitat Features

Most of the MLTI parcel is developed with structures, pavement, lawns, and ornamental plantings. Natural habitats in the MLTI parcel are annual grassland, coastal coast live oak woodland, maritime chaparral, and coastal scrub. Annual grasslands occur in the MLTI parcel mainly between the fairways of the golf course, at the main entrance to Fort Ord, in undeveloped areas at the southwest corner of the parcel, and at the eastern edge away from developed areas. Coastal coast live oak woodlands occur in the eastern half of the MLTI parcel as small patches within developed areas and large habitat patches east of the development. Maritime chaparral occurs at the eastern and northern edges of the MLTI parcel. Coastal scrub occurs as small patches in the eastern portion and at the southern edge of the MLTI parcel.

#### Listed and Proposed Threatened and Endangered Species

**Sand Gilia**. One small population of sand gilia straddles the northern boundary of the MLTI parcel near Imjin Road. This population consisted of 10 plants in spring 1993.

Monterey Spineflower. Monterey spineflower occurs mostly at low density in maritime chaparral, coastal coast live oak woodland, and annual grassland habitats over a large area at the eastern edge of the MLTI parcel. Other smaller, scattered occurrences of Monterey spineflower in the parcel are along Imjin Road, near Light Fighter Drive, and at the southwestern corner of the parcel.

#### Other HMP Species

Sandmat Manzanita. Sandmat manzanita occurs at low density in maritime chaparral and coastal coast live oak woodland habitats along the eastern and northern edges of the MLTI parcel. Two small patches of maritime chaparral habitat at the southern edge of the parcel support sandmat manzanita at medium density.

Monterey Ceanothus. Monterey ceanothus occurs at low to high density in maritime chaparral and coastal coast live oak woodland habitats along the eastern and northern edges of the MLTI parcel. Two small patches of maritime chaparral habitat at the southern edge of the parcel support sandmat manzanita at low to medium density.

**Toro Manzanita**. Toro manzanita occurs at low density in maritime chaparral at the easternmost extent of the MLTI parcel.

**Eastwood's Ericameria**. Eastwood's ericameria occurs at low density in maritime chaparral habitat at the northern edge of the MLTI parcel.

Hooker's Manzanita. Hooker's manzanita occurs at low density in maritime chaparral at the easternmost extent of the MLTI parcel.

**Black Legless Lizard.** Scattered patches of coastal scrub and maritime chaparral with suitable soils that are considered potential habitat for black legless lizard occur in the MLTI parcel in the central portion and at the northern and southern edges.

Monterey Ornate Shrew. Small and large patches of coastal coast live oak woodland in the eastern half of the MLTI parcel are considered potential habitat for Monterey ornate shrew.

#### **Resource Conservation**

No resource conservation requirements are associated with the HMP for any of the land use parcels within the MLTI parcel. Where possible, habitat may be preserved within and around development areas.

#### Management Requirements

No resource management requirements exist for any of the land use parcels within the MLTI parcel.

#### **Responsible Parties**

Parties responsible for parcels within the MLTI parcel are Army, County of Monterey, City of Marina, City of Seaside, Monterey Peninsula Unified School District, City of Marina Community College, and Monterey Peninsula Community College.

#### COORDINATED RESOURCE MANAGEMENT PLAN

A Coordinated Resource Management Plan (CRMP) is a multi-agency multi-jurisdictional land use plan developed under the sponsorship of the California CRMP MOU. This MOU has been signed by 14 federal and state agencies including the BLM, California Department of Fish and Game, Soil Conservation Service, U.S. Fish and Wildlife Service, and the University of California. Additional details on the development of this planning process is contained in the California CRMP Handbook (1990).

The BLM plans to use the CRMP process to develop management plans and prescriptions for BLM managed lands at Fort Ord. The BLM will invite all other public entities having natural resource management or habitat preservation responsibilities applicable to the Fort Ord area to participate in this cooperative planning effort. Agencies that have no resource conservation requirements on received lands but wish assistance in managing lands prior to development may also participate in the CRMP.

Participation in the CRMP will not be a requirement of the HMP. The goal of the CRMP will be to develop annual work plans, each being a single multi-jurisdictional management plan for all maritime chaparral habitats that are to be preserved and managed for natural values. BLM and UCNRS are willing to consider managing species and habitats on other public and private lands on a fee bases for those entities required to conserve habitat under the HMP. This service may be provided under the CRMP process.

The CRMP would be tiered to the Fort Ord installation-wide HMP. The CRMP would be annually reviewed and would implement the HMP. Anticipated products from the CRMP would be:

- uniform special-status species and habitat-monitoring strategies;
- multi-jurisdictional fire management strategy (prescribed fire and wildfire management);
- uniform prescriptions of comparable and noncompatible uses;
- realignment of land ownership to consolidate natural habitat management with natural resource management agencies;
- consolidated pubic information publications (maps, brochures, etc.), volunteer programs, and other public relations activities;
- combined single report to U.S. Fish and Wildlife Service/California Department of Fish and Game on status of special-status species.

Most importantly, the CRMP will provide a mechanism for public agencies to share resources to deliver the most efficient habitat protection and public services for the money expended. Examples of responsibilities and resources that could be shared include:

- patrolling lands; providing visitor assistance; maintain signs, barriers, and other improvements; and conducting threatened and endangered species monitoring;
- coordinating threatened and endangered species research and graduate intern projects;
- coordinating environmental education and student intern projects;
- providing natural resource interpretation staff and materials;
- providing fire crews for prescribed fires;
- providing road maintenance and prisoners for manual labor projects;
- coordinating vernal pool and wetland management.

#### MODIFICATIONS TO THE HMP

All recipients of Fort Ord lands will be required to abide by management guidelines and procedures addressed in the HMP. However, situations may arise during the life of the HMP where changes in the plan's guidelines may be appropriate. Several types of changes may occur. Land recipients may wish to change the boundaries of their parcel or the land use within their parcel. Changes in management guidelines within a land use may be required to better preserve or enhance a resource. These kinds of changes may be made if the landowners and U.S. Fish and Wildlife Service can reach agreement that the overall goals and objectives of the HMP will not be compromised.



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Kreiberg, Patti. Horticulturalist. Sunset Coast Nursery, Watsonville, CA. October 27, 1993 - telephone conversation.

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## Figure S-1 HMP REUSE SCENERIO FOR FORT ORD DISPOSAL AND REUSE MODIFIED ALTERNATIVE 6R



No HMP Habitat Preservation Requirement (Some Areas May Require Firebreaks)



Development With Reserve Areas



Habitat Corridor



Habitat Reserve



Alternative Sites for Monterey County Fairgrounds

LM21 See Accompanying Table S-3 for Parcel Numbers

--- Proposed Transportation Corridors



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US ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT

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## FIGURE 3-2. EXPECTED LOCATIONS OF UNEXPLODED ORDNANCE AT FORT ORD



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Unexploded Ordnance



High-density Unexploded Ordnance



Potential for Unexploded Ordnance Based on Archives Search Report (U.S. Army Corps of Engineera, St. Louis District 1993)



Scale 1:60,000



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