

**Supplement to the Draft
Fort Ord Disposal and Reuse
Biological Assessment**

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Executive Summary

INTRODUCTION

The Department of the Army (Army) has been directed to close the installation at Fort Ord, California, pursuant to the Defense Base Closure and Realignment Act of 1990. The Army is proposing to retain the existing reserve center and establish a Presidio of Monterey (POM) annex. The Army will be placing other property under temporary caretaker status and will continue to conduct the Superfund environmental cleanup at Fort Ord. The Army will be evaluating potential interim uses of available facilities and will dispose of excess property. The Army's proposed action is considered a major federal action (40 CFR 1508.18) that may affect federally proposed and listed threatened and endangered species at Fort Ord. Therefore, under Section 7(a)(2) of the Endangered Species Act (16 USC 1536[c]), the Army is required to prepare a biological assessment.

This document serves as a supplement to the draft "Fort Ord Disposal and Reuse Biological Assessment" (U.S. Army Corps of Engineers, Sacramento District, February 1993). The supplement addresses the effects of implementing the newly developed reuse alternative, Revised Alternative 6, on listed and proposed threatened and endangered species and the potential effects on federal candidates (Categories 1 and 2) for listing as threatened and endangered at Fort Ord. Cumulative effects are addressed for all species considered.

A summary of impacts and mitigation for reuse under Revised Alternative 6 is presented in the following section. A complete discussion of the impacts and mitigation for all other alternatives and caretaker and disposal actions is presented in the draft biological assessment.

REVISED ALTERNATIVE 6

Reuse impacts on federally listed, proposed, and candidate plants and wildlife species are summarized in Table S-1 for all alternatives.

Implementation of Revised Alternative 6 would result in the loss of approximately 5% of the occupied habitat of sand gilia and 10% of the occupied habitat of Monterey spineflower. Seven of the federal candidate plant species would suffer an average loss of 5% in occupied habitat. No populations of Seaside bird's-beak would be affected.

Table S-1. Estimated Percent Loss of Known Range of Federally Listed Threatened, Endangered, and Candidate Plant and Wildlife Species at Fort Ord by Alternative

Species	Listing Status ^a	Alternative ^a							
	Federal/State/CNPS	1	1C	2	3	4	5	6	Revised Alternative 6
Plants									
Sand gilia <i>Gilia tenuiflora</i> ssp. <i>arenaria</i>	E/T/1b	40-70	40-70	30-50	10-30	5-20	<1	10-25	5-10
Monterey spineflower <i>Chorizanthe pungens</i> var. <i>pungens</i>	PE/-/1b	65-90	65-95	35-60	15-40	10-30	<1	15-40	5-15
Robust spineflower <i>Chorizanthe robusta</i> var. <i>robusta</i>	PE/-/4	0	0	0	0	0	0	0	0
Seaside bird's-beak <i>Cordylanthus rigidus</i> var. <i>littoralis</i>	C1/E/1b	25-50	25-50	10-25	<10	0	0	0	0
Hickman's onion <i>Allium hickmanii</i>	C1/-/1b	<5	<5	<3	<3	<2	0	<1	<1
Toro manzanita <i>Arctostaphylos montereyensis</i>	C2/-/1b	55-90	55-90	20-45	5-15	5-10	<1	5-15	5-10
Sandmat manzanita <i>Arctostaphylos pumila</i>	C2/-/1b	55-90	55-90	30-60	10-30	5-20	<1	5-20	5-10
Monterey ceanothus <i>Ceanothus rigidus</i>	C2/-/4	40-70	40-70	20-40	5-20	5-15	<1	5-10	<5
Eastwood's ericameria <i>Ericameria fasciculata</i>	C2/-/1b	55-90	55-90	30-60	5-15	5-10	<1	5-15	5-10
Coast wallflower <i>Erysimum ammophilum</i>	C2/-/1b	10-30	10-30	5-25	5-15	2-10	<1	2-10	2-10
Wedge-leaved horkelia <i>Horkelia cuneata</i> ssp. <i>sericea</i>	C2/-/1b	10	10	<3	<3	<2	<1	<2	<2
Yadon's piperia <i>Piperia yadoni</i>	- ^b /-/1b	<1	<1	<1	<1	0	0	<1	0

Table S-1. Continued[illegible]

Table S-1. Continued

- Impacts resulting from all subalternatives except 1C are not substantially different from the alternatives.

• 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 USFWS.
- 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.
- 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 status designation.

State

- E = listed as endangered under the California Endangered Species Act.
- T = listed as threatened under the California Endangered Species Act.
- SSC = considered a State Species of Special Concern by California Department of Fish and Game.
- = no status designation.

California Native Plant Society

- 1b = List 1b species: rare, threatened, or endangered in California and elsewhere.
- 4 = List 4 species: plants of limited distribution that may be considered rare under CEQA.

^b Listing package is in preparation by USFWS (U.S. Fish and Wildlife Service pers. comm.).

Approximately 1% of Smith's blue butterfly habitat and 3% of California linderiella habitat would be lost under Revised Alternative 6. All nine federal candidate wildlife species would suffer an average habitat loss of roughly 9%. Impacts on all affected species could be reduced by preserving populations and habitat through developing and implementing a multispecies Habitat Management Plan (HMP). The HMP would require some land use restrictions under Revised Alternative 6. The loss of federal candidate wildlife and plant species could also be reduced by situating individual project features to avoid known populations of candidate species and establishing new populations where feasible.

Supplement to Chapter 2. Description of the Proposed Action and Alternatives

INTRODUCTION

This section describes anticipated reuse activities for Revised Alternative 6. This section corresponds with similar descriptions of reuse alternatives in Chapter 2, "Description of Proposed Action and Alternatives", in the draft "Fort Ord Disposal and Reuse Biological Assessment" (U.S. Army Corps of Engineers, Sacramento District, February 1993). Revised Alternative 6 is described in greater detail than other alternatives in the draft biological assessment because more specific information on proposed future uses has been provided by some of the potential Fort Ord land recipients.

Alternative 6: Anticipated Reuse (Revised)

Alternative 6: Anticipated Reuse (Revised), also referred to as Revised Alternative 6, includes establishment of the POM annex, retention of the reserve center, and disposal of lands excess to Army needs (Figure 2-1 and Table 2-1). Under this alternative, approximately 23,488 acres of Fort Ord that have been requested by various federal, state, and local agencies through the real estate screening process would be transferred to these public agencies for the uses identified in the screening process. The remaining land (approximately 3,000 acres) would be disposed of to private entities. Future uses of these lands would be established by the new owners in accordance with local land use requirements and the requirements of regulatory agencies. Under this alternative, approximately 10.3% of the undeveloped land would be developed. The buildout population would be approximately 22,770.

This alternative would result in the transfer of most sensitive environmental areas to federal and state agencies expected to manage the lands without significant environmental impacts. Transfer of portions of Fort Ord to some state and local agencies would allow for development of educational, recreational, airport, business, and institutional uses that would offset the economic effects of closure of Fort Ord. The lands to be disposed of to private interests would be transferred to new uses through a cooperative agreement with local agencies where the local governments would determine appropriate uses for these lands and act to coordinate sales to private owners.

Table 2-1. Revised Alternative 6: Preferred Alternative

Land Use Category	Specific Land Use	Acreage
Open Space		16,267
	Coastal dunes zone	421
	Natural resource management area	14,931
	Natural area expansion	53
	University research area	862
Parks and Recreation		2,076
	Disturbed habitat zone	538
	Multi-use area	29
	Recreation area expansion	1,123
	Community park	29
	Service area	11
	Fairgrounds	97
	RV park	249
Commercial/Business Park		829
	Office park	352
	University science office park	477
Industrial		1,773
	Agri-Center	890
	Airport	837
	Corporate yard	46
Institutional/Public		1,419
	Post academy	39
	University	1,210
	Fire training	79
	Government offices	36
	Transit center	55
Residential	McKinney Act Housing	133
Other		1,773
	Army-proposed POM Annex	1,463
	Reserve Center	12
	Transportation corridor	298
No Proposed Use		<u>3,456</u>
Total		27,726

Supplement to Chapter 6. Reuse Impacts and Mitigation

INTRODUCTION

This section describes impacts of reuse of Fort Ord under Revised Alternative 6 on federally listed, proposed, and candidate species at Fort Ord. This section corresponds with similar discussions of reuse impacts for Alternatives 1-6 in the draft "Fort Ord Disposal and Reuse Biological Assessment" (U.S. Army Corps of Engineers, Sacramento District, February 1993). Impacts associated with caretaker and disposal actions and establishment of the Army's POM annex and reserve center are described in Chapter 5, "Predisposal and Disposal Activities and Mitigation", in the draft biological assessment.

Impacts were evaluated by determining changes in acres of biological communities or habitat for individual species under Revised Alternative 6.

Information on loss of occupied habitat for plants at Fort Ord is provided in Table 6-1. Information on loss of suitable habitat for wildlife at Fort Ord is presented in Table 6-2. Estimated percent loss of plant and wildlife species over their total ranges is given in Table 6-3. Tables 6-1 to 6-3 show losses for all alternatives.

The approach and methods of analysis, including the assumptions and evaluation criteria that were used in determining impacts, are described below.

APPROACH AND METHODS

Changes in the amount and distribution of plant species were determined by identifying the habitat area known to support plant populations that would be affected by land uses incompatible with plant survival. The amount of affected occupied habitat was calculated using geographic information system (GIS) procedures to overlay land use footprints for each alternative and subalternative on the special-status plant distributions.

Impacts on wildlife species were determined by identifying changes in acres of potentially occupied habitat. Potential habitat was identified from known locations of each species, published accounts of each species' habitat requirements, and habitat suitability models developed from the vegetation and soil map layers produced through GIS. Impacts on occupied habitat were also identified when data were available.

Table 6-1. Loss of Occupied Habitat of Plant Species by Reuse Alternative

Plant Species and Density of Occurrence	Total Acres at Fort Ord	Acres Removed by Population Density ^F												Revised Alter- native 6
		Alter- native 1	Subalter- native 1A	Subalter- native 1B	Subalter- native 1C	Alter- native 2	Subalter- native 2A	Subalter- native 2B	Alter- native 3	Alter- native 4	Alter- native 5	Subalter- native 5A	Alter- native 6	
Sand gilia, E/T/1b^a														
Low	3,285	3,150	3,150	3,150	3,150	2,070	2,070	2,070	790	470	15	0	690	130
Medium	309	310	310	310	310	290	290	290	210	190	0	0	190	5
High	162	160	160	160	160	160	160	160	160	85	0	0	20	15
Total	3,756	3,620	3,620	3,620	3,620	2,520	2,520	2,520	1,160	745	15	0	890	150
Seaside bird's-beak, C1/E/1b														
Low	1,112	1,100	1,100	1,100	1,100	540	540	540	75	0	0	0	0	0
Medium	16	15	15	15	15	0	0	0	0	0	0	0	0	0
High	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,128	1,120	1,120	1,120	1,120	540	540	540	75	0	0	0	0	0
Sandmat manzanita, C2/-/1b														
Low	2,133	2,130	2,110	2,130	2,110	1,260	1,240	1,260	890	610	20	0	920	80
Medium	3,207	3,160	3,150	3,160	3,210	1,980	1,980	1,980	600	620	5	0	510	360
High	3,448	3,450	3,450	3,450	3,450	1,650	1,650	1,650	610	240	15	0	310	80
Total	8,788	8,740	8,710	8,740	8,770	4,890	4,870	4,890	2,100	1,470	40	0	1,740	520
Monterey ceanothus, C2/-/4														
Low	2,466	2,310	2,310	2,310	2,310	1,650	1,650	1,650	750	530	15	0	700	190
Medium	6,836	6,840	6,830	6,840	6,840	3,000	3,000	3,000	880	520	5	0	420	350
High	2,484	2,440	2,440	2,440	2,480	1,220	1,220	1,220	360	280	0	0	160	260
Total	11,786	11,590	11,580	11,590	11,630	5,870	5,870	5,870	1,990	1,330	20	0	1,280	800
Coast wallflower, C2/-/1b														
Low	494	420	420	420	410	390	390	390	160	70	10	0	230	100
Medium	226	190	190	190	200	190	190	190	190	160	0	0	90	50
High	51	10	10	10	50	10	10	10	10	20	0	0	10	0
Total	771	620	620	620	660	590	590	590	360	250	10	0	330	150
Yadon's piperia^b, -/1b														
Low	14	15	15	15	15	15	15	15	15	0	0	0	15	0
Medium	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	14	15	15	15	15	15	15	15	15	0	0	0	15	0
Monterey spineflower, PE/-/1b														
Low	5,948	5,690	5,680	5,690	5,730	3,330	3,320	3,330	1,600	1,030	45	20	1,720	350
Medium	3,546	3,400	3,380	3,420	3,390	1,930	1,910	1,950	1,290	970	50	25	1,040	510
High	980	890	890	890	970	500	500	500	310	140	15	0	320	70
Total	10,474	9,980	9,950	10,000	10,090	5,760	5,730	5,780	3,200	2,140	110	45	3,080	930

Table 6-1. Continued

Plant Species and Density of Occurrence	Total Acres at Fort Ord	Acres Removed by Population Density ^f												Revised Alter- native 6
		Alter- native 1	Subalter- native 1A	Subalter- native 1B	Subalter- native 1C	Alter- native 2	Subalter- native 2A	Subalter- native 2B	Alter- native 3	Alter- native 4	Alter- native 5	Subalter- native 5A	Alter- native 6	
Toro manzanita, C2/--/1b														
Low	2,320	2,210	2,210	2,210	2,210	1,100	1,100	1,100	240	210	10	0	380	120
Medium	2,157	2,000	2,000	2,000	2,000	770	770	770	240	80	0	0	45	60
High	1,948	1,670	1,670	1,670	1,670	770	770	770	95	0	0	0	5	10
Total	6,425	5,880	5,880	5,880	5,880	2,640	2,640	2,640	575	290	10	0	430	190
Hickman's allium, C1/--/1b														
Low	273	270	270	270	270	250	250	250	75	0	0	0	0	0
Medium	121	120	120	120	120	0	0	0	0	75	0	0	20	20
High	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	394	390	390	390	390	250	250	250	75	75	0	0	20	20
Eastwood's ericameria, C2/--/1b														
Low	3,566	3,430	3,430	3,430	3,430	1,780	1,780	1,780	460	250	15	0	430	220
Medium	2,279	2,020	2,020	2,020	2,070	1,450	1,450	1,450	230	80	0	0	50	120
High	23	25	25	25	25	25	25	25	25	5	0	0	25	1
Total	5,868	5,475	5,475	5,475	5,525	3,255	3,255	3,255	715	335	15	0	505	341
Wedge-leaved horkelia, C2/--/1b														
Low	2,438	2,290	2,290	2,290	2,290	1,270	1,270	1,270	480	80	0	0	350	40
Medium	1,202	1,200	1,200	1,200	1,200	650	650	650	280	190	10	0	120	100
High	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,640	3,490	3,490	3,490	3,490	1,920	1,920	1,920	760	270	10	0	470	140

^a All status designations given in Table S-1.

^b Listing package in preparation by USFWS (U.S. Fish and Wildlife Service pers. comm.).

^c Species with only one specific location and no acreage impact analysis; robust spineflower (PE/--/1b).

Table 6-2. Approximate Habitat Losses for Wildlife Species by Reuse Alternative

Species	Legal Status ^a	Potential Habitat	Approximate Acres of Potential Habitat Available	Approximate Acres of Potential Habitat Lost												Revised Alternative 6
				Alternative 1	Subalternative 1A	Subalternative 1B	Subalternative 1C	Alternative 2	Subalternative 2A	Subalternative 2B	Alternative 3	Alternative 4	Alternative 5	Subalternative 5A	Alternative 6	
Smith's blue butterfly	FE	Buckwheat in dune habitats	180	40	40	40	120	25	25	25	2	15	1	1	2	1
California lindenella	FPE	Vernal pools and ponds	65	60	60	60	60	15	15	15	4	9	0	0	10	2
Black legless lizard	C2	General habitat; native dune vegetation and where coastal scrub and maritime chaparral overlap with Baywood sands and Oceana soils	3,320	2,790	2,780	2,790	2,920	2,710	2,700	2,710	1,090	650	20	1	980	520
Monterey dusky-footed woodrat	C2	Maritime chaparral and coastal coast live oak woodland	15,560	14,970	14,860	15,000	14,950	8,760	8,650	8,790	3,910	2,630	260	90	3,650	1,440
Monterey ormate shrew	C2	General habitat; mixed riparian and oak riparian forest, coastal and inland coast live oak woodland	4,640	4,000	4,140	4,020	3,210	3,120	3,120	3,240	2,280	1,450	260	120	2,700	562
Loggerhead shrike	C2	Dunes, grasslands, coastal scrub, maritime chaparral	18,990	16,080	16,050	16,100	16,410	9,750	9,720	9,770	3,720	2,900	460	230	3,100	1,900
Tricolored blackbird	C2	Grasslands in the southeastern portion of Fort Ord	2,590	1,130	1,130	1,130	1,130	1,040	1,040	1,040	180	9	9	9	250	130
California horned lark	C2	Grasslands	4,790	3,060	3,060	3,090	3,060	2,660	2,660	2,660	1,420	1,260	240	40	1,450	850
California tiger salamander	C2	Vernal pools and ponds	65	60	60	60	60	15	15	15	4	9	0	0	10	2
California red-legged frog and south-western pond turtle	C1	Ponds	30	25	25	25	25	10	10	10	2	2	0	0	3	1

^a Status explanations

Federal

FE = endangered under the federal Endangered Species Act.

FPE = proposed for listing as endangered.

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

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.

Table 6-3. Estimated Percent Loss of Known Range of Federally Listed Threatened, Endangered, and Candidate Plant and Wildlife Species at Fort Ord by Alternative

Species	Listing Status ^a	Alternative ^a							
	Federal/State/CNPS	1	1C	2	3	4	5	6	Revised Alternative 6
Plants									
Sand gilia <i>Gilia tenuiflora</i> ssp. <i>arenaria</i>	E/T/1b	40-70	40-70	30-50	10-30	5-20	<1	10-25	5-10
Monterey spineflower <i>Chorizanthe pungens</i> var. <i>pungens</i>	PE/--/1b	65-90	65-95	35-60	15-40	10-30	<1	15-40	5-15
Robust spineflower <i>Chorizanthe robusta</i> var. <i>robusta</i>	PE/--/4	0	0	0	0	0	0	0	0
Seaside bird's-beak <i>Cordylanthus rigidus</i> var. <i>littoralis</i>	C1/E/1b	25-50	25-50	10-25	<10	0	0	0	0
Hickman's onion <i>Allium hickmanii</i>	C1/--/1b	<5	<5	<3	<3	<2	0	<1	<1
Toro manzanita <i>Arctostaphylos montereyensis</i>	C2/--/1b	55-90	55-90	20-45	5-15	5-10	<1	5-15	5-10
Sandmat manzanita <i>Arctostaphylos pumila</i>	C2/--/1b	55-90	55-90	30-60	10-30	5-20	<1	5-20	5-10
Monterey ceanothus <i>Ceanothus rigidus</i>	C2/--/4	40-70	40-70	20-40	5-20	5-15	<1	5-10	<5
Eastwood's ericameria <i>Ericameria fasciculata</i>	C2/--/1b	55-90	55-90	30-60	5-15	5-10	<1	5-15	5-10
Coast wallflower <i>Erysimum ammophilum</i>	C2/--/1b	10-30	10-30	5-25	5-15	2-10	<1	2-10	2-10
Wedge-leaved horkelia <i>Horkelia cuneata</i> ssp. <i>sericea</i>	C2/--/1b	10	10	<3	<3	<2	<1	<2	<2
Yadon's piperia <i>Piperia yadoni</i>	-- ^b --/1b	<1	<1	<1	<1	0	0	<1	0

Table 6-3. Continued

^a Impacts resulting from all subalternatives except 1C are not substantially different from the alternatives.

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

California Native Plant Society

- 1b = List 1b species: rare, threatened, or endangered in California and elsewhere.
- 4 = List 4 species: plants of limited distribution that may be considered rare under CEQA.

^b Listing package is in preparation by USFWS (U.S. Fish and Wildlife Service pers. comm.).

IMPACT MECHANISMS

The potential impacts on species resulting from reuse of Fort Ord under Revised Alternative 6 were evaluated based on changes in land use. Changes in land use would have both direct and indirect impacts on vegetation and wildlife. Some land use changes could require extensive soil excavation or grading, placement of fill material, and removal of vegetation. Land development would result in direct impacts on biological resources, such as conversion of biological communities to structures, roads, and landscaping; mortality of plants or wildlife caused by construction equipment; displacement of species because of temporary or permanent habitat loss; and abandonment of a site by wildlife because of disturbance during critical periods of the year.

In the reuse analysis of Revised Alternative 6, it was assumed that no direct impacts on biological resources would result at sites with the following land use designations: coastal dune zone, natural area expansion, natural resource management area, disturbed habitat zone, university research area, recreational vehicle park, post academy, McKinney Act housing, government offices, or no proposed use (NPU). However, lands designated as NPU could be subject to development in the future and would require further separate environmental documentation. No direct impact was assumed if biological resources would be preserved within the land use area or if the land use proposed under Revised Alternative 6 would be the same as the current land use under Army ownership. Some of these land uses would result in the loss of small amounts of biological resources for construction of a limited number of structures and roads.

For the purpose of this analysis, the category of NPU was considered an open space land use that would be maintained in caretaker status by the Army, with public access restricted and vegetation management continued after surface clearing of ordnance. However, because lands designated as NPU could potentially be adversely affected after a more specific land use is assigned, the extent of biological resources in these areas is described separately in the "Potential Additional Impacts in No Proposed Use Areas" section at the end of this chapter.

Specific information was provided on the location of developments within the land use areas designated as corporate yard, agri-center, recreation area expansion (RAE), and airport (Figure 2-1). For the purpose of this analysis, a complete loss of biological resources was assumed to occur in those sections where development is expected, and no losses were assumed to occur in the remaining area.

In the area designated as corporate yard, approximately 14 acres of habitat within the designated 46-acre area would be developed.

The agri-center land use area will undergo development on approximately 175 of the 890 allotted acres. Development would attempt to avoid sensitive biological resources and

would not occur on slopes greater than 30%. Based on these criteria, development in the parcel designated as agri-center is expected to occur in the region shown in Figure 6-1.

In the 973-acre parcel designated as RAE, several of the dirt roads along the ridges would be widened to provide 5,000-7,000 parking spaces. Approximately 9% of existing habitat in the parcel would be affected. An additional 15 acres at the southernmost tip of the RAE would be converted to an interchange with Highway 68. No development is expected to occur in the 150-acre parcel north of Laguna Seca designated as RAE.

Under Revised Alternative 6, direct impacts are expected to occur in the parcel designated as airport only where the runway will be extended 500 feet on either side of the existing runway. However, it is possible that future developments may occur in lands surrounding the airport.

In the reuse analysis, it was assumed that direct impacts from land uses not listed above would eliminate all biological resources within the land use footprint. For Revised Alternative 6, it was assumed that direct impacts from the land use category of fire training would eliminate all biological resources on the site. Resources were assumed to be eliminated because under this land use category the area would be used for airport fire training, which will have a greater impact than the grassland fire training proposed under previous alternatives. Also, the 79-acre area is much smaller than previously described fire training areas; thus facilities would be concentrated in a smaller area and have a greater affect on biological resources. Some of these proposed land uses could result in the retention of small patches of natural habitats and special-status species populations. The biological value of these remnant habitats would be low because of their small size, isolation, and the surrounding development.

Changes in land use could also result in indirect impacts, such as mortality of native wildlife because of predation by domestic pets, disturbance of wildlife by recreationists, or erosion of soil from one parcel to an adjacent parcel, resulting in loss of plant habitat or degradation of wetlands. The location and severity of these impacts are unknown at this time; therefore, indirect impacts on biological resources would have to be determined on a separate, site-specific basis and were not evaluated in this analysis.

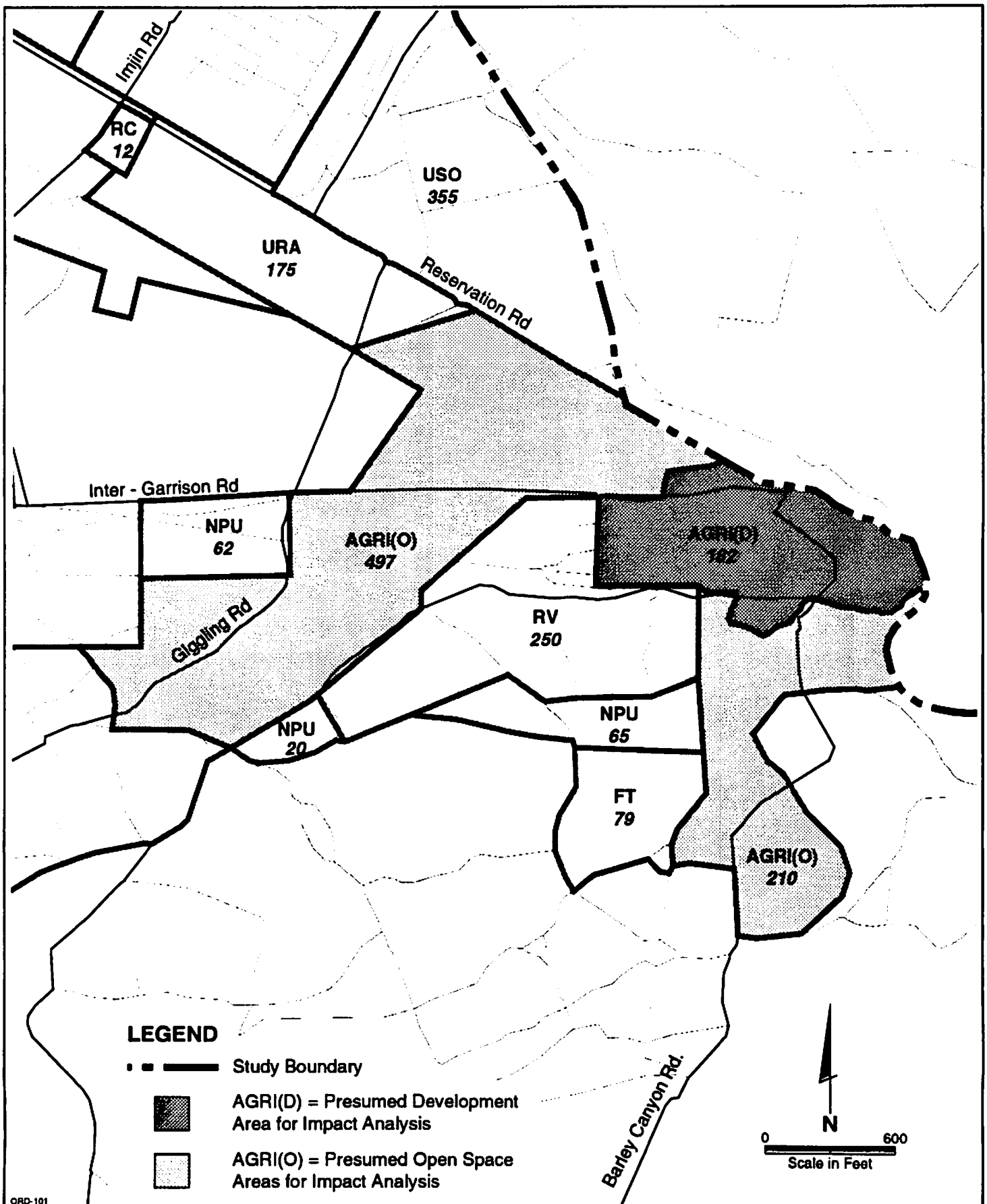
REVISED ALTERNATIVE 6

Sand Gilia

■ *Impact: Loss of Sand Gilia Populations and Habitat (Approximately 150 Acres)*

Implementation of Revised Alternative 6 would result in the loss of approximately 150 acres of occupied sand gilia habitat (Table 6-1). These habitat areas support sand gilia

Figure 6-1
**Presumed Developed and Open Space Areas Within the
 Proposed Agri-Center for Revised Alternative 6**



at high densities on approximately 15 acres, medium densities on roughly 5 acres, and low densities on about 130 acres. Maritime chaparral and coastal scrub habitat on sandy soils are potentially suitable habitat for sand gilia. Approximately 1,000 acres of potential habitat would be lost under Revised Alternative 6.

Sand gilia is listed as endangered under the federal Endangered Species Act. Removal of individuals or populations of sand gilia is a violation of the federal Endangered Species Act. The loss of sand gilia populations would be unavoidable under Revised Alternative 6.

- ***Mitigation: Preserve Populations and Habitat of Federally Listed, Proposed, and Candidate Plants and Wildlife through a Multispecies Habitat Management Plan***

Before disposal, the Army will prepare a multispecies HMP. The HMP will include all federally listed and proposed plants and wildlife at Fort Ord and candidate species with a substantial portion of their range at the installation. The HMP will be prepared in coordination with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act. The goals of the HMP will be to preserve, protect, and enhance populations and habitat of federally listed and proposed threatened and endangered plants and animals, and to avoid reducing populations or habitat of federal candidate species to levels that may result in one or more of these species becoming listed as threatened or endangered. Recipients of Fort Ord lands will follow the guidelines of the HMP.

Methods for protecting and restoring habitat and populations of sand gilia will be included in the HMP. (Mitigation will be implemented by the federal, state, and local agencies and private entities responsible for development.)

Smith's Blue Butterfly

- ***Impact: Loss of Smith's Blue Butterfly Habitat***

Under Revised Alternative 6, less than 1% (approximately 1 acre) of the Smith's blue butterfly habitat at Fort Ord would be eliminated by development. Acres affected by development for all special-status and special-interest wildlife species for each alternative and subalternative are shown in Table 6-2.

The habitat at Fort Ord has been identified in the Smith's blue butterfly recovery plan (U.S. Fish and Wildlife Service 1984) as important for the recovery of the species. The Smith's blue butterfly is listed as a federally endangered species. Loss of habitat or populations would violate the federal Endangered Species Act.

- ***Mitigation: Preserve Populations and Habitat of Federally Listed, Proposed, and Candidate Plants and Wildlife through a Multispecies Habitat Management Plan***

Recipients of disposed Fort Ord lands would be required to follow the management and land use guidelines in the multispecies HMP described under the mitigation measure for the "Loss of Sand Gilia Populations and Habitat" impact discussed above. The HMP may require avoidance of Smith's blue butterfly habitat or compensation for loss of habitat through restoration of habitat elsewhere at Fort Ord. Components of the HMP focused on Smith's blue butterfly may be developed in association with the Marina Dunes Habitat Conservation Plan. (Mitigation will be implemented by the federal, state, and local agencies and private entities responsible for development.)

■ ***Impact: Degradation of Smith's Blue Butterfly Habitat resulting from Recreational Use***

Public beach access permitted under Revised Alternative 6 would allow increased human disturbance of beach and dune habitats. Foot traffic and other human impacts associated with increased use could damage host plants and degrade Smith's blue butterfly habitat in the coastal dune zone. Degradation of Smith's blue butterfly habitat would violate the federal Endangered Species Act.

■ ***Mitigation: Preserve Populations and Habitat of Federally Listed, Proposed, and Candidate Plants and Wildlife through a Multispecies Habitat Management Plan***

Recipients of disposed Fort Ord lands would be required to follow the management and land use guidelines in the multispecies HMP developed by the Army. The HMP will address methods to minimize degradation of Smith's blue butterfly habitat. Potential methods for minimizing habitat degradation include constructing wooden boardwalks to direct beach access; installing interpretive signs that designate the area as sensitive habitat; and providing adequate, full-time law enforcement for the habitat preserves and coastal dune zones. (Mitigation will be implemented by the federal, state, and local agencies and private entities responsible for development.)

American Peregrine Falcon

American peregrine falcons do not nest at or near Fort Ord, and no suitable nesting habitat occurs on the installation. Also, Fort Ord is not an important foraging area for the species. American peregrine falcons would not be affected by Revised Alternative 6.

Southern Sea Otter

Southern sea otter would not be affected under Revised Alternative 6.

Monterey Spineflower

■ *Impact: Loss of Monterey Spineflower Populations and Habitat*

Implementation of Revised Alternative 6 would result in the loss of approximately 930 acres of habitat occupied by Monterey spineflower (Table 6-1). These habitat areas support Monterey spineflower at high densities on approximately 70 acres, medium densities on about 510 acres, and low densities on roughly 350 acres. All maritime chaparral and 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.

Monterey spineflower is proposed for listing as endangered under the federal Endangered Species Act. Monterey spineflower could become listed during disposal and reuse of Fort Ord lands. Should Monterey spineflower become listed as endangered, the removal of individuals or populations would be a violation of the federal Endangered Species Act. The loss of Monterey spineflower populations would be unavoidable under Revised Alternative 6.

■ *Mitigation: Preserve Populations and Habitat of Federally Listed, Proposed, and Candidate Plants and Wildlife through a Multispecies Habitat Management Plan*

Recipients of disposed Fort Ord lands would be required to follow the management and land use guidelines in the multispecies HMP developed by the Army. The HMP is discussed above under the mitigation measure for the "Loss of Sand Gilia Populations and Habitat" impact. Methods for protecting and restoring Monterey spineflower populations and habitat will be included in the HMP. (Mitigation will be implemented by the federal, state, and local agencies and private entities responsible for development.)

Robust Spineflower

No individuals of robust spineflower would be affected under Revised Alternative 6.

California Linderiella

■ *Impact: Loss of California Linderiella Habitat*

Under Revised Alternative 6, roughly 3% (approximately 2 acres) of potential California linderiella habitat at Fort Ord could be eliminated by development (Table 6-2). None of the five pools and ponds where California linderiella are known to occur would be

eliminated. However, the proposed transportation corridor would pass within 1,250 feet of two occupied pools (Figure 4-17 in the draft biological assessment and Figure 2-1).

California linderiella is currently proposed for federal endangered status. If California linderiella becomes listed as endangered, loss of California linderiella habitat would be a violation of the federal Endangered Species Act.

- ***Mitigation: Preserve Populations and Habitat of Federally Listed, Proposed, and Candidate Plants and Wildlife through a Multispecies Habitat Management Plan***

Recipients of disposed Fort Ord lands would be required to follow the management and land use guidelines in the multispecies HMP developed by the Army. The HMP is discussed above under the mitigation measure for the "Loss of Sand Gilia Populations and Habitat" impact.

The HMP would discuss other regulatory requirements for wetland impacts, such as Section 404 of the Clean Water Act. Potential management guidelines within the HMP include avoidance of vernal pools and ponds, creation of habitat of value equal to or greater than that of affected habitat, and protection of watersheds for vernal pools and ponds. (Mitigation will be implemented by the federal, state, and local agencies and private entities responsible for development.)

Western Snowy Plover

- ***Impact: Disturbance to Nesting Western Snowy Plovers***

Western snowy plovers nest on the beaches at Fort Ord from the northern installation boundary to Stilwell Hall. They may also nest south of Stilwell Hall. Public beach access permitted under Revised Alternative 6 would allow for increased human disturbance to beach and dune habitats. Nest failures and nest abandonment by western snowy plovers have been caused by human disturbance under a variety of circumstances (57 FR 1443 January 14, 1992), resulting directly in mortality of eggs and chicks.

Coastal populations of the western snowy plover are federally listed as threatened. Mortality or loss of habitat of coastal populations of western snowy plovers resulting from implementation of the alternative would violate the federal Endangered Species Act.

- ***Mitigation: Preserve Populations and Habitat of Federally Listed, Proposed, and Candidate Plants and Wildlife through a Multispecies Habitat Management Plan***

Recipients of disposed Fort Ord lands would be required to follow the management and land use guidelines in the multispecies HMP developed by the Army. The HMP is discussed above under the mitigation measure for the "Loss of Sand Gilia Populations and Habitat" impact. Potential management guidelines include minimizing disturbance to

nesting western snowy plovers by restricting human access to beaches north of Stilwell Hall during the western snowy plover breeding and nesting season (March-September). If western snowy plovers are found nesting in other areas, beach access could also be restricted in these locations.

Category 1 and 2 Candidate Species

Federal candidate species could become federally listed as threatened or endangered before reuse of Fort Ord begins; if such listing occurs, removal of individuals or habitats would be a violation of the federal Endangered Species Act.

■ *Impact: Loss of Federal Candidate Plant Species Populations and Habitat*

Implementation of Revised Alternative 6 would result in the loss of occupied habitat of plant species that are candidates (Category 1 or 2) for federal listing as threatened or endangered or species for which listing packages are in preparation. These species include Toro manzanita, sandmat manzanita, Hickman's onion, Monterey ceanothus, Eastwood's ericameria, coast wallflower, and wedge-leaved horkelia (Table 6-1). More than 50% of the total ranges of Toro manzanita, sandmat manzanita, Monterey ceanothus, and Eastwood's ericameria are at Fort Ord. Revised Alternative 6 would result in the loss of approximately 5% of the populations of these species at Fort Ord (Table 6-1).

Approximately 5% of the occupied habitat of Hickman's onion, 20% of the occupied habitat of coast wallflower, and 5% of the occupied habitat of wedge-leaved horkelia at Fort Ord would be removed under Revised Alternative 6 (Table 6-1). No individuals of Yadon's piperia would be removed under Revised Alternative 6. Fort Ord does not represent as large a portion of the range for Hickman's onion, coast wallflower, wedge-leaved horkelia, and Yadon's piperia as for the other candidate species (Table 6-3).

■ *Mitigation: Preserve Populations and Habitat of Federally Listed, Proposed, and Candidate Plants and Wildlife through a Multispecies Habitat Management Plan*

Recipients of disposed Fort Ord lands would be required to follow the management and land use guidelines in the multispecies HMP developed by the Army. The HMP is discussed above under the mitigation measure for the "Loss of Sand Gilia Populations and Habitat" impact. The HMP will specifically discuss management guidelines for Seaside bird's-beak, Toro manzanita, sandmat manzanita, Hooker's manzanita, Monterey ceanothus, Eastwood's ericameria, and coast wallflower. Other candidate species will also be protected because populations and habitats of these species frequently overlap with those of one or more species specifically addressed in the HMP. The HMP may prescribe avoidance of some candidate plant populations or establishment of new populations where feasible.

(Mitigation will be implemented by the federal, state, and local agencies and private entities responsible for development.)

■ ***Impact: Reduction of Federal Candidate Wildlife Species Populations and Habitat***

Nine federal candidate (Category 1 or 2) wildlife species are known to occur or have potential to occur at Fort Ord (Table 6-2). Listing petitions are currently being reviewed by USFWS for the California tiger salamander, southwestern pond turtle, and California red-legged frog, and a listing petition is currently being prepared for the black legless lizard.

The Monterey dusky-footed woodrat, Monterey ornate shrew, and black legless lizard have very limited ranges (Figures B-17, B-19, and B-21 in Appendix B of the draft biological assessment). Under Revised Alternative 6, approximately 16% of the available black legless lizard habitat, 9% of Monterey dusky-footed woodrat habitat, and 12% of Monterey ornate shrew habitat at Fort Ord would be eliminated by development (Table 6-2). None of these species would likely be elevated to threatened or endangered status under this alternative.

Under Revised Alternative 6, public access to beaches and dunes could reduce densities of native vegetation through foot traffic and other human impacts. A reduction in densities of native dune vegetation would degrade coastal habitat for the black legless lizard.

The six other federal candidate species known to occur or with potential to occur at Fort Ord would experience loss of habitat under Revised Alternative 6. Implementation of this alternative would result in the loss of between 10% and 18% of the available habitat of loggerhead shrike and California horned lark at Fort Ord (Table 6-2). Between 3% and 5% of the available habitat of California tiger salamander, California red-legged frog, southwestern pond turtle, and tricolored blackbird would also be eliminated under Revised Alternative 6. The proposed transportation corridor would eliminate one known tiger salamander breeding site and would come very close to two others, removing salamander upland habitat (Appendix B, Figure B-23 in the draft biological assessment, and Figure 2-1). The one known tricolored blackbird nesting colony at Fort Ord would not be affected by implementation of the alternative (Appendix B, Figure B-26).

Some loss of potential habitat of federal candidate wildlife species would be unavoidable under Revised Alternative 6.

■ ***Mitigation: Preserve Populations and Habitat of Federally Listed, Proposed, and Candidate Plants and Wildlife through a Multispecies Habitat Management Plan***

Recipients of disposed Fort Ord lands would be required to follow the management and land use guidelines in the multispecies disposal HMP developed by the Army. The HMP is discussed above under the mitigation measure for the "Loss of Sand Gilia Populations and Habitat" impact. The HMP will specifically discuss management guidelines for the black legless lizard and Monterey ornate shrew. Other candidate species will also be protected because populations and habitats of these species frequently overlap with one

or more plant or wildlife species specifically addressed in the HMP. The HMP may prescribe avoidance of some candidate wildlife populations or habitat, translocation of populations or individuals, or restoration of habitat where feasible. (Mitigation will be implemented by the federal, state and local agencies and private entities responsible for development.)

POTENTIAL ADDITIONAL IMPACTS IN NO PROPOSED USE AREAS

Lands designated as NPU were considered in the above analysis of Revised Alternative 6 to be open space and, therefore, not adversely affected by implementation of the alternative. Because no requests were received for these lands during the real estate screening process, they are assumed to remain under Army control in caretaker status until requests from private parties are received and processed. These lands could be completely or partially developed, remain undeveloped, or become protected with conservation easements under the disposal HMP. The following discussion assumes complete buildout of NPU areas and represents the worst-case scenario of potential impacts on biological resources on these lands.

The amount of habitat occupied by federally listed, proposed, and candidate plant species in NPU areas is given in Table 6-4. Approximately 10% of the occupied habitat of sand gilia (285 acres) and about 15% of the occupied habitat of Monterey spineflower (1,380 acres) occurs in NPU areas and could potentially be lost. Approximately 15% of the occupied habitat of coast wallflower and 5% of the occupied habitat of Toro manzanita, Monterey ceanothus, Eastwood's ericameria, and wedge-leaved horkelia occur in NPU areas. One population of Yadon's piperia occurs at Fort Ord and would be lost if NPU areas were developed. No populations of Seaside bird's-beak or Hickman's onion would be lost.

The amount of habitat occupied by federally listed, proposed, and candidate wildlife species in NPU areas is given in Table 6-5. No potential or occupied habitat of Smith's blue butterfly or western snowy plover occurs within NPU areas. Approximately 8% (5 acres) of the potential California linderiella habitat occurs in NPU areas and could potentially be lost. No known California linderiella populations would be affected. Approximately 21% of potential black legless lizard habitat occurs in NPU areas, as well as roughly 19% of habitat for the Monterey ornate shrew and 10% of habitat for the Monterey dusky-footed woodrat. Approximately 3% of the potential habitat for California red-legged frog and southwestern pond turtle is within areas designated as NPU, and roughly 8% of the potential and occupied California tiger salamander habitat is within NPU areas. One vernal pool known to support California tiger salamander occurs in an area designated as NPU. Approximately 6% of the potential habitat for California horned lark and loggerhead shrike also occurs in NPU areas. Tricolored blackbird would not be affected.

**Table 6-4. Comparison of Acreages of Occupied Habitat of Federally
Listed, Proposed, and Candidate Plant Species in Areas
Designated as No Proposed Use and Those Affected
and Unaffected under Revised Alternative 6**

Species and Density of Occurrence ^a	Acres Affected	Acres in NPU ^b	Acres not Affected	Total
Sand gilia, E/T/1b				
Low	130	260	2,900	3,290
Medium	5	20	285	310
High	15	5	140	160
Total	150	285	3,325	3,760
Monterey spineflower, PE/--/1b				
Low	350	880	4,720	5,950
Medium	510	440	2,590	3,540
High	70	60	850	980
Total	930	1,380	8,160	10,470
Seaside bird's-beak, C1/E/1b				
Low	0	0	1,110	1,110
Medium	0	0	15	15
High	0	0	0	0
Total	0	0	1,125	1,125
Toro manzanita, C2/--/1b				
Low	120	220	1,980	2,320
Medium	60	5	2,095	2,160
High	15	0	1,935	1,950
Total	195	225	6,010	6,430
Sandmat manzanita, C2/--/1b				
Low	80	480	1,570	2,130
Medium	360	270	2,570	3,200
High	80	200	3,170	3,450
Total	520	950	7,310	8,780
Hickman's onion, C1/--/1b				
Low	0	0	270	270
Medium	20	0	100	120
High	0	0	0	0
Total	20	0	370	390
Monterey ceanothus, C2/--/4				
Low	190	330	1,950	2,470
Medium	350	320	6,170	6,840
High	260	160	2,060	2,480
Total	800	810	10,180	11,790

Table 6-4. Continued

Species and Density of Occurrence ^a	Acres Affected	Acres in NPU ^b	Acres not Affected	Total
Eastwood's ericameria, C2/--/1b				
Low	220	340	3,010	3,570
Medium	130	40	2,110	2,280
High	5	20	0	25
Total	355	400	5,120	5,875
Coast wallflower, C2/--/1b				
Low	100	90	300	490
Medium	50	20	160	230
High	0	5	45	50
Total	150	115	505	770
Wedge-leaved horkelia, C2/--/1b				
Low	45	160	2,235	2,440
Medium	100	60	1,040	1,200
High	0	0	0	0
Total	145	220	3,275	3,640
Yadon's piperia, --/--/1b				
Low	0	15	0	15
Medium	0	0	0	0
High	0	0	0	0
Total	0	15	0	15

^a Status designations (federal/state/CNPS):

Federal

E = listed as endangered 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.

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 status designation.

Table 6-4. Continued

State

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

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

-- = no status designation.

California Native Plant Society

1b = List 1b species: rare, threatened, or endangered in California and elsewhere.

4 = List 4 species: plants of limited distribution.

^b NPU = No proposed use.

**Table 6-5. Comparison of Acreages of Potential and Occupied
Habitat of Federally Listed, Proposed, and Candidate
Species in Areas Designated as No Proposed Use
and Those Affected and Unaffected under
Revised Alternative 6**

Species	Listing Status Federal/State^a	Acres Affected	Acres in NPU^b	Acres Not Affected	Total
Smith's blue butterfly	E/--	1	0	180	181
California linderiella	PE/--	2	5	55	62
Black legless lizard	C2(LP)/SSC	520	710	2,090	3,320
Monterey dusky-footed woodrat	C2/--	1,440	1,600	12,530	15,570
Monterey ornate shrew	C2/--	560	890	3,190	4,640
California tiger salamander	C2(LP)/SSC	2	5	50	62
California red-legged frog	C1(LP)/SSC	1	1	30	32
Southwestern pond turtle	C1(LP)/SSC	1	1	30	32
Tricolored blackbird	C2/SSC	130	0	2,460	2,590
California horned lark	C2/--	850	300	3,640	4,790
Loggerhead shrike	C2/--	1,990	1,180	15,810	18,980

▪ Status designations:

Federal

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

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

LP = listing package being reviewed by USFWS.

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.

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 status designation.

Table 6-5. Continued

Species	Listing Status Federal/State ^a	Acres Affected	Acres in NPU ^b	Acres Not Affected	Total
State					
SSC = species of special concern.					
-- = no status designation.					
^b NPU = No proposed use.					