

**DRAFT ECONOMIC ANALYSIS
OF CRITICAL HABITAT DESIGNATION
FOR THE MONTEREY SPINEFLOWER**

August 2001

Draft- August, 2001

Prepared for:

Division of Economics
U.S. Fish and Wildlife Service
4401 N. Fairfax Drive
Arlington, VA 22203

Prepared by:

Industrial Economics, Incorporated
2067 Massachusetts Avenue
Cambridge, Massachusetts 02140

Send comments on the economic analysis to:

Field Supervisor
U.S. Fish and Wildlife Service
Ventura Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, CA 93003

PREFACE

1. On May 11, 2001, the U.S. Court of Appeals for the Tenth Circuit issued a ruling that addressed the analytical approach used by the Service to estimate the economic impacts associated with the critical habitat designation for the southwestern willow flycatcher.¹ Specifically, the court rejected the approach used by the Service to define and characterize baseline conditions.² Defining the baseline is a critical step within an economic analysis, as the baseline in turn identifies the type and magnitude of incremental impacts that are attributed to the policy or change under scrutiny. In the flycatcher analysis, the Service defined baseline conditions to include the effects associated with the listing of the flycatcher and, as is typical of many regulatory analyses, proceeded to present only the incremental effects of the rule.
2. The court's decision, in part, reflects the uniqueness of many of the more recent critical habitat rulemakings. Specifically, the flycatcher was initially listed by the Service as an endangered species in 1995, several years prior to designating critical habitat. Once a species has been officially listed as endangered under the Act, it is afforded special protection under Federal law. In particular, it is illegal for any one to "take" a protected species once it is listed. Take is defined to mean harass, harm pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Implementing regulations promulgated by the Service further define "harm" to mean "... an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patters, including breeding, feeding, or sheltering."³
3. Because the southwestern willow flycatcher was initially listed as endangered by the Service in 1995, several years before the designation of critical habitat, the flycatcher, along with its habitat,

¹ New Mexico Cattle Growers Association, et al. v. U.S. Fish and Wildlife Service, No. 00-2050, U.S. Court of Appeals, Tenth Circuit, May 11, 2001.

² In a previous case, Middle Rio Grande Conservancy District v. Bruce Babbitt, No. CIV 99-870, 99-872, and 99-1445M/RLP (consolidated), U.S. District Court for the District of New Mexico, the court similarly questioned the approach used by the Service to identify the economic effects of designating critical habitat for the Rio Grande silvery minnow. Although the court openly questioned the definition used by the Service to establish the baseline of the economic analysis, the court did not expressly rule on this approach as it set aside the rule for other reasons.

³ 50 CFR 17.3. The Service's definition of harm to include significant habitat modification was later confirmed by the U.S. Supreme Court (*Sweet Home Chapter of Communities for a Great Oregon v. Babbitt*, 1F3d 1 (D.C. Cir. 1993)).

already received considerable protection before the designation of critical habitat in 1997.⁴ As a result, the economic analysis concluded that the resulting impacts of the designation would be insignificant.⁵ This conclusion was based on the facts that: (1) the designation of critical habitat only requires the Federal government to consider whether their actions could adversely modify critical habitat; and (2) the Federal government already was required to ensure that its actions did not jeopardize the flycatcher.

4. For a Federal action to adversely modify critical habitat the action would have to adversely affect the critical habitat's constituent elements or their management in a manner likely to appreciably diminish or preclude the role of that habitat in both the survival and recovery of the species.⁶ However, the Service defines jeopardy, which was a pre-existing condition prior to the designation of critical habitat, as to "engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."⁷ The "survival and recovery" standard is used in the definition of both terms and as a result, the additional protection afforded the flycatcher due to the designation of critical habitat was determined to be negligible.
5. The court, however, considered why Congress would require an economic analysis performed by the Service when making a decision about designating critical habitat if in fact the designation of critical habitat adds no significant additional protection to a listed species. In the court's mind, "(b)ecause (the) economic analysis done using the FWS's baseline model is rendered essentially without meaning by 50 CFR 402.02, we conclude Congress intended that the FWS conduct a full analysis of all of the economic impacts of a critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes."⁸
6. Even though the court's ruling applies only to the designation of critical habitat for the southwestern willow flycatcher, this analysis attempts to comply with the court's instructions by

⁴ See 60 FR 10694 and 62 FR 39129.

⁵ *Economic Analysis of Critical Habitat Designation for the Southwestern Willow Flycatcher*, Division of Economics, U.S. Fish and Wildlife Service, June 1997.

⁶ *Consultation Handbook*, U.S. Fish and Wildlife Service, March 1998, p. 4-39.

⁷ 50 CFR 402.02.

⁸ 50 CFR 402.02 defines the terms used by the Service in implementing sections 7(a)-(d) [16 U.S.C. 1536(a)-(d)] of the Endangered Species Act of 1973, as amended. The regulatory definitions for the terms "jeopardy" and "adverse modification" can be found in this section.

revising the level of detail in the description of baseline conditions within the areas of proposed critical habitat. Specifically, this analysis quantifies, to the extent possible, the effects of section 7 in its entirety on current and planned activities that are reasonably expected to occur in the near future within proposed critical habitat. Subsequently, the analysis identifies whether these effects are associated with the jeopardy provisions of section 7 or the critical habitat provisions of that section. The approach to baseline definition employed in this analysis is consistent with that of previous analyses, in that the goal is to understand the *incremental* effects of a designation. Typical economic analyses concentrate mostly on identifying and measuring, to the extent feasible, economic effects most likely to occur because of the action being considered. Baseline conditions, while identified and discussed, are rarely characterized or measured in any detailed manner because by definition, these conditions remain unaffected by the outcome of the decision being contemplated.

7. In sum, while the goal of this analysis remains the same as previous critical habitat economic analyses (i.e., to identify and measure the estimated incremental effects of the proposed rulemaking), the implementation has been altered such that information on baseline conditions is more detailed than that presented in previous studies.

1. INTRODUCTION AND BACKGROUND

8. In January 2001, the U.S. Fish and Wildlife Service (the Service) proposed designation of critical habitat for Monterey spineflower (*Chorizanthe pungens* var. *pungens*). The purpose of this report is to identify and analyze economic impacts that could result from this proposed critical habitat designation. This report was prepared by Industrial Economics, Incorporated (IEc), under contract to the U.S. Fish and Wildlife Service's Division of Economics.
9. Section 4(b)(2) of the Endangered Species Act (the Act) requires the Service to base final designation of critical habitat upon the best scientific and commercial data available, after taking into consideration the economic impact, and any other relevant impact, of specifying a particular area as critical habitat. The Service may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided that the exclusion will not result in extinction of the species.
10. Under the listing of a species, section 7(a)(2) of the Act requires Federal agencies to consult with the Service in order to ensure that activities they fund, authorize, or carry out are not likely to jeopardize the continued existence of the species. The Act defines "jeopardize" as taking any action that would appreciably reduce the likelihood of both the survival and recovery of the species. For designated critical habitat, section 7(a)(2) also requires Federal agencies to consult with the Service to ensure that activities they fund, authorize, or carry out do not result in destruction or adverse modification of critical habitat. Adverse modification of critical habitat is defined as any direct or indirect alteration that appreciably diminishes the value of critical habitat for the survival and recovery of the species.
11. If the Service finds, in a biological opinion, that a proposed action is likely to adversely modify the critical habitat of the species, it provides the agency with reasonable and prudent alternatives to avoid adverse modification. Regulations (50 CFR §402.02) implementing section 7 of the Act define reasonable and prudent alternatives as alternative actions, identified during formal consultation, that: (1) can be implemented in a manner consistent with the intended purpose of the action; (2) can be implemented consistent with the scope of the action agency's legal authority and jurisdiction; (3) are economically and technologically feasible; and (4) would, the Service believes, avoid the likelihood of jeopardizing the continued existence of listed species or resulting in the destruction or adverse modification of critical habitat. If no reasonable and prudent alternatives are available, the Service will notify the agency and provide an explanation of that conclusion. The agency may choose to implement the reasonable and prudent alternative, proceed with the action as proposed at the risk of violating the Act, revise its proposed action, or apply for an exemption from the Act.
12. The proposed critical habitat designation for the Monterey spineflower encompasses land owned or managed by the Federal government, state and local agencies, and private landowners. This analysis assesses how critical habitat designation for the Monterey spineflower may affect

current and planned land uses and activities on these lands. For federally managed land, designation of critical habitat can directly impact any activities, land uses, or other actions that may adversely affect critical habitat. For state and local land holdings and privately owned land subject to critical habitat designation, consultations and modifications to land uses and activities can only be required when a Federal nexus, or connection, exists. A Federal nexus arises if the activity or land use of concern involves Federal permits, Federal funding, or another form of Federal involvement. Activities on state and private land that do not involve a Federal nexus are not affected by critical habitat designation.

13. To be considered in the economic analysis, activities must be "reasonably foreseeable," i.e., activities that are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. This report considers current and future activities that are likely to occur within proposed critical habitat over the next ten years and could potentially result in new or reinitiated section 7 consultations or modifications. A ten-year time horizon is used because many landowners and managers do not have specific plans for projects beyond ten years. In addition, the predictions of future economic activity in this report are based on current socioeconomic trends and the current level of technology, both of which are likely to change in the long term.

1.1 Description of Species and Habitat

14. In California, the spineflower genus (*Chorizanthe*) in the buckwheat family (*Polygonaceae*) comprises species of wiry annual herbs that inhabit dry sandy soils, both along the coast and inland.⁹ The Monterey spineflower is a low-growing herb that is soft-hairy and grayish or reddish in color. The plant is a short-lived annual species that is endemic to sandy soils of coastal habitats in southern Santa Cruz and northern Monterey Counties, and in the Salinas Valley in interior Monterey County. It germinates during the winter months and flowers from April through June. Seed dispersal is facilitated by spines that attach the seed to passing animals, and is also aided by prevailing coastal winds. Monterey spineflower generally occurs in environments with a mild maritime climate, where fog helps keep summer temperatures cool and winter temperatures relatively warm and provides moisture in addition to the normal winter rains.

⁹ Information on the Monterey spineflower and its habitat is taken from Federal Register, published February 15, 2001 (66 FR 10469), titled *Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for Chorizanthe pungens* var. *pungens* (*Monterey Spineflower*).

15. The primary constituent elements for the Monterey spineflower include:

- sandy soils associated with active coastal dunes, coastal bluffs with a deposition of windblown sand, inland sites with sandy soils, and interior floodplain dunes;
- plant communities that support associated species, including coastal dune, coastal scrub, grassland, maritime chaparral, oak woodland, and interior floodplain dune communities, and have a structure such that there are openings between the dominant elements (e.g., scrub, shrub, oak trees, clumps of herbaceous vegetation);
- no or little cover by nonnative species which compete for resources available for growth and reproduction of Monterey spineflower; and
- sites that are of sufficient size to maintain ecosystem functions and processes, such as occasional soil disturbance, including natural dune dynamics along coastal areas; pollinator activity between existing colonies of Monterey spineflower; and seed dispersal mechanisms between existing colonies and other potentially suitable sites.

1.2 Proposed Critical Habitat

16. The Service has proposed 11 units of critical habitat for the Monterey spineflower on approximately 25,818 acres of land in Santa Cruz and Monterey Counties, California. Approximately 54 percent of the designation is currently owned by the Federal government and 31 percent is owned by private parties. The remaining land is split among the State of California (ten percent) and local agencies (five percent). Additional information about each of the units is provided below.¹⁰

Coastal Units

¹⁰ Information is taken from the Federal Register published February 15, 2001 (66 FR 10469).

Draft- August, 2001

- **Unit A, Manresa**, is composed entirely of Manresa State Beach, which is approximately 100 acres of state-owned coastal land in southern Santa Cruz County.
- **Unit B, Sunset**, consists entirely of Sunset State Beach, which is approximately 130 acres of state-owned coastal land in southern Santa Cruz County.
- **Unit C, Moss Landing**, is centered around the community of Moss Landing in Monterey County and includes coastal lands to the north and to the south owned by the state of California (Zmudowski, Moss Landing, and Salinas River State Beaches and the Moss Landing Marine Lab of the University of California), a local agency (Moss Landing North Harbor District), and private parties.
- **Unit D, Marina**, includes coastal lands ranging from just south of the Salinas River south to the Monterey Peninsula. Federal lands make up approximately half of this unit and include the Salinas River National Wildlife Refuge, Department of Defense lands known as former Fort Ord, and the U.S. Navy Postgraduate School. The unit also includes state and private land.
- **Unit E, Asilomar**, includes Asilomar State Beach which is owned by the State of California and approximately 270 acres of privately owned land in and around Spanish Bay.

Inland Units

- **Unit F, Freedom Boulevard**, includes privately owned land in southern Santa Cruz County, northeast of Highway 1, at the western terminus of Freedom Boulevard.
- **Unit G, Bel Mar**, includes privately owned land in southern Santa Cruz County between Larkin Valley Road and Highway 1.
- **Unit H, Prunedale**, consists of two parcels of land: To the west of Highway 101 the unit includes Manzanita County Park.

To the east of Highway 101, the unit includes a mixture of state and private land stretching from just north of Vierra Canyon Road to just south of Pesante Road.¹¹

- **Unit I, Fort Ord**, includes the former Department of Defense (DOD) base at Fort Ord. This unit stretches from just east of the City of Seaside, south toward the City of Del Rey Oaks. Lands at the former Fort Ord are currently being transferred to non-DOD ownership as part of a military base closure.
- **Unit J, Del Rey Oaks**, includes privately held land within the City of Del Rey Oaks and unincorporated county land that makes up the Monterey County Airport.
- **Unit K, Soledad**, consists of privately held land that includes an interior dune and agricultural lands in and around the floodplain of the Salinas River channel just south of the town of Soledad in Central Monterey County.

17. Although some of the proposed critical habitat is not currently known to support populations of the Monterey spineflower, the Service finds it necessary to propose critical habitat in all of these units. Those areas within the proposed designation that are unoccupied by the species but possess the primary constituent elements have been proposed for critical habitat designation because they are essential for the discovery or establishment of new populations, continued growth of current populations, and the recovery of the species as a whole. Due to the limitations of mapping, some lands have been included within the boundaries of the proposed critical habitat that are not occupied by the species and do not possess the primary constituent elements. These lands will not be subject to any additional consultations as a result of critical habitat designation for the Monterey spineflower because they could not support the species. Critical habitat designation on these lands could possibly lead to costs associated with an increase in the amount of technical assistance offered by the Service to private landowners. Technical assistance costs represent the estimated economic costs of informational exchanges between landowners or managers and the Service regarding the designation of critical habitat for the Monterey spineflower. Most likely, such

¹¹ Description of the Prunedale Unit differs from the description included in the Federal Register. Additional research by the Service on land ownership revealed that the State of California acquired a significant portion of the land within the critical habitat designation to the east of Highway 101 as part of historical plans to expand the Highway (Email communication, Environmental Planner, Caltrans, April 5, 2001).

exchanges would consist of phone conversations or correspondences between municipal or private property owners and the Service regarding lands designated as critical habitat or lands adjacent to critical habitat. Costs associated with these informational exchanges include the opportunity cost of time spent in conversation or in preparing correspondence for the municipal or private property owner, as well as staff costs for the Service.

1.3 Recovery Plan

18. A recovery plan for the Monterey spineflower was published in September of 1998.¹² The plan identifies areas supporting the Monterey spineflower, with an emphasis on the ecological significance of protecting the large population within the former Ft. Ord site. All of the areas being proposed for critical habitat were identified in the 1998 recovery plan, with the exception of the Soledad Unit, which consists of agricultural land and the Salinas River floodplain. The plan also points explicitly to four private parcels that were known to support the Monterey spineflower, based on a 1987 biological survey. Portions of two of these parcels (the Granite Rock Company and Martin Properties) have since been acquired by the Big Sur Land Trust and will be protected in perpetuity.
19. The plan identified a number of threats to the species, including trampling of the plants by hikers and equestrians, residential development, and the invasion of non-native species. At the time of publication, the most significant threat to the species along coastal dunes was the spread of exotic species (e.g., iceplant), as a result of dune stabilization programs.

1.4 Relevant Baseline Regulations

20. The coastal dune habitat that supports the Monterey spineflower across five of the 11 units proposed for critical habitat designation also receives baseline protection through the California Coastal Commission (Coastal Commission) policies regarding the California Coastal Act. Coastal Act policies, which are prepared by local governments and submitted to the Coastal Commission for approval, require coastal development permits for projects that occur within the Coastal Zone-- generally within 1,000 yards of the mean high water mark.

¹² "Recovery Plan for Seven Coastal Plants and the Myrtle's Silverspot Butterfly," U.S. Fish and Wildlife, September 30, 1998.

In Santa Cruz County, the Coastal Zone includes the Manresa and Sunset State Beaches units. In Monterey County, the Moss Landing, Marina, and Asilomar units fall within the Coastal Commission's Coastal Zone.¹³ The permit review process requires, among other things, "protection, enhancement and restoration of environmentally sensitive habitats, including ... habitat for rare or endangered plants or animals."¹⁴ The Coastal Commission does not officially designate "environmentally sensitive habitat" areas per se, but rather considers the species and/or habitat features found on each parcel of land on a case-by-case basis. Environmentally sensitive habitats can include either the existence of a rare species on a parcel of land or simply the existence of important habitat characteristics on which that species depends.¹⁵

21. California's dune habitat receives significant consideration by the Coastal Commission during the permit review process. The Commission retains authority to decide whether an individual parcel fits the definition of environmentally sensitive habitat. The designation of critical habitat for the Monterey spineflower by the U.S. Fish and Wildlife Service may have some impact on the Coastal Commission's interpretation of environmentally sensitive habitat areas, as defined in Section 30107.5, of the California Coastal Act.¹⁶ Although it is difficult to forecast the impact of critical habitat designation for the Monterey spineflower on the Coastal Commission's permit review practices, it is likely that unoccupied Monterey spineflower habitat on private coastal land would receive additional protection from the Coastal Commission after critical habitat designation. Currently, proposed development that impacts lands containing threatened and endangered species such as the Monterey spineflower typically requires a landscape restoration and re-vegetation plan to offset the loss of the species. After the designation of critical habitat, the Coastal Commission will likely require protective measures for all projects

¹³ Information on units falling within the Coastal Commission's Coastal Zones was provided by Planner, California Coastal Commission, 8 March 2001.

¹⁴ "Questions and Answers: California Coastal Act," State of California. March 9, 1999. (<http://www.coastal.ca.gov/qa99.pdf>)

¹⁵ Environmentally sensitive habitat is defined as an "area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and development." Section 30107.5, "Definitions," California Coastal Act.

¹⁶ Personal Communication, Planner, Coastal Commission, March 8, 2001.

within Monterey spineflower critical habitat, including projects in unoccupied areas that would not have received such protection prior to critical habitat designation.

22. The State of California maintains other environmental regulations that affect the units proposed as critical habitat for the Monterey spineflower.¹⁷ The California Environmental Quality Act (CEQA) requires the identification of significant environmental effects of proposed projects that have the potential to harm the environment. The lead agency (typically the California State agency in charge of the oversight of a project) must determine whether a proposed project would have a significant effect on the environment. Section 15065 of Article 5 of the CEQA regulations states that a finding of significance is mandatory if the project will "substantially reduce the habitat of a fish and wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory." If the lead agency finds a project will cause significant impacts, the landowners must prepare an Environmental Impact Report (EIR).¹⁸ Any economic impacts identified by the EIR process are due to the presence of a particular species on the project land, regardless of whether it is designated critical habitat. Review of the CEQA statute and conversations with the California Resources Agency (one of the agencies responsible for administering CEQA) revealed that when a species is known to occupy a parcel of land, the designation of critical habitat alone does not require a lead agency to pursue any incremental actions.¹⁹ However, in the case of the Monterey spineflower, the proposed designation includes lands that do not currently support the species. Thus, critical habitat designation may increase the public's knowledge of the habitat needs of the species and may result in some incremental requirements and costs associated with CEQA.

¹⁷ Although the Monterey spineflower is not listed by the state of California as a threatened or endangered species, it still receives review in the CEQA process as a result of its sensitive status.

¹⁸ California Resources Agency, "Summary and Overview of the California Environmental Quality Act", November 12, 1998, http://ceres.ca.gov/topic/env_law/ceqa/summary.html, August 23, 2000.

¹⁹ Personal communication, California Resources Agency Office, September 11, 2000.

1.5 Socioeconomic Profile of the Critical Habitat Designations

23. Below are socioeconomic data for Santa Cruz and Monterey Counties. The critical habitat designations described below will only affect a subset of the economic activities captured within these data.

1.5.1 Santa Cruz County

24. The proposed critical habitat designation in southern Santa Cruz County, the second smallest county by acreage in the state (285,310 acres), consists of two state parks and 315 acres of private land. Average annual population growth in Santa Cruz County between 1990 and 2000 was approximately one percent, while average annual growth in housing units was approximately 0.6 percent over the same time period. Additional socioeconomic data for the County are provided in Exhibit 1.
25. Approximately 25 percent of the county's total acreage is protected as habitat in the form of state, county, and city parks, conservation easements, wetlands, and fish and game lands.²⁰ Agricultural land uses cover approximately one fifth of the county's total area.²¹ Major industries include information and knowledge-based industries, tourism, and agriculture.²² The services industry accounts for almost 27 percent of total employment. Critical habitat designation in southern Santa Cruz County is predominantly in outlying rural areas that feature socioeconomic characteristics that differ from the county average. Specifically, the area within the designation is vacant rural land in southern Santa Cruz County. The designation also includes state-owned park land.

²⁰ Habitat areas are lands "protected from development and reserved for special status plant and animal species ..." ("Quality of Life Indicator 99: Habitat Preservation," Santa Cruz County Assessment Project. Applied Survey Research, 2000. (http://www.appliedsurveyresearch.org/cap_report.htm))

²¹ Santa Cruz County Economic Profile, California Department of Finance, 1997.

²² Santa Cruz County Economic Profile, (<http://www.co.santa-cruz.ca.us/cao/econprof.htm>)

Draft- August, 2001

1.5.2 Monterey County

26. The proposed critical habitat in northern Monterey County includes approximately 25,250 acres, or approximately one percent of the county's total area (2,127,359 ac).²³ The 1999 population estimate for Monterey County is 371,756 persons, with approximately three-quarters of the population living in incorporated areas. Average annual population growth in Monterey County between 1990 and 2000 was approximately 1.2 percent, while average annual growth in housing units was approximately 0.9% over the same time period.²⁴ Additional socioeconomic data for the County are provided in Exhibit 2.
27. Slightly less than a quarter of Monterey County is owned by Federal agencies, including the United States Forest Service (Los Padres National Forest, including the Ventana Wilderness), the Department of Defense, and the Bureau of Land Management. Private sector land use in the county is predominantly agriculture-related. In 1998, the retail value of agricultural products sold in the county (e.g., broccoli, spinach, grapes, tomatoes, cauliflower, strawberries, avocado) totaled \$2.4 billion and represented the largest economic contributor to county output. In addition, Monterey County ranked tenth out of 58 counties in California in travel spending, which generated more than 18,000 jobs in 1998.²⁵
28. More than half of the land in Monterey County included in the proposed designation is owned by Federal agencies, including BLM and DOD. The remaining land consists of private developed areas and lands used for agriculture and grazing.

²³ Source of Monterey County's total acreage: (<http://www.co.monterey.ca.us/general.htm>).

²⁴ State of California, Department of Finance, "City/County Population and Housing Estimates, 1991-2000, with 1990 Census Counts." Sacramento, California, May 2000. Accessed at: <http://www.dof.ca.gov/html/Demograp/E-5text.htm> on April 3, 2001.

²⁵ Economic Profile, County of Monterey Webpage (<http://www.co.monterey.ca.us/>).

Draft- August, 2001

Exhibit 1

**SOCIOECONOMIC CHARACTERISTICS OF
SANTA CRUZ COUNTY, CALIFORNIA^a**

Population of Santa Cruz County (1999)	245,201	
Percent of State Population	0.7%	
Percent Change in Population (1990-1999)	6.9%	
Percent of Residents Living Below the Poverty Level (1995)	13.3%	
Total Full and Part Time Employment (1999)	140,900	
Unemployment Rate (1999)	6.3%	
Total Full Time Employment (1999) ^b	104,100	
Industry	Full Time Employment (1999)	Percent of County Full Time Employment
Farming	9,500	9.1%
Mining	100	0.1%
Construction	7,600	4.4%
Manufacturing	10,900	10.5%
Transportation/Utilities	3,000	2.9%
Wholesale Trade	4,700	4.5%
Retail Trade	20,900	20.1%

Draft- August, 2001

Exhibit 1

**SOCIOECONOMIC CHARACTERISTICS OF
SANTA CRUZ COUNTY, CALIFORNIA^a**

Finance/ Insurance/ Real Estate	3,600	3.5%
Services	28,000	26.9%
Government	18,800	18.1%

^a Source: California Employment Development Department, Labor Market Information Division, 2000. (<http://www.calmis.ca.gov/file/COsnaps/scruzSNAP.pdf>).

^b Full Time employment represents the number of people working a full eight hour day and is used to calculate the percent of county total for each industry sector.

Exhibit 2

**SOCIOECONOMIC CHARACTERISTICS OF
MONTEREY COUNTY, CALIFORNIA**

Population of Monterey County (1999)	371,756
Percent of State Population	1.1 %
Percent Change in Population (1990-1999)	4.5 %
Percent of Residents Living Below the Poverty Level (1995)	16.1 %
Total Full and Part Time Employment (1999)	191,700
Unemployment Rate (1999)	9.5 %

Exhibit 2

**SOCIOECONOMIC CHARACTERISTICS OF
MONTEREY COUNTY, CALIFORNIA**

Total Full Time Employment (1999) ^b	163,800	
Industry	Full Time Employment (1997)	Percent of County Full Time Employment
Farming	16,700	10.2%
Agricultural Services	20,000	12.2%
Mining	100	0.1%
Construction	6,200	3.8%
Manufacturing	10,500	6.4%
Transportation/Utilities	5,500	3.4%
Wholesale Trade	5,900	3.6%
Retail Trade	27,400	16.7%
Finance/ Insurance/ Real Estate	6,400	3.9%
Services	35,400	21.6%
Government	29,700	18.1%

^a Sources: California Employment Development Department, Labor Market Information Division, 2000. (<http://www.calmis.ca.gov/file/COsnaps/monteSNAP.pdf> and <http://www.census.gov/hhes/www/saie/stcty/sc95ftpdoc.html>).

^b Full Time employment represents the number of people working a full 8 hour day and is used to calculate the percent of county total for each industry sector.

Draft- August, 2001

2. FRAMEWORK, METHODOLOGY, AND IMPACTS

2.1 Framework for Analysis

29. As noted above, this economic analysis identifies the impacts to specific land uses or activities within those areas proposed as critical habitat for the Monterey spineflower. Impacts include future effects associated with the listing of the species, as well as any effect of the designation above and beyond those impacts associated with listing. The listing of the Monterey spineflower provides the most significant aspect of baseline protection because it makes it illegal for any person to: remove or reduce to possession the species from areas under Federal jurisdiction; maliciously damage or destroy the species on any such area; or remove, cut, dig up, or damage or destroy the plant species on any other area in knowing violation of any law or regulation of any state or in the course of any violation of a state criminal trespass law. These restrictions will not be affected by critical habitat designation.

30. To quantify the increment of economic impacts resulting from the critical habitat designation for the Monterey spineflower the analysis evaluates a "without critical habitat" scenario and compares it to a "with critical habitat" scenario. The "without critical habitat" baseline for analysis represents current and expected economic activity under all modifications prior to critical habitat designation, including protections already accorded the Monterey spineflower under Federal and state laws, such as the California Environmental Quality Act. The difference between the two scenarios represents the net change in economic activity resulting from the designation of critical habitat for the Monterey spineflower.

2.2 Methodological Approach

31. The methodology consists of:

- Considering what specific activities take place or are expected to take place in the future within each unit of proposed critical habitat;
- Identifying whether activities taking place on the state, local, and private land are likely to involve a Federal nexus;
- Evaluating the likelihood that activities associated with identified Federal nexuses will result in consultations and, in turn, that these consultations will result in modifications to projects;
- Attributing costs to any expected consultations and project modifications;
- Assessing whether critical habitat designation will create costs for small businesses as a result of modifications or delays to projects;
- Enumerating economic costs associated with public perceptions regarding the effect of critical habitat on the private land subject to the designation;
- Determining the portion of the identified costs resulting from the proposed critical habitat designation and not the listing of the Monterey spineflower;
- Establishing the benefits of critical habitat designation.

2.3 Information Sources

32. The methodology outlined above relies on input and information supplied by staff from California Resource Agency, Environmental Protection Agency Region 9, U.S. Army Corps of Engineers, California's Department of Finance, Santa Cruz County Department of Planning, Monterey County Department of Planning, California Department of Parks and Recreation, Caltrans, Fort Ord Reuse Authority, Consultants to the City of Del Rey Oaks Planning Department, California Coastal Commission, Moss Landing Marine Laboratory, and U.S. Fish and Wildlife staff at the Ventura Field Office.

2.4 Economic Impacts

2.4.1 Manresa Beach Unit (Unit A)

33. The 100-acre Manresa State Beach is managed by the California Department of Parks and Recreation (CDPR) and consists of a semi-primitive recreational environment. Recreational activities supported at this beach include surf fishing, surfing, and hiking. The beach contains populations of the federally listed robust spineflower (*Chorizanthe robusta* var. *robusta*). The geography of the park differs from the nearby Sunset State Beach in that it largely consists of coastal terrace, rather than the sandy dune environment found at most coastal beaches. For this reason, the CDPR asserts that the Manresa Unit does not support Monterey spineflower habitat. The CDPR notes that a thin band of sandy dune habitat that could potentially support Monterey spineflower exists along the transitional area between the beach and the coastal terrace, but the species does not currently occupy the unit.

34. Visitor facilities have already used up all of the space allocated by the park's management plan for man-made structures, so future land use at Manresa State Beach is unlikely to include development or other activities that could impact the Monterey spineflower or its habitat. Therefore, no section 7 consultations should occur within the area proposed as critical habitat.

2.4.2 Sunset Unit (Unit B)

35. The Sunset Unit follows the borders of the 132-acre Sunset State Beach, managed by the CDPR. Recreational activities supported at this beach include surf fishing, surfing, and hiking. Boardwalks designed to protect sensitive plant species exist at the park. This park also supports robust spineflower populations.

36. The CDPR does not receive Federal funding for activities taking place at Sunset State Beach, so a Federal nexus can result only

from Federal permitting. Personnel from CDPR report that Sunset State Beach is currently developing a management plan for restoration work in a wetlands natural preserve.²⁶ CDPR will submit this management plan to the Army Corps of Engineers (the Corps) for approval for a section 404 permit. The Corps has asserted that consultation with the Service regarding a listed upland plant species would not likely occur in the absence of critical habitat. However, if critical habitat is designated, the Corps will be more likely to consult with the Service regarding the impacts of the restoration project on the Monterey and robust spineflower. Therefore, it is possible that critical habitat designation will lead to a consultation that would not have occurred under the listing of the species alone. A consultation would result in costs of approximately \$4,000 to CDPR, \$3,000 to the Corps, and \$2,000 to the Service.²⁷ At this time, these costs are viewed as one-time expenses.

37. The consultation process, if required, could potentially lead to an adverse modification determination by the Service. Although such an outcome would be highly unlikely, if it were to occur, CDPR could incur significant costs to implement the reasonable and prudent alternatives put forth by the Service. In such cases, however, the Service must ensure that any modifications are economically and technically feasible and can be implemented in a manner consistent with the basic design of the proposed project.²⁸
38. It is likely that CDPR could modify the project or take measures to protect the Monterey spineflower even without an adverse modification determination. Based on the types of modifications and measures that have been implemented in the past for plant species, the CDPR may take such steps as installing fencing or re-aligning the project to avoid sensitive areas. The cost for implementing these

²⁶ Personal communication with Ecologist, California Department of Parks, March 16, 2000.

²⁷ Estimates for the cost of an individual consultation were developed from a review and analysis of historical section 7 files from a number of Service field offices around the country. These files addressed consultations conducted for both listings and critical habitat designations. Estimates take into consideration the level of effort of the Service, the Action agency, and the applicant during consultations. Section 7 consultation costs include the administrative costs associated with conducting the consultation, such as the cost of time spent in meetings, preparing letters, and the development of a biological assessment and biological opinion.

²⁸ U.S. Fish and Wildlife Service, *Final ESA Section 7 Consultation Handbook*, March 1998.

measures is not expected to exceed \$20,000.²⁹ It should be noted that such measures likely would already be required due to regulations in CEQA.

39. Due to uncertainty regarding whether the consultation process would occur absent critical habitat, it is not possible to attribute conclusively to critical habitat designation the costs stemming from the consultation process and modifications.

2.4.3 Moss Landing Unit (Unit C)

State Land

40. California State Beaches at Zmudowski, Moss Landing, and Salinas River are included in the proposed designation and account for approximately 465 acres. Recreational activities at these parks include surfing, surf fishing, hiking, and swimming. Boardwalks to protect the Monterey spineflower and other endangered plants are present at all three parks. Future land use activities include the repair and maintenance of existing boardwalks and the potential installation of flush toilets at Moss Landing State Beach. Because these activities are unlikely to involve a Federal nexus, no consultations will be necessary.
41. The Moss Landing Marine Laboratory, located near the outlet of the Elkhorn Slough, is owned by the State of California and serves a consortium of seven California state universities. Reconstruction of the laboratory following damage in the Loma Prieta earthquake in 1989 resulted in a section 7 consultation between the Service and the Federal Emergency Management Agency (FEMA). The consultation included both the Monterey spineflower and the federally listed sand gilia (*Gilia tenuiflora* ssp. *arenaria*). The Biological Opinion issued

²⁹ Sources of cost for costs stemming from modifications of projects include time to develop appropriate measures, supplies, and labor necessary to implement the measures.

by the Service in 1996 suggested that the Laboratory compensate for the loss of both the Monterey spineflower and sand gilia by re-generating the species on adjacent land at a ratio of three-to-one (i.e., three new plants for each plant lost). Economic impacts from this historical consultation included labor costs (e.g., collecting, growing, and propagating the species from the existing gene pool prior to reconstruction), and land costs (e.g., FEMA had to acquire sufficient land to support both the development and the mitigation).³⁰

42. Future development at the Marine Lab is unlikely since the reconstruction project in 1997 absorbed all developable land. The remaining land is protected as part of a Monterey spineflower preserve. As a result, it is unlikely that any activities detrimental to the Monterey spineflower or its habitat will occur in the future on this land. Therefore future consultations regarding the Monterey spineflower are not expected on state land in the Moss Landing Unit.

³⁰ Personal Communication, Biologist, Moss Landing Marine Lab, May 23, 2001. Note that the mitigation efforts of the Marine Lab were beyond those required under the Act. As such, costs to the Marine Lab for implementing the conservation recommendations resulting from the section 7 consultation represent a high-end estimate of the average costs of such measures.

Private Land

43. In the Moss Landing Unit, pockets of private land are interspersed among state and county land holdings (e.g., state beaches and county parks). The majority of private parcels within the Moss Landing Unit are already developed (i.e., do not contain the constituent elements). A significant portion of the remaining vacant private land is in the coastal zone and is unlikely to be developed due to its status as sensitive dune habitat or is permanently protected from development through conservation easements.
44. Residential development at Del Monte Beach Subdivision (Tract Number Two) represents the only pending project on private land within the Moss Landing Unit. To offset the loss of Monterey spineflower plants and habitat resulting from the project, the Coastal Commission has required a re-vegetation plan and the establishment of a permanent reserve for the re-located spineflower plants.³¹ No Federal nexus exists for this development, so a section 7 consultation will not likely occur in the future for this project.
45. At this time, no plans exist for other development projects on private land within the Moss Landing Unit. It is reasonable to assume, however, that development projects may be proposed in the near future. Private parcels in the Moss Landing Unit are known to support the Smith's blue butterfly (*Euphilotes enoptes smithi*) and the western snowy plover (*Charadrius alexandrinus nivosus*), so development in this unit would require an incidental take permit under section 10(a)(1)(b) of the Act. This permitting process would create a Federal nexus, prompting an internal consultation for the Monterey spineflower, which would result in costs of approximately \$4,000 to the developer and \$5,000 to the Service.³² It would be reasonable to assume that up to five internal consultations may be necessary in the future to address the impact of development on the Monterey spineflower. The total costs of these internal consultations would be \$20,000 to developers and \$25,000 to the Service.
46. It is likely that the Service could recommend a developer modify a project or take measures to protect the Monterey spineflower. Based on the types of modifications and measures that have been implemented in the past for plant species, a developer may take such steps as installing fencing or re-aligning the project to avoid sensitive areas. The cost for implementing these measures for one project is

³¹ Personal communication, Biologist, California Department of Parks, May 23, 2001

³² Cf. footnote 28.

expected to be of the same order of magnitude as the total cost of the consultation process, i.e., approximately \$10,000.³³ Therefore, the total cost for implementing these measures for five projects requiring consultations would not be expected to exceed \$50,000. It should be noted that developers likely would already be required to undertake such measures due to regulations in CEQA.

47. Because the Monterey spineflower is found throughout many of the private parcels in Moss Landing, it is likely that a consultation would occur even absent critical habitat for the Monterey spineflower. Therefore, incremental costs due to the consultation process are not likely to result from critical habitat designation.

Local Agency Land

48. The nine-acre parcel of land owned by the Moss Landing North Harbor District (District) has been used as a disposal site for an adjacent harbor-dredging project conducted by the District. The site supported Monterey spineflower prior to sediment disposal. Although the District did not consult with the Service regarding the potential impact of dredging activities on the listed Monterey spineflower, it developed a restoration plan to re-establish Monterey spineflower habitat following completion of the project. The restoration plan includes re-planting of the Monterey spineflower and developing a park and picnic area after removal of the dredged material.

49. Because this project has already been undertaken without a consultation and because implementation of the restoration plan will re-establish colonies of the Monterey spineflower in a protected setting, it is unlikely that any future consultations will be necessary within the Moss Landing North Harbor District.

2.4.4 Marina Unit (Unit D)

California State Beaches

³³ Cf. footnote 30.

50. Marina State Beach and two parcels that make up Monterey State Beach cover approximately 265 acres.³⁴ With the exception of a hang-gliding area in Marina State Beach, recreational access to the dunes is restricted to boardwalks designed to provide protection for threatened and endangered plants such as the Monterey spineflower. Monterey State Beach is in the process of completing a Habitat Conservation Plan (HCP) regarding the construction of a 4,000 foot-long, 14 foot-wide bicycle path through the dune habitat. The HCP for this project covers incidental take provisions and protective measures for the Smith's blue butterfly, the western snowy plover, and other species, including the Monterey spineflower. The Monterey spineflower exists in this area as a result of successful community planting projects. Development of the bike path and the associated parking lot is designed to consolidate the built landscape in and around an adjacent hotel and to restore dune habitat. A re-consideration of the HCP after designation of critical habitat for the Monterey spineflower is unlikely since the species was included in the HCP as a result of the listing and also because the species occupied the dunes prior to the proposed path construction.
51. Additional development activities in the two state beaches could potentially involve maintenance, construction, and repair of recreational boardwalks. For example, a storm in January of 2001 destroyed a number of boardwalks in Marina and Monterey State Beaches, both of which are slated for repairs with the aid of state money. Since aid for these types of storm repairs typically involves money from FEMA, this Federal nexus could lead to a future section 7 consultation. Assuming that one consultation takes place, CDPR would incur costs on the order of \$4,000, the Service would incur costs on the order of \$2,000, and FEMA would incur costs on the order of \$3,000.³⁵
52. The consultation process, if required, could potentially lead to an adverse modification determination by the Service. Although such an outcome would be highly unlikely, if it were to occur, CDPR could incur significant costs to implement the reasonable and prudent alternatives put forth by the Service. In such cases, however, the Service must ensure that any modifications are economically and technically feasible and can be implemented in a manner consistent with the basic design of the proposed project.³⁶

³⁴ Personal communication, Ecologist, California Department of Parks and Recreation, January 11, 2001.

³⁵ Cf. footnote 28.

³⁶ Cf. footnote 29.

53. It is likely that CDPR could modify the project or take measures to protect the Monterey spineflower even without an adverse modification determination. Based on the types of modifications and measures that have been implemented in the past for plant species, the CDPR may take such steps as installing fencing or re-aligning the project to avoid sensitive areas. The cost for implementing these measures is not expected to exceed \$20,000.³⁷ It should be noted that such measures likely would already be required due to regulations in CEQA.
54. Because the Monterey spineflower occupies the dunes in Marina State Beach and Monterey State Beach, any consultations that do occur would likely be necessary absent designation of critical habitat.³⁸ Therefore, costs stemming from a consultation and associated modifications would not result from designation of critical habitat for the Monterey spineflower.

Private Land

55. The majority of private parcels interspersed throughout the Marina Unit are already developed (i.e., do not contain the constituent elements). A significant portion of the remaining vacant private land is in the coastal zone and is unlikely to be developed due to its status as sensitive dune habitat or is permanently protected from development through conservation easements.³⁹ In addition, some of the parcels that are currently developable are being evaluated for land acquisition by the California Department of Parks and Recreation (CDPR) and the Monterey Peninsula Regional Park District (The District).

³⁷ Cf. footnote 30.

³⁸ Personal communication, Park Ranger, California Department of Parks and Recreation, May 28, 2001.

³⁹ The Big Sur Land Trust recently purchased two coastal parcels that were previously considered for development in Monterey County: Both the Martin Dunes, a 320-acre parcel, and Granite Rock, a 50-acre parcel, are located within the Marina Unit.

56. Four private parcels within the City of Sand City may support future development.⁴⁰ As noted above, a Federal nexus leading to an internal consultation on the Monterey spineflower on private land is likely if endangered fauna is also found on the property and an incidental take permit is required. As the four vacant private parcels in Sand City are known to support either the Smith's blue butterfly or the western snowy plover, consultations for the Monterey spineflower would be likely included in conjunction with the permitting process for either species. Total costs for these four internal consultations would be approximately \$16,000 to developers and \$20,000 to the Service.⁴¹
57. It is likely that a developer could modify a project or take measures to protect the Monterey spineflower. Based on the types of modifications and measures that have been implemented in the past for plant species, a developer may take such steps as installing fencing or re-aligning the project to avoid sensitive areas. The cost for implementing these measures for one project is expected to be of the same order of magnitude as the total cost of the consultation process, i.e., approximately \$10,000.⁴² Therefore, the total cost for implementing these measures for four projects requiring consultations would not exceed \$40,000. It should be noted that developers likely would already be required to undertake such measures due to regulations in CEQA.
58. Because the Monterey spineflower is found throughout the private parcels in Sand City, any consultations that do occur would likely be necessary absent designation of critical habitat.⁴³ Therefore, costs stemming from these consultations and associated modifications would not result from designation of critical habitat for the Monterey spineflower.

⁴⁰ These parcels include the Sterling and McDonald estate (two separate parcels), the land formerly known as the Lonestar property, and the Ghandour parcel. In addition, completion of the Del Monte Beach Tract subdivision represents future development on private land that supports spineflower. However, because the Coastal Commission has required implementation of a stringent landscape and restoration plan, section 7 consultations are not expected to generate significant additional economic impact.

⁴¹ Cf. footnote 28.

⁴² Cf. footnote 30.

⁴³ Personal communication, Park Ranger, California Department of Parks and Recreation, May 28, 2001.

Fort Ord

59. The Service has proposed critical habitat designation on 805 acres of land located within the boundaries of the coastal portion of former Fort Ord.⁴⁴ Currently the U.S. Army manages this land but is in the process of transferring the land to CDPR. As part of the transfer, the Army has already formally consulted with the Service on the habitat management plan (HMP) for the lands being transferred. Included in this consultation were considerations of the impact of the HMP on the Monterey spineflower. Because a consultation has already occurred to address the effect of the land transfer on the habitat of multiple species, including the Monterey spineflower, personnel from CDPR believe that critical habitat designation should not affect the transfer of lands to the State of California. Personnel from the Service agree that the land transfer is unlikely to be affected by the critical habitat designation.⁴⁵
60. After acquiring the land from the Army, CDPR intends to restore and manage as wildlife habitat approximately 700 acres of the 805 acres proposed as critical habitat.⁴⁶ The remaining land will likely be developed for recreation use. CDPR may use Federal funding from the Department of Transportation (DOT) administered through the California Department of Transportation (Caltrans) and funding from the U.S. Department of the Interior (DOI) administered through CDPR for projects such as construction of campsites and parking lots. Designation of critical habitat for the Monterey spineflower could lead to consultations for these projects that would not have occurred absent designation. If a consultation does occur for these projects, costs will be incurred by CDPR, the Service, and the Federal agency providing funding to CDPR. Assuming that one consultation takes place, CDPR would incur costs on the order of \$4,000, the Service would incur costs on the order of \$2,000, and the Federal agency providing funding (or Caltrans) would incur costs on the order of \$3,000.⁴⁷

⁴⁴ (see also footnote 36) Personal communication with Ecologist, Marina State Beach, March 16, 2001.

⁴⁵ Personal communication with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, March 22, 2001.

⁴⁶ Personal communication with Environmental Planner, California Department of Parks and Recreation, March 16, 2001.

⁴⁷ Cf. footnote 28.

61. The consultation process, if required, could potentially lead to an adverse modification determination by the Service. Although such an outcome would be highly unlikely, if it were to occur, CDPH could incur significant costs to implement the reasonable and prudent alternatives put forth by the Service. In such cases, however, the Service must ensure that any modifications are economically and technically feasible and can be implemented in a manner consistent with the basic design of the proposed project.⁴⁸
62. It is likely that CDPH could modify the project or take measures to protect the Monterey spineflower even without an adverse modification determination. Based on the types of modifications and measures that have been implemented in the past for plant species, the CDPH may take such steps as installing fencing or re-aligning the project to avoid sensitive areas. The cost for implementing these measures is not expected to exceed \$20,000.⁴⁹ It should be noted that such measures likely would already be required due to regulations in CEQA.
63. All costs stemming from the consultation process and modifications to the project would result from designation of critical habitat for the Monterey spineflower because a consultation for recreation development would likely not have been required absent designation.

U.S. Navy Postgraduate School

64. The U.S. Navy Postgraduate School (NPS) is located on 627 acres of land within Monterey County.⁵⁰ The Service has proposed designation of critical habitat along the coastal strip of land owned by the NPS, which supports recreation and on-going dune restoration work. The beach contains a boardwalk similar to those found at California state beaches to provide protection to endangered plants, such

⁴⁸ Cf. footnote 29.

⁴⁹ Cf. footnote 30.

⁵⁰ Naval Post Graduate School Website, "NPS At a Glance," visited May 22, 2001 (http://www.nps.navy.mil/PAO/at_a_glance.htm).

as the Monterey spineflower. The Service is currently conducting a formal consultation with the Navy regarding the NPS's implementation of their Integrated Natural Resource Management Plan (INRMP).⁵¹ The plan covers restoration activities and natural resource management goals on NPS land. Specifically, it discusses the potential impact of these activities (e.g., weed eradication) on the threatened Monterey spineflower and the endangered Monterey gilia (*Gilia tenuiflora arenaria*) and Yadon's piperia (*Piperia yadonii*). The Service is currently finalizing the Biological Opinion covering the section 7 consultation on the INRMP. The Service asserts that critical habitat may result in an increase in technical assistance calls placed by the Navy in an effort to better understand the implications of the designation on specific activities such as weed eradication.⁵² The cost to NPS for seeking technical assistance should not exceed \$1,000 and will likely be considerably less. The cost to the Service should not exceed \$1,000.⁵³ Because the INRMP covers specific restoration activities to improve the habitat of the Monterey spineflower and other listed species, it is very unlikely that these incremental discussions between the Service and the Navy will result in significant modifications to the plan. Therefore, this analysis concludes that no significant economic impacts beyond the costs incurred through technical assistance inquiries will occur within proposed critical habitat at the NPS.

Salinas River National Wildlife Refuge

65. The Salinas River National Wildlife Refuge (Refuge) is managed by the Service for the "conservation and enhancement of populations of native species of plants, wildlife, fish, and their habitats. Endangered and threatened species will receive management priority."⁵⁴ The Comprehensive Conservation Plan for the Refuge explicitly identifies the Monterey spineflower as a species to be protected

⁵¹ The Navy also had an informal consultation with the Service on impacts to the Smith's blue butterfly in 1992.

⁵² Personal communication, Biologist, U.S. Fish and Wildlife Service, May 24, 2001.

⁵³ Costs associated with technical assistance include the opportunity cost of time spent in conversation or in preparing correspondence for the municipal or private property owner, as well as staff costs for the Service.

⁵⁴ Draft Comprehensive Conservation Plan and Environmental Assessment, Salinas River National Wildlife Refuge, U.S. Fish and Wildlife Service, August 2000.

and enhanced. As part of on-going restoration work at the Refuge, the Corps, which has Federal responsibility to clean up environmental contamination at former military sites, is investigating the potential for unexploded ordnance or other contaminants from former military operations. It is possible that the activities associated with cleaning up former military operations will include on-site explosion of ordnance and construction of boundary fences to ensure public safety. Both of these activities could impact the Monterey spineflower and its habitat. As a result, the Service indicates that ordnance removal would be subject to a consultation, which would result in costs of \$3,000 to the Corps and \$2,000 to the Service.⁵⁵ At this time, these costs are viewed as one-time expenses.

66. The consultation process, if required, could potentially lead to an adverse modification determination by the Service. Although such an outcome would be highly unlikely, if it were to occur, the Corps could incur significant costs to implement the reasonable and prudent alternatives put forth by the Service. In such cases, however, the Service must ensure that any modifications are economically and technically feasible and can be implemented in a manner consistent with the basic design of the proposed project.⁵⁶
67. It is likely that the Corps could modify the project or take measures to protect the Monterey spineflower even without an adverse modification determination. Such measures may include as installation of fencing and restoration or enhancement of Monterey spineflower habitat, including seeding into new, potentially suitable area. The cost for implementing these measures is not expected to exceed \$10,000.⁵⁷
68. Because the Comprehensive Conservation Plan for the Refuge explicitly identifies the Monterey spineflower as a species to be protected and enhanced, it is likely that a consultation for ordnance removal would be necessary absent designation of critical habitat. Therefore, costs stemming from the consultation process and modifications to the project would occur regardless of the designation of critical habitat for the Monterey spineflower.

⁵⁵ Personal communication, Biologist, U.S. Fish and Wildlife Service, June 21, 2001. Cf. footnote 28.

⁵⁶ Cf. footnote 29.

⁵⁷ Cf. footnote 30.

2.4.5 Asilomar Unit (Unit E)

Asilomar State Beach

69. Land use activities on this beach are similar to the state beaches discussed above. In addition to a boardwalk protecting the sensitive dune habitat from recreational use and human trampling, facilities at Asilomar State Beach includes a conference center. Future land use plans do not call for development at the park, so it is unlikely that any economic impacts will occur in the future within proposed Monterey spineflower critical habitat at this state beach.

Private land

70. Private land designated for critical habitat within the Asilomar Unit comprises the Spanish Bay Golf Course and Resort and surrounding residential community. The vast majority of the unit consists of single-family detached homes and a golf course. Some currently undeveloped parcels are interspersed within the developed residential community. These undeveloped parcels may support development in the future, but a Federal nexus would not likely exist for any projects.⁵⁸ Therefore, no new section 7 related economic impacts should arise within the proposed critical habitat for the Monterey spineflower.

2.4.6 Freedom Boulevard Unit (Unit F)

71. This 220-acre privately owned unit in Santa Cruz County is zoned for residential development. The majority of parcels have already been developed, though some of the undeveloped parcels currently support proposals for development or subdividing of lots. A Federal nexus leading to a consultation would not likely exist for any future activities on these undeveloped lots.⁵⁹ Therefore, it is unlikely that

⁵⁸ Personal communication, Biologist, Monterey District of California Parks and Recreation, January 10, 2001.

⁵⁹ Personal communication, Planner, Santa Cruz County Planning Department, May 25, 2001.

a consultation would occur for any project in the Freedom Boulevard Unit.

72. Although a Federal nexus is unlikely to exist with the type of residential development projected to occur in the Freedom Unit, critical habitat may have an informational effect on the approval of future development proposals. The Santa Cruz County Planning Department considers sensitive habitat in the permit approval process on a case-by-case basis. If a parcel of land is identified as sensitive habitat, it is possible that certain aspects of the proposed development would be redirected or restricted by the County. For example, the County may require clustering of homes to reduce impact on biological resources if a proposal is within sensitive habitat, as identified by the County. It is possible that the critical habitat designation may provide additional information to the county which may influence their interpretation of sensitive habitat.⁶⁰ However, the identification of sensitive habitat by the County is on a case-by-case basis, which makes it difficult to isolate the effect of critical habitat on the County's independent interpretation of sensitive habitat. The lack of information on future development proposals to predict the impact of a critical habitat's potential informational effect makes it difficult to estimate economic impacts resulting from the designation. However, based on historical precedent, it is unlikely that "sensitive habitat" considerations will significantly affect the overall economic viability of a future development project.

2.4.7 Bel Mar Unit (Unit G)

73. Proposed critical habitat in the Bel Mar Unit includes 95 acres of privately owned land zoned for residential development. One private owner within the unit recently proposed to split a parcel into five lots, four residential and one remainder lot (development potential unknown). The proposal, which is intended to eventually support new homes, was remanded by the County Planning Department, in part because of an incomplete biological report and an insufficient effort to cluster the proposed homes to minimize impact on the land.⁶¹ Some of the adjacent parcels within the Bel Mar Unit are also vacant and may support development in the future, though plans are not certain at this time. A Federal nexus would not likely exist for projects in this unit. Therefore, no new section 7 related economic impacts should arise within the proposed critical habitat for the Monterey spineflower in the Bel Mar Unit.

⁶⁰ Personal Communication, County Planner, Santa Cruz County Planning Department, May 8, 2001.

⁶¹ Email communication, County Planner, Santa Cruz County Planning Department, May 23, 2001.

74. As discussed above for the Freedom Unit, the proposal for critical habitat in the Bel Mar Unit may result in an informational effect for county planners when interpreting the regulations regarding the county's sensitive habitat. However, due to the lack of information on specific development proposals, predicting the impact of critical habitat on the county's review of development proposals is difficult. It is unlikely, however, that sensitive habitat considerations will significantly affect the overall economic viability of a future development project.

2.4.8 Prunedale Unit (Unit H)

Manzanita County Park

75. This 404-acre park was purchased using Federal monies from the Land and Water Conservation Fund in the 1970s.⁶² Land-use designations in the park currently include a 65-acre lease by a sports concessionaire responsible for managing recreational fields (e.g., soccer turf fields) and an 82-acre buffer zone (managed by the park) surrounding the athletic facilities. The remaining land contains recreational trails and consists of 106 acres of open space and a 177-acre nature preserve. Future development on the leased portion of land includes possible expansion of the existing facilities, though the expansion would remain within the concessionaire's 65-acre lease. Plans for the expansion have not been finalized and a Federal nexus is unlikely. However, a permit from the California Coastal Commission will be required.⁶³ Land that currently contains recreational trails in the park may be developed as a picnic site in the future, though impact to the Monterey spineflower would be minimal and a consultation is unlikely because no Federal nexus exists.⁶⁴ Therefore, this analysis estimates that no economic impacts will result from the designation of critical habitat at Manzanita County Park.

State Land

76. Approximately five to ten percent of the land east of Highway 101 is owned by the State of California as a result of historical acquisition efforts in conjunction with Prunedale highway expansion proposals.⁶⁵

⁶² Personal Communication, Biologist, Manzanita County Park, January 17, 2001.

⁶³ Personal Communication, Land-Use Planner, California Coastal Commission, March 8, 2001.

⁶⁴ Personal Communication, Biologist, Manzanita County Park, January 17, 2001.

⁶⁵ Internal IEC GIS analysis overlaying critical habitat unit areas with Monterey County Parcel Data.

77. Caltrans has proposed expansion of the Prunedale section of Highway 101, which bisects Unit H. A Federal nexus for consultation would exist for this project through the Federal Highways Administration (FHA). Currently, two alternatives for expansion are being considered.⁶⁶ Both Alternative Two, an in-place expansion of the existing highway, and Alternative Four East, a re-routing of the highway eastward, would impact areas of proposed critical habitat. Alternative Four East has not yet been surveyed for Monterey spineflower, though it is unlikely to be found in the area since the landscape consists primarily of oak woodland and agricultural lands that do not support the constituent elements.⁶⁷ Therefore, if Alternative Four East is selected, a section 7 consultation on the spineflower is unlikely to occur. Similarly, surveying for spineflower on lands considered for highway expansion under Alternative Two has not been completed. This option, however, would more likely impact the species, as mandatory avoidance of wetlands could result in impact to lands that support primary constituent elements for the spineflower.⁶⁸ In this case, a consultation would likely be necessary. A consultation on the red-legged frog is already projected to occur regarding the proposed highway expansion.⁶⁹ Administrative costs associated with including the Monterey spineflower in a section 7 consultation covering other listed species are estimated to be approximately \$3,000 each for Caltrans and FHA and \$2,000 for the Service.⁷⁰
78. The consultation process, if required, could potentially lead to an adverse modification determination by the Service. Although such an outcome would be highly unlikely, if it were to occur, Caltrans could incur significant costs to implement the reasonable and prudent alternatives put forth by the Service. In such cases, however, the Service must ensure that any modifications are economically

⁶⁶ As of January 11, 2001, Alternatives Three, Three West, and Four have been dropped from further consideration from the current efforts to expand the Prunedale section of Highway 101.

⁶⁷ Personal Communication, Biologist, Caltrans, January 18, 2001 and Biologist, U.S. Fish and Wildlife Service.

⁶⁸ Personal Communication, Biologist, Caltrans, January 18, 2001.

⁶⁹ Personal Communication, Biologist, Caltrans, January 18, 2001 and Biologist, U.S. Fish and Wildlife Service.

⁷⁰ Cf. footnote 28.

and technically feasible and can be implemented in a manner consistent with the basic design of the proposed project.⁷¹

79. It is likely that Caltrans could modify the project or take measures to protect the Monterey spineflower even without an adverse modification determination. Based on past efforts to protect sensitive plant species, these measures may involve restoration or enhancement of Monterey spineflower habitat, including seeding into new, potentially suitable area. Since Caltrans, the agency responsible for the proposed highway expansion, already owns land in the vicinity that supports the species, these lands would likely be used for the protective measures.⁷² Therefore, costs associated with these measures will exclude land acquisition, but include costs for collecting, growing, and propagating the species. These costs should not exceed \$5,000.
80. Due to uncertainty regarding whether the consultation process would occur absent critical habitat, it is not possible to attribute conclusively the costs stemming from the consultation process to critical habitat designation.

Private Land

81. The majority of private land within the Prunedale Unit consists mostly of vacant rural and agricultural land as well as significant grazing lands.⁷³ Historically, residential development in the region has predominantly resulted from the infill of existing lots. Currently, a moratorium on residential and commercial development in the Prunedale region exists due to a water shortage.⁷⁴ It is reasonable to assume, however, that the moratorium will eventually be lifted and some form of development will take place. However, due to the uncertainty regarding future development, it is difficult to accurately estimate economic impacts resulting from the designation of critical

⁷¹ Cf. footnote 29.

⁷² Personal Communication, GIS specialist, Environmental Planning Department, Caltrans, March 27, 2001.

⁷³ Internal IEc GIS analysis using parcel data from Monterey County.

⁷⁴ Personal Communication, County Planner, Monterey County Planning Department, March 27, 2001.

habitat. Therefore, based on the information available regarding future land use activities, this analysis assumes that no significant economic impacts will occur within the area proposed as critical habitat in the reasonably foreseeable future.

2.4.9 Fort Ord Unit (Unit I)

82. The Service has proposed critical habitat designation for 14,810 acres of the approximately 28,000 acres that make up the former Fort Ord. The Department of the Army (Army) is in the process of transferring ownership of this land to Federal, state, and local jurisdictions.⁷⁵ As of September 2000, 10,600 acres had been transferred, with approximately 1,085 acres going to the state, 765 acres going to local jurisdictions, and 12,960 acres remaining in Federal ownership (i.e., Bureau of Land Management and the Department of Defense). The land transfer agreements have been coordinated through the *Installation-wide Multispecies Habitat Management Plan for Former Fort Ord, California* (HMP),⁷⁶ which identifies both lands to be preserved and lands to support future development. The Service consulted on the HMP and endorsed the plan through a series of Biological Opinions, the most recent dated March 30, 1999.
83. Because the on-going transfer of lands within the Fort Ord Reuse Area is a Federal action, a section 7 consultation on the HMP was required. This consultation was complete with the issuance of the 1999 Biological Opinion by the Service. If the proposed designation of critical habitat for the Monterey spineflower is finalized, the Army will request reinitiation of the consultation on the HMP concerning Federal lands yet to be transferred.⁷⁷ These consultation costs are estimated to be in the range of \$2,000 for the Service and about \$6,000

⁷⁵ Monterey spineflower is found on almost all undeveloped areas on the western portion of the former Fort Ord, including an area of approximately 10,402 acres (see letter dated March 30, 1999, from U.S. Fish and Wildlife Service to James M. Willison, Department of the Army regarding *Biological and Conference Opinion on the Closure and Reuse of Fort Ord, Monterey County, California* (1-8-99-F/C-39R)).

⁷⁶ The latest version of the HMP was signed by the Service in April 1997.

⁷⁷ Lands that have already been transferred are no longer under the jurisdiction of a Federal agency (e.g., the Army) and therefore do not trigger a re-initiation of consultation on the HMP.

for the Army. This reinitiated consultation should not result in the need for any protective measures or modifications of activities. Costs associated with reinitiating consultation and revising the current Biological Opinion would be due to the proposed designation of critical habitat for the Monterey spineflower.

Private Land

84. The lands at the former Fort Ord that may support future development are being transferred to BLM and private parties. This report assumes that future development projects with a Federal nexus on non-Federal land may result in two to four incremental consultations.⁷⁸ The total administrative costs for these consultations is expected to range from \$4,000 to \$8,000 for the Service, from \$6,000 to \$12,000 for the Federal Agency, and \$10,000 and \$20,000 for the private parties.⁷⁹
85. A consultation, if required, could potentially lead to an adverse modification determination by the Service. Although such an outcome would be highly unlikely, if it were to occur, the developer could incur significant costs to implement the reasonable and prudent alternatives put forth by the Service. In such cases, however, the Service must ensure that any modifications are economically and technically feasible and can be implemented in a manner consistent with the basic design of the proposed project.⁸⁰
86. It is likely that a developer could modify a project or take measures to protect the Monterey spineflower even without an adverse modification determination. Based on the types of modifications and measures that have been implemented for plant species, the developer may take such steps as installing fencing or re-aligning the project to avoid sensitive areas. The cost for implementing these measures for

⁷⁸ Historically, development on lands transferred from the former Fort Ord has involved Federal nexuses with the Economic Development Administration, the Bureau of Reclamation, and the U.S. Department of Agriculture (Personal Communication, Executive Director, Fort Ord Reuse Authority, May 17, 2001 and Personal Communication, Ecologist, U.S. Fish and Wildlife Service, May 18, 2001).

⁷⁹ Cf. footnote 28.

⁸⁰ Cf. footnote 29.

one project is expected to be of the same order of magnitude as the total cost of the consultation process, i.e., approximately \$10,000.⁸¹ Therefore, the total cost for implementing these measures for two to four projects requiring consultations would range from \$20,000 to \$40,000. It should be noted that developers likely would already be required to undertake such measures due to regulations in CEQA.

87. Biological surveys conducted in 1992 identify "polygons" of occupied habitat throughout the former Fort Ord military lands. The proposed critical habitat within the Fort Ord Unit (Unit I) includes additional areas not identified in the 1992 polygons. Because the polygons of occupied habitat are not congruent with the outline of the proposed critical habitat for the Monterey spineflower, it is likely that some future development projects would result in section 7 consultations that would not have occurred without critical habitat designation. Therefore, the above estimated costs associated with consultations on private land would likely result from designation of critical habitat for the Monterey spineflower.

Bureau of Land Management

88. Activities on land being transferred to the BLM may also necessitate additional consultations as a result of critical habitat designation for the Monterey spineflower. The BLM will likely request consultation for on-going activities that may impact the Monterey spineflower or its habitat (e.g., road maintenance and repair, fire break creation, sheep grazing, etc). Thus, consultation subsequent to the transfer of land will likely be handled as part of a programmatic consultation between BLM and the Service. The cost is estimated to be between approximately \$2,000 for the Service and \$3,000 for the BLM. This programmatic consultation should not result in the need for any modifications of activities or protective measures. Because the Monterey spineflower exists on the land in question, the programmatic consultation would likely occur absent designation of critical habitat.
89. In addition to the programmatic consultation, the BLM may request consultation on specific activities that are not included in the programmatic consultation but are likely to impact the Monterey spineflower or its habitat.⁸² As part of the existing HMP, areas transferred

⁸¹ Cf. footnote 30.

⁸² Personal communication, Ecologist, U.S. Fish and Wildlife Service, May 24, 2001.

to the BLM will be protected as reserve lands in perpetuity, and the agency has agreed to restrict future development uses to only two percent of the reserve lands.⁸³ Development on these lands will likely include recreational, visitor, and maintenance facilities. The Service suggests that consultation on these individual future activities will likely be bundled into one or two large consultations rather than many small consultations. This analysis assumes that these activities may result in two consultations.⁸⁴ Administrative costs are estimated at \$4,000 for the Service and \$8,000 for BLM.⁸⁵

90. The consultation process, if required, could potentially lead to an adverse modification determination by the Service. Although such an outcome would be highly unlikely, if it were to occur, the developer could incur significant costs to implement the reasonable and prudent alternatives put forth by the Service. In such cases, however, the Service must ensure that any modifications are economically and technically feasible and can be implemented in a manner consistent with the basic design of the proposed project.⁸⁶
91. It is likely that the developer could modify the project or take measures to protect the Monterey spineflower even without an adverse modification determination. Based on the types of modifications and measures that have been implemented in the past for plant species, the BLM may take such steps as installing fencing or re-aligning the project to avoid sensitive areas. Costs associated with these efforts should not exceed \$10,000.
92. Due to uncertainty regarding whether the consultation process would occur absent critical habitat or as a result of critical habitat designation, it is not possible to attribute conclusively to critical habitat designation the costs stemming from the consultation process for

⁸³ As noted above, this analysis assumes that the substantive agreements in the existing HMP are unlikely to change significantly as a result of the reinitiation of consultation and revision of the Biological Opinion between the Army and the Service.

⁸⁴ It is possible that future BLM activities could occur in occupied areas (as defined by the polygons developed as part of the 1992 biological surveys). In this scenario, a section 7 consultation on the spineflower would result from the listing of the species.

⁸⁵ Cf. footnote 28.

⁸⁶ Cf. footnote 29.

activities on BLM land.

2.4.10 Del Rey Oaks Unit (Unit J)

Monterey County Airport

93. The Monterey County Airport was formerly the Naval Auxiliary Air Station, Monterey and has recently been identified as a Formerly Used Defense Site. The Corps, which has Federal responsibility to clean up environmental contamination from former military sites, is currently conducting a remedial investigation of trichloroethene contamination of soil and groundwater both on the airport and in the neighboring community. The Corps initiated evaluation of the site in 1991 and conducted an environmental assessment in compliance with NEPA in 1992. The Corps has not consulted with the Service regarding remediation activities in this area.
94. Current activities include soil and groundwater sampling using a non-intrusive cone penetrometer unit. The majority of sampling activities occur on impervious surface layers connected to the air strip, with occasional sampling on adjacent private land (e.g., backyards, etc.). Following remedial investigations, the Corps anticipates developing a treatability study in 2002 and beginning construction of a treatment facility by 2003. Specific project plans for a treatment facility, if it is required, are currently unknown, as current sampling activities have not yet been completed. Depending on the location of the contamination (either within the Monterey County Airport or on adjacent private lands), a treatment facility may be constructed on existing asphalt and concrete surfaces or in the surrounding grassy fields. For the purpose of this report, it is assumed conservatively that (1) a facility will likely be required to treat contaminated soil and groundwater and (2) Monterey spineflower habitat may be impacted.
95. Administrative costs associated with a section 7 consultation covering the siting and construction of a treatment facility will be approximately \$2,000 for the Service and \$3,000 for the Corps. If the project is built in areas where the Monterey spineflower may be impacted, the Service may suggest that the Corps take such measures as restoration and enhancement of adjacent degraded spineflower habitat. These measures would ensure that the Corps provides protection for a portion of the airport's 240 acres as Monterey spineflower habitat. Presumably, the Corps will be able to use lands adjacent to the air strip for the relocated Monterey spineflower habitat and will not incur land acquisition costs. The costs associated with collecting, growing, propagating the species prior to construction activity, and planting should not exceed \$20,000.

96. Due to uncertainty regarding whether the consultation process would occur absent critical habitat, it is not possible to attribute conclusively the costs stemming from the consultation process to critical habitat designation.

Private Land

97. The majority of land within the City of Del Rey Oaks has already been developed, though undeveloped areas that could be developed in the future do exist. In particular, a 17-acre parcel fronting Route 216 and adjacent to the school district retains development potential.⁸⁷ The parcel is likely to support some form of development in the future, although a specific development plan has not been proposed. Because the parcel contains riparian habitat it is reasonable to assume that a section 404 permit may be required prior to any development. It is assumed conservatively that a section 7 consultation may result between the Corps and the Service. These administrative costs are estimated to be in the range of \$2,000 for the Service, \$3,000 for the Corps, and \$4,000 for the private developer.⁸⁸
98. The consultation process, if required, could potentially lead to an adverse modification determination by the Service. Although such an outcome would be highly unlikely, if it were to occur, the developer could incur significant costs to implement the reasonable and prudent alternatives put forth by the Service. In such cases, however, the Service must ensure that any modifications are economically and technically feasible and can be implemented in a manner consistent with the basic design of the proposed project.⁸⁹

⁸⁷ Email communication, Planning Department Consultant, City of Del Rey Oaks, April 5, 2001. The City Planning Department also identified a 360-acre parcel being transferred from the Department of Defense to the City of Del Rey Oaks that is likely to be developed in the future. However, because the City Planning Department identified future land use activities on this 360-acre parcel as a result of the 1999 HMP, this analysis assumes that the potential for a section 7 consultation on this parcel was already captured in the economic impacts discussed under the Fort Ord, Unit I.

⁸⁸ Cf. footnote 28.

⁸⁹ Cf. footnote 29.

99. It is likely that the developer could modify the project or take measures to protect the Monterey spineflower even without an adverse modification determination. Based on past efforts to protect sensitive plant species, these measures may involve installation of fencing or restoration of Monterey spineflower habitat, including seeding into new, potentially suitable area. The cost for implementing these measures should not exceed \$10,000.⁹⁰
100. Due to uncertainty regarding whether the consultation process would occur absent critical habitat or as a result of critical habitat designation, it is not possible to attribute conclusively the costs stemming from the consultation process to critical habitat designation.

2.4.11 Soledad Unit (Unit K)

101. The 1,236 acres of land proposed for designation near the City of Soledad are entirely privately owned and consist of two distinct sub-units. The larger unit is south of Soledad and encompasses the floodplain of the Arroyo Seco River and adjacent agricultural lands. The Service considers this sub-unit to be occupied by the spineflower. The smaller unit is east of Soledad and includes a portion of the Salinas River floodplain and adjacent agricultural lands. Based on a 1995 survey, the smaller sub-unit supports Monterey spineflower. Land use activities within Unit K are restricted to row crop agricultural and occasional off-road vehicle use.⁹¹ The unpredictable flooding and fluctuating water levels inherent to the floodplain make future residential and commercial development unlikely.⁹²

⁹⁰ Cf. footnote 30.

⁹¹ The sandy soils of the floodplain are known to support the constituent elements of spineflower, though the adjacent cultivated lands do not. The Service has indicated that before the proposed designation goes final, the boundary is likely to be refined to exclude agricultural lands.

⁹² A recent study by the University of California, Berkeley, predicts future residential growth throughout the State of California. This study estimates that build-out from the City of Prunedale will not reach into either of the proposed critical habitat subunits by 2020 (Landis, John et al, California Urban and Biodiversity Analysis (CURBA) model, Institute of Urban and Regional Development, University

102. Because future development of the floodplain is very unlikely, this analysis does not anticipate any economic impact from critical habitat designation in the Soledad Unit. Although illegal off-road vehicle use may not be compatible with a population of Monterey spineflower, the designation of critical habitat alone will not result in additional restrictions above and beyond those imposed by local ordinances.

2.5 Summary of Impacts

103. Overall, consultations for and associated modifications to projects occurring within the boundaries of proposed critical habitat for Monterey spineflower are expected to result in total costs of approximately \$400,000. Exhibit 3 provides a summary of economic costs for each proposed critical habitat unit.

State Agencies

104. Total economic costs for consultations and modifications to projects within proposed critical habitat for the Monterey spineflower on state-owned land should not exceed \$56,000. California Department of Parks and Recreation will likely incur costs of \$24,000 in Unit B (Sunset) and costs of \$48,000 in Unit D (Marina). California Department of Transportation will likely incur costs of \$8,000 in Unit H (Prunedale).

Local Agencies

105. Local agencies are not expected to be impacted by the designation of critical habitat, principally because activities on local-agency land do not typically involve Federal nexuses.

of California at Berkeley, September 1998).

Private Landowners

106. Total economic costs for consultations and modifications to projects within proposed critical habitat for the Monterey spineflower on privately owned land are expected range from \$170,000 to \$200,000. Private landowners will likely incur costs of \$70,000 in Unit C (Moss Landing), \$56,000 in Unit D (Marina), \$30,000 to \$60,000 in Unit I (Fort Ord), and \$14,000 in Unit J (Del Ray Oaks).

Federal Lands

107. Federal agencies are likely to incur total costs of approximately \$150,000 as a result of consultations and modifications regarding activities occurring in areas of proposed critical habitat for the Monterey spineflower on Federal lands or activities involving Federal funding or permitting in areas of proposed critical habitat for the Monterey spineflower.
- The U.S. Fish and Wildlife Service will likely incur costs of \$2,000 in Unit B (Sunset), \$25,000 in Unit C (Moss Landing), \$27,000 in Unit D (Marina), \$2,000 in Unit H (Prunedale), \$12,000 to \$16,000 in Unit I (Fort Ord), and \$4,000 in Unit J (Del Ray Oaks).
 - The Army Corps of Engineers will likely incur costs of \$3,000 in Unit B (Sunset), \$13,000 in Unit D (Marina), and \$26,000 in Unit J (Del Ray Oaks).
 - The Bureau of Land Management will likely incur costs of \$16,000 in Unit I (Fort Ord).
 - The Department of the Army will likely incur costs of \$6,000 in Unit I (Fort Ord).
 - The Federal Highway Administration will likely incur costs of \$3,000 in Unit H (Prunedale).
 - The Federal Emergency Management Agency will likely incur costs of \$3,000 in Unit D (Marina).

- The Navy Postgraduate School will likely incur costs of \$1,000 in Unit D (Marina).

Exhibit 3				
SUMMARY OF POTENTIAL ECONOMIC IMPACTS WITHIN PROPOSED CRITICAL HABITAT FOR THE MONTEREY SPINEFLOWER FROM 2001 TO 2010				
Critical Habitat Unit	Affected Party	Potentially Affected Activity	Estimated Cost to Party	Cost Due to Critical Habitat
Manresa- Unit A	California Department of Parks and Recreation	None	None	None
Sunset- Unit B	California Department of Parks and Recreation	Wetlands restoration	\$24,000	\$24,000
	Army Corps of Engineers	Section 404 permitting for wetlands restoration	\$3,000	\$3,000
	U.S. Fish and Wildlife Service	Consultation for wetlands restoration	\$2,000	\$2,000
Moss Landing- Unit C	California Department of Parks and Recreation	None	None	None
	Moss Landing Marine Laboratory	None	None	None
	Private landowners	Residential development	\$70,000	None
	U.S. Fish and Wildlife Service	Consultation for development	\$25,000	None
	Moss Landing North Harbor District	None	None	None
Marina- Unit D	U.S. Fish and Wildlife Service	Consultation for development	\$20,000	None
	California Department of Parks and Recreation	Repairs of storm damage	\$24,000	None
	Federal Emergency Management Agency	Funding for repairs of storm damage	\$3,000	None

	Private Land	Residential development	\$56,000	None
	U.S. Fish and Wildlife Service	Consultation for development	\$2,000	None
	U.S. Army	None	None	None
	California Department of Parks and Recreation	Construction of campsites and parking lots on land of former Fort Ord	\$24,000	\$24,000
	Federal Agency Providing Funding	Funding for construction of campsites and parking lots	\$3,000	\$3,000
	U.S. Fish and Wildlife Service	Consultation for construction of campsites and parking lots	\$2,000	\$2,000

Exhibit 3- Continued				
SUMMARY OF POTENTIAL ECONOMIC IMPACTS WITHIN PROPOSED CRITICAL HABITAT FOR THE MONTEREY SPINEFLOWER FROM 2001 TO 2010				
Critical Habitat Unit	Affected Party	Potentially Affected Activity	Estimated Cost to Party	Cost Due to Critical Habitat
Marina- Unit D Continued	Navy Postgraduate School	Technical assistance calls for weed eradication program	\$1,000	\$1,000
	U.S. Fish and Wildlife Service	Technical assistance	\$1,000	\$1,000
	Salinas River National Wildlife Refuge	None	None	None
	Army Corps of Engineers	Ordnance removal	\$13,000	None
	U.S. Fish and Wildlife Service	Consultation for ordnance removal	\$2,000	None
Asilomar- Unit E	California Department of Parks and Receptions	None	None	None
	Private Landowners	None	None	None
Freedom Boulevard- Unit F	Private Landowner	None	None	None
Bel Mar- Unit G	Private landowners	None	None	None
Prunedale-Unit H	Manzanita County Park	None	None	None
	California Department of Transportation	Highway expansion	\$8,000	\$8,000
	Federal Highway Administration	Funding of highway expansion	\$3,000	\$3,000
	U.S. Fish and Wildlife Service	Consultation for highway expansion	\$2,000	\$2,000

	Private landowners	None	None	None
Fort Ord- Unit I	Department of the Army	Reinitiation of consultation	\$6,000	\$6,000
	U.S. Fish and Wildlife Service	Reinitiation of consultation	\$2,000	\$2,000
	Private landowners	Development	\$30,000 to \$60,000	\$30,000 to \$60,000
	Federal Agency with Nexus	Permitting or funding for development	\$6,000 to \$12,000	\$6,000 to \$12,000
	U.S. Fish and Wildlife Service	Consultation for development	\$4,000 to \$8,000	\$4,000 to \$8,000

Exhibit 3- Continued				
SUMMARY OF POTENTIAL ECONOMIC IMPACTS WITHIN PROPOSED CRITICAL HABITAT FOR THE MONTEREY SPINEFLOWER FROM 2001 TO 2010				
Critical Habitat Unit	Affected Party	Potentially Affected Activity	Estimated Cost to Party	Cost Due to Critical Habitat
Fort Ord- Unit I Continued	Bureau of Land Management	Programmatic consultation and additional consultations for maintenance and construction	\$21,000	\$18,000
	U.S. Fish and Wildlife Service	Consultation for maintenance and construction	\$6,000	\$2,000
Del Rey Oaks- Unit J	Army Corps of Engineers	Construction of groundwater treatment facility	\$23,000	\$23,000
	U.S. Fish and Wildlife Service	Consultation for construction	\$2,000	\$2,000
	Private landowners	Residential and commercial development	\$14,000	\$14,000
	Army Corps of Engineers	Permitting for development	\$3,000	\$3,000
	U.S. Fish and Wildlife Service	Consultation for development	\$2,000	\$2,000
Soledad- Unit K	Private landowners	None	None	None

2.6 Potential Impacts to Small Businesses

108. Under the Regulatory Flexibility Act (as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever a Federal agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses,

small organizations, and small government jurisdictions).⁹³ However, no regulatory flexibility analysis is required if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

109. Residential and commercial development on private land constitutes the primary activity that is likely to take place within the area of proposed critical habitat for the Monterey spineflower. The cost of an additional consultation and any required modifications could be borne by a small business in the development industry. Estimating this impact on small businesses is difficult due to the uncertainty in predicting which contractors and subcontractors will aid in the design and development of future residential development projects. However, since the impacts cited in this report are relatively low overall, it is unlikely that impacts on small businesses will be significant. As noted above, the Service must ensure that any required modifications are economically and technically feasible and can be implemented in a manner consistent with the basic design of the proposed project.⁹⁴

2.7 **Potential Impacts Associated with Project Delays and Property Values**

110. It is possible that critical habitat designation could lead to reductions in the property values on some of the proposed units. Reductions could occur if the perception exists that designation will limit the ability of parties to develop land, even though no specific project plans exist. These reductions could be temporary or permanent, depending upon whether the designation will, in fact, restrict land uses or lead to increased costs. A temporary decline in property value, if it occurs, would last until uncertainty regarding the effects of the designation is resolved. At this time, information is insufficient to estimate accurately the extent of temporary or permanent reductions in the value of the privately held land within the proposed critical habitat. It is also difficult to separate the effect of baseline regulations (i.e., Coastal Commission approval) and the effect of critical habitat designation on property values. Casual evidence, however, suggests that significant new impacts are unlikely.

⁹³ 5 U.S.C. 601 et. seq.

⁹⁴ U.S. Fish and Wildlife Service, *Final ESA Section 7 Consultation Handbook*, March 1998.

2.8 Benefits

111. To determine the benefits of the critical habitat designation of the Monterey spineflower, this report considers those categories of benefit that will be enhanced as a result of the listing of the species and the proposed critical habitat designation.
112. The primary goal of listing a species as endangered is to preserve the species from extinction. However, various economic benefits, measured in terms of enhanced national social welfare, result from species preservation as well. National social welfare values reflect both use and non-use (i.e., existence) values, and can reflect various categories of value. For example, use values might include the opportunity to see a Monterey spineflower while on a hike, or the recreational use of habitat area preserved as a result of the Monterey spineflower. Existence values are not derived from direct use of the species, but instead reflect the satisfaction and utility people derive from the knowledge that a species exists.
113. The following examples represent benefits derived from the listing of the Monterey spineflower and, potentially, critical habitat:
- **Ecosystem health.** Absent the Monterey spineflower, other natural organisms may suffer. Actions to protect the Monterey spineflowers may also benefit other organisms. Each one of these organisms may provide some level of direct or indirect benefit to people.
 - **Real estate value effects.** Real estate values may be enhanced by critical habitat designation. For example, such enhancement may occur if open space is preserved or if allowable densities are reduced or kept at current levels as a result of critical habitat designation.
 - **Flood control.** Preserving natural environments can also reduce FEMA and county expenditure on bank stabilization and other flood control programs.
114. The benefits identified above arise primarily from the protection afforded to the Monterey spineflower under the Federal listing. Critical habitat designation may provide some incremental benefits beyond the listing benefits. Critical habitat designation provides some

educational benefit by increasing awareness of the extent of Monterey spineflower habitat. Incremental surveys, consultations, and project modifications conducted as a result of the designation of critical habitat are likely to increase the probability that the Monterey spineflower will recover. Critical habitat also provides a legal definition of the extent of Monterey spineflower habitat. This reduces the amount of uncertainty Federal agencies face when determining if a section 7 consultation is necessary for an activity with a Federal nexus.

115. The quantification of total economic benefits resulting from the designation of critical habitat is, at best, difficult. Without knowing the exact nature of future consultations and associated project modifications, it is difficult to predict the incremental increase in the probability that the Monterey spineflower will recover as a result of critical habitat designation. A single project modification associated with the designation of critical habitat has the potential to protect the Monterey spineflower. While such a scenario is unlikely, such a hypothetical project modification would bear the entire economic value of the listing of the Monterey spineflower as mentioned above. Alternatively, additional consultations resulting from the designation of critical habitat may not in any way increase the probability of recovery for the species. In this case, the incremental benefits of designating critical habitat for the Monterey spineflower would be limited to the educational benefits, increased support for existing conservation efforts, and reduced uncertainty regarding the extent of Monterey spineflower habitat. In all likelihood, the actual benefits of the designation of critical habitat for the Monterey spineflower will lie in between the benefits presented in these extreme examples.

REFERENCES

Biological and Conference Opinion on the Closure and Reuse of Fort Ord, Monterey County, California (1-8-99-F/C-39R), letter dated March 30, 1999, from U.S. Fish and Wildlife Service to James M. Willison, Department of the Army

California Coastal Act, Section 30107.5, "Definitions."

California Resources Agency, "Summary and Overview of the California Environmental Quality Act", November 12, 1998, http://ceres.ca.gov/topic/env_law/ceqa/summary.html, August 23, 2000.

California, Department of Finance, "City/County Population and Housing Estimates, 1991-2000, with 1990 Census Counts." Sacramento,

Draft- August, 2001

California, May 2000. Accessed at: <http://www.dof.ca.gov/html/Demograp/E-5text.htm> on April 3, 2001.

California Employment Development Department, Labor Market Information Division. 2000. (<http://www.calmis.ca.gov/file/COsnaps/scruzSNAP.pdf>)

Draft Comprehensive Conservation Plan and Environmental Assessment, Salinas River National Wildlife Refuge, U.S. Fish and Wildlife Service, August 2000.

Federal Register, February 15, 2001 (66 FR 10469), *Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for Chorizanthe pungens var. pungens (Monterey Spineflower)*.

Landis, John et al, California Urban and Biodiversity Analysis (CURBA) model, Institute of Urban and Regional Development, University of California at Berkeley, September 1998).

Naval Post Graduate School Website, "NPS At a Glance," May 22, 2001 (http://www.nps.navy.mil/PAO/at_a_glance.htm).

Santa Cruz County Economic Profile, (<http://www.co.santa-cruz.ca.us/cao/econprof.htm>).

U.S. Fish and Wildlife Service, *Final ESA Section 7 Consultation Handbook*, March 1998.

"Quality of Life Indicator 99: Habitat Preservation," Santa Cruz County Assessment Project. Applied Survey Research, 2000. (http://www.appliedsurveyresearch.org/cap_report.htm)

"Questions and Answers: California Coastal Act," State of California. March 9, 1999. (<http://www.coastal.ca.gov/qa99.pdf>)

U.S. Fish and Wildlife. 1998. Seven Coastal Plants and the Myrtle's Silverspot Butterfly Recovery Plan. Portland, Oregon.