

*April 2002*

**FINAL DRAFT ECONOMIC ANALYSIS  
OF CRITICAL HABITAT DESIGNATION  
FOR THE SANTA CRUZ TARPLANT**

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## PREFACE

The U.S. Fish and Wildlife Service has added this preface to all economic analyses of critical habitat designations:

"The standard best practice in economic analysis is applying an approach that measures costs, benefits, and other impacts arising from a regulatory action against a baseline scenario of the world without the regulation. Guidelines on economic analysis, developed in accordance with the recommendations set forth in Executive Order 12866 ("Regulatory Planning and Review"), for both the Office of Management and Budget and the Department of the Interior, note the appropriateness of the approach:

*'The baseline is the state of the world that would exist without the proposed action. All costs and benefits that are included in the analysis should be incremental with respect to this baseline.'*

"When viewed in this way the economic impacts of critical habitat designation involve evaluating the 'without critical habitat' baseline versus the 'with critical habitat' scenario. Impacts of a designation equal the difference, or the increment, between these two scenarios. Measured differences between the baseline and the scenario in which critical habitat is designated may include (but are not limited to) changes in land use, environmental quality, property values, or time and effort expended on consultations and other activities by federal landowners, federal action agencies, and in some instances, State and local governments and/or private third parties. Incremental changes may be either positive (benefits) or negative (costs).

"In *New Mexico Cattle Growers Ass'n v. U.S.F.W.S.*, 248 F.3d 1277 (10<sup>th</sup> Cir. 2001), however, the 10th Circuit recently held that the baseline approach to economic analysis of critical habitat designations that was used by the Service for the southwestern willow flycatcher designation was 'not in accord with the language or intent of the ESA.' In particular, the court was concerned that the Service had failed to analyze any economic impact that would result from the designation, because it took the position in the economic analysis that there was no economic impact from critical habitat that was incremental to, rather than merely co-extensive with, the economic impact of listing the species. The Service had therefore assigned all of the possible impacts of designation to the listing of the species, without acknowledging any uncertainty in this conclusion or considering such potential impacts as transaction costs, reinitiations, or indirect costs. The court rejected the baseline approach incorporated in that designation, concluding that, by obviating the need to perform any analysis of economic impacts, such an approach rendered the economic analysis requirement meaningless: 'The statutory language is plain in requiring some kind of consideration of economic impact in the CHD phase.'

"In this analysis, the Service addresses the 10th Circuit's concern that we give meaning to the ESA's requirement of considering the economic impacts of designation by acknowledging the uncertainty of assigning certain post-designation economic impacts (particularly section 7 consultations) as having resulted from either the listing or the designation. The Service believes that

for many species the designation of critical habitat has a relatively small economic impact, particularly in areas where consultations have been ongoing with respect to the species. This is because the majority of the consultations and associated project modifications, if any, already consider habitat impacts and as a result, the process is not likely to change due to the designation of critical habitat. Nevertheless, we recognize that the nationwide history of consultations on critical habitat is not broad, and, in any particular case, there may be considerable uncertainty whether an impact is due to the critical habitat designation or the listing alone. We also understand that the public wants to know more about the kinds of costs consultations impose and frequently believe that designation could require additional project modifications.

"Therefore, this analysis incorporates two baselines. One addresses the impacts of critical habitat designation that may be 'attributable co-extensively' to the listing of the species. Because of the potential uncertainty about the benefits and economic costs resulting from critical habitat designations, we believe it is reasonable to estimate the upper bounds of the cost of project modifications based on the benefits and economic costs of project modifications that would be required due to consultation under the jeopardy standard. It is important to note that the inclusion of impacts attributable co-extensively to the listing does not convert the economic analysis into a tool to be considered in the context of a listing decision. As the court reaffirmed in the southwestern willow flycatcher decision, 'the ESA clearly bars economic considerations from having a seat at the table when the listing determination is being made.'

"The other baseline, the lower boundary baseline, will be a more traditional rulemaking baseline. It will attempt to provide the Service's best analysis of which of the effects of future consultations actually result from the regulatory action under review - i.e. the critical habitat designation. These costs will in most cases be the costs of additional consultations, reinitiated consultations, and additional project modifications that would not have been required under the jeopardy standard alone as well as costs resulting from uncertainty and perceptual impacts on markets."

DATED: March 20, 2002

## 1. INTRODUCTION AND BACKGROUND

1. On November 15, 2001, the U.S. Fish and Wildlife Service (Service) proposed designation of critical habitat for the Santa Cruz tarplant (*Holocarpha macradenia*) on approximately 3,360 acres of land in Contra Costa, Santa Cruz, and Monterey counties, California (66 FR 57525). The purpose of this report is to identify and analyze the potential economic impacts that could result from this designation. This report was prepared by Industrial Economics, Incorporated (IEc), under contract to the U.S. Fish and Wildlife Service's Division of Economics.
2. Section 4(b)(2) of the Endangered Species Act (the Act) requires that the Service base the 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 any 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 as critical habitat, provided the exclusion will not result in extinction of the species.
3. 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, permit, or carry out are not likely to jeopardize the continued existence of the species. The Service defines jeopardy as 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, permit, 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 both the survival and recovery of a listed species.

### 1.1 Description of Species and Habitat

4. The Santa Cruz tarplant is an aromatic annual herb in the aster family with yellow, daisy-like flowers.<sup>1</sup> It is restricted to coastal terrace prairie habitat along the coast of central California. Based on field surveys and research, the Service has identified physical and biological habitat features, referred to as primary constituent elements, that are essential for the survival and recovery of this species. Primary constituent elements for the Santa Cruz tarplant include: soils associated with coastal terraces prairies, including the Watsonville, Tierra, Elkhorn, Santa Inez, and Pinto series; plant communities that support associated species, including native grasses such as needlegrass and California oatgrass, and native herbaceous species such as other tarplants, Gairdner's yampah, San Francisco popcorn

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<sup>1</sup> Information on the Santa Cruz tarplant and its habitat comes from the *Proposed Designation of Critical Habitat for the Santa Cruz Tarplant*, November 15, 2001 (66 FR 57525).

flower, and Santa Cruz clover; and physical processes, particularly soils and hydrologic processes, that maintain the soil structure and hydrology that produce the seasonally saturated soils characteristic of Santa Cruz tarplant habitat.

## 1.2 **Proposed Critical Habitat**

5. The Service has proposed eleven units of critical habitat for the Santa Cruz tarplant on approximately 3,360 acres of land in Contra Costa, Santa Cruz, and Monterey counties, California. The proposed critical habitat comprises 93 acres of State land, 600 acres of city and other local-agency land, and 2,667 acres of privately held land.

- **Unit A, Mezue**, comprises 150 acres of land managed by the East Bay Regional Park District (EBRPD). Unit A supports known populations of the Santa Cruz tarplant.
- **Unit B, Graham Hill**, consists of 35 acres of privately owned lands, 17 acres of which have been set aside for conservation of coastal prairie habitat and Santa Cruz tarplant as mitigation for an adjacent development project. Lands within Unit B support known populations of the Santa Cruz tarplant.
- **Unit C, De Laveaga**, consists of seven acres on state lands managed by the California Army National Guard, a portion of which supports known populations of the Santa Cruz tarplant.
- **Unit D, Arana Gulch**, comprises 65 acres of land owned and managed by the City of Santa Cruz. Areas of Unit D support known populations of the Santa Cruz tarplant.
- **Unit E, Twin Lakes**, consists of 26 acres of land owned by the California Department of Parks and Recreation within Twin Lakes State Park. Unit E supports known populations of the Santa Cruz tarplant.
- **Unit F, Rodeo Gulch**, consists of 27 acres of privately owned land. Santa Cruz tarplant populations have not been observed within the boundaries of Unit F since 1993, though the area is believed to support a seedbank.
- **Unit G, Soquel**, comprises 100 acres. The County of Santa Cruz manages 55 acres of this land as part of Anna Jean Cummings Regional Park (also known as O'Neill Ranch). The remaining 45 acres in this unit are privately owned. Lands within Unit G support known populations of the Santa Cruz tarplant.
- **Unit H, Porter Gulch**, consists of 35 acres of privately owned lands. Unit

H supports known populations of the Santa Cruz tarplant.

- **Unit I, Watsonville**, comprises 1,635 acres of land. The City of Watsonville owns 330 acres, a 20-acre portion is under easement to the California Department of Transportation, the California Department of Fish and Game manages 40 acres as a reserve, and the remaining 1,245 acres belong to private landowners. Areas of Unit I support known populations of the Santa Cruz tarplant.
- **Unit J, Casserly**, consists of 1,110 acres of privately owned lands. Unit J supports known populations of the Santa Cruz tarplant.
- **Unit K, Elkhorn**, consists of 170 acres of land owned by the Elkhorn Slough Foundation. Areas of Unit K support known populations of the Santa Cruz tarplant.

### 1.3 **Relevant Baseline Regulations**

6. Several baseline regulations are relevant to the proposed critical habitat. Baseline regulations, i.e., State and county laws governing land use, afford protection to the species even in the absence of the Act. California has a stringent set of regulations governing land use, and these regulations may also be triggered by the establishment of critical habitat. Exhibit 1 describes the baseline regulations relevant to this proposed designation.

<b>Exhibit 1</b>		
<b>RELEVANT BASELINE REGULATIONS</b>		
<b>Regulatory Agency/Act</b>	<b>Description</b>	<b>Units Potentially Affected</b>
California Coastal Commission	In accordance with the California Coastal Act, this agency ensures that economic development on the coast is located, designed, and carried out in an environmentally sustainable manner. The coastal zone spans over 1,100 miles along the California coast and extends from three miles at sea to, at most, five miles inland. <sup>a</sup>	All except Unit J
California Environmental Quality Act (CEQA)	The act requires the identification of environmental effects of proposed projects that have the potential to harm sensitive species. If the lead state agency finds that a project will cause significant impacts to sensitive species, the landowners must prepare an Environmental Impact Report (EIR) and propose Environmentally Superior Alternatives. <sup>b</sup>	All
California Endangered Species Act/California Department of Fish and Game	The CEQA requires the identification of environmental effects of proposed projects that have the potential to harm sensitive species. If the lead state agency finds that a project will cause significant impacts to sensitive species, the landowners must prepare an Environmental Impact Report (EIR) and propose Environmentally Superior Alternatives. <sup>c</sup>	All
Santa Cruz County Sensitive Habitat Protection Ordinance	The Sensitive Habitat Protection Ordinance was designed to minimize disturbance in “sensitive habitats” and to protect these areas for their genetic, scientific, and educational value. The ordinance regulates the use of toxic substances, as well as development activities and land disturbances. Any development or land disturbance in sensitive habitat requires a “biotic review”, which determines what kinds of development activities can be conducted and what mitigation measures may be necessary to ensure protection of the habitat. <sup>d</sup>	All except Unit A and Unit K
<p>a- California Coastal Commission, State of California, <i>The California Coastal Act, Questions and Answers</i>, March 9, 1999, <a href="http://www.coastal.ca.gov/qa99.pdf">http://www.coastal.ca.gov/qa99.pdf</a>, accessed January 25, 2002.</p> <p>b- Industrial Economics, Inc. <i>Draft Economic Analysis of Proposed Critical Habitat Designation for the Quino Checkerspot Butterfly</i>, (June 2001).</p> <p>c- Ceres Environmental Law, Regulation, and Policy, <a href="http://ceres.ca.gov/topic/env_law/cesa/summary.html">http://ceres.ca.gov/topic/env_law/cesa/summary.html</a>, accessed /February 4, 2002.</p> <p>d- Santa Cruz County Planning Department, <a href="http://sccounty01.co.santa-cruz.ca.us/planning/sensitiv.htm">http://sccounty01.co.santa-cruz.ca.us/planning/sensitiv.htm</a>, accessed March 21, 2002.</p>		

## 2. FRAMEWORK, METHODOLOGY, AND IMPACTS

### 2.1 Framework for Analysis

7. The focus of this economic analysis is on section 7 of the Act, which requires Federal agencies to insure that any action authorized, funded, or carried out will not likely jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat. Federal agencies are required to consult with the Service whenever they propose a discretionary action that may affect a listed species or its designated critical habitat. Aside from the protection that is provided under section 7, the Act does not provide other forms of protection to lands designated as critical habitat. Because consultation under section 7 only applies to activities that involve Federal permits, funding or involvement, the designation of critical habitat will not afford any additional protections for species with respect to such strictly private activities.
8. This analysis first identifies land use activities within or in the vicinity of those areas being proposed for critical habitat that are likely to be affected by section 7 of the Act. To do this, the analysis evaluates a “without section 7” scenario and compares it to a “with section 7” scenario. The “without section 7” scenario constitutes the baseline of this analysis. It represents the level of protection currently afforded the species under the Act, absent section 7 protective measures, which includes other Federal, State, and local laws. The “with section 7” scenario identifies land-use activities likely to involve a Federal nexus that may affect the species or its designated critical habitat, which accordingly have the potential to be subject to future consultations under section 7 of the Act.
9. Economic activities identified as likely to be affected under section 7 and the resulting impacts that section 7 can have on such activities constitute the upper-bound estimate of the proposed critical habitat economic analysis. By defining the upper-bound estimate to include both jeopardy and critical habitat impacts, the analysis recognizes the difficulty in sometimes differentiating between the two in evaluating only the critical habitat effects associated with the proposed rulemaking. This step is adopted in order to ensure that any critical habitat impacts that may occur co-extensively with the listing of the species (i.e., jeopardy) are not overlooked in the analysis.
10. Upon identifying section 7 impacts, the analysis proceeds to consider the subset of impacts that can be attributed exclusively to the critical habitat designation. To do this, the analysis adopts a “with and without critical habitat approach.” This approach is used to determine those effects found in the upper-bound estimate that may be attributed solely to the proposed designation of critical habitat. Specifically, the “with and without critical habitat” approach considers section 7 impacts that will likely be associated with the implementation of the *jeopardy* provisions of section 7 and those that will likely be associated with the implementation of the *critical habitat* provision of section 7. In many cases, impacts associated with the jeopardy standard remain unaffected by the designation of critical habitat and thus would not normally be considered an effect of a critical habitat rulemaking. The subset of section 7 impacts likely to be affected solely by the designation

of critical habitat represent the lower-bound estimate of this analysis.

11. The critical habitat designation for the Santa Cruz tarplant encompasses land under private, local-agency, State, and Federal ownership. For private, local-agency, and State lands subject to critical habitat designation, section 7 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. Section 7 consultations are not required for activities on non-Federal lands that do not involve a Federal nexus.
12. This report estimates impacts of listing and critical habitat designation on activities that are "reasonably foreseeable," including, but not limited to, activities that are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. Accordingly, the analysis bases estimates on activities that are likely to occur within a ten-year time horizon.

## 2.2 **Methodological Approach**

13. This report relies on a sequential methodology and focuses on distilling the salient and relevant aspects of potential economic impacts of designation. The methodology consists of:
  - Determining the current and projected economic activity within and around the proposed critical habitat area;
  - Considering how current and future activities that take place or will likely take place on the Federal and private land could adversely affect proposed critical habitat;
  - Identifying whether such activities taking place on privately-owned property within the proposed critical habitat boundaries are likely to involve a Federal nexus;
  - Evaluating the likelihood that identified Federal actions and non-Federal actions having a Federal nexus will require consultations under section 7 of the Act and, in turn, that such consultations will result in modifications to projects;
  - Estimating per-unit costs of expected section 7 consultations, project modifications and other economic impacts associated with activities in or adjacent to areas proposed as critical habitat;
  - Estimating the upper bound of total costs associated with the area proposed for the designation (including costs that may be attributed co-extensively

with the listing of the species) and the lower bound of costs (i.e., costs attributable solely to critical habitat);

- Determining the benefits that may be associated with the designation of critical habitat; and
- Assessing the extent to which critical habitat designation will create costs for small businesses and/or affect property values as a result of modifications or delays to projects.

### **2.3 Information Sources**

14. The methodology outlined above relies on information supplied by staff from the Service, California Department of Fish and Game, East Bay Regional Park District, California Air National Guard, California Department of Parks and Recreation, California Department of Transportation, the City of Watsonville, and Santa Cruz County. Information on land uses was not available from all landowners, so this analysis uses information from the Service, the City of Watsonville Community Development Department, and Santa Cruz County to address activities occurring on private land, including the likelihood of Federal nexuses being associated with these activities.

### **2.4 Categories of Costs**

15. Estimates of 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. Cost figures were based on an average level of effort for consultations of low, medium, or high complexity, multiplied by the appropriate labor rates for staff from the Service and other Federal agencies. Estimates take into consideration the level of effort of the Service, the Action agency, and the applicant during both formal and informal consultations, as well as the varying complexity of consultations. Informal consultations for the Santa Cruz tarplant are assumed to involve a low level of complexity. Formal consultations are assumed to involve a medium level of complexity. These 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 in some cases, developing a biological assessment and biological opinion.
16. Technical assistance costs represent the estimated economic costs of informational conversations, letters, and meetings between private landowners and the Service regarding the designation of critical habitat for the Santa Cruz tarplant. Most likely, such communication will occur private property owners and the Service regarding areas designated as critical habitat or lands adjacent to critical habitat. Technical assistance efforts are assumed to involve the same level of involvement as an informal consultation.

17. Estimated administrative costs associated with section 7 consultations and technical assistance efforts are presented in Exhibit 2 (these are per effort estimates).

<b>Exhibit 2</b>			
<b>ESTIMATED ADMINISTRATIVE COSTS OF CONSULTATION AND TECHNICAL ASSISTANCE EFFORTS FOR THE SANTA CRUZ TARPLANT (PER EFFORT)</b>			
<b>Critical Habitat Impact</b>	<b>Service</b>	<b>Federal Action Agency</b>	<b>Third Party</b>
Technical Assistance Effort	\$1,000	NA	\$1,000
Informal Consultation	\$1,000	\$1,000	\$2,000
Formal Consultation	\$3,000	\$8,000	\$7,000
Notes: Values presented include costs associated with the preparation of a biological assessment or other biological project evaluation. Sources: IEc analysis based on data from the Federal Government General Schedule Rates, 1999, Office of Personnel Management, 2000, and level of effort information from a review of consultation records from several Service field offices across the county and from conversations with Biologists in the U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office.			

## 2.5 Economic Impacts

### 2.5.1 Unit A, Mezue

18. Unit A comprises recreation land maintained by the East Bay Regional Park District (EBRPD) as part of Wildcat Canyon Regional Park. Staff with EBRPD report that section 7 consultations could be necessary in the future for various projects in riparian areas within the park.<sup>2</sup> Federal nexuses for these consultations may result through the Army Corps of Engineers (the Corps) for section 404 permitting and through the Federal Emergency Management Agency (FEMA) for funding of emergency repairs to park infrastructure. Staff from EBRPD estimate, based on past occurrences, that a consultation with the Service could be necessary once every three years. Thus, this analysis estimates that, at most, four consultations may occur over the next ten years regarding the Santa Cruz tarplant in Unit A. Service personnel report that, because the riparian areas in Unit A lack the primary constituent elements necessary for the survival of the plant, activities involving a Federal nexus would likely require only informal consultations. An informal consultation should result in costs of approximately \$1,000 to the Service, \$1,000 to the involved Federal agency

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<sup>2</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat on Wildcat Canyon Regional Park comes from personal communications with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, December 14, 2001 and with Environmental Programs Manager, East Bay Regional Park District, January 14, 2002.

(the Corps or FEMA), and \$2,000 to EBRPD.<sup>3</sup> The cost for four informal consultations, then, would be approximately \$4,000 to the Service, \$4,000 to the involved Federal agencies, and \$8,000 to EBRPD. Because the consultations are all expected to be informal, no project modifications should result from the consultation process. Personnel from EBRPD indicate that proposed designation of critical habitat provides new information about the extent of appropriate habitat for the Santa Cruz tarplant. Therefore, informal consultations would likely not occur absent critical habitat designation, and this analysis concludes that all costs stemming from the consultation process would be due to designation of critical habitat for the Santa Cruz tarplant.

### 2.5.2 Unit B, Graham Hill

19. Unit B consists of privately owned grasslands on the west side of Graham Hill Road, approximately one mile north of the City of Santa Cruz in Santa Cruz County. As part of mitigation measures developed by the State for a development on adjacent lands, 17 of the 35 acres in this unit have been set aside for conservation of coastal prairie habitat. At this time, the Service does not have knowledge of any projects or activities likely to occur over the next ten years within the boundaries of Unit B.<sup>4</sup> Even if some activities do occur, it is unlikely that a Federal nexus will exist for them.<sup>5</sup> Therefore, no new consultations are expected to occur in Unit B after the designation of critical habitat for the Santa Cruz tarplant. Critical habitat designation could result in the need for the Service to provide technical assistance to a private landowner in Unit B.<sup>6</sup> The purpose of this technical assistance inquiry will likely be to clarify the requirements that critical habitat might impose on the landowner. The cost to a private landowner for seeking technical assistance is not

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<sup>3</sup> Cost estimates for an individual informal consultation were developed from a review and analysis of historical section 7 files from a number of Service field offices around the country. See Section 2.4 for full details.

<sup>4</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat on private land in Unit B comes from personal communication with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, December 14, 2001.

<sup>5</sup> In general, activities on private land will only have a Federal nexus through section 404 permitting wetlands permitting with the Army Corps of Engineers. Because the Santa Cruz tarplant is an upland plant species, any wetlands within the proposed critical habitat in this unit would not likely contain the primary constituent elements necessary to require a section 7 consultation when section 404 permitting is required for an activity.

<sup>6</sup> Estimates for the number of technical assistance inquiries for private land owners are based on consideration of critical habitat designation for other plant species. This analysis estimates that critical habitat designation will result in technical assistance inquiries at a rate of one inquiry per 100 acres for urban lands and one inquiry per 250 acres for rural lands.

expected to exceed \$1,000 and will likely be considerably less.<sup>7</sup> The cost to the Service should not exceed \$1,000.

### **2.5.3 Unit C, De Laveaga**

20. The land in Unit C consists of seven acres in De Laveaga Park used by the California Army National Guard (CANG). Over the past summer, city workers from the City of Santa Cruz, performing maintenance at the golf course adjacent to Unit C, spread wood chips from a fallen tree onto the Santa Cruz tarplant population in Unit C.<sup>8</sup> The City of Santa Cruz will have to remove these wood chips from Unit C in order to minimize the damage to the population. In addition, CANG intends to undertake some habitat improvement measures, such as removal of invasive species. Because CANG receives Federal funding, the wood chip removal and habitat improvement will likely require a formal consultation. A consultation would result in costs of approximately \$7,000 to the city, \$8,000 to the CANG, and \$3,000 to the Service.<sup>9</sup> No project modification costs are expected to be associated with this consultation beyond the cost of removing the wood chips, which personnel from CANG estimate at approximately \$1,000. Because the wood chip removal will occur in an area occupied by the Santa Cruz tarplant, the consultation would likely occur absent the designation of critical habitat. Therefore, this analysis concludes that costs stemming from the consultation will not result from designation of critical habitat for the Santa Cruz tarplant.

### **2.5.4 Unit D, Arana Gulch**

21. The land in Unit D consists of grasslands owned and managed by the City of Santa Cruz. It is bounded on the west, east, and north sides by existing development and on the south side by Santa Cruz Harbor. The City of Santa Cruz has plans to build a bike path

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<sup>7</sup> Costs associated with technical assistance include, but are not limited to, 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.

<sup>8</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat on De Laveaga Park comes from personal communications with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, December 14, 2001 and with Associate Biologist, California Army National Guard, Camp Roberts, March 11, 2002.

<sup>9</sup> Costs for the formal consultation process are based on an analysis of similar efforts that have taken place at various Service offices. Sources of these costs include meetings, site visits, and biological surveys. See Section 2.4 for full details.

through this land using funding from the Federal Highway Administration (FHWA).<sup>10</sup> While the status of this project is uncertain at this time, if the city does implement the plan, it will likely require a formal consultation. A formal consultation will likely lead to costs of approximately \$7,000 to the City of Santa Cruz, \$8,000 to FHWA, and \$3,000 to the Service.<sup>11</sup>

22. The City of Santa Cruz may modify the project or take measures to protect the Santa Cruz tarplant as a result of the consultation process. Based on the types of modifications and measures that have been implemented for other listed plant species, the City of Santa Cruz 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.<sup>12</sup>
23. The Service asserts that, because the colonies of Santa Cruz tarplants are so close together, it would recommend that FHWA consult on the bike path even absent critical habitat designation. Therefore, this analysis concludes that costs stemming from the consultation will not result from designation of critical habitat for the Santa Cruz tarplant.

#### **2.5.5 Unit E, Twin Lakes**

24. The land in Unit E consists of grasslands maintained by the California Department of Parks and Recreation (CDPR) as part of Twin Lakes State Park. The land in this unit is bounded on the west, north, and east sides by existing development and on the south side by Schwan Lagoon. Current activities taking place within Twin Lakes State Park include low-impact recreation, removal of invasive non-native species, and various attempts to enhance the population of the Santa Cruz tarplant.<sup>13</sup> None of these activities involves a Federal nexus. Because CDPR has a mandate to protect sensitive resources, including the Santa Cruz tarplant, it is unlikely that any future activities will result in significant impacts on the Santa Cruz tarplant or its habitat. Given the lack of Federal nexuses and the low-impact nature of activities taking place at Twin Lakes State Park, it is expected that no new

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<sup>10</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat in Unit D comes from personal communications with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, December 14, 2001 and personnel from the City of Santa Cruz Public Works Department, January 24, 2002.

<sup>11</sup> See footnote 9.

<sup>12</sup> Costs stemming from modifications of projects are estimated based on the time required to develop appropriate measures, labor to implement those measures, and supplies.

<sup>13</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat in Unit E comes from personal communication with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, December 14, 2001 and with Botanist, California Department of Parks and Recreation, January 14, 2001.

consultations will occur associated with activities in Unit E after the designation of critical habitat for the Santa Cruz tarplant.

### **2.5.6 Unit F, Rodeo Gulch**

25. Critical habitat Unit F comprises 27 acres of privately owned land in the community of Soquel in Santa Cruz County. This unit includes a parcel that has recently been proposed for a housing development known as Santa Cruz Gardens.<sup>14</sup> As part of the development, the developers will submit a Habitat Conservation Plan (HCP) for the federally listed Ohlone tiger beetle (*Cicindela ohlone*). Designation of critical habitat for the Santa Cruz tarplant will result in a formal consultation for the development of the HCP and the need for the HCP to include provisions for the Santa Cruz tarplant. Costs for this formal consultation are expected to be approximately \$7,000 for the developer, and \$3,000 for the Service.<sup>15</sup>
26. The developer could modify the project or take measures to protect the Santa Cruz tarplant as a result of the consultation for the HCP. At this time, it is not possible to predict what such modifications and measures might entail, because specific information about this project is not known. Based on the types of modifications and measures that have been implemented for other 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 is not expected to exceed \$10,000.<sup>16</sup>
27. A formal consultation for development would likely not be required absent critical habitat designation given that the land in Unit F has not supported a Santa Cruz tarplant population since 1993. Therefore, this analysis concludes that all costs stemming from the consultation process and from modifications to the project would result from designation of critical habitat for the Santa Cruz tarplant.

### **2.5.7 Unit G, Soquel**

#### **Santa Cruz County**

28. Currently, the land in critical habitat Unit G belonging to Santa Cruz County

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<sup>14</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat in Unit F personal communication with Entomologist, U.S. Fish and Wildlife Service, Ventura Office, January 14, 2002 and with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, January 14, 2002.

<sup>15</sup> See footnote 9.

<sup>16</sup> See footnote 12.

falls under the jurisdiction of the County of Santa Cruz Redevelopment Agency, which is in the process of transferring the land to the Santa Cruz County Parks Department (SCCPD).<sup>17</sup> After the transfer, the land will become part of Anna Jean Cummings Park. The Service is encouraging SCCPD to apply for Service funds that could be used to restore and enhance tarplant habitat. The process of allocating funding to the SCCPD will likely require the Service to undergo an internal formal consultation. This formal consultation should result in costs of approximately \$3,000 to the Service and \$7,000 to SCCPD.<sup>18</sup> As the restoration proposal is intended to help preserve the Santa Cruz tarplant, project modification costs associated with this formal consultation are expected to be minimal. Because the area where the restoration will take place supports populations of the Santa Cruz tarplant, the formal consultation would likely occur absent the designation of critical habitat. Therefore, costs stemming from the consultation will not result from designation of critical habitat for the Santa Cruz tarplant in Unit G.

### **Private Land**

29. The privately owned land within Unit G does not support significant activity due to the existence of conservation easements, established as a result of earlier development on nearby lands.<sup>19</sup> Activities that do take place on this land do not involve a Federal nexus.<sup>20</sup> Therefore, it is expected that no consultations will occur for activities on privately owned land within Unit G after the designation of critical habitat for the Santa Cruz tarplant. Critical habitat designation could result in the need for the Service to provide technical assistance to one private landowner in Unit G.<sup>21</sup> The purpose of this technical assistance inquiry will likely be to clarify the requirements that critical habitat might impose on the landowner. The cost to a private landowner for seeking technical assistance is not expected to exceed \$1,000 and will likely be considerably less. The cost to the Service should not exceed \$1,000.<sup>22</sup>

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<sup>17</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat in Unit G comes from personal communication with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, January 14, 2002.

<sup>18</sup> See footnote 9.

<sup>19</sup> See footnote 17.

<sup>20</sup> See footnote 5.

<sup>21</sup> See footnote 6.

<sup>22</sup> See footnote 7.

## 2.5.8 Unit H, Porter Gulch

### Land Trust of Santa Cruz County

30. Part of the land within proposed critical habitat Unit H has been deeded to the Land Trust of Santa Cruz County. This private organization maintains the land for conservation purposes and will not likely undertake any activities involving Federal permitting or funding.<sup>23</sup> Therefore, it is expected that no consultations will occur for activities on Land Trust lands in Unit H after the designation of critical habitat for the Santa Cruz tarplant.

### Private Land

31. The privately owned land within Unit H is not expected to support significant new activity because most of the land has already been developed or is under conservation easements.<sup>24</sup> Any activities that do take place on this land will not likely involve a Federal nexus.<sup>25</sup> Therefore, it is expected that no consultations will occur for activities on privately owned land within Unit H after the designation of critical habitat for the Santa Cruz tarplant. Critical habitat designation could result in the need for the Service to provide technical assistance to one private landowner in Unit H.<sup>26</sup> The purpose of this technical assistance inquiry will likely be to clarify the requirements that critical habitat might impose on the landowner. The cost to a private landowner for seeking technical assistance is not expected to exceed \$1,000 and will likely be considerably less. The cost to the Service should not exceed \$1,000.<sup>27</sup>

## 2.5.9 Unit I, Watsonville

### California Department of Fish and Game

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<sup>23</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat in Unit H comes from personal communication with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, December 14, 2001 and *Proposed Designation of Critical Habitat for the Santa Cruz Tarplant*, November 15, 2001 (66 FR 57525).

<sup>24</sup> See footnote 23.

<sup>25</sup> See footnote 5.

<sup>26</sup> See footnote 6.

<sup>27</sup> See footnote 7.

32. Staff from the California Department of Fish and Game (CDFG) report that little activity takes place within the proposed critical habitat managed by CDFG within Unit I.<sup>28</sup> Personnel from the Service indicate that this land is occupied by the California red-legged frog, a federally listed species. A federally funded or permitted land-altering activity on CDFG land could lead to a section 7 consultation for the California red-legged frog in the future. This consultation would create a Federal nexus for consultation on the Santa Cruz tarplant. The CDFG, however, indicates that no land-altering activities are planned for this area. As a result, this analysis anticipates that no new consultations will occur for activities on CDFG land in Unit I after the designation of critical habitat for the Santa Cruz tarplant.

### **California Department of Transportation**

33. The California Department of Transportation (Caltrans) has jurisdiction over the right-of-way along Highway 1 within the boundaries of critical habitat Unit I. The Service indicates that this area supports known populations of the California red-legged frog. Caltrans plans construction activities for the overpass at the Harkins Slough Road exit.<sup>29</sup> Specifically, construction for the south-bound off-ramp will take place within the boundaries of critical habitat for the Santa Cruz tarplant. Because Caltrans receives funding from the U.S. Department of Transportation through the FHWA, this planned construction is likely to lead to a formal consultation with the Service regarding the California red-legged frog. As part of this formal consultation, Caltrans will likely address concerns related to the Santa Cruz tarplant. To be conservative (i.e. more likely overstate costs than understate costs), this analysis assigns the full administrative costs for this formal consultation to the Santa Cruz tarplant. These costs are expected to be approximately \$7,000 to Caltrans, \$8,000 to FHWA, and \$3,000 to the Service.<sup>30</sup>
34. Caltrans could modify the project or take measures to protect the Santa Cruz tarplant as a result of the consultation process. Based on the types of modifications and measures that have been implemented for other plant species, Caltrans may take

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<sup>28</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat on California Department of Fish and Game land comes from personal communication with personnel from California Department of Fish and Game, January 11, 2002 and Biologist, U.S. Fish and Wildlife Service, Ventura Office, March 26, 2002.

<sup>29</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat on California Department of Transportation land comes from personal communication with personnel from California Department of Transportation, January 15, 2002 and Biologist, U.S. Fish and Wildlife Service, Ventura Office, March 26, 2002.

<sup>30</sup> See footnote 9.

such steps as installing fencing or restoring Santa Cruz tarplant habitat at another location. The cost for implementing these measures is not expected to exceed \$50,000.<sup>31</sup>

35. The designation of critical habitat for the Santa Cruz tarplant will provide new information to Caltrans about the extent and location of the Santa Cruz tarplant and its habitat. Therefore, future consultations in this area would be unlikely to include the Santa Cruz tarplant absent critical habitat designation. This analysis estimates that the costs discussed above (those due to the consultation process and modifications to the construction project) would result from designation of critical habitat for the Santa Cruz tarplant.

### **City of Watsonville**

35. Personnel with the City of Watsonville report that numerous activities take place on land owned by the City of Watsonville in Unit I.<sup>32</sup> Currently, all of this land falls under the jurisdiction of the city airport. The land maintained by the airport consists of four parcels. One parcel was illegally used for dumping in the past. The city airport is currently performing environmental restoration work on this land. The city airport also has plans to restore wetlands on a second parcel within the proposed critical habitat. Personnel with the City of Watsonville report that neither restoration project currently involves or will involve Federal funds or permits, so no future consultations are expected to occur.
36. Two additional future projects occurring on airport land will likely require section 7 consultations with the Service. The first consists of the installation of lights for a precision instrument landing system on a golf driving range adjacent to and operated by the airport. The installation could involve Federal funds as the airport receives significant funding from the Federal Aviation Administration (FAA). A formal consultation will likely lead to costs of approximately \$7,000 to the airport, \$8,000 to the FAA, and \$3,000 to the Service.<sup>33</sup>
37. The airport may take measures to protect the Santa Cruz tarplant as a result

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<sup>31</sup> See footnote 12.

<sup>32</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat on City of Watsonville land comes from personal communication with personnel from Watsonville Airport, January 15, 2002; Principal Planner, Community Development Department, City of Watsonville, January 14 and 15, 2002; and Biologist, U.S. Fish and Wildlife Service, Ventura Office, March 26, 2002.

<sup>33</sup> See footnote 9.

of the consultation process. Given modifications and measures implemented for other species, the city airport may take such steps as installing fencing to protect sensitive land or restoring Santa Cruz tarplant habitat at another location. The cost for implementing these measures is not expected to exceed \$50,000.<sup>34</sup>

38. Personnel from the city airport indicate that proposed designation of critical habitat provides new information about the extent of appropriate habitat for the Santa Cruz tarplant. Therefore, a formal consultation would likely not occur absent critical habitat designation, and all costs stemming from the consultation process and modifications to the installation project would likely be attributable to designation of critical habitat for the Santa Cruz tarplant.

39. The second project occurring on airport land likely to require a formal consultation consists of filling a small wetland on the airport proper in order to build a new runway. This project will involve FAA funding through the Airport Improvement Program, though personnel from the City of Watsonville indicate that no section 404 permit will be necessary because the wetland area is too small to require a permit. A formal consultation with FAA on the fill project will likely lead to costs of approximately \$7,000 to the airport, \$8,000 to the FAA, and \$3,000 to the Service.<sup>35</sup>

40. The consultation process could cause the airport to modify the wetland fill project. Based on the types of modifications and measures that have been implemented for other species, the city airport may take such steps as restoring Santa Cruz tarplant habitat at another location. The cost for implementing these measures is not expected to exceed \$50,000.<sup>36</sup>

41. Personnel from the city airport indicate that proposed designation of critical habitat provides new information about the extent of appropriate habitat for the Santa Cruz tarplant. Therefore, future consultations in this area would be unlikely to include the Santa Cruz tarplant absent critical habitat designation. This analysis estimates that the costs discussed above (those due to the consultation process and modifications to the fill project) would result from designation of critical habitat for the Santa Cruz tarplant.

### **Pajaro Valley Unified School District**

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<sup>34</sup> See footnote 12.

<sup>35</sup> See footnote 9.

<sup>36</sup> See footnote 12.

42. The Pajaro Valley Unified School District (PVUSD) has plans to acquire private land within proposed critical habitat Unit I in order to build a high school.<sup>37</sup> As part of this project, PVUSD plans to use funding from the FHWA to construct a bridge to the school. The Service indicates that the area in which the bridge will be built supports known populations of the California red-legged frog, so PVUSD will likely have to consult on this species. As part of this formal consultation, PVUSD will likely address concerns related to the Santa Cruz tarplant. To be conservative (i.e. more likely overstate costs than understate costs), this analysis assigns full value of the administrative costs for this formal consultation to the Santa Cruz tarplant. The costs of including considerations for the Santa Cruz tarplant in the formal consultation are expected to be approximately \$7,000 to PVUSD, \$8,000 to the FHWA, and \$3,000 to the Service.<sup>38</sup>
43. As a result of the consultation process, the PVUSD may have to modify the construction project or take measures to protect the Santa Cruz tarplant. Based on the types of modifications and measures implemented for other plant species, the PVUSD may take such steps as installing fencing to protect sensitive land or restoring Santa Cruz tarplant habitat at another location. The cost for implementing these measures is not expected to exceed \$50,000.<sup>39</sup>
44. Personnel from the City of Watsonville indicate that proposed designation of critical habitat provides new information about the extent of appropriate habitat for the Santa Cruz tarplant. Therefore, future consultations in this area would be unlikely to include the Santa Cruz tarplant absent critical habitat designation. Thus, this analysis estimates that the costs discussed above (those due to the consultation process and modifications to the construction project) would result from designation of critical habitat for the Santa Cruz tarplant.

#### **Private Land within City of Watsonville**

45. According to the Community Development Department for the City of Watsonville, a development project has been approved on private land within Unit I inside the City of Watsonville.<sup>40</sup> This project involves no Federal funding or

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<sup>37</sup> Information regarding potential section 7 impacts on the Pajaro Valley Unified School District comes from personal communication with Principal Planner, Community Development Department, City of Watsonville, January 14 and 15, 2002 and Biologist, U.S. Fish and Wildlife Service, Ventura Office, March 26, 2002.

<sup>38</sup> See footnote 9.

<sup>39</sup> See footnote 12.

<sup>40</sup> See footnote 32.

permitting, so it will not be subject to consultation after the designation of critical habitat. No other projects or activities are known or expected for private lands proposed as critical habitat within the boundaries of the City of Watsonville. Further, even in the event that future activities do occur on these lands, a Federal nexus will not likely exist.<sup>41</sup> Therefore, it is expected that no new consultations will occur for activities on private land in Unit I within the boundaries of the City of Watsonville after the designation of critical habitat for the Santa Cruz tarplant.

46. Critical habitat designation could result in the need for the Service to provide technical assistance to the private landowners in Unit I. The purpose of these technical assistance inquiries will likely be to clarify the requirements that critical habitat might impose on these landowners. This analysis estimates that the Service will provide technical assistance to five private landowners.<sup>42</sup> The cost to a private landowner for seeking technical assistance is not expected to exceed \$1,000 and will likely be considerably less. The cost to the Service should not exceed \$1,000.<sup>43</sup> Therefore, the total cost for provision of technical assistance is not expected to be greater than \$5,000 for private landowners and \$5,000 for the Service.

#### **Private Land within Santa Cruz County**

47. The privately owned lands in Unit I within Santa Cruz County are zoned as residential agricultural and commercial agricultural.<sup>44</sup> For privately owned lands with this zoning, it is unlikely that a Federal nexus would exist for activities, so this analysis estimates that no consultations will occur after the designation of critical habitat.<sup>45</sup> The designation could result in the need for the Service to provide technical assistance to three private landowners.<sup>46</sup> The purpose of these technical assistance inquiries will likely be to clarify the requirements that critical habitat might impose on these landowners. The cost to a private landowner for seeking technical assistance, as indicated in Exhibit 1, is not expected to exceed \$1,000 and

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<sup>41</sup> See footnote 5.

<sup>42</sup> See footnote 6.

<sup>43</sup> See footnote 7.

<sup>44</sup> <http://gis.co.santa-cruz.ca.us/internet/planninginformation/viewer.htm> accessed March 21, 2002.

<sup>45</sup> See footnote 5.

<sup>46</sup> See footnote 6.

will likely be considerably less. The cost to the Service should not exceed \$1,000.<sup>47</sup> Therefore, the total cost for provision of technical assistance is not expected to be greater than \$3,000 for private landowners and \$3,000 for the Service.

#### **2.5.10 Unit J, Casserly**

48. The privately owned lands in Unit J are zoned as residential agricultural and commercial agricultural.<sup>48</sup> For privately owned lands with this zoning, it is unlikely that a Federal nexus would exist for activities, so this analysis estimates that no consultations will occur after the designation of critical habitat.<sup>49</sup> The designation could result in the need for the Service to provide technical assistance to four private landowners.<sup>50</sup> The purpose of these technical assistance inquiries will likely be to clarify the requirements that critical habitat might impose on these landowners. The cost to a private landowner for seeking technical assistance, as indicated in Exhibit 2, is not expected to exceed \$1,000 and will likely be considerably less. The cost to the Service should not exceed \$1,000.<sup>51</sup> Therefore, the total cost for provision of technical assistance is not expected to be greater than \$4,000 for private landowners and \$4,000 for the Service.

#### **2.5.11 Unit K, Elkhorn**

49. Critical habitat Unit K is located on land owned by the Elkhorn Slough Foundation (Foundation), a private land-conservation group. The Foundation currently manages the land as a conservation area and will continue to do so in the future.<sup>52</sup> In addition, the CDFG holds a conservation easement on some of the land belonging to the Foundation. A number of land management agencies has recently developed a conservation plan for the Elkhorn Slough watershed, including the land within Unit K. As a result of all of these factors, it is expected that no new consultations will occur for activities taking place within the boundaries of Unit K after the designation of critical habitat for the Santa Cruz tarplant.

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<sup>47</sup> See footnote 7.

<sup>48</sup> <http://gis.co.santa-cruz.ca.us/internet/planninginformation/viewer.htm>

<sup>49</sup> See footnote 5.

<sup>50</sup> See footnote 6.

<sup>51</sup> See footnote 7.

<sup>52</sup> Information regarding activities and the potential for section 7 consultations within proposed critical habitat in Unit K comes from personal communication with Ecologist, U.S. Fish and Wildlife Service, Ventura Office, December 14, 2001 and *Proposed Designation of Critical Habitat for the Santa Cruz Tarplant*, November 15, 2001 (66 FR 57525).

## 2.6 **Summary of Economic Impacts**

50. The largest costs are expected for Unit I, the largest unit, at approximately \$288,000 to all affected parties, all due to critical habitat designation. The costs in this unit result from the following activities:

- C \$57,000 to the California Department of Transportation for construction of a highway off-ramp;
- C \$8,000 to the Federal Highway Administration for funding of construction of a highway off-ramp;
- C \$3,000 to the Service for formal consultation on the construction of a highway off-ramp;
- C \$114,000 to the City of Watsonville for activities on lands under the jurisdiction of the municipal airport;
- C \$6,000 to the Service for consultation on multiple activities on airport land;
- C \$16,000 to the Federal Aviation Administration for funding of activities at the municipal airport;
- C \$57,000 to the Pajaro Valley School District for construction of a bridge to a new high school and;
- C \$3,000 to the Service for consultation on bridge construction;
- C \$8,000 to the Federal Highway Administration for funding of the construction of the bridge to the new high school;
- C \$5,000 to private landowners within the City of Watsonville for increased technical assistance inquiries;
- C \$3,000 to private landowners within Santa Cruz County for increased technical assistance inquiries; and
- C \$8,000 to the Service for increased technical assistance.

51. Lesser costs are expected for the following units:

- C Unit A- \$16,000 total to all parties, all due to critical habitat

designation;

- C Unit C- \$19,000 total to all parties, none due to critical habitat designation;
- C Unit D- \$38,000 total to all parties, none due to critical habitat designation;
- C Unit F- \$20,000 total to all parties, all due to critical habitat designation;
- C Unit G- \$12,000 total to all parties, \$2,000 due to critical habitat designation; and
- C Unit J- \$8,000 total to all parties, all due to critical habitat designation.

- 52. No new costs are expected to occur for activities in units E and K after critical habitat designation for the Santa Cruz tarplant while minimal costs due to increased technical assistance are expected in Units B and H (\$2,000 in each).
- 53. Exhibit 3 summarizes the potential activities that could lead to new consultations and project modifications and the expected costs attributable to critical habitat designation for the Santa Cruz tarplant.

**Exhibit 3**  
**SUMMARY OF POTENTIAL SECTION 7 RELATED ECONOMIC IMPACTS**  
**WITHIN PROPOSED CRITICAL HABITAT FOR THE SANTA CRUZ TARPLANT**  
**(2002 TO 2012)**

<b>Critical Habitat Unit</b>	<b>Affected Party</b>	<b>Potentially Affected Activity</b>	<b>Estimated Section 7 Cost</b>	<b>Cost Due to Critical Habitat</b>
Unit A, Mezue	East Bay Regional Parks District	Activities in riparian areas	\$8,000	\$8,000
	Army Corps of Engineers and/or Federal Emergency Management Agency	Funding and permitting of activities in riparian areas	\$4,000	\$4,000
	U.S. Fish and Wildlife Service	Informal consultations for activities in riparian areas	\$4,000	\$4,000
<b>Unit A Total</b>			<b>\$16,000</b>	<b>\$16,000</b>
Unit B, Graham Hill	Private landowners	Technical Assistance	\$1,000	\$1,000
	U.S. Fish and Wildlife Service	Technical Assistance	\$1,000	\$1,000
<b>Unit B Total</b>			<b>\$2,000</b>	<b>\$2,000</b>
Unit C, De Laveaga	City of Santa Cruz	Removal of wood chips	\$8,000	None
	U.S. Fish and Wildlife Service	Consultation for removal of wood chips	\$3,000	None
	California Army National Guard	Consultation for removal of wood chips	\$8,000	None
<b>Unit C Total</b>			<b>\$19,000</b>	<b>None</b>
Unit D, Arana Gulch	City of Santa Cruz	Construction of bike path	\$27,000	None
	Federal Highway Administration	Consultation for construction of bike path	\$8,000	None
	U.S. Fish and Wildlife Service	Consultation for construction of bike path	\$3,000	None
<b>Unit D Total</b>			<b>\$38,000</b>	<b>None</b>
Unit E, Twin Lakes	California Department of Parks and Recreation	None	None	None
<b>Unit E Total</b>			<b>None</b>	<b>None</b>
Unit F, Rodeo Gulch	Private landowner	Development	\$17,000	\$17,000
	U.S. Fish and Wildlife Service	Internal formal consultation for development	\$3,000	\$3,000
<b>Unit F Total</b>			<b>\$20,000</b>	<b>\$20,000</b>

<b>Exhibit 3 (Continued)</b>				
<b>SUMMARY OF POTENTIAL SECTION 7 RELATED ECONOMIC IMPACTS</b>				
<b>WITHIN PROPOSED CRITICAL HABITAT FOR THE SANTA CRUZ TARPLANT</b>				
<b>(2002 TO 2012)</b>				
<b>Critical Habitat Unit</b>	<b>Affected Party</b>	<b>Potentially Affected Activity</b>	<b>Estimated Section 7 Cost</b>	<b>Cost Due to Critical Habitat</b>
Unit G, Soquel	Private landowners	Technical Assistance	\$1,000	\$1,000
	U.S. Fish and Wildlife Service	Technical Assistance	\$1,000	\$1,000
	County of Santa Cruz Regional Parks Department	Funding from the Service for restoration activities	\$7,000	None
	U.S. Fish and Wildlife Service	Formal consultation for funding of restoration activities	\$3,000	None
<b>Unit G Total</b>			<b>\$12,000</b>	<b>\$2,000</b>
Unit H, Porter Gulch	Private landowners	Technical Assistance	\$1,000	\$1,000
	U.S. Fish and Wildlife Service	Technical Assistance	\$1,000	\$1,000
	Land Trust of Santa Cruz County	None	None	None
<b>Unit H Total</b>			<b>\$2,000</b>	<b>\$2,000</b>
Unit I, Watsonville	California Department of Fish and Game	None	None	None
	California Department of Transportation	Construction of highway off-ramp	\$57,000	\$57,000
	Federal Highway Administration	Funding of construction	\$8,000	\$8,000
	U.S. Fish and Wildlife Service	Consultation for construction	\$3,000	\$3,000
	City of Watsonville	Multiple activities on airport land	\$114,000	\$114,000
	U.S. Fish and Wildlife Service	Consultations for multiple activities	\$6,000	\$6,000
	Federal Aviation Administration	Funding for multiple activities	\$16,000	\$16,000
	Pajaro Valley Unified School District	Construction of bridge to new high school	\$57,000	\$57,000
	U.S. Fish and Wildlife Service	Consultation for bridge construction	\$3,000	\$3,000
	Federal Highway Administration	Funding for bridge construction	\$8,000	\$8,000
	Private landowners within City of Watsonville	Technical Assistance	\$5,000	\$5,000
	Private landowners within Santa Cruz County	Technical Assistance	\$3,000	\$3,000
	U.S. Fish and Wildlife Service	Technical Assistance	\$8,000	\$8,000
<b>Unit I Total</b>			<b>\$288,000</b>	<b>\$288,000</b>

<b>Exhibit 3 (Continued)</b> <b>SUMMARY OF POTENTIAL SECTION 7 RELATED ECONOMIC IMPACTS</b> <b>WITHIN PROPOSED CRITICAL HABITAT FOR THE SANTA CRUZ TARPLANT</b> <b>(2002 TO 2012)</b>				
<b>Critical Habitat Unit</b>	<b>Affected Party</b>	<b>Potentially Affected Activity</b>	<b>Estimated Section 7 Cost</b>	<b>Cost Due to Critical Habitat</b>
Unit J, Casserly	Private landowners	Technical Assistance	\$4,000	\$4,000
	U.S. Fish and Wildlife Service	Technical Assistance	\$4,000	\$4,000
<b>Unit J Total</b>			<b>\$8,000</b>	<b>\$8,000</b>
Unit K, Elkhorn	Private landowner	None	None	None
<b>Unit K Total</b>			<b>None</b>	<b>None</b>
<b>DESIGNATION TOTAL</b>			<b>\$405,000</b>	<b>\$338,000</b>
Sources: IEC analysis based on conversations with personnel from U.S. Fish and Wildlife Service, California Department of Fish and Game, East Bay Regional Park District, California Air National Guard, California Department of Parks and Recreation, California Department of Transportation, the City of Watsonville, and Santa Cruz County.				

## 2.7 Potential Impacts to Small Businesses

54. 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).<sup>53</sup> 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.<sup>54</sup> 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. Accordingly, the following represents a screening level analysis of the potential effects of critical habitat designation on small entities to assist the Secretary in making this certification.

55. This analysis determines whether this critical habitat designation potentially affects a "substantial number" of small entities in counties supporting critical habitat areas. It also quantifies the probable number of small businesses that experience a "significant effect." While SBREFA does not explicitly define either "substantial number" or "significant effect,"

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<sup>53</sup> Regulatory Flexibility Act, 5 U.S.C. 601 et. seq.

<sup>54</sup> Thus, for a regulatory flexibility analysis to be required, impacts must exceed a threshold for "significant impact" **and** a threshold for a "substantial number of small entities." See 5 U.S.C. 605 (b).

the Small Business Administration (SBA) and other Federal agencies have interpreted these terms to represent an impact on 20 percent or more of the small entities in any industry and an effect equal to three percent or more of a business' annual sales.<sup>55</sup>

### 2.7.1 Estimated Number of Small Businesses Affected: The “Substantial Number” Test

56. Based on the past consultation history for the Santa Cruz tarplant, residential development is the primary activity anticipated to be affected by the designation of critical habitat that could affect small businesses. To be conservative, (i.e., more likely to overstate impacts than understate them), this analysis assumes that a unique company will undertake each of the projected consultations in a given year, and so the number of businesses affected is equal to the total annual number of consultations (both formal and informal).<sup>56</sup> This analysis also limits the universe of potentially affected entities to include only those within the counties in which critical habitat units lie; this interpretation produces far more conservative results than including all entities nationwide.

57. First, the *number* of small businesses affected is estimated. As shown in Exhibit 4, the following calculations yield this estimate:<sup>57</sup>

- Estimate the number of businesses within the study area affected by section 7 implementation annually (assumed to be equal to the number of annual consultations);
- Calculate the *percent* of businesses in the affected industry that are likely to be small;
- Calculate the *number* of affected small businesses in the affected industry;
- Calculate the *percent* of small businesses likely to be affected by critical

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<sup>55</sup> See U.S. Small Business Administration, *The Regulatory Flexibility Act: An Implementation Guide for Federal Agencies*, 1998. Accessed at: [www.sba.gov/advo/laws/rfaguide.pdf](http://www.sba.gov/advo/laws/rfaguide.pdf) on December 3, 2001.

<sup>56</sup> While it is possible that the same business could consult with the Service more than once, it is unlikely to do so during the one-year time frame addressed in this analysis. However, should such multiple consultations occur, they would concentrate effects of the designation on fewer entities. In such a case, the approach outlined here likely would overstate the number of affected businesses.

<sup>57</sup> Note that because these values represent the probability that small businesses will be affected during a one-year time period, calculations may result in fractions of businesses. This is an acceptable result, as these values represent the probability that small businesses will be affected.

habitat.

<b>Exhibit 3</b>	
<b>ESTIMATED ANNUAL NUMBER OF SMALL BUSINESSES AFFECTED BY CRITICAL HABITAT DESIGNATION: THE "SUBSTANTIAL" TEST</b>	
<b>Industry Name</b>	<b>Development/Real Estate- SIC 6552</b>
Annual number of businesses in industry affected by section 7 consultations	0.1
Total number of <i>all</i> businesses in industry within study area	286
Number of <i>small</i> businesses in industry within study area	267
Percent of businesses that are small (Number of small businesses)/(Total Number of businesses)	93%
Annual number of small businesses affected (Number affected businesses)*(Percent of small businesses)	0.1
<b>Annual percentage of small businesses affected</b> (Number of small businesses affected)/(Total number of small businesses); >20 percent is substantial	0.03%

58. This calculation reflects conservative assumptions and nonetheless yields an estimate that is still far less than the 20 percent threshold that would be considered “substantial.” As a result, this analysis concludes that a significant economic impact on a substantial number of small entities will not result from the designation of critical habitat for the Santa Cruz tarplant. Nevertheless, an estimate of the number of small businesses that will experience effects at a significant level is provided below.

**2.7.2 Estimated Effects on Small Businesses: The “Significant Effect” Test**

59. Costs of critical habitat designation to small businesses consist primarily of the cost of participating in section 7 consultations and the cost of project modifications. To calculate the likelihood that a small business will experience a significant effect from critical habitat designation for the Santa Cruz tarplant, the following calculations were made:

- Calculate the per-business cost. This consists of the unit cost to a third party of participating in a section 7 consultation (formal or informal) and the unit cost of associated project modifications. *To be conservative, this analysis uses the high-end estimate for each cost.*
- Determine the amount of annual sales that a company would need to have for this per-business cost to constitute a “significant effect.” This is calculated by dividing

the per-business cost by the three percent “significance” threshold value.

- Estimate the likelihood that small businesses in the study area will have annual sales equal to or less than the threshold amount calculated above. This is estimated using national statistics on the distribution of sales within industries.<sup>58</sup>
- Based on the probability that a single business may experience significant effects, calculate the expected value of the number of businesses likely to experience a significant effect;
- Calculate the percent of businesses in the study area within the affected industry that are likely to be affected significantly.

60. Calculations for costs associated with designating critical habitat for the Santa Cruz tarplant are provided in Exhibit 5 below.

<b>Exhibit 5</b>	
<b>ESTIMATED ANNUAL EFFECTS ON SMALL BUSINESSES: THE “SIGNIFICANT EFFECT” TEST</b>	
<b>Industry</b>	<b>Development/Real Estate- SIC 6552</b>
Annual Number of Small Businesses Affected (from Exhibit 4)	0.1
Per-Business Cost	\$17,000
Level of Annual Sales Below which Effects Would Be Significant	\$567,000
Probability that Per-Business Cost is Greater Than 3% of Sales for Small Business	25%
Probable Annual Number of Small Businesses Experiencing Significant Effects (Number Small Businesses)* (Probability of Significant Effect)	0.02
<b>Annual Percentage of Small Businesses Bearing Significant Costs in Industry</b>	0%

61. Because the costs associated with designating critical habitat for the Santa Cruz tarplant are likely to be significant for 0.02 small businesses per year (approximately zero percent of the small businesses in the residential development industry) in the affected counties, this analysis concludes that a significant economic impact on a substantial number

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<sup>58</sup> This probability is calculated based on national industry statistics obtained from the Robert Morris Associated *Annual Statement of Studies: 2001-2002* and from comparison with the SBA definitions of small businesses.

of small entities will not result from the designation of critical habitat for the Santa Cruz tarplant. This would be true even if all of the effects of section 7 consultation on these activities were attributed solely to the critical habitat designation.

## 2.8 **Benefits**

62. To determine the benefits of the critical habitat designation of the Santa Cruz tarplant, 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.
63. 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 Santa Cruz tarplant while on a hike, or the recreational use of habitat area preserved as a result of the Santa Cruz tarplant. 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.
64. The following examples represent benefits derived from the listing of the Santa Cruz tarplant and, potentially, critical habitat:
- C **Ecosystem health.** Absent the Santa Cruz tarplant, other natural organisms may suffer. Actions to protect the Santa Cruz tarplant may also benefit other organisms. Each one of these organisms may provide some level of direct or indirect benefit to people.
  - C **Real estate value effects.** Real estate values of land within and adjacent to critical habitat may be enhanced by the 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.
  - C **Flood control.** Preserving natural environments can also reduce FEMA and county expenditure on bank stabilization and other flood control programs.
65. The benefits identified above arise primarily from the protection afforded to the Santa Cruz tarplant 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 Santa Cruz tarplant 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 Santa Cruz tarplant will recover. Critical habitat also provides a legal definition of the extent of Santa Cruz tarplant 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.

66. The quantification of total economic benefits attributable to 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 Santa Cruz tarplant 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 Santa Cruz tarplant. While such a scenario is unlikely, such a hypothetical project modification would bear the entire economic value of the listing of the Santa Cruz tarplant as mentioned above. Alternatively, additional consultations attributable to 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 Santa Cruz tarplant would be limited to the educational benefits, increased support for existing conservation efforts, and reduced uncertainty regarding the extent of Santa Cruz tarplant habitat. In all likelihood, the actual benefits of the designation of critical habitat for the Santa Cruz tarplant will lie in between the benefits presented in these extreme examples.