

FINAL REPORT

ECONOMIC ANALYSIS OF CRITICAL HABITAT DESIGNATION FOR THE VENTURA MARSH MILK-VETCH

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I. INTRODUCTION AND BACKGROUND

1. On October 9, 2002, the U.S. Fish and Wildlife Service (Service) proposed designating critical habitat for one plant species—the Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*)—on 420 acres of land in Santa Barbara and Ventura counties, California. The purpose of this report is to identify and analyze the potential economic effects associated with this designation. This report was prepared by Economic & Planning Systems, Inc. (EPS), under subcontract to Industrial Economics, Incorporated (IEc), under contract to the Service’s Division of Economics.
2. Section 4(b)(2) of the Endangered Species Act (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 currently construed as any direct or indirect alteration that appreciably diminishes the value of critical habitat for conservation of a listed species.

II. METHODS AND DATA

FRAMEWORK FOR ANALYSIS

4. This economic analysis considers both the economic efficiency and distributional effects associated with the designation. This information is intended to assist the Secretary in determining whether the benefits of excluding particular areas from the designation outweigh the benefits of including those areas in designation.¹ In addition, this information allows the Service to address the requirements of Executive Orders 12866 and 13211, and the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA).² This report also complies with direction from the U.S. 10th Circuit Court of Appeals that, when deciding which areas to designate as critical habitat, the economic analysis informing that decision should include “co-extensive” effects.³ A full discussion of the framework and methodological approach used by the Service to assess the impacts of critical habitat is attached in the Appendix. A summary of the relevant cost elements of this analysis, including efficiency effects resulting from direct compliance costs, and indirect costs associated with habitat conservation plans (HCPs) and triggered effects; and distributional effects associated with potential impacts to small businesses; is provided below.

5. The measurement of direct compliance costs focuses on the implementation of section 7 of the Act. This section requires Federal agencies to consult with the Service to ensure 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. The administrative costs of these consultations, along with the costs of project modifications resulting from these consultations, represent direct compliance costs.

¹ 16 U.S.C. §1533(b)(2).

² Executive Order 12866, “Regulatory Planning and Review,” September 30, 1993; Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” May 18, 2001; 5 U.S.C. §§601 *et seq.*; and Pub. Law No. 104-121.

³ In 2001, the U.S. 10th Circuit Court of Appeals instructed the Service to conduct a full analysis of all of the economic impacts of proposed critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes (*New Mexico Cattle Growers Ass’n v. U.S.F.W.S.*, 248 F.3d 1277 (10th Cir. 2001)).

6. To quantify direct compliance costs, 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 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.
7. Additional, indirect costs may be incurred under section 10 of the Act, which requires landowners proposing activities that do not have a Federal nexus to obtain incidental take permits for activities resulting in “take” of threatened or endangered species. An HCP must accompany each incidental take permit application. The purpose of the habitat conservation planning process is to ensure that the effects of incidental take are adequately minimized and mitigated. As such, HCPs are generally developed to meet the requirements of sections 9 and 10 of the Act.
8. However, a connection may exist between the creation of an HCP (and the costs these actions impose) and designation of critical habitat. For example, in some cases landowners may complete HCPs in order to be omitted from critical habitat designation. Similarly, because the HCP process includes the issuance of a Federal permit (i.e., the incidental take permit), the Service is required to conduct an intra-agency (i.e., internal) section 7 consultation as part of the process. Because no new HCPs are reasonably foreseeable within the boundaries of the proposed critical habitat for the Ventura marsh milk-vetch, HCP-related costs are not anticipated in association with this designation.⁴
9. Indirect costs may also be incurred if the designation of critical habitat provides new information to a community about the sensitive ecological nature of a geographic region, potentially triggering additional economic impacts under other State or local laws. In cases where these costs would not have been triggered “but for” the designation of critical habitat, they should be included in this analysis. The proposed designation for the Ventura marsh milk-vetch is not anticipated to result in additional State requirements related to the California Coastal Commission, California Environmental Quality Act (CEQA), or the California Environmental Protection Agency (Cal/EPA). Because the single project impacted by the proposed designation has already received necessary approval by the City of Oxnard and the California Coastal Commission, additional review under CEQA is not required. In addition, the City of Oxnard has approved the project and adopted an environmental impact report. Therefore, new information will not affect remediation activities on the site.

⁴*Proposed Designation of Critical Habitat for the Ventura marsh milk-vetch*, October 9, 2002 (67 FR 62927).

10. The measurement of direct and indirect costs focuses on the net impact of the regulation to society, without consideration for how certain aspects of economic sectors or groups of people are affected. Thus, a discussion of efficiency effects alone may miss important distributional considerations concerning groups that may be disproportionately affected. Therefore, this analysis also considers how small entities, including small businesses, organizations, and governments, as defined by the RFA, might be affected by critical habitat designation and other co-extensive regulations.⁵ In addition, in response to Executive Order 13211 “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” this analysis considers potential impacts on the energy industry and its customers.
11. This report estimates impacts 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, this analysis lists and describes all development projects that are “reasonably foreseeable,” and that occur within a 10-year time horizon. Such activities include, but are not limited to, projects that are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. Proposals for land improvement projects on specific parcels are often unavailable for time periods extending beyond 10 years. As the time horizon is expanded, the assumptions on which the projected numbers of projects are based become increasingly speculative. The appendix of this report provides additional detail about the methodological approach used to conduct this analysis.

INFORMATION SOURCES

12. This analysis relies on input and information supplied by staff from the Service, State of California Department of Parks and Recreation (CDPR), California Department of Fish and Game, U.S. Army Corps of Engineers (ACOE), City of Oxnard Planning Department, County of Ventura Planning Department, and the County of Ventura Parks and Recreation Department.

⁵ 5 U.S.C. § 601 *et seq.*

III. PROPOSED CRITICAL HABITAT AND LAND USES

DESCRIPTION OF SPECIES AND HABITAT

13. The Ventura marsh milk-vetch is a perennial herb in the pea family that has a reddish stem and greenish-white clustered flowers that are in bloom from July to October.⁶ Historical records suggest that the Ventura marsh milk-vetch was known to generally inhabit low-elevation coastal dune-swale areas. The only known extant population of the species occurs on a sparsely vegetated site previously used for disposal of petroleum waste products in the City of Oxnard, California.

14. 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 the Ventura marsh milk-vetch. Primary constituent elements for the Ventura marsh milk-vetch include:
 - Vegetation cover of anywhere from 50 to 75 percent that consists primarily of associated native species;
 - Low densities of native and non-native annual plants and shrubs, not exceeding 75 percent;
 - The presence of a high water table, either fresh or brackish, as evidenced by the presence of channels, sloughs, or depressions;
 - Soils that are fine-grained, composed primarily of sand with some composed primarily of sand with some clay, yet are well-drained; and,
 - Soils that do not exhibit a white crystalline crust that would indicate saline or alkaline conditions.

⁶ Information on the Ventura marsh milk-vetch and its habitat comes from the *Proposed Designation of Critical Habitat for the Ventura marsh milk-vetch*, October 9, 2002 (67 FR 62927).

PROPOSED CRITICAL HABITAT AND EXISTING LAND USES

15. The Service has proposed three units of critical habitat for the Ventura marsh milk-vetch on approximately 420 acres of private and state-owned lands in Ventura and Santa Barbara Counties.
16. Ventura County is located directly to the south of Santa Barbara County along the southern coast of California. To the southeast of both is Los Angeles County. The topographies of Santa Barbara and Ventura counties range from sandstone bluffs to ocean lagoons and mountainous areas. Santa Barbara and Ventura counties enjoy a relatively consistent mild and sunny climate year-round.⁷
17. Three habitat units, two in Ventura County and one in Santa Barbara County, totaling 420 acres, have been proposed for the Ventura marsh milk-vetch. The only known extant population of the species occurs on one of the three units. A five-acre portion of this unit houses the single extant natural population of the Ventura marsh milk-vetch, but the population is likely to be extirpated by direct and indirect effects of an approved housing development.⁸
18. The unit on which the extant population lives includes state-owned property where a research population of the species has been placed. Because there is a low probability of long-term survival for the remaining natural population of the Ventura marsh milk-vetch, the Service has proposed critical habitat containing three such reintroduction sites, one of which is within the unit containing the extant population. Two sites are within the historical range of the species and one is not. All three sites, however, contain the primary constituent elements of critical habitat for the species and have been described in the proposed critical habitat regulation as essential to the long term conservation of the species. The remainder of this chapter describes each of the three habitat units in greater detail.

VENTURA MARSH MILK-VETCH HABITAT UNITS

19. The Mandalay unit covers 152 acres of the total proposed designated critical habitat and contains the only known extant population of the Ventura marsh milk-vetch. The state-owned Mandalay State Beach is managed by the Ventura County Parks and Recreation Department and comprises 49 acres of this unit.

⁷ 2001 County Snapshots, California Employment Development Department. Santa Barbara County: <http://www.calmis.ca.gov/file/COsnaps/santbSNAP.pdf> (Santa Barbara County); <http://www.calmis.ca.gov/file/COsnaps/ventuSNAP.pdf> (Ventura County).

⁸ *Proposed Designation of Critical Habitat for the Ventura marsh milk-vetch*, October 9, 2002 (67 FR 62927).

- One research population of Ventura marsh milk-vetch has been introduced on the Mandalay State Beach, which is directly across the street from the extant population. The remaining 103 acres, on which the extant population lives, is privately owned and has been chosen as the site for a 300 housing unit subdivision called the North Shore at Mandalay Bay. The site currently is undeveloped and must undergo extensive cleanup of petroleum waste before the proposed housing development can commence.⁹ The cleanup of the site will be overseen by the Los Angeles District Water Quality Control Board.¹⁰
20. A Final Environmental Impact Report for the North Shore at Mandalay housing development was approved by the City of Oxnard in 1998. The project was also approved by the California Coastal Commission in April 2002, as the site is located within the city's coastal zone.¹¹ Additional approval under the CEQA is not required. The approved project includes a five-acre preserve for the Ventura marsh milk-vetch.¹²
21. The McGrath unit includes 35 acres of private land and 27 acres of state-owned land that is operated by the CDPR. The 27 acres fall within the McGrath State Beach Park in unincorporated Ventura County. No construction projects are planned for McGrath State Beach Park.¹³ One research population has been introduced on this unit. The 35 acres of private land currently are undeveloped and County planning officials know of no development applications for this area. Planning officials at both Ventura County and the City of Oxnard were doubtful that subdivision or other land development approvals would occur in this area in the future because the land is currently zoned as open space and is located within the city's coastal zone. Therefore, any development application would be required to undergo extensive scrutiny by the California Coastal Commission before it could be approved. In addition, any residential or commercial

⁹ Marilyn Miller, Planning and Environmental Services Manager, City of Oxnard Planning Department, personal communication, November 8, 2002.

¹⁰ The Los Angeles Regional Water Quality Control Board is one of nine Regional Water Quality Control Boards (RWQCBs) under the State Water Resources Control Board of the California Environmental Protection Agency (EPA). The state's RWQCBs were given the authority to oversee the cleanup of petroleum spills as a result of a judicial agreement between the EPA's Department of Toxic Substances Control and the Regional Water Quality Control Boards. <http://www.dtsc.ca.gov/ContactDtsc/dofaqs.html>.

¹¹ *Proposed Designation of Critical Habitat for the Ventura marsh milk-vetch*, October 9, 2002 (67 FR 62927).

¹² The 5-acre preserve resulted from an agreement between the California Department of Fish and Game and the developer of the North Shore at Mandalay subdivision. The California Department of Fish and Game listed the Ventura marsh milk-vetch as a "candidate" species for endangered status under the California Endangered Species Act before the species was proposed for Federal listing as endangered by the U.S. Fish and Wildlife Service.

¹³ Barbara Fosbrink, CDPR, personal communication, October 11, 2002.

development requires that the land first be annexed to the City of Oxnard since it is also located within the city's urban reserve.¹⁴

22. The Carpinteria Salt Marsh unit is located in Santa Barbara County and consists of 205 acres of undeveloped salt-marsh land that is managed by the University of California, Santa Barbara. Future development is not planned for this site, because it is managed strictly as an ecological reserve by U.C. Santa Barbara.¹⁵ One research population of the Ventura marsh milk-vetch has been introduced at this site.

¹⁴ Sue Martin, Planner, City of Oxnard Planning Department, personal communication, December 17, 2002. Todd Collart, Senior Planner, Ventura County Planning Division, personal communication, December 18, 2002.

¹⁵ Rick Farris, Senior Biologist, U.S. Fish and Wildlife Service, personal communication, October 11, 2002.

IV. ECONOMIC IMPACTS

23. This chapter estimates the 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. Project modification costs are dependent on the type of activities in question. Consultation costs, however, are administrative in nature and, although conducted at variable levels of efforts, have more predictable unit costs.
24. 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.
25. No section 7 consultations are anticipated in any of the three proposed critical habitat units, and therefore costs associated with section 7 implementation are anticipated to be \$0.

POTENTIAL FEDERAL INVOLVEMENT

26. As stated earlier, only one development project is anticipated on the lands proposed for critical habitat designation for the Ventura marsh milk-vetch. The project involves a cleanup of petroleum toxic waste followed by the construction of approximately 300 homes. While both the cleanup and the construction were suspected to involve Federal agencies, it has been determined that neither will. Each potential Federal nexus is described below.
27. The cleanup of the Mandalay unit will be overseen by the Los Angeles Regional Water Quality Control Board. The Regional Water Quality Control Board is an agency under the California Environmental Protection Agency (EPA). The Los Angeles Water Quality Control Board accepted the developer's offer to fund 100 percent of the cost required to remediate the site. There might have been a Federal nexus had the U.S. EPA overseen or funded the cleanup. However, the EPA at the Federal level determined that the state's provision over the site cleanup was sufficient, and therefore chose not to become involved.¹⁶

¹⁶ Officials at the U.S. Fish and Wildlife Office (Ventura field office) contacted the U.S. EPA and learned that since the U.S. EPA determined that the cleanup of the Mandalay site under the provision of the Cal/EPA was adequate, the Federal EPA would not get involved. Rick Farris, Senior Biologist, U.S. Fish and Wildlife Service, personal communication, December 19, 2002. Sue Martin, Associate Planner, City of Oxnard Planning Department, personal communication, December 17, 2002. Todd Collart, Senior Planner, Ventura County Planning Division, personal communication, December 18, 2002.

28. The ACOE was also not involved in the North Shore at Mandalay Bay housing project. A 404 permit under the Clean Water Act for this development project would have been another possible Federal nexus, as 404 permits as required when proposed developments impact creeks, certain types of wetlands, or other “waters of the U.S.” The North Shore at Mandalay Bay project did not require a Clean Water Act 404 permit, because wetlands on the project site are not within the ACOE’ jurisdiction over waters of the U.S.¹⁷ In addition, the City of Oxnard has approved the project and adopted an Environmental Impact Report. Therefore, new information will not affect remediation activities on the site.
29. The proposed designation for the Ventura marsh milk-vetch is not anticipated to result in additional State requirements related to the California Coastal Commission, CEQA, or Cal/EPA. Because the single project impacted by the proposed designation has already received necessary approval by the City of Oxnard and the California Coastal Commission, additional review under CEQA is not required.

POTENTIAL IMPACTS TO SMALL BUSINESSES

30. Under the RFA (as amended by SBREFA), 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 governmental jurisdictions).¹⁸ 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.¹⁹ SBREFA amended the RFA 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.
31. The proposed critical habitat designation for the Ventura marsh milk-vetch will not affect a single entity. 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 this species.

¹⁷ Bruce Henderson, ACOE, personal communication, November 5, 2002.

¹⁸ 5 U.S.C. 601 et. seq.

¹⁹ 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.”

POTENTIAL IMPACTS ON ENERGY SUPPLY, DISTRIBUTION, OR USE

32. Pursuant to Executive Order No. 13211, "Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use," issued May 18, 2001, Federal agencies must prepare and submit a "Statement of Energy Effects" for all "significant energy actions." The purpose of this requirement is to ensure that all Federal agencies "appropriately weigh and consider the effects of the Federal Government's regulations on the supply, distribution, and use of energy."²⁰ Energy supply, distribution, and use is not anticipated to be effected by the designation of cervical habitat or other, co-extensive regulations.

²⁰ Memorandum For Heads of Executive Department Agencies, and Independent Regulatory Agencies, Guidance For Implementing E.O. 13211, -01-27, OMB, July 13, 2001, <http://www.whitehouse.gov/omb/memoranda/m01-27.html>.

V. BENEFITS OF CRITICAL HABITAT DESIGNATION

33. The published economics literature has documented that real social welfare benefits can result from the conservation and recovery of endangered and threatened species (Bishop [1978, 1980], Brookshire and Eubanks [1983], Boyle and Bishop [1986], Hageman [1985], Samples *et al.* [1986], Stoll and Johnson [1984]). Such benefits have also been ascribed to preservation of open space and biodiversity (see examples in Pearce and Moran [1994] and Fausold and Lillieholm [1999]), both of which are associated with species conservation. Likewise, regional economies can benefit from the preservation of healthy populations of endangered and threatened species, and the habitat on which these species depend.
34. The primary goal of the Act is to enhance the potential for species recovery. Thus, the benefits of actions taken under the Act are primarily measured in terms of the value the public places on species preservation (e.g., avoidance of extinction and/or an increase in a species' population). Such social welfare values may reflect both use and non-use (i.e., existence) values. For example, use values might include non-consumptive recreational use of a species (i.e., viewing opportunities), or the potential for consumptive uses should recovery be achieved. Non-use values are not derived from direct use of the species, but instead reflect the utility the public derives from knowledge that a species continues to exist.
35. In addition, as a result of actions taken to preserve endangered and threatened species, various other benefits may accrue to the public. Such benefits may be a direct result of modifications to projects made following section 7 consultation, or may be collateral to such actions. For example, as a result of section 7 consultation, a landowner may preserve open space that would otherwise have been developed. The preservation of open space may provide the collateral benefits of preserving habitat for other species and enhancing nearby residential property values.
36. In the case of the Ventura marsh milk-vetch, no future section 7 consultations are predicted in the time frame of this analysis. Therefore, activities taking place within the boundaries of proposed critical habitat are not expected to be affected by this rulemaking, and benefits associated with the proposed designation are limited. Critical habitat may provide informational benefits by identifying and mapping known occurrences of the species. However, it is not feasible to quantify the magnitude of these benefits in the context of this economic analysis.

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APPENDIX

1. This appendix provides a detailed discussion of the framework and methodology applied by the Service in the estimation of the economic impacts, including co-extensive effects, associated with critical habitat.

FRAMEWORK FOR THE ANALYSIS

2. The primary purpose of this analysis is to estimate the economic impact associated with the designation of critical habitat for the Ventura marsh milk-vetch.²¹ This information is intended to assist the Secretary in making decisions about whether the benefits of excluding particular areas from the designation outweigh the benefits of including those areas in the designation.²² In addition, this information allows the Service to address the requirements of Executive Orders 12866 and 13211 and the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA).²³
3. This section provides the framework for this analysis. First, it defines the economic effects considered in the analysis. Second, it establishes the baseline against which these effects are measured. Third, it describes the measurement of direct compliance costs, which include costs associated with, and generated as a result of, section 7 consultations. Fourth, it identifies potential indirect economic effects of the rule resulting from (1) compliance with other parts of the Act potentially triggered by critical habitat, (2) compliance with other laws, and (3) time delays and regulatory uncertainty. Fifth, it discusses the need for an economic assessment of the benefits of critical habitat designation. Finally, the section concludes by discussing the time frame for the analysis and the general steps followed in the analysis.

²¹ This analysis considers the effects of the regulatory action as proposed in the Federal Register on March 14, 2003 (68 *Federal Register* 12326, March 14, 2003).

²² 16 U.S.C. § 1533(b)(2).

²³ Executive Order 12866, "Regulatory Planning and Review," September 30, 1993; Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," May 18, 2001; 5 U.S.C. § 601 *et seq*; and Pub Law No. 104-121.

TYPES OF ECONOMIC EFFECTS CONSIDERED

4. This economic analysis considers both the economic efficiency and distributional effects. In the case of critical habitat designation, economic efficiency effects generally reflect the “opportunity costs” associated with the commitment of resources required to comply with the Act. For example, if the activities that can take place on a parcel of private land are limited as a result of a designation, and thus the market value of the land reduced, this reduction in value represents one measure of opportunity cost or change in economic efficiency. Similarly, the costs incurred by a Federal action agency to consult with the Service under section 7 represent opportunity costs of the designation.
5. This analysis also addresses how the impacts are distributed, including an assessment of any local or regional economic impacts and the potential effects on small entities and the energy industry. This information can be used by decision-makers to assess whether the effects of the designation might unduly burden a particular group or economic sector.
6. For example, while the designation may have a relatively small impact when measured in terms of changes in economic efficiency, individuals employed in a particular sector of the economy in the geographic area of the designation may experience relatively greater effects. The difference between economic efficiency effects and distributional effects, as well as their application in this analysis, are discussed in greater detail below.

Efficiency Effects

7. At the guidance of the Office of Management and Budget (OMB) and in compliance with Executive Order 12866 “Regulatory Planning and Review,” Federal agencies measure changes in economic efficiency in order to understand how society, as a whole, will be affected by a regulatory action.²⁴ In the context of this regulatory action, these efficiency effects represent the opportunity cost of resources used or benefits foregone by society as a result of critical habitat designation and other co-extensive regulations.²⁵ Economists generally characterize opportunity costs in terms of changes in producer and consumer surpluses in affected markets.²⁶ In some instances, compliance costs may provide

²⁴ Executive Order 12866, “Regulatory Planning and Review,” September 30, 1993; U.S. Office of Management and Budget, “Circular A-4,” September 17, 2003.

²⁵ The term “co-extensive” is discussed in greater detail in Section 1.3.3.

²⁶ For additional information on the definition of “surplus” and an explanation of consumer and producer surplus in the context of regulatory analysis, see Gramlich, Edward M., *A Guide to Benefit-Cost Analysis (2nd Ed.)*, Prospect Heights, Illinois: Waveland Press, Inc., 1990; and U.S. Environmental Protection Agency, *Guidelines for Preparing Economic Analyses*, EPA 240-R-00-003, September 2000, available at

- a reasonable approximation for the efficiency effects associated with a regulatory action. For example, a landowner or manager may need to enter into a consultation with the Service to ensure that a particular activity will not adversely modify critical habitat. The effort required for the consultation represents an economic opportunity cost, because the landowner or manager's time and effort would have been spent in an alternative activity had the parcel not been included in the designation. When compliance activity is not expected to significantly affect markets -- that is, not result in a shift in the quantity of a good or service provided at a given price, or in the quantity of a good or service demanded given a change in price -- the measurement of compliance costs can provide a reasonable estimate of the change in economic efficiency.
8. Where a designation is expected to significantly impact a market, it may be necessary to estimate changes in producer and consumer surpluses. For example, a designation that precludes the development of large areas of land may shift the price and quantity of housing supplied in a region. In this case, changes in economic efficiency can be measured by considering changes in producer and consumer surplus in the real estate market.
 9. This analysis begins by measuring reasonably foreseeable compliance costs. As noted above, in some cases, compliance costs can provide a reasonable estimate of changes in economic efficiency. However, if the designation is expected to significantly impact markets, the analysis will consider potential changes in consumer and/or producer surplus in affected markets.

Distributional and Regional Economic Effects

10. Measurements of changes in economic efficiency focus on the net impact of the regulation, without consideration for how certain economic sectors or groups of people are affected. Thus, a discussion of efficiency effects alone may miss important distributional considerations concerning groups that may be disproportionately affected. OMB encourages Federal agencies to consider distributional effects separately from efficiency effects.²⁷ This analysis considers several types of distributional effects, including impacts on small entities; impacts on energy supply distribution and use; and regional economic impacts. It is important to note that these are fundamentally different measures of economic impact than efficiency effects, and thus cannot be added to or compared with estimates of changes in economic efficiency.

<http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html>.

²⁷ Office of Management and Budget, "Draft 2003 Report to Congress on the Costs and Benefits of Federal Regulations; Notice" 68 *Federal Register* 5492, February 3, 2003.

Impacts on Small Entities and Energy Supply, Distribution and Use

11. This analysis considers how small entities, including small businesses, organizations, and governments, as defined by the RFA, might be affected by critical habitat designation and other co-extensive regulations.²⁸ In addition, in response to Executive Order 13211 “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” this analysis considers the impacts of critical habitat on the energy industry and its customers.²⁹

Regional Economic Effects

12. Regional economic impact analysis provides an assessment of the potential localized effects. Specifically, regional economic impact analysis produces a quantitative estimate of the potential magnitude of the initial change in the regional economy resulting from a regulatory action. Regional economic impacts are commonly measured using regional input/output models. These models rely on multipliers that mathematically represent the relationship between a change in one sector of the economy (e.g., hydroelectric power generation) and the effect of that change on economic output, income, or employment in other local industries (e.g., manufacturers relying on the electricity generated). These economic data provide a quantitative estimate of the magnitude of shifts of jobs and revenues in the local economy.
13. The use of regional input/output models can overstate the long-term impacts of a regulatory change. Most importantly, these models provide a static view of the economy of a region. That is, they measure the initial impact of a regulatory change on an economy but do not consider long-term adjustments that the economy will make in response to this change. For example, these models provide estimates of the number of jobs lost as a result of a regulatory change, but do not consider re-employment of these individuals over time. In addition, the flow of goods and services across the regional boundaries defined in the model may change as a result of the designation, compensating for a potential decrease in economic activity within the region.
14. Despite these and other limitations, in certain circumstances regional economic impact analysis may provide useful information about the scale and scope of localized impacts. It is important to remember that measures of regional economic effects generally reflect shifts in resource use rather than efficiency losses. These types of distributional effects, therefore, should be reported separately from efficiency effects (i.e., not summed). In addition, measures of regional economic

²⁸ 5 U.S.C. § 601 *et seq.*

²⁹ Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” May 18, 2001.

impact cannot be compared with estimates of efficiency effects. In the case of the Ventura marsh milk-vetch, no future regional economic impacts are anticipated.

DEFINING THE BASELINE

15. The purpose of this analysis is to measure the economic impact of compliance with the protections derived from the designation of critical habitat, including habitat protections that may be co-extensive with the listing of the species. Economic impacts to land use activities may exist in the absence of co-extensive protections. These impacts may result from, for example:
 - Local zoning laws;
 - State natural resource laws; and
 - Enforceable management plans and best management practices applied by other State and Federal agencies.
16. Economic impacts that result from these types of protections are not included in this assessment; they are considered to be part of the “baseline.” Existing laws, regulations, and policies are described in greater detail in Section 2.3 of this analysis.

DIRECT COMPLIANCE COSTS ASSOCIATED WITH SECTION 7 OF THE ACT

17. The measurement of direct compliance costs focuses on the implementation of section 7 of the Act. This section requires Federal agencies to consult with the Service to ensure 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. The administrative costs of these consultations, along with the costs of project modifications resulting from these consultations, represent direct compliance costs.
18. This analysis does not differentiate between consultations that result from the listing of the species (i.e., the jeopardy standard) and consultations that result from the presence of critical habitat (i.e., the adverse modification standard). Consultations resulting from the listing of the species, or project modifications meant specifically to protect to the species as opposed to its habitat, may occur even in the absence of critical habitat. However, in 2001, the U.S. 10th Circuit Court of Appeals instructed the Service to conduct a full analysis of all of the economic impacts of critical habitat designation, regardless of whether those

impacts are attributable co-extensively to other causes.³⁰ Given the similarity in regulatory definitions between the terms “jeopardy” and “adverse modification,” in practice it can be difficult to pre-determine the standard that drives a section 7 consultation. Consequently, in an effort to ensure that this economic analysis complies with the instructions of the 10th Circuit as well as to ensure that no costs of the proposed designation are omitted, the potential effects associated with **all** section 7 impacts in or near proposed critical habitat are fully considered. In doing so, the analysis ensures that any critical habitat impacts that are co-extensive with the listing of the species are not overlooked.

INDIRECT COSTS

19. A designation may, under certain circumstances, affect actions that do not have a Federal nexus and thus are not subject to the provisions of section 7 under the Act. The potential exists for several types of such indirect effects: three examples are discussed in this section. First, some landowners may voluntarily elect to complete a habitat conservation plan (HCP) in response to having their land designated as critical habitat. Second, some State laws may require landowners and managers to consider the effects of their actions on sensitive species and habitat. Thus, designation of critical habitat could trigger additional regulatory burden due to new information provided by the designation. Third, the consultation process may result in time delays for upcoming or ongoing projects, and the designation may foster regulatory uncertainty for prospective projects. The three most common categories of indirect effects are discussed further below.

Creation of Habitat Conservation Plans (HCPs)

20. No HCPs exist or are anticipated within the boundaries of this proposed designation. Therefore, HCP-related costs are not an issue in this analysis. However, such costs may be a factor in other economic analyses of proposed critical habitat designations for other species, so this methodological discussion has been retained.
21. Under section 10(a)(1)(B) of the Act, a non-Federal entity (i.e., a landowner or local government) may develop an HCP for an endangered animal species in order to meet the conditions for issuance of an incidental take permit in connection with the development and management of a property.³¹ The HCP intends to counterbalance potential harmful effects that a proposed activity may have on a species, while allowing the otherwise lawful activity to proceed. As

³⁰ *New Mexico Cattle Growers Ass’n v. U.S.F.W.S.*, 248 F.3d 1277 (10th Cir. 2001).

³¹ U.S. Fish and Wildlife Service, “Endangered Species and Habitat Conservation Planning.” From: <http://endangered.fws.gov/hcp/>, as viewed on August 6, 2002. Sections 9 and 10(a)(1)(B) of the Act do not apply to plants.

- such, the purpose of the habitat conservation planning process is to ensure that the effects of incidental take are adequately minimized and mitigated. Thus, HCPs are developed to ensure compliance with section 9 of the Act and to meet the requirements of section 10 of the Act.
22. However, a connection may exist between the creation of HCPs and the costs these plans impose and the designation of critical habitat. The Service, being a Federal entity, must formally consider whether an HCP will jeopardize a listed species or adversely modify its designated critical habitat before approving the plan. This review process may be a direct impact under section 7 of the Act. However, in certain circumstances, the effort involved in creating the HCP and associated conservation actions may also generate indirect effects associated with the designation of critical habitat. For example, in one past instance, landowners preemptively developed HCPs in an effort to avoid having their property designated as critical habitat.³² In this case, the effort involved in creating the HCP and undertaking associated conservation actions were considered to be an effect of designation.
23. The following scenarios regarding HCP creation provide general guidance regarding the degree to which associated costs should be considered within the context of a critical habitat economic analysis:
- In cases in which an HCP existed prior to a proposed designation, the costs of developing the HCP and the added costs of management imposed by the HCP **should not be** considered in the analysis of the effects of the designation. These costs are appropriately considered to be part of the regulatory baseline, because their creation was driven by the listing of the species and the need to avoid take, which is prohibited under section 9 of the Act. However, in cases where designated critical habitat overlaps with completed HCPs, the economic analysis will need to consider the cost to the Service to re-consult on the plan's impact to critical habitat and whether or not this process may result in additional conservation actions.
 - In cases in which an HCP is proposed, or reasonably foreseeable absent the designation of critical habitat, the administrative costs associated with the required internal section 7 consultation **should be** included in the economic analysis of total section 7 costs, because the Service will need to consider the effects of the plan on designated critical habitat. In addition, if as a result of the designation additional project modifications will be recommended

³² See Industrial Economics, Incorporated, *Economic Analysis of Critical Habitat Designation for the Nine Bexar County Texas Invertebrate Species*, prepared for the U.S. Fish and Wildlife Service, March 3, 2003.

by the Service and incorporated into the HCP in order to avoid adversely modifying critical habitat, the costs of these project modifications **also should be** included in the economic analysis of critical habitat.³³

- In cases in which development of one or more HCPs can be documented as being precipitated by critical habitat designation (i.e., to avoid designation or to reduce the costs of the designation), the costs of development of the HCP and the added costs of management imposed by the HCP **should be** included in the critical habitat economic analysis. In such cases the analysis should be presented with appropriate caveats as to the uncertainty regarding the extent to which the HCP would have existed absent critical habitat designation.

24. As previously stated, no current or proposed HCPs are located within the boundaries of this proposed designation, as the proposed habitat is located on Federal land.

Other State and Local Laws

25. Under certain circumstances, the designation of critical habitat may provide new information to a community about the sensitive ecological nature of a geographic region, potentially triggering additional economic impacts under other State or local laws. In cases where these costs would not have been triggered “but for” the designation of critical habitat, they are included in this economic analysis. Because the only proposed project within the area of the proposed designation has already received State and local approval, costs resulting from the triggering of State and local laws are not anticipated. However, such costs may be a factor in other economic analyses of proposed critical habitat designations for other species, so this methodological discussion has been retained.

26. Under other circumstances, one example where such costs may be incurred is for those designations located in California. The CEQA requires that lead

³³ Project modification costs associated with the jeopardy standard are not considered for the following reason. Section 10(a)(2)(B) of the Act requires that for the issuance of an incidental take permit, the HCP must assure that “the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.” According to the Service’s *Habitat Conservation Planning and Incidental Take Permit Processing Handbook*, “the wording of this criterion is identical to the “jeopardy” definition under the section 7 regulations (50 CFR Part 402.02)...Congress was explicit about this link, stating in the Conference Report on the 1982 ESA amendments that the Services will determine whether or not to grant a permit, “in part, by using the same standard as found in section 7(a)(2) of the ESA, as defined by the [Services’] regulations.” (U.S. Department of the Interior and U.S. Department of Commerce, *Habitat Conservation Planning and Incidental Take Permit Processing Handbook*, November 4, 1996). As a result, during the HCP process, actions undertaken to meet the jeopardy provision of section 7 are also required under section 10 of the Act. Therefore, in circumstances where an HCP is reasonably foreseeable absent the designation of critical habitat, these actions are considered to be part of the baseline of this economic analysis.

- agencies—public agencies responsible for project approval -- consider the environmental effects of proposed projects that are considered discretionary in nature and not categorically or statutorily exempt. Among other effects, the CEQA statutes specifically require lead agencies to consider a project's effects on rare or endangered plant and animal communities. To approve qualifying projects, lead agencies must require applicants, who are not "categorically exempt," to mitigate effects to less than significant levels for projects that are not granted a "statement of overriding considerations."³⁴
27. In some instances, the designation of critical habitat can have an indirect effect on CEQA-related requirements. This is most likely to occur in areas where the Federal designation provides clearer information on the importance of particular areas as habitat for a listed species. In addition, applicants who were "categorically exempt" from preparing an Environmental Impact Report under CEQA may no longer be exempt once critical habitat is designated. In cases where the designation triggers the CEQA significance test or results in a reduction of categorically exempt activities, associated costs are considered to be an indirect effect of the designation.
 28. In these and other cases in which costs are incurred by landowners and managers above and beyond what would be required under State or local law and policy in the absence of the designation, these costs are considered to be an indirect effect of the designation. As stated above, additional costs resulting from State and local laws are not anticipated for the project anticipated within the area proposed for designation for the Ventura marsh milk-vetch.

Time Delays and Regulatory Uncertainty

29. In addition to the indirect effects of compliance with other laws triggered by the designation, project proponents, land managers and landowners may face additional indirect impacts. These can include costs due to project delays associated with the consultation process or compliance with other regulations, or, in the case of land location within or adjacent to the designation, loss in property values due to regulatory uncertainty, and loss in property values resulting from public perceptions regarding the effects of critical habitat. These categories of potential effects are not anticipated, because the regulatory status of the single, anticipated development project is known with certainty, and no additional regulatory burden is required that could potentially delay the project. However, such costs may be a factor in other economic analyses of proposed critical habitat

³⁴ Article 19 of CEQA provides a list of categorical exemptions, which are descriptions of types of projects that usually do not have a significant effect on the environment (e.g., replacement or reconstruction of existing facilities, actions taken by regulatory agencies as authorized by State law or local ordinance to assure the maintenance, restoration, or enhancement of a natural resource.) (<http://ceres.ca.gov/ceqa/flowchart/exemptions/categorical.html>, as viewed on April 21, 2003.)

designations for other species, so this methodological discussion has been retained.

Time Delays

30. Both public and private entities may experience incremental time delays for projects and other activities due to requirements associated with the section 7 consultation process and/or compliance with other laws triggered by the designation. The need to conduct a section 7 consultation will not necessarily delay a project, as often the consultation may be coordinated with the existing baseline regulatory approval process. However, depending on the schedule of the consultation, a project may experience additional delays, resulting in an unanticipated extension in the time needed to fully realize returns from the planned activity. To the extent that delays result from the designation, they are considered in the analysis. Specifically, the analysis considers costs associated with any incremental time delays associated with section 7 consultation or other requirements triggered by the designation above and beyond project delays resulting from baseline regulatory processes.

Regulatory Uncertainty

31. The Service conducts each section 7 consultation on a case-by-case basis and issues a biological opinion on formal consultations based on species-specific and site-specific information. As a result, government agencies and affiliated private parties who need to consult with the Service under section 7 may face uncertainty concerning whether project modifications will be recommended by the Service and what the nature of these modifications will be. This uncertainty may diminish as consultations are completed and additional information becomes available on the effects of critical habitat on specific activities. However, a degree of regulatory uncertainty may persist. In some cases, this uncertainty may be incorporated by the project proponent into the costs of completing a proposed activity. For example, mining companies uncertain about potential restrictions to their activities in designated areas of critical habitat may lease mining rights at a reduced rate. Where appropriate, the analysis considers the potential costs associated with regulatory uncertainty.

Stigma

32. In some cases, the public may perceive that critical habitat designation may result in incremental changes to private property values, above and beyond those associated with anticipated project modifications and regulatory uncertainty described above. That is, the public may perceive that, all else being equal, a property that is designated as critical habitat will have lower market value than an identical property that is not within the boundaries of critical habitat. Public

attitudes about the limits and costs that critical habitat may impose can cause real economic effects to the owners of property, regardless of whether such limits are actually imposed. This effect will not result from the Ventura marsh milk-vetch designation, because the remaining, undeveloped portion of the proposed designation is protected as open space by other laws and regulations, or is managed as an ecological reserve by the University of California, Santa Barbara.

BENEFITS

33. The published economics literature has documented that real social welfare benefits can result from the conservation and recovery of endangered and threatened species. Such benefits have also been ascribed to preservation of open space and biodiversity, both of which are associated with species conservation. Likewise, regional economies and communities can benefit from the preservation of healthy populations of endangered and threatened species, and the habitat on which these species depend.
34. In Executive Order 12866, OMB directs Federal agencies to provide an assessment of costs and benefits of a proposed regulatory actions.³⁵ However, in its guidance for implementing Executive Order 12866, OMB acknowledges that often, it may not be feasible to monetize, or even quantify, the benefits of environmental regulations.³⁶ Where benefits cannot be quantified, OMB directs agencies to describe the benefits of a proposed regulation qualitatively. This report provides insight into the potential economic benefits of critical habitat designation based on information obtained in the course of developing the economic analysis. It is not intended to provide a complete analysis of all of the benefits that could result from the designation. *Given these limitations, the Service believes that the benefits of critical habitat designation are best expressed in biological terms that can be weighed against the expected cost impacts of the rulemaking.*

GENERAL ANALYTIC STEPS

35. This report relies on a sequential methodology and focuses on distilling the salient and relevant aspects of potential economic impacts. The steps followed in this analysis consist of:
 - Describing current and projected economic activity within and around the proposed critical habitat area;
 - Identifying whether such activities are likely to involve a Federal nexus;

³⁵ Executive Order 12866, "Regulatory Planning and Review," September 30, 1993.

³⁶ U.S. Office of Management and Budget, "Circular A-4," September 17, 2003.

- For activities with a Federal nexus, evaluating the likelihood that these activities will require consultations under section 7 of the Act and, in turn, result in any modifications to projects.
- Estimating the direct costs of expected section 7 consultations, project modifications and other economic impacts;
- Estimating the likelihood that current or future activities may require additional compliance with other Federal, State, and local laws as a result of new information provided by the proposed designation;
- Estimating the likelihood that projects will be delayed by the consultation process or other regulatory requirements triggered by the designation;
- Estimating the likelihood that economic activity will be affected by regulatory uncertainty, and/or property values affected;
- Estimating the indirect costs of the designation, as reflected in the cost of compliance with State and local laws, project delays, regulatory uncertainty, and effects on property values;
- Assessing the extent to which critical habitat designation and other co-extensive regulations will create costs for small businesses as a result of modifications or delays to projects;
- Assessing the effects of administrative costs and project modifications on the supply, distribution, and use of energy; and
- Determining the benefits that may be associated with the designation of critical habitat.