DRAFT ECONOMIC ANALYSIS OF CRITICAL HABITAT DESIGNATION FOR THE TIDEWATER GOBY

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

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Prepared by:

Robert E. Unsworth and Rebecca A. West
Industrial Economics, Incorporated
2067 Massachusetts Avenue
Cambridge, Massachusetts 02140

Send comments on the economic analysis to:

Field Supervisor
U.S. Fish and Wildlife Service
Carlsbad Fish and Wildlife Office
2730 Loker Avenue West
Carlsbad, CA 92008

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PREFACE

This report was prepared for the U.S. Fish and Wildlife Service (FWS) by Industrial Economics, Incorporated (IEc) to assess the economic impacts that may result from designation of critical habitat for the tidewater goby *(Eucyclogobius newberryi*). IEc worked closely with FWS personnel to ensure that both current and future land uses were appropriately identified and to assess whether or not the designation of critical habitat would have any net economic affect in the regions containing the proposed critical habitat designations. To better understand the concerns of stakeholders, IEc reviewed comments submitted by public stakeholders in response to the proposal to designate critical habitat for the goby. In some instances, IEc contacted stakeholders directly for additional information. After identifying current and planned land uses, IEc solicited input from FWS officials concerning whether or not any of these projects would likely result in an adverse modification determination without an accompanying jeopardy opinion. It is important to note here that it would not have been appropriate for IEc to make such policy determinations. Identification of these land management/use actions provided IEc with a basis for evaluating the incremental economic impacts due to critical habitat designation for the goby.

EXECUTIVE SUMMARY

The purpose of this report is to identify and analyze the potential economic impacts that would result from the proposed critical habitat designation for the tidewater goby (*Eucyclogobius newberryi*). This report was initially prepared by Industrial Economics, Incorporated (IEc), under contract to the U.S. Fish and Wildlife Service's Division of Economics.

The U.S. Department of the Interior's Fish and Wildlife Service (FWS) proposed designation of critical habitat for the tidewater goby on August 3, 1999 (64 FR 42250). Section 4(b)(2) of the Endangered Species Act (ESA) requires FWS to base critical habitat proposals 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. FWS may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species.

FWS has proposed eleven critical habitat units for the tidewater goby in the southern California counties of Orange and San Diego. The eleven units are comprised of coastal streams and their associated estuaries, lagoons, and marsh areas. The proposed critical habitat units include land owned or managed by the following groups:

- U.S. Department of Defense
- State of California, Department of Fish and Game
- Orange County
- Cities of Laguna Beach, Carlsbad, and Oceanside
- Private Owners

This analysis defines an impact of critical habitat designation to include any effect critical habitat designation has above and beyond the impacts associated with the listing of the goby. Section 9 of the ESA makes it illegal for any person to "take" a listed species, which is defined by the Act to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or the attempt to engage in any such conduct.[1] To evaluate the *increment* of economic impacts attributable to the critical habitat designation for the goby, above and beyond the ESA listing, the analysis assumes a “without critical habitat” baseline and compares it to a “with critical habitat” scenario.

[1] 15 U.S.C. 1531 et seq.

The difference between the two is a measurement of the net change in economic activity that may result from the designation of critical habitat for the goby.

The "without critical habitat" baseline represents current and expected economic activity under all existing modifications prior to critical habitat designation.[2] These include the take restrictions that result from the ESA listing as well as other Federal, state, and local requirements that may limit economic activities in the regions containing the proposed critical habitat units. For example, the U.S. Army Corp of Engineers will still need to consult with FWS on wetland development projects that may jeopardize the existence of a listed species, regardless of the critical habitat status of the parcel. While there may be both current and future impacts attributable to the listing of the goby, such impacts are not the subject of this analysis.

To estimate the incremental effect that critical habitat designation would have existing and planned activities, IEc used the following approach:

- We first collected information on current and planned land uses in proposed critical habitat areas for the goby;
- We then identified whether a Federal nexus to these activities exists; and
- Finally, we requested FWS opinion on: (1) whether each identified land use might be subject to modifications under the ESA listing for the goby; and (2) whether additional modifications might be imposed under the critical habitat designation.[3]

FWS staff in Carlsbad, CA and Washington, DC discussed potential land management/use actions identified by IEc and determined that, for the goby critical habitat designation, it is highly

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[2] In addition to Section 7 jeopardy rulings, listing a species may result in economic impacts attributable to Section 9 provisions regarding illegal take and Section 4(d) protective measures.

[3] To assess the incremental economic impacts of critical habitat designation for the goby, IEc required policy direction from FWS on what potential project modifications would be imposed as a result of critical habitat designation over and above those associated with the listing. It is important to note here that it would not be appropriate for IEc to make such a policy determination. IEc requested that FWS consider what land management/use within the proposed critical habitat designation for the goby might result in a determination of adverse modification (critical habitat effects) without an accompanying jeopardy opinion (listing effects). Identifying these land management/use actions provides IEc with a basis for evaluating the incremental economic impacts due to critical habitat designation for the goby.

unlikely that any action would result in an adverse modification determination without an accompanying jeopardy opinion. In other words, critical habitat designation for the goby is expected to result in no further modifications to proposed and existing activities *above and beyond modifications that already exist under the ESA listing* of the goby.

Although critical habitat designation is not expected to require any further project modifications beyond those required by the listing of the goby, government and private landowners may nonetheless incur *direct* costs resulting from critical habitat designation above and beyond those attributable to the listing of the goby as a threatened species. These costs include: (1) the value of time spent in conducting Section 7 consultations beyond those associated with the listing of the goby; and (2) delays in implementing public and private development activities, which may result in losses to individuals and society.

FWS has recognized that there are approximately three different scenarios associated with the designation of critical habitat that could trigger additional consultation costs: (1) some consultations that have already been "completed" may need to be reinitiated to address critical habitat; (2) consultations taking place after critical habitat designation may take longer because critical habitat issues will need to be addressed; and (3) critical habitat designation may result in some new consultations taking place that otherwise would not had critical habitat not been designated. Exhibit ES-1 summarizes the potential direct impacts of critical habitat designation for the goby on Federal, state, municipal, and private land uses and activities. These impacts are explored in greater detail in Section 4.

In addition, the designation of critical habitat results in economic benefits. Resource preservation or enhancement, which is aided by designation of critical habitat, may constitute an increase in non-recreational values provided directly by the species and indirectly by its habitat. Categories of potential benefits for the goby include enhancement of scenic beauty, biodiversity, ecosystems, and intrinsic (passive use) values.[4]

Small entities and communities potentially affected by critical habitat designation for the goby include small businesses operating within the proposed critical habitat designation and Native American lands. We reviewed current and proposed activities and did not identify any potential economic impacts to small businesses or Native American lands within the proposed critical habitat.

[4] Intrinsic values, also referred to as passive use values, include categories of economic benefits such as existence value, i.e., knowledge of continued existence of a resource or species; and bequest value, i.e., preserving the resource or species for future generations.

Exhibit ES-1

SUMMARY OF IMPACTS UNDER THE PROPOSED CRITICAL HABITAT DESIGNATION FOR THE TIDEWATER GOBY

Manager, Holder, or Owner of Land	Description of Current and Planned Land Uses or Activities That May Impact Suitable Habitat	Critical Habitat Unit(s) Potentially Affected	Possible Federal Nexus	Modifications Under the ESA Listing?*	*Additional* Modifications Under Critical Habitat Designation?*	Impacts From Critical Habitat Designation?
U.S. Department of Defense	Military training; amphibious vehicle training	9	Potential destruction of habitat	Possibly	No	Re-initiation of consultations
	Maintenance operations	9	Potential destruction of habitat	Possibly	No	Re-initiation of consultations
CA Dept. of Fish and Game	Construction of pedestrian boardwalk	10	Section 404 permit	Possibly	No	Consultations
	Construction of rails-to-trials bikeway	10	Section 404 permit	Possibly	No	Consultations
Municipalities of Laguna Beach, Carlsbad, &Oceanside	Removal and reinstallation of cement stream siding	1	Section 404 permit	Possibly	No	Consultations
	Structural changes to weir	10	Section 404 permit	Possibly	No	Consultations
Privately Owned Lands	Improvements to hotel facilities	1	Section 404 permit	Possibly	No	Consultations
	Operation of power plant	11	Permits for air emission, water discharge, and dredging	Possibly	No	Consultations
	Fish hatchery and stock research	11	Permits for water discharge	Possibly	No	Consultations

* Possible modifications are based on guidance from FWS staff in Carlsbad, CA office.
Sources: (1) Public comments received in response to the proposed critical habitat designation; (2) public hearings held on the proposed critical habitat designation; and (3) interviews with Federal, state, and local land management agency staff and private landowners.

INTRODUCTION SECTION 1

The U.S. Department of the Interior's Fish and Wildlife Service (FWS) published a proposed rule to list the tidewater goby (hereafter referred to as the "goby") as endangered on December 11, 1992 (57 FR 58770), under provisions of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531et seq.). Following a review of information and public comments received on the proposed rule, FWS elected to list the goby as an endangered species on March 7, 1994 (59 FR 5494).[5] ESA Section 4(a)(3) requires that, to the maximum extent prudent and determinable, FWS designate critical habitat at the time a species is listed. At that point in time, FWS determined that the necessary economic information to designate critical habitat was not available. As a result, critical habitat was deemed "not presently determinable," and FWS did not designate critical habitat.

On September 18, 1998, the Natural Resources Defense Council filed a lawsuit in Federal District Court against the U.S. Department of the Interior for failure to designate critical habitat for the goby. On April 5, 1999, a Senior U.S. District judge ordered that FWS publish a proposed critical habitat designation for the goby. As a result, FWS published a proposal to designate critical habitat for the tidewater goby on August 3, 1999.

Critical habitat designation can help focus conservation activities for a listed species by identifying areas, both "occupied" and "unoccupied", that contain or could develop essential habitat features for the species. FWS defines occupied critical habitat as areas that contain the physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. By contrast, FWS defines unoccupied critical habitat as

[5] On June 24, 1999, FWS published a proposed rule to remove the northern populations of the tidewater goby from protection under the ESA (64 FR 33816). This proposal was based on: (1) biological evidence that the northern tidewater goby populations were more numerous and stable than originally believed; and (2) information indicating that the tidewater goby populations in Orange and San Diego counties constituted a "distinct population segment" (DPS) that continued to be threatened. This proposal has not been finalized.

those areas that fall outside the geographical area occupied by the species at the time it is listed, but that may meet the definition of critical habitat upon determination that they are essential for the conservation of the species. Unoccupied lands proposed as critical habitat frequently include areas inhabited by the species at some point in the past.

The designation of critical habitat contributes to Federal land-management agencies' and the public's awareness of the importance of these areas. However, the designation of critical habitat will likely have no effect on private actions on private lands; it only applies where there is a Federal connection (or "nexus") to a land use or management action, such as funding, the requirement for a permit, or other Federal actions. Beyond its informational role, critical habitat designation may provide protection where significant threats to the species have been identified. This protection derives from the ESA Section 7, which requires Federal agencies to ensure that activities they fund, authorize, or carry out are not likely to jeopardize the continued existence of a listed species or result in destruction or adverse modification of critical habitat.

Consultation Under Section 7 of the Endangered Species Act

The designation of critical habitat directly affects only Federal agencies. Section 7 (a) of the Act requires Federal agencies to ensure that actions they fund, authorize, or carry out do not destroy or adversely modify critical habitat to the extent that the action appreciably diminishes the value of the critical habitat for the survival and recovery of the species. Individuals, organizations, States, local and tribal governments, and other non-Federal entities are only affected by the designation of critical habitat if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding. Thus, activities on Federal lands that may affect the goby or its critical habitat, if designated, will require section 7 consultation. Actions on private or State lands receiving funding or requiring a permit from a Federal agency also will be subject to the section 7 consultation process if the action may affect critical habitat. Federal actions not affecting the species or its critical habitat, as well as actions on non-Federal lands that are not federally funded or permitted, will not require section 7 consultation.

Federal agencies are required to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its proposed or designated critical habitat. Regulations implementing this interagency cooperation provisions of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act and regulations at 50 CFR 402.10 require Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of a proposed species or to result in destruction or adverse modification of proposed critical habitat. The ESA implementing regulations define jeopardy as any action that would appreciably reduce the likelihood of both the survival and recovery of the species. 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 the species. Determination of whether an activity will result in jeopardy to a species or adverse modification of its critical habitat is dependent on a number of variables, including type of project, size, location, and duration.

The conference is designed to assist the Federal agency and any applicant in identifying and resolving potential conflicts at an early stage in the planning process. A conference between a Federal agency and FWS may consist of informal discussions concerning an action that is likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of critical habitat. During the informal conference, FWS makes advisory recommendations, if any, on ways to minimize or avoid adverse effects. If agreement can be reached, FWS will concur in writing that the action, as revised, is not likely to adversely affect listed species or critical habitat.

A formal consultation is required if the action agency can not find, with FWS written concurrence, that the proposed action may affect, but is not likely to adversely affect listed species or critical habitat. Formal consultations determine whether a proposed agency action is likely to jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat. If FWS finds, in their biological opinion, that a proposed agency action is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify the critical habitat, FWS may identify reasonable and prudent alternatives that are designed to avoid such adverse effects to the listed species or critical habitat.

Reasonable and prudent alternatives are defined at 50 CFR 402.2 as alternative actions that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that we believe would avoid destruction or adverse modification of critical habitat. Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project.

Costs associated with implementing a reasonable and prudent alternative vary accordingly. FWS believes, however, that such costs would normally be associated with the listing of the goby, as it is unlikely that FWS would conclude that an action would destroy or adversely modify critical habitat without also jeopardizing the continued existence of a listed species. Thus, impacts attributable solely to critical habitat designation would result only when an activity adversely modifies critical habitat of the goby but does not jeopardize the goby.

Purpose and Approach of Report

Under Section 4(b)(2) of the ESA, the Secretary of the Interior is required to designate critical habitat on the basis of the best scientific and commercial data available and to consider the economic and other relevant impacts of designating a particular area as critical habitat. The Secretary may exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as critical habitat.

The purpose of this report is to identify and analyze the potential economic impacts that would result from the proposed critical habitat designation for the goby. The analysis was conducted by assessing how designation of critical habitat for the goby may affect current and planned land uses

and activities on Federal, state, county, municipal, and private land above that resulting from listing. To more finely focus our analysis of potential impacts of critical habitat for the goby, we primarily concentrate on current and proposed activities on lands classified by FWS as unoccupied. We base this decision on indication from FWS that any impacts to occupied lands would be attributable to the ESA listing of the goby.

For Federally managed land, critical habitat designation may modify land uses, activities, and other actions that threaten to adversely modify habitat. For state, county, municipal, and private land subject to critical habitat designation, modifications to land uses and activities can only be imposed when a "Federal nexus" exists (i.e., the activities or land uses of concern involve Federal permits, Federal funding, or other Federal actions). Activities on non-Federal public private land that do not involve a Federal nexus are not restricted by designation of critical habitat.

In addition to determining whether a Federal nexus exists, the analysis must distinguish between economic impacts caused by the ESA listing of the goby and those additional effects that would be caused by the proposed critical habitat designation. *The analysis only evaluates economic impacts resulting from additional modifications under the proposed critical habitat designation that are above and beyond impacts caused by existing modifications under the ESA listing of the goby*. Finally, in the event that a land use or activity would be limited or prohibited by another existing statute, regulation, or policy, the economic impacts associated with those limitations or prohibitions would not be attributable to the designation of critical habitat.

To evaluate the increment of economic impacts attributable to critical habitat designation, above and beyond the ESA listing, the analysis assumes a “without critical habitat” baseline and compares it to a “with critical habitat” scenario, measuring the net change in economic activity. The "without critical habitat" baseline represents current and expected economic activity under all existing modifications prior to the designation of critical habitat. Only those actions that may be affected by modifications imposed by critical habitat designation, above and beyond existing modifications, are considered in this economic analysis. For this analysis, we consider all activities proposed or likely to occur within the proposed critical habitat area.

Structure of Report

The remainder of this report is organized as follows:

- **Section 2: Description of Species and Proposed Critical Habitat Areas** - Provides general information on the species and a brief description of proposed critical habitat areas.

- **Section 3: Framework for Analysis** - Describes the framework and methodology for the economic analysis; highlights sources and information for the report.

- **Section 4: Impacts of Critical Habitat Designation on Land Use: Federal, State, County, Municipal, and Private Land** - Identifies and assesses potential economic and other relevant impacts from the proposed designation of critical habitat.

- **Section 5: Social and Community Impacts** - Identifies impacts to small entities and communities located within the proposed critical habitat.

- **Appendix A: Maps of Critical Habitat Areas** - Provides maps of the proposed critical habitat units, including information on ownership/management.

DESCRIPTION OF SPECIES AND PROPOSED CRITICAL HABITAT AREAS[6] SECTION 2

The tidewater goby (*Eucyclogobius newberryi*) is a small, grey-brown fish commonly measuring less than two inches. It is characterized by large, dark pectoral fins and a sucker-like disk formed by the complete fusion of the pelvic fins. Gobies are generalists, feeding on small invertebrates such as mysids, amphipods, ostracods, snails, and aquatic insect larvae. The tidewater goby is the only member of the genus *Eucyclogobius.*

The tidewater goby is endemic to California and inhabits coastal brackish waters. Historically, its habitat ranged from the mouth of the Smith River in Del Norte County to Agua Hedionda Lagoon in San Diego County. The brackish water conditions favored by the goby occur in two different settings:

- The upper edge of tidal bays (such as Tomales, Bolinas, and San Francisco Bays), near the entrance of freshwater tributaries.

- Coastal lagoons formed at the mouths of small to large coastal rivers, streams, or seasonally wet canyons.

The goby typically inhabits waters of relatively low salinities (around 10 parts per thousand [ppt]), although it can tolerate habitats with a wide range of salinities. The southernmost gobies in San

[6] The information on the goby and its habitat included in this section was obtained from the *Proposed Determination of Critical Habitat for the tidewater Goby*, August 3, 1999 (64 FR 42250).

Diego County are believed to have long been separated from other goby populations in California, such that they have been proposed as a Distinct Population Segment (DPS) by FWS (64 FR 33816).

The tidewater goby is a short-lived species with an estimated life cycle of approximately one year. Reproduction peaks during spring to mid-summer, and males gobies prepare burrows 75 mm to 100 mm deep in course sand for the female to deposit eggs. As adults and sub-adults, gobies commonly migrate up to 2.0 km upstream from the estuary into tributaries. Migration occurs in the summer and fall and there is little evidence that reproduction occurs in the upper regions of tributaries.

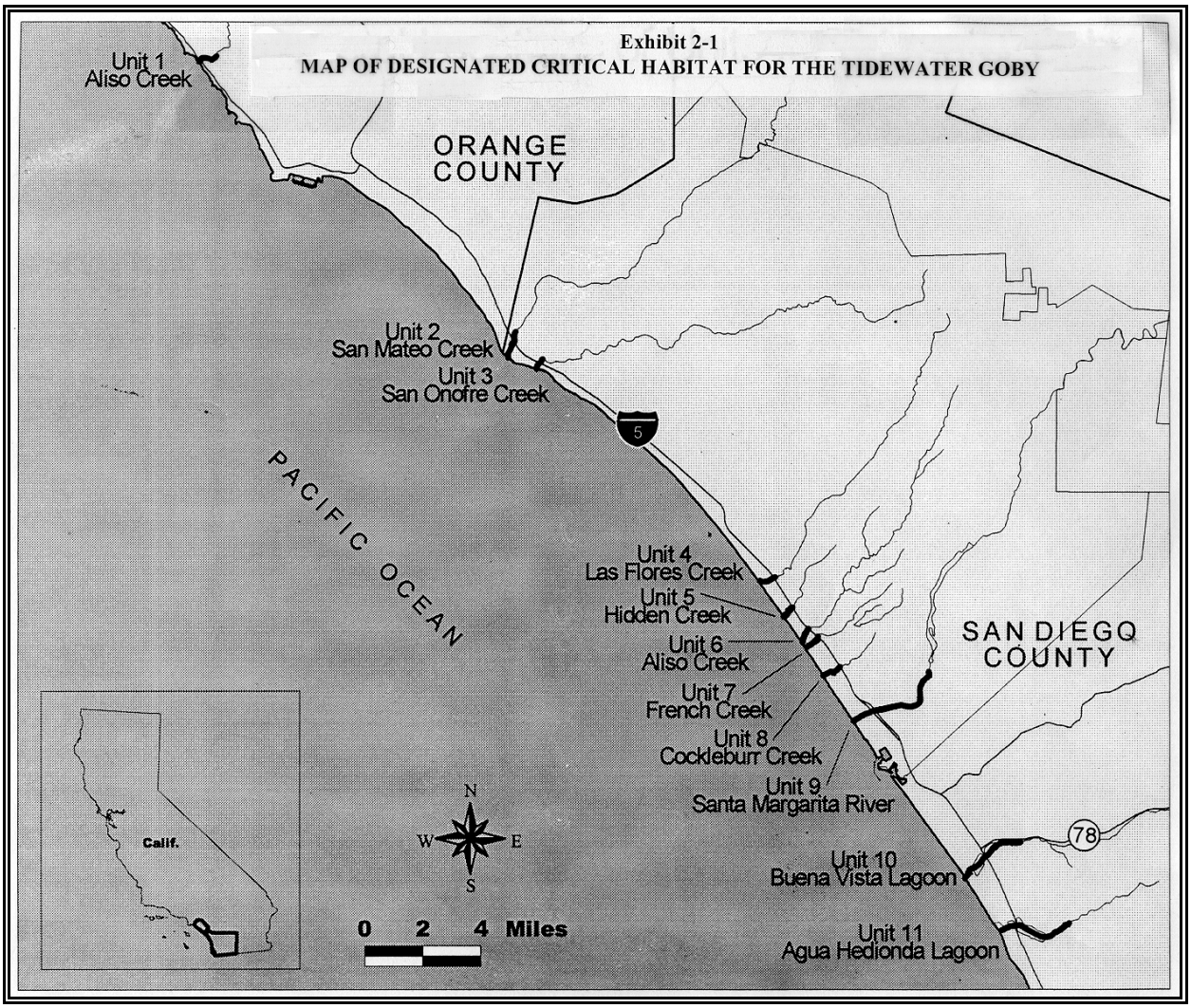
Background on Proposed Critical Habitat Areas

The proposed critical habitat designation for the goby includes coastal tributaries currently supporting the species, as well as areas believed to contain the necessary habitat characteristics to support the species. The proposed critical habitat designation for the goby includes a total of eleven critical habitat units. One of the eleven units lies within Orange County, while the remaining ten units are contained within San Diego County. Nine of the eleven units are classified as rivers or creeks, while two are coastal lagoons. The proposed critical habitat for the goby includes land owned by the following entities:

- U.S. Department of Defense
- State of California, Department of Fish and Game
- Orange County
- Cities of Laguna Beach, Carlsbad, and Oceanside
- Private Owners

Exhibit 2-1 displays the eleven units proposed as critical habitat for the goby. More detailed maps of each unit are provided in Appendix A. All eleven areas proposed as critical habitat initiate at the Pacific Ocean and extend inland to a specified location upstream. FWS has classified eight of the proposed critical habitat units as occupied by the goby, while the remaining three are classified as unoccupied. The eleven units proposed as critical habitat include:

- **Unit 1 - Aliso Creek,** is located within Orange County just north of Aliso Point and the town of South Laguna. The unit includes the creek and its associated lagoon from the mouth until 1.0 km (0.6 mi) upstream. Unit 1 contains land owned by the City of Laguna Beach, Orange County, and private entities. The Aliso Creek is classified as unoccupied habitat.



- **Unit 2 - San Mateo Creek**, is located in San Diego County just south of the northern boundary of the Camp Pendleton Marine Corps Base. The unit extends 1.3 km (0.9 mi) inland, and is entirely owned by the U.S. Marine Corps. The San Mateo Creek is classified as occupied habitat.

- **Unit 3 - San Onofre Creek**, is located in San Diego County within the Camp Pendleton Marine Corps Base. The unit extends 0.6 km (0.4 mi) inland, and is entirely owned by the U.S. Marine Corps. The San Onofre Creek is classified as occupied habitat.

- **Unit 4 - Las Flores Creek**, is located in San Diego County within the Camp Pendleton Marine Corps Base. The unit extends 1.0 km (0.6 mi) inland to

Interstate 5, and is entirely owned by the U.S. Marine Corps. The Las Flores Creek is classified as occupied habitat.

- **Unit 5 - Hidden Creek**, is located in San Diego County within the Camp Pendleton Marine Corps Base. The unit extends 0.8 km (0.5 mi) inland to Interstate 5, and is entirely owned by the U.S. Marine Corps. The Hidden Creek unit is classified as occupied habitat.

- **Unit 6 - Aliso Creek**, is located in San Diego County within the Camp Pendleton Marine Corps Base. The unit extends 0.7 km (0.4 mi) inland to Interstate 5, and is entirely owned by the U.S. Marine Corps. The Aliso Creek in San Diego County is classified as occupied habitat.

- **Unit 7 - French Creek**, is located in San Diego County within the Camp Pendleton Marine Corps Base. The unit extends 0.7 km (0.4 mi) inland to Interstate 5, and is entirely owned by the U.S. Marine Corps. The French Creek is classified as occupied habitat.

- **Unit 8 - Cockleburr Creek**, is located in San Diego County within the Camp Pendleton Marine Corps Base. The unit extends 1.0 km (0.6 mi) inland to Interstate 5, and is entirely owned by the U.S. Marine Corps. The Cockleburr Creek is classified as occupied habitat.

- **Unit 9 - Santa Margarita River**, is located in San Diego County within the Camp Pendleton Marine Corps Base. The unit extends 5.0 km (3.1 mi) inland, and is entirely owned by the U.S. Marine Corps. The Santa Margarita River is classified as occupied habitat.

- **Unit 10 - Buena Vista Lagoon,** is located in San Diego County just south of the City of Oceanside and just north of the City of Carlsbad. The unit extends from the Pacific Ocean to a point 3.4 km (2.1 mi) upstream and includes the associated creek and marsh. The Buena Vista Lagoon is classified as unoccupied habitat.

- **Unit 11 - Agua Hedionda Lagoon,** is located in San Diego County in the middle of the City of Carlsbad and the Carlsbad State Beach. The unit extends from the Pacific Ocean to a point 3.7 km (2.3 mi) upstream and includes the associated creek and marsh. The Agua Hedionda Lagoon is classified as unoccupied habitat.

FRAMEWORK FOR ANALYSIS SECTION 3

This section describes the primary sources of information used to develop this report and provides an overview of the framework for analysis, including a description of the methodology used to determine potential economic impacts from the proposed designation of critical habitat for the goby.

Framework for Analysis

This economic analysis examines the impacts of restricting specific land uses or activities within areas designated as critical habitat. The analysis evaluates impacts in a "with" critical habitat designation versus a "without" critical habitat designation framework, measuring the net change in economic activity. The "without" critical habitat designation scenario, which represents the baseline for analysis, includes all protection already accorded to the goby under state and Federal laws, such as the California Environmental Quality Act, National Environmental Policy Act and the Clean Water Act. The ESA listing added additional protection in its listing provisions. The focus of this economic analysis is to determine the impacts of land use land modifications and activities from the critical habitat designation that are above and beyond the impacts due to existing modifications under state and Federal, state, and local laws.

Steps to Identify Potential Impacts from Critical Habitat Designation

Listed below are the four questions that were posed to identify economic impacts from the proposed designation of critical habitat.

1. **What land uses and activities within the proposed critical habitat designation may be affected?** As noted above, potential impacts were identified by reviewing public comments, public hearings, and through phone conversations with Federal, state, county, and municipal personnel, as well as private landowners. In addition to considering direct impacts on designated lands, the analysis considers the potential for indirect impacts that may affect these lands (see Question 4).

2. **Does the land use or activity involve a "Federal nexus"?** Critical habitat designation modifications can only be imposed on land uses and activities on state, county, municipal, and private land when a "Federal nexus" exists (i.e., the activities or land uses of concern involve Federal permits, Federal funding, or other Federal actions). If no Federal nexus exists, land uses on non-Federal public land as well as private entities are not restricted by critical habitat designation. For Federally managed land, critical habitat designation may restrict land uses, activities, and other actions that threaten to adversely modify habitat.

3. **Would the land use or activity face *additional* modifications or costs under the proposed critical habitat designation, above and beyond existing modifications or costs under the ESA listing?** As noted above, the baseline for analysis includes all restrictions on land use existing prior to the proposal of critical habitat, including listing restrictions. Only impacts from restrictions above and beyond this baseline are considered. Determinations of whether a land use or activity would face additional modifications or costs under the proposed critical habitat designation are based on discussions with FWS. Those land uses and activities that would be subject to additional modifications under the proposed critical habitat designation are evaluated to determine the potential national economic efficiency effects and regional economic impacts. While FWS anticipates recommending no further modifications to land use activities above those that may be required as a result of the listing of the goby, it is possible that some land owners could incur additional costs resulting from consultations with FWS.

4. **Would the land use or activity be subject to other *indirect* effects under the proposed critical habitat designation, based on perceptions of potential modifications rather than actual modifications on planned activity?** FWS has determined that the designation of critical habitat places no further modifications on land uses and activities above and beyond those modifications extant under the ESA listing. Although actual modifications may be identical for lands within the boundaries of critical habitat and lands outside designated critical habitat, landowners and land managers may

perceive or expect that additional modifications will arise from the delineation of critical habitat boundaries. In addition, landowners and managers with property within critical habitat boundaries may be uncertain about whether their property constitutes critical habitat. This perceptions may result in real losses in economic value and may cause increased costs to property owners to mitigate these losses during the period following critical habitat designation, before markets incorporate information regarding actual required modifications to activities. For example, the value of property within the extant boundary of the critical habitat designation may be lower (or higher) than properties outside the boundaries of the designation.

National and Regional Economic Effects

The economic effects of designation of critical habitat consist of those factors affecting national income (i.e., national economic efficiency effects) and those economic and social impacts that are important on a local or regional level (i.e., regional economic impacts).

- **National economic efficiency effects** are those consequences of critical habitat designation that represent a change in national income. Efficiency effects include, among other things, recreation (consumer surplus) values as well as management and construction costs in an area that would not be required without critical habitat designation. Impacts on national income may be positive (benefits) or negative (costs). For example, if road construction is prohibited in an area to avoid adverse modification, primitive recreation may be preserved in the area (a benefit) while development of motorized recreation is precluded (a cost).

- **Regional economic effects** (or distributional effects) relate to equity and fairness considerations associated primarily with how income and wealth are divided among regions and groups. These effects are represented by changes in regional employment, household income, or state/local tax revenue that may have offsetting effects elsewhere in the economy. For example, if critical habitat designation results in less construction and development activity within critical habitat areas, this activity may increase in other nearby areas suitable for development. While this may have important economic impacts on different local economies, it may have little or no effect on the regional or national economy.

Benefits of Critical Habitat Designation

The designation of critical habitat may also result in economic benefits by aiding the preservation or enhancement of non-recreational values provided directly by the species and

indirectly by its habitat. Categories of potential benefits for the goby include enhanced scenic beauty, biodiversity, ecosystem, and intrinsic (passive use) values. These benefits may result because society, species, and ecosystems are spared adverse and irreversible effects of habitat loss and species extinction. Quantitative or monetary values for these potential benefits of critical habitat designation, however, have not been estimated.

Information Sources

Several sources contributed to the development of this report, providing such information as the ownership and management of lands within the proposed critical habitat designation, potentially affected activities and land uses, and economic impacts. The primary sources of information for this report fall into the following categories:

- **Personal Communications:** Federal and municipal agency staff, as well as private landowners, were contacted by phone to identify potentially affected current and planned activities and land uses and to provide data on possible economic impacts. Phone interviews were conducted in April 2000.

- **Public Comments:** Public comments received in response to the proposed critical habitat designation for the goby on August 3, 1999, provided valuable information on potentially affected land uses and activities.

- **Public Hearing:** As part of the public comment period for the proposed critical habitat designation, a public hearing was held in Oceanside, CA on November 4, 1999. A transcript of the hearing was reviewed to identify possible impacts from the proposed critical habitat designation.

IMPACTS OF CRITICAL HABITAT DESIGNATION ON LAND USE: FEDERAL, STATE, COUNTY, MUNICIPAL, AND PRIVATE LANDS SECTION 4

The proposed designation of critical habitat for the tidewater goby includes Federal, state, county, municipal, and private lands. Critical habitat designation may restrict land uses, activities, and other actions on Federally managed land that threaten to adversely modify habitat. In order for activities and land uses on state, county, municipal, and privately owned lands to be affected by critical habitat designation, a Federal nexus must exist (i.e., the activities or land uses involve a Federal permit, Federal funding, or require Federal actions). Activities on private lands that do not involve a Federal nexus are not restricted by the designation of critical habitat.

In this chapter, we first discuss the types of impacts that theoretically could be incurred by Federal, state, county, municipal, and private land owners and managers as a result of the critical habitat designation for the goby. Subsequently, we discuss actual activities in which these entities are involved, and evaluate whether they are likely to experience these impacts.

POTENTIAL IMPACTS OF CRITICAL HABITAT DESIGNATION

For the goby critical habitat designation, FWS indicated that it is highly unlikely that any action would result in an adverse modification determination without an accompanying jeopardy determination. In other words, FWS staff does not anticipate that critical habitat designation for the goby would place modifications on land uses and activities above and beyond modifications that already exist under the ESA listing of the goby. However, governments and private landowners may nonetheless incur direct costs that are not attributable to the listing of the goby as a threatened species. These costs include:

- The value of time and other costs incurred in conducting Section 7 consultations beyond those associated with the listing of the goby; and

- Delays in implementing public and private development activities, which may result in losses to individuals and society.

Each aspect is discussed in more detail below.

Costs Associated with Conducting Section 7 Consultations on Critical Habitat

Parties involved in Section 7 consultations include FWS and the Federal agency involved in the proposed activity. In cases where the consultation involves an activity proposed by a state or local government or a private entity (the "applicant"), the Federal agency with the nexus to the activity serves as the liaison with FWS.

To initiate a formal consultation, the relevant Federal agency submits to FWS a consultation request with an accompanying biological analysis of the effects of the proposed activity. This biological analysis may be prepared by the relevant Federal agency, the state, county, or municipal entity whose action requires a consultation, or an outside party hired by the agency or landowner. Once FWS determines that these documents contain sufficient detail to enable an FWS assessment, FWS has 135 days to consult with the relevant Federal agency and render its biological opinion. During the consultation, parties discuss the extent of the impacts on critical habitat and propose potential mitigation strategies. Many applicants incur costs to prepare analyses as part of the consultation package. These costs vary greatly depending on the specifics of the project. In almost all cases, these costs are attributable to the fact that a species has been added to the list of threatened and endangered species rather than the designation of critical habitat.

FWS has recognized that there are approximately three different scenarios associated with the designation of critical habitat that could trigger additional consultation costs: (1) some consultations that have already been "completed" may need to be reinitiated to address critical habitat; (2) consultations taking place after critical habitat designation may take longer because critical habitat issues will need to be addressed; and (3) critical habitat designation may result in some new consultations taking place that otherwise would not had critical habitat not been designated (this would likely only happen in unoccupied habitat).

Note that this analysis of economic impacts recognizes a possible distinction between occupied and unoccupied lands within critical habitat. FWS expects that any potential economic impacts from the designation incremental to the listing will occur almost exclusively on *unoccupied* lands. The reasoning to support this view is that actions affecting occupied habitat would trigger the "may affect" threshold, thereby requiring consultation with the FWS, regardless of critical habitat designation. Therefore, any economic impacts affecting these lands are entirely attributable to the listing of the species rather than to critical habitat. In contrast, actions affecting unoccupied habitat without designated critical habitat would generally not trigger the "may affect" threshold. In these circumstances, consultations triggered by activities on unoccupied lands can be attributed to the critical habitat designation.

This analysis, however, also recognizes an alternative view expressed by some land owners. That is, ongoing or planned activities on occupied lands may trigger re-initiations of previous

consultations conducted under the listing, or in select cases, new consultations that would not have taken place under the listing. While it is certainly more plausible that new consultations will be associated with activities on unoccupied lands, this analysis considers the possibility that some new consultations may be triggered by activities on occupied lands.

Cost Associated with Project Delays from Section 7 Consultations on Critical Habitat

Both public and private entities may experience delays in projects and other activities due to critical habitat designation. Regardless of funding (i.e., private or public), projects and activities are generally undertaken only when the benefits exceed the costs, given an expected project schedule. If costs increase, benefits decrease, or the schedule is delayed, a project or activity may no longer have positive benefits, or it may be less attractive to the entity funding the project. For example, if a private entity undertaking a residential development must delay groundbreaking as result of an unresolved Section 7 consultation attributable to the listing of critical habitat, the developer may incur additional financing costs. Delays in public projects, such as construction of a new park, may impose costs in the form of lost recreational opportunities. The magnitude of these costs of delay will depend on the specific attributes of the project, and the seriousness of the delay. However, it is likely any such delays will be attributable to the listing of the species and not the designation of critical habitat.[7]

IMPACTS OF CRITICAL HABITAT ON FEDERAL LAND

The lands proposed as critical habitat designation for the goby include property owned and managed by the U.S. Department of Defense (DOD). Under DOD, the United States Marine Corps operates the Camp Pendleton Marine Corps Base for military training and residential purposes. Camp Pendleton encompasses 126,000 acres and extends from the northern coastal boundary of San Diego county to the City of Oceanside. The U.S. Marine Corps maintains all of Camp Pendleton for military training purposes. Eight of the eleven units proposed as critical habitat for the goby are contained with the boundaries of Camp Pendleton. These units include:

- Unit 2 - San Mateo Creek
- Unit 3 - San Onofre Creek

[7] Developers are aware of the potential impact of critical habitat designation on project scheduling. For example, one representative of a developers' association in Northern California indicated that, "Our builders do everything they can to comply with the Endangered Species Act. However,...the amount of additional paperwork [associated with the impact of ESA requirements], in many cases, stops or delays a project. (See San Francisco Examiner article by Jane Kay, "Feds may designate whipsnake habitat", March 9, 2000.)

- Unit 4 - Las Flores Creek
- Unit 5 - Hidden Creek
- Unit 6 - Aliso Creek (San Diego County)
- Unit 7 - French Creek
- Unit 8 - Cockleburr Creek
- Unit 9 - Santa Margarita River

According to FWS, the goby occupies all eight units proposed for designation on Camp Pendleton. For the purpose of this analysis, we reviewed current and planned activities on Unit 9, the Santa Margarita River, as an example of potential impacts to occupied land from critical habitat designation. As Section 7 of the ESA requires consultation for all Federal actions likely to cause adverse modification or destruction of critical habitat, we evaluate current and planned activities of the Santa Margarita River, future plans the U.S. Marine Corps has for developing the unit, and any potential impacts resulting from critical habitat designation.

We identified current uses of the Santa Margarita River based on comments submitted to the FWS by the U.S. Marine Corps, as well as personal communication with Camp Pendleton personnel.[8] Based on this information, we identified amphibious military training as the primary use for the Santa Margarita River and its surrounding shore. In addition to military training, personnel indicated that maintenance operations commonly take place in and around the river. At present, the U.S. Marine Corps does not have any additional activities or projects proposed for the first 5 km (3.1 miles) of the Santa Margarita River.

According to guidance from FWS staff, critical habitat designation will require no modifications to the identified Federal activities above and beyond modifications that already exist under the ESA listing for the goby. FWS personnel did indicate, however, that designation of critical habitat may result in re-initiation of consultations or additional consultations with FWS regarding activities in and alongside the Santa Margarita River. The outcomes of these future consultations cannot be determined at this time. Exhibit 4-1 summarizes current activities at the Santa Margarita River, as well as potential impacts resulting from the designation of critical habitat.

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[8] Chris Bandy, civilian field biologist, Camp Pendleton U.S. Marine Corps Base, April 19, 2000.

Exhibit 4-1

U.S. DEPARTMENT OF DEFENSE:
SUMMARY OF IMPACTS UNDER THE PROPOSED CRITICAL HABITAT DESIGNATION FOR THE TIDEWATER GOBY

Description of Current and Planned Land Uses or Activities That May Impact Occupied Habitat	Critical Habitat Unit(s) Potentially Affected	Possible Federal Nexus	Modifications Under the ESA Listing?*	*Additional* Modifications Under Critical Habitat Designation?*	Impacts From Critical Habitat Designation ?
Military training; amphibious vehicle training	9	Potential disruption or destruction of critical habitat	Possibly	No	Re-initiation of consultations
Maintenance operations	9	Potential disruption or destruction of critical habitat	Possibly	No	Re-initiation of consultations

* Possible modifications are based on guidance received from FWS staff in the Carlsbad, California office.
Source: Chris Bandy, Camp Pendleton Marine Corps Base, personal communication, April 19, 2000.

IMPACTS OF CRITICAL HABITAT ON STATE LAND

Unit 10 of the proposed critical habitat for the goby includes land owned by the State of California. The California Department of Fish and Game owns and manages a substantial portion of the 3.4 km (2.1 miles) of the lagoon, in addition to pieces of the surrounding shoreline.[9] At present, the goby does not inhabit the Buena Vista Lagoon and FWS has classified the unit as unoccupied.

Under the designation of critical habitat, activities on state lands can only be restricted in cases of a Federal nexus. Any sale, lease, or permit not requiring the permission or involvement of the Federal government would not be affected by the designation of critical habitat. We gathered information on current and planned uses of the state-owned portion of Buena Vista Lagoon based on comments submitted by the community and personal communication with local contacts.

[9] Personal communication with Ronald Wootton, Buena Vista Lagoon Foundation, April 19, 2000.

At present, the California Department of Fish and Game maintains and operates the Buena Vista Lagoon as a state ecological reserve. The lagoon is primarily used for recreation; popular activities include fishing, bird-watching, and other wildlife viewing. Recreational boating on the lagoon is prohibited. According to local contacts, a proposal currently exists to construct a pedestrian boardwalk on the eastern side of the lagoon along state property, in addition to a rails-to-trails bikeway along the western side of the lagoon.

As current activities on the state-owned Buena Vista ecological reserve do not involve a Federal nexus, FWS indicates that the proposed designation of critical habitat will not require any modifications to current activities above and beyond those from the ESA listing. According to local contacts, however, the proposals to construct a pedestrian boardwalk and a rails-to-trails bikeway will likely require Section 404 permits and therefore Section 7 consultations with FWS. While FWS indicates that the designation of critical habitat will not involve any modifications above and beyond those resulting from the listing, conducting Section 7 consultations with FWS could result in project delays and administrative expenses over and above the listing. We summarize current and planned activities and potential impacts on state-owned land in Exhibit 4-2 below.

Exhibit 4-2

CALIFORNIA DEPARTMENT OF FISH AND GAME: SUMMARY OF IMPACTS UNDER THE PROPOSED CRITICAL HABITAT DESIGNATION FOR THE TIDEWATER GOBY

Description of Current and Planned Land Uses or Activities That May Impact Unoccupied Habitat	Critical Habitat Unit(s) Potentially Affected	Possible Federal Nexus	Modifications Under the ESA Listing?*	*Additional* Modifications Under Critical Habitat Designation?*	Impacts From Critical Habitat Designation?
Construction of pedestrian boardwalk	10	Section 404 permit	Possibly	No	Consultations
Construction of rails-to-trails bikeway	10	Section 404 permit	Possibly	No	Consultations

* Possible modifications are based on guidance received from FWS staff in the Carlsbad, California office.
Source: Ronald Wootton, Buena Vista Lagoon Foundation, April 19, 2000.

IMPACTS OF CRITICAL HABITAT ON COUNTY LAND

Of the eleven units proposed as critical habitat for the goby, one unit contains land owned by a county entity. Unit 1 (Aliso Creek), which FWS has classified as unoccupied, includes a section of land currently owned and managed by Orange County. According to local contacts, Orange

County owns a portion of one side of Aliso Creek extending from the Pacific Ocean inland a few hundred yards.[10] Although personnel from Orange County could not be reached to confirm current and future uses of the land, local contacts indicated that the county maintains the land as a creek-side park. The park is operated as part of the adjacent Aliso Beach, which is a county-owned public beach. No facilities currently exist on the land, and local contacts report that the county does not have plans to further develop the property. As such, we do not find any possibilities of a Federal nexus, and we conclude that designation of critical habitat for the goby will not result in impacts to county-owned land.

IMPACTS OF CRITICAL HABITAT ON MUNICIPAL LAND

Two of the eleven units proposed as critical habitat for the goby include land owned and managed by municipalities. The City of Laguna Beach owns and maintains a section of the designated portion of Aliso Creek (Unit 1). The Cities of Carlsbad and Oceanside own and jointly manage a portion of the Buena Vista Lagoon (Unit 10). According to FWS, both Unit 1 and Unit 10 are presently unoccupied by the goby.

Municipally owned lands may only be affected by critical habitat if current or planned uses of the land involve a Federal nexus. To determine whether municipal lands within the designated portions of Aliso Creek and Buena Vista Lagoon could require Federal permitting or involvement, we reviewed public comments submitted to FWS and contacted personnel in both municipalities.

The City of Laguna Beach owns a small strip of land along the portion of Aliso Creek designated as critical habitat. Municipal contacts from Laguna Beach report that, at present, the land is not in active use.[11] The city maintains the land as a storage area for equipment used in the municipal water treatment system. Municipal contacts indicated that no changes in use are scheduled for the property. In addition, the city does not plan to build or develop any structures along the shore of the creek. As such, current and planned activities along the municipally-owned section of Aliso Creek do not involve a Federal nexus and would not be restricted by designation of critical habitat.

Personnel from the neighboring Aliso Creek Inn, Inc., however, report that the section of the creek that runs through municipal lands is presently lined on both sides by cement. Flooding routinely occurs at Aliso Creek, the impacts of which could require removal and reinstallation of the

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[10] Personal communication with Mike Dunbar, City of Laguna Beach Water District, April 26, 2000, and with Mark Slymen, Aliso Creek Inn, Inc., April 20 & 26, 2000.

[11] Personal communication with Mike Dunbar, City of Laguna Beach Water District, April 26, 2000.

cement liners at some point in the future. The reinstallation of the cement liners could likely require a Section 404 permit and consultation with FWS.

Additional municipal lands within the proposed critical habitat include the City of Carlsbad and the City of Oceanside's joint operation of a weir at the mouth of Buena Vista Lagoon. At present, the weir does not permit tidal flow of water to the lagoon. Local contacts report that the lagoon is slowly accumulating soil and the two municipalities have proposed to change the weir to a moveable structure that would provide the opportunity to open the lagoon to tidal flow.[12] At present, both the City of Oceanside and the City of Carlsbad are actively involved in the planning and permitting processes necessary to implement the change to the weir structure. The proposed changes to the weir would reportedly require a Section 404 permit, as well as other Federal permits. As a result, both cities could be impacted by the administrative, financial, and time-delay costs associated with Section 7 consultations. Exhibit 4-3 summarizes the current and future activities on municipal lands that might be affected by critical habitat designation.

Exhibit 4-3

MUNICIPALITIES OF LAGUNA BEACH, CARLSBAD, AND OCEANSIDE: SUMMARY OF IMPACTS UNDER THE PROPOSED CRITICAL HABITAT DESIGNATION FOR THE TIDEWATER GOBY

Description of Current and Planned Land Uses or Activities That May Impact Unoccupied Habitat	Critical Habitat Unit(s) Potentially Affected	Possible Federal Nexus	Modifications Under the ESA Listing?*	*Additional* Modifications Under Critical Habitat Designation?*	Impacts From Critical Habitat Designation ?
Removal and reinstallation of cement stream siding	1	Section 404 permit	Possibly	No	Consultations
Structural changes to weir.	10	Section 404 permit	Possibly	No	Consultations

* Possible modifications are based on guidance received from FWS staff in the Carlsbad, California office.
Sources: Mike Dunbar, City of Laguna Beach Water District ; Mark Slymen, Aliso Creek Inn, Inc.; Ronald Wootton, Buena Vista Lagoon Foundation.

IMPACTS OF CRITICAL HABITAT ON PRIVATE LAND

[12] Personal communication with Ronald Wootton, Buena Vista Lagoon Foundation, April 19, 2000.

The proposal to designate critical habitat for the goby includes property owned by private parties. Unit 1, Aliso Creek (Orange County), and Unit 11, Agua Hedionda Lagoon both contain property held by a number of private owners. At present, the goby does not inhabit either tributary. As such, FWS classifies both Unit 1 and Unit 11 as unoccupied land.

In order for privately owned lands to be impacted by critical habitat designation, a Federal nexus must exist. Activities on private lands that do not involve Federal permitting, Federal funding, or any Federal action are not affected by the designation of critical habitat. To identify current and future activities on privately owned land within critical habitat, we reviewed public comments submitted to FWS in response to the proposed designation. In addition, we contacted some private landowners within the affected areas to identify examples of current and planned uses for the land.

Approximately 65 percent of the 1 km portion of Aliso Creek proposed as critical habitat is owned and managed by the Aliso Creek Inn, Incorporated, whose facilities include a golf course, a hotel, and a restaurant. According to contacts at the facility, the portion of the Aliso Creek Inn property that falls within critical habitat corresponds to the hotel facility and associated grounds. [13] The hotel complex includes 14 buildings on either side of the creek, in addition to an access road that runs alongside Aliso Creek. Current activities on the hotel property do not involve a Federal nexus. Moreover, the buildings are located at a minimum of 10 yards from the creek, so they fall outside the boundaries of the proposed critical habitat. Nonetheless, future modifications or improvements to the property may impact the proposed critical habitat in some capacity. As such, Section 7 consultations may be required, which in turn could result in costs associated with the time, administrative, and financial burdens of conducting consultations with FWS. In addition, Aliso Creek Inn personnel indicated that routine flooding of the creek may at some point require removal and reinstallation of the cement siding that currently lines both sides of the creek.

In addition to the uses along Aliso Creek in Orange County, private interests own the entire portion of the Agua Hedionda Lagoon proposed as critical habitat. Cabrillo Power purchased the Encina Power Station and surrounding Agua Hedionda Lagoon from the San Diego Gas and Electric Company in 1999. According to public comments submitted by Cabrillo Power, the Encina Power Station provides 25 percent of all power used in San Diego County, in addition to serving as a must-run facility for the county grid system. The operators of the facility have raised concerns that the designation of critical habitat would result in ecological modifications to the marine environment in order to return the lagoon to the brackish coastal environment preferred by the goby. According to the operators, returning the lagoon to its former condition would threaten the power station's ability to maintain use of its cooling system, which currently relies on water temperature and flow more characteristic of a tidal environment. FWS personnel, however, indicate that the present characteristics of Agua Hedionda as a deep, fully tidal lagoon would not be altered by designation

[13] Personal communication with Mark Slymen, Aliso Creek Inn, Inc., April 20 & 26, 2000.

of critical habitat for the goby. As such, designation of critical habitat for Agua Hedionda is not expected to impact the ability of the power station to continue functioning at full capacity.

The Encina Power Station, however, currently operates under the control of numerous Federal permits, including permits relating to air emissions, water discharge, dredging, and oil response. Due to the number of Federal permits necessary to operate the facility, designation of critical habitat could result in the need for additional Section 7 consultations with FWS in order to renew existing permits or obtain new permits. Given the number of Federal permits currently maintained by the Encina Power Plant, Section 7 consultations with FWS could require lengthy negotiations with significant administrative, time, and financial costs.

In addition to operating the Encina Power Station, Cabrillo Power leases portions of the Agua Hedionda Lagoon for use by other private interests. Among these interests are the Carlsbad Aquafarm, Inc. and the Hubbs Sea-World Research Facility White Seabass Hatchery. The Carlsbad Aquafarm operates an aquaculture farming facility dedicated to raising mussels, abalone, clams, scallops, and oysters, while the Hubbs Sea-World Facility maintains a White Seabass hatchery and stock enhancement research station. According to public comments submitted to FWS, both facilities rely on the current flow of tidal water in the lagoon created by routine dredging and the water intake system for the Encina Power Plant. Both facilities have voiced concern that changes to the lagoon associated with critical habitat for the goby would have severe impacts on future operations at the facilities. As mentioned above, however, FWS indicates that current ecological conditions at the Agua Hedionda Lagoon will not be altered in response to designation of critical habitat. As such, current research capabilities at Carlsbad Aquafarm and the Hubbs Sea-World Research Facility will not be impacted by critical habitat designation. However, any current or planned activities at the facilities requiring Federal involvement of any type would require additional consultations with FWS. While neither facility currently maintains activities involving a Federal nexus, the Hubbs Sea-World Research Facility operates a water intake/discharge system that may at some point in the future require Federal permitting.

In addition the uses described above, the Agua Hedionda Lagoon is commonly used for recreational purposes. Popular activities at Agua Hedionda include boating, water-skiing, fishing, clamming and bird-watching. Several marinas and boat launches exist along the shore of the lagoon. As none of these activities presently involve a Federal nexus, no impacts from critical habitat designation are expected. At this time no information is available concerning any future plans to modify the lagoon or shoreline that might involve a Federal nexus. Exhibit 4-4 summarizes activities on privately owned lands potentially impacted by the designation of critical habitat for the goby.

Exhibit 4-4 PRIVATELY OWNED LANDS: SUMMARY OF IMPACTS UNDER THE PROPOSED CRITICAL HABITAT DESIGNATION FOR THE TIDEWATER GOBY					
Description of Current and Planned Land Uses or Activities That May Impact Unoccupied Habitat	**Critical Habitat Unit(s) Potentially Affected**	**Possible Federal Nexus**	**Modifications Under the ESA Listing?***	***Additional* Modifications Under Critical Habitat Designation?***	**Impacts From Critical Habitat Designation ?**
Improvements to hotel facilities and grounds	1	Section 404 permit	Possibly	No	Consultations
Removal and reinstallation of cement stream siding	1	Section 404 permit	Possibly	No	Consultations
Operation of power plant	11	Permits for air emissions, water discharge dredging, etc.	Possibly	No	Consultations
Fish hatchery and research facility.	11	Permit for water discharge.	Possibly	No	Consultations
* Possible modifications are based on guidance received from FWS staff in the Carlsbad, California office. Sources: Mark Slymen, Aliso Creek Inn, Inc.; Public comments submitted to FWS.					

OTHER POTENTIAL IMPACTS

Some Federal activities have been identified as potential concerns, but are not addressed in the summaries above. Other Federal activities constituting a nexus include:

- BLM regulation of grazing, mining, and recreational activities;
- Sale, exchange, or lease of lands by Bureau of Land Management and Department of Energy;
- Regulation of water flows, water delivery, damming, diversion, and channelization by the Bureau of Reclamation and U.S. Army Corp of Engineers;

- Funding and implementation of disaster relief projects by Federal Emergency Management Agency;

- Funding and regulation of new road construction by Federal Highway Administration;

- Vegetation clearing by Department of Energy; and

- Environmental Protection Agency air and water quality standards.

These potential Federal nexuses are not present for the land uses described in this analysis of designated critical habitat for the goby. Nonetheless, if such Federal nexuses pertain to land within the proposed goby critical habitat, a Section 7 consultation may result. It is unlikely that Section 7 consultations required by these nexuses would result in modifications to activities and land uses.

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).[14] However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities. This section addresses the potential impacts to small entities and communities located within the proposed critical habitat designation.

This rule will not have a significant economic impact on a substantial number of small entities because it imposes very little, if any, additional impacts on land use activities beyond those that may be required as a result of the listing of the goby. Because the goby is a Federally protected species, landowners prohibited from taking the species, which is defined under the Act to include such activities that would harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. As a result, any future consultations with FWS are likely to occur to avoid any such activities that would result in an incidental take of the goby. Therefore, proposed modifications to such activities recommended by FWS would be attributable to the presence of the goby on a landowner's property and not due to the presence of critical habitat.

It is possible that in the future, some small entities and communities may incur direct costs resulting from the designation of critical habitat above and beyond those attributable to the listing of the goby as a threatened species. In the case of the goby, we identified one small business, the Carlsbad Aquafarm, Inc., in Unit 11. Currently, Carlsbad Aquafarm has not needed to consult with

[14] 5 U.S.C. 601 et seq.

FWS because they operate without a Federal nexus. As a result, Carlsbad Aquafarm should not be impacted by critical habitat designation.

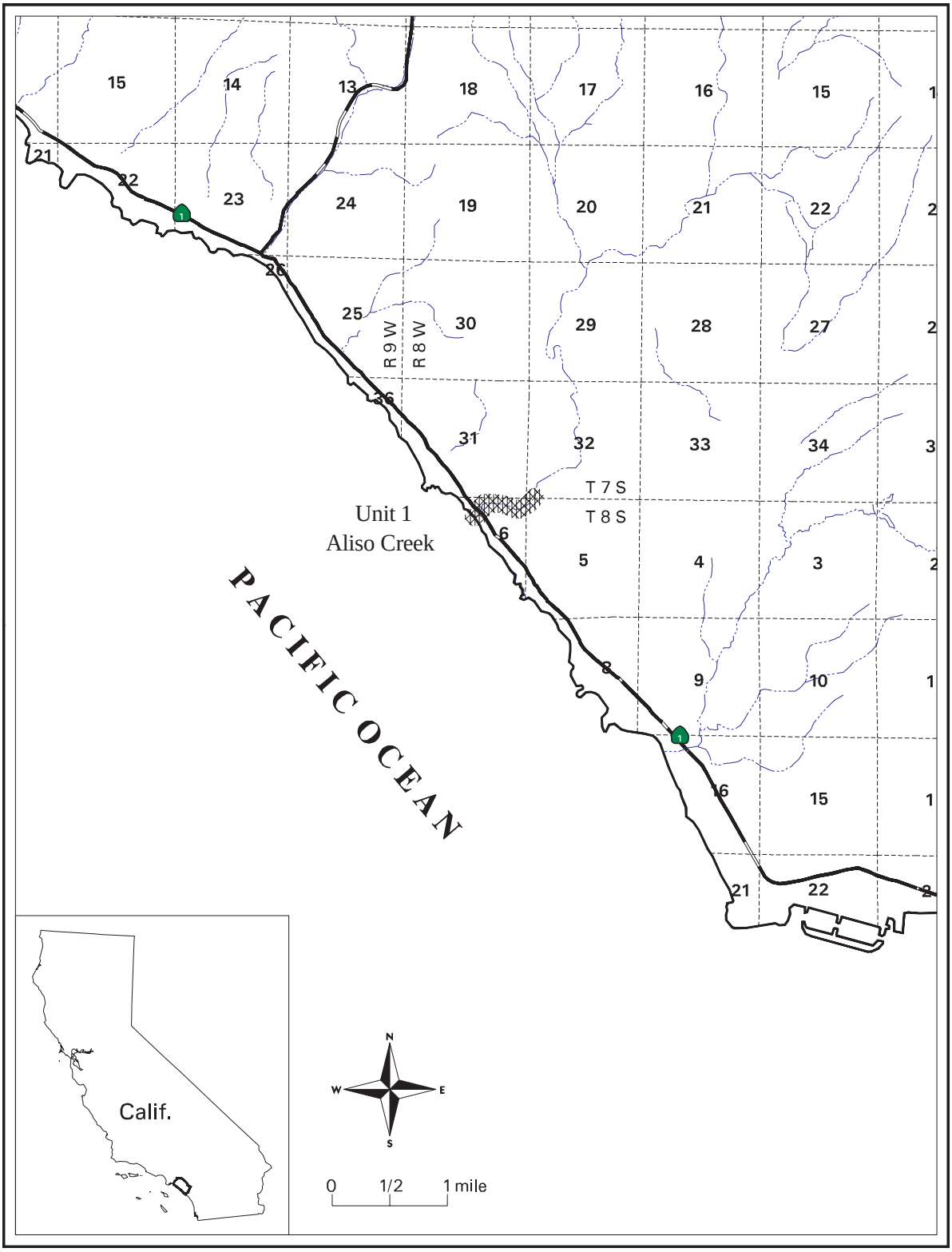
If, however, this situation would change, and Carlsbad Aquafarm should seek Federal funding or need a Federal permit, then consultations with FWS may be necessary, which would most likely be attributable to the designation of critical habit because the Agua Hedionda Lagoon is currently unoccupied by the goby. Costs incurred as a result of critical habitat may include: (1) the value of time spent in conducting Section 7 consultations beyond those associated with the listing of the goby, and (2) delays in implementing public and private development projects losses, which may result in losses to individuals and society. While the Carlsbad Aquafarm, Inc. and any other small businesses and communities could incur some additional costs under this scenario, it is unlikely to occur in the foreseeable future due to a lack of a Federal nexus.

According to official Bureau of Indian Affairs land ownership maps, as created for the BIA by the Geographic Data Service Center, no Native American lands lie within the borders of the designated critical habitat area.[15]

[15] Data taken from BIA land ownership maps, available at *http://www.gdsc.bia.gov*.

CRITICAL HABITAT UNIT MAPS APPENDIX A

The following maps were provided by FWS staff. They show each of the eleven units proposed as critical habitat for the goby.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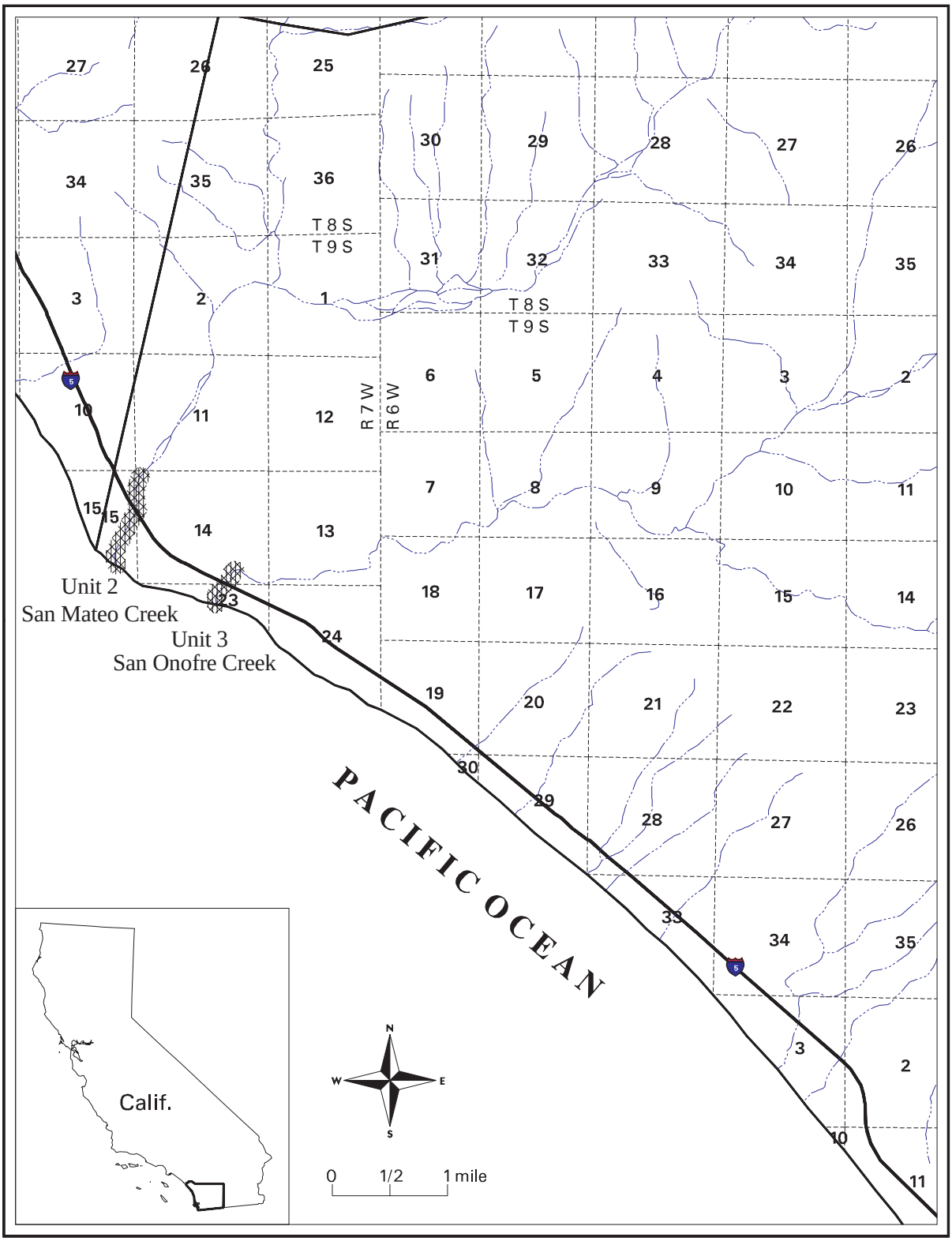
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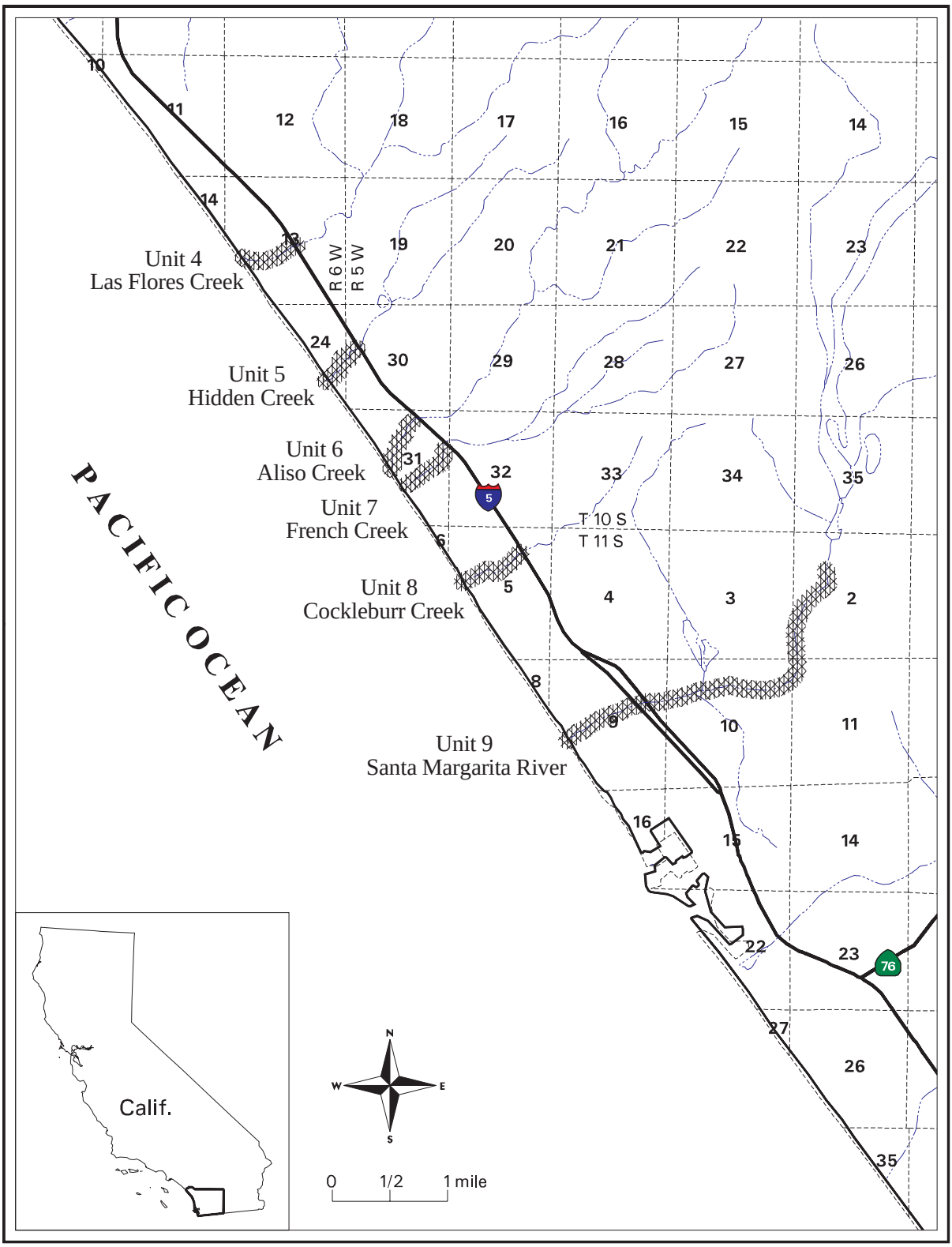
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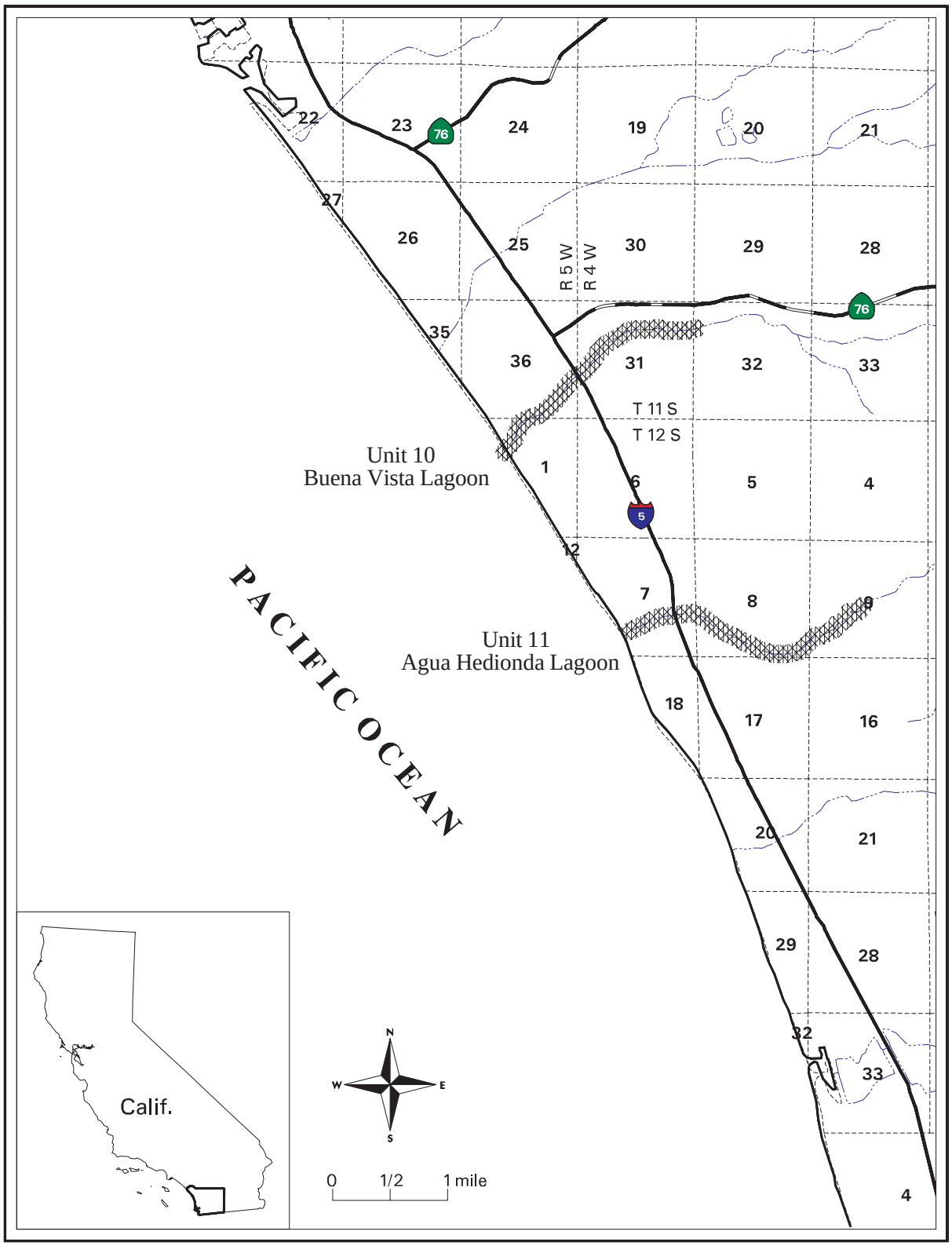
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