

**DEPARTMENT OF THE INTERIOR****Fish and Wildlife Service****50 CFR Part 17**

RIN 1018-AU81

**Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the Tidewater Goby (*Eucyclogobius newberryi*)****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), propose to revise currently designated critical habitat for the tidewater goby (*Eucyclogobius newberryi*) under the Endangered Species Act of 1973, as amended (Act). We originally designated critical habitat for the tidewater goby on November 20, 2000 (65 FR 69693). We are proposing to revise the critical habitat for the tidewater goby to a total of approximately 10,003 acres (ac) (4,050 hectares (ha)). This is an increase of approximately 8,422 ac (3,408 ha) from the currently designated critical habitat. In the previous rule, critical habitat was only designated in Orange and San Diego Counties due to uncertainty over the future listing status of tidewater goby populations to the north. The proposed revised critical habitat is located in Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties, California.

**DATES:** We will accept comments from all interested parties until January 29, 2007. We must receive requests for public hearings, in writing, at the address shown in the **ADDRESSES** section by January 12, 2007.

**ADDRESSES:** If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods:

1. You may mail or hand-deliver written comments and information to Diane K. Noda, Field Supervisor, U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, CA 93003.

2. You may send comments by electronic mail (e-mail) to [fw8gobypch@fws.gov](mailto:fw8gobypch@fws.gov). Please see the Public Comments Solicited section below for file format and other information about electronic filing.

3. You may fax your comments to 805/644-3958.

4. You may go to the Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments.

Comments and materials received, as well as supporting documentation used in the preparation of this proposed rule, will be available for public inspection, by appointment, during normal business hours at the Ventura Fish and Wildlife Office (2493 Portola Road, Suite B, Ventura, CA 93003; telephone 805/644-1766).

**FOR FURTHER INFORMATION CONTACT:** For general information, and information about the proposed designation in Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties, contact the Field Supervisor, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, CA 93003 (telephone 805/644-1766; facsimile 805/644-3958). Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800-877-8339, 7 days a week and 24 hours a day.

For information about the proposed designation in Del Norte, Humboldt, and Mendocino Counties, contact the Field Supervisor, Arcata Fish and Wildlife Office, 1655 Heindon Road, Arcata, CA 95521 (telephone 707/822-7201; facsimile 707/822-8411).

For information about the proposed designation in Sonoma, Marin, and San Mateo Counties, contact the Field Supervisor, Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2800 Cottage Way, Suite W-2605, Sacramento, CA 95825 (telephone 916/414-6600; facsimile 916/414-6712).

**SUPPLEMENTARY INFORMATION:****Public Comments Solicited**

We intend that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning the following issues.

(1) The reasons any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act (16 U.S.C. 1531 *et seq.*), including whether the benefit of designation will outweigh any threats to the species due to designation;

(2) Specific information on the amount and distribution of tidewater goby habitat, what areas should be included in the designation that were occupied at the time of listing that contain the features that are essential for

the conservation of the species and why, and what areas not occupied at the time of listing are essential to the conservation of the species and why;

(3) Land use designations and current or planned activities in the subject areas and their possible impacts on proposed revised critical habitat;

(4) Any foreseeable economic, national security, or other potential impacts resulting from the proposed revision of critical habitat and, in particular, any impacts on small entities;

(5) Whether our approach to designating critical habitat could be improved or modified in any way to provide for greater public participation and understanding, or to assist us in accommodating public concerns and comments;

(6) Whether our general approach to determine which localities to include in proposed critical habitat (44 of the 112 localities that are currently occupied by tidewater gobies) could be improved or modified;

(7) Specifically with reference to those State Park lands under the jurisdiction of the California Department of Parks and Recreation (CDPR) that are proposed for designation, information on any areas covered by conservation or management plans that we should consider for exclusion from the designation under section 4(b)(2) of the Act;

(8) Any additional proposed critical habitat areas covered by conservation or management plans that we should consider for exclusion from the designation under section 4(b)(2) of the Act. We specifically request any information on any operative or draft habitat conservation plans for the tidewater goby that have been prepared under section 10(a)(1)(B) of the Act, or any other management or other conservation plan or agreement that benefits the goby or its primary constituent elements; and

(9) Any information concerning Tribal lands or trust resources that may be impacted by this proposed revision to critical habitat.

If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods (see **ADDRESSES**). Internet comments may be submitted to [fw8gobypch@fws.gov](mailto:fw8gobypch@fws.gov) (please use ASCII file format and avoid the use of special characters or any form of encryption) or the Federal eRulemaking Portal: <http://www.regulations.gov>. Please also include "Attn: Tidewater goby" in your e-mail subject header and your name and return address in the body of your message. If you do not receive a

confirmation from the system that we have received your Internet message, contact us directly by calling Chris Dellith at the Ventura Fish and Wildlife Office at phone number 805/644-1766. Please note that the Internet address [fw8gobypch@fws.gov](mailto:fw8gobypch@fws.gov) will be closed out at the termination of the public comment period.

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their names and/or home addresses, etc., but if you wish us to consider withholding this information you must state this prominently at the beginning of your comments. In addition, you must present rationale for withholding this information. This rationale must demonstrate that disclosure would constitute a clearly unwarranted invasion of privacy. Unsupported assertions will not meet this burden. In the absence of exceptional, documentable circumstances, this information will be released. We will always make submissions from organizations or businesses, and from individuals identifying themselves as representatives of or officials of organizations or businesses, available for public inspection in their entirety.

#### **Role of Critical Habitat in Actual Practice of Administering and Implementing the Act**

Attention to and protection of habitat is paramount to successful conservation actions. The role that designation of critical habitat plays in protecting habitat of listed species, however, is often misunderstood. As discussed in more detail below in the discussion of exclusions under section 4(b)(2) of the Act, there are significant limitations on the regulatory effect of designation under section 7(a)(2) of the Act. In brief, (1) designation provides additional protection to habitat only where there is a Federal nexus; (2) the protection is relevant only when, in the absence of designation, destruction or adverse modification of the critical habitat would in fact take place (in other words, other statutory or regulatory protections, policies, or other factors relevant to agency decision-making would not prevent the destruction or adverse modification); and (3) designation of critical habitat triggers the prohibition of destruction or adverse modification of that habitat, but it does not require specific actions to restore or improve habitat.

Currently, only 476 species, or 36 percent of the 1,311 listed species in the

United States under the jurisdiction of the Service, have designated critical habitat. We address the habitat needs of all 1,311 listed species through conservation mechanisms such as listing, Section 7 consultations, the Section 4 recovery planning process, the Section 9 protective prohibitions of unauthorized take, Section 6 funding to the States, the Section 10 incidental take permit process, and cooperative, nonregulatory efforts with private landowners. The Service believes that it is these measures that may make the difference between extinction and survival for many species.

In considering potential exclusions of critical habitat proposed in this revision, we will evaluate the benefits of designation in light of *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir 2004) (hereinafter *Gifford Pinchot*). In that case, the Ninth Circuit invalidated the Service's regulation defining "destruction or adverse modification of critical habitat." In response, on December 9, 2004, the Director issued guidance to be considered in making section 7 adverse modification determinations. This proposal to revise critical habitat does not use the invalidated regulation in our consideration of the benefits of including areas in this proposed revised designation. The Service will carefully manage future consultations that analyze impacts to designated critical habitat, particularly those that appear to be resulting in an adverse modification determination. Such consultations will be reviewed by the Regional Office prior to finalizing to ensure that an adequate analysis has been conducted that is informed by the Director's guidance.

On the other hand, to the extent that designation of critical habitat provides protection, that protection can come at significant social and economic cost. In addition, the mere administrative process of designation of critical habitat is expensive, time-consuming, and controversial. The current statutory framework of critical habitat, combined with past judicial interpretations of the statute, make critical habitat the subject of excessive litigation. As a result, critical habitat designations are driven by litigation and courts rather than biology, and made at a time and under a time frame that limits our ability to obtain and evaluate the scientific and other information required to make the designation most meaningful.

In light of these circumstances, the Service believes that additional agency discretion would allow our focus to return to those actions that provide the

greatest benefit to the species most in need of protection.

#### **Procedural and Resource Difficulties in Designating Critical Habitat**

We have been inundated with lawsuits for our failure to designate critical habitat, and we face a growing number of lawsuits challenging critical habitat determinations once they are made. These lawsuits have subjected the Service to an ever-increasing series of court orders and court-approved settlement agreements, compliance with which now consumes nearly the entire listing program budget. This leaves the Service with little ability to prioritize its activities to direct scarce listing resources to the listing program actions with the most biologically urgent species conservation needs.

The consequence of the critical habitat litigation activity is that limited listing funds are used to defend active lawsuits, to respond to Notices of Intent (NOIs) to sue relative to critical habitat, and to comply with the growing number of adverse court orders. As a result, listing petition responses, the Service's own proposals to list critically imperiled species, and final listing determinations on existing proposals are all significantly delayed.

The accelerated schedules of court-ordered designations have left the Service with limited ability to provide for public participation or to ensure a defect-free rulemaking process before making decisions on listing and critical habitat proposals, due to the risks associated with noncompliance with judicially imposed deadlines. This in turn fosters a second round of litigation in which those who fear adverse impacts from critical habitat designations challenge those designations. The cycle of litigation appears endless, and is expensive, thus diverting resources from conservation actions that may provide relatively more benefit to imperiled species.

The costs resulting from the designation include legal costs, the cost of preparation and publication of the designation, the analysis of the economic effects and the cost of requesting and responding to public comment, and in some cases the costs of compliance with the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*). These costs, which are not required for many other conservation actions, directly reduce the funds available for direct and tangible conservation actions.

#### **Background**

It is our intent to discuss only those topics directly relevant to the proposal

to revise critical habitat in this rule. For more information on the tidewater goby, refer to the final rule listing the species, which was published in the **Federal Register** on February 4, 1994 (59 FR 5494), or the final rule designating critical habitat for the species in Orange and San Diego Counties, California, which was published in the **Federal Register** on November 20, 2000 (65 FR 69693).

#### *Species Description and Genetic/Morphological Characteristics*

The tidewater goby is a small, elongate, grey-brown fish rarely exceeding 2 inches (in) (5 centimeters (cm)) in length. This species possesses large pectoral fins, and the pelvic or ventral fins are joined to each other below the chest and belly from below the gill cover back to just anterior of the anus. Male tidewater gobies are nearly transparent with a mottled brownish upper surface. Female tidewater gobies develop darker colors, often black, on the body and dorsal and anal fins. The tidewater goby is a short-lived species; the lifespan of most individuals appears to be about 1 year (Irwin and Soltz 1984, p. 26; Swift *et al.* 1989, p. 4).

Various genetic markers demonstrate that pronounced differences in the genetic structure of tidewater gobies exist, and that tidewater gobies in some locations are genetically distinct. A recent study of mitochondrial DNA and cytochrome b (molecular material used in genetic studies) sequences from tidewater gobies that were collected at 31 locations throughout the species' range identified six major phylogeographic (geographic differences in the evolution of a species) or regional groups (Dawson *et al.* 2001, p. 1171). These six regional groups include the following areas: (1) Tillas Slough (Smith River) in Del Norte County to Lagoon Creek in Mendocino County, i.e., the North Coast (NC) Unit; (2) Salmon Creek in Sonoma County to Bennett's Slough in Monterey County, i.e., the Greater Bay (GB) Unit; (3) Arroyo del Oso to Morro Bay in San Luis Obispo County, i.e., the Central Coast (CC) Unit; (4) San Luis Obispo Creek in San Luis Obispo County to Rincon Creek in Santa Barbara County, i.e., the Conception (CO) Unit; (5) Ventura River in Ventura County to Topanga Creek in Los Angeles County, i.e., the Los Angeles-Ventura (LV) Unit; and (6) San Pedro Harbor in Los Angeles County to Los Peñasquitos Lagoon in San Diego County, i.e., the South Coast (SC) Unit.

#### *Metapopulation Dynamics*

Local populations of tidewater gobies are best characterized as

metapopulations (Lafferty *et al.* 1999a, p. 1448). First, local goby populations are frequently isolated from other local populations by extensive areas of unsuitable habitat. Second, gobies occupy coastal lagoons and estuaries that in most cases are separated from each other by the open ocean. Very few tidewater gobies have ever been captured in the marine environment (Swift *et al.* 1989, p. 7), which suggests this species rarely occurs in the open ocean. Studies of the tidewater goby suggest that some populations persist on a consistent basis (Lafferty *et al.* 1999a, p. 1452), while other tidewater goby populations appear to experience intermittent extirpations. These extirpations may result from one or a series of factors, such as the drying up of some small streams during prolonged droughts (Lafferty *et al.* 1999a, p. 1451). Some of the areas where tidewater gobies have been extirpated apparently have been recolonized when extant populations were present within a relatively short distance of the extirpated population (i.e., less than 6 miles (mi) (10 kilometers (km))). These recolonization events suggest that tidewater goby populations exhibit a metapopulation dynamic where some populations survive or remain viable by continually exchanging individuals and recolonizations may occur after occasional extirpations (Doak and Mills 1994, p. 619).

Lafferty *et al.* (1999b) monitored the post-flood persistence of several tidewater goby populations in Santa Barbara and Los Angeles Counties during and after the heavy winter floods of 1995. All of the monitored populations persisted after the floods, and no significant changes in population sizes were noted (Lafferty *et al.* 1999b, p. 621). Tidewater gobies apparently colonized Cañada Honda in Santa Barbara County after one flood event (Lafferty *et al.* 1999b, p. 621). This information suggests that flooding may sometimes contribute to recolonization of habitats where a tidewater goby population has become extirpated.

The largest wetland habitats where tidewater gobies have been known to occur are not necessarily the most secure, as evidenced by the fact that the Santa Margarita River in San Diego County and the San Francisco Bay have lost their populations of tidewater goby. Today, the majority of the most stable and largest tidewater goby populations consist of lagoons and estuaries of intermediate sizes, i.e., 5 to 125 ac (2 to 50 ha) that have remained relatively unaffected by human activities (Service 2005, p. 12). Many of the localities where tidewater gobies are consistently

present may be "source" populations, and such locations may provide the colonists for localities that intermittently lose their tidewater goby populations.

Historical records and survey results for several localities occupied by the tidewater goby are available (e.g., Swift *et al.* 1989, pp. 18–19; Swift *et al.* 1994, pp. 8–16). These documents suggest the persistence of tidewater goby populations is related to habitat size, configuration, location, and proximity to human development. In general, the most stable and persistent tidewater goby populations occur in the lagoons and estuaries that are more than 2.47 ac (1 ha) in size and that have remained relatively unaffected by human activities (Lafferty *et al.* 1999a, pp. 1450–1453). We note, however, that some systems that are affected or altered by human activities also have relatively large and stable populations (e.g., Humboldt Bay in Humboldt County, Pismo Creek in San Luis Obispo County, Santa Ynez River in Santa Barbara County, and the Santa Clara River in Ventura County). Also, some habitats less than 2.47 ac (1 ha) in size have tidewater goby populations that persist on a regular basis (Swift *et al.* 1997, p. 3; Keegan 2006, p. 8). The best available information suggests that the lagoons and estuaries that have persistent populations are likely the core populations that provide the individuals that colonize adjacent, smaller localities that have ephemeral tidewater goby populations (Lafferty *et al.* 1999a, p. 1452).

#### *Distribution*

The known geographic range of the tidewater goby is limited to the coast of California (Eschmeyer *et al.* 1983, p. 262; Swift *et al.* 1989, p. 12). The species historically occurred from localities that extended from 3 mi (5 km) south of the California–Oregon border (i.e., Tillas Slough in Del Norte County) to 44 mi (71 km) north of the United States–Mexico border (i.e., Agua Hedionda Lagoon in San Diego County). The available documentation (e.g., Eschmeyer *et al.* 1983, p. 262; Swift *et al.* 1989, p. 12) suggests the northernmost locality that forms one end of the historical and current geographic range of the tidewater goby has not changed over time. Tidewater gobies do not currently occur in Agua Hedionda Lagoon, and the species' southernmost known locality currently is located in Cocklebur Canyon 9.2 mi (14.8 km) north of Agua Hedionda Lagoon. Although the northernmost and southernmost extent of the goby's range has not changed much over time, the

goby's overall population has become patchy and fragmented along the coast.

Tidewater gobies appear to be naturally absent from several large (50 to 135 mi (80 to 217 km)) stretches of coastline where lagoons or estuaries are absent, and steep topography or swift currents may prevent tidewater gobies from dispersing between adjacent localities (Swift *et al.* 1989, p. 13). One such gap in lagoons and estuaries occurs between the Eel River in Humboldt County and the Ten Mile River in Mendocino County. A second gap exists between Lagoon Creek in Mendocino County and Salmon Creek in Sonoma County. Another large, natural gap occurs between the Salinas River in Monterey County and Arroyo del Oso in San Luis Obispo County. Habitat loss and other anthropogenic-related factors have resulted in the tidewater goby now being absent from several locations where it historically occurred; their recent disappearance from specific locations has created smaller, artificial gaps in the species' geographic distribution (Capelli 1997, p. 7). Such locations include Buena Vista Lagoon and Agua Hedionda Lagoon in San Diego County, Calleguas Creek/Mugu Lagoon in Ventura County, San Francisco Bay in San Francisco and Alameda Counties, and Redwood Creek and Freshwater Lagoon in Humboldt County.

Swift *et al.* (1989, p. 13) reported that, as of 1984, tidewater gobies occurred, or had been known to occur, at 87 localities; these localities included those at the extreme northern and southern end of the species' historical geographic range. An assessment of the species' distribution in 1993, using records that were limited to the area between the Monterey Peninsula in Monterey County and the United States—Mexico border, found tidewater gobies occurring at four additional localities (Swift *et al.* 1993, p. 129). Other goby localities have been identified since 1993, and currently tidewater gobies have been documented at 135 localities within the historical geographic range of the species (Service 2005, p. 6). Of these 135 localities, 23 (17 percent) are no longer known to be occupied by tidewater gobies. Therefore, 112 localities are currently occupied.

#### Habitat

The lagoons, estuaries, backwater marshes, and freshwater tributaries that tidewater gobies occupy are dynamic environments that are subject to considerable fluctuations on a seasonal and annual basis. In a typical year, the formation of a sandbar occurs in the late spring as flow into a lagoon declines

enough to allow the ocean surf to build up the sandbar at the mouth of the lagoon. Winter rains and subsequently increased stream flows may bring in considerable sediment and dramatically affect the bottom profile and substrate composition of a lagoon or estuary. Fine mud and clay either moves through the lagoon or estuary or settles out in backwater marshes, while heavier sand is left in the lagoon or estuary. High flows associated with winter rains can scour out the lagoon bottom to lower levels, with sand building up again after flows decline. These dynamic processes result in wetland habitats that, over time, move both laterally and up- or down-gradient relative to stationary features that exist outside the flood zone (e.g., roads or buildings).

The horizontal extent of the lentic (pond-like) wetland habitat associated with a particular tidewater goby locality varies on a site-specific basis, and is affected in part by local precipitation patterns and topography. In coastal areas where the topography is steep and precipitation is relatively low (e.g., areas adjacent to the Santa Ynez Mountains in Santa Barbara County), the habitats occupied by tidewater gobies may be a few acres in size, only extend a few hundred feet inland from the ocean, and backwater marshes may be small or absent. In other coastal settings where precipitation is more abundant: (1) Topography is less steep and surface streams are larger; (2) coastal lagoons or estuaries may be hundreds of acres in size and extend many miles inland; and (3) extensive backwater marshes may be present (e.g., Lake Earl in Del Norte County and Ten Mile River in Mendocino County).

Some localities occupied by tidewater gobies receive surface or ground water from upstream areas on a year-round basis. Such localities (e.g., Bennett's Slough in Monterey County) tend to possess wetland habitats that are larger and can extend inland for several hundred feet or even miles. Other occupied locations do not possess stream channels or tributaries that provide a considerable amount of water throughout the summer or fall months. Such locations (e.g., Little Pico Creek in San Luis Obispo County) tend to possess wetland habitats that only extend a short distance inland from the ocean (i.e., 290 ft (88 m)).

#### Reproduction

Tidewater gobies have been observed spawning in every month of the year except December (Swenson 1999, p. 107). Reproduction tends to peak in late April or May to July, and can continue into November depending on seasonal

temperature and rainfall. Swenson (1995, p. 31) has documented spawning behavior in adult fish and the presence of egg clutches at water temperatures between 48 and 77 degrees Fahrenheit (F) (9 and 25 degrees Celsius (C)). Spawning tidewater gobies have been observed in water salinities between 2 and 27 parts per thousand (ppt) (Swenson 1999, p. 31).

#### Threats

The final listing rule for the tidewater goby that was published in 1994 (59 FR 5494) states that this species is threatened, or potentially threatened, by: (1) Coastal development projects that result in the loss or alteration of coastal wetland habitat; (2) water diversions and alterations of water flows upstream of coastal lagoons and estuaries that negatively impact the species' breeding and foraging activities; (3) groundwater overdrafting; (4) channelization of the rivers where the species occurs; (5) discharge of agricultural and sewage effluents; (6) cattle grazing and feral pig activity that results in increased sedimentation of coastal lagoons and riparian habitats, removal of vegetative cover, increased ambient water temperatures, and elimination of plunge pools and undercut banks utilized by tidewater gobies; (7) introduced species that prey on the tidewater goby (e.g., bass (*Micropterus* spp.) and crayfish (*Cambaris* spp.)); (8) the inadequacy of existing regulatory mechanisms; (9) drought conditions that result in the deterioration of coastal and riparian habitats; and (10) competition with introduced species such as the yellowfin goby (*Acanthogobius flavimanus*) and chameleon goby (*Tridentiger trigonocephalus*).

#### Previous Federal Actions

On February 4, 1994, the tidewater goby was listed as endangered throughout its entire range (59 FR 5494). We did not designate critical habitat at the time we listed this species because we found that critical habitat for the tidewater goby was not then determinable.

On September 18, 1998, the Natural Resources Defense Council, Inc., filed a lawsuit in Federal District Court in California against the United States Department of the Interior, *et al.*, for failure to designate critical habitat for the tidewater goby. On April 5, 1999, Judge Carlos R. Moreno ordered that the "Service publish a proposed critical habitat designation for the tidewater goby in 120 days" (*Natural Resources Defense Council, Inc. v. United States*

*Department of the Interior et al. CV 98-7596*).

On June 24, 1999, we published a proposed rule to: (1) Delist populations of the tidewater goby in areas north of Orange and San Diego Counties, and (2) retain the tidewater goby populations in Orange and San Diego Counties as an endangered distinct population segment based on our re-evaluation of the species' status throughout its range (64 FR 33816). The Service proposed delisting northern populations of tidewater gobies because there were more populations in the north than were known at the time of listing, and it was believed that the threats to the northern populations may have been less severe and that the ability of tidewater gobies to recolonize sites may have been greater than previously thought.

On August 3, 1999, we proposed critical habitat for the tidewater goby in Orange and San Diego Counties (64 FR 42250); we did not propose critical habitat for this species throughout the rest of its geographic range in 1999 because we believed that the tidewater goby populations north of Orange County did not warrant listing under the Act, and had proposed to delist the species north of Orange County; therefore there were no areas essential to the conservation of the tidewater goby north of Orange County. On November 20, 2000, the Service designated critical habitat for the tidewater goby in Orange and San Diego Counties (65 FR 69693). The critical habitat designation consisted of 10 coastal stream segments that collectively measured 9 linear mi (14.5 km) in length.

On November 7, 2002, we withdrew our proposal to delist the tidewater goby in areas north of Orange County (67 FR 67803) based in large part on comments from the public, the scientific community, industry, and other concerned government agencies and new information, received after the publication of the proposed rule, that indicated that the reasons for delisting may have been in error. Therefore, the tidewater goby has remained listed as an endangered species throughout its historical geographic range since 1994.

On August 31, 2001, Cabrillo Power L.L.C. (Cabrillo) filed a lawsuit in the U.S. District Court for the Southern District of California challenging a portion of the November 20, 2000, final rule that designated the 10 critical habitat units in Orange and San Diego Counties. Specifically, Cabrillo objected to the critical habitat unit involving Agua Hedionda Lagoon and Creek. In a consent decree dated February 27, 2003, the U.S. District Court: (1) Agreed to

vacate the critical habitat designation involving Agua Hedionda Lagoon and Creek; (2) stated the nine other critical habitat units should remain in effect; (3) stated the final rule designating critical habitat was remanded in its entirety for reconsideration; and (4) directed the Service to promulgate a revised critical habitat rule that considers the entire geographic range of the tidewater goby and any currently unoccupied tidewater goby habitat. The consent decree requires that the Service submit proposed and revised rules to the **Federal Register** no later than November 15, 2006, and November 1, 2007, respectively.

### Critical Habitat

Critical habitat is defined in section 3 of the Act as—(i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping and translocation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal agency. Section 7 requires consultation on Federal actions that are likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow government or public access to private lands. Section 7 is a purely protective measure

and does not require implementation of restoration, recovery, or enhancement measures.

To be included in a critical habitat designation, the habitat within the area occupied by the species must first have features that are essential to the conservation of the species. Critical habitat designations identify, to the extent known using the best scientific data available, habitat areas that provide essential life cycle needs of the species (i.e., areas on which are found the primary constituent elements (PCEs), as defined at 50 CFR 424.12(b)).

Habitat occupied at the time of listing may be included in critical habitat only if the essential features thereon may require special management considerations or protection. Thus, we do not include areas where existing management is sufficient to conserve the species. (As discussed below, such areas may also be excluded from critical habitat pursuant to section 4(b)(2)). Areas outside of the geographic area occupied by the species at the time of listing may only be included in critical habitat if they are essential for the conservation of the species. Accordingly, when the best available scientific data do not demonstrate that the conservation needs of the species require additional areas, we will not designate critical habitat in areas outside the geographical area occupied by the species at the time of listing. An area currently occupied by the species that was not known to be occupied at the time of listing will likely, but not always, be essential to the conservation of the species and, therefore, typically included in the critical habitat designation.

The Service's Policy on Information Standards Under the Endangered Species Act, published in the **Federal Register** on July 1, 1994 (59 FR 34271), and Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658) and the associated Information Quality Guidelines issued by the Service, provide criteria, establish procedures, and provide guidance to ensure that decisions made by the Service represent the best scientific data available. They require Service biologists to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat. When determining which areas are critical habitat, a primary source of information is generally the listing package for the species. Additional information sources include the

recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion or personal knowledge. All information is used in accordance with the provisions of Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106–554; H.R. 5658) and the associated Information Quality Guidelines issued by the Service.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that designation of critical habitat may not include all of the habitat areas that may eventually be determined to be necessary for the recovery of the species. For these reasons, critical habitat designations do not signal that habitat outside the designation is unimportant or may not be required for recovery.

Areas that support populations, but are outside the critical habitat designation, will continue to be subject to conservation actions implemented under section 7(a)(1) of the Act and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available information at the time of the action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans, or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome.

## Methods

As required by section 4(b)(2) of the Act, we use the best scientific data available in determining areas that contain the features that are essential to the conservation of the tidewater goby. The sources of data used in identifying critical habitat include information in our files regarding habitat requirements of this species, and the data sources mentioned in the published final rule that resulted in the designation of critical habitat in Orange and San Diego Counties (65 FR 69693). We also reviewed available information in reports submitted during section 7

consultations and by biologists holding section 10(a)(1)(A) recovery permits; information contained within the recently completed and peer reviewed tidewater goby recovery plan (Service 2005) that does not appear elsewhere; research published in peer-reviewed articles and presented in academic theses and agency reports; and regional Geographic Information System (GIS) coverages. We also solicited information from knowledgeable experts that have worked with the tidewater goby.

## Primary Constituent Elements

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12, in determining which areas to propose as critical habitat within areas occupied by the species at the time of listing, we consider those physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing (or development) of offspring; and habitats that are protected from disturbance or are representative of the historical geographical and ecological distributions of a species.

The specific primary constituent elements required for the tidewater goby are derived from the biological needs of the tidewater goby as described in the Background section of this proposal and the following text.

### *Space for Individual and Population Growth and for Normal Behavior*

#### Saline Aquatic Habitat

Tidewater gobies occur in lagoons, estuaries, and backwater marshes that are adjacent to the Pacific Ocean (Wang 1982, p. 14; Irwin and Soltz 1984, p. 27; Swift *et al.* 1989, p. 1; Swenson 1993, p. 3; Moyle 2002, p. 431). Tidewater gobies are most commonly found in waters with relatively low salinities, i.e., less than 10–12 ppt (Swift *et al.* 1989, p. 7). This species can, however, tolerate a wide range of salinities and is frequently found in coastal habitats with higher salinity levels (Swift *et al.* 1989, p. 7; Worcester 1992, p. 106; Swift *et al.* 1997, pp. 15–22). The species has been collected in salinities as high as 42 ppt (Swift *et al.* 1989, p. 7). The species' tolerance of high salinities likely enables it to withstand some exposure to the marine environment, allowing it to recolonize nearby lagoons and estuaries following flood events.

However, tidewater gobies have only rarely been captured in the marine environment (Swift *et al.* 1989, p. 7), and they appear to enter the ocean only when flushed out of lagoons, estuaries, and river mouths by storm events.

#### Water Depth, Velocity, and Temperature

Tidewater gobies are most commonly collected in water less than 6 ft (2 m) deep (Wang 1982, pp. 4–5; Worcester 1992, p. 53). However, recently tidewater gobies were collected in Big Lagoon in Humboldt County during the breeding season at a water depth of 15 ft (4.6 m) (Goldsmith 2006a, p. 1). Whether use of these deeper waters is confined to this locality or is more widespread will require additional sampling at various depths at various locations.

Tidewater gobies tend to avoid currents and concentrate in slack-water areas; this suggests they are less likely to occur in areas with a steep gradient or microhabitats that have a substantial current. At Pescadero Creek in San Mateo County, tidewater gobies were absent from portions of the flowing creek that had a surface velocity of 0.15 m (0.49 ft per second), and the species was instead more densely concentrated in nearby eddies with lower water velocities (Swenson 1993, p. 3).

Backwater marshes, including lateral sloughs, are likely to be important to tidewater gobies for multiple reasons. Flood waters with increased water velocities can have a negative effect on tidewater gobies (Irwin and Soltz 1984, p. 27), and backwater marshes may provide important refuges that reduce the likelihood that tidewater gobies will be flushed out of the lagoons or estuaries and into the marine environment during heavy winter floods (Lafferty *et al.* 1999a, p. 619). Evidence that increased flows can eliminate tidewater gobies from a locality is suggested by the elimination of tidewater gobies from Waddell Creek in Santa Cruz County following a flood event in the winter of 1972–73 (Nelson as cited in Swift 1990, p. 2); this creek had been channelized and no longer afforded protection from high flows during flood events. Likewise, the channelization and elimination of habitat lateral to the main stream channel upstream of San Onofre Lagoon in San Diego County probably led to the flushing and extirpation of tidewater gobies from this locality during a storm in 1993 (Swift *et al.* 1994, p. 22–23). The importance of backwater marshes is also highlighted by the fact that tidewater gobies in these habitats can achieve a greater size than in adjacent lagoons and creeks (Swenson 1993, pp. 6–7).

Because the number of eggs produced per female increases as female size increases (Swift *et al.* 1989, p. 9), it is likely that females in the backwater marshes can produce a proportionally greater number of young fry that allow a population to persist.

Tidewater gobies have been documented in habitats with water temperatures that range from 46 to 77 degrees F (8 to 25 degrees C) (Irwin and Soltz 1984, Tables 3 and 4; Swift *et al.* 1989, p. 1).

#### Freshwater Habitat

Tidewater gobies also occur in freshwater streams upgradient and tributary to brackish habitats; the salinity of these freshwater streams is typically less than 0.5 ppt. The available documentation demonstrates that in some areas, tidewater gobies can occur 1.6 to 7.3 mi (2.6 to 11.7 km) upstream from the ocean environment (Irwin and Soltz 1984, p. 27; Swift *et al.* 1997, p. 20; Chamberlain and Goldsmith 2006, p. 1).

Hundreds of tidewater gobies have been observed to move upstream of a fixed location into areas in the Santa Ynez River 3.2 mi (5.1 km) from the ocean in Santa Barbara County (Swift *et al.* 1997, p. 20). The fact that this many individuals were observed to move through an area within a 2-hour period suggests that freshwater tributaries in some riverine systems provide important space for individual and population growth.

We have reviewed a variety of documents to determine how far tidewater gobies have been detected upstream from the ocean. Chamberlain and Goldsmith (2006, p. 1) found tidewater gobies 1.6–2.0 mi (2.6–3.3 km) upstream from the ocean in the Ten Mile River in Mendocino County; Swift *et al.* (1997, p. 18) found tidewater gobies 4.6 mi (7.3 km) upstream from the ocean in the San Antonio River in Santa Barbara County; Swift *et al.* (1997, p. 20) found tidewater gobies at various distances from 3.9 to 7.3 mi (6.2 to 11.7 km) upstream from the ocean in the Santa Ynez River in Santa Barbara County; and Holland (1992, p. 9) found tidewater gobies 3 mi (5 km) upstream from the ocean in the Santa Margarita River in San Diego County. Collectively, these data suggest the average distance tidewater gobies have been detected upstream from the ocean in medium to large rivers is approximately 3.8 mi (6.1 km). Although the reasons for the variation in up-stream movement between one locality and another have not been determined, salinity is likely an important factor. Upstream salinity

levels may vary with time of year, tidal cycles, storm events, and topography.

#### Sandbars

Many of the locations occupied by the tidewater goby closely correspond to stream drainages. Under natural conditions, these stream drainages and the marine environment collectively act to produce sandbars that form a barrier between the ocean and the lagoon, estuary, backwater marsh, and freshwater stream system (Habel and Armstrong 1977, p. 39). These sandbars tend to be present during the late spring, summer, and fall seasons. The presence of a sandbar can create a lower salinity level (*i.e.*, 5 to 10 ppt) in the area upgradient from the sandbar (Carpelan 1967, p. 324) than would otherwise exist if there were no sandbar.

Tidewater gobies are more commonly associated with these lower salinity levels than with the salinity levels that occur in the ocean or an estuary without a sandbar, *i.e.*, about 35 ppt. The formation of a sandbar also creates a larger area for aquatic organisms because water becomes ponded behind the sandbar. Artificial breaching of a sandbar tends to result in a rapid decrease in water levels and increases the likelihood that adult tidewater gobies, their nests, and their fry could become stranded and die, or become concentrated and subject to greater levels of predation pressure by birds or other predators.

In Humboldt Bay and the Eel River estuary in Humboldt County, a large amount of salt and brackish marsh habitat was eliminated through the construction of levees and drainage channels. As a result, several of the localities occupied by the tidewater goby do not contain natural sandbars between the ocean and habitat where the species is present. Instead, manmade water control structures, such as tidegates and culverts, exist between tidal waters and the locations where tidewater gobies occur. These tidegates have been in place for decades, and in some cases, they provide habitat conditions similar to those created by the presence of a seasonal sandbar. In fact, most of the occupied tidewater goby habitats in the Humboldt Bay-Eel River estuaries are above tidegates.

#### Food

Tidewater gobies feed mainly on macro-invertebrates such as mysid shrimp, gammarid amphipods, ostracods, and aquatic insects such as chironomid midge larvae (Irwin and Soltz 1984, p. 21–23; Swift *et al.* 1989, p. 6; Swenson 1995, p. 87). The diets of adult and juvenile tidewater gobies tend to

include the same relative abundance of different invertebrate species (Swenson and McCray 1996, p. 962).

#### Cover or Shelter

A variety of native and nonnative fish species and fish-eating bird species such as egrets (*Egretta* spp.) and herons (e.g., great blue herons (*Ardea herodias*)) prey on tidewater gobies, and escape cover or shelter is necessary to reduce the likelihood that tidewater gobies will be preyed upon.

A species' ability to persist when it is subject to predation pressure frequently depends on the presence of features that provide cover from predators, or the presence of a heterogeneous habitat that provides a greater level of structure which makes it more likely a prey species will avoid predation (Crowder and Cooper 1982, p. 1802; Gilinsky 1984, p. 455).

At locations where tidewater gobies occur, submerged and emergent aquatic vegetation has the potential to provide cover from predators, and provide a greater degree of habitat heterogeneity or structure that would not otherwise exist if the aquatic vegetation was absent. Stable lagoons often possess dense aquatic vegetation that frequently consists of sago pondweed (*Potamogeton pectinatus*) or widgeon grass (e.g., *Ruppia maritima* and *R. cirrhosa*). At some locations, juvenile tidewater gobies are more prevalent in areas with at least some submergent vegetation as compared to other areas with no or little vegetation (Wang 1984, p. 16; Swenson 1994, p. 6; Trihey & Associates, Inc. 1996, p. 11). We believe it is reasonable to assume that the presence of submerged or emergent vegetation reduces the likelihood that tidewater gobies will be preyed upon by native and nonnative species because this vegetation provides cover and increases the level of habitat heterogeneity in a way that makes it more likely that tidewater gobies will persist where they co-occur with predators.

Aquatic vegetation may provide some degree of shelter or refuge during flash flood events (Lafferty *et al.* 1999b, p. 621). These refuges presumably would result because the presence of vegetation would create lower water velocities than might otherwise occur in unvegetated areas. Such refuges would be especially important to fish species that are not strong swimmers, such as the tidewater goby.

#### Sites for Breeding, Reproduction, and Rearing (or Development) of Offspring

The eggs of the tidewater goby are laid in burrows that are excavated by male



fish. The available literature suggests that burrows most commonly occur in areas with relatively unconsolidated, clean, coarse sand (Swift *et al.* 1989, p. 8), while other documents demonstrate that burrows also occur in silt or mud (Wang 1982, p. 6). Swenson (1995, p. 148) demonstrated that tidewater gobies prefer a sandy substrate in the laboratory. Male tidewater gobies remain in the burrow to guard the eggs attached to the burrow ceiling and walls. Male tidewater gobies care for the embryos for approximately 9 to 11 days until they hatch, rarely if ever emerging from the burrow to feed (Swift *et al.* 1989, p. 4).

Tidewater goby larvae occupy the water column after the eggs hatch (Wang 1982, p. 15). As they mature, they occupy the bottom substrate. Worcester (1992, pp. 77–79) found that larval tidewater gobies in Pico Creek Lagoon in San Luis Obispo County tended to use the deeper portion of the lagoon, i.e., 29 in. (73 cm) deep water vs. 17 in. (42 cm) deep water.

#### *Primary Constituent Elements for the Tidewater Goby*

Pursuant to our regulations, we are required to identify the known physical and biological features (PCEs) essential to the conservation of the tidewater goby. All of the areas proposed as revised critical habitat for the tidewater goby are within the species' historical geographic range and contain sufficient PCEs to support at least one life history function.

Based on our current knowledge of the life history, biology, and ecology of the tidewater goby and the requirements of the habitat to sustain the essential life history functions of this species, we have determined that the PCEs for the tidewater goby are:

(1) Persistent, shallow (in the range of about 0.1–2 m), still-to-slow-moving, aquatic habitat most commonly ranging in salinity from less than 0.5 ppt to about 10–12 ppt, which provides adequate space for normal behavior and individual and population growth;

(2) Substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction;

(3) Submerged and emergent aquatic vegetation, such as *Potamogeton pectinatus* and *Ruppia maritima*, that provides protection from predators; and

(4) Presence of a sandbar(s) across the mouth of a lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, thereby providing relatively stable water levels and salinity.

Although the previous rule included a PCE on the prey species the tidewater

goby may use as food, tidewater gobies are generalists and prey on a wide diversity of invertebrate species that are readily available wherever gobies occur. Therefore, we have not included prey as a PCE in this revised rule.

This proposed revised designation is designed for the conservation of areas supporting PCEs that exist at coastal lagoons, estuaries, backwater marshes, and associated freshwater tributaries, and that are necessary to support the life history functions which were the basis for the proposal. Because not all life history functions require all the PCEs, not all proposed revised critical habitat will contain all the PCEs. The presence of PCE 4 at a given location will, in general, only be applicable to locations where a sandbar forms due to natural processes.

Units are proposed for revised designation based on sufficient PCEs being present to support the life processes of the species. Some lands contain all PCEs and support multiple life processes. Some lands contain only a portion of the PCEs necessary to support the particular use of that habitat.

#### **Criteria Used To Identify Critical Habitat**

As required by section 4(b)(1)(A) of the Act, we use the best scientific data and information available in determining areas that contain the features that are essential to the conservation and habitat requirements of the tidewater goby. These include research published in peer-reviewed articles and presented in academic theses and agency reports; information submitted during section 7 consultations and by biologists holding section 10(a)(1)(A) recovery permits; information that is contained within the recently completed recovery plan for the tidewater goby that does not appear elsewhere; and regional Geographic Information System (GIS) coverages. We also solicited information from knowledgeable biologists that have worked with the tidewater goby.

The process we use in this proposed rule to identify the features that are essential to the conservation of the tidewater goby reflects a complete assessment of the current, best scientific data available. Based on this assessment, we developed criteria for identifying critical habitat units (see below). By applying these criteria to the 112 localities known to be currently occupied by gobies, we identified 44 (39 percent) that we are proposing to designate as revised critical habitat. In general, we are proposing these 44 units as critical habitat because they support

the conservation of the species in that these units are representative of the distribution of the goby occupied at the time of listing; some units are occupied by source populations, such that they support other habitats with gobies; and proposed units reflect the diversity of the species and its habitats which it currently occupies. In this rule, we have also attempted to describe, in a more explicit manner, the features that we use to determine the lateral and upstream extent of the critical habitat unit boundaries.

The criteria for identifying critical habitat units include:

(a) Areas known to be occupied at the time of listing and that possess one or more PCEs such that the area supports one or more of the tidewater goby's life processes. We determined which areas were occupied at the time of listing from information in two papers on goby occurrence (Swift *et al.* 1989, p. 13; Swift *et al.* 1993, p. 129), both of which were used in the preparation of the final listing rule for the goby;

(b) Areas that are currently occupied but were not known to be occupied at the time of listing that are determined to be essential to the conservation of the species;

(c) Areas that are representative of the distribution of the tidewater goby throughout the entire geographic range known to be occupied at the time of listing including those with unique ecological characteristics (e.g., large open bays in Humboldt County vs. small, routinely closed lagoons in Santa Barbara County) with the goal of maintaining the full range of the habitat variability and genetic and morphological adaptation in the species; and

(d) Areas that allow for the continued existence of viable metapopulations (as defined in the "Background" section) under varying environmental conditions (e.g., drought). These areas include those that presumably serve as source populations or those that provide important connectivity between source populations.

No areas that are currently unoccupied were found to be essential to the conservation of the species.

For the purposes of this proposed rule, we assume that source populations are those where tidewater gobies have been observed or collected on a regular basis, and therefore are more likely to provide the individuals that disperse and recolonize localities where the species periodically disappears. Locations that provide connectivity between source populations are those locations that exist between source populations that are likely to act as



“stepping stones” between more isolated populations, and contribute to metapopulation persistence. Locations that possess unique ecological characteristics are those that represent the full range of environmental variability where the tidewater goby has evolved, and therefore are likely to promote the adaptation of the species to different environmental conditions. For example, some of these habitats would include locations that reflect different environmental conditions in southern and northern California (e.g. smaller habitats that occur in a more arid environment vs. large habitats that occur in areas with abundant rainfall). Genetic or morphological variability was used to support the inclusion of locations where we assume that this variability may play a role in positively affecting the species’ conservation over time. For additional information on any of the above definitions, please refer back to the “Background” section in this proposed rule.

The conservation of a broad range of environmental, morphological, and genetic diversity that is present at the various locations is an important consideration in determining locations that are important for the conservation of the species. For example, a population’s ability to successfully adapt to changing environmental conditions is a function of the heterozygosity, population size, and genetic variation of the individuals at a given location (Reed and Frankham 2003, p. 233). Local adaptations to different environmental conditions and morphological differences are likely linked to genetic variations among populations. These features may in turn be best protected by: (a) Identifying areas that represent the species and genetic diversity, and (b) maximizing within these areas the protection of contiguous environmental gradients across which selection and migration can interact to maintain population viability and (adaptive) genetic diversity (Moritz 2002, p. 238).

After determining the occupied localities necessary for the conservation of the tidewater goby by applying criteria “a” through “d” above, the boundary of each critical habitat unit was mapped. Unit boundaries were based on several factors including species occurrence data that demonstrated where tidewater gobies have been observed, the presence of barriers and stream gradients that limit tidewater goby movements, and the presence and extent of the aquatic habitat required by tidewater gobies.

The lateral extent of each critical habitat unit was delineated, in part,

using existing digital data. To determine the lateral boundaries of each proposed critical habitat unit, we most frequently relied on National Wetland Inventory (NWI) maps that were prepared by the Service in 2006. The NWI maps are based on the Cowardin classification system (Cowardin *et al.* 1979); the Service has adopted this classification system as its official standard to describe wetland and deepwater habitats. Specifically, the following wetland types based on Cowardin (1979) were used to delineate unit boundaries: Lake, Estuarine and Marine Deepwater, Estuarine and Marine Wetland, Freshwater Pond, Freshwater Emergent Wetland, Freshwater Forested/Shrub Wetland, and Riverine. These wetland types have or are likely to have the PCE’s at various times throughout the year depending on the season and environmental factors such as storm or drought events. In some cases, we used existing anthropogenic structures, such as concrete or riprap channel linings, that occur within wetland habitat types to delineate the lateral boundaries of units. To a lesser extent, we also used aerial imagery from the National Agricultural Imagery Program (NAIP) to delineate the lateral boundaries of a proposed critical habitat unit where insufficient NWI data was available.

The precise location where tidewater goby habitat occurs at a particular locality may vary on a daily, seasonal, and annual basis, i.e., the habitats occupied by tidewater gobies exist in a dynamic environment that varies over time. For example, the size and lateral extent of a coastal lagoon or estuary varies with daily tide cycles. Flood events may also change the precise location where surface water exists within a given lagoon, estuary, backwater marsh, or freshwater tributary. Therefore, it is appropriate to delineate each critical habitat unit to encompass the entire area occupied by tidewater gobies on a daily, seasonal, and annual basis. To accomplish this, we used the boundaries delineated on the NWI maps to determine the lateral extent of each unit.

The delineation of the upstream-most extent of a particular critical habitat unit was determined using one of four features that include: (a) The average distance that tidewater gobies are known to move upstream from the ocean (3.8 mi (6.1 km)), (b) the presence of barriers (e.g., culverts) that may prevent tidewater gobies from moving upstream, (c) the presence of a gradient that precludes tidewater gobies from swimming upstream (vertical drops of more than 4 to 8 in (10 to 20 cm) high

can act as barriers that make it less likely tidewater gobies will be able to swim upstream (Swift *et al.* 1997, p. 20)), or (d) limited surface water in the tributary upgradient from the lagoon or estuary. Each of the above features describes a barrier to upstream movement; therefore the upstream extent of a particular unit was determined by whichever barrier was identified first through the mapping process regardless of whether or not PCE’s were still present above it.

When determining proposed revised critical habitat boundaries, we made every effort to avoid including within the boundaries of the map contained within this proposed rule developed areas such as buildings, paved areas, and other structures that lack PCEs for the tidewater goby. The scale of the maps prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed areas. Any such structures and the land under them inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as revised critical habitat. Therefore, Federal actions limited to these areas would not trigger section 7 consultation, unless they may affect the species or primary constituent elements in adjacent critical habitat.

We are proposing to designate critical habitat in areas that we have determined were occupied at the time of listing or are currently occupied, and that contain sufficient PCEs to support life history functions essential for the conservation of the species. Lands are proposed for designation based on sufficient PCEs being present to support the life processes of the species. Lands are proposed for designation based on sufficient PCEs being present to support life processes of the species. Some lands contain all PCEs and support multiple life processes. Some lands contain only a portion of the PCEs necessary to support the particular use of that habitat.

Section 10(a)(1)(B) of the Act authorizes us to issue permits for the take of listed species incidental to otherwise lawful activities. An incidental take permit application must be supported by a habitat conservation plan (HCP) that identifies conservation measures that the permittee agrees to implement for the species to minimize and mitigate the impacts of the requested incidental take. We often exclude non-Federal public lands and private lands that are covered by an existing operative HCP and executed

implementation agreement (IA) under section 10(a)(1)(B) of the Act from designated critical habitat because the benefits of exclusion outweigh the benefits of inclusion as discussed in section 4(b)(2) of the Act. There are no existing operative HCPs or draft HCPs that meet our issuance criteria and have been released for public notice and comment within the areas proposed for designation as critical habitat.

### Special Management Considerations or Protection

When designating critical habitat, we assess whether the areas determined to be occupied at the time of listing support PCEs that may require special management considerations or protection. Special management considerations or protection may be necessary to eliminate or reduce the magnitude of threats that affect the tidewater goby. Threats that were identified in the final rule listing the tidewater goby include: (1) Coastal development projects that result in the loss or alteration of coastal wetland habitat; (2) water diversions and alterations of water flows upstream of coastal lagoons and estuaries that negatively impact the species' breeding and foraging activities; (3) groundwater overdrafting; (4) channelization of habitats where the species occurs; (5) discharge of agricultural and sewage effluents; (6) cattle grazing and feral pig activity that results in increased sedimentation of coastal lagoons and riparian habitats, removes vegetative cover, increases ambient water temperatures, and eliminates plunge pools and collapsed undercut banks utilized by tidewater gobies; (7) introduced species that prey on the tidewater goby (e.g., bass, crayfish (*Cambaris* spp.)); (8) the inadequacy of existing regulatory mechanisms; (9) drought conditions that result in the deterioration of coastal and riparian habitats; and (10) competition with introduced species such as the yellowfin goby and chameleon goby.

For the purposes of this rule we have combined the "water diversions and alterations of water flows upstream of coastal lagoons and estuaries that negatively impact the species' breeding and foraging activities" threats category with "drought conditions" and "groundwater overdrafting" into one threat category called "water diversions, alterations of water flows, and groundwater overdrafting upstream of coastal lagoons and estuaries that negatively impact the species' breeding and foraging activities." Similarly, we have combined the two threat categories of "introduced species that prey on the

tidewater goby (e.g., bass, crayfish, (*Cambaris* spp.))" and "competition with introduced species such as the yellowfin goby and chameleon goby" into one threat category called "Introduced species that prey on, or compete with, the tidewater goby (e.g., yellowfin gobies, bass, and crayfish)." Where special management may be necessary, regulatory mechanisms may need to be added or amended by local, State or Federal governmental entities if sufficient management is not achievable through voluntary mechanisms.

We find that the PCEs present within all the areas we are proposing for designation may require special management considerations or protection due to threats to the tidewater goby or its habitat. Using current information provided in the tidewater goby recovery plan (Service 2005, Appendix E) and other information in our files, we have identified the known threats that may require special management considerations or protection for the PCEs within each of the proposed critical habitat units (see Proposed Revised Critical Habitat Designation below).

### Summary of Changes From Previously Designated Critical Habitat

The areas identified in this proposed rule constitute a proposed revision from the areas we designated as critical habitat for the tidewater goby in 2000 (65 FR 69693). The main reasons for the differences include:

(1) Prior to designating critical habitat for the tidewater goby in 2000, we published a proposed rule to: (1) Delist populations of the tidewater goby in areas north of Orange and San Diego Counties, and (2) retain the tidewater goby populations in Orange and San Diego Counties as an endangered distinct population segment based on our re-evaluation of the species' status throughout its range (64 FR 33816). Therefore, when we published the 2000 critical habitat final rule, we believed that tidewater goby populations north of Orange County did not warrant listing under the Act and that, therefore, there were no areas essential to the conservation of the tidewater goby north of Orange County. However, we withdrew the proposed rule to delist the goby north of Orange County in 2002, based on comments received from the public, the scientific community, industry, and other concerned government agencies, and based on new information received after the publication of the proposed rule; all of this information indicated that the reasons for delisting may have been in

error. Therefore, we are now proposing to revise the designated critical habitat to include habitat throughout the range of the goby at the time of listing.

(2) We are proposing to remove Aliso Creek in Orange County. In addition, we are not including in this proposed designation one area vacated by the court, Agua Hedionda Lagoon in San Diego County. Both of these units were included in the 2000 designation. These two areas have not been occupied for many years and were not occupied at the time of listing (the last tidewater goby specimen from Aliso Creek was collected in 1976 and the last tidewater goby specimen from Agua Hedionda Lagoon was collected in 1940 (Swift *et al.* 1989, p. 19)). As noted in (1) above, in the 2000 designation we only addressed critical habitat for the tidewater goby in Orange and San Diego Counties. However, in this proposed revised designation, we have considered the entire range of the species at the time of listing, which not only includes Orange and San Diego Counties but also 12 counties to the north. All the areas we have proposed in this revised designation are occupied, and several are known to have large populations. As noted in (4) below, we also considered those areas on Marine Corps Base Camp Pendleton (Base) in San Diego County that are occupied by tidewater gobies. The occupied localities on the Base are between Aliso Creek to the north and Agua Hedionda Lagoon to the south. However, we did not include these areas in this revised proposal because they are protected through the Base's Integrated Natural Resource Management Plan (INRMP). Because we are now proposing to designate critical habitat in many more areas than were included in the 2000 designation, all of which are occupied, and because those occupied areas on the Base are protected under the Base's INRMP, we no longer consider the two unoccupied areas above as being essential to the conservation of the species and we do not expect to see recolonization of these areas. In addition, we now believe that there are sufficient occupied areas in Orange and San Diego counties to support the natural pattern of local extinctions and recolonizations.

(3) We are proposing revised PCEs based on new information. The 2000 critical habitat rule did not explicitly recognize the importance of backwater marshes or freshwater tributaries. However, there are multiple documents that suggest these habitat types are features essential to the conservation of the tidewater goby (e.g., Swenson 1993, pp. 6–7; Swift *et al.* 1997, p. 20; Smith 2004). Also, the 2000 rule suggested

critical habitat may not occur at locations where exotic fish species are present. From a practical standpoint, most aquatic habitats along the coast of California possess at least one exotic (i.e., nonnative) fish species, and the mere presence of these species does not preclude the presence of tidewater gobies (e.g., Wang 1984, pp. 8–9; Swift *et al.* 1997, p. 23) or habitat that contains the features essential for the conservation of the listed fish species. The 2000 rule included a PCE that specifically highlighted the importance of a diversity of prey species the tidewater goby may use as food. Because the tidewater goby are known to eat a relatively large diversity of invertebrate species (Irwin and Soltz 1984, pp. 21–23; Swift *et al.* 1989, p. 6; Swenson 1995, p. 87), we have chosen to not include a PCE in this proposed rule that highlights the importance of prey species. We have adopted this approach because we believe that, except in extenuating circumstances (e.g., a toxic waste spill that only affects aquatic invertebrate species), these invertebrates will be present if other PCEs (e.g., persistent, shallow aquatic habitat) are present.

(4) In the 2000 rule, eight units were designated as critical habitat on Marine Corps Base Camp Pendleton (Base) in San Diego County. The Base is the only area south of Los Angeles where goby localities occur, and that was occupied the time of listing and is still occupied. In 2001, the Marine Corps completed an Integrated Natural Resource

Management Plan (INRMP) for the Base per the Sikes Act, as amended (16 U.S.C. 670a). Additionally, in 1995, the Marine Corps and the Service completed a large-scale programmatic consultation under section 7 of the Act addressing, among other species, the tidewater goby and its habitat. In this proposed rule, we have determined that conservation efforts identified in the INRMP for the Base provide a benefit to the tidewater goby occurring in habitats within or adjacent to the Base. As a result, pursuant to section 4(a)(3) of the Act, we have not included approximately 838 ac (340 ha) of habitat on the Base in this proposed revision to the critical habitat designation

Proposed Revision to the Critical Habitat Designation

We are proposing 44 units as critical habitat for the tidewater goby distributed along a large portion of the coast of California. These units, which do not correspond to those units in the 2000 designation, if finalized, would entirely replace the current critical habitat designation for the tidewater goby in 50 CFR 17.95(e). The 44 areas proposed as revised critical habitat occur in: Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties, California. Based on information available to us, we are proposing to include 10,003 ac (4,050 ha) in our revised critical habitat for the goby. If no changes are made between this proposed rule and the final rule,

this would mean that our final revised designation would increase the currently designated critical habitat for tidewater gobies by approximately 8,422 ac (3,408 ha). We considered an additional 1,594 ac (645 ha) that constituted the 10 critical habitat units in the previous designation from 2000, but are now proposing to remove them from designated critical habitat because eight of the areas are on the Marine Corp Base Camp Pendleton and qualify for exemption from designation under section 4(a)(3) of the Act and the other two areas have not been occupied since before the time of listing and are no longer considered essential to the conservation of the species. The area now proposed for designation consists of 11 percent Federal land, 72 percent State land, 2 percent local land, and 15 percent private land. The proposed revised critical habitat areas described below constitute our best assessment at this time of areas determined to be occupied at the time of listing, containing the PCEs that may require special management considerations or protection, and those additional areas that were not occupied at the time of listing but are currently occupied and were found to be essential to the conservation of the tidewater goby.

Table 1 below identifies the approximate area of locations determined to meet the definition of critical habitat for the tidewater goby, but which we have found to be exempt from proposed critical habitat under section 4(a)(3) of the Act.

TABLE 1.—APPROXIMATE SIZE OF OCCUPIED AREAS CONTAINING FEATURES ESSENTIAL TO THE CONSERVATION OF THE TIDEWATER GOBY (DEFINITIONAL AREA) AND THE AREAS DETERMINED TO BE EXEMPT FROM THE CRITICAL HABITAT DESIGNATION UNDER SECTION 4(A)(3) OF THE ACT

Geographic area	Definitional area (acres/hectares)	Exempt area (acres/hectares)
Camp Pendleton Marine Corps Base .....	838/340	838/340
Vandenberg Air Force Base .....	775/314	775/314

Table 2 below provides the approximate area, by unit and landownership, proposed for revised

designation of critical habitat for the tidewater goby.

TABLE 2.—CRITICAL HABITAT UNITS PROPOSED FOR THE TIDEWATER GOBY AND KNOWN THREATS REQUIRING SPECIAL MANAGEMENT PER UNIT. AREA ESTIMATES (ACRES/HECTARES) REFLECT THE ENTIRE AREA WITHIN THE PROPOSED REVISED CRITICAL HABITAT UNIT BOUNDARIES. AREA ESTIMATES ARE ROUNDED TO THE NEAREST WHOLE INTEGER THAT IS EQUAL TO OR GREATER THAN 1. KNOWN THREATS ARE ELEMENTS REQUIRING SPECIAL MANAGEMENT. UNITS ARE ARRANGED NORTH TO SOUTH

Unit name	Federal	State	Local	Private	Total	Known threats requiring special management <sup>1</sup>
DN-1 .....	0/0	2,682/1,085	0/0	0/0	2,682/1,085	1,4
HUM-1 .....	0/0	586/237	0/0	0/0	586/237	4
HUM-2 .....	0/0	1,505/609	0/0	0/0	1,505/609	4
HUM-3 .....	879/356	296/120	90/36	213/86	1,478/598	1,3,4,5
HUM-4 .....	0/0	32/13	0/0	236/96	268/109	4,5
MEN-1 .....	0/0	218/88	0/0	0/0	218/88	4
MEN-2 .....	0/0	11/4	0/0	0/0	11/4	1,4
MEN-3 .....	0/0	23/9	0/0	0/0	23/9	1,4
MEN-4 .....	0/0	24/10	0/0	0/0	24/10	4
SON-1 .....	0/0	41/17	0/0	59/24	100/41	1,2,4,5
MAR-1 .....	1/1	6/2	0/0	288/117	295/120	1,4,5
MAR-2 .....	0/0	60/24	0/0	118/48	178/72	1,2,4,5
MAR-3 .....	176/71	666/270	0/0	7/3	849/344	1,3,4,5
MAR-4 .....	40/16	0/0	0/0	0/0	40/16	1
SM-1 .....	0/0	39/16	0/0	0/0	39/16	1,3
SM-2 .....	0/0	218/88	0/0	0/0	218/88	1,3,4
SM-3 .....	0/0	3/1	0/0	7/3	10/4	1,2
SC-1 .....	0/0	26/11	0/0	0/0	26/11	2,4
SC-2 .....	0/0	17/7	0/0	0/0	17/7	2,4
SC-3 .....	0/0	5/2	6/2	21/8	32/12	1,4
SC-4 .....	0/0	3/1	0/0	0/0	3/1	1,3,4
SC-5 .....	0/0	158/64	10/4	8/3	176/71	1,3,4
MN-1 .....	0/0	82/33	5/2	68/28	155/63	1,2,3,4
SLO-1 .....	0/0	5/2	0/0	0/0	5/2	1,5
SLO-2 .....	0/0	3/1	0/0	0/0	3/1	1,3
SLO-3 .....	0/0	2/1	0/0	0/0	2/1	5
SLO-4 .....	0/0	16/7	0/0	0/0	16/7	2,4,5
SLO-5 .....	0/0	5/2	0/0	0/0	5/2	1,2,4,5
SLO-6 .....	0/0	1/1	0/0	0/0	1/1	5
SLO-7 .....	0/0	12/5	1/1	5/2	18/8	1,3,4
SB-1 .....	0/0	149/60	33/13	286/116	468/189	1,2,4,5
SB-2 .....	0/0	0/0	0/0	1/1	1/1	1,4
SB-3 .....	0/0	0/0	0/0	3/1	3/1	4
SB-4 .....	0/0	0/0	0/0	1/1	1/1	1,2,4,5
SB-5 .....	0/0	0/0	0/0	1/1	1/1	1,4
SB-6 .....	0/0	8/3	0/0	1/1	9/4	1,3,4,5
SB-7 .....	0/0	0/0	1/1	5/2	6/3	4
SB-8 .....	0/0	0/0	2/1	0/0	2/1	1,3,4
SB-9 .....	0/0	9/4	5/2	0/0	14/6	1,3,4
VEN-1 .....	0/0	26/10	16/6	9/4	51/20	1,2,3,4
VEN-2 .....	0/0	218/88	22/9	110/45	350/142	1,2,3,4
VEN-3 .....	0/0	5/2	40/16	0/0	45/18	1,3,4
LA-1 .....	0/0	58/24	0/0	6/3	64/27	1,2,3,4
LA-2 .....	0/0	5/2	0/0	0/0	5/2	1,2,3,4
Total .....	1,096/443	7,223/2,923	231/93	1,453/593	10,003/4,053	

<sup>1</sup> Codes to known threats to tidewater goby PCE's that may require special management are as follows:

1. Coastal development projects that result in the loss or alteration of coastal wetland habitat affecting PCE 1, 2, 3, and 4.
2. Water diversions, alterations of water flows, and groundwater overdrafting upstream of coastal lagoons and estuaries that negatively impact the species' breeding and foraging activities and PCE 1, 2, and 3.
3. Channelization of habitats where the species occurs affecting PCE 1, 2, 3, and 4.
4. Non-point and point source pollution or discharge of agricultural and sewage effluents that are likely to impact the species health or breeding and foraging activities and PCE 1.
5. Cattle grazing and feral pig activity that results in increased sedimentation of coastal lagoons and riparian habitats, removes vegetative cover, increases ambient water temperatures, and eliminates plunge pools and undercut banks utilized by tidewater gobies affecting PCE 1.

We present brief descriptions for each proposed critical habitat unit below and provide one or more reasons why each unit meets the definition of critical habitat. The first two or three letters in the code for each proposed critical

habitat unit description reflects the county where the unit occurs: DN = Del Norte, HUM = Humboldt, LA = Los Angeles, MAR = Marin, MEN = Mendocino, MON = Monterey, SLO = San Luis Obispo, SM = San Mateo, SB

= Santa Barbara, SC = Santa Cruz, SON = Sonoma, and VEN = Ventura. In Table 2 above, these units are listed in sequential order from north to south, with the most northerly unit being

described first and the most southerly unit being described last.

All of the proposed critical habitat units, which follow below, for the tidewater goby contain the following PCEs: Persistent, shallow (in the range of about 0.1–2 m), still-to-slow-moving, aquatic habitat most commonly ranging in salinity from less than 0.5 ppt to about 10–12 ppt (PCE 1); substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction (PCE 2); and submerged and emergent aquatic vegetation, such as *Potamogeton pectinatus* and *Ruppia maritima*, that provides protection from predators (PCE 3). In the unit descriptions below, we provide an assessment indicating if PCE 4 is present within the unit boundary (i.e., the presence of a sandbar(s) across the mouth of a lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, thereby providing relatively stable water levels and salinity).

For the purposes of this document, local ownership refers to land that is owned or managed by a city, county, or municipal government entity.

*DN–1, Lake Earl/Lake Tolowa (2,682 ac (1,085 ha))*

This unit is located about 3 mi (4.8 km) north of the town of Crescent City, and is about 10 mi (16 km) south of the California–Oregon border. On an intermittent basis, DN–1 possesses a sandbar across the mouth of the lagoon or estuary during the majority of the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). This unit includes two contiguous lagoons (Lake Tolowa and Lake Earl), referred to collectively as Lake Earl. DN–1 includes State-owned land within the California Department of Fish and Game's (CDFG) Lake Earl Wildlife Area, and a portion of Tolowa Dunes State Park. DN–1 was occupied at the time of listing and is currently occupied. This proposed critical habitat unit is the largest occupied locality in Del Norte County. Tidewater gobies have regularly been found throughout the lagoon in large numbers during surveys and intensive studies (Tetra Tech 2000, pp. 8–9 and Tables G–1 through G–12). The unit is separated from the nearest extant population to the north, in Tilla Slough/Smith River (not proposed as critical habitat), by 7.3 mi (11.8 km). Because DN–1 has been consistently occupied over time, it is considered likely a source population for this region. This proposed critical habitat unit provides habitat for a tidewater goby population

that is genetically distinct (Dawson et al. 2001, p. 1172) and is important to maintaining the overall genetic diversity of the species. It likely provides demographic and genetic support for other intermittent localities such as Tillas Slough, and provides a source population for reestablishment of the species at historically occupied but currently extirpated localities at Redwood Creek estuary and Freshwater Lagoon.

Furthermore, Lake Earl/Lake Tolowa are representative of extensive coastal lagoons and bays north of Cape Mendocino formed over uplifting Holocene sediments on broad flat coastal benches. These coastal benches include an intricate network of estuaries and other channels that are features that are essential to the conservation of the tidewater goby because they provide refugia during seasonal floods and breeding habitat through the full range of climatic cycles. The water level and salinity within the lagoon varies seasonally and annually in response to (a) periods of high precipitation or drought within its watershed; (b) the timing, duration, and frequency of breaching events; (c) the water level in the lagoon at the time of breaching; and (d) ocean tidal cycles during and immediately following a breach. As a result of natural and human-induced environmental changes, maximum water depth within Lake Earl varies during an annual cycle from less than 5 feet deep to more than 10 feet deep. The distribution of tidewater gobies and PCEs within Lake Earl changes in response to these dynamic, short-term habitat conditions; over a multi-year cycle, tidewater gobies may persist and breed anywhere within the lagoon. PCEs are found throughout DN–1 on a short-term but variable time scale in response to the dynamic variability of the habitat itself. DN–1 is important to the conservation of the species because it is the northernmost area within the range of the tidewater goby that we are proposing for critical habitat designation, and therefore reflects an important aspect of the historical geographical distribution of the species. This unit is also important to the conservation of the species because it is considered a source population, it will reduce the chance of losing the tidewater goby along this important coastal range, conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management are described in Table 2.

*HUM–1, Stone Lagoon (586 ac (237 ha))*

This unit is approximately 11 mi (18 km) north of the city of Trinidad. HUM–1 (Stone Lagoon) is a moderately large, natural, coastal lagoon with a narrow sand spit separating it from the ocean. The lagoon includes fresh water input from two streams on the east and southern sides of the unit. Similar to DN–1, HUM–1 is typical of large north coast lagoons, characterized by a seasonal sandbar that results in relatively stable habitat within a naturally variable range of seasonal and annual climate conditions. HUM–1 possesses a sandbar across the mouth of the lagoon or estuary during the majority of the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). Tidewater goby distribution within this overall large lagoon varies in response to annual and seasonal climatic conditions. The other three PCEs occur throughout the unit, and the species likely alters its distribution within the lagoon in response to seasonal and annual habitat variability. HUM–1 is entirely State-owned and is part of Humboldt Lagoons State Park. Management of the lagoon does not include goals or tasks specific to the tidewater goby. HUM–1 was occupied at the time of listing, is currently occupied and is likely a source population for this region. HUM–1 is the northernmost of the four Humboldt County units and is located 40.8 mi (65.6 km) south of Lake Earl/Lake Tolowa (DN–1). The unit is separated from the nearest extant population to the north, in Freshwater Lagoon (not proposed), by 30.7 mi (49.4 km). HUM–1 is the closest source population to reestablish the tidewater goby within formerly suitable but known extirpated localities at Redwood Creek and Freshwater Lagoon. HUM–1 will also reduce the chance of losing the tidewater goby along this portion of the coast and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*HUM–2, Big Lagoon (1,505 ac (609 ha))*

This unit is approximately 7 mi (11 km) north of the city of Trinidad. Big Lagoon is a large coastal lagoon with a narrow sand spit separating it from the ocean, and receives the majority of its fresh water input from one stream in the southeast portion of the unit. Similar to DN–1, HUM–2 is typical of large north coast lagoons and estuaries, characterized by a seasonal sandbar that

results in relatively stable habitat within a naturally variable range of seasonal and annual climate conditions. HUM-2 possesses a sandbar across the mouth of the lagoon or estuary during the majority of the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). Tidewater goby distribution within this overall large lagoon varies in response to annual and seasonal climatic conditions. The other three PCEs occur throughout the unit, and the species likely alters its distribution within the lagoon in response to seasonal and annual habitat variability. HUM-2 consists entirely of State lands that are part of Humboldt Lagoons State Park. HUM-2 was occupied at the time of listing, is currently occupied, and is likely a source population for this region. HUM-2 is located 4.6 mi (7.3 km) south of Stone Lagoon (HUM-1), which is also the nearest extant population. This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*HUM-3, Humboldt Bay (1,478 ac (598 ha))*

This unit is located within an 8 mi (13 km) radius to the north, south, and east of the city of Eureka. This area was known to be occupied at the time of listing and is currently occupied. Humboldt Bay and its adjacent marshes and estuaries are a complex mixture of natural and human-made aquatic features that have experienced many decades of human-induced changes. These changes include the construction of levees, tidegates, culverts, and other water control structures, and extensive dredging of sandbars. Surrounding the bay itself is a generally broad bench historically dominated by mudflats, tidal marshes, estuarine channels, and brackish marshes. Substantial portions of those habitats were converted to agricultural, urban, and industrial uses in recent history, resulting in the loss of as much as 10,000 ac (4,047 ha) of potentially suitable habitat.

This critical habitat unit consists of a complex of interconnected estuary channels and human-made structures along the eastern edge of Humboldt Bay which collectively mimic, on a much

reduced scale, habitats largely lost through past management practices. Many of these channels and marshes are themselves the result of changes to historical habitats, and depend on specific yet generally undocumented management activities for their continued function. To address the dynamic variability of these habitats resulting from seasonal and inter-annual precipitation differences, we have included both the actual known locations where tidewater gobies have been documented, as well as portions of those channels contiguous to but upchannel or downchannel from the known localities. We have not included Humboldt Bay proper in critical habitat, nor have we included major channels substantially subject to daily tidal fluctuations, as we have no evidence suggesting tidewater gobies may breed there. Similarly, we have not included channels that are not contiguous with known occupied habitat, nor have we included intervening marsh or agricultural lands that may occasionally be flooded during severe winter storm events.

Based on several recent surveys, we have found that the precise locations of tidewater goby use within the channel complex during any particular year may change in response to annual variation in precipitation and channel hydrology. PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. Only PCE 4 (a sandbar(s) across the mouth of lagoon or estuary) is not likely to occur within this unit because a navigable, dredged channel with a permanent open connection to the ocean is maintained on a regular basis. We anticipate that the persistence of the tidewater goby source population within this unit may require protection of localities that are not occupied every year, but collectively form a source population through an interconnected complex of channels and shallow water habitats. That is, any of the several known occupied localities within a channel complex may be used by tidewater gobies during various years in response to dynamic habitat conditions during seasonal, annual, and longer term climatic cycles (e.g., drought).

Recently, significant restoration efforts directed primarily at salmonid recovery have occurred or are anticipated to occur within habitats proposed for designation as critical habitat in this revision. The outcome of these salmonid restoration efforts to tidewater gobies is unknown, and will likely vary with their design features

and their location. This unit consists of Federal, State, local government, and private lands. HUM-3 is located 21.0 mi (33.9 km) south of Big Lagoon (HUM-2). The unit is separated from the nearest extant population to the south, in the Eel River (HUM-4), by 18.4 mi (29.7 km). This source population may provide essential demographic and genetic support to HUM-4, especially during periods of extreme floods (e.g., the 1964 "Christmas Flood"), when the population of tidewater gobies at the Eel River estuary may be extirpated. This unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management are described in Table 2.

*HUM-4, Eel River (268 ac (109 ha))*

This unit is located approximately 4 mi (6.5 km) north of the town of Ferndale. The Eel River delta includes a large, complex estuary with a network of diked and natural slough channels which contain suitable tidewater goby habitat. The Eel River delta contains many small, un-surveyed slough channels and other backwater areas that provide suitable habitat for tidewater gobies, but it also contains larger channels open to direct tidal influence that do not provide suitable habitat and are not included in this unit. This unit consists of backwater channels and immediately adjacent marsh contiguous to the known occupied habitat. This unit was not known to be occupied at the time of listing; however, no tidewater goby surveys are known to have occurred in the Eel River estuary prior to the listing. The Service discovered a new population of tidewater gobies in the Eel River estuary during surveys in 2004 (Goldsmith 2006b, p. 1). This unit consists of State lands, local government lands, and private lands. Similar to HUM-3, this unit includes portions of the contiguous channel upstream from the known locality, expected to function as habitat in response to seasonal and inter-annual fluctuations of water level and salinity. On an intermittent basis, HUM-4 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). The other three PCEs occur throughout the unit in a

dynamic, seasonally variable distribution.

As described earlier in HUM-3, we anticipate that tidewater gobies use various locations throughout this unit as a moving source population in response to the naturally changing habitat conditions. This unit is subject to infrequent yet severe flooding from the nearby Eel River proper. The major flood event of 1964 ("Christmas Flood"), and other major floods during the past century, may have severely altered habitat in most channels, including those currently occupied. Tidewater gobies may have persisted in the refugia provided in upper channels and swales, and we have included some of those channels in this proposal. Alternatively, the species may have been extirpated at the Eel River delta during those severe events, and reestablished itself through demographic and genetic support from HUM-3, located approximately 18.4 mi (29.7 km) to the north.

Of particular importance, the Eel River location is at the north end of one of the largest natural geographic gaps in the tidewater goby's geographic range. The gap extends to the Ten Mile River (Mendocino County) to the south, representing a coastline distance in excess of 135 mi (217 km). This gap, with its rocky coastline, strong currents, and long distance, remains a formidable barrier to the dispersal of tidewater gobies. Thus, one of the reasons that this unit is important for the conservation of the species is because it is at the boundary of a large, natural gap in the geographic range of the species. Further, this unit possesses ecological characteristics which may be important in maintaining the species' ability to adapt to changing environments, including the ability to disperse into higher channels and marsh habitat during severe flood events. This unit will also reduce the chance of losing the tidewater goby along this portion of the coast, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management are described in Table 2.

*MEN-1, Ten Mile River (218 ac (88 ha))*

This unit is located 9 mi (14.5 km) north of the town of Fort Bragg. Ten Mile River includes a moderately large estuary with a long, low-gradient profile that contains many beneficial characteristics for supporting tidewater gobies, including part-time tidal exchange, brackish water, complex cover, suitable substrate types, and areas of off-channel refugia. Suitable habitat in this estuary extends to at least 3 mi

(5 km) from the ocean, where a gradual increase in gradient and freshwater conditions dominates. On an intermittent basis, MEN-1 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). Persistent, shallow water extends in the estuary for more than 3 mi (5 km) upstream from the ocean. Through this long estuary, salinity and water depth vary by season, amount of precipitation, and tidal cycle. Thus, PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal and longer term fluctuations in precipitation and tidal inundation.

This unit consists entirely of State lands. Ten Mile River was known to be occupied by tidewater gobies at the time of listing and is currently occupied. MEN-1 is located 135.0 mi (217.0 km) south of Eel River (HUM-4). The unit is separated from the nearest extant population to the south, in Virgin Creek (MEN-2), by 5.6 mi (8.9 km). This unit provides habitat for a tidewater goby population that is genetically distinct (Dawson et al. 2001, p. 1172). This unit is considered a source population, and will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Furthermore, this unit is the largest block of habitat along the coast of Mendocino County, and is the last location on the southern end of one of the longest stretches of unsuitable habitat in the species range (previously described under HUM-4). Thus, this unit is important to the long-term exchange of genetic material between populations south of Cape Mendocino and populations to the north in Humboldt and Del Norte Counties. South of Ten Mile River, only three other small, isolated localities occupied by tidewater gobies are known to exist across the more than 100 miles of rugged coastline between MEN-1 and SON-1 in south-coastal Sonoma County. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*MEN-2, Virgin Creek (11 ac (4 ha))*

This unit is located 3.5 mi (5.6 km) north of the town of Fort Bragg and includes the small estuary of Virgin Creek. On an intermittent basis, MEN-2 possesses a sandbar across the mouth of the estuary during the late spring,

summer, and fall that closes or partially closes the estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands that are part of McKerricher State Park, but is influenced by factors, such as upstream water quality, not under the jurisdiction of the Park. The tidewater goby was known to occupy this locality at the time of listing and the unit is currently occupied. MEN-2 is located 5.6 mi (8.9 km) south of Ten Mile River (MEN-1). The unit is separated from the nearest extant population to the south, in Pudding Creek (MEN-3), by 1.2 mi (2.0 km). This unit provides habitat for a tidewater goby population that is genetically distinct (Dawson et al. 2001, p. 1172). This unit is considered a source population, and it will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. As described above, this unit is one of only three small estuaries occupied by gobies between MEN-1 and SON-1. It forms an important intermediate locality for long-term genetic movement over more than 100 mi (161 km) of rugged Mendocino and Sonoma County coast. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*MEN-3, Pudding Creek (23 ac (9 ha))*

This unit is located 2.5 mi (4.0 km) north of the town of Fort Bragg. Pudding Creek, unit MEN-3, is a moderately small estuary controlled at the upstream end by a low-head, municipal water storage dam. On an intermittent basis, MEN-3 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the estuary, and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands that are part of McKerricher State Park, but is influenced by factors, such as upstream water quality, not under the jurisdiction of the Park. Tidewater gobies have been known from this location for at least the last 30 years, including the time of listing, and it is



currently occupied. MEN-3 is located 1.2 mi (2.0 km) south of Virgin Creek (MEN-2), which is also the nearest extant population. This unit allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. As described above, this unit is one of only three small estuaries likely to be occupied by tidewater gobies between MEN-1 and SON-1. It forms an important intermediate locality for long-term genetic movement over more than 100 mi (161 km) of rugged, unoccupied Mendocino and Sonoma County coast. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*MEN-4, Davis Lake and Manchester State Park Ponds (24 ac (10 ha))*

This unit is located 3.3 mi (5.2 km) northeast of Point Arena, and includes an area with ponds fed by a small, unnamed, low-elevation, coastal stream in Manchester State Park. On an intermittent basis, MEN-4 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands that are part of Manchester State Park. Tidewater gobies have been known from this location for at least the last 30 years, including the time of listing, and it is currently occupied. MEN-4 is located 32.4 mi (52.2 km) south of Pudding Creek (MEN-3), which is also the nearest extant population. This unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit is considered a source population, and it will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. As described above, this unit is one of only three small estuaries likely to be occupied by gobies between MEN-1 and SON-1. It forms an important intermediate locality for long-term genetic movement over more than 100 miles of rugged, unoccupied Mendocino and Sonoma County coast. There are other potential areas of suitable habitat in neighboring wetlands. However, tidewater gobies have not been

documented from these locations, and they are not included in this unit. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SON-1, Salmon Creek (100 ac (41 ha))*

This unit is located about 7 mi (11.3 km) south of the community of Jenner at the mouth of the Russian River. On an intermittent basis, SON-1 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. Within the unit, the beach, estuary downstream of the State Route (SR) 1 bridge, and the floodplain north of Salmon Creek and upstream (east) of SR 1 are State lands under the jurisdiction of the C DPR. The area and wetlands south of the creek and east of SR 1 in the unit are privately owned. This unit was occupied by tidewater gobies at the time of listing, is currently occupied, and is likely a source population for this region. The closest known existing population of tidewater gobies to Salmon Creek is located at Estero Americano 5.3 mi (8.5 km) to the south. The geological feature known as Bodega Head separates Salmon Creek and Estero Americano, and is likely to reduce the exchange of tidewater gobies between these two locations. This unit provides habitat for a tidewater goby population that is genetically distinct. This unit will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*MAR-1, Estero Americano (295 ac (120 ha))*

This unit is located south of the Bodega Head, about 3.5 mi (5.7 km) south of Bodega Bay. Estero Americano is approximately 750 to 1,000 ac (300 to 400 ha) in size and is a large lagoon relative to other known extant and historical tidewater goby locations. On an intermittent basis, MAR-1 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby

provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. The majority of this unit consists of privately-owned lands. A small portion of the unit also consists of Federal and State lands. Although the abundance of tidewater goby in Estero Americano seems to vary, it was occupied by tidewater gobies at the time of listing and is currently occupied. MAR-1 is likely a source population for this region. The unit is one of two known locations of tidewater goby in this area, the other being Estero de San Antonio (MAR-2) approximately 2.2 mi (3.5 km) to the south. The closest known existing locations of tidewater goby to the north is the Salmon Creek estuary (SON-1), but this location is upcoast from the Bodega Head, which likely limits interactions with tidewater gobies from this unit. This unit will reduce the chance of losing the tidewater goby along this portion of the coast and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*MAR-2, Estero de San Antonio (178 ac (72 ha))*

This unit is located about 5.6 mi (9 km) south of Bodega Bay. Estero de San Antonio provides approximately 500 to 750 ac (200 to 300 ha) of fish habitat and is a large lagoon relative to other known extant and historical tidewater goby locations. On an intermittent basis, MAR-2 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation.

The majority of this unit consists of private lands, and the rest are State lands. Tidewater gobies are abundant within Estero de San Antonio, and it was occupied by tidewater gobies at the time of listing and is currently occupied. MAR-2 is one of two known locations of tidewater gobies to remain within the local area. This critical habitat unit includes a source population of tidewater gobies that likely provides individuals that are recruited into surrounding subpopulations. The closest known

existing locations of tidewater goby are Estero Americano (i.e., MAR-1) approximately 2.2 mi (3.5 km) to the north and Lagunitas (Papermill) Creek (i.e., MAR-3) approximately 15.5 mi (25 km) to the south. Given the proximity between the MAR-1 and MAR-2 units, it is possible they have exchanged individuals in the past and that they continue to exchange individuals. Exchange between these populations bolsters the continued sustainable existence of the two populations which will, together with SON-1 and MAR-3 units, provide for natural and introduced colonization of available but unoccupied estuaries within the region south of the Russian River and north of Point Reyes.

This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*MAR-3, Lagunitas (Papermill) Creek (849 ac (344 ha))*

This unit is located in Tomales Bay 20.5 mi (33 km) south of Bodega Bay. We do not have information that confirms that PCE 4 (a sandbar(s) across the mouth of the lagoon or estuary) is present within this unit on at least an intermittent basis. PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. The bay-ward portion of the unit consists of State lands. A portion of the unit consists of Federal lands under the jurisdiction of the National Park Service. The remaining portion of the unit is privately owned. Historical records existed documenting the presence of tidewater goby at this location, but at the time of listing it was not occupied. Recent surveys have, however, confirmed that the unit is currently occupied. This unit is essential to the conservation of the species because it is the only known location of the tidewater goby to remain within the greater Tomales Bay area. Thus, if allowed to establish a robust population the unit could act as an important source population for future colonization or introductions to other habitats within Tomales Bay. The closest known location with an extant

tidewater goby population is Estero de San Antonio approximately 15.5 mi (25 km) to the north. Furthermore, this unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172).

*MAR-4, Rodeo Lagoon (40 ac (16 ha))*

This unit is located at the tip of the Marin Peninsula, approximately 3.8 mi (6 km) north of San Francisco. MAR-4 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists of Federal lands under the jurisdiction of the National Park Service's Golden Gate National Recreation Area. The tidewater goby is abundant within Rodeo Lagoon, and the lagoon was occupied by tidewater gobies at the time of listing and is currently occupied. MAR-5 is the only known location where the tidewater goby remains within the greater Bay Area. This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). It also provides habitat for a population of tidewater gobies that could disperse to other adjoining habitats. The closest known existing locations of tidewater goby are Lagunitas Creek in Tomales Bay 23.6 mi (38 km) to the north, and San Gregorio Creek 36 mi (58 km) to the south. This unit will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SM-1, San Gregorio Creek (39 ac (16 ha))*

This unit is located about 28 mi (45 km) south of the San Francisco-San Mateo County line. On an intermittent basis, SM-1 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal

inundation. This unit consists entirely of State lands that are part of San Gregorio State Beach. This unit was occupied at the time of listing, and it is currently occupied. SM-1 is the northernmost of the only three extant populations in San Mateo County. This unit also provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit is noted for high densities of tidewater gobies (Swenson 1993, p. 3). The closest extant population of tidewater gobies north of San Gregorio Creek is 36 mi (58 km) at Rodeo Lagoon and the closest historical location to the north is Lake Merced approximately 28 mi (45 km) to the north. The lack of nearby populations to the north reduces the likelihood that the existing SM-1 population would be naturally reestablished if it were lost. SM-1's position as the northernmost of the only extant tidewater locations remaining in San Mateo County and its proximity to potential reintroduction sites, the lack of other nearby locations to the north, and the presence of a stable population makes this unit an important source population for this region of the California coast. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SM-2, Pescadero-Butano Creek (218 ac (88 ha))*

This unit is located approximately 32 mi (51 km) south of the San Francisco-San Mateo County line. The unit consists of a lagoon, marshes, and creek channels. Unit SM-2 is located between two extant tidewater goby populations; namely the populations in San Gregorio Creek (SM-1) about 3.7 mi (6 km) to the north and in Bean Hollow Creek (SM-3) about 2.9 mi (4.7 km) to the south. On an intermittent basis, SM-2 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). However, since the early 1990s the timing of the sandbar formation seems to have changed from spring/summer to late summer or fall. PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands that are part of Pescadero State Beach and Pescadero Marsh Natural Preserve. This unit was occupied by tidewater gobies at the time of listing and is currently occupied. This unit is unusual in that

some tidewater gobies from this location possess a parasite that appears to occasionally affect their health; these parasites, or the environmental factors that increase the prevalence of the parasites, may represent a threat to this population not identified in Table 2. This unit allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SM-3, Bean Hollow Creek (Arroyo de Los Frijoles) (10 ac (4 ha))*

This unit is located approximately 34.8 mi (56 km) south of the San Francisco-San Mateo County line. On an intermittent basis, SM-3 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. The area east of State Highway 1 is privately owned and the portion of the lagoon west of the highway consists of State lands, which are part of Bean Hollow State Beach. This unit was occupied by tidewater gobies at the time of listing and it is currently occupied. SM-3 is the southernmost of the three San Mateo County units and is located 2.9 mi (4.7 km) south of Pescadero Creek. The unit is separated from the nearest extant population to the south, in Scott Creek (not proposed), by 16.1 mi (26 km). This unit, together with the two units to the north, will reduce the chance of losing the tidewater goby along this important coastal range, and allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SC-1, Laguna Creek (26 ac (11 ha))*

This unit is located approximately 7.5 mi (12.0 km) west of the city of Santa Cruz. On an intermittent basis, SC-1 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3

occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands. SC-1 was occupied by tidewater gobies at the time of listing and is currently occupied. SC-1 is the northernmost of the five Santa Cruz County units and is located 21.4 mi (34.5 km) south of Bean Hollow Creek (SM-3). The unit is separated from the nearest extant population to the south, in Baldwin Creek (SC-2), by 2.0 mi (3.2 km). SC-1 is likely a source population for this region. This unit also provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit, together with Baldwin Creek (SC-2) to the south, is considered a source population, and will reduce the chance of losing the tidewater goby along this portion of the coast; help conserve the genetic diversity of the species; and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protections of the PCEs are described in Table 2.

*SC-2, Baldwin Creek (17 ac (7 ha))*

This unit is located approximately 6 mi (9.7 km) west of the city of Santa Cruz. On an intermittent basis, SC-2 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands that are part of Wilder Ranch State Park. SC-2 was occupied by tidewater gobies at the time of listing and is currently occupied. SC-2 is located 2.0 mi (3.2 km) south of Laguna Creek (SC-1). The unit is separated from the nearest extant population to the south, Lombardi Creek (not proposed), by 0.7 mi (1.2 km). SC-2 is likely a source population for this region. This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit, together with Laguna Creek to the north, is considered a source population, and will reduce the chance of losing the tidewater goby along this portion of the coast; help conserve genetic diversity within the species; and help facilitate colonization of currently unoccupied

locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SC-3, Corcoran Lagoon (32 ac (12 ha))*

This unit is located approximately 3 mi (4.8 km) east of the city of Santa Cruz. On an intermittent basis, SC-3 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. A portion of the unit consists of State lands that are part of Twin Lakes State Beach. The remaining portion is under the jurisdiction of local government, or is privately owned. SC-3 was occupied by tidewater gobies at the time of listing and is currently occupied. SC-3 is located 8.0 mi (12.9 km) south of Baldwin Creek (SC-2) and is in Monterey Bay. The unit is separated from the nearest extant population to the south, in Moran Lake (not proposed), by 0.7 mi (1.1 km). SC-3 is likely a source population for this region. This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This will reduce the chance of losing the tidewater goby along this portion of the coast; help conserve genetic diversity within the species; and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SC-4, Aptos Creek (3 ac (1 ha))*

This unit occurs within the limits of the town of Aptos. We do not have information that confirms that PCE 4 (a sandbar(s) across the mouth of the lagoon or estuary) is present within this unit on at least an intermittent basis. The other three PCEs are present throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. The unit consists entirely of State lands. SC-4 was occupied by tidewater gobies at the time of listing, is currently occupied and is likely a source population for this region. SC-4 is located 4.1 mi (6.6 km) east of Corcoran Lagoon (SC-3) and is in Monterey Bay. The unit is separated from the nearest extant population to

the north, Moran Lake (not proposed), by 42.0 mi (67.5 km). This unit will reduce the chance of losing the tidewater goby along this portion of the coast and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management consideration or protection of the PCEs are described in Table 2.

*SC-5, Pajaro River (176 ac (71 ha))*

This unit is located approximately 5 mi (8 km) southwest of the town of Watsonville. On an intermittent basis, SC-5 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists of State, local government, and private lands. SC-5 was occupied prior to listing but was possibly unoccupied at the time of listing, and therefore we consider it to be unoccupied at the time of listing. However, SC-5 is currently occupied. SC-5 is the southernmost of the five Santa Cruz County units and is located 9.7 mi (15.6 km) south of Aptos Creek (SM-4) within Monterey Bay. The unit is separated from the nearest extant population to the south, in Bennett Slough (MN-1), by 3.0 mi (4.7 km). This unit is essential to the conservation of the species because it allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region.

*MN-1, Bennett Slough (155 ac (63 ha))*

This unit is located approximately 3.7 mi (6 km) northwest of the town of Castroville. We do not have information that confirms that PCE 4 (a sandbar(s) across the mouth of the lagoon or estuary) is present within this unit on at least an intermittent basis; however, the other three PCEs are present throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. A portion of this unit is on State-owned land under the jurisdiction of either CDFG (Moss Landing Wildlife Area) or CDPR (Moss Landing State Beach). The rest of the unit is on privately owned land, or land owned by local government. MN-1 was occupied by tidewater gobies at the time of listing and is currently the only occupied

locality in Monterey County. MN-1 is likely a source population for this region. MN-1 is located 4.1 mi (6.6 km) south of the Pajaro River (SC-5) and is in Monterey Bay. The Pajaro River (SC-5) is the nearest extant population to this unit. This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SLO-1, Arroyo del Corral (5 ac (2 ha))*

This unit is located approximately 6 mi (9.7 km) northwest of San Simeon. On an intermittent basis, SLO-1 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands. SLO-1 was occupied at the time of listing and is currently occupied. SLO-1 is likely a source population for this region. SLO-1 is the northernmost of the seven San Luis Obispo County units and is located 83.2 mi (133.9 km) south of Bennett Slough (MN-1). The unit is separated from the nearest extant population to the south, Oak Knoll Creek (SLO-2), by 4.3 mi (6.9 km). This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit will reduce the chance of losing the tidewater goby along this portion of the coast; help conserve genetic diversity within the species; and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SLO-2, Oak Knoll Creek (Arroyo Laguna) (3 ac (1 ha))*

This unit is located approximately 2 mi (3.2 km) northwest of San Simeon. On an intermittent basis, SLO-2 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary

and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands. SLO-2 was occupied at the time of listing and is currently occupied. SLO-2 is located 4.3 mi (6.9 km) south of Arroyo del Corral (SLO-1). The unit is separated from the nearest extant population to the south, in Arroyo de Tortuga (not proposed), by 4.9 mi (7.9 km). This unit allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SLO-3, Little Pico Creek (2 ac (1 ha))*

This unit is located approximately 6.7 mi (10.8 km) northwest of the town of Cambria. On an intermittent basis, SLO-3 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands. SLO-3 is located 3.7 mi (5.9 km) south of Oak Knoll Creek (SLO-2). The unit is separated from the nearest extant population to the north, in Broken Bridge Creek (not proposed), by 1.4 mi (2.2 km). SLO-3 was occupied at the time of listing, is currently occupied, and is likely a source population for this region. This unit will reduce the chance of losing the tidewater goby along this portion of the coast and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SLO-4, San Simeon Creek (16 ac (7 ha))*

This unit is located approximately 3.3 mi (5.3 km) northwest of the town of Cambria. On an intermittent basis, SLO-4 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any

particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands that are part of San Simeon State Park. SLO-4 was occupied at the time of listing and is currently occupied. SLO-4 is located 3.8 mi (6.1 km) south of Little Pico Creek (SLO-3). The unit is separated from the nearest extant population to the south, in Santa Rosa Creek (not proposed), by 2.6 mi (4.2 km). SLO-4 was occupied at the time of listing, is currently occupied, and is likely a source population for this region. This unit will reduce the chance of losing the tidewater goby along this portion of the coast and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SLO-5, Villa Creek (5 ac (2 ha))*

This unit is located approximately 9.6 mi (15.4 km) southeast of Cambria. On an intermittent basis, SLO-5 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands. SLO-5 was occupied at the time of listing, is currently occupied, and is likely a source population for this region. SLO-5 is located 12.3 mi (19.8 km) south of San Simeon Creek (SLO-4). The unit is separated from the nearest extant population to the south, in San Geronimo Creek (SLO-6), by 2.3 mi (3.7 km). This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SLO-6, San Geronimo Creek (1 ac (1 ha))*

This unit is located approximately 7.6 mi (12.2 km) northwest of the town of Morro Bay. On an intermittent basis, SLO-6 possesses a sandbar across the mouth of the lagoon or estuary during

the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands. SLO-6 was occupied at the time of listing, is currently occupied, and is likely a source population for this region. SLO-6 is located 2.3 mi (3.7 km) south of Villa Creek (SLO-5). The unit is separated from the nearest extant population to the south, in Cayucos Creek (not proposed), by 1.5 mi (2.4 km). This unit will reduce the chance of losing the tidewater goby along this portion of the coast and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SLO-7, Pismo Creek (18 ac (8 ha))*

This unit is located within, or is directly adjacent to, the town of Pismo Beach. On an intermittent basis, SLO-7 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. Approximately 60 percent of this locality is located on State-owned land that is part of Pismo State Beach; the remainder is privately owned or owned by the town of Pismo Beach. SLO-7 was occupied at the time of listing, is currently occupied, and is likely a source population for this region. SLO-7 is the southernmost of the nine San Luis Obispo County units and is located 27.3 mi (44.0 km) south of San Geronimo Creek (SLO-6). The unit is separated from the nearest extant population to the south, in Arroyo Grande Creek (not proposed), by 2.6 mi (4.2 km). SLO-7 has been consistently occupied over time and This unit will reduce the chance of losing the tidewater goby along this portion of the coast and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SB-1, Santa Maria River (468 ac (189 ha))*

This unit is located approximately 13 mi (21 km) west of the city of Santa Maria. On an intermittent basis, SB-1 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists of land that is owned by local government and privately owned land. SB-1 was occupied at the time of listing, is currently occupied, and is likely a source population for this region. SB-1 is the northernmost of the nine Santa Barbara County units and is located 11.8 mi (18.9 km) south of Pismo Creek (SLO-9). The unit is separated from the nearest extant population to the south, in Shuman Canyon (not proposed), by 8.6 mi (13.9 km). This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit will reduce the chance of losing the tidewater goby along this portion of the coast; help conserve genetic diversity within the species; and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SB-2, Cañada de las Agujas (1 ac (1 ha))*

This unit is located approximately 7.2 mi (11.6 km) west of Gaviota. On an intermittent basis, SB-2 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists of privately owned lands. SB-2 was occupied at the time of listing and is currently occupied. SB-2 is located 38.8 mi (62.5 km) south of the Santa Maria River (SB-1). The unit is separated from the nearest extant population to the south, in Arroyo El Bulito (not proposed), by 0.4 mi (0.7 km). This unit allows for connectivity between tidewater goby source populations, and thereby supports gene flow and

metapopulation dynamics in this region. Furthermore, we believe this unit, and units SB-3, SB-4, SB-5, and SB-6, likely act as a metapopulation as defined in the "Background" section. These units are no more than 2.0 mi (3.3 km) from each other, which facilitates higher dispersal rates between sites. Because these units are of relatively small size in area (1 to 9 ac (1 to 4 ha)), they are more susceptible to drying up or shrinking due to drought conditions and thereby increasing the likelihood of local extirpation. Lastly, because these units are small, they are likely to be dependent upon some degree of periodic exchange of tidewater gobies between units for any one unit to persist over time; therefore, designation of critical habitat at these five locations is necessary for the conservation of the tidewater goby along the Gaviota Coast in Santa Barbara County. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SB-3, Cañada de Santa Anita (3 ac (1 ha))*

This unit is located approximately 5.2 mi (8.4 km) west of Gaviota. On an intermittent basis, SB-3 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists of privately owned lands. SB-3 was occupied at the time of listing and is currently occupied. SB-3 is located 2.0 mi (3.2 km) south of Cañada de las Agujas (SB-2). The unit is separated from the nearest extant population to the north, in Cañada del Agua (not proposed), by 0.4 mi (0.7 km). This unit is important to the conservation of the species because it allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. Furthermore, as described above in SB-2, we believe this unit, and units SB-2, SB-4, SB-5, and SB-6, likely act as a metapopulation as defined in the "Background" section, and that designation of critical habitat at these five locations is necessary for the conservation of the tidewater goby along the Gaviota Coast in Santa Barbara County. Known threats in this unit that may require special management

considerations or protection of the PCEs are described in Table 2.

*SB-4, Cañada de Alegria (1 ac (1 ha))*

This unit is located approximately 3.2 mi (5.1 km) west of Gaviota. On an intermittent basis, SB-4 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists of privately owned lands. SB-4 was occupied at the time of listing and is currently occupied. SB-4 is located 2.0 mi (3.3 km) south of Cañada de Santa Anita (SB-3). The unit is separated from the nearest extant population to the south, in Cañada de Agua Caliente (SB-5), by 1.1 mi (1.8 km). This unit is important to the conservation of the species because it allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. Furthermore, as described above in SB-2, we believe this unit, and units SB-2, SB-3, SB-5, and SB-6, likely act as a metapopulation as defined in the "Background" section. Known threats in this unit that may require special management are described in Table 2.

*SB-5, Cañada de Agua Caliente (1 ac (1 ha))*

This unit is located approximately 2.1 mi (3.4 km) west of Gaviota. On an intermittent basis, SB-5 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists of privately owned land. SB-5 was occupied at the time of listing and is currently occupied. This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit helps conserve genetic diversity within the species. This unit also allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. Furthermore, as described above in SB-

2, we believe this unit, and units SB-2, SB-3, SB-4, and SB-6, likely act as a metapopulation as defined in the "Background" section, and that designation of critical habitat at these five locations is necessary for the conservation of the tidewater goby along the Gaviota Coast in Santa Barbara County. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SB-6, Gaviota Creek (9 ac (4 ha))*

This unit is located approximately 0.8 mi (1.3 km) west of Gaviota. On an intermittent basis, SB-6 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists of State lands that are part of Gaviota Creek State Park, and includes some privately owned land. SB-6 was occupied at the time of listing, is currently occupied. SB-6 is located 1.5 mi (2.4 km) south of Cañada de Agua Caliente (SB-5), which is also the nearest extant population. This unit is important to the conservation of the species because it will reduce the chance of losing the tidewater goby along this portion of the coast. It also allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. Furthermore, as described above in SB-2, we believe this unit, and units SB-2, SB-3, SB-4, and SB-5, likely act as a metapopulation as defined in the "Background" section, and that designation of critical habitat at these five locations is necessary for the conservation of the tidewater goby along the Gaviota Coast in Santa Barbara County. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SB-7, Winchester/Bell Canyon (6 ac (3 ha))*

This unit is located approximately 2.2 mi (3.5 km) west of the community of El Encanto Heights. On an intermittent basis, SB-7 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4).

PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit includes privately owned land, and land that is owned by local government. SB-7 was occupied at the time of listing and is currently occupied. SB-7 is located 4.3 mi (6.9 km) south of Gaviota Creek (SB-6). The unit is separated from the nearest extant population to the north, Tecolote Canyon (not proposed), by 0.3 mi (0.4 km). This unit is important to the conservation of the species because it allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*SB-8, Arroyo Burro (2 ac (1 ha))*

This unit is located approximately 3.6 mi (5.8 km) west of the city of Santa Barbara. On an intermittent basis, SB-8 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit occurs on land that is owned by local government. SB-8 was not known to be occupied at the time of listing, but was subsequently found to be occupied. SB-8 is located 9.9 mi (15.9 km) south of Winchester/Bell Canyon (SB-7). The unit is separated from the nearest extant population to the south, in Laguna Channel/Mission Creek (SB-9), by 2.8 mi (4.5 km). This unit is essential to the conservation of the tidewater goby because it allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region.

*SB-9, Mission Creek-Laguna Channel (14 ac (6 ha))*

This unit is located on the southern margin of the city of Santa Barbara. On an intermittent basis, SB-9 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their

precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. A portion of this unit is owned by the city of Santa Barbara, and the remainder is privately owned. SB-9 was occupied at the time of listing, is currently occupied, and is likely a source population for this region. SB-9 is the southernmost of the nine Santa Barbara County units and is located 2.8 mi (4.5 km) south of Arroyo Burro (SB-8). The unit is separated from the nearest extant population to the south, in Sycamore Creek (not proposed), by 1.0 mi (1.5 km). This unit will reduce the chance of losing the tidewater goby along this portion of the coast and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*VEN-1, Ventura River (51 ac (20 ha))*

This unit is located on the northern border of the city of Ventura. On an intermittent basis, VEN-1 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. A portion of this unit is on State-owned land, and the remainder is privately owned. VEN-1 was occupied at the time of listing, is currently occupied, and is likely a source population for this region. VEN-1 is the northernmost of the three Ventura County units and is located 23.4 mi (37.7 km) south of the Mission Creek-Laguna Channel unit (SB-9). The unit is separated from the nearest extant population to the south, the Santa Clara River (VEN-2), by 4.3 mi (7.0 km). This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit is important to the conservation of the species because it is considered a source population, and it will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*VEN-2, Santa Clara River (350 ac (142 ha))*

This unit is located about 4 mi (6.4 km) southeast of the city of Ventura and 7 mi (11.3 km) northwest of Port Hueneme. On an intermittent basis, VEN-2 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall summer that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. VEN-2 consists of State-owned lands, which are part of McGrath State Beach, and privately owned lands. VEN-2 was occupied by tidewater gobies at the time of listing, is currently occupied, and is likely a source population for this region. VEN-2 is located 4.3 mi (7.0 km) south of the Ventura River unit (SB-9), which is also the nearest extant population. This critical habitat unit provides habitat for a tidewater goby population that is genetically distinct (Dawson *et al.* 2001, p. 1172). This unit will reduce the chance of losing the tidewater goby along this portion of the coast, help conserve genetic diversity within the species, and help facilitate colonization of currently unoccupied locations. This critical habitat unit is known to have tens of thousands of tidewater gobies during certain times of the year (Swift 2006), and is considered one of the largest tidewater goby populations in southern California. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*VEN-3, J Street Drain-Ormond Lagoon (45 ac (18 ha))*

This unit is located approximately 1 mi (1.6 km) east of Port Hueneme. On an intermittent basis, VEN-3 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists of State and local government lands. VEN-3 was occupied at the time of listing and is currently occupied. VEN-3 is the southernmost of the three Ventura County units and is located 4.3



mi (6.9 km) south of the Santa Clara River (VEN-2), which is also the nearest extant population. This unit allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*LA-1, Malibu Lagoon (64 ac (27 ha))*

This unit is located 0.6 mi (1 km) east of Malibu Beach. On an intermittent basis, LA-1 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands that are part of Malibu Creek State Park. This unit was occupied at the time of listing, is currently occupied, and is likely a source population for this region. LA-1 is one of the two remaining extant populations of tidewater gobies within Los Angeles County, both of which are proposed as critical habitat units in this revision. LA-1 is located 29.6 mi (47.7 km) south of J Street Drain-Ormond Lagoon (VEN-3). The unit is separated from the nearest extant population to the south, in Topanga Canyon (LA-2), by 6.0 mi (9.6 km). This unit will reduce the chance of losing the tidewater goby along this portion of the coast and help facilitate colonization of currently unoccupied locations. Known threats in this unit that may require special management considerations or protection of the PCEs are described in Table 2.

*LA-2, Topanga Creek (5 ac (2 ha))*

This unit is approximately 5.5 mi (8.9 km) northwest of the city of Santa Monica. On an intermittent basis, LA-2 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary and thereby provides relatively stable conditions (PCE 4). PCEs 1, 2, and 3 occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation. This unit consists entirely of State lands. LA-2 was not known to be occupied at the time of listing, however tidewater gobies

were first detected at this locality in 2001 and the unit is currently occupied. Tidewater gobies in Topanga Canyon are probably derived from fish that dispersed from Malibu Creek. This location is one of the only two remaining localities in Los Angeles County that are occupied by tidewater gobies. LA-2 is located 6.0 mi (9.6 km) south of the Malibu Creek unit (LA-1), which is also the nearest extant population. This unit is essential to the conservation of the species because it allows for connectivity between tidewater goby source populations, and thereby supports gene flow and metapopulation dynamics in this region.

### Effects of Critical Habitat Designation

#### Section 7 Consultation

Section 7(a) of the Act requires Federal agencies, including the Service, to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is proposed or designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402.

Section 7(a)(4) of the Act requires Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. This is a procedural requirement only. However, once a proposed species becomes listed, or proposed critical habitat is designated as final, the full prohibitions of section 7(a)(2) apply to any Federal action. The primary utility of the conference procedures is to maximize the opportunity for a Federal agency to adequately consider proposed species and critical habitat and avoid potential delays in implementing their proposed action as a result of the section 7(a)(2) compliance process, should those species be listed or the critical habitat designated.

Under conference procedures, the Service may provide advisory conservation recommendations to assist the agency in eliminating conflicts that may be caused by the proposed action. The Service may conduct either informal or formal conferences. Informal conferences are typically used if the proposed action is not likely to have any adverse effects to the proposed species or proposed critical habitat. Formal conferences are typically used when the Federal agency or the Service believes the proposed action is likely to cause adverse effects to proposed species or critical habitat, inclusive of those that

may cause jeopardy or adverse modification.

The results of an informal conference are typically transmitted in a conference report; while the results of a formal conference are typically transmitted in a conference opinion. Conference opinions on proposed critical habitat are typically prepared according to 50 CFR 402.14, as if the proposed critical habitat were designated. We may adopt the conference opinion as the biological opinion when the critical habitat is designated, if no substantial new information or changes in the action alter the content of the opinion (see 50 CFR 402.10(d)). As noted above, any conservation recommendations in a conference report or opinion are strictly advisory.

Once a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. Recent decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of "adverse modification" at 50 CFR 402.02 (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442F (5th Cir 2001)). Pursuant to current national policy and the statutory provisions of the Act, we determine destruction or adverse modification based on whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain the current ability for the primary constituent elements to be functionally established) to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. As a result of this consultation, compliance with the requirements of section 7(a)(2) will be documented through the Service's issuance of: (1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or (2) a biological opinion for Federal actions that may affect, but are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to result in jeopardy to a listed species or the destruction or adverse modification of critical habitat, we also provide reasonable and prudent alternatives to

the project, if any are identifiable. "Reasonable and prudent alternatives" are defined at 50 CFR 402.02 as alternative actions identified during consultation 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 the Director believes would avoid jeopardy to the listed species or 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 are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinstate consultation on previously reviewed actions in certain instances, including where a new species is listed or critical habitat is subsequently designated that may be affected by the Federal action, where the Federal agency has retained discretionary involvement or control over the action or such discretionary involvement or control is authorized by law. Consequently, some Federal agencies may request reinstitution of consultation with us on actions for which formal consultation has been completed, if those actions may affect subsequently listed species or designated critical habitat or adversely modify or destroy proposed critical habitat.

Federal activities that may affect the tidewater goby or its designated critical habitat will require section 7 consultation under the Act. Activities on State, tribal, local or private lands requiring a Federal permit (such as a permit from the Corps under section 404 of the Clean Water Act or a permit under section 10(a)(1)(B) of the Act from the Service) or involving some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) will also be subject to the section 7 consultation process. Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local or private lands that are not federally-funded, authorized, or permitted, do not require section 7 consultations.

#### *Application of the Jeopardy and Adverse Modification Standards for Actions Involving Effects to the Tidewater Goby and its Critical Habitat*

##### *Jeopardy Standard*

When performing jeopardy analyses for the tidewater goby, the Service applies an analytical framework that relies heavily on the importance of core area populations to the survival and recovery of the tidewater goby. The section 7(a)(2) analysis is focused not only on these populations but also on the habitat conditions necessary to support them.

The jeopardy analysis usually expresses the survival and recovery needs of the tidewater goby in a qualitative fashion without making distinctions between what is necessary for survival and what is necessary for recovery. Generally, if a proposed Federal action is incompatible with the viability of the affected core area population(s), inclusive of associated habitat conditions, a jeopardy finding is warranted, because of the relationship of each core area population to the survival and recovery of the species as a whole.

##### *Adverse Modification Standard*

The analytical framework described in the Director's December 9, 2004, memorandum is used to complete section 7(a)(2) analyses for Federal actions affecting tidewater goby critical habitat. The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain the current ability for the primary constituent elements to be functionally established) to serve its intended conservation role for the species. Generally, the conservation role of tidewater goby critical habitat units is to support viable core area populations.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe in any proposed or final regulation that designates critical habitat those activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation. Activities that may destroy or adversely modify critical habitat may also jeopardize the continued existence of the species.

Activities that may destroy or adversely modify critical habitat are those that alter the PCEs to an extent that the conservation value of critical habitat for the tidewater goby is appreciably reduced. Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical

habitat and therefore should result in consultation for the tidewater goby include, but are not limited to:

(1) Actions such as channelization and water diversion that reduce the amount of space that is available for individual and population growth and normal behavior, and reduce or eliminate sites for breeding, reproduction, and rearing (or development) of offspring.

(2) Actions that substantially alter the natural hydrologic regime upstream of the designated critical habitat units. These activities could include, but are not limited to, ground water pumping or surface water diversion activities, construction of impoundments or flood control structures, or the release of water in excess of levels that historically occurred. Such activities could result in an atypical reduction or excess amount of water that is present in the aquatic habitats that tidewater gobies occupy, and alter salinity conditions that support this species.

(3) Actions that substantially alter the channel morphology of the proposed critical habitat units, or the areas upgradient from these units. Such activities may include, but are not limited to, channelization projects, road and bridge projects, removal of substrates, destruction and alteration of riparian vegetation, reduction of available floodplain, and removal of gravel or floodplain terrace materials. Such activities could increase water velocities and flush large numbers of tidewater gobies into the ocean especially during flood events.

(4) Actions that result in the discharge of agricultural and sewage effluents, or chemical or biological pollutants into the aquatic habitats where tidewater gobies occur. Such activities have the ability to degrade the water quality where tidewater gobies live, introduce toxic substances that can poison individual fish, adversely affect fish immune systems, and decrease the amount of oxygen in aquatic habitats where the species occurs.

(5) Actions that cause atypical levels of sedimentation in coastal wetland habitats or remove vegetative cover that stabilizes stream banks. Such activities could include, but are not limited to, grazing or mining activities, road construction projects, off-road vehicle use, and other watershed and floodplain disturbance activities. Such activities have the potential to alter the amount and composition of the substrate in the habitats where tidewater gobies occur, and thereby affect the species' ability to construct breeding burrows.

(6) Actions that result in the artificial breaching of lagoon habitats. Such

activities can reduce the amount of space that is available for individual and population growth; strand and desiccate tidewater goby adults, fry or eggs; and increase the risk they will be preyed upon by native or non-native predators as they become concentrated and exposed as water levels drop.

(7) Actions that create barriers that prevent tidewater gobies from accessing areas they would normally be able to access. These activities, which may include, but are not limited to, water diversions, road crossings, and sills, can reduce the amount of space that is available for individual and population growth, and reduce the number and extent of sites for breeding, reproduction, and rearing (or development) of offspring.

All of the units proposed as revised critical habitat, as well as those that have been exempted, to contain features essential to the conservation of the tidewater goby. With the exception of the Eel River, Lagunitas (Papermill) Creek, Pajaro River, Arroyo Burro, and Topanga Creek units, all of the proposed revised critical habitat units were occupied by the species at the time of listing. All of the proposed units are believed to be currently occupied by the tidewater goby. Federal agencies already consult with us on activities in areas currently occupied by the tidewater goby, or where the species may be affected by an action, to ensure that their actions do not jeopardize the continued existence of the tidewater goby.

#### *Application of Section 4(a)(3)*

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete, by November 17, 2001, an Integrated Natural Resource Management Plan (INRMP). An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes an assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species; a statement of goals and priorities; a detailed description of management actions to be implemented to provide for these ecological needs; and a monitoring and adaptive management plan. Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management, fish and wildlife habitat enhancement or modification, wetland protection, enhancement, and

restoration where necessary to support fish and wildlife and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108–136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

We consult with the military on the development and implementation of INRMPs for installations with listed species. INRMPs developed by military installations located within the range of the proposed critical habitat designation for the tidewater goby were analyzed for exemption under the authority of 4(a)(3) of the Act.

#### *Application of Section 4(a)(3)—Marine Corps Base Camp Pendleton*

At the time we designated critical habitat in 2000, the military had not completed an INRMP for the Marine Corps Base Camp Pendleton (“Base”) in northwestern San Diego County, and section 4(a)(3)(B)(i) of the Act did not exist. Therefore, the areas where the tidewater goby occurred on the Base were included in the critical habitat designation. However, subsequently the Base has completed an INRMP and, based on the above considerations and in accordance with section 4(a)(3)(B)(i) of the Act, we have determined that conservation efforts identified in the INRMP for the Base provide benefits to the tidewater goby occurring in habitats within or adjacent to the Base. This includes approximately 838 ac (340 ha) of habitat on the Base that are subject to the INRMP. This habitat is located in the following areas: San Mateo Creek, San Onofre Creek, Las Flores/Pulgas Creek, Hidden Lagoon, Aliso Canyon, French Lagoon, Cocklebur Canyon, and the Santa Margarita River. Therefore, we are proposing to remove the currently designated habitat for tidewater goby on this installation as this critical habitat must be exempted pursuant to section 4(a)(3) of the Act for the reasons described below.

In 2001, the Marine Corps completed an INRMP per the Sikes Act, as amended. All of the currently occupied tidewater goby locations in San Diego

County are on the Base. Additionally, in 1995, the Marine Corps and the Service completed a large-scale programmatic consultation under section 7 of the Act addressing, among other species, the tidewater goby and its habitat. All of the conservation measures, including the Base’s Estuarine/Beach Ecosystem Conservation Plan and the terms and conditions from that consultation, have been incorporated into the INRMP. The objective of the Estuarine/Beach Ecosystem Conservation Plan is to “manage and protect the natural resources along the Base’s coastline emphasizing coastal lagoons and the Santa Margarita River Estuary”, which includes tidewater goby habitat. Specific measures in the INRMP that benefit the tidewater goby include: (1) General avoidance of estuarine wetlands by all military activities, (2) maintenance of currently and historically occupied tidewater goby habitat, (3) compensation for unavoidable impacts, (4) regular monitoring of tidewater goby populations, and (5) controlling and removing exotic plants and fish. Additionally, the Base is exploring the potential for habitat enhancement to benefit the tidewater goby, including deepening smaller lagoons. Further, the Base’s environmental security staff reviews Base projects and enforces existing regulations and Base orders that, through their implementation, avoid and minimize impacts to natural resources, including tidewater gobies and their habitat.

Habitat features essential to the conservation of the tidewater goby exist on the Base; however, designating critical habitat on this military installation may impact its role as the Marine Corps’ premier West Coast amphibious training base and therefore affect the nation’s military readiness. Activities occurring on the Base are currently being conducted in a manner that minimizes impacts to tidewater goby habitat. In addition, the Base already programmatically consulted for regularly occurring activities and regularly consults on any of their actions that fall outside of that programmatic consultation. This military installation has an approved INRMP that provides a benefit to the tidewater goby and the Marine Corps has committed to work closely with the Service and the State wildlife agency to continually refine the existing INRMP as part of the Sikes Act’s INRMP review process.

#### *Vandenberg Air Force Base*

Based on the considerations outlined above in the introduction to this section

and in accordance with section 4(a)(3)(B)(i) of the Act, we have determined that conservation efforts identified in the INRMP for Vandenberg Air Force Base (VAFB) in Santa Barbara County provide benefits to the tidewater goby occurring in habitats within or adjacent to VAFB. This includes approximately 775 ac (314 ha) of habitat on VAFB. This habitat is located in the following areas: Shuman Canyon, San Antonio Creek, and the Santa Ynez River. Therefore, we are not including critical habitat for tidewater goby on this installation pursuant to section 4(a)(3) of the Act for the reasons described below.

VAFB completed an INRMP in 1997, prior to the passage and implementation of the Sikes Act Improvements Act of 1997; in 2003, VAFB revised their INRMP, and we provided comments on the revised INRMP, in a letter dated August 2, 2004. The older plan and the revised INRMP provide conservation measures for the tidewater goby, as well as for the management of important wetland habitats on the base.

VAFB's INRMP benefits tidewater gobies through: (1) Avoidance of tidewater gobies and their habitat, whenever possible, in project planning; (2) scheduling of activities that may affect tidewater gobies outside of the peak breeding period (March–July); (3) coordination with VAFB water quality staff to prevent degradation and contamination of aquatic habitats; and (4) prohibiting the introduction of nonnative fishes into streams on-base. Further, VAFB's environmental staff reviews projects and enforces existing regulations and orders that, through their implementation, avoid and minimize impacts to natural resources, including tidewater gobies and their habitat. In addition, VAFB's INRMP provides protection to aquatic habitats for the tidewater goby by excluding cattle from wetlands and riparian areas through the installation and maintenance of fencing. VAFB's INRMP specifies periodic monitoring of the distribution and abundance of tidewater goby populations on the base.

Habitat features essential to the conservation of the tidewater goby exist on VAFB; however, designating critical habitat on this military installation may impact its mission of launching and tracking of satellites and testing and evaluating missile systems, and therefore affect the nation's military readiness. Activities occurring on VAFB are currently being conducted in a manner that minimizes impacts to tidewater goby habitat. This military installation has an approved INRMP that provides a benefit to the tidewater

goby, and VAFB has committed to work closely with the Service and the State wildlife agency to continually refine their existing INRMP as part of the Sikes Act's INRMP review process. Therefore, approximately 775 ac (314 ha) of critical habitat subject to the INRM at Shuman Canyon, San Antonio Creek, and the Santa Ynez River are exempted from critical habitat in this proposal to revise critical habitat.

#### **Exclusions Under Section 4(b)(2) of the Act**

Section 4(b)(2) of the Act states that critical habitat shall be designated, and revised, on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact, of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if [s]he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless [s]he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the Secretary is afforded broad discretion and the Congressional record is clear that in making a determination under the section the Secretary has discretion as to which factors and how much weight will be given to any factor.

Under section 4(b)(2), in considering whether to exclude a particular area from the designation, we must identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, determine whether the benefits of exclusion outweigh the benefits of inclusion. If an exclusion is contemplated, then we must determine whether excluding the area would result in the extinction of the species. The Service is conducting an economic analysis of the impacts of the proposal to revise critical habitat and related factors, which will be available for public review and comment. Based on public comment on that document, the proposed revision itself, and the information in the final economic analysis, particular areas may be excluded from critical habitat by the Secretary under the provisions of section 4(b)(2) of the Act. This is provided for in the Act, and in our implementing regulations at 50 CFR 242.19.

#### **Economic Analysis**

An analysis of the economic impacts of proposing to revise critical habitat for

the tidewater goby is being prepared. We will announce the availability of the draft economic analysis as soon as it is completed, at which time we will seek public review and comment. At that time, copies of the draft economic analysis will be available for downloading from the Internet at <http://www.fws.gov/ventura/> or by contacting the Ventura Fish and Wildlife Office directly (see **ADDRESSES** section).

#### **Peer Review**

In accordance with our joint policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of such review is to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. We will send these peer reviewers copies of this proposed rule immediately following publication in the **Federal Register**. We will invite these peer reviewers to comment, during the public comment period, on the specific assumptions and conclusions regarding the proposal to revise critical habitat.

We will consider all comments and information received during the comment period on this proposed rule during preparation of a final rulemaking. Accordingly, the final decision may differ from this proposal.

#### **Public Hearings**

The Act provides for one or more public hearings on this proposal, if requested. Requests for public hearings must be made in writing at least 15 days prior to the close of the public comment period. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings in the **Federal Register** and local newspapers at least 15 days prior to the first hearing.

#### **Clarity of the Rule**

Executive Order 12866 requires each agency to write regulations and notices that are easy to understand. We invite your comments on how to make this proposed rule easier to understand, including answers to questions such as the following: (1) Are the requirements in the proposed rule clearly stated? (2) Does the proposed rule contain technical jargon that interferes with the clarity? (3) Does the format of the proposed rule (grouping and order of the sections, use of headings, paragraphing, and so forth) aid or reduce its clarity? (4) Is the description

of the notice in the **SUPPLEMENTARY INFORMATION** section of the preamble helpful in understanding the proposed rule? (5) What else could we do to make this proposed rule easier to understand?

Send a copy of any comments on how we could make this proposed rule easier to understand to: Office of Regulatory Affairs, Department of the Interior, Room 7229, 1849 C Street, NW., Washington, DC 20240. You may e-mail your comments to this address: [Exsec@ios.doi.gov](mailto:Exsec@ios.doi.gov).

## Required Determinations

### *Regulatory Planning and Review*

In accordance with Executive Order 12866, this document is a significant rule in that it may raise novel legal and policy issues, but it is not anticipated to have an annual effect on the economy of \$100 million or more or affect the economy in a material way. Due to the tight timeline for publication in the **Federal Register**, the Office of Management and Budget (OMB) has not formally reviewed this rule. We are preparing a draft economic analysis of this proposed action, which will be available for public comment, to determine the economic consequences of designating the specific area as critical habitat. This economic analysis also will be used to determine compliance with Executive Order 12866, Regulatory Flexibility Act, Small Business Regulatory Enforcement Fairness Act, Executive Order 12630, Executive Order 13211, and Executive Order 12875.

Further, Executive Order 12866 directs Federal Agencies promulgating regulations to evaluate regulatory alternatives (Office of Management and Budget, Circular A-4, September 17, 2003). Pursuant to Circular A-4, once it has been determined that the Federal regulatory action is appropriate, then the agency will need to consider alternative regulatory approaches. Since the determination of critical habitat is a statutory requirement pursuant to the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), we must then evaluate alternative regulatory approaches, where feasible, when promulgating a designation of critical habitat.

In developing our designations of critical habitat, we consider economic impacts, impacts to national security, and other relevant impacts pursuant to section 4(b)(2) of the Act. Based on the discretion allowable under this provision, we may exclude any particular area from the designation of critical habitat providing that the benefits of such exclusion outweigh the

benefits of specifying the area as critical habitat and that such exclusion would not result in the extinction of the subspecies. As such, we believe that the evaluation of the inclusion or exclusion of particular areas, or combination thereof, in a designation constitutes our regulatory alternative analysis.

Within these areas, the types of Federal actions or authorized activities that we have identified as potential concerns are listed above in the section on Section 7 Consultation. The availability of the draft economic analysis will be announced in the **Federal Register** and in local newspapers so that it is available for public review and comments. The draft economic analysis can be obtained from the Internet Web site at <http://www.fws.gov/ventura/> or by contacting the Ventura Fish and Wildlife Office directly (see **ADDRESSES**).

### *Regulatory Flexibility Act (5 U.S.C. 601 et seq.)*

Under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an 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 effects of the rule on small entities (*i.e.*, small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the Regulatory Flexibility Act (RFA) to require Federal agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

At this time, the Service lacks the available economic information necessary to provide an adequate factual basis for the required RFA finding. Therefore, the RFA finding is deferred until completion of the draft economic analysis prepared pursuant to section 4(b)(2) of the Act and E.O. 12866. This draft economic analysis will provide the required factual basis for the RFA finding. Upon completion of the draft economic analysis, the Service will publish a notice of availability of the draft economic analysis of the proposal to revise critical habitat and reopen the public comment period for the proposed revision for an additional 60 days. The Service will include with the notice of availability, as appropriate, an initial

regulatory flexibility analysis or a certification that the rule will not have a significant economic impact on a substantial number of small entities accompanied by the factual basis for that determination. The Service has concluded that deferring the RFA finding until completion of the draft economic analysis is necessary to meet the purposes and requirements of the RFA. Deferring the RFA finding in this manner will ensure that the Service makes a sufficiently informed determination based on adequate economic information and provides the necessary opportunity for public comment.

### *Executive Order 13211*

On May 18, 2001, the President issued an Executive Order (E.O. 13211; Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This proposed rule to designate revised critical habitat for the tidewater goby is a significant regulatory action under Executive Order 12866, but it is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action and no Statement of Energy Effects is required.

### *Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501), the Service makes the following findings:

(a) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are defined in 2 U.S.C. 658(5)–(7). "Federal intergovernmental mandate" includes a regulation that "would impose an enforceable duty upon State, local, or tribal governments" with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary Federal program," unless the regulation "relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority," if the provision would

“increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; AFDC work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply; nor would critical habitat shift the costs of the large entitlement programs listed above on to State governments.

(b) We do not believe that this rule will significantly or uniquely affect small governments because only about 2 percent (231 ac (93 ha)) of the total proposed critical habitat designation for the tidewater goby is owned by small government entities. As such, a Small Government Agency Plan is not required. We will, however, further evaluate this issue as we conduct our economic analysis and revise this assessment if appropriate.

#### *Takings*

In accordance with Executive Order 12630 (“Government Actions and Interference with Constitutionally Protected Private Property Rights”), we have analyzed the potential takings implications of designating critical

habitat for the tidewater goby in a takings implications assessment. The takings implications assessment concludes that this designation of critical habitat for the tidewater goby does not pose significant takings implications. However, we will further evaluate this issue as we conduct our economic analysis and review and revise this assessment as warranted.

#### *Federalism*

In accordance with Executive Order 13132 (Federalism), the rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this proposal to revise critical habitat with, appropriate State resource agencies in the State of California. The revised designation of critical habitat in areas currently occupied by the tidewater goby imposes no additional restrictions to those currently in place and, therefore, has little incremental impact on State and local governments and their activities. The revised designation may have some benefit to these governments in that the areas that contain the features essential to the conservation of the species are more clearly defined, and the primary constituent elements of the habitat necessary to the conservation of the species are specifically identified. While making this definition and identification does not alter where and what federally sponsored activities may occur, it may assist these local governments in long-range planning (rather than waiting for case-by-case section 7 consultations to occur).

#### *Civil Justice Reform*

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed revising critical habitat in accordance with the provisions of the Endangered Species Act. This proposed rule uses standard property descriptions and identifies the primary constituent elements within the designated areas to assist the public in understanding the habitat needs of the tidewater goby.

#### *Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)*

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act. This rule will not

impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

#### *National Environmental Policy Act*

It is our position that, outside the Tenth Circuit, we do not need to prepare environmental analyses as defined by the NEPA in connection with designating critical habitat under the Endangered Species Act of 1973, as amended. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This assertion was upheld in the courts of the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. Ore. 1995), cert. denied 116 S. Ct. 698 (1996)).

#### *Government-to-Government Relationship With Tribes*

In accordance with the President’s memorandum of April 29, 1994, “Government-to-Government Relations with Native American Tribal Governments” (59 FR 22951), Executive Order 13175, and the Department of Interior’s manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. We have determined that there are no tribal lands occupied at the time of listing that contain the features essential for the conservation and no tribal lands that are unoccupied areas that are essential for the conservation of the tidewater goby. Therefore, revised critical habitat for the tidewater goby has not been designated on Tribal lands.

#### **References Cited**

A complete list of all references cited in this rulemaking is available upon request from the Field Supervisor, Ventura Fish and Wildlife Office (see **ADDRESSES**).

#### **Author(s)**

The primary author of this package is the Ventura Fish and Wildlife Office.

#### **List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

#### **Proposed Regulation Promulgation**

Accordingly, we propose to amend part 17, subchapter B of chapter I, title

50 of the Code of Federal Regulations, as set forth below:

#### PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. In § 17.95(e), revise the entry for “Tidewater goby (*Eucyclogobius newberryi*)” under “FISHES” to read as follows:

**§ 17.95 Critical habitat—fish and wildlife.**

\* \* \* \* \*

(e) *Fishes.*

\* \* \* \* \*

Tidewater Goby (*Eucyclogobius newberryi*)

(1) Critical habitat units are depicted for Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa

Barbara, Ventura, and Los Angeles Counties, California, on the maps below.

(2) The primary constituent elements of critical habitat for the tidewater goby are the habitat components that provide:

(i) Persistent, shallow (in the range of about 0.1–2 m), still-to-slow-moving, aquatic habitat most commonly ranging in salinity from less than 0.5 ppt to about 10–12 ppt;

(ii) Substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction;

(iii) Submerged and emergent aquatic vegetation, such as *Potamogeton pectinatus* and *Ruppia maritima*, that provides protection from predators; and

(iv) Presence of a sandbar(s) across the mouth of a lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, thereby providing relatively stable water levels and salinity.

(3) Critical habitat does not include manmade structures (such as buildings,

aqueducts, airports, and roads, and the land on which such structures are located) existing on the effective date of this rule and not containing one or more of the primary constituent elements.

*Critical habitat map units.*

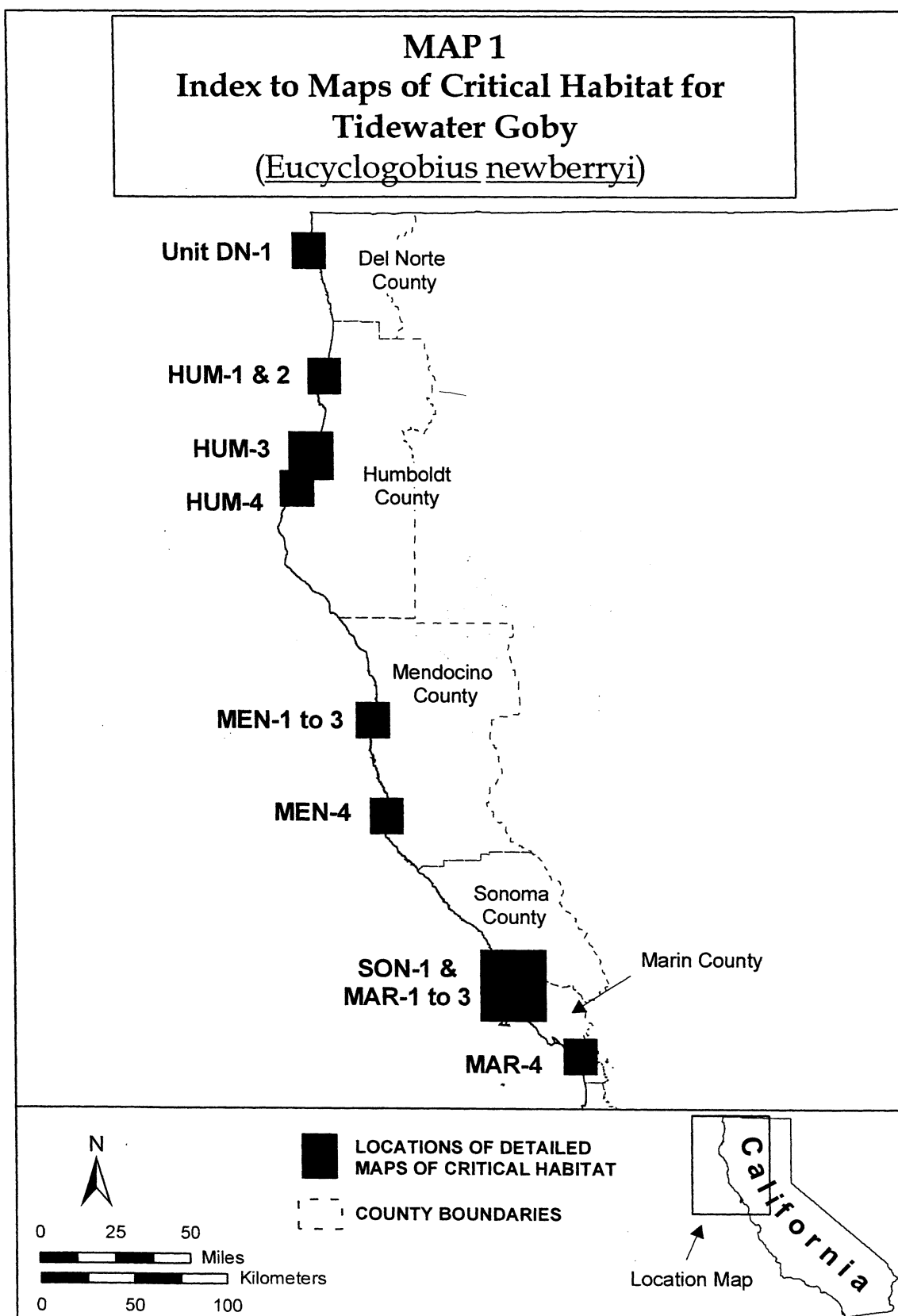
(4) Boundaries of critical habitat are defined for most units using National Wetlands Inventory (NWI) data (both published data available over the Internet and in-publication provisional data). Where NWI data was lacking, unit boundaries are digitized directly on imagery from the Department of Agriculture’s National Aerial Imagery Program data (NAIP) acquired in 2005. NAIP and NWI data are projected to Universal Transverse Mercator (UTM), zones 10 and 11, on the North American Datum of 1983.

(5) Index maps of tidewater goby critical habitat.

(i) Note: Index Map 1 follows:

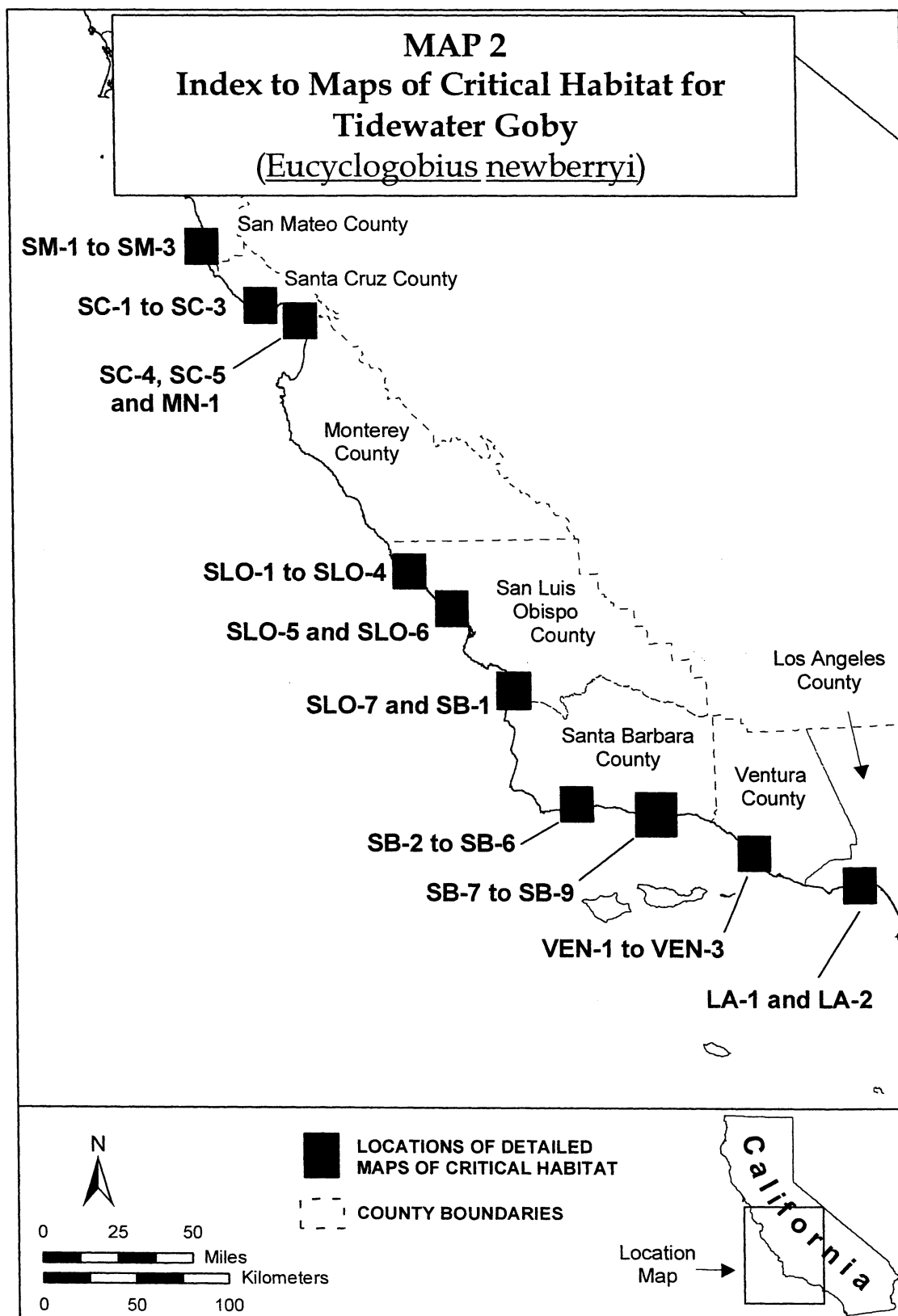
**BILLING CODE 4310–55–P**





(ii) Note: Index Map 2 follows:

BILLING CODE 4310-55-P



BILLING CODE 4310-55-C

(6) Unit DN-1, Del Norte County, California.

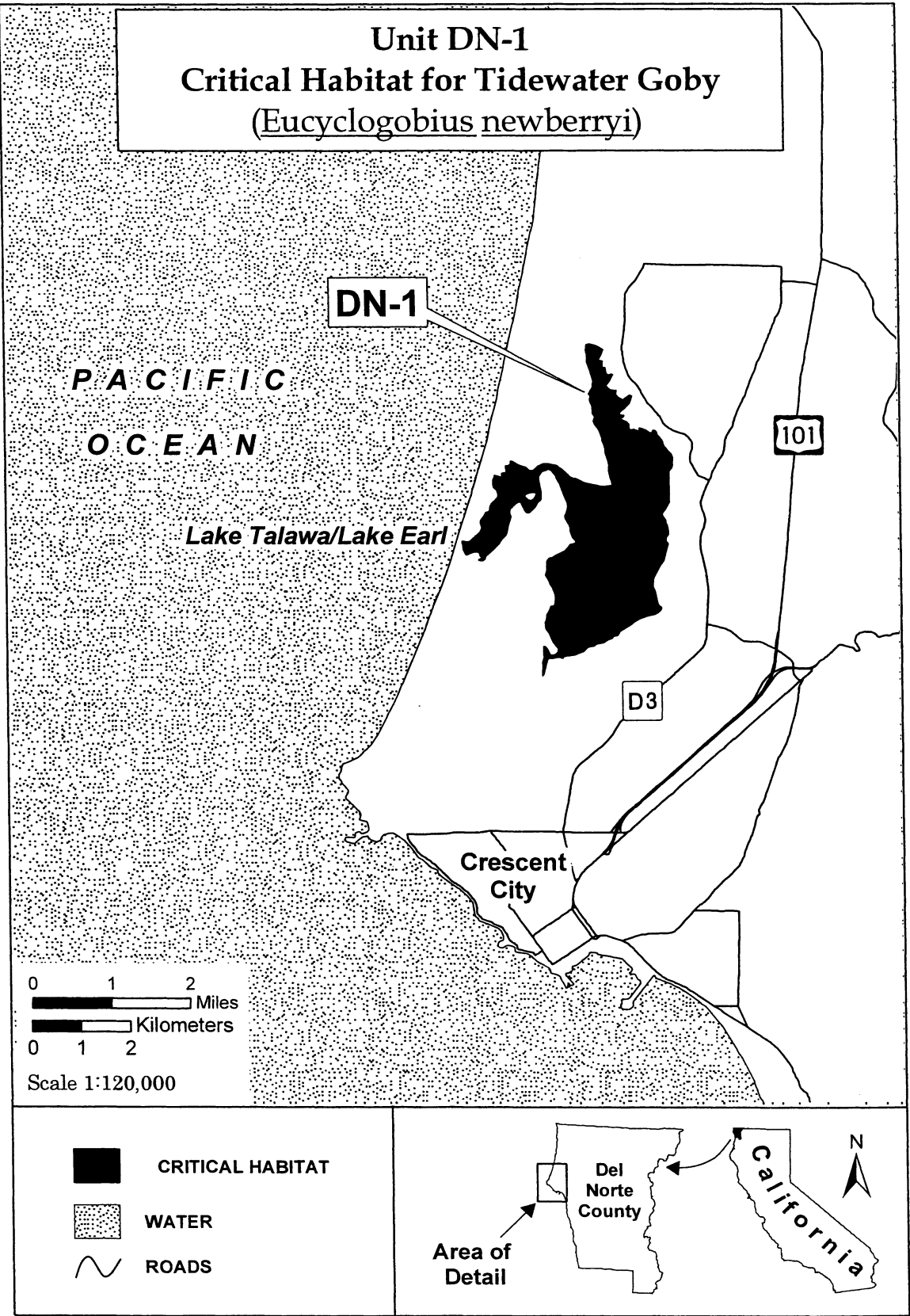
(i) From USGS 1:24,000 scale quadrangle Crescent City. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 398215, 4631301; 398219, 4631313; 398228, 4631341; 398279, 4631340; 398325, 4631324; 398371, 4631334; 398505, 4631467; 398579, 4631522; 398623, 4631595; 398624, 4631645; 398600, 4631737; 398603, 4631783; 398665, 4631868; 398689, 4631921; 398709, 4631944; 398773, 4631963; 398796, 4631999; 398808, 4632080; 398826, 4632118; 398947, 4632241; 398965, 4632271; 398963, 4632327; 398939, 4632408; 398882, 4632465; 398859, 4632511; 398866, 4632625; 398895, 4632716; 398906, 4632726; 399042, 4632686; 399052, 4632691; 399053, 4632760; 399066, 4632775; 399135, 4632782; 399133, 4632845; 399118, 4632863; 399124, 4632921; 399193, 4632933; 399216, 4632958; 399222, 4633001; 399245, 4633026; 399286, 4633023; 399404, 4632945; 399553, 4632890; 399608, 4632831; 399638, 4632823; 399700, 4632835; 399800, 4632920; 399905, 4632967; 399943, 4632974; 399958, 4632972; 399988, 4632969; 400004, 4632968; 400113, 4632943; 400184, 4632937; 400229, 4632899; 400302, 4632852; 400410, 4632749; 400447, 4632700; 400513, 4632666; 400579, 4632657; 400763, 4632563; 401092, 4632485; 401201, 4632486; 401217, 4632506; 401290, 4632508; 401308, 4632531; 401307, 4632604; 401277, 4632648; 401244, 4632839; 401238, 4632974; 401205, 4633104; 401178, 4633167; 401164, 4633284; 401140, 4633371; 401108, 4633446; 401110, 4633494; 401081, 4633570; 401052, 4633650; 401017, 4633717; 400970, 4633771; 400929, 4633861; 400957, 4633954; 400911, 4634017; 400907, 4634099; 400909, 4634177; 400889, 4634229; 400864, 4634308; 400869, 4634386; 400832, 4634422; 400925, 4634573; 400940, 4634708; 400911, 4634810; 400810, 4635094; 400815, 4635251; 400789, 4635356; 400797, 4635462; 400870, 4635486; 401038, 4635437; 401156, 4635368; 401124, 4635266; 401076, 4635197; 401062, 4635148; 401147, 4635126; 401131, 4635003; 401194, 4634989; 401214, 4634885; 401247, 4634833; 401329, 4634850; 401350, 4634841; 401294, 4634706; 401211,

4634613; 401249, 4634557; 401305, 4634526; 401355, 4634518; 401421, 4634511; 401410, 4634429; 401464, 4634365; 401552, 4634320; 401699, 4634412; 401744, 4634384; 401696, 4634244; 401608, 4634146; 401566, 4634111; 401536, 4634084; 401504, 4634063; 401480, 4634029; 401490, 4634000; 401575, 4633987; 401577, 4633949; 401510, 4633917; 401508, 4633894; 401621, 4633845; 401671, 4633798; 401683, 4633704; 401705, 4633678; 401728, 4633675; 401779, 4633693; 401809, 4633674; 401885, 4633650; 401889, 4633719; 401924, 4633721; 402038, 4633671; 402126, 4633606; 402151, 4633606; 402175, 4633667; 402208, 4633671; 402241, 4633633; 402253, 4633584; 402355, 4633459; 402377, 4633415; 402380, 4633385; 402402, 4633341; 402477, 4633241; 402534, 4633187; 402574, 4633105; 402580, 4633018; 402563, 4632904; 402548, 4632859; 402506, 4632806; 402500, 4632743; 402503, 4632199; 402497, 4632166; 402429, 4632027; 402352, 4631932; 402346, 4631909; 402376, 4631845; 402431, 4631783; 402433, 4631707; 402453, 4631684; 402483, 4631531; 402483, 4631491; 402431, 4631415; 402425, 4631372; 402433, 4631344; 402463, 4631303; 402465, 4631283; 402368, 4630918; 402298, 4630820; 402160, 4630568; 402153, 4630383; 402182, 4630308; 402237, 4630049; 402272, 4629980; 402302, 4629971; 402324, 4629943; 402324, 4629915; 402255, 4629848; 402170, 4629795; 402002, 4629757; 401859, 4629698; 401756, 4629646; 401669, 4629581; 401487, 4629467; 401449, 4629435; 401397, 4629351; 401315, 4629337; 401292, 4629300; 401210, 4629270; 401102, 4629203; 400998, 4629189; 400952, 4629170; 400921, 4629129; 400814, 4629118; 400781, 4629103; 400701, 4629023; 400622, 4629001; 400517, 4628950; 400306, 4628930; 400291, 4628915; 400280, 4628884; 400262, 4628882; 400214, 4628900; 400161, 4628906; 400059, 4628872; 399968, 4628873; 399952, 4628853; 399882, 4628547; 399858, 4628519; 399838, 4628512; 399839, 4628588; 399861, 4628702; 399862, 4628758; 399850, 4628796; 399879, 4628908; 399870, 4628984; 399874, 4629121; 399885, 4629134; 399902, 4629134; 399950, 4629087; 400012, 4628967; 400040,

4628951; 400108, 4628963; 400168, 4629013; 400169, 4629089; 400069, 4629222; 400024, 4629304; 399990, 4629406; 399918, 4629514; 399917, 4629649; 399944, 4629714; 399942, 4629798; 399981, 4629859; 400033, 4629970; 400107, 4629994; 400118, 4630030; 400130, 4630189; 400096, 4630259; 400067, 4630361; 400015, 4630443; 400010, 4630473; 399975, 4630535; 399933, 4630632; 399939, 4630685; 399958, 4630728; 399953, 4630918; 399976, 4630964; 400002, 4630981; 400068, 4630996; 400135, 4631045; 400326, 4631134; 400399, 4631220; 400430, 4631267; 400453, 4631280; 400519, 4631292; 400550, 4631309; 400550, 4631345; 400488, 4631409; 400461, 4631516; 400446, 4631547; 400440, 4631608; 400423, 4631666; 400336, 4631835; 400337, 4631866; 400371, 4631952; 400398, 4632068; 400384, 4632144; 400359, 4632208; 400292, 4632357; 400242, 4632535; 400177, 4632645; 400165, 4632699; 400130, 4632750; 400063, 4632825; 400037, 4632838; 400007, 4632841; 399956, 4632826; 399884, 4632792; 399853, 4632766; 399831, 4632723; 399812, 4632678; 399823, 4632561; 399856, 4632388; 399859, 4632210; 399781, 4632145; 399737, 4632049; 399631, 4631947; 399601, 4631929; 399540, 4631945; 399500, 4631997; 399431, 4632158; 399416, 4632165; 399362, 4632153; 399223, 4632011; 399210, 4631980; 399209, 4631924; 399226, 4631861; 399225, 4631787; 399181, 4631696; 399145, 4631514; 399117, 4631451; 399021, 4631353; 398972, 4631262; 398879, 4631164; 398707, 4631027; 398691, 4631002; 398688, 4630959; 398678, 4630944; 398644, 4630929; 398561, 4630930; 398561, 4630950; 398620, 4630993; 398585, 4631026; 398570, 4631077; 398538, 4631108; 398454, 4631109; 398313, 4631043; 398283, 4631063; 398241, 4631163; 398237, 4631252; returning to 398215, 4631301; excluding land bounded by: 399568, 4632334; 399524, 4632296; 399527, 4632273; 399577, 4632222; 399640, 4632198; 399676, 4632205; 399727, 4632260; 399748, 4632318; 399744, 4632344; 399716, 4632362; 399655, 4632360; 399645, 4632357; returning to 399568, 4632334.

(ii) Note: Map of Unit DN-1 follows:

BILLING CODE 4310-55-P



(7) Unit HUM–1, Humboldt County, California.

(i) From USGS 1:24,000 scale quadrangles Orick and Rodgers Peak. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N):

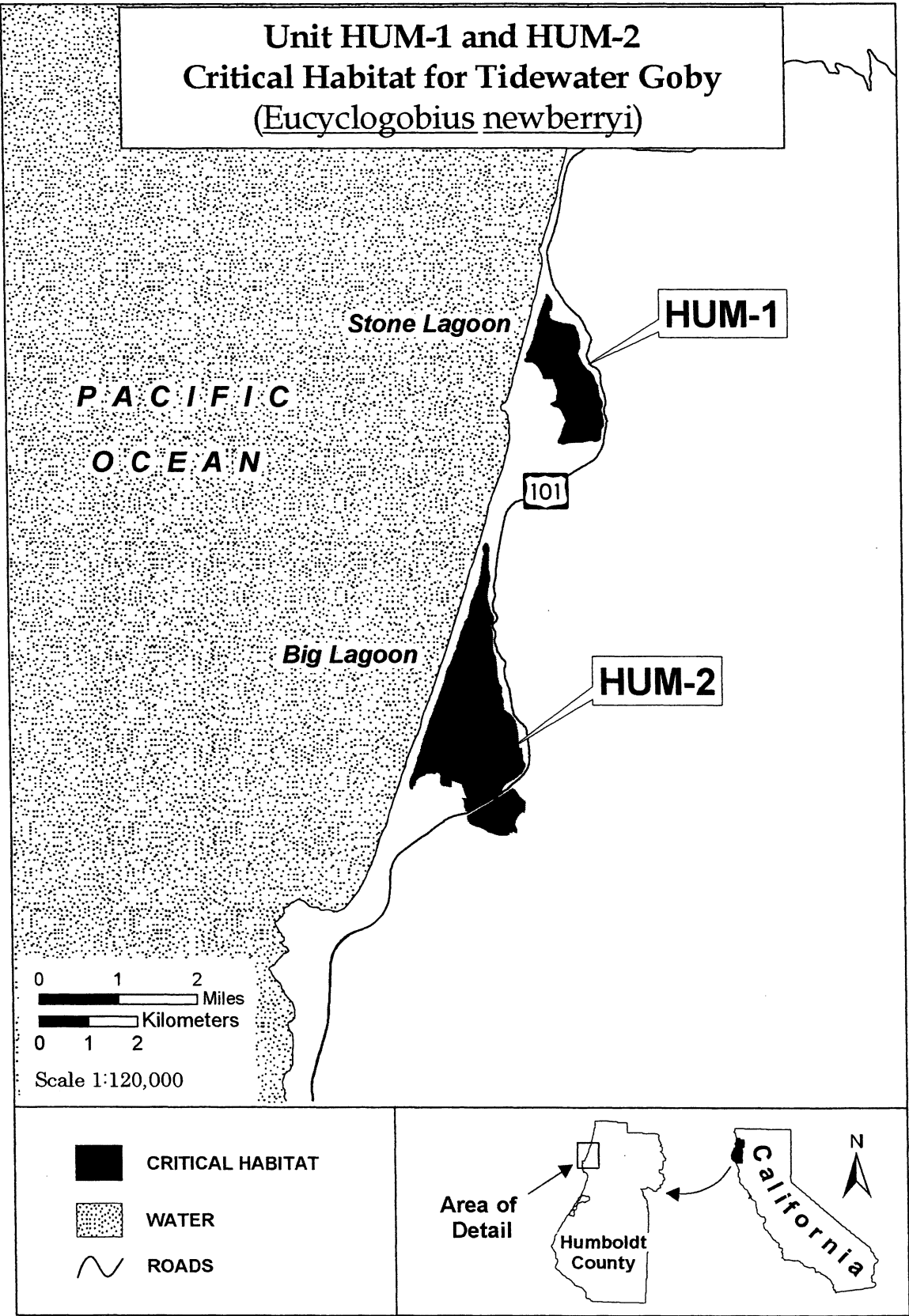
407547, 4566545; 407550, 4566573;  
407596, 4566611; 407600, 4566697;  
407685, 4566848; 407746, 4567008;  
407759, 4567078; 407799, 4567202;  
407828, 4567303; 407832, 4567384;  
407974, 4567789; 408015, 4567860;  
408016, 4567903; 408008, 4567923;  
408024, 4567944; 408042, 4567946;  
408057, 4567930; 408084, 4567895;  
408094, 4567849; 408121, 4567815;  
408131, 4567787; 408140, 4567691;  
408114, 4567594; 408068, 4567595;  
408070, 4567519; 408081, 4567450;  
408094, 4567424; 408157, 4567386;

408316, 4567335; 408524, 4567320;  
408565, 4567299; 408605, 4567256;  
408669, 4567113; 408674, 4567067;  
408700, 4566955; 408701, 4566818;  
408646, 4566722; 408641, 4566689;  
408681, 4566625; 408738, 4566495;  
408790, 4566408; 408830, 4566364;  
408890, 4566326; 408963, 4566238;  
408983, 4566187; 408997, 4566116;  
409047, 4566042; 409059, 4566011;  
409061, 4565942; 409087, 4565790;  
409147, 4565687; 409151, 4565626;  
409115, 4565540; 409114, 4565492;  
409134, 4565454; 409153, 4565319;  
409156, 4565200; 409114, 4565098;  
409104, 4565050; 409102, 4564916;  
409066, 4564881; 409023, 4564863;  
408982, 4564859; 408936, 4564880;  
408858, 4564883; 408751, 4564857;  
408484, 4564842; 408402, 4564830;

408359, 4564805; 408321, 4564806;  
408230, 4564835; 408217, 4564848;  
408220, 4564881; 408282, 4564984;  
408311, 4565057; 408327, 4565146;  
408385, 4565293; 408380, 4565326;  
408314, 4565466; 408304, 4565505;  
408271, 4565548; 408223, 4565572;  
408130, 4565596; 408084, 4565629;  
408087, 4565660; 408174, 4565699;  
408190, 4565717; 408201, 4565793;  
408222, 4565849; 408220, 4565955;  
408181, 4566037; 408164, 4566124;  
408132, 4566175; 407982, 4566169;  
407939, 4566197; 407930, 4566266;  
407815, 4566445; 407722, 4566523;  
407580, 4566519; returning to 407547,  
4566545.

(ii) Note: Map of Units HUM–1 and HUM–2 follows.

BILLING CODE 4310–55–P



(8) Unit HUM–2, Humboldt County, California.

(i) From USGS 1:24,000 scale quadrangles Rodgers Peak and Trinidad. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N):

405094, 4557688; 405100, 4557744;  
405129, 4557807; 405137, 4557852;  
405179, 4557936; 405195, 4558006;  
405266, 4558196; 405272, 4558252;  
405332, 4558393; 405341, 4558464;  
405397, 4558649; 405479, 4558879;  
405535, 4559074; 405569, 4559137;  
405627, 4559309; 405708, 4559498;  
405732, 4559592; 405763, 4559632;  
405847, 4559862; 405850, 4559913;  
405893, 4560073; 405961, 4560234;  
405995, 4560300; 406053, 4560459;  
406099, 4560535; 406102, 4560586;  
406176, 4560803; 406180, 4560862;  
406260, 4561023; 406274, 4561099;  
406336, 4561175; 406349, 4561258;  
406368, 4561312; 406382, 4561388;  
406416, 4561524; 406461, 4561618;  
406471, 4561671; 406526, 4561805;  
406550, 4561835; 406578, 4561908;  
406600, 4562053; 406611, 4562071;  
406639, 4562294; 406643, 4562408;  
406674, 4562489; 406675, 4562563;  
406661, 4562616; 406664, 4562654;  
406680, 4562702; 406698, 4562730;  
406731, 4562742; 406758, 4562714;  
406780, 4562645; 406770, 4562399;  
406752, 4562226; 406782, 4562132;  
406784, 4562089; 406791, 4562079;  
406790, 4561964; 406769, 4561896;  
406730, 4561655; 406742, 4561541;  
406749, 4561535; 406795, 4561316;  
406817, 4561265; 406857, 4561214;  
406872, 4561178; 406871, 4561145;  
406812, 4561055; 406799, 4561024;  
406827, 4560877; 406829, 4560546;  
406853, 4560442; 406885, 4560365;  
406918, 4560162; 406914, 4560030;  
406935, 4559890; 406950, 4559857;  
406957, 4559816; 407017, 4559729;  
407016, 4559635; 407005, 4559581;  
407052, 4559464; 407051, 4559439;  
407038, 4559396; 407059, 4559261;  
407178, 4559173; 407255, 4559081;  
407305, 4558973; 407340, 4558759;  
407348, 4558538; 407367, 4558454;  
407377, 4558449; 407418, 4558456;  
407423, 4558245; 407432, 4558207;  
407475, 4558133; 407474, 4558077;  
407451, 4558021; 407401, 4557943;  
407260, 4557821; 407078, 4557703;  
407035, 4557668; 407006, 4557623;  
406988, 4557555; 406934, 4557532;  
406874, 4557490; 406915, 4557415;  
406916, 4557415; 407112, 4557533;  
407219, 4557613; 407252, 4557597;  
407310, 4557530; 407325, 4557479;  
407362, 4557428; 407458, 4557351;  
407472, 4557318; 407468, 4557163;  
407457, 4557112; 407427, 4557125;  
407402, 4557125; 407353, 4557085;  
407296, 4556997; 407267, 4556924;

407259, 4556860; 407276, 4556792;  
407310, 4556730; 407310, 4556712;  
407284, 4556690; 407224, 4556719;  
407201, 4556711; 407193, 4556688;  
407150, 4556679; 407129, 4556649;  
407083, 4556634; 406936, 4556631;  
406840, 4556662; 406792, 4556683;  
406726, 4556699; 406686, 4556735;  
406587, 4556795; 406428, 4556840;  
406337, 4556884; 406292, 4556946;  
406280, 4557002; 406285, 4557027;  
406306, 4557047; 406833, 4557365;  
406795, 4557435; 406716, 4557380;  
406588, 4557316; 406361, 4557184;  
406292, 4557149; 406261, 4557149;  
406239, 4557173; 406219, 4557239;  
406215, 4557313; 406191, 4557404;  
406186, 4557407; 406277, 4557408;  
406168, 4557710; 405948, 4557797;  
405948, 4557648; 405763, 4557689;  
405752, 4557707; 405737, 4557738;  
405728, 4557779; 405728, 4557810;  
405732, 4557839; 405741, 4557861;  
405733, 4557944; 405655, 4557962;  
405615, 4557924; 405524, 4557946;  
405456, 4557939; 405392, 4557897;  
405297, 4557858; 405264, 4557828;  
405238, 4557790; 405208, 4557684;  
405170, 4557664; 405146, 4557603;  
405126, 4557611; returning to 405094,  
4557688.

(ii) Note: Map of Unit HUM–2 is provided on the map in paragraph (7)(ii) of this entry.

(9) Unit HUM–3, Humboldt County, California.

(i) From USGS 1:24,000 scale quadrangles Tyee City. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 405066, 4529314;  
405079, 4529311; 405089, 4529308;  
405101, 4529303; 405111, 4529297;  
405117, 4529288; 405122, 4529288;  
405124, 4529293; 405127, 4529303;  
405131, 4529315; 405139, 4529323;  
405140, 4529328; 405134, 4529335;  
405126, 4529339; 405121, 4529352;  
405117, 4529353; 405108, 4529355;  
405110, 4529361; 405121, 4529366;  
405136, 4529367; 405141, 4529362;  
405137, 4529354; 405137, 4529349;  
405146, 4529341; 405158, 4529336;  
405161, 4529328; 405161, 4529322;  
405154, 4529315; 405146, 4529308;  
405141, 4529295; 405139, 4529273;  
405130, 4529262; 405112, 4529252;  
405099, 4529259; 405090, 4529274;  
405089, 4529294; 405085, 4529296;  
405075, 4529300; 405070, 4529307;  
returning to 405066, 4529314.

(ii) From USGS 1:24,000 scale quadrangle Arcata North. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 405163, 4529039;  
405174, 4529059; 405184, 4529079;  
405184, 4529091; 405185, 4529106;  
405204, 4529103; 405209, 4529111;  
405220, 4529135; 405232, 4529158;  
405248, 4529168; 405248, 4529155;

405236, 4529137; 405231, 4529113;  
405221, 4529095; 405206, 4529084;  
405200, 4529062; 405188, 4529041;  
405185, 4529031; 405213, 4529004;  
405244, 4528990; 405259, 4528982;  
405264, 4528990; 405264, 4529004;  
405264, 4529023; 405265, 4529041;  
405265, 4529051; 405253, 4529072;  
405261, 4529119; 405275, 4529150;  
405283, 4529165; 405296, 4529172;  
405310, 4529192; 405332, 4529201;  
405349, 4529201; 405375, 4529219;  
405402, 4529231; 405429, 4529227;  
405452, 4529225; 405492, 4529233;  
405515, 4529233; 405530, 4529228;  
405554, 4529232; 405574, 4529237;  
405595, 4529237; 405595, 4529225;  
405579, 4529223; 405543, 4529213;  
405523, 4529208; 405493, 4529217;  
405469, 4529212; 405442, 4529206;  
405413, 4529209; 405397, 4529204;  
405355, 4529185; 405343, 4529181;  
405327, 4529178; 405295, 4529154;  
405268, 4529082; 405275, 4529064;  
405288, 4529045; 405283, 4529028;  
405280, 4529011; 405279, 4528980;  
405272, 4528968; 405257, 4528962;  
405253, 4528929; 405240, 4528913;  
405237, 4528921; 405237, 4528934;  
405239, 4528952; 405244, 4528972;  
405216, 4528981; 405180, 4529007;  
405166, 4529027; returning to 405163,  
4529039.

(iii) From USGS 1:24,000 scale quadrangles Tyee City. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 404239, 4528501;  
404247, 4528509; 404275, 4528506;  
404290, 4528506; 404312, 4528520;  
404312, 4528532; 404306, 4528550;  
404312, 4528567; 404326, 4528569;  
404326, 4528564; 404334, 4528571;  
404347, 4528584; 404355, 4528593;  
404368, 4528597; 404393, 4528612;  
404430, 4528623; 404444, 4528632;  
404466, 4528628; 404475, 4528623;  
404493, 4528623; 404523, 4528629;  
404550, 4528646; 404569, 4528670;  
404586, 4528686; 404612, 4528692;  
404660, 4528695; 404679, 4528708;  
404694, 4528719; 404707, 4528724;  
404716, 4528726; 404730, 4528744;  
404746, 4528757; 404758, 4528770;  
404781, 4528786; 404791, 4528795;  
404796, 4528807; 404795, 4528829;  
404775, 4528866; 404761, 4528885;  
404740, 4528891; 404724, 4528891;  
404710, 4528879; 404700, 4528869;  
404686, 4528869; 404676, 4528879;  
404676, 4528897; 404677, 4528912;  
404686, 4528912; 404689, 4528899;  
404691, 4528885; 404698, 4528885;  
404712, 4528897; 404730, 4528904;  
404753, 4528903; 404772, 4528897;  
404790, 4528871; 404814, 4528822;  
404815, 4528806; 404812, 4528789;  
404809, 4528776; 404810, 4528770;  
404834, 4528767; 404854, 4528766;



404885, 4528756; 404905, 4528756;  
404918, 4528767; 404924, 4528788;  
404923, 4528837; 404931, 4528838;  
404935, 4528832; 404934, 4528784;  
404928, 4528761; 404918, 4528749;  
404906, 4528743; 404887, 4528744;  
404861, 4528751; 404846, 4528754;  
404822, 4528756; 404803, 4528757;  
404795, 4528762; 404783, 4528753;  
404772, 4528745; 404755, 4528741;  
404743, 4528735; 404732, 4528727;  
404722, 4528712; 404708, 4528701;  
404696, 4528695; 404682, 4528686;  
404672, 4528683; 404638, 4528679;  
404618, 4528675; 404605, 4528672;  
404585, 4528658; 404563, 4528639;  
404540, 4528624; 404505, 4528612;  
404475, 4528609; 404448, 4528608;  
404417, 4528603; 404385, 4528592;  
404358, 4528571; 404346, 4528562;  
404333, 4528544; 404323, 4528518;  
404304, 4528498; 404291, 4528492;  
404244, 4528496; returning to 404239,  
4528501.

(iv) From USGS 1:24,000 scale  
quadrangle Tyee City. Land bounded by  
the following UTM zone 10 NAD83  
coordinates (E, N): 404741, 4528632;  
404748, 4528640; 404760, 4528654;  
404791, 4528683; 404812, 4528695;  
404832, 4528699; 404854, 4528694;  
404890, 4528667; 404915, 4528656;  
404934, 4528658; 404965, 4528679;  
404970, 4528702; 404988, 4528718;  
405013, 4528721; 405032, 4528722;  
405060, 4528734; 405082, 4528734;  
405098, 4528734; 405123, 4528745;  
405151, 4528769; 405173, 4528774;  
405201, 4528780; 405218, 4528778;  
405236, 4528789; 405247, 4528774;  
405235, 4528764; 405205, 4528758;  
405182, 4528758; 405154, 4528745;  
405127, 4528725; 405103, 4528715;  
405076, 4528715; 405055, 4528713;  
405032, 4528702; 405020, 4528698;  
404989, 4528681; 404981, 4528648;  
404969, 4528632; 404966, 4528569;  
404977, 4528534; 404981, 4528503;  
405000, 4528469; 404998, 4528459;  
404981, 4528430; 404980, 4528349;  
404978, 4528329; 404968, 4528332;  
404961, 4528355; 404958, 4528423;  
404964, 4528439; 404980, 4528463;  
404980, 4528471; 404964, 4528502;  
404961, 4528524; 404945, 4528567;  
404945, 4528603; 404945, 4528628;  
404942, 4528638; 404934, 4528623;  
404925, 4528616; 404906, 4528626;  
404899, 4528639; 404896, 4528644;  
404855, 4528670; 404841, 4528679;  
404828, 4528682; 404811, 4528677;  
404782, 4528651; 404762, 4528624;  
404746, 4528624; returning to 404741,  
4528632.

(v) From USGS 1:24,000 scale  
quadrangle Tyee City. Land bounded by  
the following UTM zone 10 NAD83  
coordinates (E, N): 404557, 4528121;  
404567, 4528121; 404584, 4528095;

404593, 4528061; 404619, 4528067;  
404641, 4528069; 404679, 4528071;  
404796, 4528068; 404850, 4528078;  
404855, 4528072; 404850, 4528061;  
404836, 4528050; 404597, 4528047;  
404575, 4528051; 404572, 4528060;  
404572, 4528077; 404572, 4528089;  
404561, 4528100; returning to 404557,  
4528121.

(vi) From USGS 1:24,000 scale  
quadrangle Tyee City. Land bounded by  
the following UTM zone 10 NAD83  
coordinates (E, N): 404115, 4527638;  
404116, 4527670; 404128, 4527680;  
404140, 4527673; 404158, 4527668;  
404170, 4527663; 404187, 4527670;  
404202, 4527681; 404214, 4527700;  
404220, 4527733; 404225, 4527780;  
404234, 4527849; 404259, 4527931;  
404267, 4528007; 404277, 4528012;  
404277, 4527958; 404274, 4527924;  
404256, 4527839; 404254, 4527797;  
404247, 4527738; 404235, 4527688;  
404227, 4527644; 404207, 4527596;  
404180, 4527555; 404165, 4527561;  
404157, 4527577; 404140, 4527591;  
404126, 4527611; returning to 404115,  
4527638.

(vii) From USGS 1:24,000 scale  
quadrangles Tyee City and Arcata  
North. Land bounded by the following  
UTM zone 10 NAD83 coordinates (E, N):  
404279, 4526903; 404312, 4526977;  
404324, 4527086; 404336, 4527131;  
404384, 4527228; 404452, 4527291;  
404497, 4527349; 404526, 4527410;  
404563, 4527503; 404609, 4527598;  
404671, 4527686; 404788, 4527856;  
404817, 4527901; 404826, 4527940;  
404847, 4527983; 404873, 4528016;  
404887, 4528014; 404896, 4528008;  
404856, 4527955; 404842, 4527932;  
404842, 4527916; 404837, 4527882;  
404819, 4527851; 404790, 4527825;  
404742, 4527759; 404680, 4527670;  
404630, 4527603; 404600, 4527558;  
404537, 4527403; 404534, 4527370;  
404518, 4527333; 404457, 4527269;  
404397, 4527213; 404379, 4527179;  
404351, 4527124; 404339, 4527084;  
404327, 4526981; 404321, 4526967;  
404298, 4526905; 404327, 4526903;  
404341, 4526889; 404351, 4526900;  
404369, 4526926; 404391, 4526964;  
404418, 4526978; 404439, 4526978;  
404452, 4526972; 404473, 4526947;  
404504, 4526949; 404627, 4526966;  
404662, 4526983; 404677, 4527004;  
404688, 4527018; 404747, 4527109;  
404745, 4527165; 404685, 4527227;  
404623, 4527306; 404628, 4527389;  
404668, 4527473; 404794, 4527545;  
404869, 4527609; 404960, 4527661;  
404964, 4527713; 404988, 4527771;  
404995, 4527812; 405007, 4527819;  
404921, 4527842; 405025, 4527833;  
405015, 4527813; 405003, 4527799;  
404993, 4527744; 404981, 4527718;  
404980, 4527666; 405017, 4527667;

405053, 4527647; 405075, 4527630;  
405089, 4527631; 405140, 4527709;  
405183, 4527846; 405171, 4527916;  
405165, 4527959; 405167, 4527974;  
405187, 4527977; 405209, 4527851;  
405177, 4527710; 405127, 4527653;  
405125, 4527623; 405111, 4527606;  
405082, 4527599; 405059, 4527606;  
405032, 4527634; 404997, 4527646;  
404900, 4527594; 404727, 4527447;  
404675, 4527395; 404678, 4527319;  
404705, 4527257; 404782, 4527192;  
404804, 4527136; 404722, 4526997;  
404675, 4526945; 404679, 4526927;  
404667, 4526923; 404652, 4526934;  
404460, 4526897; 404410, 4526865;  
404386, 4526854; 404360, 4526812;  
404342, 4526814; 404333, 4526799;  
404319, 4526753; 404312, 4526708;  
404318, 4526686; 404318, 4526661;  
404310, 4526651; 404300, 4526658;  
404296, 4526671; 404303, 4526730;  
404304, 4526761; 404313, 4526807;  
404311, 4526834; 404292, 4526877;  
returning to 404279, 4526903.

(viii) From USGS 1:24,000 scale  
quadrangle Tyee City. Land bounded by  
the following UTM zone 10 NAD83  
coordinates (E, N): 404211, 4526342;  
404305, 4526400; 404370, 4526424;  
404419, 4526445; 404531, 4526530;  
404556, 4526562; 404582, 4526596;  
404653, 4526642; 404689, 4526689;  
404692, 4526707; 404698, 4526708;  
404702, 4526697; 404712, 4526692;  
404706, 4526673; 404684, 4526646;  
404686, 4526636; 404696, 4526634;  
404696, 4526627; 404659, 4526616;  
404649, 4526603; 404623, 4526592;  
404602, 4526569; 404580, 4526538;  
404553, 4526514; 404480, 4526458;  
404482, 4526444; 404473, 4526441;  
404463, 4526441; 404430, 4526420;  
404380, 4526402; 404379, 4526385;  
404431, 4526403; 404471, 4526421;  
404521, 4526433; 404589, 4526432;  
404677, 4526433; 404727, 4526440;  
404741, 4526453; 404749, 4526473;  
404752, 4526500; 404759, 4526512;  
404794, 4526550; 404867, 4526594;  
404884, 4526635; 404921, 4526646;  
404977, 4526653; 405047, 4526650;  
405064, 4526657; 405082, 4526616;  
405098, 4526574; 405131, 4526543;  
405195, 4526490; 405193, 4526462;  
405185, 4526451; 405171, 4526459;  
405160, 4526473; 405138, 4526510;  
405115, 4526532; 405089, 4526556;  
405070, 4526580; 405057, 4526621;  
405045, 4526633; 404986, 4526635;  
404909, 4526622; 404893, 4526599;  
404871, 4526577; 404806, 4526526;  
404781, 4526503; 404770, 4526471;  
404762, 4526439; 404750, 4526427;  
404732, 4526416; 404682, 4526413;  
404635, 4526415; 404599, 4526410;  
404542, 4526411; 404509, 4526401;  
404453, 4526381; 404403, 4526348;

404328, 4526296; 404283, 4526260;  
404271, 4526261; 404247, 4526282;  
404245, 4526300; 404255, 4526304;  
404271, 4526300; 404362, 4526375;  
404362, 4526395; 404326, 4526384;  
404297, 4526363; 404266, 4526349;  
404242, 4526333; 404234, 4526307;  
404217, 4526318; returning to 404211,  
4526342.

(ix) From USGS 1:24,000 scale  
quadrangle Tyee City. Land bounded by  
the following UTM zone 10 NAD83  
coordinates (E, N): 404159, 4525734;  
404159, 4525748; 404181, 4525799;  
404211, 4525818; 404249, 4525862;  
404248, 4525896; 404237, 4525939;  
404229, 4525979; 404240, 4525997;  
404240, 4526016; 404226, 4526037;  
404220, 4526056; 404230, 4526065;  
404248, 4526069; 404248, 4526063;  
404241, 4526050; 404244, 4526042;  
404256, 4526003; 404262, 4526012;  
404270, 4526030; 404279, 4526052;  
404291, 4526063; 404294, 4526077;  
404303, 4526076; 404302, 4526065;  
404290, 4526049; 404282, 4526037;  
404277, 4526013; 404298, 4526005;  
404305, 4526023; 404313, 4526030;  
404321, 4526042; 404330, 4526047;  
404341, 4526048; 404352, 4526038;  
404366, 4526040; 404382, 4526033;  
404406, 4526019; 404403, 4526008;  
404365, 4526029; 404345, 4526025;  
404340, 4526034; 404331, 4526038;  
404324, 4526024; 404312, 4526015;  
404311, 4526001; 404303, 4525992;  
404289, 4525994; 404275, 4525995;  
404270, 4525978; 404275, 4525948;  
404271, 4525923; 404286, 4525920;  
404294, 4525897; 404257, 4525843;  
404257, 4525835; 404213, 4525801;  
404177, 4525751; 404197, 4525737;  
404215, 4525718; 404207, 4525706;  
404183, 4525724; returning to 404159,  
4525734.

(x) From USGS 1:24,000 scale  
quadrangles Tyee City, Eureka, Arcata  
North, and Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 404222, 4525621;  
404233, 4525683; 404286, 4525666;  
404326, 4525712; 404420, 4525729;  
404517, 4525742; 404587, 4525721;  
404625, 4525721; 404653, 4525750;  
404660, 4525799; 404660, 4525831;  
404655, 4525869; 404666, 4525908;  
404691, 4525984; 404736, 4526033;  
404768, 4526042; 404840, 4526076;  
404891, 4526105; 404946, 4526120;  
405021, 4526120; 405078, 4526116;  
405104, 4526101; 405138, 4526037;  
405133, 4526008; 405133, 4525984;  
405140, 4525965; 405155, 4525938;  
405161, 4525918; 405161, 4525897;  
405148, 4525861; 405118, 4525844;  
405087, 4525840; 405050, 4525852;  
405027, 4525887; 405012, 4525903;  
404984, 4525903; 404942, 4525899;  
404900, 4525884; 404861, 4525838;

404844, 4525797; 404847, 4525731;  
404844, 4525704; 404823, 4525661;  
404813, 4525610; 404819, 4525561;  
404863, 4525511; 404947, 4525462;  
404975, 4525451; 405013, 4525446;  
405041, 4525430; 405084, 4525392;  
405116, 4525387; 405179, 4525398;  
405229, 4525398; 405282, 4525379;  
405323, 4525359; 405372, 4525355;  
405445, 4525370; 405490, 4525363;  
405570, 4525337; 405605, 4525357;  
405637, 4525391; 405686, 4525416;  
405704, 4525443; 405706, 4525469;  
405682, 4525524; 405643, 4525569;  
405569, 4525625; 405567, 4525680;  
405586, 4525707; 405602, 4525704;  
405589, 4525674; 405589, 4525642;  
405610, 4525629; 405663, 4525580;  
405702, 4525537; 405725, 4525478;  
405733, 4525427; 405680, 4525385;  
405645, 4525354; 405617, 4525322;  
405577, 4525312; 405532, 4525317;  
405474, 4525339; 405428, 4525345;  
405365, 4525332; 405310, 4525339;  
405242, 4525366; 405191, 4525370;  
405111, 4525358; 405064, 4525369;  
405033, 4525402; 404986, 4525428;  
404936, 4525443; 404906, 4525449;  
404819, 4525502; 404800, 4525527;  
404781, 4525585; 404783, 4525632;  
404798, 4525678; 404819, 4525704;  
404823, 4525725; 404821, 4525768;  
404823, 4525810; 404838, 4525852;  
404868, 4525886; 404897, 4525920;  
404950, 4525935; 405018, 4525944;  
405031, 4525933; 405046, 4525908;  
405059, 4525872; 405084, 4525861;  
405112, 4525863; 405131, 4525874;  
405144, 4525904; 405137, 4525933;  
405114, 4525961; 405097, 4525986;  
405103, 4526024; 405106, 4526050;  
405080, 4526080; 405052, 4526090;  
405025, 4526092; 404980, 4526093;  
404959, 4526078; 404933, 4526069;  
404893, 4526054; 404808, 4526027;  
404749, 4525997; 404713, 4525944;  
404708, 4525918; 404708, 4525833;  
404693, 4525734; 404687, 4525710;  
404638, 4525676; 404604, 4525665;  
404572, 4525680; 404521, 4525702;  
404451, 4525693; 404375, 4525672;  
404356, 4525644; 404345, 4525631;  
404288, 4525608; returning to 404222,  
4525621.

(xi) From USGS 1:24,000 scale  
quadrangles Tyee City, Eureka, and  
Arcata South. Land bounded by the  
following UTM zone 10 NAD83  
coordinates (E, N): 403248, 4524430;  
403254, 4524438; 403270, 4524435;  
403311, 4524427; 403363, 4524406;  
403440, 4524395; 403519, 4524392;  
403550, 4524407; 403578, 4524414;  
403649, 4524397; 403727, 4524374;  
403760, 4524362; 403801, 4524371;  
403818, 4524385; 403839, 4524397;  
403868, 4524417; 403906, 4524432;  
403937, 4524432; 404026, 4524424;

404037, 4524434; 404034, 4524448;  
404014, 4524465; 404004, 4524475;  
403985, 4524495; 403978, 4524505;  
403957, 4524512; 403930, 4524520;  
403899, 4524527; 403879, 4524535;  
403857, 4524558; 403840, 4524573;  
403801, 4524577; 403771, 4524569;  
403751, 4524558; 403732, 4524534;  
403712, 4524518; 403707, 4524513;  
403674, 4524492; 403626, 4524490;  
403588, 4524495; 403564, 4524514;  
403549, 4524543; 403543, 4524563;  
403554, 4524565; 403572, 4524537;  
403590, 4524514; 403608, 4524509;  
403643, 4524506; 403680, 4524512;  
403707, 4524533; 403737, 4524561;  
403751, 4524575; 403793, 4524591;  
403829, 4524591; 403854, 4524581;  
403875, 4524566; 403897, 4524545;  
403923, 4524539; 403969, 4524525;  
403996, 4524508; 404007, 4524492;  
404020, 4524482; 404045, 4524470;  
404057, 4524469; 404069, 4524482;  
404089, 4524511; 404101, 4524542;  
404100, 4524557; 404113, 4524580;  
404138, 4524619; 404184, 4524650;  
404217, 4524650; 404271, 4524642;  
404311, 4524664; 404344, 4524685;  
404367, 4524687; 404407, 4524678;  
404459, 4524688; 404527, 4524713;  
404546, 4524740; 404544, 4524779;  
404518, 4524800; 404511, 4524828;  
404516, 4524851; 404544, 4524873;  
404586, 4524886; 404625, 4524873;  
404667, 4524862; 404677, 4524870;  
404677, 4524886; 404667, 4524918;  
404670, 4524951; 404662, 4524970;  
404604, 4525008; 404534, 4525037;  
404513, 4525052; 404507, 4525060;  
404504, 4525110; 404494, 4525124;  
404466, 4525133; 404442, 4525147;  
404373, 4525195; 404355, 4525211;  
404332, 4525234; 404324, 4525265;  
404319, 4525287; 404290, 4525327;  
404263, 4525354; 404260, 4525385;  
404268, 4525421; 404273, 4525461;  
404268, 4525495; 404275, 4525525;  
404294, 4525552; 404284, 4525597;  
404298, 4525599; 404304, 4525589;  
404306, 4525557; 404302, 4525537;  
404288, 4525504; 404294, 4525476;  
404287, 4525438; 404280, 4525390;  
404280, 4525359; 404309, 4525331;  
404339, 4525280; 404351, 4525244;  
404372, 4525214; 404388, 4525205;  
404419, 4525184; 404451, 4525160;  
404493, 4525144; 404514, 4525134;  
404523, 4525116; 404523, 4525094;  
404527, 4525068; 404539, 4525059;  
404563, 4525045; 404608, 4525031;  
404659, 4525002; 404673, 4524991;  
404684, 4524976; 404691, 4524948;  
404691, 4524914; 404698, 4524892;  
404704, 4524872; 404695, 4524849;  
404680, 4524844; 404653, 4524845;  
404615, 4524858; 404589, 4524863;  
404575, 4524863; 404545, 4524849;  
404537, 4524835; 404538, 4524823;

404553, 4524803; 404575, 4524782;  
404575, 4524741; 404542, 4524694;  
404488, 4524671; 404440, 4524659;  
404393, 4524657; 404361, 4524661;  
404343, 4524661; 404306, 4524635;  
404266, 4524619; 404233, 4524626;  
404187, 4524622; 404153, 4524602;  
404137, 4524567; 404134, 4524524;  
404114, 4524497; 404086, 4524451;  
404086, 4524421; 404113, 4524410;  
404159, 4524406; 404188, 4524404;  
404239, 4524406; 404298, 4524397;  
404339, 4524371; 404371, 4524338;  
404389, 4524322; 404426, 4524306;  
404455, 4524291; 404464, 4524291;  
404479, 4524303; 404514, 4524330;  
404558, 4524348; 404604, 4524344;  
404646, 4524336; 404698, 4524337;  
404746, 4524364; 404770, 4524375;  
404805, 4524378; 404841, 4524369;  
404875, 4524354; 404921, 4524354;  
404955, 4524367; 404965, 4524382;  
404963, 4524392; 404954, 4524399;  
404942, 4524406; 404881, 4524439;  
404862, 4524464; 404862, 4524510;  
404865, 4524531; 404858, 4524550;  
404839, 4524570; 404831, 4524598;  
404832, 4524614; 404824, 4524618;  
404808, 4524614; 404802, 4524627;  
404818, 4524632; 404843, 4524629;  
404857, 4524632; 404877, 4524655;  
404901, 4524663; 404936, 4524664;  
404945, 4524669; 404946, 4524688;  
404959, 4524678; 404953, 4524659;  
404933, 4524653; 404907, 4524655;  
404893, 4524649; 404849, 4524610;  
404850, 4524587; 404878, 4524551;  
404884, 4524524; 404881, 4524471;  
404890, 4524452; 404963, 4524418;  
404979, 4524410; 404993, 4524403;  
405008, 4524430; 405017, 4524454;  
405013, 4524466; 404989, 4524509;  
404968, 4524546; 404968, 4524575;  
404980, 4524588; 404991, 4524577;  
404986, 4524560; 404997, 4524535;  
405014, 4524501; 405031, 4524481;  
405041, 4524464; 405040, 4524442;  
405058, 4524433; 405071, 4524428;  
405084, 4524439; 405100, 4524465;  
405115, 4524482; 405136, 4524488;  
405152, 4524500; 405169, 4524525;  
405190, 4524538; 405215, 4524544;  
405230, 4524555; 405233, 4524571;  
405238, 4524593; 405245, 4524597;  
405267, 4524597; 405280, 4524594;  
405296, 4524601; 405309, 4524598;  
405319, 4524591; 405312, 4524570;  
405310, 4524559; 405304, 4524560;  
405303, 4524573; 405301, 4524584;  
405293, 4524589; 405279, 4524584;  
405254, 4524584; 405249, 4524577;  
405246, 4524558; 405237, 4524542;  
405222, 4524531; 405202, 4524526;  
405188, 4524522; 405174, 4524505;  
405155, 4524485; 405139, 4524477;  
405121, 4524471; 405110, 4524463;  
405110, 4524459; 405102, 4524434;  
405081, 4524418; 405058, 4524415;

405034, 4524431; 405018, 4524421;  
405006, 4524379; 404979, 4524358;  
404969, 4524347; 404940, 4524331;  
404886, 4524327; 404848, 4524340;  
404827, 4524351; 404791, 4524355;  
404768, 4524347; 404692, 4524306;  
404645, 4524303; 404601, 4524310;  
404558, 4524306; 404520, 4524289;  
404495, 4524264; 404499, 4524247;  
404511, 4524206; 404511, 4524183;  
404506, 4524140; 404517, 4524107;  
404537, 4524060; 404573, 4524020;  
404604, 4524002; 404615, 4524013;  
404645, 4524034; 404664, 4524042;  
404687, 4524042; 404704, 4524034;  
404712, 4524025; 404736, 4523999;  
404735, 4523971; 404729, 4523945;  
404723, 4523923; 404729, 4523910;  
404746, 4523900; 404781, 4523899;  
404815, 4523913; 404910, 4523952;  
404993, 4523987; 405015, 4524006;  
405013, 4524028; 405001, 4524048;  
405000, 4524051; 404990, 4524069;  
404993, 4524095; 405012, 4524110;  
405042, 4524111; 405069, 4524120;  
405087, 4524145; 405121, 4524173;  
405160, 4524231; 405194, 4524272;  
405211, 4524279; 405249, 4524290;  
405304, 4524301; 405331, 4524318;  
405340, 4524314; 405307, 4524285;  
405281, 4524281; 405225, 4524264;  
405198, 4524249; 405168, 4524199;  
405142, 4524158; 405099, 4524129;  
405082, 4524102; 405051, 4524090;  
405026, 4524089; 405014, 4524078;  
405015, 4524066; 405016, 4524060;  
405017, 4524060; 405038, 4524045;  
405041, 4523996; 405025, 4523983;  
404984, 4523964; 404843, 4523902;  
404795, 4523884; 404751, 4523877;  
404718, 4523888; 404702, 4523910;  
404699, 4523933; 404709, 4523955;  
404714, 4523982; 404701, 4524000;  
404684, 4524010; 404663, 4524010;  
404638, 4524002; 404621, 4523976;  
404634, 4523965; 404642, 4523948;  
404642, 4523938; 404631, 4523913;  
404618, 4523881; 404617, 4523851;  
404624, 4523820; 404646, 4523781;  
404680, 4523746; 404669, 4523736;  
404650, 4523746; 404614, 4523799;  
404600, 4523847; 404603, 4523886;  
404622, 4523951; 404596, 4523978;  
404541, 4524025; 404518, 4524070;  
404496, 4524114; 404492, 4524150;  
404495, 4524199; 404490, 4524232;  
404431, 4524286; 404361, 4524319;  
404347, 4524336; 404306, 4524369;  
404273, 4524378; 404215, 4524383;  
404087, 4524388; 403988, 4524403;  
403896, 4524407; 403867, 4524388;  
403825, 4524351; 403773, 4524341;  
403722, 4524350; 403647, 4524375;  
403575, 4524386; 403543, 4524375;  
403495, 4524367; 403447, 4524371;  
403378, 4524372; 403334, 4524386;  
403266, 4524414; returning to 403248,  
4524430.

(xii) From USGS 1:24,000 scale  
quadrangles Tyee City and Eureka. Land  
bounded by the following UTM zone 10  
NAD83 coordinates (E, N): 403498,  
4525062; 403498, 4525079; 403514,  
4525102; 403531, 4525112; 403552,  
4525117; 403569, 4525115; 403688,  
4525069; 403706, 4525077; 403704,  
4525089; 403602, 4525135; 403597,  
4525155; 403612, 4525163; 403633,  
4525198; 403653, 4525213; 403683,  
4525229; 403701, 4525262; 403704,  
4525297; 403693, 4525338; 403698,  
4525363; 403780, 4525436; 403881,  
4525538; 403921, 4525619; 403929,  
4525657; 403982, 4525672; 404020,  
4525647; 404101, 4525626; 404167,  
4525609; 404147, 4525593; 404127,  
4525586; 404127, 4525571; 404137,  
4525558; 404152, 4525530; 404144,  
4525495; 404124, 4525469; 404091,  
4525452; 404045, 4525462; 403992,  
4525474; 403962, 4525474; 403926,  
4525467; 403891, 4525444; 403777,  
4525310; 403772, 4525279; 403782,  
4525241; 403792, 4525201; 403800,  
4525178; 403790, 4525125; 403780,  
4525089; 403749, 4525056; 403714,  
4525034; 403681, 4525034; 403567,  
4525072; 403544, 4525072; 403536,  
4525056; 403514, 4525041; returning to  
403498, 4525062.

(xiii) From USGS 1:24,000 scale  
quadrangle Eureka. Land bounded by  
the following UTM zone 10 NAD83  
coordinates (E, N): 403167, 4524519;  
403174, 4524547; 403189, 4524560;  
403207, 4524568; 403265, 4524580;  
403301, 4524595; 403334, 4524631;  
403357, 4524692; 403362, 4524742;  
403341, 4524811; 403336, 4524899;  
403357, 4524993; 403367, 4525029;  
403402, 4525079; 403407, 4525059;  
403415, 4525034; 403427, 4525011;  
403453, 4525001; 403476, 4524996;  
403486, 4525021; 403498, 4525031;  
403519, 4525029; 403529, 4525013;  
403521, 4524988; 403503, 4524960;  
403473, 4524950; 403445, 4524955;  
403420, 4524968; 403389, 4524988;  
403379, 4524958; 403369, 4524917;  
403362, 4524861; 403367, 4524841;  
403405, 4524839; 403430, 4524846;  
403458, 4524882; 403493, 4524920;  
403544, 4524935; 403584, 4524917;  
403600, 4524872; 403572, 4524826;  
403521, 4524798; 403511, 4524818;  
403559, 4524851; 403572, 4524874;  
403564, 4524899; 403552, 4524912;  
403526, 4524904; 403508, 4524889;  
403478, 4524869; 403453, 4524826;  
403430, 4524816; 403402, 4524808;  
403369, 4524811; 403377, 4524783;  
403384, 4524735; 403382, 4524689;  
403367, 4524644; 403336, 4524590;  
403306, 4524565; 403275, 4524557;  
403222, 4524545; 403197, 4524527;  
403192, 4524509; 403197, 4524484;

403174, 4524487; returning to 403167, 4524519.

(xiv) From USGS 1:24,000 scale quadrangle Arcata South. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 405091, 4523686;

405091, 4523709; 405111, 4523708; 405126, 4523698; 405147, 4523680; 405150, 4523697; 405144, 4523708; 405138, 4523722; 405133, 4523735; 405133, 4523753; 405151, 4523772; 405181, 4523791; 405207, 4523807; 405232, 4523807; 405254, 4523814; 405263, 4523828; 405260, 4523853; 405253, 4523885; 405241, 4523894; 405226, 4523911; 405217, 4523931; 405217, 4523961; 405219, 4523992; 405220, 4524014; 405220, 4524028; 405234, 4524029; 405235, 4524000; 405239, 4523951; 405241, 4523926; 405260, 4523906; 405272, 4523886; 405281, 4523851; 405285, 4523831; 405276, 4523807; 405256, 4523791; 405231, 4523782; 405209, 4523780; 405164, 4523755; 405160, 4523735; 405167, 4523716; 405173, 4523691; 405163, 4523666; 405195, 4523635; 405207, 4523605; 405232, 4523526; 405242, 4523483; 405253, 4523471; 405273, 4523471; 405276, 4523486; 405276, 4523510; 405287, 4523533; 405294, 4523563; 405295, 4523580; 405301, 4523597; 405320, 4523610; 405348, 4523623; 405369, 4523641; 405376, 4523663; 405381, 4523685; 405391, 4523700; 405416, 4523723; 405423, 4523745; 405428, 4523785; 405428, 4523806; 405417, 4523823; 405412, 4523847; 405412, 4523867; 405412, 4523886; 405419, 4523906; 405432, 4523932; 405448, 4523944; 405451, 4523966; 405448, 4523985; 405444, 4524004; 405451, 4524020; 405454, 4524037; 405470, 4524053; 405488, 4524054; 405509, 4524054; 405523, 4524062; 405525, 4524076; 405525, 4524092; 405516, 4524097; 405503, 4524085; 405487, 4524084; 405472, 4524087; 405460, 4524092; 405457, 4524081; 405448, 4524060; 405435, 4524042; 405426, 4524042; 405422, 4524060; 405438, 4524075; 405444, 4524095; 405457, 4524116; 405472, 4524116; 405481, 4524106; 405487, 4524107; 405504, 4524116; 405522, 4524116; 405538, 4524107; 405551, 4524107; 405562, 4524117; 405581, 4524126; 405587, 4524137; 405594, 4524135; 405594, 4524116; 405576, 4524098; 405548, 4524081; 405544, 4524050; 405516, 4524035; 405488, 4524031; 405472, 4524019; 405469, 4524000; 405473, 4523969; 405473, 4523947; 405459, 4523925; 405438, 4523904; 405432, 4523878; 405432, 4523850; 405444, 4523823; 405448, 4523788; 405440, 4523745; 405437, 4523716; 405410, 4523688;

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 407105, 4524434; 407120, 4524404;  
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 407191, 4524326; 407201, 4524306;  
 407202, 4524279; 407195, 4524254;  
 407174, 4524234; 407141, 4524209;  
 407132, 4524188; 407138, 4524175;  
 407164, 4524168; 407204, 4524154;  
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 406183, 4523227; 406141, 4523190;  
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 405947, 4523009; 405924, 4523004;  
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 405690, 4523045; 405669, 4523076;  
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 405557, 4523211; 405531, 4523239;  
 405507, 4523270; 405481, 4523296;  
 405453, 4523316; 405422, 4523338;  
 405388, 4523361; 405366, 4523386;  
 405337, 4523417; 405313, 4523444;  
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 405226, 4523470; 405209, 4523519;  
 405194, 4523558; 405185, 4523594;  
 405170, 4523617; 405133, 4523658;  
 405097, 4523683; returning to 405091,  
 4523686.

(xv) From USGS 1:24,000 scale  
 quadrangle Arcata South. Land bounded  
 by the following UTM zone 10 NAD83  
 coordinates (E, N): 407456, 4523277;  
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 407484, 4523357; 407515, 4523395;  
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 407614, 4523398; 407624, 4523392;  
 407636, 4523390; 407643, 4523387;  
 407658, 4523381; 407669, 4523375;  
 407677, 4523367; 407686, 4523368;  
 407702, 4523369; 407724, 4523369;  
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 407796, 4523343; 407791, 4523337;  
 407802, 4523332; 407810, 4523339;  
 407820, 4523340; 407832, 4523337;  
 407838, 4523331; 407844, 4523326;  
 407848, 4523326; 407858, 4523326;  
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 407641, 4523175; 407640, 4523181;  
 407629, 4523190; 407609, 4523202;  
 407602, 4523203; 407591, 4523200;  
 407582, 4523201; 407509, 4523240;  
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 returning to 407456, 4523277.

(xvi) From USGS 1:24,000 scale  
 quadrangle Arcata South. Land bounded  
 by the following UTM zone 10 NAD83  
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 408367, 4523266; 408369, 4523282;  
 408376, 4523297; 408387, 4523315;  
 408394, 4523328; 408393, 4523345;  
 408385, 4523353; 408382, 4523361;  
 408386, 4523369; 408393, 4523381;  
 408397, 4523389; 408405, 4523390;  
 408410, 4523396; 408411, 4523400;  
 408408, 4523404; 408404, 4523411;  
 408401, 4523423; 408403, 4523432;  
 408396, 4523441; 408359, 4523464;  
 408353, 4523470; 408353, 4523477;  
 408363, 4523475; 408373, 4523466;  
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408503, 4523443; 408503, 4523433;  
408503, 4523422; 408498, 4523415;  
408491, 4523406; 408483, 4523402;  
408483, 4523396; 408489, 4523390;  
408500, 4523389; 408507, 4523393;  
408514, 4523400; 408521, 4523407;  
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408549, 4523411; 408556, 4523415;  
408562, 4523421; 408564, 4523430;  
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408570, 4523468; 408579, 4523468;  
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408603, 4523463; 408609, 4523463;  
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408616, 4523465; 408613, 4523455;  
408602, 4523455; 408597, 4523458;  
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408572, 4523450; 408572, 4523441;  
408570, 4523430; 408568, 4523419;  
408563, 4523410; 408554, 4523404;  
408542, 4523401; 408544, 4523395;  
408549, 4523368; 408547, 4523366;  
408539, 4523366; 408534, 4523358;  
408544, 4523351; 408553, 4523338;  
408549, 4523333; 408543, 4523336;  
408532, 4523345; 408525, 4523355;  
408521, 4523359; 408511, 4523363;  
408502, 4523364; 408492, 4523363;  
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408462, 4523372; 408459, 4523377;  
408453, 4523380; 408444, 4523380;  
408428, 4523378; 408411, 4523376;  
408408, 4523364; 408407, 4523346;  
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408404, 4523311; 408396, 4523296;  
408385, 4523283; 408383, 4523267;  
408384, 4523244; 408383, 4523219;  
408383, 4523207; 408393, 4523195;  
408401, 4523194; 408413, 4523196;  
408408, 4523189; 408402, 4523180;  
408385, 4523189; 408378, 4523175;  
408367, 4523172; 408494, 4523054;  
408508, 4523063; 408520, 4523064;  
408532, 4523063; 408543, 4523056;  
408548, 4523039; 408547, 4523026;  
408537, 4523018; 408526, 4523017;  
408519, 4523024; 408473, 4523064;  
408360, 4523167; 408288, 4523233;  
408250, 4523270; 408232, 4523289;  
408216, 4523311; returning to 408209,  
4523323.

(xvii) From USGS 1:24,000 scale  
quadrangle Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 408660, 4523204;  
408667, 4523217; 408668, 4523242;  
408674, 4523231; 408673, 4523202;  
408676, 4523194; 408689, 4523183;  
408689, 4523172; 408682, 4523153;  
408675, 4523137; 408676, 4523121;  
408681, 4523107; 408687, 4523095;  
408694, 4523080; 408694, 4523067;  
408701, 4523051; 408713, 4523039;

408728, 4523031; 408712, 4523031;  
408685, 4523046; 408676, 4523063;  
408681, 4523085; 408671, 4523106;  
408664, 4523140; 408674, 4523161;  
408674, 4523180; 408662, 4523195;  
returning to 408660, 4523204.

(xviii) From USGS 1:24,000 scale  
quadrangle Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 408793, 4522282;  
408793, 4522296; 408825, 4522296;  
408833, 4522299; 408837, 4522310;  
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408835, 4522418; 408840, 4522429;  
408844, 4522442; 408852, 4522450;  
408863, 4522457; 408866, 4522470;  
408865, 4522485; 408865, 4522489;  
408856, 4522499; 408848, 4522510;  
408848, 4522523; 408844, 4522556;  
408840, 4522588; 408833, 4522611;  
408835, 4522635; 408833, 4522645;  
408834, 4522681; 408842, 4522682;  
408844, 4522664; 408849, 4522639;  
408875, 4522638; 408897, 4522641;  
408914, 4522643; 408919, 4522662;  
408924, 4522681; 408935, 4522701;  
408951, 4522718; 408950, 4522738;  
408940, 4522755; 408926, 4522768;  
408912, 4522791; 408910, 4522816;  
408912, 4522838; 408923, 4522862;  
408938, 4522878; 408950, 4522895;  
408967, 4522927; 408965, 4522951;  
408965, 4522982; 408968, 4522998;  
408979, 4523015; 408980, 4523030;  
408969, 4523034; 408948, 4523039;  
408931, 4523045; 408918, 4523056;  
408911, 4523066; 408911, 4523088;  
408918, 4523111; 408918, 4523134;  
408916, 4523154; 408922, 4523173;  
408933, 4523186; 408942, 4523195;  
408947, 4523213; 408939, 4523225;  
408935, 4523238; 408933, 4523254;  
408936, 4523273; 408946, 4523297;  
408946, 4523315; 408948, 4523329;  
408963, 4523352; 408962, 4523356;  
408949, 4523354; 408920, 4523357;  
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408919, 4523434; 408905, 4523431;  
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408862, 4523480; 408865, 4523500;  
408862, 4523514; 408859, 4523536;  
408867, 4523548; 408872, 4523517;  
408876, 4523505; 408877, 4523483;  
408877, 4523453; 408895, 4523446;  
408921, 4523451; 408941, 4523444;  
408948, 4523432; 408943, 4523418;  
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408960, 4523378; 408976, 4523375;  
408988, 4523365; 408988, 4523353;  
408984, 4523343; 408973, 4523331;  
408965, 4523310; 408960, 4523286;  
408956, 4523255; 408955, 4523244;  
408959, 4523233; 408966, 4523221;  
408967, 4523207; 408965, 4523192;  
408959, 4523182; 408950, 4523172;  
408941, 4523161; 408938, 4523147;

408938, 4523133; 408939, 4523118;  
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409053, 4523037; 409051, 4523054;  
409043, 4523075; 409030, 4523083;  
409013, 4523089; 409002, 4523098;  
408994, 4523110; 408992, 4523125;  
408998, 4523139; 409021, 4523155;  
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409043, 4523198; 409049, 4523191;  
409056, 4523176; 409049, 4523158;  
409035, 4523147; 409018, 4523138;  
409007, 4523124; 409007, 4523115;  
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409269, 4523250; 409216, 4523202;  
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409042, 4522982; 409290, 4523125;  
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409267, 4523076; 409267, 4523062;  
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409325, 4523062; 409326, 4523068;  
409324, 4523074; 409326, 4523079;  
409331, 4523070; 409331, 4523055;  
409326, 4523041; 409331, 4523025;  
409341, 4523014; 409356, 4523005;  
409366, 4522997; 409375, 4522973;  
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409376, 4522914; 409381, 4522905;  
409389, 4522905; 409396, 4522901;  
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409267, 4522783; 409261, 4522773;  
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409326, 4522785; 409326, 4522778;  
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409275, 4522747; 409271, 4522747;  
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409227, 4522732; 409213, 4522730;  
409208, 4522722; 409206, 4522699;  
409203, 4522689; 409175, 4522660;  
409162, 4522658; 409141, 4522658;  
409128, 4522655; 409115, 4522647;  
409102, 4522644; 409092, 4522645;  
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408945, 4522613; 408944, 4522606;  
408936, 4522607; 408924, 4522616;  
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408888, 4522499; 408893, 4522473;  
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408876, 4522219; 408881, 4522206;  
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408965, 4522271; 408986, 4522273;  
408995, 4522273; 409002, 4522279;  
409010, 4522288; 409012, 4522309;  
409017, 4522342; 409024, 4522357;  
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409141, 4522409; 409144, 4522395;  
409149, 4522388; 409168, 4522386;  
409179, 4522387; 409195, 4522391;  
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409470, 4522461; 409467, 4522462;  
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409457, 4522458; 409450, 4522468;  
409438, 4522470; 409424, 4522470;  
409417, 4522472; 409412, 4522489;  
409406, 4522505; 409398, 4522515;  
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409335, 4522475; 409318, 4522464;  
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409259, 4522446; 409255, 4522432;  
409252, 4522419; 409235, 4522397;  
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409170, 4522372; 409142, 4522377;  
409135, 4522388; 409127, 4522410;  
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409112, 4522431; 409104, 4522428;  
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409055, 4522276; 409062, 4522270;  
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409111, 4522236; 409121, 4522233;  
409126, 4522237; 409137, 4522252;  
409140, 4522259; 409142, 4522255;  
409140, 4522244; 409134, 4522233;  
409121, 4522225; 409110, 4522227;  
409096, 4522239; 409075, 4522253;  
409061, 4522263; 409051, 4522269;  
409041, 4522269; 409018, 4522269;  
409008, 4522264; 408990, 4522258;  
408971, 4522255; 408956, 4522249;  
408933, 4522237; 408922, 4522220;  
408909, 4522203; 408899, 4522190;  
408886, 4522178; 408877, 4522178;  
408874, 4522193; 408871, 4522209;  
408869, 4522210; 408869, 4522202;  
408871, 4522179; 408869, 4522171;  
408868, 4522165; 408861, 4522160;  
408848, 4522160; 408846, 4522175;  
408838, 4522180; 408838, 4522185;  
408846, 4522194; 408842, 4522201;  
408835, 4522214; 408838, 4522224;  
408841, 4522233; 408841, 4522243;  
408841, 4522269; 408840, 4522281;  
408834, 4522284; 408827, 4522283;  
408812, 4522283; returning to 408793,  
4522282.

(xix) From USGS 1:24,000 scale  
quadrangle Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 408827, 4521822;  
408829, 4521942; 408843, 4521954;  
408843, 4521975; 408843, 4522009;  
408845, 4522060; 408845, 4522106;  
408851, 4522108; 408854, 4522062;  
408853, 4522015; 408853, 4521970;  
408853, 4521951; 408872, 4521939;  
408924, 4521913; 408962, 4521881;  
409011, 4521849; 409066, 4521844;  
409121, 4521841; 409164, 4521843;  
409207, 4521848; 409259, 4521862;  
409305, 4521866; 409322, 4521839;  
409379, 4521833; 409431, 4521840;  
409461, 4521827; 409545, 4521805;

409543, 4521570; 409520, 4521641;  
409490, 4521729; 409460, 4521729;  
409406, 4521743; 409376, 4521785;  
409317, 4521785; 409291, 4521799;  
409279, 4521824; 409249, 4521818;  
409223, 4521781; 409178, 4521760;  
409135, 4521759; 409101, 4521756;  
409063, 4521752; 409020, 4521786;  
408982, 4521820; 408911, 4521823;  
408880, 4521831; returning to 408827,  
4521822.

(xx) From USGS 1:24,000 scale  
quadrangle Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 408824, 4521590;  
408824, 4521640; 408825, 4521658;  
408832, 4521672; 408843, 4521692;  
408856, 4521723; 408874, 4521738;  
408899, 4521738; 408914, 4521726;  
408927, 4521705; 408940, 4521678;  
408949, 4521649; 408959, 4521631;  
408969, 4521621; 408982, 4521615;  
409005, 4521615; 409027, 4521604;  
409016, 4521599; 408839, 4521613;  
408835, 4521597; returning to 408824,  
4521590.

(xxi) From USGS 1:24,000 scale  
quadrangle Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 405365, 4517762;  
405372, 4517778; 405520, 4517852;  
405888, 4518096; 406038, 4518193;  
406162, 4518274; 406251, 4518332;  
406342, 4518391; 406487, 4518485;  
406790, 4518682; 406988, 4518812;  
407152, 4518919; 407287, 4519007;  
407490, 4519140; 407589, 4519191;  
407724, 4519261; 407788, 4519302;  
407816, 4519302; 407839, 4519293;  
407861, 4519261; 407859, 4519254;  
407846, 4519259; 407820, 4519286;  
407805, 4519292; 407786, 4519287;  
407728, 4519246; 407596, 4519179;  
407526, 4519144; 407446, 4519099;  
407284, 4518991; 407182, 4518928;  
407085, 4518861; 406976, 4518791;  
406930, 4518760; 406804, 4518673;  
406819, 4518664; 406839, 4518649;  
406862, 4518632; 406882, 4518617;  
406906, 4518595; 406933, 4518577;  
406955, 4518580; 406974, 4518587;  
406998, 4518591; 407032, 4518590;  
407062, 4518581; 407073, 4518570;  
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407140, 4518584; 407153, 4518587;  
407162, 4518582; 407176, 4518568;  
407193, 4518534; 407204, 4518516;  
407223, 4518499; 407243, 4518482;  
407263, 4518464; 407273, 4518444;  
407298, 4518423; 407312, 4518402;  
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407331, 4518317; 407336, 4518304;  
407343, 4518293; 407357, 4518273;  
407374, 4518266; 407404, 4518252;  
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407447, 4518186; 407447, 4518177;  
407434, 4518179; 407422, 4518204;  
407407, 4518230; 407387, 4518243;  
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407307, 4518361; 407297, 4518405;  
407291, 4518416; 407271, 4518434;  
407255, 4518457; 407235, 4518479;  
407206, 4518502; 407190, 4518516;  
407173, 4518546; 407166, 4518563;  
407160, 4518572; 407152, 4518574;  
407139, 4518574; 407123, 4518566;  
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407055, 4518566; 407043, 4518576;  
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407005, 4518577; 406979, 4518570;  
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406920, 4518497; 406912, 4518536;  
406879, 4518572; 406841, 4518609;  
406786, 4518639; 406773, 4518656;  
406729, 4518626; 406710, 4518614;  
406679, 4518595; 406634, 4518565;  
406634, 4518555; 406633, 4518533;  
406630, 4518504; 406617, 4518472;  
406612, 4518442; 406611, 4518423;  
406632, 4518403; 406660, 4518394;  
406673, 4518388; 406678, 4518380;  
406661, 4518378; 406632, 4518388;  
406599, 4518414; 406604, 4518442;  
406606, 4518480; 406617, 4518524;  
406622, 4518549; 406622, 4518560;  
406568, 4518527; 406391, 4518410;  
406184, 4518272; 406069, 4518197;  
406045, 4518180; 405987, 4518146;  
405924, 4518102; 405894, 4518085;  
405652, 4517922; 405530, 4517839;  
405381, 4517766; 405379, 4517746;  
405385, 4517689; 405476, 4517633;  
405482, 4517619; 405462, 4517594;

405463, 4517627; 405374, 4517679;  
405370, 4517729; returning to 405365,  
4517762.

(xxii) From USGS 1:24,000 scale  
quadrangle Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 406574, 4517557;  
406583, 4517571; 406601, 4517590;  
406623, 4517598; 406653, 4517604;  
406676, 4517602; 406693, 4517598;  
406706, 4517594; 406715, 4517590;  
406735, 4517588; 406757, 4517604;  
406755, 4517624; 406734, 4517661;  
406722, 4517698; 406731, 4517723;  
406751, 4517753; 406765, 4517773;  
406786, 4517793; 406795, 4517794;  
406800, 4517782; 406800, 4517768;  
406790, 4517749; 406796, 4517748;  
406807, 4517765; 406825, 4517775;  
406843, 4517776; 406861, 4517775;  
406875, 4517775; 406897, 4517765;  
406883, 4517749; 406888, 4517737;  
406909, 4517734; 406932, 4517733;  
406941, 4517726; 406917, 4517719;  
406891, 4517714; 406873, 4517728;  
406852, 4517739; 406845, 4517716;  
406861, 4517718; 406875, 4517717;  
406872, 4517707; 406862, 4517704;  
406851, 4517693; 406862, 4517689;  
406883, 4517678; 406901, 4517666;  
406909, 4517655; 406926, 4517654;  
406946, 4517644; 406960, 4517629;  
406974, 4517625; 406986, 4517617;  
406983, 4517601; 406991, 4517593;  
406994, 4517571; 406994, 4517555;  
407006, 4517562; 407007, 4517579;  
407019, 4517593; 407044, 4517603;  
407049, 4517596; 407040, 4517581;  
407040, 4517568; 407041, 4517549;  
407040, 4517530; 407028, 4517525;  
407029, 4517498; 407014, 4517484;  
407018, 4517468; 407008, 4517462;  
407007, 4517444; 407007, 4517432;  
407013, 4517414; 407011, 4517402;  
407013, 4517396; 407030, 4517396;  
407052, 4517392; 407062, 4517389;  
407067, 4517377; 407067, 4517361;  
407060, 4517343; 407035, 4517339;  
407012, 4517338; 406986, 4517338;  
406971, 4517344; 406959, 4517357;  
406962, 4517371; 406972, 4517383;  
406978, 4517403; 406978, 4517424;  
406978, 4517444; 406978, 4517462;  
406983, 4517469; 406980, 4517483;  
406966, 4517494; 406949, 4517493;  
406932, 4517500; 406924, 4517505;  
406910, 4517499; 406889, 4517499;  
406867, 4517515; 406848, 4517523;  
406840, 4517512; 406825, 4517501;  
406811, 4517518; 406810, 4517539;  
406795, 4517555; 406784, 4517551;  
406763, 4517556; 406752, 4517556;  
406765, 4517517; 406783, 4517446;  
406794, 4517410; 406817, 4517384;  
406896, 4517344; 406983, 4517309;  
407020, 4517310; 407049, 4517333;  
407053, 4517329; 407051, 4517319;  
407025, 4517299; 407010, 4517295;

406988, 4517297; 406944, 4517309;  
406861, 4517348; 406820, 4517367;  
406799, 4517382; 406785, 4517400;  
406775, 4517428; 406763, 4517475;  
406755, 4517511; 406735, 4517560;  
406708, 4517585; 406683, 4517591;  
406652, 4517593; 406614, 4517582;  
406591, 4517558; 406581, 4517551;  
returning to 406574, 4517557.

(xxiii) From USGS 1:24,000 scale  
quadrangle Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 406455, 4517395;  
406458, 4517402; 406470, 4517401;  
406477, 4517392; 406493, 4517382;  
406512, 4517379; 406525, 4517388;  
406537, 4517407; 406545, 4517421;  
406551, 4517452; 406551, 4517470;  
406552, 4517498; 406558, 4517527;  
406568, 4517544; 406574, 4517541;  
406567, 4517521; 406562, 4517477;  
406563, 4517451; 406554, 4517421;  
406547, 4517391; 406533, 4517368;  
406506, 4517361; 406483, 4517370;  
406464, 4517382; returning to 406455,  
4517395.

(xxiv) From USGS 1:24,000 scale  
quadrangle Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 406478, 4517065;  
406493, 4517065; 406523, 4517064;  
406555, 4517073; 406576, 4517093;  
406592, 4517123; 406597, 4517143;  
406596, 4517164; 406584, 4517198;  
406558, 4517223; 406546, 4517240;  
406543, 4517267; 406549, 4517293;  
406562, 4517308; 406581, 4517318;  
406595, 4517335; 406612, 4517374;  
406622, 4517410; 406625, 4517451;  
406627, 4517498; 406638, 4517514;  
406652, 4517518; 406669, 4517502;  
406684, 4517464; 406699, 4517394;  
406709, 4517355; 406741, 4517320;  
406802, 4517291; 406869, 4517272;  
406912, 4517261; 406937, 4517250;  
406978, 4517233; 407002, 4517232;  
407048, 4517243; 407079, 4517253;  
407111, 4517276; 407135, 4517306;  
407151, 4517349; 407154, 4517391;  
407154, 4517429; 407155, 4517456;  
407176, 4517471; 407205, 4517471;  
407229, 4517460; 407260, 4517439;  
407279, 4517399; 407288, 4517331;  
407300, 4517248; 407313, 4517232;  
407335, 4517233; 407360, 4517241;  
407377, 4517245; 407389, 4517249;  
407391, 4517242; 407370, 4517231;  
407341, 4517222; 407320, 4517206;  
407322, 4517183; 407332, 4517164;  
407334, 4517151; 407333, 4517135;  
407344, 4517115; 407361, 4517098;  
407379, 4517089; 407394, 4517089;  
407425, 4517099; 407463, 4517107;  
407540, 4517113; 407594, 4517110;  
407635, 4517099; 407671, 4517083;  
407702, 4517056; 407724, 4517032;  
407744, 4516996; 407745, 4516952;  
407743, 4516874; 407757, 4516822;  
407763, 4516772; 407761, 4516749;

407753, 4516735; 407729, 4516726;  
407682, 4516720; 407634, 4516720;  
407585, 4516717; 407551, 4516713;  
407522, 4516703; 407494, 4516678;  
407476, 4516634; 407471, 4516597;  
407469, 4516597; 407459, 4516598;  
407458, 4516598; 407459, 4516618;  
407473, 4516664; 407489, 4516693;  
407512, 4516715; 407551, 4516727;  
407614, 4516734; 407646, 4516737;  
407705, 4516738; 407729, 4516741;  
407743, 4516745; 407749, 4516757;  
407745, 4516787; 407729, 4516865;  
407725, 4516894; 407723, 4516934;  
407725, 4516975; 407729, 4516996;  
407713, 4517029; 407681, 4517059;  
407645, 4517083; 407601, 4517094;  
407531, 4517100; 407450, 4517092;  
407441, 4517082; 407418, 4517074;  
407395, 4517071; 407363, 4517068;  
407345, 4517078; 407336, 4517095;  
407328, 4517113; 407319, 4517147;  
407317, 4517164; 407304, 4517209;  
407290, 4517244; 407283, 4517287;  
407272, 4517352; 407264, 4517401;  
407241, 4517444; 407219, 4517456;  
407197, 4517459; 407178, 4517457;  
407167, 4517442; 407164, 4517418;  
407162, 4517370; 407152, 4517322;  
407135, 4517290; 407108, 4517260;  
407069, 4517239; 407026, 4517226;  
406997, 4517222; 406971, 4517224;  
406944, 4517236; 406919, 4517245;  
406886, 4517254; 406836, 4517271;  
406788, 4517286; 406747, 4517305;  
406721, 4517321; 406709, 4517337;  
406695, 4517358; 406685, 4517388;  
406677, 4517426; 406672, 4517460;  
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406649, 4517503; 406643, 4517498;  
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406637, 4517439; 406636, 4517409;  
406627, 4517381; 406612, 4517344;  
406598, 4517321; 406580, 4517306;  
406563, 4517294; 406556, 4517278;  
406557, 4517259; 406559, 4517246;  
406577, 4517227; 406596, 4517204;  
406608, 4517174; 406611, 4517165;  
406700, 4517169; 406731, 4517156;  
406762, 4517147; 406795, 4517118;  
406789, 4517107; 406775, 4517117;  
406750, 4517138; 406695, 4517155;  
406612, 4517154; 406610, 4517149;  
406605, 4517131; 406619, 4517116;  
406645, 4517091; 406657, 4517069;  
406672, 4517055; 406693, 4517041;  
406694, 4517034; 406675, 4517036;  
406659, 4517045; 406635, 4517046;  
406629, 4517036; 406625, 4517018;  
406631, 4516990; 406648, 4516971;  
406655, 4516958; 406676, 4516951;  
406713, 4516946; 406733, 4516939;  
406755, 4516934; 406769, 4516924;  
406781, 4516910; 406793, 4516879;  
406798, 4516835; 406795, 4516791;  
406800, 4516758; 406806, 4516740;  
406806, 4516724; 406802, 4516696;  
406797, 4516654; 406799, 4516635;

406810, 4516612; 406836, 4516567;  
406845, 4516531; 406848, 4516509;  
406840, 4516482; 406836, 4516462;  
406843, 4516463; 406855, 4516477;  
406862, 4516495; 406877, 4516495;  
406893, 4516493; 406895, 4516488;  
406884, 4516485; 406876, 4516488;  
406867, 4516484; 406857, 4516465;  
406838, 4516449; 406841, 4516437;  
406839, 4516409; 406841, 4516371;  
406850, 4516359; 406872, 4516355;  
406899, 4516342; 406914, 4516336;  
406914, 4516326; 406904, 4516328;  
406891, 4516335; 406878, 4516342;  
406860, 4516346; 406842, 4516351;  
406844, 4516330; 406853, 4516301;  
406866, 4516282; 406883, 4516266;  
406888, 4516257; 406900, 4516231;  
406906, 4516214; 406921, 4516200;  
406946, 4516179; 406970, 4516165;  
407007, 4516160; 407016, 4516156;  
407013, 4516147; 407000, 4516150;  
406978, 4516150; 406958, 4516154;  
406932, 4516177; 406921, 4516189;  
406900, 4516203; 406891, 4516202;  
406884, 4516196; 406884, 4516183;  
406899, 4516157; 406919, 4516121;  
406939, 4516087; 406941, 4516059;  
406943, 4516019; 406952, 4515994;  
406970, 4515973; 406990, 4515953;  
407006, 4515939; 407013, 4515912;  
407024, 4515896; 407042, 4515875;  
407049, 4515854; 407044, 4515852;  
407034, 4515872; 407016, 4515890;  
407003, 4515910; 406989, 4515931;  
406977, 4515953; 406959, 4515966;  
406939, 4515990; 406928, 4516027;  
406927, 4516065; 406917, 4516102;  
406891, 4516141; 406869, 4516180;  
406851, 4516194; 406830, 4516216;  
406803, 4516263; 406782, 4516304;  
406770, 4516324; 406748, 4516344;  
406732, 4516349; 406708, 4516352;  
406684, 4516345; 406660, 4516329;  
406631, 4516318; 406613, 4516318;  
406602, 4516326; 406583, 4516348;  
406577, 4516372; 406583, 4516403;  
406591, 4516423; 406615, 4516445;  
406637, 4516461; 406666, 4516468;  
406686, 4516472; 406692, 4516481;  
406689, 4516489; 406678, 4516496;  
406658, 4516500; 406649, 4516508;  
406651, 4516515; 406664, 4516513;  
406678, 4516511; 406695, 4516511;  
406714, 4516525; 406721, 4516525;  
406718, 4516517; 406710, 4516500;  
406713, 4516485; 406707, 4516468;  
406690, 4516456; 406676, 4516451;  
406658, 4516449; 406640, 4516444;  
406622, 4516430; 406604, 4516413;  
406593, 4516380; 406593, 4516355;  
406613, 4516335; 406624, 4516331;  
406645, 4516335; 406672, 4516353;  
406696, 4516366; 406740, 4516362;  
406769, 4516344; 406798, 4516315;  
406818, 4516261; 406845, 4516218;  
406867, 4516202; 406879, 4516207;  
406884, 4516221; 406876, 4516243;

406867, 4516256; 406849, 4516270;  
406835, 4516294; 406823, 4516326;  
406818, 4516360; 406819, 4516387;  
406822, 4516413; 406817, 4516452;  
406817, 4516483; 406824, 4516511;  
406824, 4516534; 406815, 4516559;  
406804, 4516582; 406781, 4516618;  
406772, 4516637; 406774, 4516674;  
406784, 4516719; 406781, 4516743;  
406771, 4516779; 406771, 4516816;  
406772, 4516865; 406757, 4516892;  
406750, 4516913; 406737, 4516914;  
406689, 4516924; 406648, 4516940;  
406625, 4516968; 406609, 4516995;  
406604, 4517015; 406614, 4517036;  
406617, 4517063; 406616, 4517093;  
406596, 4517100; 406581, 4517078;  
406541, 4517057; 406503, 4517053;  
406480, 4517058; returning to 406478,  
4517065.

(xxv) From USGS 1:24,000 scale  
quadrangle Arcata South. Land bounded  
by the following UTM zone 10 NAD83  
coordinates (E, N): 405813, 4517245;  
405816, 4517250; 405826, 4517237;  
405837, 4517224; 405928, 4517186;  
405951, 4517171; 405959, 4517164;  
405976, 4517143; 406004, 4517145;  
406019, 4517149; 406019, 4517135;  
406010, 4517105; 406005, 4517086;  
405999, 4517070; 405992, 4517046;  
405992, 4517030; 406004, 4517019;  
406022, 4517018; 406045, 4517021;  
406064, 4517034; 406084, 4517044;  
406114, 4517049; 406132, 4517051;  
406145, 4517046; 406162, 4517035;  
406188, 4517013; 406198, 4516996;  
406210, 4516994; 406211, 4516980;  
406203, 4516973; 406200, 4516934;  
406203, 4516879; 406201, 4516860;  
406223, 4516835; 406234, 4516805;  
406230, 4516793; 406248, 4516768;  
406282, 4516711; 406319, 4516696;  
406408, 4516682; 406449, 4516663;  
406518, 4516641; 406574, 4516627;  
406599, 4516602; 406609, 4516562;  
406591, 4516501; 406570, 4516455;  
406459, 4516384; 406401, 4516334;  
406356, 4516286; 406348, 4516251;  
406353, 4516233; 406403, 4516214;  
406401, 4516206; 406350, 4516216;  
406339, 4516232; 406334, 4516249;  
406335, 4516276; 406345, 4516297;  
406359, 4516315; 406398, 4516354;  
406447, 4516400; 406522, 4516450;  
406553, 4516470; 406586, 4516555;  
406587, 4516581; 406574, 4516603;  
406538, 4516619; 406437, 4516647;  
406397, 4516665; 406322, 4516677;  
406282, 4516687; 406257, 4516711;  
406225, 4516768; 406216, 4516782;  
406211, 4516778; 406202, 4516774;  
406193, 4516776; 406191, 4516782;  
406193, 4516790; 406178, 4516812;  
406168, 4516825; 406164, 4516834;  
406144, 4516876; 406139, 4516879;  
406132, 4516879; 406130, 4516884;  
406134, 4516888; 406137, 4516893;

406134, 4516914; 406134, 4516927;  
406142, 4516972; 406142, 4516990;  
406137, 4516996; 406131, 4516991;  
406124, 4516995; 406126, 4517003;  
406116, 4517012; 406099, 4517013;  
406084, 4517013; 406074, 4517010;  
406067, 4516999; 406050, 4516988;  
406034, 4516986; 406012, 4516985;  
405990, 4516991; 405979, 4517003;  
405968, 4517017; 405966, 4517031;  
405972, 4517062; 405979, 4517082;  
405979, 4517087; 405986, 4517107;  
405986, 4517131; 405977, 4517133;  
405969, 4517139; 405949, 4517164;  
405921, 4517183; 405885, 4517194;  
405834, 4517218; 405824, 4517227;  
returning to 405813, 4517245.

(xxvi) From USGS 1:24,000 scale quadrangle Arcata South. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 407085, 4515505; 407087, 4515512; 407130, 4515530; 407145, 4515540; 407173, 4515552; 407184, 4515539; 407203, 4515520; 407223, 4515509; 407236, 4515491; 407238, 4515481; 407244, 4515471; 407268, 4515463; 407278, 4515449; 407282, 4515436; 407272, 4515442; 407265, 4515454; 407245, 4515461; 407231, 4515476; 407226, 4515491; 407211, 4515506; 407190, 4515513; 407169, 4515516; 407155, 4515518;

407152, 4515510; 407139, 4515507;  
407127, 4515502; 407113, 4515499;  
407106, 4515498; 407099, 4515496;  
407097, 4515490; 407098, 4515483;  
407094, 4515481; 407088, 4515485;  
407088, 4515490; 407088, 4515498;  
returning to 407085, 4515505.

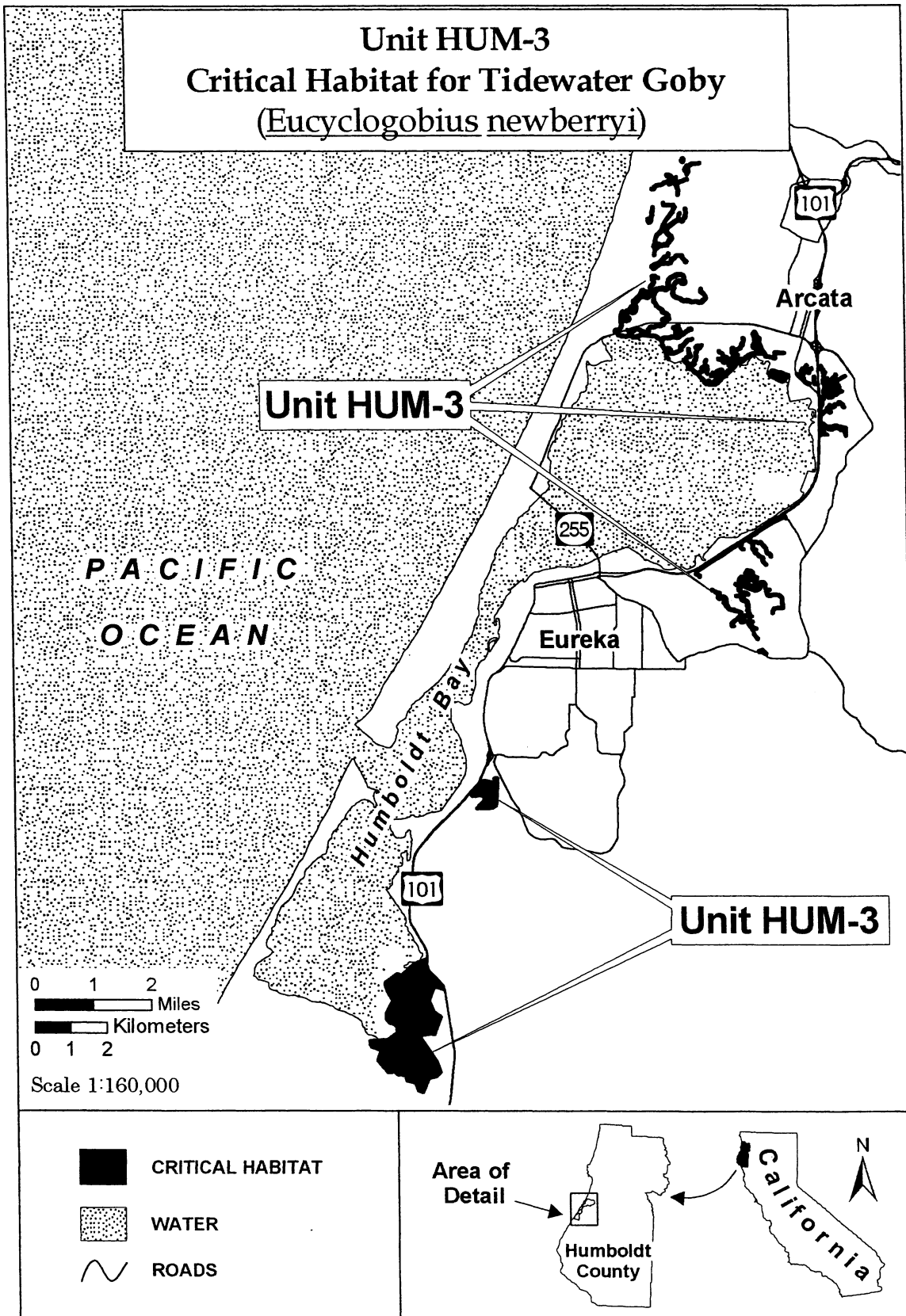
(xxvii) From USGS 1:24,000 scale quadrangles Eureka and Fields Landing. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 399065, 4511443; 399073, 4511482; 399088, 4511516; 399110, 4511539; 399153, 4511567; 399203, 4511583; 399264, 4511622; 399286, 4511651; 399296, 4511673; 399356, 4511801; 399406, 4511839; 399422, 4511844; 399444, 4511846; 399672, 4511791; 399693, 4511796; 399721, 4511806; 399736, 4511816; 399738, 4511835; 399733, 4511864; 399717, 4511910; 399781, 4511918; 399776, 4511662; 399738, 4511155; 399643, 4511079; 399235, 4511068; 399406, 4511265; 399422, 4511318; 399429, 4511358; 399388, 4511425; 399364, 4511436; 399325, 4511440; 399315, 4511444; 399149, 4511407; 399109, 4511407; 399080, 4511422; returning to 399065, 4511443.

(xxviii) From USGS 1:24,000 scale quadrangle Fields Landing. Land

bounded by the following UTM zone 10 NAD83 coordinates (E, N): 396204, 4504399; 396220, 4504485; 396333, 4504495; 396700, 4504525; 396964, 4504736; 396961, 4504902; 396868, 4504978; 396753, 4505018; 396680, 4505107; 396673, 4505269; 396855, 4505633; 396706, 4505904; 396637, 4506093; 396657, 4506149; 396973, 4506376; 397092, 4506339; 397457, 4506666; 397761, 4506800; 397765, 4506657; 397817, 4506487; 397978, 4506317; 398219, 4506049; 398235, 4505961; 398020, 4506037; 397955, 4505986; 397823, 4505633; 397955, 4505312; 398163, 4505180; 397980, 4504676; 397910, 4504693; 397854, 4504693; 397547, 4504641; 398043, 4503896; 398135, 4503602; 398020, 4503486; 397810, 4503449; 397646, 4503052; 397527, 4503096; 397464, 4503316; 397212, 4503386; 397193, 4503531; 396973, 4503537; 396872, 4503619; 396708, 4503606; 396425, 4503934; 396513, 4504185; 396488, 4504244; 396369, 4504280; 396266, 4504313; returning to 396204, 4504399.

(xxix) Note: Map of Unit HUM-3 follows:

BILLING CODE 4310-55-P



(10) Unit HUM-4, Humboldt County, California.

(i) From USGS 1:24,000 scale quadrangles, Cannibal Island. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 393052, 4504207; 393102, 4504275; 393146, 4504303; 393119, 4504226; 393143, 4504186; 393184, 4504123; 393203, 4504065; 393203, 4504037; 393158, 4503967; 393129, 4503919; 393122, 4503876; 393131, 4503835; 393167, 4503811; 393283, 4503811; 393324, 4503806; 393374, 4503784; 393408, 4503743; 393412, 4503698; 393412, 4503618; 393412, 4503570; 393441, 4503549; 393583, 4503585; 393593, 4503570; 393403, 4503501; 393396, 4503534; 393374, 4503575; 393369, 4503628; 393372, 4503678; 393360, 4503719; 393324, 4503755; 393290, 4503772; 393158, 4503767; 393117, 4503765; 393081, 4503782; 393062, 4503823; 393054, 4503864; 393062, 4503909; 393090, 4503967; 393136, 4504008; 393167, 4504058; 393090, 4504198; 393074, 4504198; returning to 393052, 4504207.

(ii) From USGS 1:24,000 scale quadrangles, Cannibal Island. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 392678, 4504120; 392705, 4504134; 392705, 4504156; 392716, 4504160; 392724, 4504145; 392751, 4504139; 392780, 4504123; 392788, 4504107; 392780, 4504083; 392770, 4504058; 392772, 4504035; 392799, 4503999; 392824, 4503999; 392850, 4504003; 392874, 4504002; 392882, 4503994; 392885, 4503976; 392874, 4503937; 392859, 4503937; 392867, 4503967; 392859, 4503981; 392839, 4503978; 392797, 4503978; 392767, 4503994; 392749, 4504026; 392743, 4504048; 392746, 4504067; 392759, 4504091; 392761, 4504105; 392727, 4504120; 392714, 4504107; 392684, 4504099; returning to 392678, 4504120.

(iii) From USGS 1:24,000 scale quadrangles, Cannibal Island. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 392357, 4503825; 392357, 4503890; 392427, 4503892; 392410, 4503830; 392408, 4503789; 392432, 4503765; 392470, 4503770; 392492, 4503799; 392504, 4503842; 392526, 4503890; 392562, 4503919; 392603, 4503933; 392631, 4503928; 392720, 4503892; 392773, 4503890; 392819, 4503885; 392845, 4503871; 392869, 4503844; 392879, 4503806; 392874, 4503765; 392860, 4503715; 392862, 4503691; 392869, 4503664; 392884, 4503654; 392908, 4503645; 392949, 4503659; 392982, 4503676; 393030, 4503683; 393066, 4503674; 393102, 4503654; 393126, 4503621; 393131, 4503582; 393117,

4503532; 393098, 4503498; 393090, 4503469; 393090, 4503433; 393074, 4503407; 393030, 4503359; 393002, 4503368; 392970, 4503361; 392893, 4503479; 392824, 4503481; 392790, 4503469; 392761, 4503462; 392742, 4503424; 392768, 4503390; 392773, 4503373; 392773, 4503277; 392716, 4503140; 392696, 4503143; 392696, 4503152; 392752, 4503275; 392756, 4503306; 392747, 4503373; 392723, 4503414; 392737, 4503465; 392752, 4503484; 392792, 4503496; 392807, 4503513; 392913, 4503486; 392934, 4503457; 392961, 4503419; 392999, 4503402; 393045, 4503414; 393054, 4503450; 393069, 4503501; 393093, 4503556; 393088, 4503594; 393062, 4503626; 393011, 4503635; 392937, 4503614; 392869, 4503597; 392824, 4503640; 392809, 4503681; 392824, 4503734; 392833, 4503789; 392814, 4503823; 392788, 4503849; 392728, 4503859; 392636, 4503876; 392588, 4503876; 392562, 4503847; 392528, 4503779; 392497, 4503734; 392451, 4503722; 392410, 4503727; 392381, 4503743; 392360, 4503775; returning to 392357, 4503825.

(iv) From USGS 1:24,000 scale quadrangles, Cannibal Island. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 391919, 4503618; 391946, 4503641; 391966, 4503662; 391975, 4503643; 391991, 4503633; 392018, 4503619; 392046, 4503599; 392061, 4503604; 392084, 4503608; 392108, 4503598; 392129, 4503596; 392146, 4503583; 392175, 4503547; 392209, 4503507; 392263, 4503444; 392272, 4503416; 392267, 4503402; 392246, 4503386; 392224, 4503371; 392207, 4503350; 392213, 4503321; 392224, 4503286; 392232, 4503240; 392232, 4503208; 392243, 4503184; 392252, 4503171; 392271, 4503171; 392296, 4503177; 392314, 4503191; 392331, 4503204; 392355, 4503207; 392381, 4503201; 392404, 4503193; 392432, 4503184; 392448, 4503173; 392467, 4503152; 392467, 4503138; 392453, 4503144; 392434, 4503165; 392408, 4503175; 392380, 4503185; 392361, 4503193; 392346, 4503193; 392331, 4503184; 392306, 4503162; 392278, 4503153; 392243, 4503154; 392231, 4503171; 392212, 4503205; 392209, 4503255; 392188, 4503311; 392185, 4503342; 392189, 4503363; 392227, 4503398; 392246, 4503412; 392244, 4503432; 392134, 4503560; 392112, 4503567; 392082, 4503584; 392042, 4503575; 392023, 4503584; 391962, 4503625; 391942, 4503619; 391920, 4503608; returning to 391919, 4503618.

(v) From USGS 1:24,000 scale quadrangles, Cannibal Island. Land bounded by the following UTM zone 10

NAD83 coordinates (E, N): 391651, 4503288; 391674, 4503278; 391699, 4503243; 391720, 4503213; 391720, 4503176; 391720, 4503121; 391768, 4503087; 391773, 4503064; 391763, 4503029; 391780, 4502984; 391830, 4502950; 391850, 4502901; 391879, 4502858; 391909, 4502870; 391954, 4502856; 391976, 4502860; 391981, 4502893; 391991, 4502922; 392026, 4502928; 392053, 4502927; 392071, 4502901; 392071, 4502868; 392080, 4502840; 392105, 4502829; 392121, 4502843; 392141, 4502885; 392130, 4502901; 392106, 4502901; 392071, 4502918; 392051, 4502942; 392036, 4502980; 392036, 4503020; 392049, 4503032; 392059, 4503015; 392058, 4502987; 392069, 4502953; 392100, 4502925; 392133, 4502920; 392155, 4502918; 392168, 4502890; 392150, 4502846; 392118, 4502803; 392074, 4502803; 392044, 4502835; 392041, 4502873; 392039, 4502896; 392019, 4502895; 392006, 4502870; 391991, 4502821; 391961, 4502821; 391924, 4502835; 391885, 4502829; 391848, 4502828; 391803, 4502920; 391788, 4502933; 391746, 4502963; 391726, 4503019; 391730, 4503061; 391701, 4503084; 391676, 4503121; 391684, 4503169; 391683, 4503211; 391654, 4503240; returning to 391651, 4503288.

(vi) From USGS 1:24,000 scale quadrangles, Cannibal Island. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 392724, 4502551; 392748, 4502590; 392799, 4502607; 392846, 4502615; 392877, 4502593; 392901, 4502547; 392935, 4502527; 392974, 4502527; 393001, 4502544; 393003, 4502602; 393028, 4502675; 393064, 4502717; 393118, 4502770; 393193, 4502821; 393242, 4502836; 393356, 4502865; 393407, 4502855; 393448, 4502814; 393436, 4502794; 393404, 4502804; 393392, 4502826; 393365, 4502838; 393273, 4502821; 393178, 4502780; 393127, 4502760; 393096, 4502704; 393052, 4502668; 393028, 4502576; 393025, 4502530; 393016, 4502515; 392955, 4502498; 392921, 4502510; 392884, 4502527; 392836, 4502593; 392807, 4502588; 392768, 4502571; 392756, 4502544; 392758, 4502508; 392768, 4502474; 392787, 4502440; 392826, 4502411; 392914, 4502386; 392940, 4502372; 392955, 4502338; 392955, 4502306; 392943, 4502253; 392909, 4502192; 392877, 4502136; 392860, 4502085; 392880, 4502051; 392875, 4502015; 392790, 4502019; 392785, 4502053; 392826, 4502078; 392853, 4502160; 392880, 4502202; 392916, 4502306; 392909, 4502350; 392833, 4502381; 392765, 4502403; 392741, 4502454; returning to 392724, 4502551.

(vii) From USGS 1:24,000 scale quadrangles, Cannibal Island. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 393154, 4501798; 393227, 4501791; 393249, 4501813; 393285, 4501830; 393312, 4501808; 393317, 4501830; 393382, 4501791; 393548, 4501791; 393611, 4501786; 393672, 4501755; 393701, 4501711; 393730, 4501568; 393749, 4501521; 393761, 4501487; 393795, 4501456; 393832, 4501434; 393871, 4501429; 393922, 4501451; 393968, 4501568; 393985, 4501633; 393980, 4501665; 393970, 4501684; 393953, 4501704; 393744, 4501810; 393718, 4501830; 393698, 4501878; 393693, 4501920; 393715, 4502002; 393825, 4502187; 393861, 4502228; 393995, 4502311; 394048, 4502323; 394206, 4502289; 394225, 4502250; 394245, 4502214; 394274, 4502189; 394289, 4502153; 394289, 4502124; 394272, 4502112; 394240, 4502129; 394216, 4502158; 394216, 4502192; 394213, 4502214; 394170, 4502238; 394106, 4502262; 394046, 4502272; 394002, 4502248; 393929, 4502211; 393859, 4502163; 393774, 4502002; 393759, 4501956; 393749, 4501915; 393764, 4501871; 393934, 4501781; 394000, 4501738; 394034, 4501689; 394031, 4501638; 393987, 4501439; 393961, 4501402; 393880, 4501380; 393793, 4501393; 393727, 4501434; 393691, 4501478; 393664, 4501541; 393652, 4501616; 393628, 4501701; 393572, 4501725; 393409, 4501721; 393305,

4501716; 393161, 4501696; returning to 393154, 4501798.

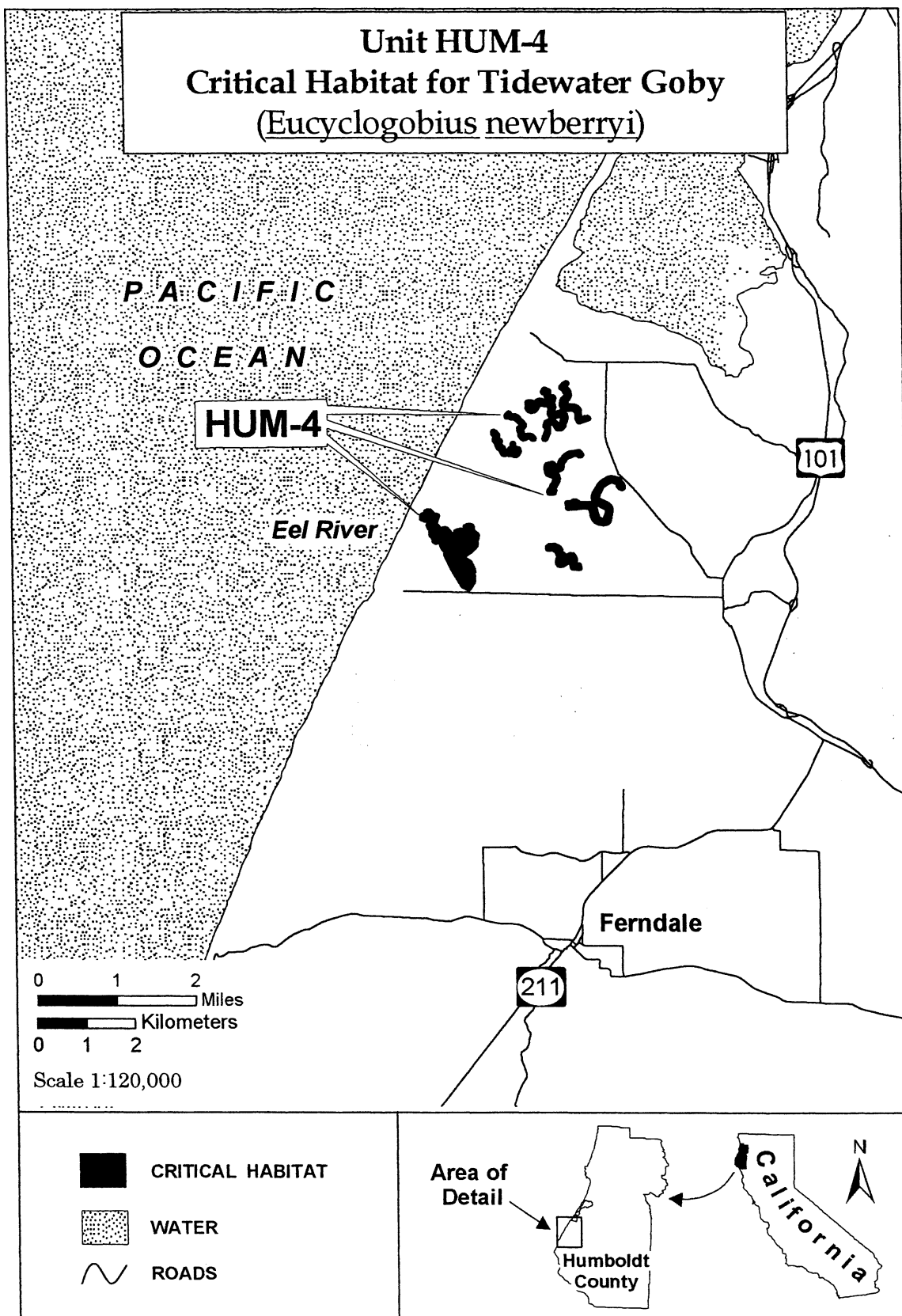
(viii) From USGS 1:24,000 scale quadrangles, Cannibal Island. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 392754, 4500850; 392754, 4500887; 392781, 4500908; 392815, 4500908; 392872, 4500908; 392953, 4500871; 392987, 4500820; 392994, 4500793; 393011, 4500756; 393034, 4500736; 393068, 4500702; 393068, 4500645; 393027, 4500604; 393017, 4500581; 393041, 4500574; 393081, 4500614; 393149, 4500689; 393196, 4500716; 393243, 4500716; 393287, 4500658; 393290, 4500601; 393277, 4500537; 393284, 4500496; 393368, 4500507; 393381, 4500446; 393324, 4500453; 393274, 4500453; 393250, 4500456; 393236, 4500480; 393236, 4500540; 393250, 4500591; 393247, 4500631; 393230, 4500648; 393182, 4500648; 393135, 4500594; 393081, 4500544; 393044, 4500520; 393004, 4500520; 392967, 4500520; 392947, 4500557; 392947, 4500598; 392960, 4500638; 393000, 4500648; 393017, 4500672; 393000, 4500689; 392980, 4500695; 392960, 4500726; 392940, 4500773; 392923, 4500813; 392879, 4500840; 392852, 4500864; 392829, 4500864; 392791, 4500850; returning to 392754, 4500850.

(ix) From USGS 1:24,000 scale quadrangles, Cannibal Island. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 390162, 4501488; 390181, 4501544; 390239, 4501544; 390239, 4501568; 390250,

4501613; 390277, 4501632; 390311, 4501632; 390346, 4501592; 390375, 4501549; 390389, 4501514; 390423, 4501541; 390469, 4501533; 390437, 4501429; 390421, 4501365; 390434, 4501333; 390477, 4501288; 390514, 4501237; 390570, 4501240; 390607, 4501245; 390650, 4501245; 390677, 4501216; 390709, 4501179; 390762, 4501109; 390802, 4501069; 390839, 4501064; 390850, 4501117; 390863, 4501184; 390909, 4501219; 390964, 4501227; 391021, 4501232; 391053, 4501240; 391053, 4501296; 391116, 4501323; 391180, 4501315; 391191, 4501256; 391180, 4501208; 391223, 4501179; 391284, 4501131; 391276, 4501067; 391258, 4501016; 391258, 4500931; 391215, 4500877; 391146, 4500816; 391077, 4500768; 391002, 4500717; 390994, 4500640; 391123, 4500560; 391196, 4500393; 391183, 4500150; 391103, 4500023; 390997, 4500083; 390759, 4500488; 390701, 4500616; 390656, 4500728; 390658, 4500824; 390610, 4500832; 390581, 4500904; 390538, 4501008; 390511, 4501053; 390490, 4501008; 390450, 4500997; 390410, 4501019; 390410, 4501059; 390389, 4501107; 390349, 4501139; 390349, 4501165; 390346, 4501197; 390354, 4501251; 390314, 4501285; 390301, 4501325; 390303, 4501363; 390319, 4501416; 390319, 4501474; 390295, 4501485; 390277, 4501458; 390226, 4501458; returning to 390162, 4501488.

(x) Note: Map of Unit HUM-4 follows:

BILLING CODE 4310-55-P





(11) Unit MEN–1, Mendocino County, California.

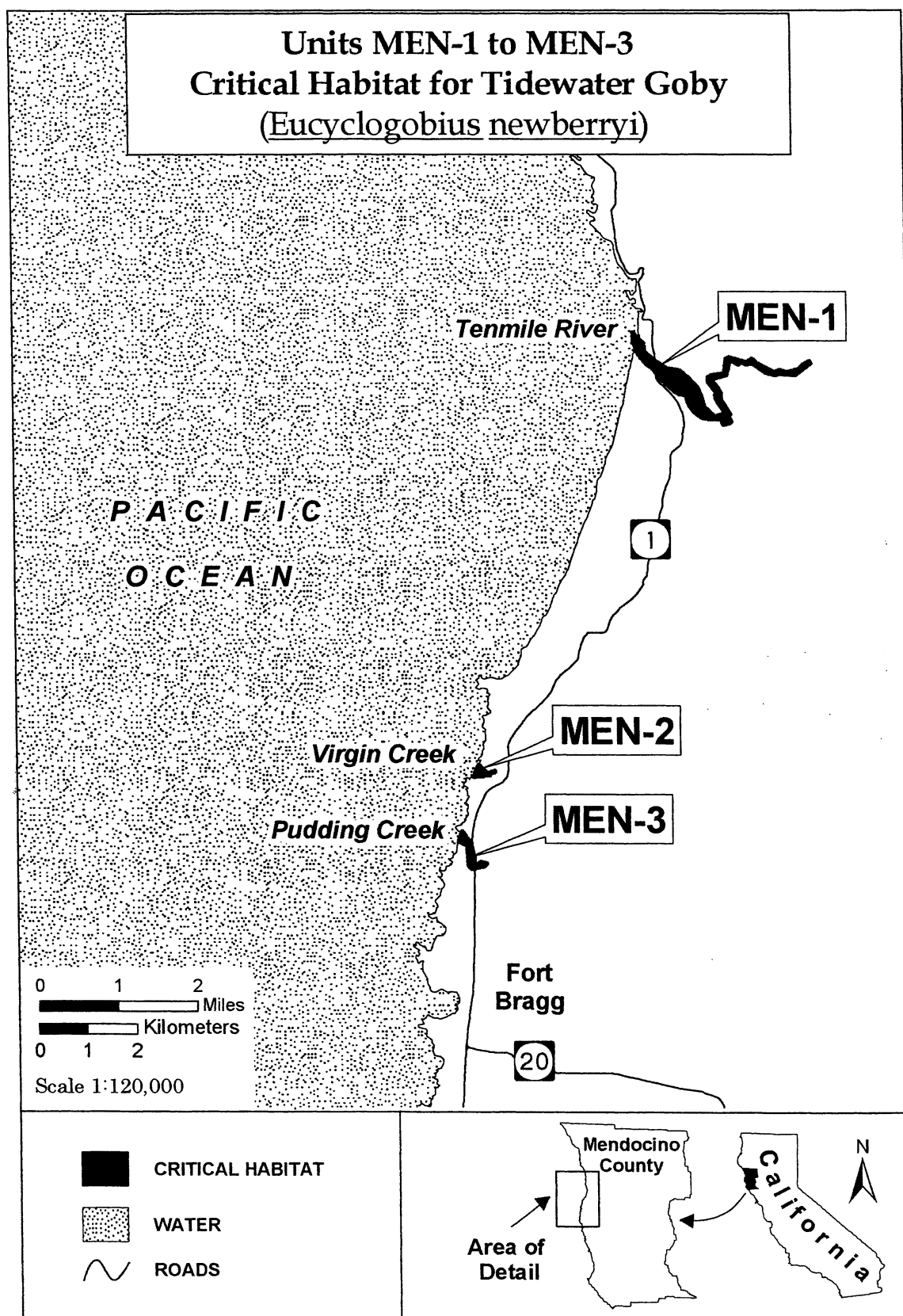
(i) From USGS 1:24,000 scale quadrangles Inglenook and Covelo. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N):  
434019, 4378674; 434159, 4378526;  
434233, 4378461; 434247, 4378280;  
434478, 4378076; 434692, 4377937;  
434979, 4377882; 435336, 4377548;  
435424, 4377344; 435480, 4377126;  
435688, 4376927; 435897, 4376996;  
435707, 4377288; 435693, 4377376;  
435721, 4377427; 435563, 4377645;  
435549, 4377742; 435633, 4377784;

435878, 4377831; 435915, 4378132;  
435976, 4378169; 436337, 4378053;  
436458, 4378136; 436536, 4378048;  
436921, 4377849; 437014, 4377900;  
437158, 4377844; 437408, 4377905;  
437501, 4378007; 437644, 4378085;  
437667, 4378039; 437348, 4377793;  
437144, 4377798; 437009, 4377817;  
436930, 4377784; 436731, 4377835;  
436453, 4378039; 436332, 4378007;  
436235, 4378053; 436179, 4378007;  
435999, 4378104; 435925, 4377789;  
435748, 4377742; 435619, 4377696;  
435721, 4377571; 435813, 4377423;  
435813, 4377293; 436003, 4376968;

435985, 4376913; 436031, 4376815;  
435976, 4376774; 435855, 4376755;  
435832, 4376802; 435938, 4376839;  
435887, 4376885; 435781, 4376866;  
435605, 4376857; 435424, 4376899;  
435262, 4377015; 435169, 4377140;  
435132, 4377219; 435095, 4377376;  
434979, 4377390; 434854, 4377455;  
434594, 4377687; 434427, 4377905;  
434288, 4378016; 434159, 4378169;  
434103, 4378280; 434024, 4378489;  
returning to 434019, 4378674.

(ii) Note: Map of Units MEN–1 through MEN–3 follows:

**BILLING CODE 4310–55–P**



(12) Unit MEN–2, Mendocino County, California.

(i) From USGS 1:24,000 scale quadrangle Fort Bragg. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 430656, 4369380; 430767, 4369639; 430910, 4369479; 430972, 4369449; 430976, 4369468; 431094, 4369506; 431096, 4369479; 431000, 4369454; 431000, 4369421; 430989, 4369407; 430950, 4369412; 430899, 4369412; 430865, 4369388; returning to 430656, 4369380.

(ii) Note: Map of Unit MEN–2 is provided on the map in paragraph (11)(ii) of this entry.

(13) Unit MEN–3, Mendocino County, California.

(i) From USGS 1:24,000 scale quadrangle Fort Bragg. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 430347, 4368031; 430419, 4368232; 430587, 4367989; 430582, 4367872; 430631, 4367632; 430657, 4367494; 430697, 4367505; 430797, 4367598; 430912, 4367562; 430873, 4367497; 430797, 4367486; 430664, 4367452; 430595, 4367459; 430535, 4367532; 430524, 4367693; 430519, 4367942; returning to 430347, 4368031.

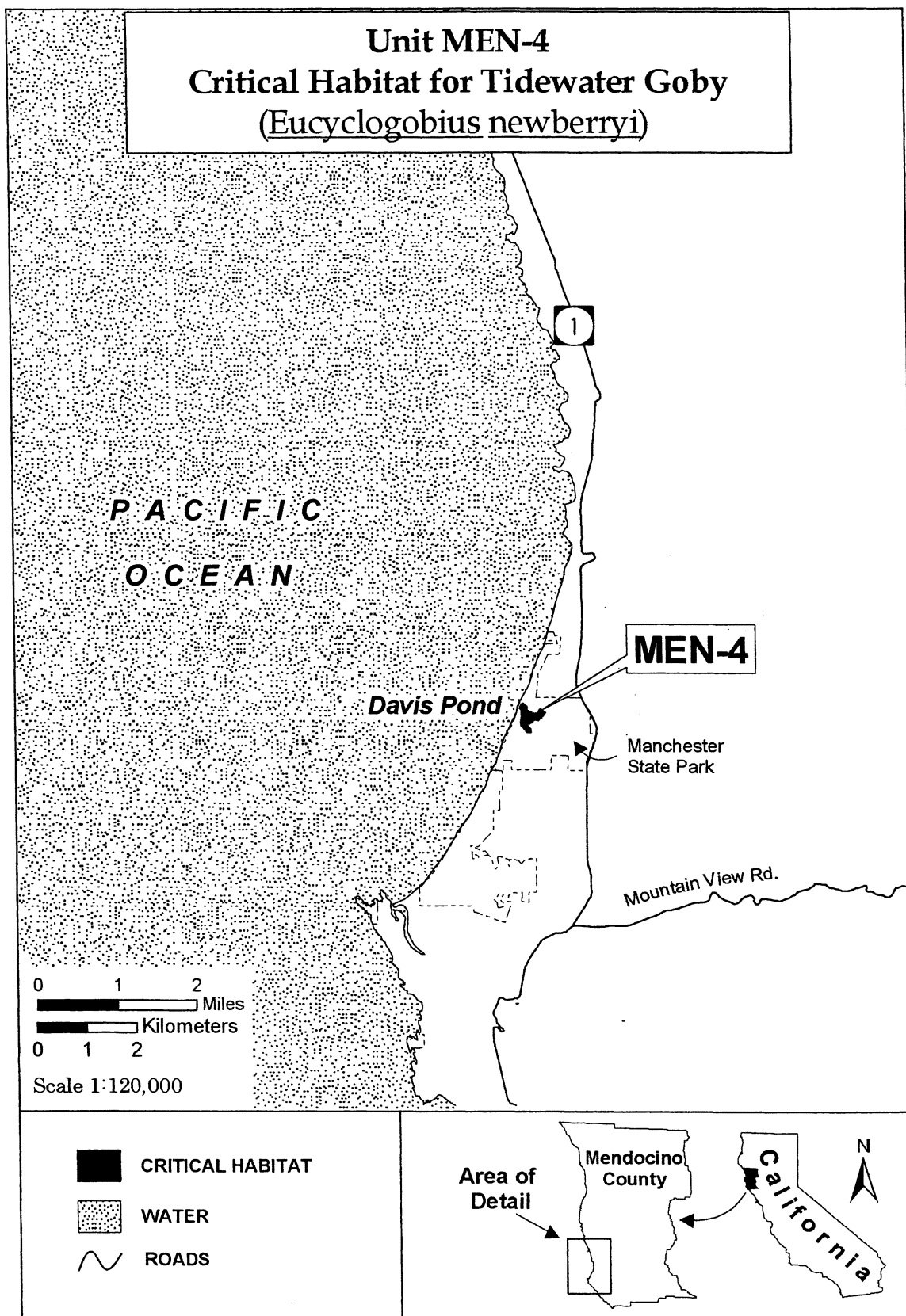
(ii) Note: Map of Unit MEN–3 is provided on the map in paragraph (11)(ii) of this entry.

(14) Unit MEN–4, Mendocino County, California.

(i) From USGS 1:24,000 scale quadrangle Point Arena. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 439145, 4316147; 439192, 4316229; 439254, 4316165; 439256, 4316086; 439350, 4316041; 439362, 4316012; 439390, 4316024; 439513, 4316022; 439550, 4316105; 439639, 4316044; 439513, 4315901; 439409, 4315918; 439385, 4315866; 439323, 4315822; 439232, 4315851; 439219, 4315807; 439348, 4315686; 439345, 4315644; 439279, 4315654; 439168, 4315782; 439190, 4316105; returning to 439145, 4316147.

(ii) Note: Map of Unit MEN–4 follows:

**BILLING CODE 4310–55–P**



(15) Unit SON-1, Sonoma County, California.

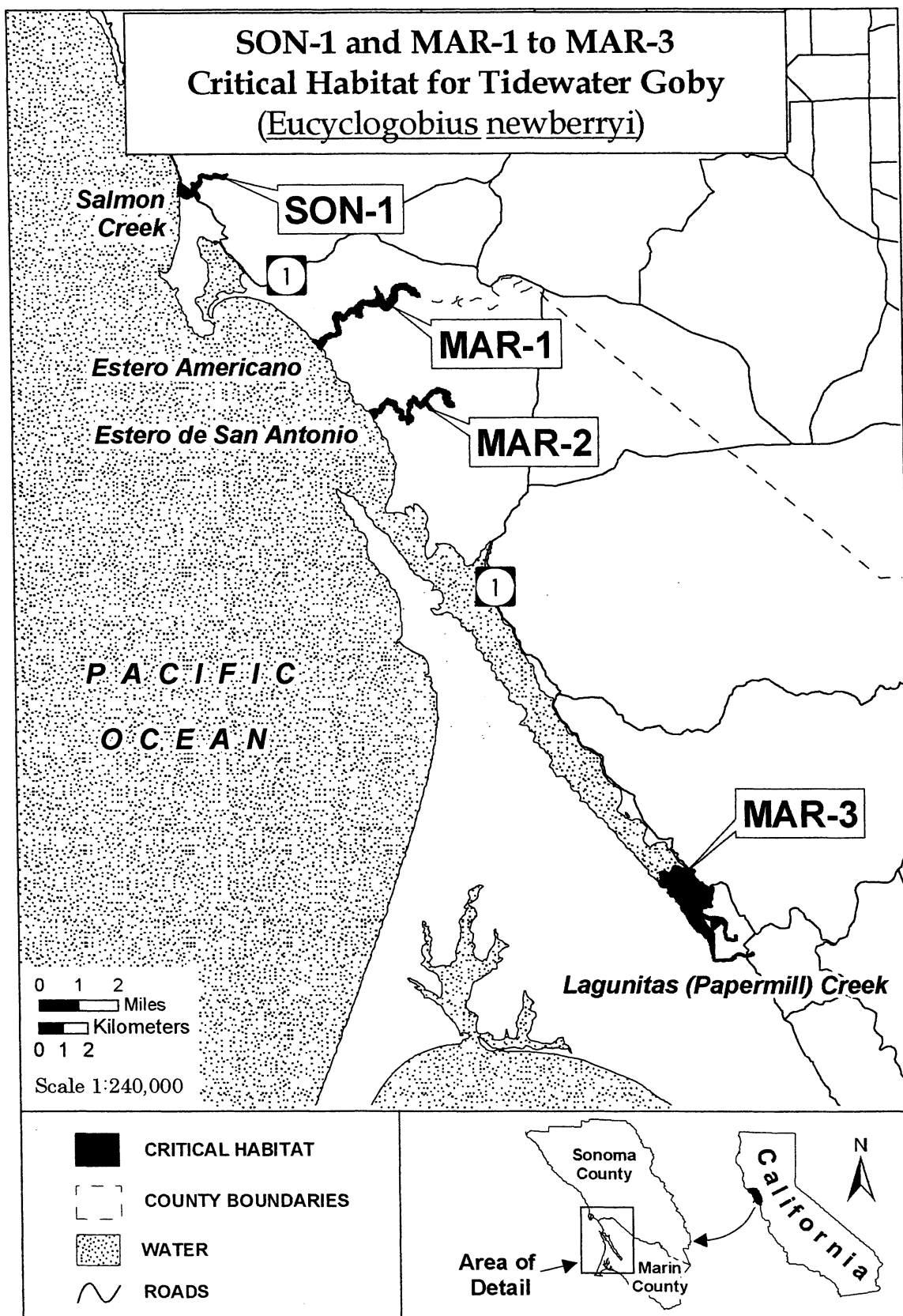
(i) From USGS 1:24,000 scale quadrangle Bodega Head. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 494029, 4245091; 494029, 4245106; 494036, 4245131; 494041, 4245198; 494050, 4245233; 494073, 4245274; 494080, 4245308; 494081, 4245316; 494073, 4245356; 494213, 4245202; 494304, 4245147; 494330, 4245161; 494341, 4245148; 494426, 4245084; 494451, 4245051; 494457, 4245031; 494458, 4245013; 494444, 4244966; 494449, 4244941; 494461, 4244924; 494471, 4244920; 494485, 4244921; 494549, 4244956; 494562, 4244956; 494569, 4244952; 494592, 4244913; 494602, 4244907; 494608, 4244931; 494609, 4244954; 494600, 4245040; 494601, 4245099; 494607, 4245125; 494623, 4245134; 494628, 4245199; 494625, 4245218; 494629, 4245237; 494620, 4245265; 494594, 4245320; 494593, 4245331; 494605, 4245344; 494628, 4245343; 494677, 4245310; 494703, 4245301; 494715, 4245302; 494746, 4245315; 494781, 4245340; 494815, 4245357; 494875, 4245365; 494881, 4245417; 494889, 4245435; 494907, 4245440; 494925, 4245435; 494924, 4245474; 494906, 4245525; 494897, 4245563; 494898, 4245597; 494905, 4245625; 494916, 4245639; 494931, 4245646; 494959, 4245647; 494969, 4245645;

494979, 4245653; 494988, 4245663; 495013, 4245674; 495036, 4245678; 495061, 4245677; 495081, 4245671; 495164, 4245635; 495262, 4245628; 495332, 4245612; 495382, 4245613; 495458, 4245624; 495476, 4245621; 495496, 4245673; 495503, 4245680; 495533, 4245699; 495573, 4245702; 495727, 4245656; 495813, 4245627; 495827, 4245616; 495853, 4245586; 495900, 4245620; 495918, 4245629; 495989, 4245658; 496042, 4245675; 496042, 4245667; 496033, 4245648; 495976, 4245573; 495937, 4245541; 495896, 4245514; 495879, 4245508; 495861, 4245505; 495846, 4245507; 495814, 4245522; 495787, 4245547; 495781, 4245562; 495759, 4245564; 495748, 4245571; 495723, 4245577; 495679, 4245569; 495661, 4245569; 495613, 4245587; 495591, 4245589; 495524, 4245584; 495468, 4245561; 495408, 4245529; 495372, 4245517; 495333, 4245519; 495313, 4245525; 495276, 4245527; 495243, 4245538; 495213, 4245553; 495155, 4245570; 495099, 4245606; 495033, 4245614; 495010, 4245623; 494990, 4245635; 494977, 4245628; 494961, 4245596; 494954, 4245561; 494956, 4245494; 494973, 4245403; 494973, 4245381; 494964, 4245333; 494949, 4245307; 494935, 4245291; 494922, 4245282; 494901, 4245243; 494864, 4245207; 494847, 4245196; 494810, 4245178; 494803, 4245154; 494785, 4245119;

494774, 4245104; 494779, 4245101; 494765, 4245074; 494755, 4245029; 494729, 4245001; 494720, 4244984; 494721, 4244960; 494740, 4244928; 494751, 4244917; 494797, 4244925; 494807, 4244920; 494817, 4244908; 494831, 4244855; 494837, 4244846; 494851, 4244836; 494864, 4244832; 494875, 4244821; 494871, 4244811; 494858, 4244803; 494856, 4244797; 494858, 4244786; 494877, 4244749; 494885, 4244717; 494864, 4244697; 494852, 4244674; 494830, 4244664; 494822, 4244665; 494811, 4244673; 494800, 4244698; 494798, 4244738; 494783, 4244774; 494769, 4244837; 494761, 4244845; 494743, 4244848; 494733, 4244860; 494722, 4244859; 494697, 4244843; 494687, 4244843; 494676, 4244847; 494645, 4244892; 494637, 4244898; 494613, 4244856; 494585, 4244822; 494556, 4244807; 494537, 4244790; 494454, 4244761; 494407, 4244738; 494377, 4244733; 494344, 4244733; 494300, 4244747; 494282, 4244762; 494224, 4244795; 494181, 4244836; 494164, 4244901; 494122, 4244924; 494104, 4244921; 494098, 4244912; 494092, 4244885; 494085, 4244825; 494042, 4244824; 494037, 4244931; 494037, 4245018; returning to 494029, 4245091.

(ii) Note: Map of Units SON-1 and MAR-1 through MAR-3 follows:

BILLING CODE 4310-55-P



(16) Unit MAR–1, Marin County, California.

(i) From USGS 1:24,000 scale quadrangles Bodega Head and Valley Ford. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N):

499504, 4238760; 499508, 4238800;  
499544, 4238796; 499614, 4238765;  
499677, 4238749; 499701, 4238735;  
499736, 4238762; 499804, 4238825;  
499878, 4238873; 499903, 4238902;  
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(ii) Note: Map of Unit MAR–1 is provided on the map in paragraph (15)(ii) of this entry.

(17) Unit MAR–2, Marin County, California.

(i) From USGS 1:24,000 scale quadrangle Valley Ford. Land bounded by the following UTM zone 10 NAD83



coordinates (E, N): 501844, 4235816; 501869, 4235829; 501901, 4235841; 501952, 4235843; 501975, 4235847; 502011, 4235864; 502034, 4235869; 502045, 4235867; 502058, 4235854; 502094, 4235857; 502155, 4235838; 502166, 4235832; 502185, 4235799; 502195, 4235787; 502209, 4235779; 502227, 4235790; 502243, 4235803; 502264, 4235828; 502260, 4235848; 502249, 4235874; 502238, 4235889; 502232, 4235915; 502237, 4235926; 502247, 4235933; 502257, 4235980; 502256, 4236020; 502264, 4236059; 502279, 4236074; 502285, 4236075; 502294, 4236087; 502311, 4236103; 502370, 4236146; 502433, 4236217; 502476, 4236246; 502492, 4236265; 502505, 4236290; 502517, 4236302; 502541, 4236310; 502566, 4236312; 502597, 4236307; 502617, 4236298; 502639, 4236278; 502660, 4236266; 502678, 4236265; 502726, 4236249; 502763, 4236251; 502786, 4236244; 502820, 4236221; 502854, 4236206; 502885, 4236185; 502899, 4236169; 502916, 4236138; 502922, 4236113; 502924, 4236033; 502954, 4235919; 502987, 4235904; 503034, 4235892; 503094, 4235861; 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(ii) Note: Map of Unit MAR-2 is provided on the map in paragraph (15)(ii) of this entry.

(18) Unit MAR-3, Marin County, California.

(i) From USGS 1:24,000 scale quadrangle Inverness. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 513514, 4216097;

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516236, 4214278; 516173, 4214318;  
516046, 4214400; 516005, 4214397;  
515781, 4214163; 515747, 4214145;  
515698, 4214161; 515670, 4214206;  
515660, 4214235; 515656, 4214293;  
515655, 4214361; 515655, 4214386;  
515663, 4214423; 515689, 4214459;  
515699, 4214483; 515689, 4214504;  
515631, 4214517; 515578, 4214524;  
515532, 4214541; 515493, 4214573;  
515444, 4214589; 515398, 4214612;  
515362, 4214632; 515325, 4214648;  
515293, 4214662; 515275, 4214667;  
515264, 4214666; 515262, 4214646;  
515262, 4214614; 515273, 4214568;  
515279, 4214541; 515293, 4214508;  
515404, 4214354; 515390, 4214333;  
515389, 4214323; 515399, 4214299;  
515449, 4214256; 515561, 4214120;  
515604, 4214099; 515634, 4214095;  
515641, 4214099; 515677, 4214055;  
515694, 4214014; 515718, 4213982;  
515741, 4213926; 515743, 4213895;  
515731, 4213839; 515733, 4213786;  
515742, 4213684; 515739, 4213627;  
515736, 4213538; 515733, 4213476;  
515733, 4213327; 515735, 4213209;  
515737, 4213103; 515750, 4212984;  
515751, 4212902; 515769, 4212854;  
515789, 4212837; 515824, 4212829;  
515881, 4212834; 515998, 4212859;  
516059, 4212849; 516226, 4212838;  
516244, 4212851; 516393, 4212852;  
516460, 4212877; 516519, 4212934;  
516543, 4212968; 516626, 4213020;  
516655, 4213052; 516693, 4213077;  
516759, 4213090; 516828, 4213090;  
516889, 4213077; 517008, 4213030;  
517030, 4213025; 517082, 4213024;  
517131, 4213030; 517228, 4213069;  
517236, 4213065; 517267, 4213072;  
517287, 4213086; 517322, 4213135;  
517351, 4213143; 517365, 4213108;  
517316, 4213056; 517237, 4213017;  
517120, 4212997; 517067, 4212999;  
517030, 4213000; 516972, 4213009;  
516909, 4213047; 516846, 4213069;  
516808, 4213071; 516695, 4213054;

516642, 4213015; 516612, 4212980;  
516593, 4212954; 516603, 4212933;  
516600, 4212930; 516526, 4212877;  
516486, 4212856; 516462, 4212851;  
516423, 4212833; 516302, 4212826;  
516255, 4212827; 516159, 4212807;  
516043, 4212816; 515868, 4212806;  
515827, 4212805; 515777, 4212820;  
515745, 4212837; 515734, 4212869;  
515720, 4212959; 515700, 4213067;  
515695, 4213091; 515651, 4213155;  
515634, 4213216; 515632, 4213261;  
515602, 4213448; 515588, 4213495;  
515577, 4213506; 515564, 4213552;  
515555, 4213566; 515545, 4213621;  
515513, 4213672; 515507, 4213692;  
515511, 4213703; 515509, 4213713;  
515480, 4213765; 515438, 4213793;  
515418, 4213785; 515398, 4213786;  
515294, 4213951; 515257, 4213989;  
515218, 4214009; 515126, 4214013;  
515083, 4214053; 515032, 4214113;  
514826, 4214370; 514792, 4214415;  
514768, 4214464; 514737, 4214497;  
514724, 4214532; 514719, 4214565;  
514703, 4214575; 514694, 4214605;  
514653, 4214687; 514544, 4214841;  
514516, 4214870; 514488, 4214908;  
514454, 4214930; 514425, 4215011;  
514427, 4215025; 514438, 4215029;  
514430, 4215069; 514375, 4215180;  
514361, 4215201; 514290, 4215270;  
514261, 4215310; 514252, 4215309;  
514238, 4215299; 514228, 4215308;  
514225, 4215328; 514231, 4215413;  
514221, 4215453; 514210, 4215469;  
514194, 4215488; 514165, 4215499;  
514121, 4215508; 514017, 4215512;  
513988, 4215551; 513970, 4215628;  
513965, 4215636; 513933, 4215641;  
513870, 4215664; 513872, 4215685;  
513878, 4215691; 513920, 4215712;  
513924, 4215719; 513922, 4215741;  
513903, 4215786; 513903, 4215802;  
513905, 4215825; 513920, 4215877;  
513919, 4215910; 513904, 4215922;  
513884, 4215922; 513765, 4215908;  
513738, 4215900; 513682, 4215900;  
513653, 4215910; 513577, 4215954;  
513558, 4215989; 513534, 4216071;  
returning to 513514, 4216097.

(ii) Note: Map of Unit MAR-3 is provided on the map in paragraph (15)(ii) of this entry.

(19) Unit MAR-4, Marin County, California.

(i) From USGS 1:24,000 scale quadrangle Point Bonita. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 540461, 4187256; 540478, 4187263; 540497, 4187265; 540522, 4187261; 540558, 4187249; 540606, 4187242; 540637, 4187227; 540692, 4187224; 540716, 4187211; 540738, 4187212; 540797, 4187198; 540841, 4187197; 540908, 4187177; 540933, 4187165; 540960, 4187172; 541012, 4187168; 541039, 4187176; 541116, 4187175; 541129, 4187180;

541157, 4187206; 541177, 4187219;  
541199, 4187225; 541320, 4187238;  
541372, 4187230; 541384, 4187231;  
541435, 4187247; 541521, 4187268;  
541564, 4187257; 541591, 4187261;  
541605, 4187268; 541649, 4187308;  
541658, 4187309; 541669, 4187303;  
541677, 4187291; 541702, 4187235;  
541718, 4187190; 541716, 4187182;  
541698, 4187171; 541614, 4187164;  
541520, 4187142; 541501, 4187142;

541483, 4187137; 541407, 4187061;  
541393, 4187058; 541379, 4187060;  
541367, 4187056; 541315, 4187050;  
541277, 4187033; 541269, 4187022;  
541254, 4187011; 541227, 4187001;  
541195, 4186993; 541106, 4186984;  
541072, 4186990; 541049, 4186990;  
541017, 4186963; 540991, 4186948;  
540940, 4186941; 540927, 4186948;  
540922, 4186958; 540907, 4187027;  
540893, 4187060; 540879, 4187076;

540838, 4187110; 540823, 4187139;  
540776, 4187161; 540758, 4187164;  
540691, 4187189; 540644, 4187199;  
540628, 4187211; 540619, 4187155;  
540594, 4187167; 540557, 4187191;  
540546, 4187209; 540521, 4187230;  
540490, 4187247; returning to 540461,  
4187256.

(ii) Note: Map of Unit MAR-4 follows:

BILLING CODE 4310-55-P



(20) Unit SM–1, San Mateo County, California.

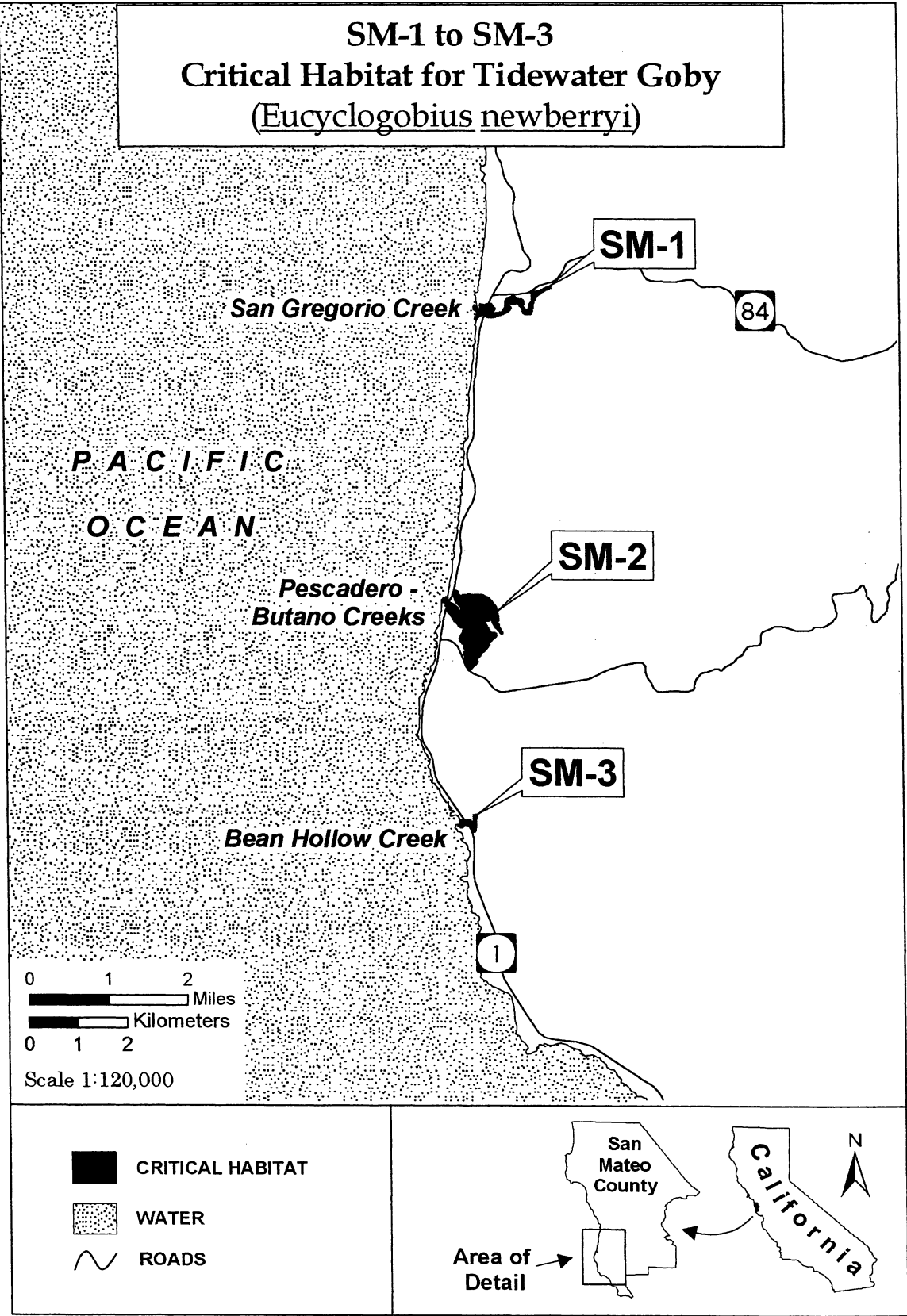
(i) From USGS 1:24,000 scale quadrangle San Gregorio. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 552769, 4130764; 552784, 4130813; 552806, 4130800; 552837, 4130766; 552869, 4130686; 552884, 4130681; 552903, 4130686; 552920, 4130694; 552922, 4130709; 552911, 4130785; 552902, 4130822; 552922, 4130836; 552970, 4130825; 553001, 4130812; 553002, 4130822; 553007, 4130831; 553023, 4130833; 553044, 4130845; 553055, 4130845; 553062, 4130833; 553033, 4130773; 553019, 4130747; 552990, 4130725; 552984, 4130712; 552986, 4130699; 552996, 4130680; 552994, 4130669; 553045, 4130645; 553053, 4130658; 553042, 4130666; 553031, 4130662; 553018, 4130666; 553014, 4130673; 553014, 4130685; 553029, 4130715; 553082, 4130729; 553095, 4130737; 553114, 4130758; 553104, 4130777; 553074, 4130796; 553064, 4130807; 553070, 4130823; 553087, 4130854; 553098, 4130853; 553127, 4130841; 553134, 4130834; 553164, 4130795; 553180, 4130782; 553192, 4130766; 553191, 4130751; 553175, 4130728; 553151, 4130709; 553105, 4130698; 553092, 4130688; 553065, 4130685; 553055, 4130679; 553064, 4130660; 553067, 4130638; 553129, 4130636;

553186, 4130647; 553246, 4130652; 553343, 4130671; 553365, 4130689; 553384, 4130713; 553395, 4130732; 553402, 4130752; 553430, 4130800; 553435, 4130825; 553429, 4130884; 553430, 4130910; 553441, 4130936; 553453, 4130944; 553467, 4130948; 553502, 4130945; 553508, 4130973; 553528, 4130987; 553549, 4130991; 553571, 4131006; 553586, 4131011; 553605, 4131002; 553659, 4130945; 553667, 4130948; 553723, 4130945; 553737, 4130947; 553753, 4130942; 553768, 4130928; 553780, 4130897; 553784, 4130877; 553777, 4130834; 553779, 4130818; 553776, 4130791; 553818, 4130733; 553862, 4130714; 553887, 4130720; 553893, 4130736; 553893, 4130747; 553919, 4130794; 553919, 4130845; 553929, 4130866; 553957, 4130889; 553968, 4130919; 553968, 4130976; 553972, 4131011; 553977, 4131026; 553974, 4131044; 553980, 4131056; 553980, 4131066; 553976, 4131079; 553951, 4131094; 553947, 4131102; 553959, 4131114; 553985, 4131130; 553993, 4131115; 553993, 4131101; 553988, 4131093; 553990, 4131079; 554001, 4131070; 554018, 4131066; 554040, 4131090; 554062, 4131105; 554119, 4131109; 554269, 4131178; 554316, 4131182; 554333, 4131195; 554351, 4131198; 554351, 4131196; 554335, 4131192; 554317, 4131179; 554288, 4131168;

554267, 4131164; 554208, 4131138; 554147, 4131083; 554077, 4131038; 554060, 4131018; 554043, 4130994; 554019, 4130938; 553999, 4130900; 553966, 4130851; 553964, 4130761; 553940, 4130687; 553915, 4130651; 553885, 4130640; 553858, 4130640; 553825, 4130650; 553796, 4130668; 553782, 4130691; 553778, 4130741; 553774, 4130763; 553739, 4130802; 553689, 4130875; 553674, 4130880; 553655, 4130880; 553595, 4130860; 553571, 4130860; 553542, 4130867; 553528, 4130882; 553496, 4130890; 553483, 4130887; 553469, 4130877; 553458, 4130860; 553466, 4130828; 553466, 4130811; 553525, 4130783; 553526, 4130769; 553516, 4130741; 553478, 4130715; 553457, 4130694; 553430, 4130682; 553407, 4130693; 553406, 4130691; 553427, 4130681; 553393, 4130665; 553379, 4130655; 553201, 4130593; 553153, 4130581; 553106, 4130582; 553063, 4130589; 552978, 4130631; 552944, 4130637; 552870, 4130605; 552858, 4130583; 552836, 4130558; 552806, 4130534; 552796, 4130562; 552814, 4130572; 552831, 4130587; 552845, 4130628; 552848, 4130683; 552812, 4130742; 552795, 4130760; 552781, 4130745; returning to 552769, 4130764.

(ii) Note: Map of Units SM–1 through SM–3 follows:

BILLING CODE 4310–55–P



(21) Unit SM–2, San Mateo County, California.

(i) From USGS 1:24,000 scale quadrangle San Gregorio. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 552093, 4124660;

552152, 4124706; 552208, 4124607; 552227, 4124591; 552243, 4124592; 552325, 4124545; 552363, 4124496; 552398, 4124421; 552447, 4124421; 552455, 4124442; 552467, 4124459; 552488, 4124471; 552450, 4124533; 552377, 4124608; 552346, 4124657; 552335, 4124723; 552321, 4124759; 552323, 4124841; 552354, 4124844; 552378, 4124827; 552397, 4124804; 552407, 4124755; 552427, 4124731; 552597, 4124774; 552629, 4124773; 552719, 4124759; 552869, 4124762; 552893, 4124753; 552993, 4124703; 553029, 4124682; 553080, 4124628; 553127, 4124563; 553153, 4124520; 553167, 4124484; 553187, 4124393; 553202, 4124352; 553210, 4124314; 553217, 4124262; 553193, 4124183; 553219, 4124140; 553217, 4124107; 553244, 4124048; 553299, 4123975; 553291, 4123974; 553283, 4123980; 553247, 4124020; 553193, 4124079; 553160, 4124113; 553090, 4124253; 553059, 4124264; 553043, 4124264; 553015, 4124246; 552988, 4124239; 552956, 4124241; 552929, 4124251; 552910, 4124268; 552904, 4124290; 552879, 4124333; 552822, 4124365; 552750, 4124346; 552794, 4124318; 552923, 4124211; 552939, 4124187; 552949, 4124149; 553065, 4123962; 553146, 4123962; 553167, 4123910; 553011, 4123777; 553011, 4123740; 553008, 4123719; 552983, 4123672; 552957, 4123643; 552869, 4123570; 552848, 4123540; 552830, 4123498; 552782, 4123479; 552779, 4123446; 552755, 4123403; 552782, 4123375; 552764, 4123347; 552691, 4123276; 552643, 4123214; 552613, 4123228; 552596, 4123246; 552575, 4123285;

552556, 4123361; 552537, 4123392; 552532, 4123420; 552548, 4123460; 552514, 4123531; 552519, 4123555; 552546, 4123582; 552538, 4123656; 552519, 4123697; 552511, 4123732; 552439, 4123832; 552435, 4123848; 552437, 4123872; 552479, 4123937; 552486, 4123961; 552533, 4124099; 552484, 4124100; 552447, 4124107; 552422, 4124127; 552410, 4124150; 552382, 4124180; 552343, 4124217; 552325, 4124244; 552294, 4124280; 552279, 4124320; 552239, 4124387; 552218, 4124395; 552203, 4124420; 552187, 4124528; 552156, 4124540; 552144, 4124553; 552149, 4124572; 552134, 4124599; 552104, 4124618; returning to 552093, 4124660.

(ii) Note: Map of Unit SM–2 is provided on the map in paragraph (20)(ii) of this entry.

(22) Unit SM–3, San Mateo County, California.

(i) From USGS 1:24,000 scale quadrangle Pigeon Point. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 552371, 4119927;

552402, 4119965; 552411, 4119992; 552409, 4120039; 552436, 4120046; 552446, 4120041; 552461, 4120039; 552483, 4120043; 552490, 4120040; 552498, 4120036; 552507, 4120016; 552533, 4120028; 552537, 4120034; 552560, 4120032; 552569, 4120040; 552589, 4120043; 552606, 4120035; 552637, 4119992; 552655, 4119973; 552683, 4120024; 552688, 4120146; 552701, 4120157; 552725, 4120160; 552741, 4120157; 552744, 4120134; 552741, 4120114; 552729, 4120090; 552723, 4119997; 552717, 4119970; 552724, 4119920; 552712, 4119843; 552702, 4119832; 552699, 4119819; 552690, 4119819; 552665, 4119838; 552657, 4119853; 552653, 4119871; 552624, 4119887; 552596, 4119949; 552581, 4119953; 552563, 4119975; 552548, 4120000; 552519, 4119990;

552522, 4119981; 552529, 4119976; 552532, 4119967; 552532, 4119958; 552529, 4119953; 552507, 4119957; 552477, 4119953; 552450, 4119940; 552444, 4119914; 552440, 4119907; 552423, 4119907; 552413, 4119910; 552398, 4119928; 552390, 4119932; returning to 552371, 4119927.

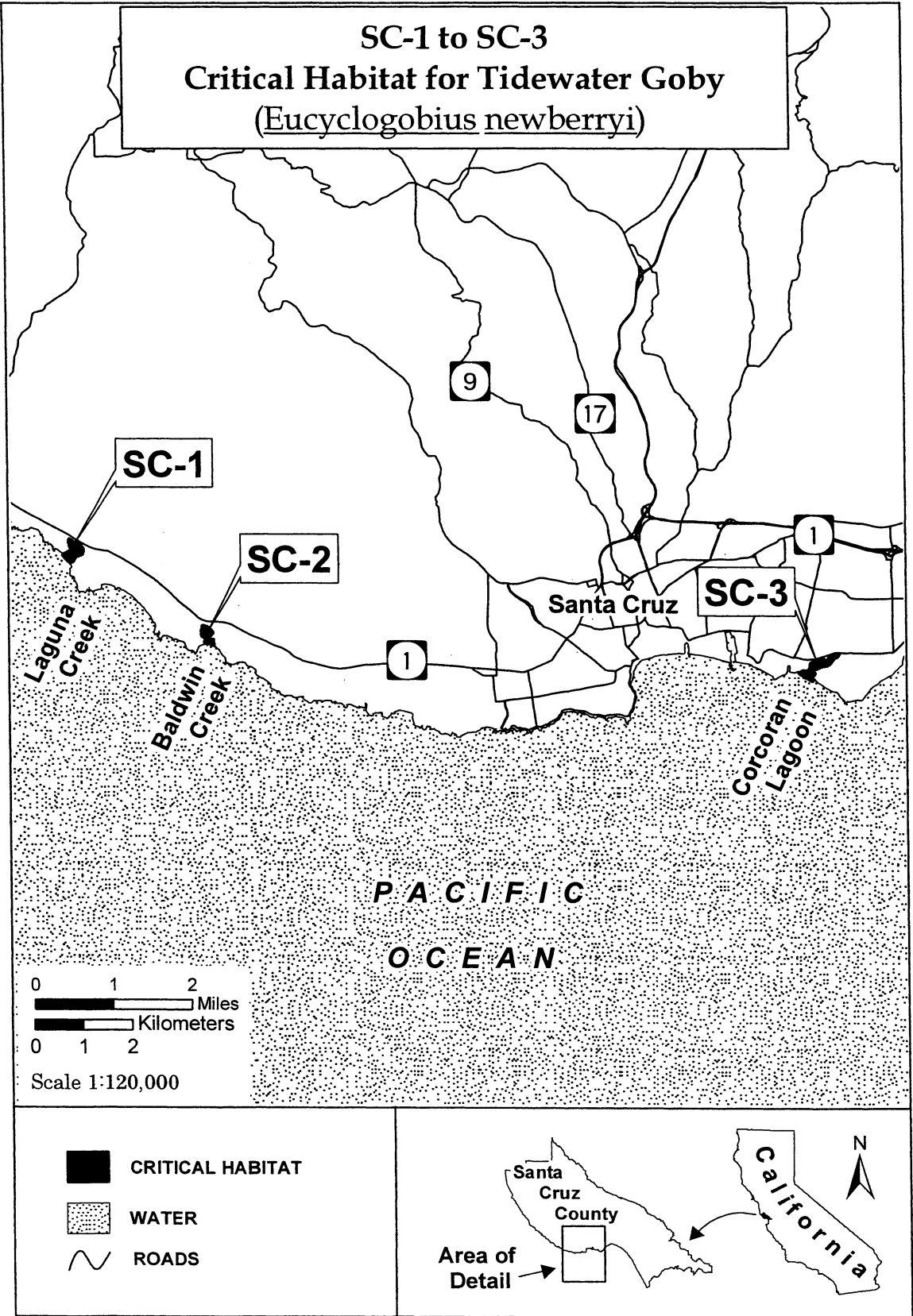
(ii) Note: Map of Unit SMEN–3 is provided on the map in paragraph (20)(ii) of this entry.

(23) Unit SC–1, Santa Cruz County, California.

(i) From USGS 1:24,000 scale quadrangle Santa Cruz. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 575050, 4093349; 575122, 4093391; 575122, 4093392; 575142, 4093406; 575179, 4093428; 575186, 4093431; 575194, 4093426; 575207, 4093421; 575221, 4093430; 575228, 4093440; 575233, 4093453; 575226, 4093467; 575203, 4093491; 575189, 4093516; 575180, 4093533; 575177, 4093546; 575175, 4093575; 575172, 4093616; 575172, 4093657; 575174, 4093688; 575437, 4093542; 575447, 4093510; 575461, 4093501; 575468, 4093490; 575471, 4093482; 575471, 4093452; 575471, 4093430; 575469, 4093412; 575462, 4093384; 575451, 4093363; 575429, 4093350; 575408, 4093342; 575379, 4093334; 575356, 4093328; 575341, 4093320; 575330, 4093309; 575312, 4093295; 575303, 4093272; 575287, 4093241; 575274, 4093224; 575264, 4093209; 575251, 4093203; 575235, 4093206; 575231, 4093207; 575220, 4093204; 575213, 4093197; 575207, 4093172; 575189, 4093186; 575186, 4093200; 575167, 4093210; 575139, 4093240; 575068, 4093327; returning to 575050, 4093349.

(ii) Note: Map of Units SC–1 through SC–3 follows:

BILLING CODE 4310–55–P





(24) Unit SC–2, Santa Cruz County, California.

(i) From USGS 1:24,000 scale quadrangle Santa Cruz. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 577882, 4091692; 577882, 4091713; 577882, 4091737; 577886, 4091758; 577894, 4091784; 577904, 4091804; 577908, 4091830; 577906, 4091840; 577903, 4091858; 577905, 4091866; 577913, 4091867; 577922, 4091862; 577922, 4091865; 577927, 4091871; 577933, 4091876; 577958, 4091870; 577982, 4091859; 577997, 4091852; 578011, 4091846; 578028, 4091831; 578063, 4091813; 578083, 4091801; 578108, 4091775; 578122, 4091750; 578126, 4091742; 578129, 4091738; 578130, 4091726; 578126, 4091708; 578116, 4091686; 578103, 4091670; 578083, 4091655; 578068, 4091641; 578063, 4091620; 578073, 4091597; 578080, 4091577; 578083, 4091568; 578084, 4091569; 578087, 4091564; 578094, 4091561; 578105, 4091570; 578111, 4091578; 578117, 4091583; 578126, 4091580; 578137, 4091574; 578147, 4091568; 578143, 4091563; 578141, 4091553; 578141, 4091542; 578142, 4091530; 578147, 4091513; 578151, 4091504; 578159, 4091444; 578158, 4091445; 578076, 4091483; 577988, 4091509; 577974, 4091504; 577961, 4091520; 577961, 4091536; 577966, 4091552; 577968, 4091571; 577965, 4091588; 577956, 4091603; 577941, 4091617; 577923, 4091635; 577910, 4091641; 577896, 4091659; 577885, 4091673; returning to 577882, 4091692.

(ii) Note: Map of Unit SC–2 is provided on the map in paragraph (23)(ii) of this entry.

(25) Unit SC–3, Santa Cruz County, California.

(i) From USGS 1:24,000 scale quadrangle Soquel. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 590179, 4090901;

590236, 4090929; 590236, 4090930; 590282, 4090945; 590313, 4090956; 590335, 4090952; 590350, 4090945; 590362, 4090937; 590375, 4090930; 590378, 4090927; 590380, 4090934; 590391, 4090956; 590400, 4090976; 590411, 4090978; 590412, 4090977; 590420, 4090993; 590424, 4091004; 590423, 4091011; 590425, 4091018; 590424, 4091018; 590423, 4091049; 590423, 4091065; 590425, 4091074; 590426, 4091079; 590429, 4091087; 590437, 4091096; 590448, 4091112; 590464, 4091125; 590480, 4091138; 590489, 4091143; 590497, 4091150; 590518, 4091158; 590549, 4091161; 590573, 4091153; 590581, 4091147; 590587, 4091146; 590601, 4091147; 590611, 4091146; 590620, 4091149; 590623, 4091152; 590629, 4091168; 590631, 4091183; 590643, 4091197; 590660, 4091205; 590683, 4091207; 590701, 4091194; 590718, 4091184; 590745, 4091164; 590763, 4091166; 590776, 4091162; 590791, 4091175; 590795, 4091180; 590800, 4091192; 590809, 4091208; 590817, 4091231; 590829, 4091245; 590855, 4091265; 590889, 4091279; 590909, 4091283; 590935, 4091291; 590950, 4091295; 590968, 4091298; 590984, 4091301; 591003, 4091304; 591012, 4091305; 591015, 4091305; 591021, 4091304; 591025, 4091302; 591027, 4091299; 591028, 4091294; 591027, 4091289; 591024, 4091284; 591018, 4091272; 591014, 4091260; 591005, 4091248; 590999, 4091240; 590990, 4091234; 590973, 4091227; 590957, 4091222; 590947, 4091218; 590938, 4091211; 590929, 4091206; 590919, 4091196; 590912, 4091188; 590905, 4091177; 590890, 4091164; 590878, 4091145; 590873, 4091136; 590865, 4091127; 590859, 4091118; 590854, 4091110; 590842, 4091096; 590836, 4091087; 590827, 4091080; 590819, 4091073; 590804, 4091062; 590794, 4091057; 590785, 4091053; 590755, 4091042;

590739, 4091039; 590719, 4091037; 590699, 4091033; 590672, 4091029; 590653, 4091024; 590636, 4091018; 590619, 4091011; 590604, 4091005; 590582, 4090991; 590566, 4090982; 590554, 4090977; 590542, 4090972; 590532, 4090972; 590524, 4090973; 590507, 4090980; 590496, 4090986; 590477, 4090999; 590468, 4091002; 590457, 4091003; 590446, 4091004; 590436, 4091010; 590428, 4091003; 590427, 4090993; 590425, 4090970; 590427, 4090970; 590460, 4090956; 590495, 4090941; 590530, 4090892; 590533, 4090873; 590502, 4090842; 590465, 4090818; 590459, 4090810; 590474, 4090794; 590480, 4090791; 590477, 4090718; 590430, 4090743; 590366, 4090776; 590323, 4090794; 590283, 4090828; 590242, 4090855; 590204, 4090874; returning to 590179, 4090901.

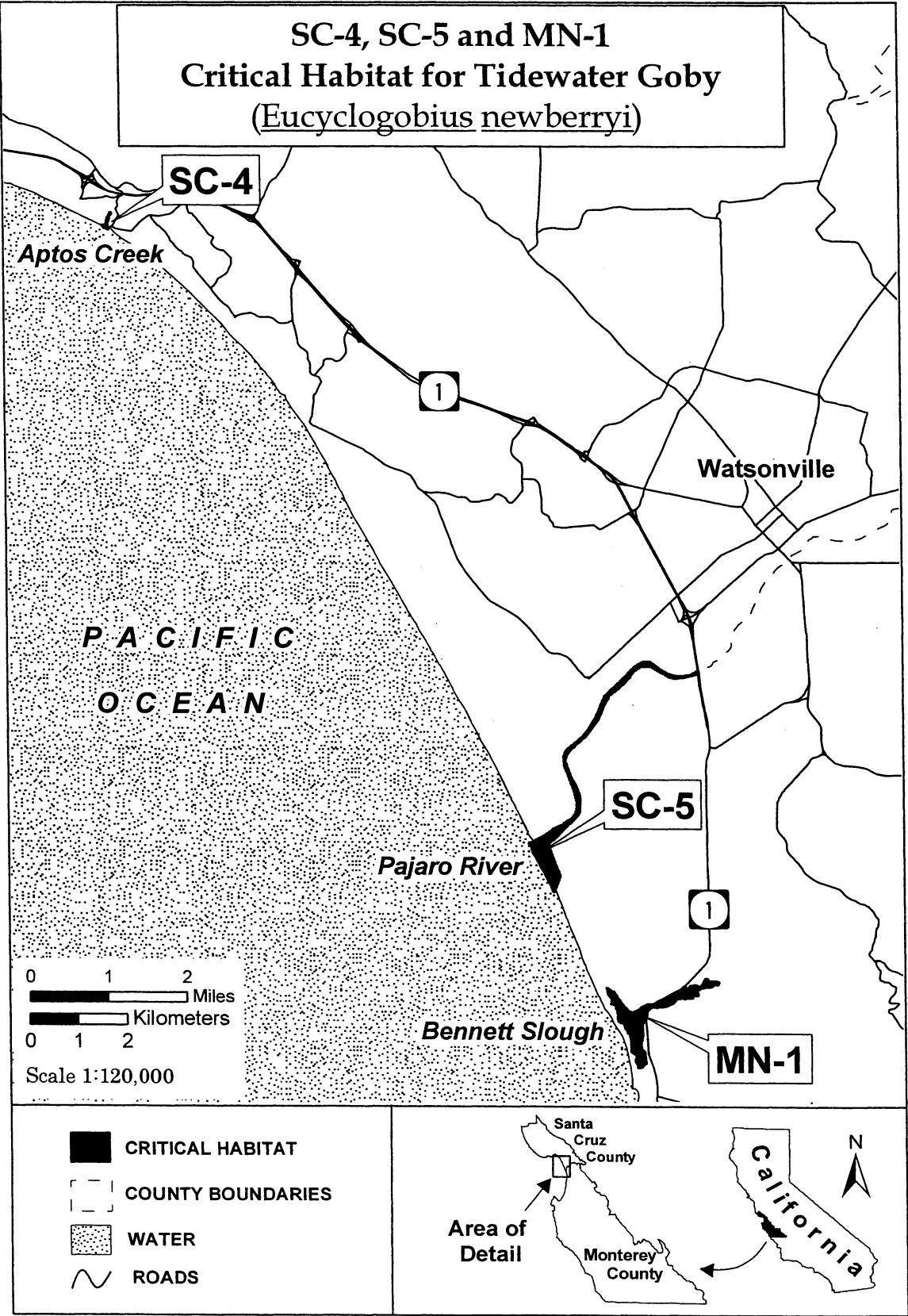
(ii) Note: Map of Unit SC–3 is provided on the map in paragraph (23)(ii) of this entry.

(26) Unit SC–4, Santa Cruz County, California.

(i) From USGS 1:24,000 scale quadrangle Soquel. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 597246, 4092023; 597317, 4092033; 597320, 4092041; 597331, 4092080; 597348, 4092134; 597363, 4092174; 597373, 4092199; 597378, 4092211; 597386, 4092225; 597396, 4092249; 597406, 4092262; 597412, 4092279; 597423, 4092294; 597429, 4092282; 597416, 4092251; 597402, 4092211; 597389, 4092165; 597381, 4092140; 597372, 4092109; 597361, 4092080; 597359, 4092059; 597359, 4092049; 597358, 4092042; 597360, 4092040; 597373, 4091945; 597351, 4091956; 597327, 4091965; 597310, 4091976; 597273, 4092007; returning to 597246, 4092023.

(ii) Note: Map of Unit SC–4, SC–5, and MN–1 follows:

**BILLING CODE 4310–55–P**



(27) Unit SC-5, Santa Cruz and Monterey Counties, California.

(i) From USGS 1:24,000 scale quadrangles Watsonville West and Moss Landing. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 605911, 4079111; 606162, 4079236; 606226, 4079281; 606361, 4079366; 606416, 4079419; 606517, 4079467; 606577, 4079500; 606717, 4079591; 606758, 4079610; 606799, 4079640; 606872, 4079760; 606899, 4079887; 606895, 4079983; 606875, 4080067; 606845, 4080174; 606820, 4080259; 606672, 4080641; 606643, 4080737; 606629, 4080919; 606631, 4080943; 606662, 4081020; 606737, 4081107; 606879, 4081225; 607000, 4081337; 607128, 4081485; 607218, 4081624; 607254, 4081690; 607346, 4081878; 607382, 4081974; 607445, 4082127; 607474, 4082175; 607528, 4082251; 607556, 4082275; 607765, 4082472; 607861, 4082567; 608079, 4082792; 608147, 4082847; 608282, 4082921; 608395, 4082922; 608595, 4082775; 608783, 4082658; 608883, 4082624; 609077, 4082620; 609255, 4082657; 609368, 4082708; 609375, 4082666; 609278, 4082633; 609137, 4082597; 608957, 4082582; 608884, 4082583; 608799, 4082604; 608730, 4082648; 608623, 4082704; 608418, 4082820; 608332, 4082826; 608241, 4082819; 608098, 4082739; 608020, 4082648; 607992, 4082604; 607858, 4082457; 607748, 4082360; 607606, 4082244; 607551, 4082207; 607554, 4082147; 607512, 4082084; 607476, 4082012; 607382, 4081813; 607334, 4081708; 607165, 4081477; 607075, 4081361; 607035, 4081316; 606828, 4081128; 606753, 4081051; 606698, 4080981; 606661, 4080886; 606657, 4080844; 606664, 4080807; 606743, 4080589; 606791, 4080489; 606893, 4080276; 606950, 4080145; 606963, 4080070; 606955, 4079974; 606947, 4079787; 606932, 4079740; 606900, 4079696; 606815, 4079589; 606672, 4079474; 606516, 4079318; 606445, 4079230; 606343, 4079151; 606304, 4079085; 606413, 4078742; 606426, 4078716; 606465, 4078622; 606499, 4078532; 606527, 4078444; 606525, 4078404; 606510, 4078342; 606420, 4078101; 606395, 4078140; 606354, 4078244; 606255, 4078416; 606218, 4078509; 606137, 4078641; 606080, 4078773; 605983, 4078937; 605936, 4079066; returning to 605911, 4079111.

(ii) Note: Map of Unit SC-5 is provided on the map in paragraph (26)(ii) of this entry.

(28) Unit MN-1, Monterey County, California.

(i) From USGS 1:24,000 scale quadrangle Moss Landing. Land

bounded by the following UTM zone 10 NAD83 coordinates (E, N): 607479, 4076078; 607484, 4076090; 607498, 4076089; 607529, 4076051; 607548, 4076043; 607563, 4076019; 607614, 4076009; 607664, 4075939; 607690, 4075882; 607715, 4075845; 607729, 4075835; 607765, 4075780; 607782, 4075742; 607812, 4075704; 607871, 4075651; 607909, 4075602; 607954, 4075586; 607997, 4075559; 608003, 4075571; 608095, 4075612; 608137, 4075638; 608191, 4075683; 608295, 4075738; 608324, 4075749; 608380, 4075742; 608433, 4075743; 608480, 4075770; 608516, 4075767; 608595, 4075832; 608670, 4075851; 608730, 4075908; 608780, 4075917; 608883, 4075966; 608963, 4075985; 609014, 4076006; 609042, 4076037; 609037, 4076049; 609013, 4076060; 609044, 4076094; 609091, 4076103; 609112, 4076082; 609143, 4076090; 609157, 4076088; 609189, 4076107; 609209, 4076135; 609217, 4076139; 609244, 4076120; 609275, 4076145; 609305, 4076143; 609358, 4076120; 609383, 4076127; 609404, 4076121; 609432, 4076149; 609503, 4076272; 609517, 4076283; 609538, 4076279; 609555, 4076242; 609578, 4076223; 609706, 4076239; 609760, 4076224; 609779, 4076203; 609772, 4076170; 609753, 4076155; 609723, 4076168; 609685, 4076167; 609634, 4076122; 609612, 4076120; 609599, 4076111; 609506, 4076108; 609466, 4076097; 609458, 4076097; 609442, 4076119; 609421, 4076115; 609420, 4076100; 609370, 4076068; 609357, 4076066; 609330, 4076024; 609311, 4076009; 609343, 4075983; 609352, 4075945; 609253, 4075939; 609243, 4075925; 609243, 4075893; 609227, 4075876; 609161, 4075881; 609129, 4075874; 609059, 4075870; 609031, 4075875; 608941, 4075867; 608898, 4075846; 608822, 4075769; 608732, 4075714; 608647, 4075693; 608547, 4075694; 608506, 4075687; 608402, 4075693; 608353, 4075656; 608310, 4075612; 608290, 4075582; 608286, 4075529; 608272, 4075483; 608276, 4075466; 608265, 4075456; 608242, 4075392; 608231, 4075376; 608212, 4075371; 608190, 4075328; 608188, 4075271; 608202, 4075096; 608174, 4074988; 608165, 4074913; 608166, 4074872; 608185, 4074802; 608203, 4074780; 608226, 4074768; 608242, 4074744; 608258, 4074610; 608252, 4074570; 608269, 4074527; 608281, 4074517; 608171, 4074429; 608104, 4074419; 608100, 4074483; 608083, 4074522; 608056, 4074561; 608053, 4074583; 608078, 4074657; 608074, 4074686; 608032, 4074719; 607975, 4074748; 607977, 4074840; 607971, 4074920; 607954,

4075047; 607939, 4075108; 607952, 4075166; 607977, 4075198; 608060, 4075233; 608126, 4075235; 608142, 4075229; 608140, 4075250; 608116, 4075255; 608060, 4075248; 607991, 4075229; 607968, 4075216; 607945, 4075190; 607915, 4075141; 607899, 4075150; 607880, 4075203; 607852, 4075240; 607821, 4075335; 607810, 4075348; 607763, 4075361; 607751, 4075370; 607720, 4075398; 607707, 4075421; 607704, 4075490; 607715, 4075546; 607696, 4075565; 607696, 4075616; 607674, 4075642; 607667, 4075662; 607669, 4075707; 607619, 4075744; 607571, 4075762; 607582, 4075819; 607578, 4075867; 607549, 4075918; 607530, 4075928; 607502, 4075961; 607490, 4076020; 607493, 4076054; returning to 607479, 4076078.

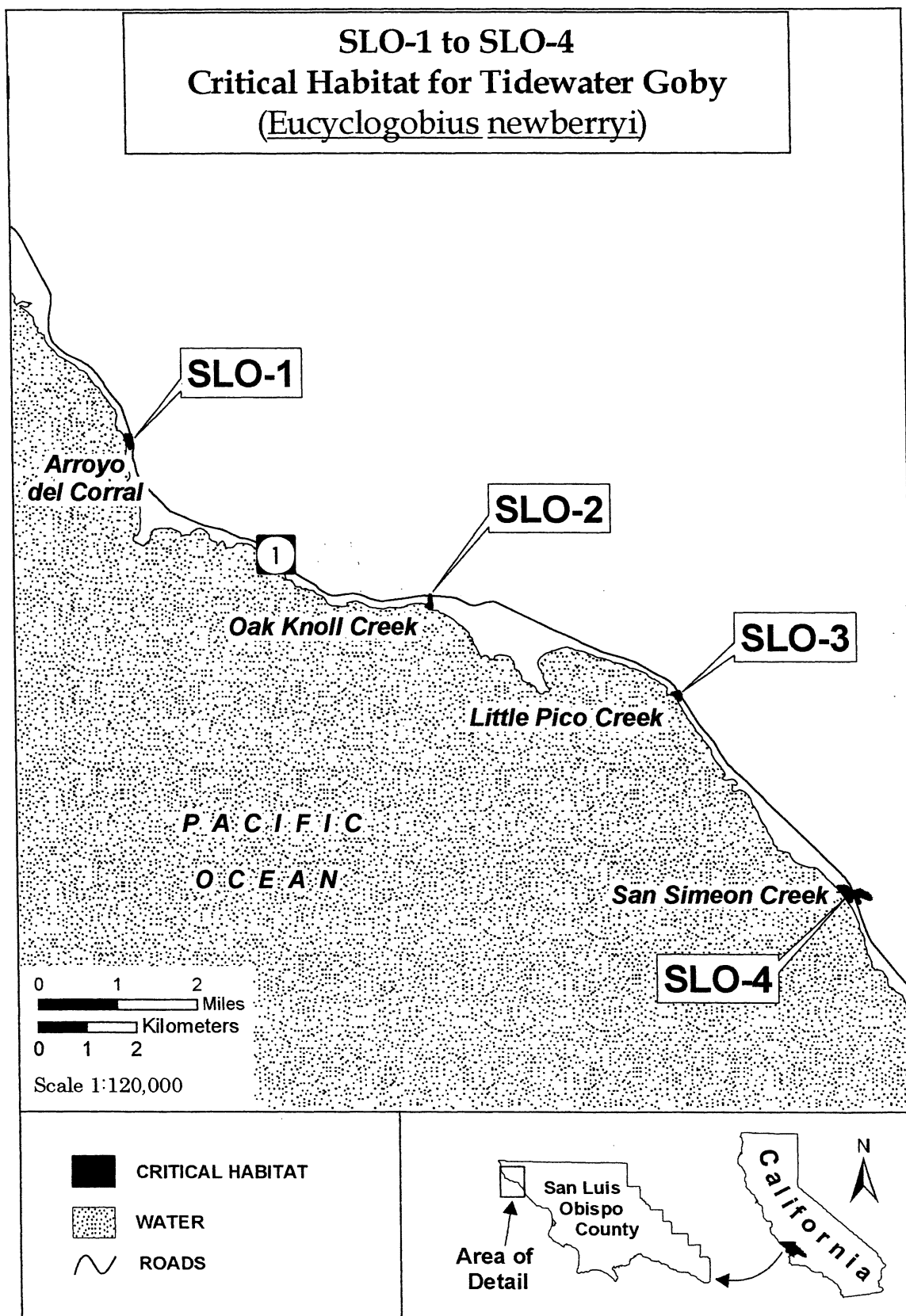
(ii) Note: Map of Unit MN-1 is provided on the map in paragraph (26)(ii) of this entry.

(29) Unit SLO-1, San Luis Obispo County, California.

(i) From USGS 1:24,000 scale quadrangle Piedras Blancas. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 654950, 3950321; 654974, 3950315; 654982, 3950312; 654990, 3950310; 654996, 3950309; 654997, 3950309; 654998, 3950309; 654998, 3950310; 654999, 3950310; 655014, 3950305; 655018, 3950303; 655018, 3950310; 655014, 3950319; 655017, 3950328; 655026, 3950331; 655031, 3950331; 655039, 3950328; 655065, 3950249; 655066, 3950238; 655058, 3950233; 655048, 3950227; 655043, 3950217; 655042, 3950199; 655044, 3950183; 655048, 3950169; 655053, 3950162; 655057, 3950157; 655061, 3950151; 655065, 3950138; 655068, 3950128; 655076, 3950120; 655081, 3950111; 655081, 3950090; 655081, 3950083; 655068, 3950080; 655058, 3950077; 655052, 3950072; 655047, 3950069; 655041, 3950056; 655036, 3950067; 655032, 3950077; 655028, 3950090; 655025, 3950104; 655020, 3950111; 655020, 3950118; 655018, 3950124; 655018, 3950131; 655007, 3950129; 655006, 3950130; 655005, 3950130; 655004, 3950130; 655003, 3950130; 654997, 3950121; 654996, 3950121; 654996, 3950120; 654996, 3950115; 654994, 3950108; 654990, 3950103; 654990, 3950105; 654983, 3950122; 654985, 3950133; 654987, 3950145; 654985, 3950156; 654982, 3950192; 654978, 3950211; 654974, 3950231; 654973, 3950246; 654958, 3950299; returning to 654950, 3950321.

(ii) Note: Map of Units SLO-1 through SLO-4 follows:

BILLING CODE 4310-55-P



(30) Unit SLO–2, San Luis Obispo County, California.

(i) From USGS 1:24,000 scale quadrangle San Simeon. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 661106, 3946736; 661136, 3946762; 661138, 3946761; 661154, 3946765; 661163, 3946776; 661162, 3946822; 661160, 3946859; 661160, 3946860; 661165, 3946889; 661168, 3946920; 661171, 3946938; 661172, 3946939; 661172, 3946940; 661173, 3946940; 661174, 3946940; 661175, 3946940; 661176, 3946940; 661176, 3946939; 661177, 3946939; 661177, 3946938; 661178, 3946946; 661187, 3946945; 661187, 3946940; 661190, 3946912; 661190, 3946884; 661192, 3946849; 661193, 3946836; 661194, 3946826; 661195, 3946809; 661200, 3946789; 661205, 3946777; 661207, 3946759; 661208, 3946746; 661205, 3946734; 661200, 3946728; 661198, 3946727; 661194, 3946723; 661191, 3946717; 661190, 3946711; 661193, 3946705; 661197, 3946699; 661197, 3946695; 661194, 3946690; 661195, 3946685; 661196, 3946682; 661182, 3946684; 661133, 3946718; returning to 661106, 3946736.

(ii) Note: Map of Unit SLO–2 is provided on the map in paragraph (29)(ii) of this entry.

(31) Unit SLO–3, San Luis Obispo County, California.

(i) From USGS 1:24,000 scale quadrangle San Simeon. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 666127, 3944901; 666136, 3944903; 666152, 3944900; 666193, 3944908; 666235, 3944880; 666260, 3944893; 666263, 3944905; 666258, 3944930; 666258, 3944937; 666297, 3944877; 666294, 3944848; 666275, 3944773; 666254, 3944801; 666226, 3944828; 666172, 3944870; 666152, 3944892; returning to 666127, 3944901.

(ii) Note: Map of Unit SLO–3 is provided on the map in paragraph (29)(ii) of this entry.

(32) Unit SLO–4, San Luis Obispo County, California.

(i) From USGS 1:24,000 scale quadrangles Pico Creek and Cambria. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 669487, 3940858; 669537, 3940865;

669549, 3940860; 669550, 3940860; 669551, 3940861; 669551, 3940862; 669551, 3940863; 669558, 3940865; 669574, 3940868; 669596, 3940871; 669606, 3940872; 669615, 3940872; 669625, 3940869; 669635, 3940866; 669641, 3940863; 669648, 3940859; 669655, 3940853; 669662, 3940850; 669669, 3940846; 669676, 3940839; 669685, 3940832; 669694, 3940814; 669705, 3940798; 669720, 3940774; 669737, 3940755; 669748, 3940744; 669753, 3940740; 669756, 3940738; 669765, 3940735; 669776, 3940736; 669785, 3940735; 669801, 3940730; 669815, 3940738; 669819, 3940742; 669823, 3940747; 669826, 3940754; 669830, 3940758; 669836, 3940761; 669840, 3940764; 669847, 3940765; 669851, 3940765; 669859, 3940765; 669864, 3940767; 669868, 3940768; 669885, 3940776; 669895, 3940780; 669904, 3940778; 669916, 3940781; 669926, 3940784; 669937, 3940786; 669948, 3940784; 669958, 3940779; 669969, 3940773; 669980, 3940763; 669989, 3940756; 670000, 3940750; 670012, 3940746; 670031, 3940741; 670041, 3940734; 670052, 3940727; 670069, 3940719; 670090, 3940712; 670098, 3940704; 670107, 3940697; 670113, 3940691; 670118, 3940683; 670126, 3940676; 670135, 3940668; 670137, 3940659; 670136, 3940652; 670135, 3940646; 670140, 3940642; 670144, 3940636; 670147, 3940629; 670154, 3940620; 670152, 3940618; 670152, 3940616; 670151, 3940613; 670131, 3940620; 670120, 3940628; 670120, 3940629; 670112, 3940625; 670102, 3940623; 670082, 3940627; 670069, 3940637; 670060, 3940645; 670050, 3940648; 670042, 3940658; 670040, 3940667; 670031, 3940666; 670022, 3940657; 670005, 3940658; 669988, 3940665; 669979, 3940674; 669973, 3940681; 669965, 3940681; 669943, 3940680; 669929, 3940684; 669913, 3940680; 669904, 3940670; 669900, 3940657; 669894, 3940653; 669881, 3940659; 669872, 3940670; 669861, 3940680; 669853, 3940680; 669860, 3940645; 669865, 3940630; 669871, 3940615; 669882, 3940606; 669886, 3940598; 669885, 3940590; 669886, 3940583; 669894, 3940570; 669914, 3940559; 669928, 3940548; 669935, 3940540; 669933, 3940533;

669923, 3940536; 669916, 3940542; 669908, 3940546; 669898, 3940551; 669889, 3940557; 669879, 3940562; 669876, 3940568; 669871, 3940577; 669866, 3940594; 669865, 3940613; 669860, 3940628; 669854, 3940643; 669850, 3940659; 669844, 3940675; 669842, 3940680; 669842, 3940681; 669842, 3940682; 669842, 3940683; 669843, 3940684; 669838, 3940694; 669828, 3940703; 669819, 3940707; 669810, 3940703; 669809, 3940703; 669804, 3940697; 669800, 3940691; 669796, 3940683; 669779, 3940659; 669769, 3940648; 669753, 3940628; 669743, 3940614; 669743, 3940602; 669743, 3940595; 669745, 3940584; 669744, 3940577; 669743, 3940570; 669731, 3940561; 669705, 3940611; 669665, 3940672; 669651, 3940695; 669651, 3940696; 669640, 3940712; 669586, 3940765; 669537, 3940814; 669504, 3940842; returning to 669487, 3940858.

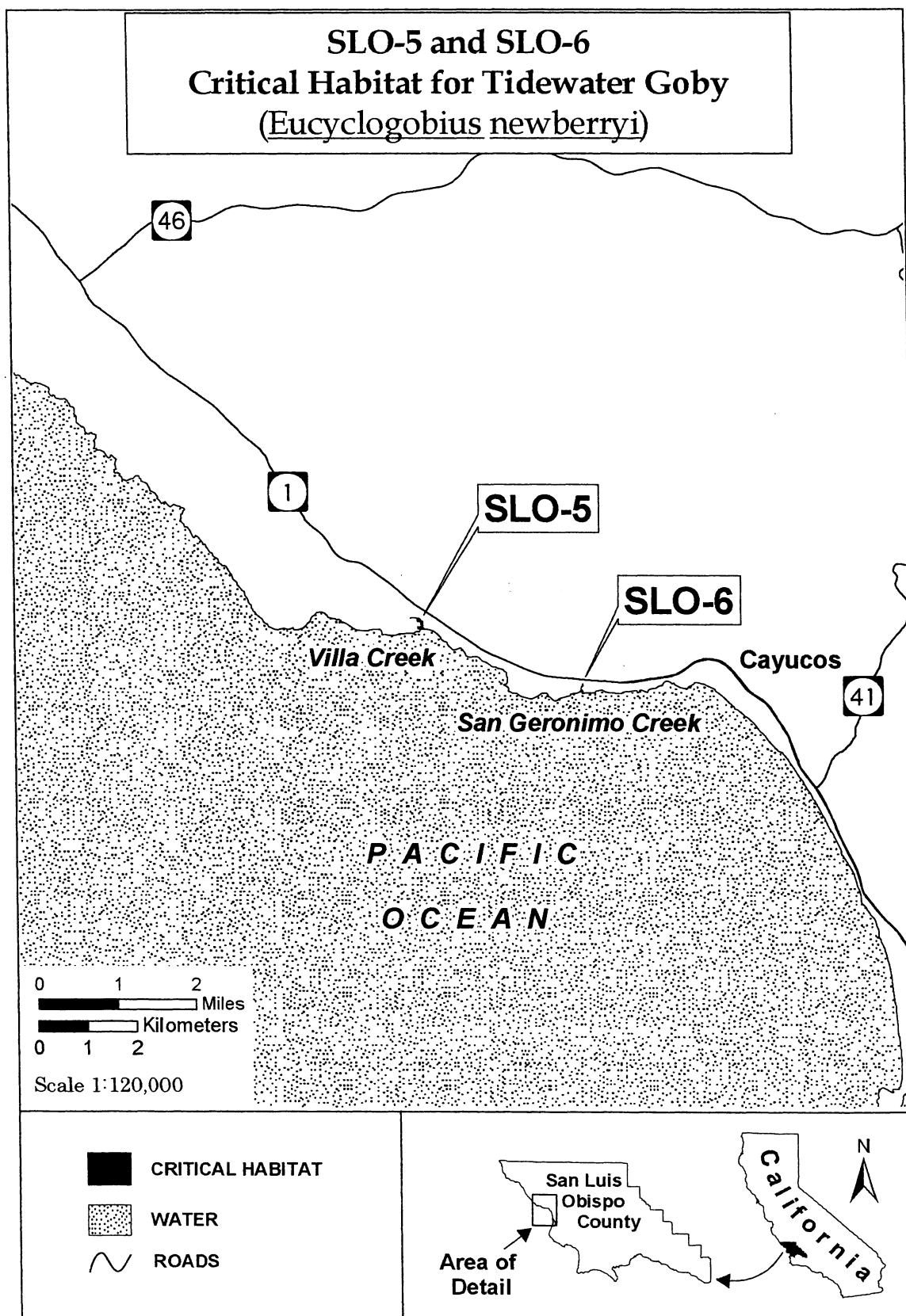
(ii) Note: Map of Unit SLO–4 is provided on the map in paragraph (29)(ii) of this entry.

(33) Unit SLO–5, San Luis Obispo County, California.

(i) From USGS 1:24,000 scale quadrangle Cayucos. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 683953, 3926198; 683960, 3926205; 683980, 3926215; 683989, 3926218; 684058, 3926215; 684072, 3926209; 684105, 3926205; 684129, 3926198; 684168, 3926177; 684195, 3926145; 684206, 3926138; 684229, 3926116; 684237, 3926088; 684228, 3926074; 684232, 3926054; 684232, 3926033; 684224, 3926020; 684280, 3925950; 684232, 3925959; 684197, 3925958; 684178, 3925954; 684167, 3925958; 684135, 3925976; 684115, 3925983; 684106, 3925983; 684109, 3926014; 684123, 3926021; 684155, 3926025; 684180, 3926034; 684182, 3926053; 684170, 3926109; 684162, 3926125; 684124, 3926123; 684108, 3926128; 684097, 3926146; 684096, 3926185; 684062, 3926201; 684018, 3926207; 683993, 3926207; 683962, 3926192; returning to 683953, 3926198.

(ii) Note: Map of Units SLO–5 and SLO–6 follows:

BILLING CODE 4310–55–P



(34) Unit SLO–6, San Luis Obispo County, California.

(i) From USGS 1:24,000 scale quadrangle Cayucos. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 687453, 3924653; 687454, 3924656; 687457, 3924661; 687465, 3924675; 687477, 3924685; 687487, 3924688; 687483, 3924691; 687479, 3924691; 687482, 3924700; 687481, 3924701; 687481, 3924702; 687480, 3924702; 687481, 3924703; 687478, 3924708; 687475, 3924719; 687473, 3924731; 687473, 3924738; 687474, 3924744; 687475, 3924745; 687476, 3924748; 687476, 3924749; 687484, 3924762; 687485, 3924762; 687490, 3924765; 687504, 3924774; 687517, 3924796; 687526, 3924818; 687527, 3924824; 687528, 3924826; 687529, 3924827; 687530, 3924828; 687531, 3924828; 687532, 3924827; 687533, 3924826; 687533, 3924825; 687533, 3924824; 687533, 3924823; 687532, 3924817; 687532, 3924816; 687522, 3924793; 687526, 3924794; 687530, 3924798; 687532, 3924805; 687534, 3924812; 687537, 3924813; 687536, 3924802; 687535, 3924794; 687535, 3924789; 687535, 3924785; 687532, 3924782; 687528, 3924784; 687525, 3924783; 687524, 3924778; 687522, 3924774; 687521, 3924770; 687519, 3924766; 687514, 3924765; 687509, 3924764; 687504, 3924761; 687500, 3924757; 687493, 3924753; 687484, 3924744; 687481, 3924741; 687480, 3924732; 687482, 3924723; 687485, 3924719; 687489, 3924715; 687494, 3924710; 687501, 3924707; 687506, 3924703; 687510, 3924698; 687513, 3924691; 687508, 3924690; 687503, 3924690; 687500, 3924689; 687510, 3924687; 687523, 3924678; 687531, 3924666; 687532, 3924663; 687533, 3924657; 687534, 3924651; 687534, 3924650; 687536, 3924646; 687536, 3924645; 687537, 3924643;

687534, 3924643; 687519, 3924641; 687499, 3924649; 687475, 3924655; 687456, 3924653; returning to 687453, 3924653.

(ii) Note: Map of Unit SLO–5 is provided on the map in paragraph (33)(ii) of this entry.

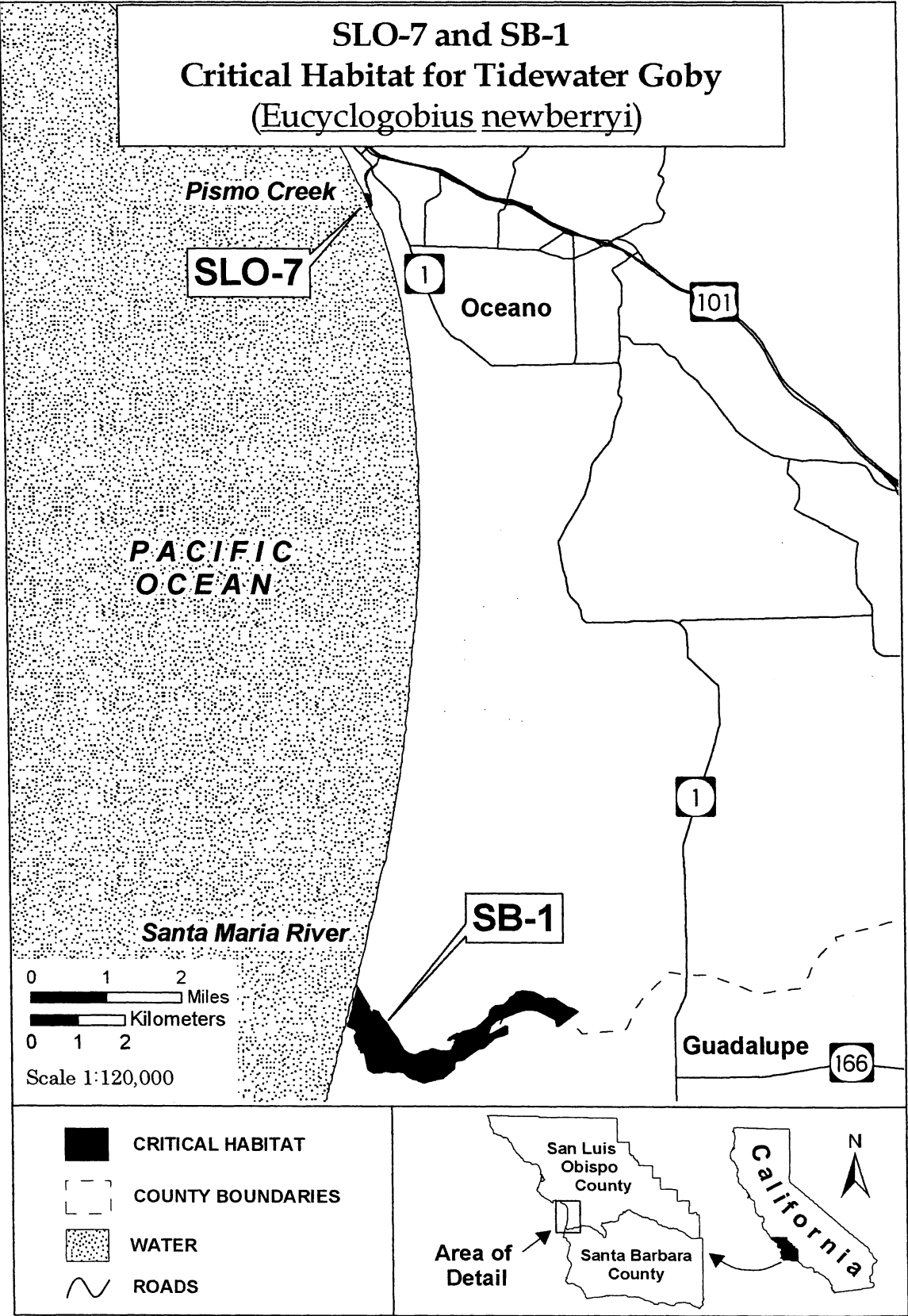
(35) Unit SLO–7, San Luis Obispo County, California.

(i) From USGS 1:24,000 scale quadrangle Pismo Beach. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 714995, 3890262; 715095, 3890271; 715104, 3890261; 715109, 3890252; 715120, 3890240; 715127, 3890233; 715138, 3890227; 715149, 3890213; 715148, 3890223; 715145, 3890233; 715140, 3890238; 715136, 3890243; 715134, 3890254; 715132, 3890272; 715129, 3890286; 715125, 3890297; 715119, 3890324; 715116, 3890338; 715112, 3890351; 715108, 3890361; 715100, 3890375; 715095, 3890385; 715088, 3890392; 715082, 3890396; 715076, 3890399; 715069, 3890401; 715065, 3890405; 715061, 3890408; 715060, 3890415; 715058, 3890429; 715056, 3890444; 715053, 3890455; 715051, 3890473; 715048, 3890488; 715045, 3890504; 715042, 3890521; 715039, 3890539; 715035, 3890553; 715033, 3890566; 715032, 3890574; 715031, 3890588; 715031, 3890606; 715033, 3890623; 715033, 3890645; 715034, 3890667; 715041, 3890681; 715046, 3890692; 715055, 3890706; 715062, 3890722; 715067, 3890730; 715070, 3890736; 715074, 3890743; 715082, 3890752; 715093, 3890762; 715101, 3890768; 715119, 3890786; 715130, 3890799; 715145, 3890809; 715163, 3890821; 715178, 3890830; 715194, 3890837; 715205, 3890845; 715221, 3890859; 715236, 3890869; 715252, 3890885; 715262, 3890891; 715268, 3890896; 715276, 3890902; 715283, 3890912; 715289, 3890922; 715296, 3890932;

715305, 3890943; 715310, 3890953; 715317, 3890972; 715318, 3890984; 715319, 3891005; 715323, 3891027; 715326, 3891034; 715335, 3891032; 715336, 3891031; 715342, 3891028; 715347, 3891021; 715345, 3891004; 715340, 3890985; 715331, 3890962; 715321, 3890938; 715310, 3890916; 715296, 3890885; 715287, 3890864; 715277, 3890859; 715272, 3890854; 715258, 3890837; 715241, 3890825; 715232, 3890816; 715226, 3890810; 715212, 3890802; 715200, 3890802; 715186, 3890801; 715179, 3890795; 715169, 3890778; 715154, 3890761; 715142, 3890751; 715133, 3890737; 715127, 3890720; 715122, 3890708; 715117, 3890704; 715109, 3890684; 715103, 3890669; 715099, 3890654; 715092, 3890642; 715084, 3890623; 715080, 3890608; 715077, 3890585; 715075, 3890559; 715079, 3890539; 715083, 3890515; 715090, 3890484; 715097, 3890454; 715105, 3890425; 715111, 3890398; 715118, 3890380; 715129, 3890356; 715141, 3890327; 715153, 3890297; 715164, 3890254; 715170, 3890229; 715174, 3890208; 715177, 3890185; 715178, 3890165; 715176, 3890142; 715177, 3890130; 715176, 3890123; 715183, 3890106; 715187, 3890085; 715189, 3890067; 715193, 3890044; 715200, 3890028; 715137, 3889924; 715128, 3889946; 715121, 3889965; 715115, 3889981; 715110, 3889994; 715106, 3890007; 715102, 3890018; 715095, 3890036; 715090, 3890049; 715082, 3890067; 715076, 3890080; 715069, 3890095; 715062, 3890111; 715052, 3890126; 715044, 3890146; 715034, 3890166; 715029, 3890185; 715022, 3890203; 715013, 3890222; 715004, 3890241; returning to 714995, 3890262.

(ii) Note: Map of Units SLO–7 and SB–1 follows:

BILLING CODE 4310–55–P





(36) Unit SB–1, Santa Barbara County, California.

(i) From USGS 1:24,000 scale quadrangles Point Sal and Guadalupe. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N):

714486, 3872122; 714493, 3872165; 714530, 3872230; 714539, 3872329; 714554, 3872389; 714594, 3872480; 714613, 3872646; 714626, 3872708; 714651, 3872747; 714689, 3872903; 714703, 3873025; 714969, 3872560; 714988, 3872467; 715039, 3872436; 715055, 3872488; 715175, 3872451; 715237, 3872326; 715354, 3872192; 715434, 3872073; 715583, 3871865; 715637, 3871734; 715713, 3871614; 715807, 3871544; 715939, 3871505; 716019, 3871535; 716044, 3871566; 716102, 3871589; 716153, 3871603; 716222, 3871602; 716268, 3871649; 716299, 3871655; 716334, 3871652; 716452, 3871607; 716526, 3871594; 716558, 3871593; 716701, 3871615; 716807, 3871341; 716785, 3871204;

716542, 3870984; 716348, 3870951; 716245, 3870930; 716125, 3870887; 716029, 3870923; 715975, 3870952; 715899, 3870968; 715803, 3871010; 715682, 3871109; 715600, 3871122; 715455, 3871112; 715304, 3871140; 715197, 3871101; 715115, 3871098; 715046, 3871108; 714985, 3871140; 714935, 3871180; 714908, 3871224; 714839, 3871547; 714773, 3871548; 714762, 3871579; 714753, 3871608; 714720, 3871626; 714713, 3871685; 714656, 3871775; 714650, 3871830; 714624, 3871908; 714676, 3871989; 714646, 3872058; returning to 714486, 3872122.

(ii) Note: Map of Unit SB–1 is provided on the map in paragraph (35)(ii) of this entry.

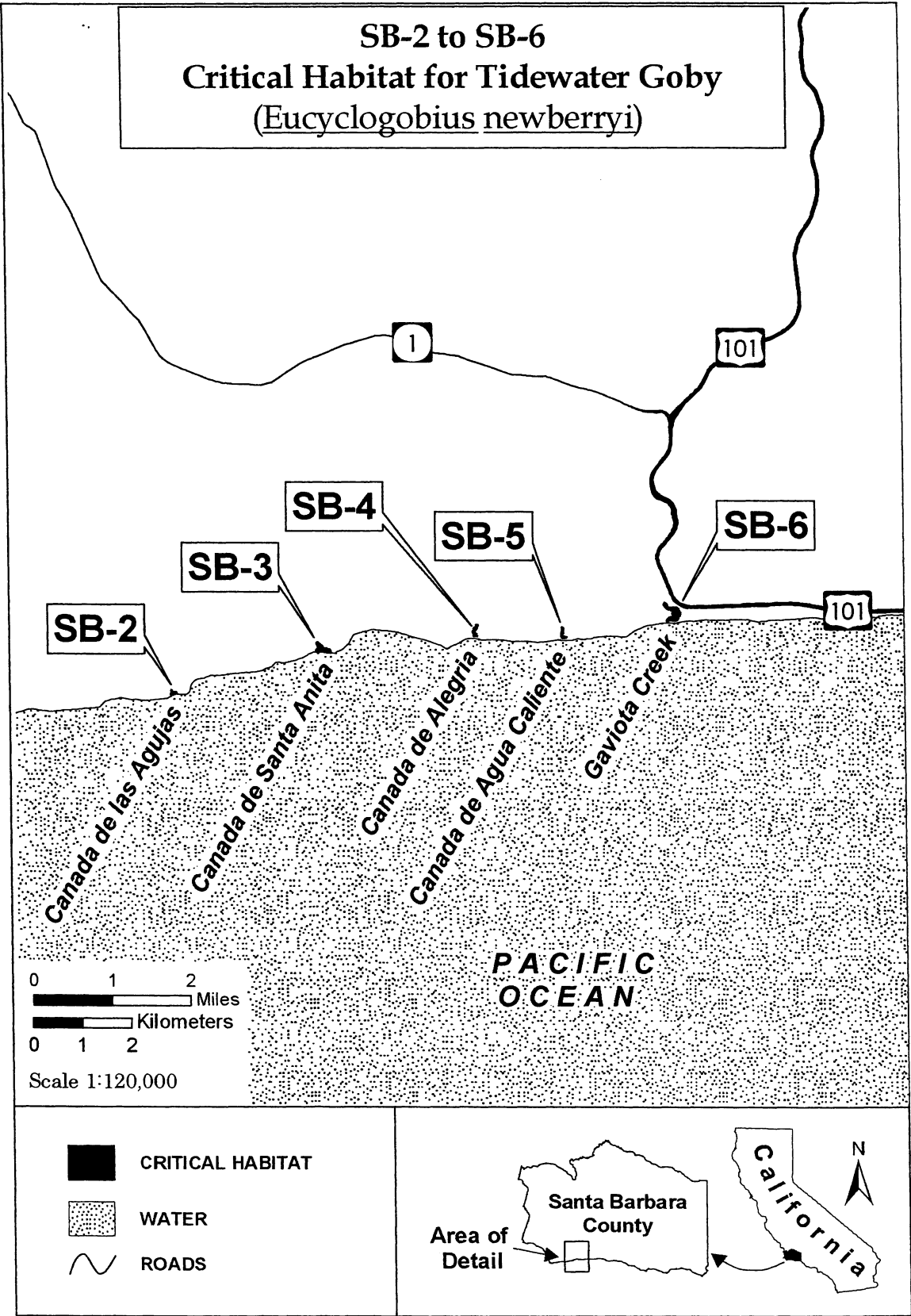
(37) Unit SB–2, Santa Barbara County, California.

(i) From USGS 1:24,000 scale quadrangle Point Conception. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 744289, 3816310; 744302, 3816318; 744310,

3816324; 744314, 3816329; 744320, 3816334; 744322, 3816336; 744326, 3816338; 744320, 3816343; 744314, 3816346; 744311, 3816351; 744310, 3816356; 744308, 3816361; 744308, 3816366; 744307, 3816371; 744306, 3816376; 744305, 3816383; 744304, 3816387; 744307, 3816387; 744312, 3816379; 744313, 3816373; 744314, 3816366; 744315, 3816359; 744315, 3816356; 744317, 3816352; 744320, 3816347; 744325, 3816346; 744330, 3816344; 744336, 3816342; 744339, 3816341; 744350, 3816340; 744358, 3816339; 744369, 3816340; 744373, 3816338; 744377, 3816336; 744383, 3816336; 744391, 3816337; 744397, 3816339; 744402, 3816338; 744407, 3816337; 744373, 3816328; 744350, 3816322; 744343, 3816320; 744335, 3816318; 744308, 3816313; 744298, 3816310; returning to 744289, 3816310.

(ii) Note: Map of Units SB–2 through SB–6 follows:

**BILLING CODE 4310–55–P**



(38) Unit SB–3, Santa Barbara County, California.

(i) From USGS 1:24,000 scale quadrangle Point Conception. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 747310, 3817233; 747358, 3817279; 747376, 3817283; 747396, 3817298; 747384, 3817307; 747357, 3817311; 747334, 3817326; 747324, 3817337; 747314, 3817372; 747318, 3817391; 747323, 3817394; 747338, 3817375; 747376, 3817348; 747386, 3817331; 747413, 3817305; 747435, 3817265; 747509, 3817255; 747522, 3817247; 747556, 3817236; 747588, 3817216; 747550, 3817228; 747506, 3817229; 747494, 3817235; 747346, 3817239; returning to 747310, 3817233.

(ii) Note: Map of Unit SB–2 is provided on the map in paragraph (37)(ii) of this entry.

(39) Unit SB–4, Santa Barbara County, California.

(i) From USGS 1:24,000 scale quadrangle Point Conception. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 750530, 3817616; 750546, 3817669; 750554, 3817688; 750582, 3817711; 750595, 3817736; 750602, 3817758; 750608, 3817758; 750598, 3817712; 750570, 3817678; 750570, 3817666; 750559, 3817649; 750559, 3817614; 750565, 3817606; 750567, 3817590; 750580, 3817583; 750585, 3817577; 750588, 3817572; 750582, 3817557; 750602, 3817534; 750563, 3817537; 750547, 3817533; 750553, 3817561; 750542, 3817580; 750540, 3817593; returning to 750530, 3817616.

(ii) Note: Map of Unit SB–2 is provided on the map in paragraph (37)(ii) of this entry.

(40) Unit SB–5, Santa Barbara County, California.

(i) From USGS 1:24,000 scale quadrangle Point Conception. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 752340, 3817567; 752343, 3817589; 752347, 3817598; 752351, 3817624; 752351, 3817636; 752357, 3817675; 752353, 3817702; 752366, 3817705; 752370, 3817675; 752364, 3817634; 752364, 3817623; 752360, 3817595; 752353, 3817577; 752354, 3817544; 752362, 3817533; 752363, 3817528; 752366, 3817524; 752380, 3817515; 752388, 3817512; 752427, 3817506; 752442, 3817500; 752435, 3817500; 752388, 3817494; 752363, 3817498; 752345, 3817533; 752341, 3817543; returning to 752340, 3817567.

(ii) Note: Map of Unit SB–5 is provided on the map in paragraph (37)(ii) of this entry.

(41) Unit SB–6, Santa Barbara County, California.

(i) From USGS 1:24,000 scale quadrangle Gaviota. Land bounded by the following UTM zone 10 NAD83 coordinates (E, N): 754473, 3818173; 754487, 3818216; 754512, 3818201; 754519, 3818189; 754526, 3818145; 754537, 3818130; 754567, 3818121; 754588, 3818106; 754643, 3818104; 754672, 3818114; 754733, 3818115; 754752, 3818107; 754778, 3818058; 754782, 3818039; 754797, 3818005; 754793, 3817977; 754787, 3817954; 754777, 3817948; 754768, 3817931; 754759, 3817922; 754756, 3817901; 754735, 3817880; 754733, 3817870; 754727, 3817868; 754718, 3817855; 754606, 3817863; 754568, 3817859; 754534, 3817850; 754531, 3817853; 754571, 3817881; 754575, 3817891; 754586, 3817901; 754597, 3817906;

754626, 3817916; 754643, 3817913; 754654, 3817916; 754687, 3817910; 754709, 3817914; 754707, 3817922; 754727, 3817941; 754703, 3817949; 754680, 3817949; 754669, 3817954; 754665, 3817960; 754666, 3817978; 754657, 3817995; 754655, 3818033; 754643, 3818075; 754629, 3818079; 754624, 3818085; 754625, 3818089; 754618, 3818091; 754564, 3818094; 754541, 3818104; 754479, 3818161; 754480, 3818169; returning to 754473, 3818173.

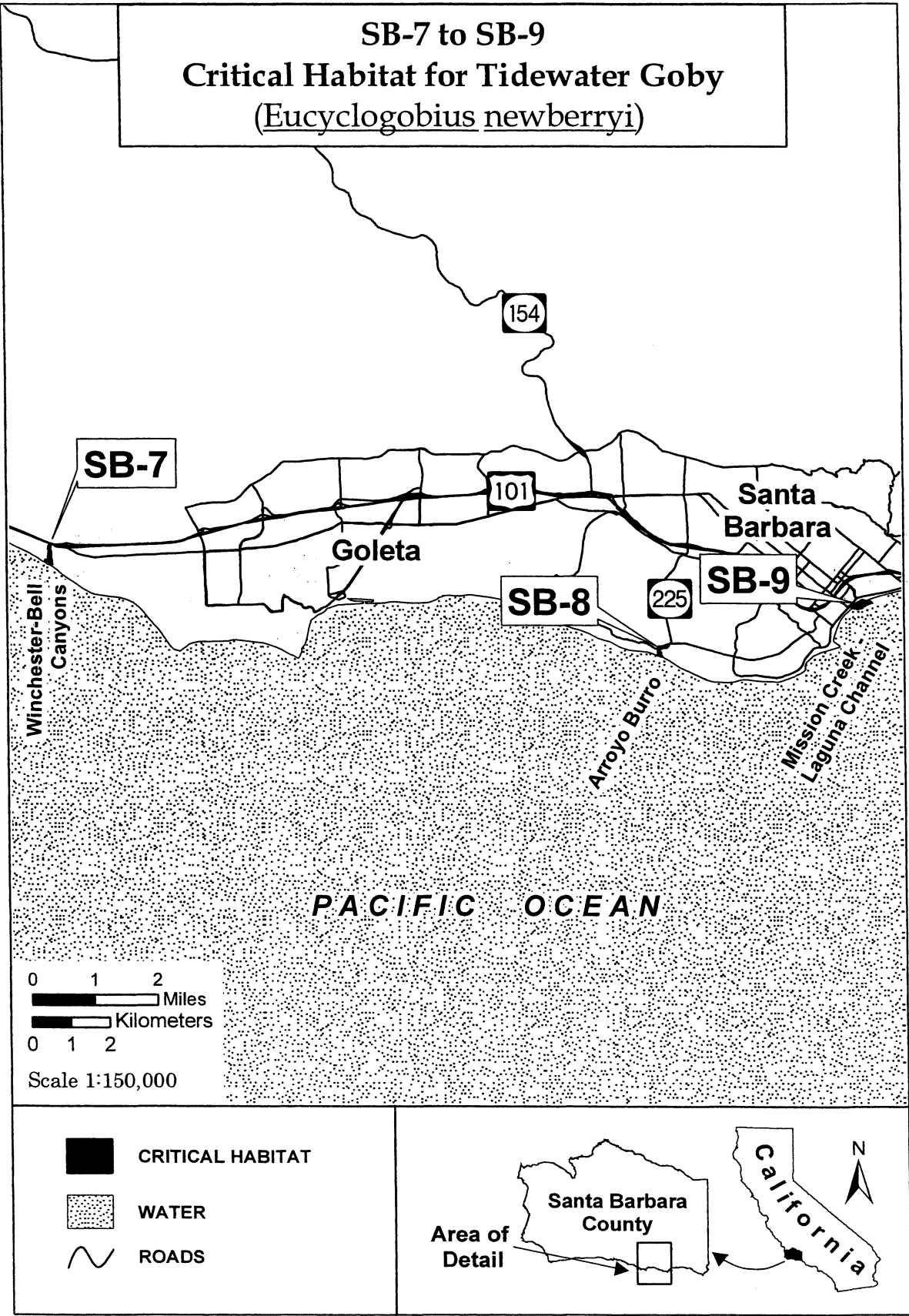
(ii) Note: Map of Unit SB–6 is provided on the map in paragraph (37)(ii) of this entry.

(42) Unit SB–7, Santa Barbara County, California.

(i) From USGS 1:24,000 scale quadrangle Dos Pueblos Canyon. Land bounded by the following UTM zone 11 NAD83 coordinates (E, N): 232224, 3813614; 232337, 3813596; 232345, 3813600; 232348, 3813614; 232342, 3813631; 232314, 3813641; 232303, 3813652; 232297, 3813683; 232307, 3813732; 232313, 3813743; 232321, 3813769; 232323, 3813789; 232318, 3813850; 232320, 3813928; 232340, 3813983; 232370, 3813973; 232363, 3813947; 232346, 3813948; 232329, 3813927; 232329, 3813905; 232339, 3813898; 232350, 3813875; 232355, 3813835; 232366, 3813794; 232370, 3813748; 232359, 3813698; 232353, 3813689; 232345, 3813688; 232363, 3813651; 232357, 3813646; 232363, 3813625; 232373, 3813614; 232373, 3813605; 232360, 3813572; 232383, 3813490; 232287, 3813570; returning to 232224, 3813614.

(ii) Note: Map of Unit SB–7 through SB–9 follows:

**BILLING CODE 4310–55–P**



(43) Unit SB–8, Santa Barbara County, California.

(i) From USGS 1:24,000 scale quadrangle Santa Barbara. Land bounded by the following UTM zone 11 NAD83 coordinates (E, N): 247839, 3810209; 247844, 3810255; 247848, 3810256; 247841, 3810295; 247851, 3810332; 247867, 3810357; 247884, 3810364; 247967, 3810388; 247988, 3810390; 248001, 3810387; 248032, 3810399; 248051, 3810400; 248079, 3810406; 248097, 3810417; 248108, 3810428; 248117, 3810441; 248118, 3810451; 248124, 3810453; 248122, 3810439; 248113, 3810425; 248100, 3810412; 248082, 3810401; 248068, 3810396; 248033, 3810393; 248002, 3810381; 247988, 3810384; 247969, 3810383; 247885, 3810357; 247877, 3810347; 247868, 3810332; 247876, 3810282; 247893, 3810265; 247900, 3810237; 247897, 3810226; 247933, 3810166; returning to 247839, 3810209.

(ii) Note: Map of Unit SB–8 is provided on the map in paragraph (42)(ii) of this entry.

(44) Unit SB–9, Santa Barbara County, California.

(i) From USGS 1:24,000 scale quadrangle Santa Barbara. Land

bounded by the following UTM zone 11 NAD83 coordinates (E, N): 252846, 3811168; 252864, 3811187; 252923, 3811193; 252975, 3811204; 253049, 3811235; 253166, 3811297; 253182, 3811299; 253183, 3811277; 253187, 3811278; 253202, 3811303; 253199, 3811317; 253207, 3811319; 253209, 3811311; 253445, 3811254; 253412, 3811247; 253337, 3811217; 253311, 3811202; 253275, 3811190; 253256, 3811174; 253236, 3811170; 253226, 3811163; 253219, 3811147; 253195, 3811137; 253122, 3811115; 253088, 3811099; 252918, 3811155; 252928, 3811169; 252923, 3811172; 252908, 3811174; returning to 252846, 3811168.

(ii) Note: Map of Unit SB–9 is provided on the map in paragraph (42)(ii) of this entry.

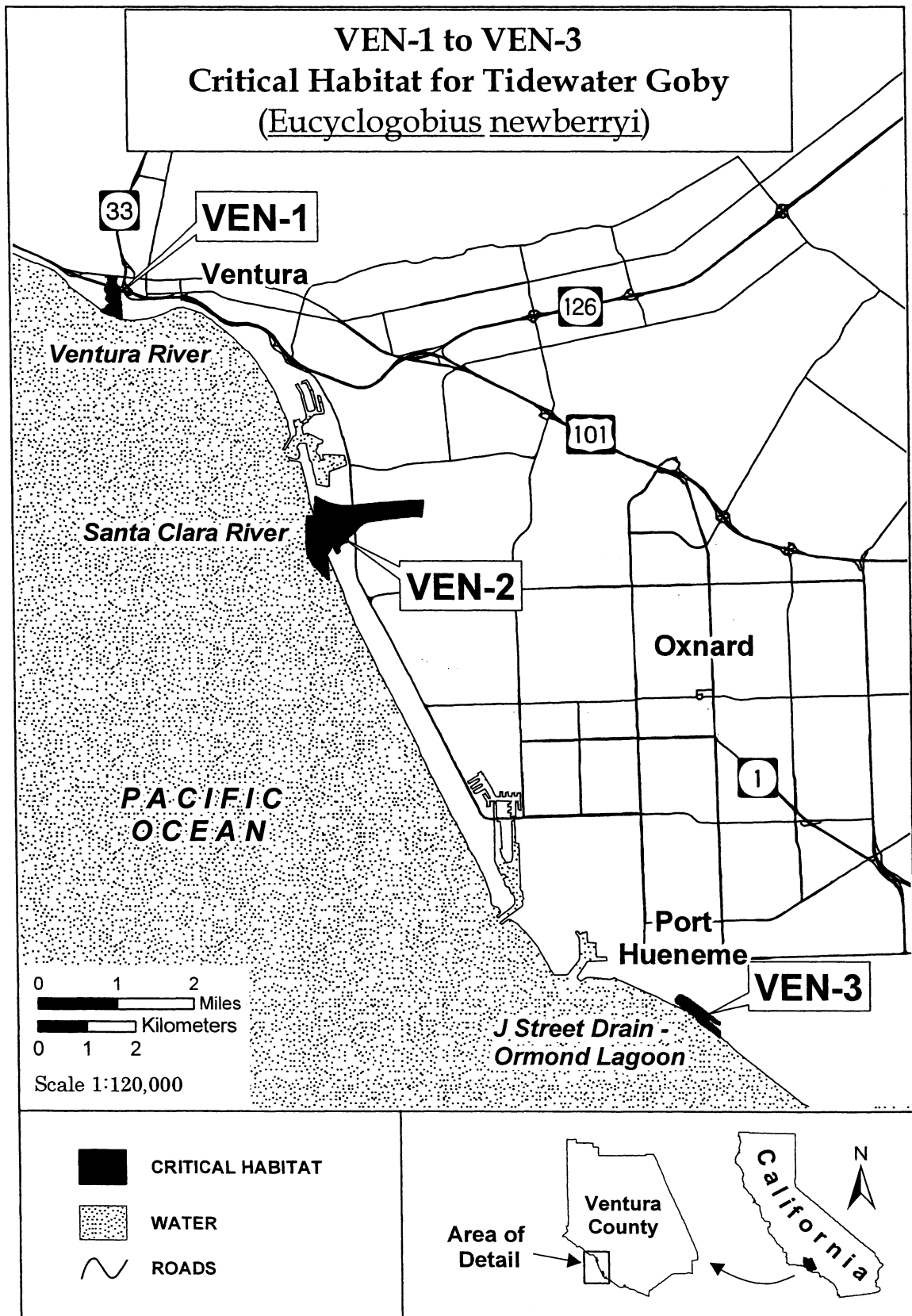
(45) Unit VEN–1, Ventura County, California.

(i) From USGS 1:24,000 scale quadrangle Ventura. Land bounded by the following UTM zone 11 NAD83 coordinates (E, N): 287223, 3795128; 287297, 3795133; 287329, 3795156; 287356, 3795190; 287377, 3795209; 287407, 3795228; 287424, 3795254; 287428, 3795275; 287423, 3795289; 287371, 3795326; 287361, 3795337;

287356, 3795349; 287354, 3795362; 287365, 3795411; 287383, 3795461; 287376, 3795489; 287364, 3795493; 287349, 3795520; 287341, 3795563; 287347, 3795595; 287357, 3795620; 287385, 3795609; 287392, 3795618; 287391, 3795629; 287398, 3795650; 287405, 3795682; 287419, 3795720; 287424, 3795745; 287423, 3795766; 287442, 3795795; 287436, 3795813; 287435, 3795806; 287423, 3795804; 287419, 3795818; 287379, 3795831; 287372, 3795843; 287571, 3795810; 287572, 3795798; 287586, 3795788; 287590, 3795779; 287581, 3795765; 287580, 3795748; 287569, 3795726; 287556, 3795683; 287576, 3795664; 287578, 3795617; 287588, 3795605; 287602, 3795595; 287634, 3795581; 287634, 3795510; 287632, 3795455; 287626, 3795410; 287625, 3795362; 287618, 3795309; 287632, 3795287; 287630, 3795263; 287632, 3795216; 287627, 3795163; 287626, 3795106; 287622, 3795028; 287625, 3794917; 287577, 3794954; 287470, 3795013; 287404, 3795023; 287293, 3795067; returning to 287223, 3795128.

(ii) Note: Map of Units VEN–1 through VEN–3 follows:

**BILLING CODE 4310–55–P**



(46) Unit VEN-2, Ventura County, California.

(i) From USGS 1:24,000 scale quadrangle Oxnard. Land bounded by the following UTM zone 11 NAD83 coordinates (E, N): 291159, 3789957; 291223, 3790506; 291369, 3790503; 291384, 3790685; 291387, 3790730; 291415, 3790767; 291412, 3790821; 291419, 3790906; 291669, 3790758; 291809, 3790713; 291890, 3790691; 291995, 3790673; 292105, 3790669; 292514, 3790691; 292880, 3790694; 293336, 3790700; 293629, 3790695; 293448, 3790404; 292910, 3790378; 292682, 3790364; 292456, 3790341; 292380, 3790320; 292284, 3790262; 292160, 3790123; 292097, 3790078; 292034, 3790039; 292005, 3789999; 291995, 3789923; 291937, 3789922; 291862, 3789890; 291823, 3789847; 291809, 3789796; 291814, 3789722; 291781, 3789705; 291689, 3789886; 291558, 3789684; 291564, 3789160; 291272, 3789495; 291176, 3789721; returning to 291159, 3789957.

(ii) Note: Map of Unit VEN-2 is provided on the map in paragraph (45)(ii) of this entry.

(47) Unit VEN-3, Ventura County, California.

(i) From USGS 1:24,000 scale quadrangle Oxnard. Land bounded by the following UTM zone 11 NAD83 coordinates (E, N): 298163, 3779838; 298231, 3779920; 298245, 3779905; 298274, 3779893; 298310, 3779870; 298354, 3779843; 298335, 3779822; 298379, 3779795; 298443, 3779754; 298494, 3779730; 298528, 3779695; 298555, 3779675; 298592, 3779644; 298678, 3779570; 298699, 3779579; 298578, 3779686; 298385, 3779845; 298325, 3779874; 298289, 3779897; 298267, 3779918; 298269, 3779922; 298290, 3779914; 298338, 3779882; 298379, 3779865; 298393, 3779856; 298562, 3779713; 298614, 3779669; 298798, 3779514; 298880, 3779430;

299009, 3779320; 299029, 3779318; 299028, 3779279; 299001, 3779300; 298958, 3779309; 298863, 3779394; 298792, 3779416; 298790, 3779357; 299022, 3779125; 299018, 3779003; 298939, 3779085; 298884, 3779132; 298659, 3779308; 298603, 3779365; 298638, 3779430; 298164, 3779790; returning to 298163, 3779838.

(ii) Note: Map of Unit VEN-3 is provided on the map in paragraph (45)(ii) of this entry.

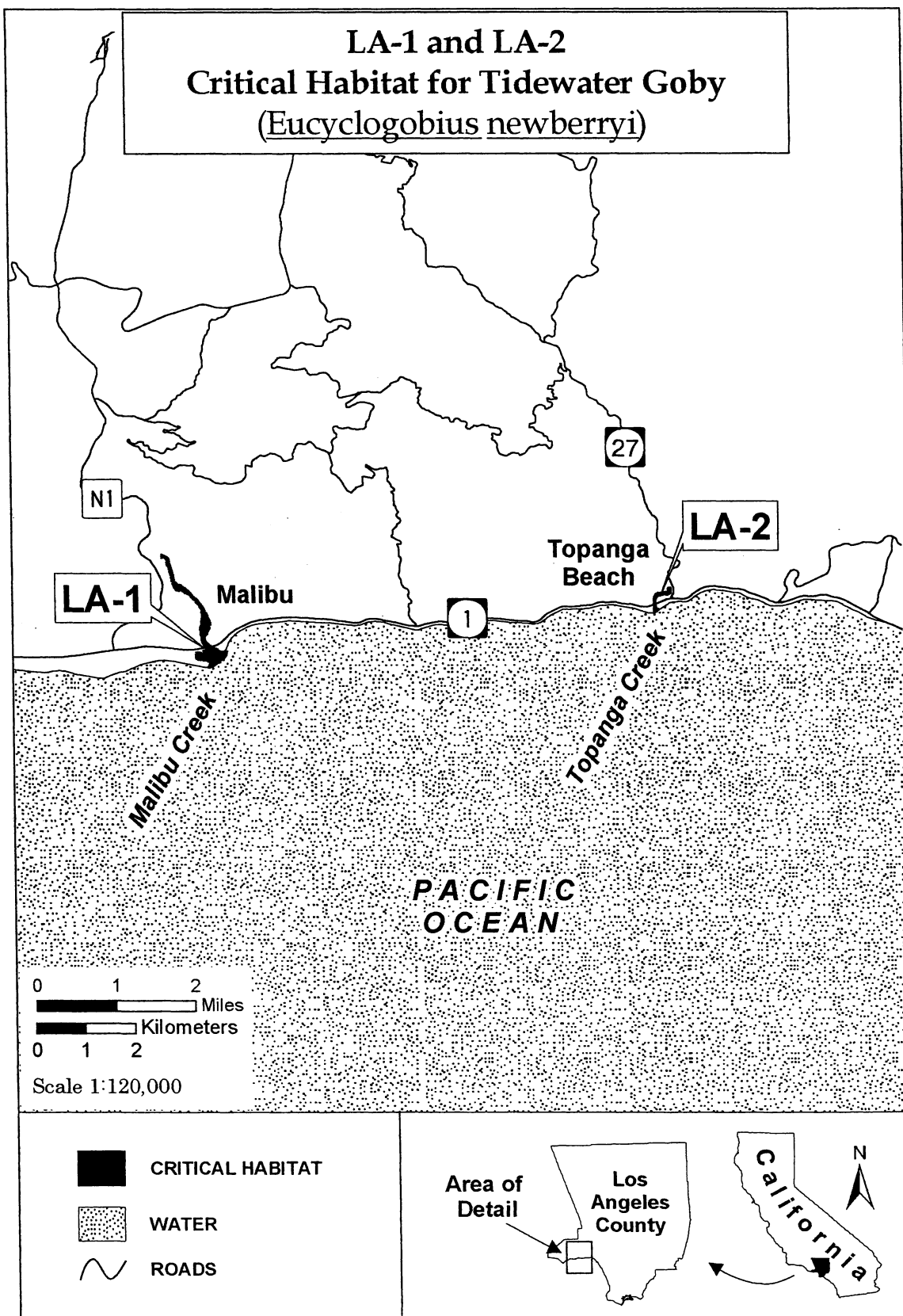
(48) Unit LA-1, Los Angeles County, California.

(i) From USGS 1:24,000 scale quadrangle Malibu Beach. Land bounded by the following UTM zone 11 NAD83 coordinates (E, N): 343854, 3769197; 343855, 3769238; 343878, 3769230; 343927, 3769201; 343954, 3769178; 343968, 3769157; 343970, 3769141; 343966, 3769111; 343979, 3769096; 343980, 3769072; 344025, 3768898; 344034, 3768802; 344047, 3768729; 344054, 3768697; 344071, 3768661; 344079, 3768650; 344134, 3768608; 344162, 3768595; 344209, 3768580; 344224, 3768555; 344259, 3768529; 344278, 3768520; 344300, 3768489; 344324, 3768469; 344335, 3768450; 344393, 3768395; 344431, 3768343; 344499, 3768273; 344516, 3768245; 344552, 3768200; 344595, 3768138; 344644, 3768041; 344671, 3767978; 344710, 3767877; 344715, 3767848; 344735, 3767804; 344738, 3767775; 344745, 3767750; 344727, 3767736; 344724, 3767686; 344715, 3767665; 344675, 3767601; 344657, 3767564; 344613, 3767516; 344605, 3767490; 344605, 3767470; 344606, 3767425; 344613, 3767401; 344663, 3767338; 344688, 3767314; 344709, 3767297; 344732, 3767260; 344754, 3767249; 344787, 3767242; 344795, 3767231; 344811, 3767219; 344835, 3767224; 344861, 3767204; 344868, 3767186; 344886, 3767171; 344912, 3767158; 345030, 3767154; 345032,

3767118; 345025, 3767101; 344993, 3767067; 344983, 3767048; 344967, 3767027; 344926, 3766990; 344900, 3766951; 344815, 3766930; 344784, 3766918; 344753, 3766885; 344670, 3766849; 344660, 3766846; 344681, 3766899; 344724, 3766933; 344722, 3766964; 344680, 3766974; 344629, 3767002; 344606, 3767012; 344589, 3767003; 344548, 3767011; 344503, 3767018; 344449, 3767035; 344427, 3767050; 344414, 3767071; 344417, 3767121; 344431, 3767168; 344492, 3767156; 344536, 3767136; 344562, 3767136; 344597, 3767140; 344607, 3767146; 344581, 3767201; 344587, 3767205; 344612, 3767184; 344640, 3767179; 344650, 3767181; 344639, 3767234; 344617, 3767298; 344596, 3767334; 344579, 3767376; 344563, 3767443; 344567, 3767500; 344565, 3767521; 344556, 3767534; 344551, 3767568; 344554, 3767606; 344549, 3767633; 344545, 3767683; 344557, 3767730; 344577, 3767833; 344594, 3767899; 344599, 3767949; 344599, 3767985; 344592, 3768023; 344593, 3768082; 344574, 3768100; 344545, 3768164; 344527, 3768194; 344497, 3768232; 344481, 3768259; 344413, 3768328; 344375, 3768381; 344352, 3768405; 344310, 3768439; 344301, 3768439; 344276, 3768447; 344250, 3768468; 344220, 3768505; 344210, 3768511; 344198, 3768511; 344169, 3768497; 344152, 3768492; 344122, 3768500; 344105, 3768509; 344062, 3768572; 344040, 3768628; 344043, 3768668; 344032, 3768690; 344028, 3768708; 344011, 3768799; 344002, 3768895; 343975, 3768996; 343956, 3769033; 343941, 3769077; 343946, 3769149; 343936, 3769163; 343914, 3769182; 343886, 3769197; 343863, 3769200; returning to 343854, 3769197.

(ii) Note: Map of Units LA-1 and LA-2 follows:

BILLING CODE 4310-55-P





(49) Unit LA-2, Los Angeles County, California.

(i) From USGS 1:24,000 scale quadrangle Topanga. Land bounded by the following UTM zone 11 NAD83 coordinates (E, N): 353851, 3767575; 353859, 3767610; 353860, 3767654; 353855, 3767659; 353856, 3767672; 353860, 3767720; 353880, 3767768; 353908, 3767818; 353919, 3767829; 353921, 3767837; 353942, 3767845; 354016, 3767844; 354041, 3767856; 354080, 3767864; 354109, 3767861; 354127, 3767851; 354139, 3767850; 354166, 3767854; 354179, 3767883;

354179, 3767917; 354187, 3767930; 354186, 3767938; 354203, 3767945; 354205, 3767873; 354198, 3767851; 354181, 3767831; 354156, 3767825; 354134, 3767824; 354088, 3767836; 354071, 3767836; 354051, 3767831; 354024, 3767819; 353969, 3767820; 353945, 3767792; 353933, 3767786; 353918, 3767769; 353904, 3767745; 353894, 3767733; 353876, 3767699; 353873, 3767653; 353875, 3767609; 353881, 3767598; 353879, 3767586; 353889, 3767512; 353906, 3767526; 353936, 3767510; 353887, 3767481; 353856, 3767475; 353856, 3767503;

353867, 3767505; 353862, 3767528; 353856, 3767538; 353857, 3767554; returning to 353851, 3767575.

(ii) Note: Map of Unit LA-2 is provided on the map in paragraph (48)(ii) of this entry.

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Dated: November 14, 2006.

**David M. Verhey,**

*Acting Assistant Secretary for Fish and Wildlife and Parks.*

[FR Doc. 06-9291 Filed 11-27-06; 8:45 am]

**BILLING CODE 4310-55-P**