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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AF73

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Tidewater Goby

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for the tidewater goby (Eucyclogobius newberryi), pursuant to the Endangered Species Act of 1973, as amended (Act). The designation includes 10 coastal stream segments in Orange and San Diego Counties, California, totaling approximately 9 linear miles of streams. Critical habitat includes the stream channels and their associated wetlands, flood plains, and estuaries. These habitat areas provide for the primary biological needs of foraging, sheltering, reproduction, and dispersal, which are essential for the conservation of the tidewater goby.

Section 7 of the Act requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to destroy or adversely modify designated critical habitat. As required by section 4 of the Act, we considered economic and other relevant impacts prior to making a final decision on what areas to designate as critical habitat.

DATES: The effective date of this rule is December 20, 2000.

ADDRESSES: You may inspect the complete file for this rule at the Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2730 Loker Avenue West, Carlsbad, California 92008, by appointment during normal business hours.

FOR FURTHER INFORMATION CONTACT: Ken Berg, Field Supervisor, Carlsbad Fish and Wildlife Office, at the above address; telephone 760/431-9440, facsimile 760/431-5902.

SUPPLEMENTARY INFORMATION:

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Background

The tidewater goby (Eucyclogobius newberryi) is the only member of the monotypic genus Eucyclogobius and is in the family Gobiidae. This fish was first described in 1857 by Girard as Gobius newberryi. Based on Girard's specimens, Gill (1862) erected the genus Eucyclogobius for this distinctive species. The majority of scientists have accepted this classification (e.g., Bailey et al. 1970, Miller and Lea 1972, Hubbs et al. 1979, Robins et al. 1991, Eschmeyer et al. 1983). A few older works including Ginsburg (1945) placed the tidewater goby and the eight related eastern Pacific species into the genus Lepidogobius. This classification includes the currently recognized genera Lepidogobius, Clevelandia, Ilypnus, Quietula, and Eucyclogobius. Birdsong et al. (1988) coined the informal Chasmichthys species group, recognizing the phyletic relationship of the eastern Pacific group with species in the northwestern Pacific.

Crabtree's (1985) allozyme work on tidewater gobies from 12 localities throughout the range shows fixed allelic differences at the extreme northern (Lake Earl and Humboldt Bay) and southern (Canada de Agua Caliente, Winchester Canyon, and San Onofre Lagoon) ends of the range. The northern, central, and southern California populations are genetically distinct from each other. The more centrally distributed populations are relatively similar to each other (Brush Creek, Estero Americano, Corcoran Lagoon, Arroyo de Corral, Morro Bay, Santa Ynez River, and Jalama Creek). Crabtree's results indicate that there is a low level of gene flow (movement of individuals) between the populations sampled in the northern, central, and southern parts of the range. However, Lafferty et al. (1999a) point out that Crabtree's sites were widely distributed geographically, and may not be indicative of gene flow on more local levels.

Dawson et al. (2000) conducted an analysis of mitochondrial DNA from populations ranging from Humboldt to San Diego counties. Results indicated the southern California populations of tidewater gobies diverged from other tidewater gobies along the California coast long ago. These southernmost populations may have begun diverging from the remainder of the gobies in excess of 1,000,000 years ago. We recently proposed recognition of the tidewater gobies in southern California (i.e., Orange and San Diego Counties) as an endangered distinct population segment (DPS) (June 24, 1999; 64 FR 33816).

The tidewater goby is a small elongate fish seldom exceeding 50 millimeters (mm) (2 inches (in.)) standard length. This fish is characterized by large, dusky pectoral fins and a ventral sucker-like disk formed by the complete fusion of the pelvic fins. Tidewater gobies are nearly transparent, with a mottled brownish upper surface, and often with spots or bars on dusky dorsal and anal fins. The mouth is large and oblique with the upper jaw extending nearly to the rear edge of the eye. The eyes are widely spaced. The tidewater goby is a short-lived species, apparently having an annual life cycle (Eschmeyer and Herald, 1983, Irwin and Soltz 1984, Swift et al. 1997).

The tidewater goby is endemic to California, and is unique in that it is restricted to coastal brackish water habitats. Historically, the species ranged from Tillas Slough (mouth of the Smith River, Del Norte County) near the Oregon border to Agua Hedionda Lagoon (northern San Diego County). Within the range of the tidewater goby, shallow, brackish water conditions occur in two relatively distinct situations: 1) the upper edge of tidal bays, such as Tomales, Bolinas, and San Francisco bays near the entrance of freshwater tributaries, and 2) the coastal lagoons formed at the mouths of small to large coastal rivers, streams, or seasonally wet canyons, along most of the length of California. Few well documented records of this species are known from marine environments outside of coastal lagoons and estuaries (Swift et al. 1989). Historically, the southern population of tidewater gobies

occupied the coastal lagoons formed at the mouths of small to large coastal rivers, streams, or seasonally wet canyons from Aliso Creek in Orange County, to Agua Hedionda Lagoon in Northern San Diego County.

The tidewater goby is often found in waters of relatively low salinities (around 10 parts per thousand (ppt)) in the uppermost brackish zone of larger estuaries and coastal lagoons. However, the fish can tolerate a wide range of salinities and is frequently found throughout lagoons (Swift et al. 1989, 1997; Worcester 1992, Worcester and Lea 1996). Tidewater gobies regularly range upstream into fresh water, and downstream into water of up to 28 ppt salinity (Worcester 1992, Swenson 1995). Specimens have also been collected at salinities as high as 42 ppt (Swift et al. 1989). The species' tolerance of high salinities (up to 60 ppt for varying time periods) likely enables it to withstand exposure to the marine environment, allowing it to colonize or reestablish in lagoons and estuaries following flood events (Swift et al. 1989; Worcester and Lea 1996; Lafferty et al. 1999a). Tidewater gobies in southern California appear to be highly tolerant of varying salinities. Tidewater gobies were collected in May 2000 from French and Aliso lagoons, San Diego County, two lagoons located within 500 m of each other. Although both lagoons had hundreds of larval, juvenile and adult tidewater gobies, the salinities of the two lagoons varied markedly. Aliso Lagoon consisted of entirely fresh water, while French Lagoon ranged from 45 to 51 ppt (Service field data 2000).

Tidewater gobies are usually collected in water less than 1 meter (m) (3 feet (ft)) deep and many localities have no area deeper than this (Wang 1982, Irvin and Soltz 1984; Swenson 1995). However, they have been found in waters over 1 m (3ft) in depth (Worcester 1992, Lafferty and Altstatt 1995; Swift et al. 1997; Smith 1998). In lagoons and estuaries with deeper water, the lack of collections of tidewater gobies in depths greater than 1 m (3 ft) may be due to the inadequacy of the sampling methods, rather than the lack of gobies (Worcester 1992, Lafferty 1997, Smith 1998).

Tidewater gobies often migrate upstream into tributaries up to 2.0 kilometers (km) (1.2 miles) (mi) from the estuary. However, in San Antonio Creek and the Santa Ynez River in Santa Barbara County, tidewater gobies are often collected 5-8 km (3-5 mi) upstream of the tidal or lagoonal areas, sometimes in beaver-impounded sections of streams (Swift et al. 1989). The fish move upstream in summer and fall as sub-adults and adults. There is little evidence of reproduction in these upper areas (Swift et al. 1997). Tidewater gobies in Southern California have been found as far as 5 km (3 mi) from the estuary in the Santa Margarita River (Holland and Swift 1992; Dan Holland, Camp Pendleton Amphibian and Reptile Survey, pers. comm. 2000).

The life of tidewater gobies is tied to the annual hydrologic cycles of the coastal lagoons and estuaries (Swift et al. 1989, 1994; Swenson 1994, 1995). Water in estuaries, lagoons and bays is at its lowest salinity during the winter and spring as a result of precipitation and runoff. During this time, high runoff causes the sandbars at the mouths of the lagoons to breach, allowing mixing of the relatively fresh estuarine and lagoon waters with seawater. This annual building and breaching of the sandbars is part of the normal dynamics of the systems in which the tidewater goby has evolved (Zedler 1982, Lafferty and Alstatt 1995, Heasly et al. 1997). The

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time of sandbar closure varies greatly among systems and years, and typically occurs from spring to late summer. Summer salinity in the lagoon depends upon the amount of freshwater inflow at the time of sandbar formation (Zedler 1982, Heasly et al. 1997).

Males begin digging breeding burrows 75 to 100 mm (3-4 in.) deep, usually in relatively unconsolidated, clean, coarse sand averaging 0.5 mm (0.02 in.) in diameter, in April or May (Swift et al. 1989; Swenson 1994, 1995). Swenson (1995) demonstrated that tidewater gobies prefer this substrate in the laboratory, but also found tidewater gobies digging breeding burrows in mud in the wild (Swenson 1994). Page (C. Page, Biological Consultant, pers. com. 2000) found that tidewater gobies commonly built breeding burrows and spawned in silt-dominated muddy habitats. Inter-burrow distances range from about 5 to 275 centimeters (cm) (2 to 110 in) (Swenson 1995). Females lay about 100 to 1,000 eggs per clutch, averaging 400 eggs per clutch, with clutch size depending on the size of both the female and the male. Females can lay more than one clutch of eggs over their lifespan, with captive females spawning 6-12 times (Swenson 1995). Spawning frequency in wild females probably varies due to fluctuations in food supply and other environmental conditions. Male gobies remain in the burrow to guard the eggs that are attached to sand grains in the walls of the burrow. Males also spawn more than once per season (Swenson 1995) and have been observed guarding multiple clutches in the same burrow (Swift et al. 1989, Swenson 1995). Males frequently go at least for a few weeks without feeding and this probably contributes to mid-summer mortality (Swift et al. 1989; Swenson 1994, 1995).

Reproduction peaks during spring to mid-summer (late April or May to July) and can continue into November or December depending on the seasonal temperature and rainfall. Reproduction sometimes increases slightly in the fall (Swift et al. 1989). Reproduction takes place when the water temperature is from 15-20 degrees Celsius (deg.C) (60-65 degrees Fahrenheit (deg.F)) and at salinities of 0-25 ppt (Swift et al. 1989; Swenson 1994, 1995). Typically, winter rains and cold weather interrupt spawning, but in some warm years reproduction may occur throughout the year (Goldberg 1977, Wang 1984). Goldberg (1977) showed by histological analysis that females have the potential to lay eggs all year in Southern California, but this rarely has been documented. Length-frequency data from southern and central California (Swift et al. 1989; Swenson 1994, 1995) and age data analysis from central California populations (Swift et al. 1997) indicate that tidewater gobies typically live one year or less, although some may overwinter upstream (Irwin and Soltz 1984).

Tidewater goby eggs hatch in 7-10 days at water temperatures of 15-18 deg.C (60-65 deg.F) at lengths of 4-7 mm (0.2 in.). The newly hatched larvae are planktonic (float in water column) for one to a few days and once they reach 8-18 mm (0.3-0.8 in.) in length, move to substrate oriented (living on or near the bottom of the estuary or lagoon). All larger size classes are substrate oriented and little habitat segregation by size has been noted (Swift et al. 1989, Swenson 1995). However, Worcester (1992) found that larval gobies in Pico Creek Lagoon tended to use the deeper portion of the lagoon. Individuals collected in marshes appear to be larger (43-45 mm (1.7-1.8 in.) standard length) than those collected in open areas of lagoons (32-35 mm (1.3-1.4 in.) standard length) (Swenson 1995).

Studies of the tidewater goby's feeding habits suggest that it is a generalist. At all sizes examined, tidewater gobies feed on small benthic (bottom-dwelling) invertebrates, crustaceans (usually mysids, amphipods, and ostracods), snails, and aquatic insect larvae, particularly flies (dipterans) (Irwin and Soltz 1984; Swift et al. 1989; Swenson 1994, 1995). The food items of the smallest tidewater gobies (4-8 mm (0.2-0.3 in.)) have not been examined, but they probably feed on unicellular phytoplankton or zooplankton similar to many other early stage larval fishes (Swenson and McCray 1996).

Tidewater gobies are preyed upon by native species such as prickly

sculpin (Cottus asper), staghorn sculpin (Leptocottus armatus), starry flounder (Platichthys californicus) (Swift et al. 1997), and possibly steelhead (Oncorhynchus mykiss) (Swift et al. 1989). Tidewater gobies were found in stomachs of about 6 percent of 120 fish of the former three species examined, and comprised about 20 percent by volume of the prey. Predation by the native Sacramento perch (Archoplites interruptus) and tule perch (Hysterocarpus traski) may have prevented tidewater gobies from inhabiting the San Francisco Bay delta (Swift et al. 1989), although direct documentation to support this hypothesis is lacking.

Several non-native fish species, such as largemouth bass and yellowfin gobies, also prey on tidewater gobies. The shimofuri goby (Tridentiger bifasciatus), which has become established in the San Francisco Bay region (Matern and Fleming 1995), may compete with the smaller tidewater goby, based on dietary overlap (Swenson 1995) and foraging and reproductive behavioral alterations in captivity. Shimofuri gobies eat juvenile tidewater gobies in captivity, but usually were unable to catch subadult and adult tidewater gobies (Swenson and Matern 1995). Evidence of predation or competition in the wild is lacking (Swenson 1999), although Wang (1984) found that yellowfin gobies prey on tidewater gobies. Shapovalov and Taft (1954) documented the non-native striped bass (Morone saxatilis) preying on tidewater gobies in Waddell Creek Lagoon, but stated that striped bass were found only infrequently in the areas inhabited by the goby. Non-native sunfishes and black bass (centrarchids) have been introduced in or near coastal lagoons and may prey heavily on tidewater gobies under some conditions. Although tidewater gobies disappeared soon after centrarchids were introduced at several localities, direct evidence that the introductions led to the extirpations is lacking (Swift et al. 1989, 1994; Rathbun et al. 1991). Predation by young-of-the-year largemouth bass (Micropterus salmoides) on tidewater gobies was documented in one system (Santa Ynez River), where tidewater gobies accounted for 61 percent of the prey volume of 55 percent (10 of 18) of the juvenile bass sampled (Swift et al. 1997).

In Southern California, non-native sunfish (Centrarchidae), largemouth bass, and channel catfish (Ictulurus punctatus) are all suspected of impacting tidewater goby populations through predation in the San Mateo and Santa Margarita lagoons (Swift and Holland 1998). Yellowfin gobies are thought to have contributed to the extirpation of tidewater gobies from the Santa Margarita River (Swift et al. 1994). The tidewater goby population at Cockleburr Creek is reduced presumably due to predation and competition from the large numbers of non-native mosquitofish (Swift and Holland 1998).

Non-native African clawed frogs (Xenopus laevis) also prey upon tidewater gobies (Lafferty and Page 1997), although this is probably not a significant source of mortality due to the limited distribution of this species in tidewater goby habitats. The frogs are killed by the higher salinities that occur when the lagoons are breached (Glenn Greenwald, Service, pers. obs.).

Lafferty et al. (1999a) monitored persistence of 17 tidewater goby populations in Santa Barbara and Los

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Angeles counties during and after the heavy winter flood flows of 1995. All 17 populations persisted after the high flows and no significant changes in population sizes were detected. In addition, gobies apparently colonized Canada Honda, approximately 10 km (6 mi) from the closest known population during or after the flooding (Swift et al. 1997). Lafferty et al. (1999a, 1999b) proposed that flood events such

as those that occurred in 1995, flush gobies out into the ocean's littoral zone where they are dispersed by longshore currents to other estuaries generally south along the coast. As Swenson (1999) points out, Lafferty's work suggests that, because prevailing longshore currents on the California coast are southerly, populations at the northern ends of geographic clusters of populations are more likely than southern populations to serve as source populations. Lafferty et al. (1999b) estimated the extirpation and recolonization rates for 37 populations in Southern California from over 250 presence-absence records and found a high rate of recolonization. The results suggest that there is more gene flow among populations within geographic clusters (e.g., northern California, San Francisco Bay, Santa Cruz, San Luis Obispo, and Southern California) than previously believed. They also found a positive association between tidewater goby presence and wet years, suggesting that flooding may contribute to recolonization of sites from which gobies have temporarily disappeared.

Lagoons in which tidewater gobies are found range in size from less than 0.10 hectare (ha) (0.25 acres (ac)) of surface area to about 800 ha (2,000 ac). Most lagoons with tidewater goby populations are in the range of 0.5-5.0 ha (1.25-12.5 ac). Surveys of tidewater goby localities and historical records indicate that persistence of tidewater goby populations is related to size, configuration, location, and access by humans (Swift et al. 1989, 1994). Water surface areas smaller than about 2 ha (5 ac) generally have histories of extinction, extirpation, or population reduction to very low levels, although some as small as 0.35 ha (0.86 ac) have been identified as having persistent tidewater goby populations (Swift et al. 1997, Lafferty 1997, Heasly et al. 1997). As evidenced by the Canada Honda colonization (Swift et al. 1997), relatively long distances from the nearest source populations are not obstacles to colonization or reestablishment. Many of the small lagoons with histories of intermittent populations are within 1-2 km (0.6-1.2 mi) of larger lagoons that can act as sources of colonizing gobies.

Today, the most stable and largest populations are in lagoons and estuaries of intermediate sizes, 2-50 ha (5-125 ac) that have remained relatively unaffected by human activities, although some systems that are heavily affected or altered also have relatively large and stable populations (e.g., Humboldt Bay, Humboldt County; Santa Clara River, Ventura County; Santa Ynez River, Santa Barbara County; and Pismo Creek, San Luis Obispo County). In many cases, these probably have provided the colonists for the smaller ephemeral sites (Swift et al. 1997; Lafferty et al. 1999b).

Previous Federal Action

We first classified the tidewater goby as a Category 2 species in 1982 (47 FR 58454). It was reclassified as a Category 1 species in 1991 (56 FR 58804) based on status and threat information in Swift et al. (1989). At those times, Category 2 species were those taxa for which information in our possession indicated that proposing to list as endangered or threatened was possibly appropriate, but for which sufficient data on biological vulnerability and threats were not currently available to support a listing proposal. Category 1 species, now referred to as candidate species, were those taxa for which we had on file, sufficient information on biological vulnerability and threats to support a proposal to list as threatened or endangered. On October 24, 1990, we received a petition from Dr. Camm Swift, Associate Curator of Fishes at the Los Angeles Museum of Natural History, to list the tidewater goby as endangered. Our finding that the requested action may be warranted was published on March 22, 1991 (56 FR 12146). A proposal

to list the tidewater goby as an endangered species was published on December 11, 1992 (57 FR 58770). On March 7, 1994, the tidewater goby was listed as an endangered species (59 FR 5494). At that time, we did not designate critical habitat, because critical habitat was not then determinable and a final decision on critical habitat required detailed information on the possible economic effects of designation. At that time, we did not have sufficient information to perform the economic analysis.

On September 18, 1998, the Natural Resources Defense Council, Inc., **filed** a lawsuit in Federal District Court in California against us for failure to designate critical habitat for the tidewater goby. On April 5, 1999, the court ordered that the ``Service publish a proposed critical habitat designation for the tidewater goby in 120 days'' (Natural Resources Defense Council, Inc. v. U. S. Department of the Interior et al., CV 98-7596, C.D. Cal.).

On June 24, 1999, we proposed to delist the northern populations of the tidewater goby and to retain the tidewater goby populations in Orange and San Diego Counties as endangered based on our reevaluation of the species status throughout its range (64 FR 33816). We determined that north of Orange County more populations exist than were known at the time of the listing, that threats to those populations are less severe than previously believed, and that the tidewater goby has a greater ability to recolonize habitats from which it is temporarily absent than was known in 1994 (64 FR 33816). Moreover, we believe that the populations of tidewater gobies in Orange and San Diego Counties are genetically distinct and represent a DPS. We believe that this DPS, comprised of gobies from only eight localities, continues to be threatened by habitat loss and degradation, predation and competition by non-native species, and extreme weather and streamflow conditions. Therefore, we proposed that populations north of Orange County be removed from the List of Endangered and Threatened Animals, and that the southern DPS of tidewater gobies be retained as an endangered species on the list.

On August 3, 1999, we proposed critical habitat for the tidewater goby (64 FR 42250). We reopened the comment period on October 15, 1999 (64 FR 55892), to announce the time and location of public hearings and provide for additional public comment. This second comment period closed on November 30, 1999. On June 28, 2000, we published a notice (65 FR 39850) announcing the reopening of the comment period on the draft proposal to designate critical habitat for the tidewater goby and a notice of availability of the draft economic analysis on the proposed determination. The comment period was opened for an additional 30 days, closing on July 28, 2000.

Critical Habitat

Critical habitat is defined in section 3 of the Act as--(i) the specific areas within the geographic 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 geographic area occupied by a species at the time it is listed, upon

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a determination that such areas are essential for the conservation of the species. ``Conservation'' means the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which listing under the Act are no longer

necessary.

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 also requires consultations on Federal actions that are likely to result in the destruction or adverse modification of critical habitat. In our regulations at 50 CFR 402.02, we define destruction or adverse modification as ``the direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical.'' Aside from the added protection that may be provided under section 7, the Act does not provide other forms of protection to lands designated as critical habitat. Because consultation under section 7 of the Act does not apply to activities on private or other non-Federal lands that do not involve a Federal nexus, critical habitat designation would not afford any additional protections under the Act against such activities.

In order to be included in a critical habitat designation, the habitat must first be ``essential to the conservation of the species.'' Critical habitat designations identify, to the extent known using the best scientific and commercial data available, habitat areas that provide essential life cycle needs of the species (i.e., areas on which are found the primary constituent elements, as defined at 50 CFR 424.12(b)).

Section 4 requires that we designate critical habitat at the time of listing and based on what we know at the time of the designation. When we designate critical habitat at the time of listing or under short court-ordered deadlines, we will often not have sufficient information to identify all areas of critical habitat. We are required, nevertheless, to make a decision and thus must base our designations on what, at the time of designation, we know to be critical habitat.

Within the geographic area occupied by the species, we will designate only areas currently known to be essential. Essential areas should already have the features and habitat characteristics that are necessary to sustain the species. We will not speculate about what areas might be found to be essential if better information became available, or what areas may become essential over time. If the information available at the time of designation does not show that an area provides essential life cycle needs of the species, then the area should not be included in the critical habitat designation. Within the geographic area occupied by the species, we will not designate areas that do not now have the primary constituent elements, as defined at 50 CFR 424.12(b), that provide essential life cycle needs of the species.

Our regulations state that, ``The Secretary shall designate as critical habitat areas outside the geographic area presently occupied by the species only when a designation limited to its present range would be inadequate to ensure the conservation of the species.'' (50 CFR 424.12(e)). Accordingly, when the best available scientific and commercial data do not demonstrate that the conservation needs of the species require designation of critical habitat outside of occupied areas, we will not designate critical habitat in areas outside the geographic area occupied by the species.

Our Policy on Information Standards Under the Endangered Species Act, published in the Federal Register on July 1, 1994 (59 FR 34271), provides criteria, establishes procedures, and provides guidance to ensure that our decisions represent the best scientific and commercial data available. It requires our biologists, to the extent consistent with the Act and with the use of the best scientific and commercial

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 should be the listing rule for the species and its supporting documentation. Additional information may be obtained from a recovery plan, articles in peer-reviewed journals, conservation plans developed by states and counties, scientific status surveys and studies, and biological assessments or other unpublished materials (i.e., gray literature).

Habitat is often dynamic, and species may move from one area to another over time. For these reasons, all should understand that critical habitat designations do not signal that habitat outside the designation is unimportant or may not be required for recovery. 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. Areas outside the critical habitat designation will continue to be subject to conservation actions that may be implemented under section 7(a)(1) and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard and the section 9 take prohibition, as determined on the basis of the best available information at the time of the action. We specifically anticipate that federally funded or assisted 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

In determining areas that are essential to conserve the tidewater goby, we used the best scientific and commercial data available. This included data from research and survey observations published in peer-reviewed articles, data collected on the U.S. Marine Corps Base, Camp Pendleton (Camp Pendleton), data collected from reports submitted by biologists holding section 10(a)(1)(A) recovery permits, and comments received on the proposed rule and economic analysis.

Primary Constituent Elements

In accordance with section 3(5) of the Act, for habitat within the geographic range occupied by the species, critical habitat is defined as specific areas that contain those physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. The habitat features (primary constituent elements) that provide for the primary biological needs of foraging, sheltering, reproduction, and dispersal that are essential for the conservation of the species are described at 50 CFR 424.12, and include, but are not limited to, the following:

Space for individual and population growth, and for normal behavior;
Food, water, or other nutritional or physiological requirements;
Cover or shelter;
Sites for breeding, reproduction, or rearing of offspring; and

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Habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

The primary constituent habitat elements for the tidewater goby were determined from studies on their habitat requirements and population biology (Lafferty et al. 1999a, 1999b; Manion 1993; Swensen 1994, 1995, 1999; Swift et al. 1989) and include habitat components that are essential to the biological needs of foraging, nest construction, spawning, sheltering, and dispersal. The foundation for the primary constituent elements of the tidewater goby is provided by coastal lagoons and estuaries supported by a relatively natural hydrologic regime and an environment with so few exotic fishes that tidewater gobies are unaffected by their presence. These elements are described in greater detail below.

Coastal lagoons and estuaries with natural hydrology generally provide several specific habitat elements that gobies require. For instance, aquatic systems supported by a natural hydrological regime are often characterized by a combination of slightly different habitat types: freshwater creek, brackish lagoon, and coastal salt marsh. This habitat variance generally ensures that some deep pockets of permanent water remain as refugia during times of drought; provides for a variety of substrate types, of which sand and silt are necessary for construction of burrows; and provides for structural complexity of the stream channel, which supports various types of aquatic and emergent vegetation. This structural complexity and presence of vegetation may ensure that all gobies are not washed out to sea during flood events (Swensen 1995). Lastly, lagoons and estuaries with a natural hydrological regime and corresponding habitat complexity generally provide for the diversity of prey species (e.g., aquatic invertebrates, including aquatic insect larvae, ostracods, crustaceans, and snails) that gobies require.

The second constituent element of tidewater goby habitat is a system that is free from exotic species or nearly so. Exotic fishes can debilitate, perhaps to the point of extirpation, tidewater goby populations through competition and predation. Largemouth bass, black bass, sunfishes, striped bass, shimofuri gobies, and yellowfin gobies all appear to prey on tidewater gobies. Keeping exotic species out of occupied goby habitats, and eliminating them from potential reestablishment sites will be crucial to the conservation of the goby.

Criteria Used To Identify Critical Habitat

We have limited our designation to Orange and San Diego Counties, because it is within this area that tidewater gobies are threatened with extinction and essential habitat areas for this species can be identified. Currently, within Orange and San Diego Counties no known populations occur outside of Camp Pendleton. Populations on Camp Pendleton fluctuate and most have temporarily been extirpated on several occasions. Because there is a total of only eight populations currently known within Orange and San Diego Counties, a random event or combination of events could affect all eight populations and cause the species to be lost from those counties. Furthermore, because the best available information (Dawson et al. 2000) indicates that tidewater gobies in Orange and San Diego Counties comprise a unique genetic unit, we proposed this population for listing as a DPS (for additional discussion on the DPS, see the June 24, 1999, proposed rule 64 FR 33816).

Our critical habitat designation must take into consideration the fact that the current information indicates that tidewater goby

populations north of Orange County are not in danger of extinction or likely to become so in the foreseeable future. North of Orange County, fluctuations in the number of populations of tidewater gobies are also common. However, these populations are of sufficient number (ranging from about 40 during drought conditions to about 80 under wet conditions) and distribution such that they are not in danger of extinction now or in the foreseeable future. The last pronounced drought (1987-1991) did not threaten the goby north of Orange County with extinction. In nearly all areas where populations were reported absent due to drought or a combination of drought and human-caused factors, gobies repopulated naturally shortly after a return to wetter conditions. Thus, a return to drought conditions does not mean endangerment for the goby populations north of Orange County.

Furthermore, most of the lagoons and estuaries that no longer support gobies north of Orange County lost them decades ago when they were altered in ways that severely, and for all practicable purposes permanently, affected the hydrology, such that they could no longer support gobies. Therefore, while there are some exceptions, north of Orange County tidewater gobies do live in most of the estuaries where they can live (not withstanding normal extirpation and re-colonization within the metapopulation (interconnected subpopulations)). Thus, this historical loss of habitat did not result in a continuing trend toward extinction. In effect, the information on the species current status and trends indicates that, for the tidewater goby populations north of Orange County, the 1994 listing rule misinterpreted the risk of extinction such that the goby was mistakenly listed as endangered (for additional discussion, see the proposed delisting rule 64 FR 33816).

This information was the basis for the delisting proposal, which addressed errors in the original 1994 listing for the tidewater goby populations north of Orange County, along with current goby status and threats. We have received a substantial number of comments on the proposed delisting. However, the main reaction expressed in the comment letters from the public was that the Service, armed with very little new information, was, in its delisting proposal, reversing its position on the status of the goby without basis. The public comment letters also expressed concern that the delisting proposal was arguing that the goby was in less danger of extinction now than in 1994. These comments included carefully reasoned and informed set of suggestions for improving our analysis of current risk of extinction, and we consider this designation in light of that information. At this time, we continue to believe that the 1994 listing rule misinterpreted the risk of extinction and that listing under the Act is not necessary for the tidewater goby populations north of Orange County. However, we want to ensure that we have made the best decision possible and intend to reopen the comment period on the proposed delisting in the near future.

We have not yet made a final determination on the delisting proposal. Therefore, the entire species remains listed, and the Act requires us to designate critical habitat for the species. The facts and analysis described above, however, are highly relevant to the question of what areas constitute critical habitat for the species. In order to be included in a critical habitat designation, the habitat must first be ``essential to the conservation of the species.'' This requires more than that the habitat be essential for the long-term survival and well-being of the species. Rather, the habitat must be essential for the ``conservation'' of the species. Under the Act, ``conservation'' is a technical term, defined as the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which listing under the Act is no longer necessary. In

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the case of a species that, although technically listed, does not meet the standard for listing, e.g., it should be delisted, but that action has not yet taken place, no methods or procedures are required to bring the species to the point where listing is no longer necessary. In other words, that species is already ``conserved,'' as that term is defined in the Act. Thus, as a technical legal matter, no areas can be ``essential to the conservation'' of a species that currently does not warrant listing.

This is precisely the situation with respect to the northern populations of the goby. The best available biological information indicates that listing under the Act is already not necessary for the tidewater goby populations north of Orange County. In other words, the northern populations are already conserved, as that term is used in the Act, and consequently no areas are essential to the conservation of the northern populations. Moreover, we find that no areas north of Orange County are essential to the conservation of the populations in Orange and San Diego Counties. Therefore, the habitat areas for the northern population are not essential to the conservation, as defined in the Act, of any of the populations, or the species as a whole. We are not suggesting that there are no threats to the goby populations north of Orange County or that these populations would not benefit from other actions to manage or protect the species or its habitat. However, given the technical legal requirements of the Act, critical habitat designation is not the appropriate vehicle for addressing this need. Under the Act's definition of critical habitat, no areas north of Orange County qualify for designation as critical habitat for the species. As we continue to analyze the proposed delisting, we will evaluate the best biological information available. If we identify additional areas that are essential to the conservation of the species, we will revise this critical habitat designation as appropriate.

The population in Orange and San Diego Counties is endangered because some of the places where it used to live have been altered so much that they are unsuitable for gobies. These remaining populations, currently eight, fluctuate, and periodically go extinct, only to be repopulated later by colonists from nearby populations. The conservation of the goby depends upon the existence of enough habitat areas to support this natural pattern (Swift et al. 1989, Lafferty et al. 1999). All of the remaining habitat areas which are presently inhabited by gobies are subject to various threats to habitat quality (see analysis in 64 FR 33816) and require special management considerations or protection. These are designated as critical habitat.

In accordance with section 3(5)(A)(ii) of the Act, areas outside the geographical area occupied by the species at the time it is listed may meet the definition of critical habitat upon determination that they are essential for the conservation of the species. The long-term survival of tidewater gobies in Orange and San Diego Counties depends upon the presence of enough habitat areas to support the natural pattern of local extinctions and recolonizations (Swift et al. 1989, Moyle et al. 1995, Lafferty et al. 1999b, Swenson 1999) that characterize its population biology. The eight fluctuating populations where gobies exist today are insufficient in number and quality to remove gobies in this part of the range from a high risk of extinction. Thus, unoccupied habitats which can support gobies in the future play an essential role in the conservation of the goby. To determine which unoccupied areas are essential and should be designated as critical habitat, we evaluated which unoccupied areas could support tidewater gobies, and, by virtue of their geographical distribution, provide for a network of habitat areas supporting gobies and acting as sources of

recolonization for other nearby habitat areas.

Two sites that fulfill these criteria are Aliso Creek, Orange County, and Agua Hedionda Lagoon, San Diego County. The tidewater goby population at Aliso Creek was intensively studied in the 1970s, and the habitat parameters that supported tidewater gobies when they occurred there are well documented (Swift et al. 1989). Habitat parameters have not changed since tidewater gobies occupied the creek (Camm Swift, ichthyologist consultant, pers. comm. 2000, see Summary of Comments and Recommendations section). In Agua Hedionda Lagoon, recent fish surveys found cheekspot (Ilypnus gilberti) and shadow gobies (Quietula y-cauda), species which can co-occur with, and have similar habitat requirements to tidewater gobies indicating that suitable conditions may currently exist in the lagoon to support tidewater gobies (MEC 1995). More recently, a study carefully examined the suitability of habitat in Agua Hedionda Lagoon specifically for tidewater gobies. The study examined habitat parameters such as substrate, salinity, water temperature, water depth, and fish species assemblage, and compared these with values in habitats occupied by tidewater gobies. Results from this study demonstrated that the lagoon can currently support tidewater gobies (Merkel and Associates 1999a and 1999b, see Summary of Comments and Recommendations section). Because suitable habitat exists at both of these lagoons, and because additional tidewater goby localities are within 10 miles of these lagoons, we find that Aliso Creek, Orange County, and Agua Hedionda Lagoon, San Diego County can support tidewater gobies in the future and that these two estuaries contribute to the network of habitat areas that can support tidewater gobies and act as sources of recolonization following the natural pattern of local extinction in other nearby habitat areas. We are designating Aliso Creek, Orange County, and Agua Hedionda Lagoon, San Diego County, because they are essential to the conservation of tidewater gobies.

In defining critical habitat boundaries, it was not possible to exclude existing man-made features and structures within the area designated, such as buildings, roads, railroads, and other features. These features will not themselves contain one or more of the primary constituent elements. Federal actions limited to those features, therefore, would not trigger a section 7 consultation, unless they affect the species and/or primary constituent elements in adjacent critical habitat.

In summary, in determining areas that are essential to conserve tidewater goby, we used the best scientific information available to us. The critical habitat areas described below constitute our best assessment of areas needed for the species' conservation and recovery.

Critical Habitat Designation

For the reasons described above, the following general areas are designated as critical habitat. Where delineated, the 50-year flood plain is used to establish boundaries within the designated waterways. In areas where the 50-year flood plain is not delineated, the presence of alluvial soils (soils deposited by streams), obligate and facultative wetland vegetation, abandoned river channels, or evidence of high water marks will be used to determine the extent of the flood plain and the boundaries for the designation (see legal descriptions for exact habitat boundaries):

1. Aliso Creek (Orange County) and its associated lagoon and marsh from the Pacific Ocean to approximately 1.0 km (0.6 mi) upstream;

2. San Mateo Creek and its associated lagoon and marsh, from the Pacific Ocean to approximately 1.3 km (0.9 mi) upstream;

3. San Onofre Creek and its associated lagoon and marsh from the

Pacific

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Ocean to approximately 0.6 km (0.4 mi) upstream;
4. Las Flores Creek and its associated lagoon and marsh from the Pacific Ocean to Interstate 5 (approximately 1.0 km (0.6 mi));
5. Hidden Creek and its associated lagoon and marsh from the Pacific Ocean to Interstate 5 (approximately 0.8 km (0.5 mi));
6. Aliso Creek and its associated lagoon and marsh from the Pacific Ocean to Interstate 5 (approximately 0.7 km (0.4 mi));
7. French Creek and its associated lagoon and marsh from the Pacific Ocean to Interstate 5 (approximately 0.7 km (0.4 mi));
8. Cockleburr Creek and its associated lagoon and marsh, from the Pacific Ocean to Interstate 5 (approximately 1.0 km (0.6 mi));
9. Santa Margarita River from the Pacific Ocean to a point approximately 5.0 km (3.1 mi) upstream; and
10. Agua Hedionda Lagoon and its associated marsh and creek from the Pacific Ocean to a point approximately 3.7 km 2.3 mi) upstream.

Although the majority of land being proposed for designation is under Federal administration and management, some estuary and riparian habitats are on State, county, city, and private lands. The Aliso Creek segment, Orange County, is owned by the County of Orange, the City of South Laguna, and private interests. Agua Hedionda Lagoon is owned by the San Diego Gas and Electric Company, which leases to the City of Carlsbad, and public and private interests. The segments on San Mateo Creek, San Onofre Creek, Las Flores Creek, Hidden Creek, Aliso Creek, French Creek, Cockleburr Creek, and the Santa Margarita River are on Camp Pendleton.

Effect of Critical Habitat Designation

Section 7 Consultation

Section 7(a) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to jeopardize the continued existence of a threatened or endangered species, or result in the destruction or adverse modification of critical habitat to the extent that the action appreciably diminishes the value of the critical habitat for the survival and recovery of the species. Individuals, organizations, States, local governments, and other non-Federal entities are affected by the designation of critical habitat only if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding. In 50 CFR 402.02, ``jeopardize the continued existence'' (of a species) is defined as engaging in an activity likely to result in an appreciable reduction in the likelihood of survival and recovery of a listed species. ``Destruction or adverse modification'' (of critical habitat) is defined as a direct or indirect alteration that appreciably diminishes the value of critical habitat for the survival and recovery of the listed species for which critical habitat was designated. Thus, the definitions of ``jeopardy'' to the species and ``adverse modification'' of critical habitat are nearly identical.

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 designated or proposed. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies

to confer with us on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. Conference reports provide conservation recommendations to assist the agency in eliminating conflicts that may be caused by the proposed action. The conservation recommendations in a conference report are advisory. If a species is listed or critical habitat is designated, section 7(a)(2) 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. 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. Through this consultation, we would ensure that the permitted actions do not adversely modify critical habitat.

When we issue a biological opinion concluding that a project is likely to result in 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 resulting in the 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 reinitiate consultation on previously reviewed actions in instances where critical habitat is subsequently designated, and 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 reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions may affect newly designated critical habitat and they have retained discretionary involvement in the action. Further, some Federal agencies may have conferenced with us on proposed critical habitat. We may adopt the formal conference report as the biological opinion when critical habitat is designated, if no significant new information or changes in the action alter the content of the opinion (see 50 CFR 402.10(d)).

Activities on Federal lands that may affect the tidewater goby or its critical habitat will require section 7 consultation. Activities on private or State lands requiring a permit from a Federal agency, such as a permit from the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act, or some other Federal action, including funding (e.g., Federal Highway Administration, Federal Aviation Administration, or Federal Emergency Management Agency) will also continue to be subject to the section 7 consultation process. Federal actions not affecting listed species or critical habitat and actions on non-Federal lands that are not federally funded, authorized, or permitted do not require section 7 consultation.

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 adversely modify such habitat, or that may be affected by such designation. Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and require that a section 7

consultation be conducted include, but are not limited to:

(1) Activities such as water diversion or impoundment, groundwater

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pumping, artificial lagoon breaching to protect urban or agricultural areas from inundation, or any other activity that alters water quality or quantity to an extent that water quality becomes unsuitable to support gobies, or any activity that significantly affects the natural hydrologic function of the lagoon system;

(2) Activities such as coastal development, sand and gravel mining, channelization, dredging, impoundment, or construction of flood control structures, that alter watershed characteristics or appreciably alter stream channel and/or lagoon morphology; and

(3) Activities which could lead to the introduction of exotic species, especially exotic fishes, into occupied or potential goby habitat.

To properly portray the effects of critical habitat designation, we must first compare the section 7 requirements for actions that may affect critical habitat with the requirements for actions that may affect a listed species. Section 7 prohibits actions funded, authorized, or carried out by Federal agencies from jeopardizing the continued existence of a listed species or destroying or adversely modifying the listed species' critical habitat. Actions likely to ``jeopardize the continued existence'' of a species are those that would appreciably reduce the likelihood of the species' survival and recovery. Actions likely to ``destroy or adversely modify'' critical habitat are those that would appreciably reduce the value of critical habitat for the survival and recovery of the listed species.

Common to both definitions is an appreciable detrimental effect on both survival and recovery of a listed species. Given the similarity of these definitions, actions likely to destroy or adversely modify critical habitat would almost always result in jeopardy to the species concerned, particularly when the area of the proposed action is occupied by the species. In those cases, it is highly unlikely that additional modification to the action would be required as a result of designating critical habitat. However, critical habitat may provide benefits toward recovery when designated in areas currently unoccupied by the species.

Designation of critical habitat could affect Federal agency activities. Federal agencies already consult with us on activities that may effect the species to ensure that their actions do not jeopardize the continued existence of the species. These actions include, but are not limited to:

(1) Regulation of activities affecting waters of the U. S. under section 404 of the Clean Water Act;

(2) Regulation of water flows, damming, diversion, and channelization by Federal agencies;

(3) Road construction, right of way designation, or regulation of agricultural activities by Federal agencies;

(4) Some military activities on the Camp Pendleton;

(5) Hazard mitigation and post-disaster repairs funded by the Federal Emergency Management Agency;

(6) Construction of communication sites licensed by the Federal Communications Commission; and

(7) Activities funded or authorized by Federal agencies.

This section serves in part as a general guide to clarify activities that may affect or destroy or adversely modify critical habitat. However, specific Federal actions will still need to be reviewed by the action agency. If the agency determines the activity

may affect critical habitat, they will consult with us under section 7 of the Act. If it is determined that the activity is likely to adversely modify critical habitat, we will work with the agency to modify the activity to minimize negative impacts to critical habitat. We will work with the agencies and affected public early in the consultation process to avoid or minimize potential conflicts and, whenever possible, find a solution that protects listed species and their habitat while allowing the action to go forward in a manner consistent with its intended purpose.

If you have questions regarding whether specific activities will constitute adverse modification of critical habitat, contact the Field Supervisor, Carlsbad Fish and Wildlife Office (see ADDRESSES section). Requests for copies of the regulations on listed wildlife and inquiries about prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Branch of Endangered Species, 911 N.E. 11th Ave, Portland, OR 97232 (telephone 503-231-2063, facsimile 503-231-6243).

Summary of Comments and Recommendations

In the August 3, 1999, proposed rule (64 FR 42250), we requested interested parties to submit factual reports or information that might contribute to development of a final rule. The 60-day comment period closed on October 4, 1999. We contacted appropriate Federal and State agencies, county and city governments, scientific organizations, and other interested parties. We reopened the comment period on October 15, 1999, (64 FR 55892) to announce the time and location of public hearings and provide for additional public comment. We published public notices of the proposed rule in the North County Times, the San Diego Union Tribune, and the Orange County Register, on October 18, 1999, which invited general public comment. We posted copies of the proposed rule and draft economic analysis on our internet site. We held two hearings on November 4, 1999, in Carlsbad, California. Notices appeared in the previously named newspapers on October 18, 1999, to announce the extension of the public comment period until November 30, 1999, and the scheduling of the public hearings in Carlsbad, California, on November 4, 1999. Transcripts of the hearings are available for inspection (see ADDRESSES section). On June 28, 2000, we published a notice (65 FR 39850) announcing the reopening of the comment period and the availability of the draft economic analysis on the proposed determination. The comment period was opened for an additional 30-days, closing on July 28, 2000.

We requested four ichthyologists (fish biologists) familiar with the species to review the proposed critical habitat designation. However, only two responded by the close of the comment period. Both of these reviewers provided valuable information about the biology, status, and range of the species, and suggested adding areas to the critical habitat designation. These comments are addressed in this section, and relevant data provided by the reviewers has also been incorporated into the ``Background'' section.

We received a total of 40 written and 28 oral comments during the public comment periods. Of those written comments, eight supported critical habitat designation, 30 opposed critical habitat designation, and two provided additional information. Of those oral comments, 3 supported critical habitat designation, 24 opposed critical habitat designation, and one provided additional information. Written and oral comments were received from one Federal agency, two state agencies, six local agencies, and 28 private organizations, companies, and individuals. Several commenters commented multiple times, both written and orally. All comments received were reviewed for substantive issues and new data regarding critical habitat and the biology and status of

the tidewater goby. We address all comments received during the comment periods and public hearing testimony in the following summary of issues. Comments of a

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similar nature are grouped into a single issue.

Issue 1: Procedural and Legal Compliance

The following comments and responses involve issues related to public involvement in the designation process and compliance with the Act and other laws, regulations, and policies.

Comment 1a: The creation of the Orange and San Diego Counties distinct population segment of the tidewater goby is invalid because it was created as part of a proposal to delist the tidewater goby in a portion of its range. The Service should first delist the species throughout its entire range, then propose the DPS separately.

Our Response: This final rule designating critical habitat for the tidewater goby finalizes the proposed designation of critical habitat for the tidewater goby (64 FR 42250) that addressed the conservation of the species throughout its entire range. The proposed rule to create a DPS and remove the northern populations of the tidewater goby from the list of threatened and endangered species was a separate proposed rule (64 FR 33816). In the section above titled ``Criteria Used To Identify Critical Habitat,'' we provide a detailed explanation as to the basis for this designation, including how this critical habitat designation relates to the proposed DPS and delisting. As discussed in our response to comment 1b, we must make a determination regarding critical habitat for the entire species at this time, based on the best information available.

Comment 1b: The Service cannot designate critical habitat on a proposed Distinct Population Segment (DPS). Because the Service has designated critical habitat for a DPS that has not yet been listed in a final rule, the proposed critical habitat designation is invalid.

Our Response: The Act requires us to designate critical habitat for the species, not the proposed DPS. Although our designation is limited to Orange and San Diego Counties, it is not because we are designating critical habitat for the proposed DPS, but rather those are the areas that we have identified that meet the definition of critical habitat for the species. In the section above titled ``Criteria Used To Identify Critical Habitat,'' we provide a detailed explanation as to the basis for this designation, including how the designation relates to the proposed DPS.

Comment 1c: The Service fails to include any economic analysis in its proposed rule, and thus gives inadequate notice of the action proposed.

Our response: In the proposed rule, we acknowledged that section 4(b)(2) of the Act requires us to consider the economic and other relevant impacts of designating a particular area as critical habitat. We also stated that we would conduct an analysis of the economic impacts of designating these areas as critical habitat prior to a final determination and announce the availability of the draft economic analysis with a notice in the Federal Register. We conducted an economic analysis. On June 28, 2000 (65 FR 39850), we published a notice in the Federal Register announcing the availability of the draft economic analysis and reopening the public comment period for 30 days.

We utilized the economic analysis, and took into consideration comments and information submitted during the public hearing and comment period, to make this final critical habitat designation. We may

exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as critical habitat. We cannot exclude such areas from critical habitat when such exclusion will result in the extinction of the species.

Comment 1d: The Service cannot designate critical habitat until it first complies with National Environmental Policy Act requirements.

Our Response: An environmental assessment and/or an environmental impact statement as defined by the National Environmental Policy Act of 1969 need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice in the Federal Register outlining our reasons for this determination on October 25, 1983 (48 FR 49244). This rule does not constitute a major Federal action significantly affecting the quality of the human environment.

Comment 1e: The proposed rule is based on unpublished data that has not been made available to the public for review. The commenter asserts that the Service has proposed a regulatory action on the basis of secret data that has never been made available for public comment.

Our Response: The commenters use ``Lafferty, et al. (in prep.)'' and ``Jacobs (in litt. 1998)'' as examples of unpublished data not available to the public for review. However, we made both references available to the public, as indicated in the ``References Cited'' section of the proposed rule. They were also part of the administrative record for the proposed rule. Additionally, the two citations referred to as ``Lafferty, et al. (in prep.)'' were published in 1999 (Lafferty et al. 1999a and 1999b) and were available as peer-reviewed literature during the second comment period on the proposed rule. The material cited in ``Jacobs (in litt. 1998)'' is now in an unpublished manuscript that has been submitted for publication and is cited in this final rule as ``Dawson et al. 2000.''

Comment 1f: One commenter stated that it was inappropriate for us to fail to designate critical habitat for the populations north of Orange County solely on the basis of the proposed rule to delist those populations. In particular, the commenter claims that doing so would be in violation of the April 5, 1999, order requiring the Service to propose designation of critical habitat for the species.

Our Response: The comment is based on the erroneous understanding that we artificially limited the proposed, and now final, rules to designate critical habitat for the tidewater goby because of the existence of a proposed rule to delist the tidewater goby in a portion of its range. In fact, the proposed and final critical habitat designation and the proposed delisting rule is irrelevant to the question of what areas should be designated as critical habitat for the tidewater goby. What is relevant is that our analysis of the best available information indicates that the areas north of Orange County do not constitute critical habitat as defined by the Act. This is discussed in greater detail in the section above titled, ``Criteria Used To Identify Critical Habitat.'' Although this same information is also the basis for the proposed delisting, that action and this one are separate and independent administrative actions. Finally, the Court on November 19, 1999, dismissed a motion to enforce judgement based on the same grounds that the commenter raised.

Issue 2: Biological Concerns

The following comments and responses involve issues related to the biological basis for the designation.

Comment 2a: The use of the 50-year flood plain to define the lateral extent, or width of the critical habitat units, is unrealistic.

The 50-year flood plain has not been delineated in most of the areas containing critical habitat units.

Our Response: We agree that the use of the 50-year flood plain is not easily defined in certain areas where the 50-year flood plain is not delineated or is in dispute. In those cases, we have changed the lateral extent of critical

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habitat designation to be the presence of alluvial soils (soils deposited by streams), obligate and facultative riparian vegetation (requiring and usually occurring in wetlands respectively), abandoned river channels, or known high water marks. These features characterize the lateral extent of critical habitat within rivers, streams, and their associated estuaries where the 50-year flood zone has not been identified. Existing man-made features and structures within this area, such as buildings, roads, railroads, and other features, do not contain, and do not have the potential to develop the primary constituent elements for the tidewater goby.

Comment 2b: Tidewater gobies are not documented to occur in upstream portions of rivers and streams in Orange and San Diego Counties. There is no evidence that the upstream areas proposed meet the Service's definition of critical habitat for the tidewater goby.

Our Response: Tidewater gobies often migrate upstream into tributaries up to 2.0 km (1.2 mi) from estuaries. In San Antonio Creek and the Santa Ynez River in Santa Barbara County, tidewater gobies are often collected 5-8 km (3-5 mi) upstream of the tidal or lagoonal areas, sometimes in beaver-impounded sections of streams (Swift et al. 1989). The fish move upstream in summer and fall as sub-adults and adults. There is little evidence of reproduction in these upper areas (Swift et al. 1997).

Tidewater gobies were collected in Trabuco Creek, Orange County, in 1939, approximately 4.5 km (2.8 mi) from the ocean (mouth of San Juan Creek) (UMMZ collection number 133000). In San Diego County, tidewater gobies were collected from the Santa Margarita River approximately 3.5 km (2.2 mi) from the mouth of the River in 1991. Presumably, they may have occurred further upstream if not for a beaver dam, which at that time acted as an effective barrier to fish movement (Holland 1992). This speculation turned out to be an accurate prediction when in May 2000, several years after the beaver dams were removed by high flood flows, gobies were collected approximately 4.5 km (2.8 mi) upstream of the mouth of the Santa Margarita River in the vicinity of the power line crossing (D. Holland, pers. comm. 2000). Clearly, tidewater gobies can occupy upstream portions of creeks in San Diego and Orange counties.

Little is known about why tidewater gobies utilize these upstream areas. Swenson (1995) found that tidewater gobies in marsh habitats in these upstream areas were larger and had fewer parasites than gobies in nearby creek and lagoon habitats. However, Swenson (1995) also found that gobies of all life stages occurred in lagoon, marsh, and creek habitats, indicating that they can complete their life cycle in any of the three habitat types. Because all life history stages of the species can be found here these areas are important to the species and we are including upstream areas as part of the critical habitat units in this designation.

Comment 2c: One commenter claimed that the proposed rule has overstated the potential impacts of the Foothill Transportation Corridor South to tidewater gobies. In contrast, another commenter expressed concern about the significant and enduring impacts to upland and riparian species, including tidewater gobies, from the proposed

preferred alignment of the Foothill Transportation Corridor South.

Our Response: The proposed ``CP alignment'' of the Foothill Transportation Corridor South (FTCS), if constructed, may have substantial negative impacts to the tidewater goby, specifically in San Mateo and San Onofre Creeks (Michael Brandman and Associates 1997). The lagoons at the mouth of San Mateo Creek and San Onofre Creek are both now occupied by tidewater gobies, and these two lagoons typically support large goby populations from several thousand to approximately 70,000 gobies (Swift and Holland 1998). These two populations, along with Las Flores Creek, are the largest and most persistent in the region and are thought to serve as source populations for dispersal into the ephemeral estuaries and streams in the area. Thus these populations are important to the recovery of the tidewater goby.

The FTCS CP alignment would have both significant short-term and long-term impacts to tidewater gobies in the San Mateo Creek and San Onofre Creek drainage basins (Michael Brandman and Associates 1998). Short-term impacts would include mortality and temporary loss of habitat for breeding, feeding, and sheltering due to blockage or diversion of water flow, increased siltation from the required cut and fill of thousands of tons of earth, and the disturbance of low oxygen sediments. Long-term impacts would include: the permanent alteration of the hydrologic regime, primarily in changes to flow regimes, temperature patterns, and sediment movement characteristics of the streams; permanent loss of habitat for breeding, feeding, and sheltering due to siltation; and permanent deterioration in water quality of the streams from the continuous input of heavy metals and other contaminants. These types of changes to the abiotic elements of a stream are often associated with corresponding changes to the ichthyofauna (fish species assemblage within a region). Generally, this kind of disturbance results in an increase of exotic fish species to the detriment of the indigenous (native) ichthyofauna (Moyle and Light 1996). A preliminary investigation of the impacts to tidewater gobies from the CP alignment found that these impacts would be less than significant after mitigation (Michael Brandman and Associates 1998). However, we believe that the benefits of the proposed mitigation would be minimal and that construction of the CP alignment would likely result in the loss of these populations and potentially preclude recovery for this species.

Issue 3: Economic Analysis

There were numerous comments that addressed economic issues.

Comment 3a: The Service should recognize the importance of the coastal railway corridor and that any critical habitat designation is not intended to impede rail service or the maintenance or improvement of rail facilities in the coastal railway corridor.

Our Response: The coastal railway crosses all tidewater goby critical habitat units. Any activities permitted, funded, or carried out by a Federal agency that jeopardize the species or destroy or adversely modify its critical habitat will require a section 7 consultation with the Service. Any non-federal activity resulting in take of tidewater gobies, as defined by the Act, will require a section 10(a)(1) permit issued by the Service. We will work closely with the responsible agencies within the coastal railway corridor to avoid and minimize impacts to tidewater goby populations and critical habitat from future maintenance or improvements to the coastal railway. Consultations will now need to consider critical habitat.

Comment 3b: Designation of critical habitat will cause private property values to decline and will negatively affect businesses.

Our Response: The economic analysis indicates that designation of

critical habitat for the tidewater goby will not have a significant economic impact. The economic analysis does acknowledge that the designation of critical habitat may affect private property values. We believe that this short-term effect would occur from market uncertainty and public perception of the perceived impacts of the critical habitat designation on property values. We also believe that this short-term effect on property values would diminish over time. We did not find supporting

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evidence during the preparation of the economic analysis to estimate or document this potential short-term effect on property values. The economic analysis determined that there will be an insignificant impact to businesses.

Comment 3c: The Service must consider the economic impacts of critical habitat designation on the Encina Power Station located at the mouth of Agua Hedionda Lagoon. The power plant is a must-run facility that provides 25 percent of all power used in San Diego County. The operators of the facility have raised concerns that the designation of critical habitat would result in ecological modifications to the marine environment in order to return the lagoon to the brackish coastal environment preferred by the goby. According to the operators, returning the lagoon to its former condition would threaten the power station's ability to maintain use of its cooling system, which currently relies on water temperature and flow more characteristic of a tidal environment.

Our Response: We believe that the existing characteristics of Agua Hedionda as fully tidal lagoon would not be altered by designation of critical habitat for the goby. As such, designation of critical habitat for Agua Hedionda is not expected to impact the ability of the power station to continue functioning. The Encina Power Station, however, currently operates under numerous Federal permits, including permits relating to air emissions, water discharge, dredging, and oil spill response. The main impact is that critical habitat will need to be considered in consultations on renewals of existing Federal permits or to obtain new permits.

Comment 3d: One commenter voiced concern that the draft economic analysis failed to consider impacts from critical habitat designation in unoccupied units.

Our Response: The draft economic analysis addressed current and future activities in unoccupied units. We have withdrawn the proposed designation of critical habitat for Buena Vista Lagoon (see explanation under response to comment 4b3, below). In most cases, there was no evidence that the proposed activity would involve a Federal nexus. In the absence of a Federal nexus, critical habitat designation would have no impact on the proposed activity. In a few cases, however, a Federal nexus associated with a proposed activity was identified. In such cases, the draft economic analysis addresses the potential delays and administrative costs attributable to new Section 7 consultations. Discussion of these costs can be found on pages 19, 20, 21, 22, and 24 of the report.

Comment 3e: One commenter indicated that the draft economic analysis is flawed because it does not account for the fact that the proposed critical habitat includes ``waters of the United States.''

Our Response: The draft economic analysis considered the regulatory program of the U.S. Army Corps of Engineers to authorize the discharge of dredged and fill material into ``waters of United States'' under the section 404 of the Clean Water Act (see Exhibit ES-1, Summary of Impacts of Under the Proposed Designation of Critical Habitat for the

Tidewater Goby in the final economic analysis available from the Carlsbad Fish and Wildlife Office (see ADDRESSES section)).

Comment 3f: Two commenters indicated that the incremental approach used in the draft economic analysis is improper and fails to comply with the requirements set forth in the Act.

Our Response: We do not agree that the economic impacts of the listing should be considered in the economic analysis for the designation of critical habitat. The Act requires that listing decisions be based solely on the best available scientific and commercial data available (section 4(b) of the Act). Congress also made it clear in the Conference Report accompanying the 1982 amendments to the Act that ``economic considerations have no relevance to determinations regarding the status of species * * *.'' We use the economic analysis to make decisions on excluding areas from critical habitat under section 4(b)(2) of the Act. The section 4(b)(2) exclusion process does not include an economic analysis related to the listing of a species. Our economic analysis evaluates the incremental effect of critical habitat on current or planned activities and practices and does not address effects associated with the listing of the species.

Comment 3g: One commenter stated that the draft economic analysis failed to account for the current housing shortage in California.

Our Response: The final critical habitat designation for the goby includes ten coastal tributaries in Orange and San Diego Counties. As the units are limited to bodies of water and its associated flood plain, the designation of critical habitat for the goby would not reduce the amount of developable land or exacerbate the current housing shortage in the affected counties.

Comment 3h: One commenter indicated that the draft economic analysis failed to address the cumulative impact of multiple critical habitat designations.

Our Response: Under the requirements set forth by the Act, the Service is required to estimate the potential impacts attributable to the proposed government action, in this case the designation of critical habitat for the goby. The Service is not required to evaluate the potential cumulative impacts associated with the listing or critical habitat for multiple species. However, the draft economic analysis of critical habitat for the goby considers the incremental impacts of designating critical habitat in the context of existing baseline regulations. As such, the analysis considers the economic effects of critical habitat designation for the goby in the context of other Federal, state, or local regulations, as well as additional species protected by the Act.

Comment 3i: One commenter stated that the draft economic analysis failed to address the economic impacts associated with modifying Agua Hedionda Lagoon.

Our Response: The designation of critical habitat for the goby will not result in modifications to the current ecological conditions at Agua Hedionda Lagoon. Recent research (Merkle and Associates 1999) indicates that the current ecological conditions at Agua Hedionda are suitable for the goby. As a result, no modifications to the lagoon will occur as a result of designation of critical habitat, and no economic impacts associated with modifications to Agua Hedionda are expected.

Comment 3j: One commenter stated the draft economic analysis failed to assess the economic impacts on private persons and state entities that lack a Federal nexus.

Our Response: The primary effect of a critical habitat designation is regulatory and occurs under section 7 consultation of the Act, when Federal agencies must consult with the Service whenever activities they fund, authorize, or carry out may affected listed species or designated critical habitat. Activities on land owned by individuals,

organizations, states, local, and Tribal governments only require consultation with the Service if their actions occur on Federal lands; require a Federal permit, license, or other authorization; or involve Federal funding. If there is no Federal nexus, we do not anticipate that the designation will have a significant economic impact on private persons and state entities. The economic analysis does acknowledge that the designation of critical habitat has the potential to affect

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private property values (see response to comment 3b).

Comment 3k: One commenter expressed concern that public comments submitted by the North San Diego County Transportation Board (NCTD) on the proposal to designate critical habitat for the goby were not included in the draft economic analysis.

Our Response: Public comments submitted by the North San Diego County Transportation Board (NCTD) in July 2000, were incorporated into the final economic analysis of critical habitat designation for the goby.

Comment 3l: One commenter expressed concern that the draft economic analysis did not address current water quality maintenance activities in Aliso Creek conducted by the County of Orange.

Our Response: A discussion of current and future water quality maintenance activities in Aliso Creek, based on public comments submitted in July 2000, was incorporated into the final economic analysis of critical habitat designation for the goby.

Issue 4: Site Specific Issues

The following comments and responses involve issues related to the inclusion or exclusion of specific areas, or our methods for selecting appropriate areas for designation as critical habitat. We received comments challenging our proposed determination of critical habitat for all the proposed units.

Comment 4a: Several commenters pointed out errors in mileages, locations, or descriptions in the proposed rule.

Our Response: Corrections have been made in the final rule to reflect these comments, where appropriate.

Issue 4b: We received comments for all 11 units proposed for designation asserting that the specified unit(s) was unsuitable for designation, or they recommended the specific unit(s) be excluded from designation.

Our Response: We carefully considered the information provided in the comments regarding requested exclusions and removals. The following is an overview of our rationale for areas retained as well as the rationale for specific units (responses 4b1 through 4b5).

Comment 4b1: Aliso Creek cannot currently support tidewater gobies, and restoration of the lagoon for the species is unrealistic at this time.

Our Response: Many of the ecological characteristics of Aliso Creek lagoon have not changed noticeably since gobies occupied the creek in the late 1970's (Camm Swift, ichthyologist consultant, pers. comm. 2000). The predominant substrate is sand. Small patches of aquatic vegetation typical of a coastal marsh (Typha, Scirpus, Salicornia, and Distichlis) grow around the margin of the lagoon. The system still forms a brackish water lagoon in the spring, which is usually opened to the ocean later in the year by winter flows. The water quality of the lagoon in the 1970's was such that warning signs were posted to keep beach visitors out of the lagoon's waters. This, too, has not changed. Although the watershed has become more urbanized over the past 2

decades, there has not been a noticeable change in the lagoon since it was formerly occupied by the species.

Currently, the local agency stakeholders are working with the U.S. Army Corps of Engineers to develop an Aliso Creek Watershed Management Plan with the central goal of restoring the watershed. We believe that because the lagoon has not changed noticeably since the 1970's, and because there is now a concerted effort by the community to restore the watershed upon which the lagoon depends, Aliso Creek represents one of the most promising prospects for reestablishing a goby population. As such, Aliso Creek and its lagoon are essential to the conservation of the species and are therefore designated as critical habitat.

Comment 4b2: The Service should not designate any areas on Camp Pendleton because populations on the base have remained relatively stable, and all threats to tidewater goby populations are addressed by the existing biological opinions, management programs, and within the ongoing NEPA-compliance program of the base.

Our Response: Currently, tidewater gobies occupy eight locations on Camp Pendleton. These include, from north to south, San Mateo Creek, San Onofre Creek, Las Flores Creek, Hidden Creek, Aliso Creek, French Creek, Cockleburr Creek, and the Santa Margarita River. All eight localities are relatively pristine coastal wetlands and are all crossed or just downstream of Interstate 5 and the coastal railway.

Although currently there are eight locations on Camp Pendleton occupied by the species, this situation is rare and has not previously been recorded. As recently as 1991 the number of occupied goby localities was only three (Swift and Holland 1998, Dan Holland in litt. 1999). Of the eight currently occupied areas, only one of these, Las Flores Creek, has remained continuously occupied since 1987. San Mateo Creek and San Onofre Creek have both been extirpated in recent years as a result of human-caused habitat alteration. Hidden Creek appears to be perennial but may become so hypersaline in a severe drought as to be unsuitable for any fish species (Swift and Holland 1998). Aliso Creek, French Creek, and Cockleburr Creek are all relatively ephemeral and have not supported gobies in times of drought. The Santa Margarita River seemed to be a large stable population until 1991, but gobies disappeared in 1991, shortly after the exotic yellowfin goby (Acanthogobius flavimanus) became abundant in the estuary.

In the proposed rule, we stated that all eight historic and currently occupied tidewater goby locations in southern California contained the primary constituent elements necessary to support gobies. This has been substantiated by the fact that all eight locations are now occupied. We believe that these localities represent the center of the metapopulation in Orange and San Diego Counties and will be the keystone for recovery of the species. As such, these areas are essential to the conservation of the species.

Pursuant to the definition of critical habitat, an area must also require ``special management considerations or protections.'' This is a term that originates in the definition of critical habitat in section 3 of the Act. Adequate special management or protection is provided by a legally operative plan that addresses the maintenance and improvement of the essential elements and manages for the long-term conservation of the species. The Service considers a plan adequate when it meets all of the following three criteria: (1) The plan provides a conservation benefit to the species (i.e., the plan must maintain or provide for an increase in the species' population or the enhancement or restoration of its habitat within the area covered by the plan); (2) the plan provides assurances that the management plan will be implemented (i.e., those responsible for implementing the plan are capable of accomplishing the objectives, have an implementation schedule and/or have adequate funding for the management plan); and (3) the plan

provides assurances the conservation plan will be effective (i.e., it identifies biological goals, has provisions for reporting progress, and is of a duration sufficient to implement the plan and achieves the plan's goals and objectives). If an area is covered by a plan that meets these criteria, it does not constitute critical habitat as defined by the Act.

In 1995, the Service issued a programmatic biological opinion on the ``Programmatic Activities and Conservation Plans in Riparian and Estuarine/Beach Ecosystems on Marine

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Corps Base, Camp Pendleton,'' including an Estuarine/Beach Ecosystems Conservation Plan (Biological Opinion 1-6-95-F 02, 1995). The reasonable and prudent measures of the biological opinion require the Marines to adopt and implement the Estuarine/Beach Ecosystem Conservation Plan.

The Estuarine/Beach Ecosystem Conservation Plan is structured to minimize the effects to listed species resulting from programmatic impacts associated with ongoing and future training, maintenance, recreation, and construction activities. Because the terms and conditions are mandatory, there are assurances that Conservation Plan will be implemented, and the Marines have the authority to carry out the measures in the plan. Therefore, our second special management criterion is also met. However, because the conservation plan outlines broad goals for benefiting tidewater gobies without clearly identifying specific conservation efforts, its effectiveness is not assured. The Estuarine/Beach Ecosystem Conservation Plan does not contain specific biological objectives for the tidewater goby. The Conservation Plan focuses primarily on avian species. It does not identify specific measures or targets to achieve an increase in the tidewater goby population size. Also, because the plan is general in nature, it does not outline parameters that can be used to measure achievement of objectives or standards by which to measure them. Population surveys and monitoring requirements are identified in the Conservation Plan, but have not been met as defined in the plan. The Service is unable to determine that the Estuarine/Beach Ecosystem Conservation Plan will be effective, and consequently, it is not adequate to preclude the need to designate critical habitat.

Comment 4b3: Buena Vista lagoon is currently unsuitable for supporting a population of tidewater gobies. The designation of Buena Vista Lagoon as critical habitat for the tidewater goby is premature at best and could actually preclude the modifications needed to create such habitat.

Our Response: Buena Vista Lagoon, a California Department of Fish and Game Ecological Reserve, is currently predominated by freshwater marsh conditions, and is closed to the Pacific Ocean by a concrete weir. This configuration, as well as the Pacific Coast Highway, the coastal railway, and Interstate 5 bridges, which are all predominantly dirt fill structures, constrict the lagoon such that sediment can no longer be moved through the system. The lagoon has been gradually filling with sediment and, without modifications to the system, the lagoon will conceivably fill entirely, transforming the lagoon into a mud flat. This situation has become apparent to the California Department of Fish and Game (CDFG), the Buena Vista Lagoon Foundation, and residents of the local communities in Carlsbad and Oceanside (Tim Dillingham CDFG pers. comm. 1999, Ron Wooton, Buena Vista Lagoon Foundation, pers. comm 1999).

In its current configuration, Buena Vista Lagoon is essentially a freshwater lake with a fish fauna that consists entirely of non-native

freshwater fishes. Some of these, such as largemouth bass (Lepomis macrochirus), have been implicated in the decline of tidewater gobies (Swift et al. 1997). However, if the lagoon were once again open to the Pacific Ocean, the habitat could support tidewater gobies. Opening the lagoon to tidal flushing would also provide an outlet to move sediment through the system, which would prevent the lagoon from becoming a mud flat, and provide some sediment to the ocean to help build local beaches. We believe that simply removing the weir structure at the mouth of the lagoon and replacing it with a structure that would permit tidal flow would be enough to restore some goby habitat to the lagoon.

The Buena Vista Lagoon Foundation is a non-profit private corporation dedicated to the protection and maintenance of Buena Vista Lagoon. The Foundation has a memorandum of understanding with the CDFG authorizing it to prepare an Ecological Reserve Land Management Plan (ERLMP) on behalf of the department. Among the proposals being considered is the potential for establishing a tidal flushing system which would open the lagoon to the Pacific Ocean. We feel that Buena Vista Lagoon could provide essential habitat for the tidewater goby and that the current direction of the ERLMP toward a more tidal system at Buena Vista Lagoon will accommodate the creation of tidewater goby habitat. However, while we believe Buena Vista Lagoon could be restored to provide tidewater goby habitat, we do not have information demonstrating such restoration is essential to the conservation of the species. Therefore, we are removing it from the designation.

Comment 4b4: Agua Hedionda Lagoon is unsuitable for tidewater gobies and so should not be designated as critical habitat.

Our Response: We received a number of comments questioning the feasability of Agua Hedionda Lagoon to support tidewater gobies. These commenters claimed that the habitat in Agua Hedionda Lagoon had been so altered since 1940, the last year in which gobies were collected from the lagoon, that the lagoon could not only not support tidewater gobies, but that the possibility of restoration of the lagoon for the species was not feasible. Many of these comments were grounded in the misconception that the lagoon would have to be restored to pre-1940 conditions to support the species. These commenters were concerned that critical habitat would trigger widespread lagoon alterations to restore habitat and thereby eliminate the many and varied uses of this tidal lagoon. Also, the commenters were concerned that alterations necessary to make suitable habitat for gobies would reduce the habitat suitability for other sensitive species that currently occupy the lagoon. We believe areas within the lagoon could support gobies now, without any restoration effort, and without any extensive changes to the current configuration or uses of the lagoon. We address habitat suitability within the lagoon here, and will deal with the effects of the designation on Agua Hedionda Lagoon and the various uses within it in the succeeding comment.

The comments we received generally cited four habitat elements within the lagoon as being unsuitable for gobies: water quality, salinity, sediment, and the presence of predatory species. The most recent survey effort of fishes and sediments was conducted by Merkel and Associates (1999) on September 23, 1999. The water quality, salinity, sediment, and fish species composition results of this survey indicated to us that not only are there areas within the lagoon that could support the tidewater goby, but that the lagoon will probably not require any restoration to do so (Merkel and Associates 1999).

Merkel and Associates (1999) reported that salinity measurements of the areas of the eastern lagoon ranged from 5 to 48 ppt with an average of about 26.5 ppt. The tidewater goby is often found in waters of relatively low salinities (around 10 ppt) in the uppermost brackish zone of larger estuaries and coastal lagoons, but can tolerate a wide

range of salinities, and has been collected at salinities as high as 42 ppt (Swift et al. 1989, 1997; Worcester 1992, Worcester and Lea 1996; Swenson 1995). A recent survey of French Creek Lagoon in June of 2000 found thousands of tidewater gobies of all life stages. Salinity in French Creek Lagoon during this survey ranged from 45-51 ppt and temperatures ranged from 31-32 deg.C (Service field data 2000). Merkel and

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Associates (1999) also reported that water temperatures within the lagoon were 21-22 deg.C and depth ranged from 0.1 to 1.0 m. Tidewater gobies are usually collected in water less than 1 m (3 ft) deep, and in temperatures typically between 9-25 deg.C (Swift et. al. 1989; Wang 1982; Irvin and Soltz 1984; Worcester 1992; Swenson 1995). Thus, depth and temperature are also within the range usually occupied by gobies. Given what we know of the water quality tolerances and preferences of this species for salinity, temperature, and depth, the conditions in the eastern end of Agua Hedionda Lagoon appear suitable to support gobies.

Merkel and Associates (1999) found that sediments in the east end of Agua Hedionda Lagoon ranged from fine sand to silt/clay. Although there are no comprehensive studies comparing the sediment composition of tidewater goby habitats in different localities, there appears to be preference of gobies for coarser sand substrates, especially for breeding (Swift et al. 1989, Worcester 1992, Swenson 1995). However, muddy, marshy conditions are a typical feature in tidewater goby habitats, and have been shown to be occupied by gobies in San Antonio Creek, the Santa Ynez River, Aliso Creek (Orange County), San Mateo Creek, San Onofre Creek, Las Flores Creek, French Creek, Aliso Creek (San Diego County) and the Santa Margarita River (Swift et al. 1989, Holland 1992, Swift et. al. 1994, Swift et al. 1997, Swift and Holland 1998, Service field data 2000). Swenson (1995) found that in San Gregorio and Pescadero Creek, tidewater gobies inhabited a variety of habitats, including (1) sandy lagoons, (2) mud or gravel-bottomed reaches of creeks, and (3) muddy marsh pools. Swenson (1995) also found that tidewater gobies of all life stages were collected in all three of these habitat types, suggesting that tidewater gobies can complete their life cycle in any one of the three. Worcester (1992) found that although tidewater gobies were significantly associated with coarse sand and fine gravel substrates, their distribution was significantly associated with a number of other physical habitat parameters, so it was unclear how important substrate was in determining their presence. Page (Carl Page pers. com. 2000) has found that tidewater gobies are actually most strongly associated with food abundance in Lake Earl, Del Norte County, and showed little preference for substrate. Furthermore, Page found that tidewater gobies commonly utilized silt dominated muddy habitats, built breeding burrows and spawned in these muddy habitats, and that their post planktonic larvae utilized muddy silt dominated habitats exclusively, presumably due to food availability. Based on this information, we conclude that substrates in Agua Hedionda Lagoon would not preclude the occurrence of tidewater gobies, and that they could occupy these areas.

Merkel and Associates (1999) found that the shoreline was steep sided at the east end of Agua Hedionda Lagoon, and stated this feature may make the lagoon unsuitable for tidewater gobies. In fact, tidewater gobies occupy a number of lagoon and estuarine habitats that are more steeply sided than Agua Hedionda Lagoon. An example of such a lagoon is Hidden Creek, San Diego County. This lagoon consists of what can only be described as a slot canyon with vertical walls extending from the

bottom of the lagoon to as much as 10 m above the water's surface. Other occupied lagoons at Aliso Creek (San Diego County), Cockleburr Creek, Shuman Lagoon, and the Santa Ynez River all have steep sides as a prominent habitat feature (Swift et al. 1997, Swift and Holland 1998). Therefore, the shoreline configuration at Agua Hedionda appears suitable for tidewater gobies.

Another contention of some commenters as to the suitability of Agua Hedionda for tidewater gobies was that occurrence of native and non-native competitors and predators in the lagoon would preclude the possibility of occupation by tidewater gobies. Merkle and Associates (1999) found the following fish species at Agua Hedionda in September 1999: California killifish (Fundulis parvipinnis), topsmelt (Atherinops affinis), deepbody anchovy (Anchoa compressa), arrow goby (Clevelandia ios), mosquitofish (Gambusia affinis), striped mullet (Mugil cephalous), and California butterfly ray (Gymnura marmorata). With the exception of the California butterfly ray, these are all species that the tidewater goby currently co-occurs with in other lagoons in San Diego County (Swift and Holland 1998). Fish surveys of the inner lagoon in 1994 and 1995 (Marine Environmental Consultants in litt. 1997) found 23 species, all native, and most, species that the tidewater goby co-occurs with, with the exception of the yellowfin goby (Acanthogobius flavimanus). Yellow fin gobies are a non-native species thought to compete and predate on tidewater gobies (Wang 1984, Swift and Holland 1998). Yellowfin gobies were not present in the most recent survey (Merkel and Associates 1999). We conclude that the fish fauna of Agua Hedionda Lagoon is suitable for tidewater gobies, and, in fact, is representative of faunas gobies co-occur with in other coastal lagoons.

Jenkins and Wasyl (1999) analyzed tidewater goby migration based on the coastal currents in the vicinity of Agua Hedionda Lagoon. The authors were addressing the effects of existing offshore current patterns on the success of tidewater goby dispersal to adjacent lagoon habitats. The authors found that 55-60 percent of nearshore currents at Agua Hedionda had a net southward transport, and 40-45 percent of nearshore currents had a net northward transport. The authors also estimated that the probability that northward nearshore currents would transport gobies to Buena Vista Lagoon to the north was about 0.4 percent. They did not estimate the probability of gobies being transported to Batiquitos Lagoon to the south. While this report examined an interesting line of research, two recently published studies documented the dispersal of tidewater gobies among coastal lagoons (Lafferty et al. 1999a, 1999b).

Comment 4b5: We received a number of comments concerning the potential changes or alterations to Agua Hedionda Lagoon resulting from a critical habitat designation. Many of these commenters believed that critical habitat designation would result in widespread changes to the existing configuration of the lagoon and the corresponding affects to current uses of the lagoon.

Our Response: Agua Hedionda Lagoon is dredged to retain tidal influence within the lagoon which provides for a deep tidal bay type of habitat. This configuration also accommodates a number of recreational and other uses, including motorboating, water skiing, and a commercial shellfish farm. Although this differs markedly from the historic conditions within the lagoon, we feel that there are still areas within the lagoon which provide potential habitat for tidewater gobies. We believe that the current configuration of the lagoon could support the species as well as the existing uses within the lagoon.

Comment 5: San Juan Creek and the San Luis Rey River should be included as critical habitat.

Our Response: We received several comments proposing that San Juan Creek and the San Luis Rey River should be designated as critical

habitat. Recent investigations at San Juan Creek and the San Luis Rey River have provided some data as to the suitability of these habitats to support tidewater gobies (Michael Brandman and Assoc. 1998, Dan Holland pers. comm. 2000). These data indicate that if efforts were

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undertaken to restore tidewater goby habitat to these systems, they may support the species. San Juan Creek and the San Luis Rey River may be important in the species recovery and their potential value will be assessed in the recovery plan for the species. However, while San Juan Creek and the San Luis Rey River may be restored to provide suitable habitat for tidewater gobies, we do not have information demonstrating these areas are essential to the conservation of the species; therefore, these areas do not meet the definition of critical habitat.

Summary of Changes From the Proposed Rule

We changed the rule to better define the lateral extent of critical habitat in response to a comment that the 50-year flood plain is undelineated or in dispute in many areas and is not useful in defining the lateral extent of critical habitat for the goby. In this final rule we have defined the lateral extent of critical habitat as the 50-year flood plain or the stream channels, estuaries, and other areas within these reaches potentially inundated by high flow events. The lateral extent of high flow events, and critical habitat, can be determined by the presence of alluvial soils (soils deposited by streams), obligate and facultative riparian vegetation (requiring and usually occurring in wetlands respectively), abandoned river channels, or known high water marks. This constitutes the present aquatic and riparian zones of the rivers, streams, and their associated estuaries designated as critical habitat. Existing human-constructed features and structures within this area, such as buildings, roads, railroads, and other features, do not contain, and do not have the potential to develop, those habitat components. It should be noted that this change does not increase the amount of critical habitat designated, but rather is a less ambiguous method of defining the same critical habitat boundaries.

We have also excluded Buena Vista Lagoon. We note that tidewater goby habitat could be created at Buena Vista Lagoon. Restoring tidal flow by removing the existing weir structure currently blocking the mouth of the lagoon would probably create some habitat for the species (see comment 4b3 in the ``Summary of Comments and Recommendations'' section above). However, as we do not have information demonstrating that restoration of Buena Vista Lagoon is essential for the conservation of the tidewater goby, we have not included the area in this final designation.

Additionally, we have changed the maps to better reflect the lateral extent of areas within these stream reaches that constitute critical habitat. The maps are a graphical representation only and do not constitute the definition of the critical habitat units. The maps are provided for reference purposes only, to guide Federal agencies and other interested parties in locating the general boundaries of the critical habitat unit (50 CFR 17.94(b)).

Economic Analysis

Section 4(b)(2) of the Act requires us to designate critical habitat on the basis of the best scientific and commercial information available and to consider the economic and other relevant impacts of designating a particular area as critical habitat. We completed a draft

economic analysis and made it available to the public for comment (65 FR 39850). We also completed a final economic analysis that incorporated public comment, information gathered since the draft analysis, and changes to the critical habitat designation. The analysis found that there would be an economic impact from the designation that would vary on a situational level, and that most of the impact would come in the form of new section 7 consultations in unoccupied habitat units. We have determined that these economic impacts are minimal and do not warrant excluding any areas from the designation. The final economic analysis is available to the public at the Carlsbad Fish and Wildlife Office (see ADDRESSES section).

Required Determinations

Regulatory Planning and Review

This document has been reviewed by the Office of Management and Budget (OMB), in accordance with Executive Order 12866. OMB makes the final determination under Executive Order 12866.

(a) This rule will not have an annual economic effect of $100 million or adversely affect an economic sector, productivity, jobs, the environment, or other units of government. A cost-benefit and economic analysis is not required. The tidewater goby was listed as an endangered species in 1994.

Under the Act, critical habitat may not be adversely modified by a Federal agency action; it does not impose any restrictions on non-Federal persons unless they are conducting activities funded or otherwise sponsored or permitted by a Federal agency (see Table 1 below). Section 7 requires Federal agencies to ensure that they do not jeopardize the continued existence of the species. Based upon our experience with the species and its needs, we conclude that any Federal action or authorized action that could potentially cause adverse modification of designated critical habitat would currently be considered as ``jeopardy'' under the Act. Accordingly, the designation of areas within the geographic range occupied by the tidewater goby does not have any incremental impacts on what actions may or may not be conducted by Federal agencies or non-Federal persons that receive Federal authorization or funding. The designation of areas outside the geographic range occupied by the species may have incremental impacts on what activities may or may not be conducted by Federal agencies or non-Federal persons that receive Federal authorization or funding. However, our analysis did not identify any significant incremental effects. Non-Federal persons that do not have a Federal ``sponsorship'' of their actions are not restricted by the designation of critical habitat, although they continue to be bound by the provisions of the Act concerning ``take'' of the species.

(b) This rule will not create inconsistencies with other agencies' actions. As discussed above, Federal agencies have been required to ensure that their actions do not jeopardize the continued existence of the tidewater goby since the listing in 1994. The prohibition against adverse modification of critical habitat is not expected to have a significant economic impact. Because of the potential for impacts on other Federal agency activities, we will continue to review this action for any inconsistencies with other Federal agency actions.

(c) This rule will not materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients. Federal agencies are currently required to ensure that their activities do not jeopardize the continued existence of the species, and as discussed above we do not anticipate that the adverse modification prohibition (resulting from critical habitat designation) will have any

significant incremental effects.

(d) This rule will not raise novel legal or policy issues. This final determination follows the requirements for determining critical habitat contained in the Endangered Species Act.

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Table 1.--Impacts of Tidewater Goby Listing and Critical Habitat Designation

Categories of Activities	Activities Potentially Affected by Species Listing Only \1\	Additional Activities Potentially Affected by Critical Habitat Designation \2\
Federal Activities Potentially Affected \3\.	Activities the Federal Government carries out such as: regulation of activities affecting waters of the U.S. (under section 404 of the Clean Water Act); regulation of water flows, damming, diversion, and channelization; road construction, right of way designation; regulation of agricultural activities; some military activities on the Camp Pendleton; hazard mitigation and post-disaster repairs; and construction activities.	Activities by Federal Agencies in any unoccupied critical habitat areas.
Private Activities Potentially Affected \4\.	Activities such as: those affecting waters of the U.S. (under section 404 of the Clean Water Act); regulation of water flows, damming, diversion, and channelization; road construction, right of way designation; agricultural activities; hazard mitigation and post-disaster repair; and construction activities that	Funding, authorization, or permitting actions by Federal Agencies in any unoccupied critical habitat areas.

			require a Federal action (permit, authorization, or funding).

\1\ This column represents the activities potentially affected by listing the tidewater goby as an endangered species (March 7, 1994; 59 FR 5494) under the Endangered Species Act.
\2\ This column represents the activities potentially affected by the critical habitat designation in addition to those activities potentially affected by listing the species.
\3\ Activities initiated by a Federal agency.
\4\ Activities initiated by a private entity that may need Federal authorization or funding.

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

In the economic analysis, we determined that designation of critical habitat will not have a significant effect on a substantial number of small entities. As discussed under Regulatory Planning and Review above and in this final determination, this designation of critical habitat for the tidewater goby is not expected to have a significant economic impact. We have designated property owned by Federal, State and local governments, and private property.

Within these areas, the types of Federal actions or authorized activities that we have identified as potential concerns are:

(1) Regulation of activities affecting waters of the U. S. under section 404 of the Clean Water Act;

(2) Regulation of water flows, damming, diversion, and channelization by Federal agencies;

(3) Road construction, right of way designation, or regulation of agricultural activities by Federal agencies;

(4) Some military activities on the Camp Pendleton;

(5) Hazard mitigation and post-disaster repairs funded by the Federal Emergency Management Agency;

(6) Construction of communication sites licensed by the Federal Communications Commission; and

(7) Activities funded or authorized by Federal agencies.

Some of these activities sponsored by Federal agencies within critical habitat areas are carried out by small entities (as defined by the Regulatory Flexibility Act) through contract, grant, permit, or other Federal authorization. As discussed in section 1 above, these actions are largely required to comply with the listing protections of the Act, and the designation of critical habitat is not anticipated to have significant additional effects on these activities.

For actions on non-Federal property that do not have a Federal connection (such as funding or authorization), the current restrictions concerning take of the species remain in effect, and this final determination will have no additional restrictions.

Small Business Regulatory Enforcement Fairness Act (5 U.S.C. 804(2))

In the economic analysis, we determined whether designation of critical habitat would cause (a) any effect on the economy of $100 million or more, (b) any increases in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions in the economic analysis, or (c) any significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S. based enterprises to compete with

foreign-based enterprises. Refer to the final economic analysis for a discussion of the effects of this determination.

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

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.):

(a) This rule will not ``significantly or uniquely'' affect small governments. A Small Government Agency Plan is not required. Small governments will only be affected to the extent that any Federal funds, permits, or other authorized activities must ensure that their actions will not adversely affect the critical habitat. However, as discussed in section 1, these actions are currently subject to equivalent restrictions through the listing protections of the species, and no further restrictions are anticipated.

(b) This rule will not produce a Federal mandate of $100 million or greater in any year, that is, it is not a ``significant regulatory action'' under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments.

Takings

In accordance with Executive Order 12630, this rule does not have significant takings implications, and a takings implication assessment is not required. This designation will not ``take'' private property and will not alter the value of private property.

Federalism

In accordance with Executive Order 13132, the rule does not have significant Federalism effects. A Federalism assessment is not required. This designation of critical habitat imposes no additional restrictions to those currently in place, and therefore has little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments in that the areas essential to the conservation of the species are more clearly defined, and the primary constituent elements of the habitat necessary to the survival of the species are specifically identified. While this definition and identification does not alter where and what federally sponsored activities may occur, it may assist these local governments in long-

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range planning (rather than waiting for case-by-case section 7 consultations to occur).

Civil Justice Reform

In accordance with Executive Order 12988, the Department of the Interior's Office of the Solicitor has determined that this 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 made every effort to ensure that this final determination contains no drafting errors, provides clear standards, simplifies procedures, reduces burden, and is clearly written such that litigation risk is minimized.

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

This rule does not contain any information collection requirements

for which Office of Management and Budget approval under the Paperwork Reduction Act is required.

National Environmental Policy Act

We have determined that an Environmental Assessment and/or an Environmental Impact Statement as defined by the National Environmental Policy Act of 1969 need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Act as amended. A notice outlining our reason for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244). This final determination does not constitute a major Federal action significantly affecting the quality of the human environment.

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) and 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 that are essential for the conservation of the tidewater goby because they do not support populations or suitable habitat. Therefore, we are not designating critical habitat for the tidewater goby on Tribal lands.

References Cited

A complete list of all references cited in this final rule is available upon request from the Carlsbad Fish and Wildlife Office (see ADDRESSES section).

Author. The primary author of this final rule is the Carlsbad Fish and Wildlife Office (see ADDRESSES section).

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

Accordingly, we 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. Amend Sec. 17.11(h), by revising the entry for ``goby, tidewater'' under ``FISHES'' to read as follows:

Sec. 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

SPECIES			V
Common name	Scientific name	Historic range	popu end t
*	*	*	*
Fishes			
*	*	*	*
Goby, tidewater	Eucyclogobius newberryi.	U.S.A. (CA)	do....
*	*	*	*

3. Amend Sec. 17.95(e) by adding critical habitat for the tidewater goby (Eucyclogobius newberrii) under paragraph (e) in the same alphabetical order as this species occurs in Sec. 17.11(h), to read as follows:

Sec. 17.95 Critical habitat--fish and wildlife.

* * * * *

(e) Fishes.

* * * * *

Tidewater goby (Eucyclogobius newberrii)

1. Critical habitat units are depicted for Orange and San Diego Counties, California, on the maps below and as described below.

2. Critical habitat includes the sections of streams indicated on the maps below and areas within these reaches potentially inundated by high flow events. Where delineated, this is the 50-year flood plain of the designated waterways. In areas where the 50-year flood plain is not delineated the presence of alluvial soils (soils deposited by streams), obligate and facultative wetland vegetation, abandoned river channels, or evidence of high water marks can be used to determine the extent of the floodplain. Critical habitat does not include existing man-made features and structures within this area, such as buildings, roads, railroads, and other features, which do not contain, and do not have the potential to develop the primary constituent elements for the tidewater goby.

3. Within these areas, the primary constituent elements include, but are not limited to, those habitat components that are essential for the primary biological needs of foraging, sheltering, and reproduction. These elements include coastal lagoons and estuary systems supported by a natural hydrological regime, which results in sufficient streamflow, areas of shallow water as well as deep pockets of permanent water, sand and silt substrate, a variety of aquatic and emergent vegetation, and a diversity of prey species; and an environment free from exotic fishes.

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[GRAPHIC] [TIFF OMITTED] TR20NO00.003

Map Unit 1: Orange County, California. From USGS 7.5' quadrangle map Laguna Beach, California, and San Juan Capistrano, California. San Bernardino Principal Meridian, California, T. 7 S., R 8 W., beginning at a point on Aliso Creek in SW sec. 32 and at approximately 33 deg.30'46" N latitude and 117 deg.44'37" W longitude, UTM coordinates 430853.4 E, 3708395.9 N, and proceeding downstream (westerly) to the Pacific Ocean covering approximately 1.0 km (0.6 mi.), including the stream, its 50-year flood plain, and associated lagoons and marsh.

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[GRAPHIC] [TIFF OMITTED] TR20NO00.004

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Map Unit 2: San Diego County, California. From USGS 7.5' quadrangle map San Clemente, California. San Bernardino Principal Meridian, California, T. 9 S., R. 7 W., beginning at a point on San Mateo Creek in NW sec. 14 and at approximately 33 deg.23'46" N latitude and 117 deg.35'20" W longitude, UTM coordinates 445152.5 E, 3695369.7 N, and proceeding downstream (southerly) to the Pacific Ocean covering approximately 1.3 km (0.9 mi.), including the stream, its 50-year flood plain, and associated lagoons and marsh.
Map Unit 3: San Diego County, California. From USGS 7.5' quadrangle map San Clemente, California. San Bernardino Principal Meridian, California, T. 9 S., R. 7 W., beginning at a point on San Onofre Creek in SE sec. 14 and at approximately 33 deg.23'05" N latitude and 117 deg.34'30" W longitude, UTM coordinates 446450.2 E, 3694074.4 N, and proceeding downstream (southwesterly) to the Pacific Ocean covering approximately 0.6 km (0.4 mi.), including the stream, its 50-year flood plain, and associated lagoons and marsh.
[GRAPHIC] [TIFF OMITTED] TR20NO00.005

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Map Unit 4: San Diego County, California. From USGS 7.5' quadrangle map Las Pulgas Canyon, California. San Bernardino Principal Meridian, California, T. 10 S., R. 6 W., beginning at a point on Las Flores Creek in the middle of sec. 13 and at approximately 33 deg.17'32" N latitude and 117 deg.27'20" W longitude, UTM coordinates 457495.3 E, 3683780.1 N, and proceeding downstream (westerly) to the Pacific Ocean covering approximately 0.8 km (0.5 mi.), including the stream, its 50-year flood plain, and associated lagoons and marsh.
Map Unit 5: San Diego County, California. From USGS 7.5' quadrangle map Las Pulgas Canyon, California. San Bernardino Principal Meridian, California, T. 10 S., R. 5 W., beginning at a point on Hidden Creek in W sec. 30 and at approximately 33 deg.16'46" N latitude and 117 deg.26'48" W longitude, UTM coordinates 458321.5 E, 3682362.9 N, and proceeding downstream (southwesterly) to the Pacific Ocean covering approximately 0.8 km (0.5 mi.), including the stream, its 50-year flood plain, and associated lagoons and marsh.
[GRAPHIC] [TIFF OMITTED] TR20NO00.006

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Map Unit 6: San Diego County, California. From USGS 7.5' quadrangle map Las Pulgas Canyon, California. San Bernardino Principal Meridian, California, T. 10 S., R. 5 W., beginning at a point on Aliso Creek in NE sec. 31 and at approximately 33 deg.16'13" N latitude and 117 deg.26'19" W longitude, UTM coordinates 459521.7 E, 3680981.1 N, and proceeding downstream (southwesterly) to the Pacific Ocean covering approximately 0.7 km (0.4 mi.), including the stream, its 50-year flood plain, and associated lagoons and marsh.
Map Unit 7: San Diego County, California. From USGS 7.5' quadrangle map Las Pulgas Canyon, California. San Bernardino Principal Meridian, California, T. 10 S., R. 5 W., beginning at a point on French Creek in E sec. 31 and at approximately 33 deg.16'01" N latitude and 117 deg.26'01" W longitude, UTM coordinates 459078.8 E, 3681354.4 N, and proceeding downstream (westerly) to the Pacific Ocean covering approximately 0.7 km (0.4 mi.), including the stream, its 50-year flood plain, and associated lagoons and marsh.
Map Unit 8: San Diego County, California. From USGS 7.5' quadrangle map Las Pulgas Canyon, California. San Bernardino Principal Meridian, California, T. 11 S., R. 5 W., beginning at a point on Cockleburr Creek in NE sec. 5 and at approximately 33 deg.15'16" N latitude and 117 deg.25'21" W longitude, UTM coordinates 460570.4 E, and 3679563.4 N, and proceeding downstream (westerly) to the Pacific Ocean covering approximately 1.0 km (0.6 mi.), including the stream, its 50-year flood plain, and associated lagoons and marsh.
[GRAPHIC] [TIFF OMITTED] TR20NO00.007

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Map Unit 9: San Diego County, California. From USGS 7.5' quadrangle map Oceanside, California. San Bernardino Principal Meridian, California, T. 11 S., R. 5 W., beginning at a point on the Santa Margarita River in NW sec. 2 and at approximately 33 deg.15'08" N latitude and 117 deg.22'38" W longitude, UTM coordinates 464774.9 E, 3679326.9 N, and proceeding downstream (westerly) to the Pacific Ocean covering approximately 5.0 km (3.1 mi.), including the river's 50-year flood plain, associated lagoons and marsh.
[GRAPHIC] [TIFF OMITTED] TR20NO00.008

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Map Unit 10: San Diego County, California. From USGS 7.5' quadrangle map San Luis Rey, California. San Bernardino Principal Meridian, California, T. 12 S., R. 4 W., beginning at a point on Augua Hedionda Creek in the middle of Section 9 and at approximately 33 deg.08'44" N latitude and 117 deg.18'19" W longitude, UTM coordinates 471444.4 E, 3667474.6 N, and proceeding downstream (southwesterly) to the Pacific Ocean covering approximately 3.7 km (2.3 mi.), including the creek, its 50-year flood plain, Agua Hedionda Lagoon, and associated marsh.
[GRAPHIC] [TIFF OMITTED] TR20NO00.009

Dated: November 13, 2000.
Kenneth L. Smith,
Acting Assistant Secretary for Fish and Wildlife and Parks.
[FR Doc. **00**-**29547 Filed** 11-17-**00**; 8:45 am]
BILLING CODE 3420-55-C