§ 1607.5 Compensation.

(a) While serving on the governing body of a recipient, no attorney member shall receive compensation from that recipient, but any member may receive a reasonable per diem expense payment or reimbursement for actual expenses for normal travel and other reasonable out-of-pocket expenses in accordance with written policies adopted by the recipient.

(b) Pursuant to a waiver granted under § 1607.6(c)(1), a recipient may adopt policies that would permit partners or associates of attorney members to participate in any compensated private attorney involvement activities supported by the recipient.

(c) A recipient may adopt policies that permit attorney members, subject to terms and conditions applicable to other attorneys in the service area:

(1) To accept referrals of fee-generating cases under part 1609 of these regulations;

(2) To participate in any uncompensated private attorney involvement activities supported by the recipient;

(3) To seek and accept attorneys' fees awarded by a court or administrative body or included in a settlement in cases undertaken pursuant to §§ 1607.5 (c) (1) and (2); and

(4) To receive reimbursement from the recipient for out-of-pocket expenses incurred by the attorney member as part of the activities undertaken pursuant to § 1607.5(c)(2).

§ 1607.6 Waiver.

(a) Upon application, the president shall waive the requirements of this part to permit a recipient that was funded under § 222(a)(3) of the Economic Opportunity Act of 1964 and, on July 25, 1974, had a majority of persons who were not attorneys on its governing body, to continue such nonattorney majority.

(b) Upon application, the president may waive any of the requirements of this part which are not mandated by applicable law if a recipient demonstrates that it cannot comply with them because of: (1) The nature of the population, legal community or area served; or (2) Special circumstances, including but not limited to, conflicting requirements of the recipient's other major funding source(s) or State law.

(c) A recipient seeking a waiver under § 1607.6(b)(1) shall demonstrate that it has made diligent efforts to comply with the requirements of this part.

(d) As a condition of granting a waiver under § 1607.6(b)(2) of any of the requirements imposed upon governing bodies by § 1607.3, the president shall require that a recipient have a policy body with a membership composed and appointed in the manner prescribed by § 1607.3. Such policy body shall be subject to the meeting requirements of § 1607.4(a) and its attorney members shall be subject to the restrictions on compensation contained in § 1607.5. The policy body shall have such specific powers and responsibilities as the President determines are necessary to enable it to formulate and enforce policy with respect to the services provided under the recipient's LSC grant or contract.

Dated: December 13, 1994.

Victor M. Fortuno,

General Counsel.

[FR Doc. 94-31043 Filed 12-16-94; 8:45 am]

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

254-94

RIN 1018-AB66

Endangered and Threatened Wildlife and Plants; Critical Habitat Determination for the Delta Smelt

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Fish and Wildlife Service (Service) designates critical habitat for the threatened delta smelt (*Hypomesus transpacificus*) pursuant to the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*). This final rule designates critical habitat for the delta smelt in the following geographic areas—areas of all water and all submerged lands below ordinary high water and the entire water column bounded by and contained in Suisun Bay (including the contiguous Grizzly and Honker Bays); the length of Goodyear, Suisun, Cutoff, First Mallard (Spring Branch), and Montezuma sloughs; and the existing contiguous waters contained within the Delta, as defined in section 12220 of the California Water Code. Critical habitat designation for the delta smelt will provide additional protection under section 7 of the Act with regard to activities that require Federal agency action.

EFFECTIVE DATE: January 18, 1995.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at U.S. Fish and Wildlife Service, Sacramento Field Office, 2800 Cottage Way, Room E-1803, Sacramento, California 95825-1846.

FOR FURTHER INFORMATION CONTACT: Joel A. Medlin, Sacramento Field Office (see **ADDRESSES** section) at (916) 978-4613.

SUPPLEMENTARY INFORMATION:

Background

Historically, the delta smelt is thought to have occurred from Suisun Bay upstream to the City of Sacramento on the Sacramento River and the City of Mossdale on the San Joaquin River (Moyle *et al.* 1992). The delta smelt is a euryhaline species (tolerant of a wide salinity range) that spawns in fresh water and has been collected from estuarine waters up to 14 grams per liter (equivalent to ppt) salinity (Moyle *et al.* 1992). For a large part of its annual life span, this species is associated with the freshwater edge of the mixing zone (zone of mixing or entrapment at the saltwater-freshwater interface), where the salinity is approximately 2 ppt (Ganssle 1966, Moyle *et al.* 1992, Sweetnam and Stevens 1993).

Shortly before spawning, adult delta smelt migrate upstream from the highly productive brackish-water habitat associated with the mixing zone to disperse widely into river channels and tidally-influenced backwater sloughs (Radtke 1966, Moyle 1976, Wang 1991).

Delta smelt spawn in shallow, fresh or slightly brackish water upstream of the mixing zone (Wang 1991), mostly in tidally-influenced backwater sloughs and channel edgewaters (Moyle 1976; Wang 1986, 1991; Moyle *et al.* 1992). Although delta smelt spawning behavior has not been observed in the wild (Moyle *et al.* 1992), the adhesive eggs are thought to attach to substrates such as cattails and tules, tree roots, and submerged branches (Moyle 1976, Wang 1991). In the Delta, spawning is known to occur in the Sacramento River and in Barker, Lindsey, Cache, Georgiana, Prospect, Beaver, Hog, and Sycamore sloughs (Wang 1991; Dale Sweetnam, pers. comm., 1993). Delta smelt also spawn north of Suisun Bay in Montezuma and Suisun sloughs and their tributaries (Lesa Meng, pers. comm., 1993; Dale Sweetnam, pers. comm., 1993).

The spawning season varies from year to year and may occur from late winter (December) to early summer (July and August). Moyle (1976) collected gravid adults from December to April, although ripe delta smelt were most common in February and March. In 1989 and 1990, Wang (1991) estimated that spawning had taken place from mid-February to late June or early July, with the peak spawning period occurring in late April

and early May. In 1993, a wet year, spawning may have occurred as early as January and extended into June (Dale Sweetnam, pers. comm., 1994). Peak spawning occurred in April of that year. In 1994, a critically dry year, peak spawning occurred at the end of April, and may have begun as early as late February or early March (Dale Sweetnam, pers. comm., 1994).

In the laboratory, delta smelt eggs hatch in 10 to 14 days (Randy Mager, University of California, pers. comm., 1993). Laboratory observations indicate that delta smelt are broadcast spawners that spawn in a current, usually at night, distributing their eggs over a local area (Lindberg 1992, Mager 1993). Eggs attach singly to the substrate, and few eggs were found on vertical plants (Lindberg 1993). Lindberg (1993) found that yolk-sac fry were positively phototactic and negatively buoyant. After hatching, larvae are transported downstream toward the mixing zone where they are retained by the vertical circulation of fresh and salt waters (Stevens *et al.* 1990). The pelagic larvae feed on phytoplankton until day 4, begin to feed on rotifers on day 6 and *Artemis nauplii* on day 14 (Mager 1992). Juveniles feed exclusively on zooplankton. When the mixing zone is located in a broad geographic area with extensive shallow-water habitat within the euphotic zone (depths less than 4 meters), high densities of phytoplankton and zooplankton are produced (Arthur and Ball 1978, 1979, 1980), and larval and juvenile fish, including delta smelt, grow rapidly (Moyle *et al.* 1992, Sweetnam and Stevens 1993). When given the opportunity, delta smelt remain in Suisun Bay even after the 2 ppt isohaline has retreated upstream (Herbold 1994). In general, estuaries are among the most productive ecosystems in the world (Goldman and Horne 1983). Estuarine environments produce an abundance of fish as a result of plentiful food and shallow, protective habitat for young.

When the mixing zone is contained within Suisun Bay, young delta smelt are dispersed widely throughout a large expanse of shallow-water and marsh habitat. Dispersal in areas downstream from the State and Federal water pumps and in-Delta agricultural diversions protects young delta smelt from entrainment and distributes them among the extensive, protective, and highly productive shoal regions of Suisun Bay. In contrast, when located upstream, the mixing zone becomes confined in the deep river channels, which are smaller in total surface area, contain fewer shoal areas, have swifter, more turbulent water currents, and lack high zooplankton productivity. Vulnerability to entrainment in the State and Federal pumping facilities and in-Delta diversions increases.

Erkkila *et al.* (1950) collected young delta smelt near Sherman Island, at the confluence of the Sacramento and San Joaquin Rivers, in July and August of 1948. In studies by the California Department of Fish and Game, California Department of Water Resources (DWR), and the Bureau, larval and juvenile delta smelt were collected from Roe Island in Suisun Bay north to the confluence of the Sacramento and Feather Rivers and east to Medford Island on the San Joaquin River (Wang 1991). These studies were conducted during the months of April through mid-July in 1989 and 1990. Through these distribution surveys, Wang (1991) was able to document the movement of juvenile delta smelt from the Delta to Suisun Bay in late June and early July. In 1990, young delta smelt were taken at the Tracy Pumping Plant at the end of February (Wang 1991).

The delta smelt is adapted to living in the highly productive Sacramento-San Joaquin River Estuary (Estuary) where salinity varies spatially and temporally according to tidal cycles and the amount of freshwater inflow. Despite this tremendously variable environment, the historical Estuary probably offered relatively constant suitable habitat conditions to delta smelt, which could move upstream or downstream with the mixing zone (Peter Moyle, University of California, pers. comm., 1993). Since the 1850's, however, the amount and extent of suitable habitat for the delta smelt has declined dramatically. The advent in 1853 of hydraulic mining in the Sacramento and San Joaquin Rivers led to increased siltation and alteration of the circulation patterns of the Estuary (Nichols *et al.* 1986, Monroe and Kelly 1992). The reclamation of Merritt Island for agricultural purposes in the same year marked the beginning of the present-day cumulative loss of 94 percent of the Estuary's tidal marshes (Nichols *et al.* 1986, Monroe and Kelly 1992).

In addition to this degradation and loss of estuarine habitat, the delta smelt has been increasingly subject to entrainment, upstream or reverse flows of waters in the Delta and San Joaquin River, and constriction of habitat in the less productive, deep-water river channels of the Delta (Moyle *et al.* 1992). These adverse conditions are primarily a result of the steadily increasing proportion of water diverted from the Delta by the Federal and State water projects (Monroe and Kelly 1992). Water delivery through the Federal Central Valley Project (CVP) began in water year 1940. The State Water Project (SWP) began delivering water in 1968. However, the proportion of fresh water being diverted has increased since 1983 and has remained at high levels (Moyle *et al.* 1992). A relationship has been found between the number of juvenile delta smelt salvaged at the State and Federal pumps and both the percent of inflow diverted and total Delta outflow (California Department of Water Resources and Bureau of Reclamation 1994). The high proportion of fresh water exported has exacerbated the already harsh environmental conditions experienced by the delta smelt during the recent 6-year drought (1987–1992). The March 5, 1993 (58 FR 12854), final rule listing the delta smelt as a threatened species describes in detail the factors that have led to this species' decline.

Previous Service Action

In the January 6, 1989 (54 FR 554), Animal Notice of Review, the Service included the delta smelt as a category 1 candidate species. Category 1 includes species for which data in the Service's possession are sufficient to support proposals for listing. On June 29, 1990, the Service received a petition dated June 26, 1990, from Dr. Don C. Erman, President-Elect of the California-Nevada Chapter of the American Fisheries Society, to list the delta smelt as an endangered species and designate its critical habitat. The Service made a 90-day finding that substantial information had been presented indicating that the petitioned action may be warranted and announced this decision in the **Federal Register** on December 24, 1990 (55 FR 52852). On October 3, 1991 (56 FR 50075), the Service published a proposal to list the delta smelt as a threatened species and to designate critical habitat. This proposed rule constituted the 12-month petition finding in accordance with section 4(b)(3)(B) of the Act.

Critical habitat was proposed for areas of all water and all submerged lands below ordinary high water and the entire water column bounded by and contained within Suisun Bay (including the contiguous Grizzly and Honker Bays), the length of Montezuma Slough, portions of the Sacramento River, portions of the Sacramento-San Joaquin Delta, portions of the San Joaquin River, and the contiguous water bodies in between (a complex of bays, dead-end sloughs, channels typically less than four meters deep, marshlands, etc.), contained in the State of California. The public comment period opened on the date of publication of the proposed rule

(October 3, 1991) and closed on January 31, 1992.

On December 19, 1991 (56 FR 65877), the Service published a notice of public hearing on the proposed rule to be held in three locations in California. Public hearings were conducted on January 9, 1992, in Sacramento; on January 14, 1992, in Santa Monica; and on January 16, 1992, in Visalia.

The final rule listing the delta smelt as a threatened species was published on March 5, 1993 (58 FR 12854). In the final rule, the Service postponed the decision on critical habitat designation. At that time, the economic analysis necessary to determine critical habitat was still in progress. On March 16, 1993 (58 FR 14199), the Service reopened the public comment period until April 30, 1993, to allow the Service to consider any economic or biological information that previously had not been submitted.

Revisions to the October 3, 1991, Critical Habitat Proposal

The Service published a revision to the October 3, 1991, proposed rule to designate critical habitat for the delta smelt on January 6, 1994 (59 FR 852). The revision was based primarily on information gathered by the California Department of Fish and Game (Dale Sweetnam, California Department of Fish and Game, pers. comm., 1993) and the University of California, Davis (Lesa Meng, U.S. Fish and Wildlife Service pers. comm., 1993). This information showed that in 1993, delta smelt spawned in the Sacramento River, at least as far upstream as the City of Sacramento and in tidally-influenced shallow freshwater sloughs (Dale Sweetnam, pers. comm., 1993). In 1991, when delta smelt had all but disappeared from Suisun Marsh, relatively large numbers of delta smelt were caught in Suisun Slough, as far upstream as Suisun City (Lesa Meng, pers. comm., 1993). The revised rule proposed to expand the geographic extent of critical habitat to include additional areas now known to constitute important spawning habitat.

In addition, in an April 23, 1993, letter received during the public comment period, the Environmental Protection Agency (EPA) requested that new scientific information presented in its draft proposed Bay/Delta water quality standards be considered in the Service's designation of critical habitat. The water quality standards were to apply to the surface waters of the Sacramento River, San Joaquin River, and San Francisco Bay and Delta of the State of California (Bay/Delta) pursuant to section 303 of the Clean Water Act (CWA). As a result of EPA's analysis respecting the number of days that low-salinity water was historically located at three locations in the Estuary, the Service refined the description of the constituent elements for the delta smelt The proposed critical habitat was revised therefore to encompass upstream spawning habitats and to better define constituent elements necessary to protect those areas essential to the recovery of the species Comment on the revised proposal and its draft economic analysis was solicited.

On the same date that the Service published its revised critical habitat rule, the Service proposed the Sacramento splittail (*Pogonichthys macrolepidotus*) as a threatened species and EPA published its proposed rule to establish water quality standards for surface waters of the Sacramento River, San Joaquin River, and San Francisco Bay and Delta pursuant to section 303 of the CWA. Those water quality standards are meant to protect the estuary as a whole, and therefore contain more than the salinity criterion EPA's water quality proposal also includes salmon smolt survival criteria to protect fish migration and cold freshwater habitat designated uses in the estuary in its January 6, 1994, rule, along with proposed striped bass spawning criteria.

Designation of critical habitat at this time is part of a coordinated effort between the Service, EPA, National Marine Fisheries Service (NMFS), and the Bureau of Reclamation (Bureau) (collectively, "Club Fed") to protect and recover the delta smelt and the Estuary ecosystem.

Relationship Between Fish and Wildlife Service and EPA Actions

The Service and EPA recognized that their proposed regulatory actions (e.g., delta smelt critical habitat and EPA's water quality standards) overlapped biologically and economically. As such, both agencies worked closely to provide a comprehensive, ecosystem-based approach for the protection of the fish and wildlife resources of the Estuary. This coordination has resulted in regulatory actions that are integrated in both substance and timing.

Biologically, the critical habitat designation for the delta smelt and the salinity criteria within EPA's water quality standards are directly related. Specifically, salinities of 2 ppt in Suisun Bay were identified as a primary constituent element in the October 3, 1991, critical habitat proposal. Subsequent scientific publications indicate that salinities associated with the distribution of delta smelt may provide the best basis for setting standards for many species that are affected by freshwater discharge from the Estuary (Moyle *et al* 1992, San Francisco Estuary Project 1993) Favorable conditions from February through June are important to the abundance and reproductive success of almost all species that live in or migrate through the upper Estuary Because EPA's water quality standards address the location of 2 ppt salinities from February to June, its standards will address certain critical habitat (water quality) requirements for delta smelt

In the text of the January, 6, 1994, proposed rule to designate critical habitat for the delta smelt, the Service identified specific salinity criteria required to maintain habitat for delta smelt through its entire life cycle These criteria had been determined in coordination with EPA in preparation of its proposed water quality standards Subsequent to publication of the critical habitat proposed rule, the Service received many comments objecting to the specificity of the salinity criteria During numerous discussions with interested parties (and in the following response to comments), Service staff have explained that the detailed discussion within the text of the proposed rule was meant to clearly describe the need for including a water quality criterion specific to salinity as one primary constituent element The actual regulation that was proposed for publication in the Code of Federal Regulations, however, was much less specific as to allow broad flexibility in implementation of the provisions of the Act Therefore, to clarify the Service's intent to preserve the flexibility inherent in implementation of the section 7 regulations, the following discussion of the primary constituent elements necessary to define delta smelt critical habitat, is general in scope However, the Service has coordinated carefully and extensively with EPA to ensure that EPA's final rule promulgating Water Quality Standards for Surface Waters of the Sacramento River, San Joaquin River, and San Francisco Bay and Delta of the State of California affords sufficient protection to further the recovery of the delta smelt. EPA's final rule is published in this same **Federal Register**, in a separate part. In its proposed rule, EPA requested that specific comments be submitted on several issues, including the possibility of modifying the Sacramento River Index for the purposes of developing the salinity criteria, alternative approaches to the averaging period used in its proposed salinity criteria, and

evaluation of the merits of the use of different forms of confidence intervals with the proposed criteria. In developing this final rule, the Service has considered all such comments. These issues also were discussed with EPA in regard to the development of its water quality standards and the Service's section 7 consultation with EPA on promulgation of these standards.

Section 7 of the Act requires that all Federal agencies ensure that their actions do not jeopardize the continued existence of listed species or adversely modify designated critical habitat. EPA's action in promulgating water quality standards must comply with the section 7 consultation requirement.

Definition of Critical Habitat

Critical habitat is defined in section 3(5)(A) of the Act as "(i) the specific areas within the geographical area occupied by the species at the time it is listed * * * on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed * * * upon a determination * * * that such areas are essential for the conservation of the species." The term "conservation", as defined in section 3(3) of the Act, means "* * * to use and the use of all methods and procedures which are necessary to bring an endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary " With recovery, no protection from the Act is necessary Therefore, areas designated as critical habitat must contain those physical or biological features essential to recover a species to the point that it no longer requires protection under the Act and can be removed from the list of endangered and threatened species. Section 3(c) further states that in most cases the entire range of a species should not be encompassed within critical habitat. Areas outside the present geographic range may be included as critical habitat if a species' present range would be inadequate to ensure conservation of the species.

Role in Species Conservation

Use of the term "conservation" in the definition of critical habitat indicates that its designation should identify areas that may be needed for a species' recovery and delisting.

The designation of critical habitat will not, in itself, lead to recovery, but is one of several measures available to contribute to a species' recovery Critical habitat helps focus conservation activities by identifying areas that contain essential habitat features (primary constituent elements) regardless of whether or not they are currently occupied by the listed species, thus alerting the public to the importance of an area in the conservation of a listed species. Critical habitat also identifies areas that may require special management or protection. Critical habitat receives protection under section 7 of the Act with regard to actions carried out, funded, or authorized by Federal agencies. Section 7 requires that Federal agencies consult on actions that may affect critical habitat to ensure that their actions are not likely to destroy or adversely modify critical habitat. This additional protection to a species' habitat may actually shorten the time needed to achieve recovery Aside from this added protection provided by section 7, the Act does not provide other direct forms of protection to lands designated as critical habitat.

Designating critical habitat does not create a management plan, establish numerical population goals, prescribe specific management actions (inside or out of critical habitat), nor does it have a direct effect on areas not designated as critical habitat. Specific management recommendations for critical habitat are more appropriately addressed in recovery plans, management plans, and section 7 consultations.

Critical habitat identifies specific areas essential to the conservation of a species. Areas with one or more essential features but not currently containing all of the features and areas having the capability to provide essential features in the future, may be required for the long-term recovery of the species. This may be so particularly in certain portions of its range. However, not all areas containing all features of a listed species' habitat are necessarily essential to the species' recovery. Areas not included in critical habitat that contain one or more of the essential elements are still important to a species' conservation and may be addressed under other facets of the Act and other conservation laws and regulations. All designated areas also may be of considerable value in maintaining ecosystem integrity and supporting other species.

Designation of critical habitat may be reevaluated and revised, at any time, when new information indicates that changes are warranted. The Service may revise critical habitat if management plans, recovery plans, or other conservation strategies are developed and fully implemented, reducing the need for the additional protection provided by critical habitat designation. For example, after the draft Delta Native Fishes Recovery Plan (Recovery Plan) is finalized or the State promulgates more protective water quality standards for the Estuary than are currently in place, land and water management agencies may provide increased protection for the delta smelt. If these protection measures are implemented, the Service may revise its critical habitat designation.

Primary Constituent Elements

In determining which areas to designate as critical habitat, the Service considers those physical and biological features that are essential to a species' conservation (50 CFR 424.12(b)). The Service is required to list the known primary constituent elements together with a description of any critical habitat that is proposed. Such physical and biological features (i.e., primary constituent elements) include, but are not limited to, the following:

(1) Space for individual and population growth, and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and

(5) Generally, habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

The primary constituent elements essential to the conservation of the delta smelt are physical habitat, water, river flow, and salinity concentrations required to maintain delta smelt habitat for spawning, larval and juvenile transport, rearing, and adult migration.

The primary constituent elements are organized by habitat conditions required for each life stage. The specific geographic areas and seasons identified for each habitat condition represent the maximum possible range of each of these conditions. Depending on the water-year type (i.e., wet, above normal, normal, below normal, dry, critically dry), each of the habitat conditions specified below requires fluctuation (within-year and between-year) in the placement of the 2 ppt isohaline (a line drawn to connect all points of equal salinity) around three historical reference points. These three historical reference points are the Sacramento-San Joaquin River confluence, the upstream

limit of Suisun Bay at Chipps Island, and in the middle of Suisun Bay at Roe Island. The actual number of days that the 2 ppt isohaline is maintained at the three points varies according to water-year type.

In addition, to maintain habitat conditions necessary to achieve recovery of the delta smelt, the number of days at each reference point must simulate a level of water project development equivalent to that which historically existed in 1968. A 1968 level of development represents a period of time before Delta outflow was affected by the SWP and the delta smelt was abundant. This year (1968) falls within the time period identified by the Delta Native Fishes Recovery Team as having had appropriate hydrologic conditions that would allow recovery of the delta smelt. Additionally, on June 15, 1994, the Regional Director signed an Interagency Statement of Principles among the Service, NMFS, and EPA (Plenert, Fullerton, and Seraydarian, *in litt.* 1994) stating, in part, despite the effects of the water projects that were operating at that time, the Estuary ecosystem and its anadromous and resident fisheries were relatively healthy during the years between 1960 and 1970.

Further, to maintain suitable habitat conditions for recovery of the delta smelt, the naturally-occurring variability found in healthy estuarine ecosystems must be preserved for the following reasons—(1) temporal and spatial variability of the 2 ppt isohaline will be the most effective deterrent to further invasion of newly introduced species and continued competition by those that are already established, (2) placement of the 2 ppt isohaline in Suisun Bay will produce the high phytoplankton and zooplankton densities that characterize most healthy estuarine ecosystems, and (3) variability is needed to simulate natural processes and historical conditions.

The primary constituent elements for the delta smelt are:

Spawning Habitat—Delta smelt adults seek shallow, fresh or slightly brackish backwater sloughs and edgewaters for spawning. To ensure egg hatching and larval viability, spawning areas also must provide suitable water quality (i.e., low concentrations of pollutants) and substrates for egg attachment (e.g., submerged tree roots and branches and emergent vegetation). Specific areas that have been identified as important delta smelt spawning habitat include Barker, Lindsey, Cache, Prospect, Georgiana, Beaver, Hog, and Sycamore sloughs and the Sacramento River in the Delta, and tributaries of northern Suisun Bay. The spawning season varies from year to year and may start as early as December and extend until July.

Larval and Juvenile Transport—To ensure that delta smelt larvae are transported from the area where they are hatched to shallow, productive rearing or nursery habitat, the Sacramento and San Joaquin Rivers and their tributary channels must be protected from physical disturbance (e.g., sand and gravel mining, diking, dredging, and levee or bank protection and maintenance) and flow disruption (e.g., water diversions that result in entrainment and in-channel barriers or tidal gates). Adequate river flow is necessary to transport larvae from upstream spawning areas to rearing habitat in Suisun Bay. Additionally, river flow must be adequate to prevent interception of larval transport by the State and Federal water projects and smaller agricultural diversions in the Delta. To ensure that suitable rearing habitat is available in Suisun Bay, the 2 ppt isohaline must be located westward of the Sacramento-San Joaquin River confluence during the period when larvae or juveniles are being transported, according to the historical salinity conditions which vary according to water-year type. Reverse flows that maintain larvae upstream in deep-channel regions of low productivity and expose them to entrainment interfere with these transport requirements. Suitable water quality must be provided so that maturation is not impaired by pollutant concentrations. The specific geographic area important for larval transport is confined to waters contained within the legal boundary of the Delta, Suisun Bay, and Montezuma Slough and its tributaries. The specific season when habitat conditions identified above are important for successful larval transport varies from year to year, depending on when peak spawning occurs and on the water-year type. The Service identified situations in the biological opinion for the delta smelt (1994) where additional flows might be required in the July–August period to protect delta smelt that were present in the south and central Delta from being entrained in the State and Federal project pumps, and to avoid jeopardy to the species. The long-term biological opinion on CVP–SWP operations will identify situations where additional flows may be required after the February through June period identified by EPA for its water quality standards to protect delta smelt in the south and central Delta.

Rearing Habitat—Maintenance of the 2 ppt isohaline according to the historical salinity conditions described above and suitable water quality (low concentrations of pollutants) within the Estuary is necessary to provide delta smelt larvae and juveniles a shallow, protective, food-rich environment in which to mature to adulthood. This placement of the 2 ppt isohaline also serves to protect larval, juvenile, and adult delta smelt from entrainment in the State and Federal water projects. An area extending eastward from Carquinez Strait, including Suisun Bay, Grizzly Bay, Honker Bay, Montezuma Slough and its tributary sloughs, up the Sacramento River to its confluence with Three Mile Slough, and south along the San Joaquin River including Big Break, defines the specific geographic area critical to the maintenance of suitable rearing habitat. Three Mile Slough represents the approximate location of the most upstream extent of tidal excursion when the historical salinity conditions described above are implemented. Protection of rearing habitat conditions may be required from the beginning of February through the summer.

Adult Migration—Adult delta smelt must be provided unrestricted access to suitable spawning habitat in a period that may extend from December to July. Adequate flow and suitable water quality may need to be maintained to attract migrating adults in the Sacramento and San Joaquin River channels and their associated tributaries, including Cache and Montezuma sloughs and their tributaries. These areas also should be protected from physical disturbance and flow disruption during migratory periods.

To conserve the delta smelt, this final rule designates critical habitat in an area encompassing the specific habitat conditions required by each life stage identified above. Accordingly, critical habitat is designated in the following geographic area—areas of all water and all submerged lands below ordinary high water and the entire water column bounded by and contained in Suisun Bay (including the contiguous Grizzly and Honker Bays); the length of Goodyear, Suisun, Cutoff, First Mallard (Spring Branch), and Montezuma sloughs; and the existing contiguous waters contained within the Delta. Thus, critical habitat for the delta smelt is contained within Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties, California. The "Regulation Promulgation" section provides a precise metes and bounds description of critical habitat designated for the delta smelt.

Effects of Critical Habitat Designation

Section 4(b)(8) of the Act requires for any proposed or final regulation that designates critical habitat a brief description and evaluation of those activities (public or private) that may adversely modify such habitat or may be affected by such designation. At the time of preparation of the revised proposed rule, the Service identified the following list of proposed or ongoing actions whose effects likely would jeopardize the delta smelt and adversely modify or destroy its critical habitat—Central Valley Project operations, State Water Project operations, deep water navigation channel dredging, reoperation of Folsom Dam, Oroville Dam, and Auburn Dam, Central Valley and State Water Project Wheeling Purchase Agreement, San Joaquin Valley Drainage Program, Central Valley Project water contract renewals, petition by the Bureau for a change in diversion point, South Delta Water Management, South Delta Temporary Barriers Project, Stanislaus-Calaveras River Basin Water Use Program, Phases 3 and 4 of the Suisun Marsh Project, North Delta Water Management Project, West Delta Water Management Project, Delta Wetlands Water Storage Project, Los Banos Grandes Reservoir, Los Vaqueros Reservoir, Kern Water Bank, full operation of four State Water Project pumps, entrainment of fish and thermal pollution by industry (e.g., power generation facilities), urban or agricultural nonpoint contaminant discharges, in-Delta and Suisun Marsh water diversion, Phase 2 of the Coastal Aqueduct, and the Delta Levee Subvention Program. Since publication of the revised proposed rule, the Service has determined through section 7 consultations that the South Delta Temporary Barriers Project, deep water navigation channel dredging, Los Vaqueros Reservoir Project, and Phase 2 of the Coastal Aqueduct Project will not jeopardize the delta smelt.

The proposed rule to revise the critical habitat designation did not identify any proposed actions that might jeopardize the delta smelt without adversely affecting critical habitat. In the revised proposed rule, the Service did identify (based on section 7 consultation experiences) five activities that, depending on the season of construction and scale of the project, might result in the destruction or adverse modification of critical habitat without necessarily jeopardizing the continued existence of the delta smelt. These activities were:

(1) Sand and gravel extraction in river channels or marshes;

(2) Diking wetlands for conversion to farmland and dredging to maintain these dikes;

(3) Levee maintenance and bank-protection activities, such as riprapping, removal of vegetation, and placement of dredged materials on levees of banks;

(4) Operation of the Montezuma Slough Control Structure; and

(5) Bridge and marina construction.

Construction and implementation of each of these five actions requires authorization by the Army Corps of Engineers (Corps) pursuant to section 10 of the Rivers and Harbors Act of 1899 and section 404 of the CWA and therefore are considered Federal actions. In a section 7 consultation with the Bureau and the California Department of Fish and Game, California Department of Water Resources (DWR), the Service reviewed the operation of the Montezuma Slough Control Structure for effects on delta smelt. As a result, DWR and the Bureau sponsored an investigation of the effects of the operation of the Structure on delta smelt, and DWR committed to operate the gates only as required to meet existing Suisun Marsh salinity standards. When not operating, the gates on the Structure will remain in the raised position. The effect of gate operation on delta smelt is currently being studied, and the Service will make a determination on the Structure's operations in the near future. As to the other actions, the Service will consult with the Corps as these actions arise.

On February 4, 1994, subsequent to the publication of the January 6, 1994, revised proposed rule to designate critical habitat, the Service transmitted to the Bureau a jeopardy biological opinion on the combined operation of the Federal and State Water Projects on the delta smelt through February 1995. In the 1994 biological opinion, the Service determined that the proposed operation of the Federal and State Water Projects likely would jeopardize the continued existence of the delta smelt and would destroy or adversely modify proposed critical habitat. This one-year opinion did not recommend a reasonable and prudent alternative that distinguished between the number of days of compliance with the 2 ppt criteria to avoid jeopardy and the number of days of compliance that would have been required to avoid destruction or adverse modification of proposed critical habitat. The Service acknowledges that such a distinction may be appropriate in future biological opinions.

Any possible revisions to the biological opinion will recognize three major initiatives that will shape the dynamics of future estuarine conditions for delta smelt. First, in accordance with a Framework Agreement (1994) between the Governor's Water Policy Council of the State of California (Council) and Club Fed, the State Board will seek agreement with DWR and the U.S. Department of the Interior to operate the SWP and CVP to make an equitable contribution to meeting the revised water quality standards beginning calendar year 1995. The Board will seek this agreement while they are working on a water rights decision to allocate responsibility among water rights holders in the Bay-Delta watershed. Second, section 7(a)(1) of the Act imposes an affirmative obligation on Federal agencies to carry out programs for the conservation (recovery) of listed species. With the forthcoming issuance of a Delta Native Fishes Recovery Plan, currently in preparation, the Service expects that local, State, and Federal agencies will fulfill their responsibilities by assisting in the completion of tasks and objectives in the plan. Third, and related to number two, the scheduled renewal of water contracts (i.e., reopened or expired Federal Energy Regulatory Commission (FERC) licenses, expired CVP water contracts) will provide an additional opportunity under sections 7(a)(1) and 7(a)(2) of the Act to implement Recovery Plan objectives and meet EPA's water quality standards. Collectively, these initiatives likely will result in a phased improvement to water quality based habitat requirements for the delta smelt. Accordingly, the Service anticipates that adverse modification or destruction of critical habitat will be avoided by operation of the CVP, SWP, and other water management facilities with implementation of the above described initiatives.

Consideration of Economic and Other Factors

Section 4(b)(2) of the Act requires the Service to consider economic and other relevant impacts of specifying any particular area to be included within the critical habitat boundary. EPA, in coordination with the Service, included an analysis of the effects of designation of critical habitat for the delta smelt in its draft Regulatory Impact Assessment (RIA) for its proposed water quality standards. A summary of that analysis was provided in the revised proposed rule designating critical habitat for the delta smelt (59 FR 852).

The Service stated in the revised proposed rule that if the final economic analysis substantially differed from the draft analysis summarized in the revised proposed rule, a revised analysis would

be made available for public comment. No opportunity for public comment was afforded because the results of the final economic analysis do not substantially differ from the results of the draft analysis.

EPA's economic analysis assumes that the economic impact of restricting activities associated with construction and implementation of major water projects would be attributable to the jeopardy standard imposed by listing the delta smelt as a threatened species, as opposed to designation of critical habitat. Specifically, the impacts of designating critical habitat are in addition to the economic and other impacts attributable to (1) listing of the species, (2) economic effects resulting from conservation actions taken by other Federal agencies under section 7(a)(1) of the Act, and (3) regulatory actions required by other laws.

Section 9 of the Act and Service regulations prohibit the taking of delta smelt without express authorization from the Service. Under Service regulations, "take" may include significant habitat modification or degradation that actually kills or injures protected species. In addition, Federal agencies must consult with the Service to ensure that their actions are not likely to jeopardize the continued existence of the listed species. An action could jeopardize the existence of a listed species if it destroys or modifies its habitat. This is so regardless of whether that habitat has been designated as critical habitat. Therefore, the direct economic and other impacts resulting from designation of critical habitat are relatively small because the Act provides substantial protection to habitat through listing of the species itself. In general, designation of critical habitat supplements the protection afforded a listed species.

The RIA concluded that economic costs attributable to the designation of critical habitat for the delta smelt would be relatively small. In the revised proposed rule, the Service determined that economic costs would be attributable to five actions (i.e., sand and gravel extraction, diking wetlands, levee maintenance and bank protection activities, operation of the Montezuma Slough Control Structure, and bridge and marine construction). In the final RIA prepared by EPA (EPA 1994), the economic costs attributable to designation were from the same five actions.

Economic Impacts Attributable Directly to Critical Habitat Designation

A synopsis of the economic impacts associated with the five activities identified by the Service includes:

Sand and Gravel Operations—Four aggregate operators in the delta may be affected by the designation of critical habitat. Two of the aggregate operations in the Delta are located in San Joaquin County, which has a total of eleven aggregate sites. The estimated value of aggregate production for San Joaquin County in 1986 was $13 million. The four aggregate operations in the Delta that could be affected by the regulation produced a small percentage of California's aggregate in 1992, which had a total value of $473 million. The economic impacts on the aggregate production industry resulting from the designation of critical habitat likely will be minor, given the relatively small amount of sand and gravel production occurring in the Delta.

In many cases, minor changes to the timing of extraction to avoid sensitive biological periods will minimize the economic effects on mining activities. Mitigation in the form of habitat replacement might be required for operations that may result in the destruction or adverse modification of critical habitat. Costs to restore 1 acre of wetlands range between $10,000 to $50,000. Mitigation costs could be reduced if low-cost lands were acquired, and levees were breached to flood areas. For some tracts of land, the costs associated with restoring wetlands may exceed the value derived from the agricultural activity, in which case the cost attributable to critical habitat would be the loss in agricultural income.

Diking and Dredging for Agricultural Operations—Though designation of critical habitat for the delta smelt may require implementation of best management practices and a 3:1 ratio of permanently destroyed habitat in proposed project areas, the economic impacts of restricting diking and dredging operations are expected to be minimal. For example, the regulatory costs (i.e., with critical habitat designated) associated with converting the Little Holland Tract in the Delta to agricultural uses with critical habitat designated would be the cost to replace 440 acres of habitat at a 3:1 ratio (EPA 1994). The expense of replacing habitat would likely exceed the economic returns from agricultural production on this tract, which was historically planted for corn. Foregone income from future agricultural production on the 1,300 arable acre tract would amount to $65,000 per year.

Levee Maintenance—Between 1981–1991, local agencies maintained 536.6 miles of levee in the Delta, spending an average of $1.24 million per mile (EPA 1994). Approximately 41% of the costs were financed through State subventions. The costs of levee maintenance are not expected to increase significantly due to this critical habitat designation because Federal regulatory agencies currently have timing and construction restrictions that generally avoid adverse effects to the delta smelt.

Montezuma Slough Control Structure Operations—The economic impacts associated with the operation of the Montezuma Slough Control Structure could not be estimated by the time this final rule was published. In response to a biological opinion issued by the USFWS to DWR and the Bureau on the Structure's operation, an investigation of the effects of the Structure on delta smelt is being conducted, and will be completed in the near future. The Structure's operations may be modified once the study is completed. The gates at this structure are currently operated from November to March in accordance with current State salinity standards to maintain low-salinity water in Suisun Marsh, but remain open the remainder of the year.

Bridge and Marina Construction—The use of best management practices, time restrictions, and other construction restrictions similar to those for levee maintenance and sand and gravel operations should preclude any substantial impact from designation of delta smelt critical habitat on bridge and marina construction.

Water Costs Attributed to EPA's Salinity Standards

EPA's economic analysis evaluated the costs associated with implementing its water quality standards for the Bay/Delta. Since the Service identifies water quality (salinity) as a primary constituent element essential to conserve the delta smelt, an analysis of the water costs associated with implementing the salinity standards is included in this final rule. Though the water costs associated with the water quality standards are attributable to EPA, the Service includes this discussion to make clear the approximate cost of implementing the salinity standards alone.

The water costs associated with the salinity standards and fish migration standards are reported in EPA's final RIA (EPA 1994). EPA reports the water costs as the sum of costs associated with

the salinity standards and fish migration standards. However, depending on hydrologic conditions, approximately 35% to 73% of the water costs in the EPA economic analysis can be attributed to the salinity criteria alone, apart from the fish migration criteria (EPA 1994).

The overall estimated water supply impacts of both the salinity and fish migration water quality standards (change in total exports) over those associated with existing D–1485 State salinity standards and water quality requirements for winter-run chinook salmon under a NMFS biological opinion are 376 thousand acre-feet (taf) per year on average, and 577 taf during critically dry periods. However, the State's implementation plan for EPA's water quality standards will substantially affect the magnitude and distribution of the costs associated with implementing the water quality standards. A more detailed discussion of the water costs associated with different implementation scenarios appears in the final RIA (EPA 1994).

National Economic Costs

Actions taken to preserve and recover threatened and endangered species may result in the re-allocation of resources within the regional and national economy. National economic costs, best described as efficiency costs, include changes in the consumer and producer surplus, and related employment impacts. These measures capture the net social gains and losses resulting from the resource allocation.

The national economic cost of the five activities evaluated above (sand and gravel extraction, diking wetlands, levee maintenance and bank protection activities, operation of the Montezuma Slough Control Structure, and bridge and marina construction) is minimal since the overall economic cost of those activities in the region is minimal.

EPA's economic analysis used the above described measures to estimate the costs and benefits of the water quality standards. Therefore, the results of EPA's economic analysis is identical to an analysis done for national economic costs.

Benefits of Critical Habitat Designation

Conservation of the delta smelt with designation of its critical habitat will result in a wide range of benefits. Section 2(a)(3) of the Act recognizes that fish, wildlife, and plants are of aesthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people. EPA (1994) categorizes the benefits of promulgating water quality standards and designating critical habitat as use, nonuse, and other benefits. A more detailed description of these uses are contained in the final RIA (EPA 1994).

Several use and nonuse benefits can be attributed to designating critical habitat for the delta smelt, apart from benefits attributable to EPA's water quality standards. Generally, the designation of critical habitat will prevent the further decline of estuarine health. Benefits include:

(1) Reduced need in the future to list fish and wildlife species currently in decline;

(2) Increased biological production of commercially important species, such as waterfowl and salmon;

(3) Increased protection to a wide variety of estuarine species, several of which are unique to the Estuary (e.g., winter-run chinook salmon, Estuary population of longfin smelt, and Sacramento splittail);

(4) Curtailed establishment of newly introduced exotic species and deterred explosion of the current population of already established exotic species;

(5) Increased recreational fishing and hunting opportunities;

(6) Increased opportunities for wildlife observation resulting from restoration of riparian and tidal marsh habitat and ecosystem health; and

(7) Improved commercial fishery harvest as a result of increased populations of fish.

EPA (1994) assigned a monetary value to several of the use benefits. The economic benefits of EPA's standards are broader than protection of the delta smelt, since EPA's standards are expected to positively affect all components of the food web. The total economic benefit of EPA's water quality standards and the designation of critical habitat for the delta smelt are reported as follows. The ecological benefits of improved estuarine conditions are expected to generate at least $2.1 million or more in net economic benefits to commercial and recreational fisheries (particular salmon fisheries), and will have an associated employment gain of approximately 145 full-time equivalent jobs (EPA 1994). Benefits to the ocean sport fishery for salmon is estimated at about $708,000 annually (EPA 1994). This increase would result in positive employment effects on sport fishing-related industry, adding approximately 70 jobs in this area. Annual benefits to the striped bass sport fishing industry is estimated to be $57,500 annually (EPA 1994).

An important avoided cost is associated with further declines in the recreational and commercial fisheries industry of the Bay/Delta, which is valued at $200 million annually (EPA 1994). Other avoided costs include government costs associated with crop deficiency payments, agricultural drainage costs, and costs associated with the potential reduction in property value.

Summary of the Exclusion Process

In order to determine the specific extent of designation of critical habitat pursuant to section 4(b)(2) of the Act, the Service must analyze:

(1) The benefits of excluding an area as critical habitat,

(2) The benefits of including an area, and

(3) The effects of exclusions on the probability of species extinction.

This process consists of (1) estimating the benefits of retaining or excluding land and water areas contained within Suisun Bay or river reaches within the Delta and Montezuma, Goodyear, Suisun, Cutoff, and First Mallard (Spring Branch) sloughs; (2) weighing those benefits; and (3) determining if exclusion of an area or areas from critical habitat will lead to the extinction of the species. If the exclusion of an area or areas from critical habitat will result in eventual species extinction, then the exclusion would be prohibited under the Act.

Extinction

Critical habitat consists of areas with habitat characteristics that are essential to the conservation of a listed species. However, the exclusion process focuses upon a threshold for species extinction. Conservation (recovery) and extinction are separate standards. Recovery and extinction are at opposite ends of a continuum, with the likelihood of a species' continued survival increasing the closer the species is to the recovery end of the continuum. It may be more difficult to predict the point at which extinction would be inevitable than to determine where recovery may occur.

The analysis to determine whether extinction will occur will be different for each species, depending on many variables, including a species' geographic range. The exclusion analysis also may be related to a number of factors, such as the number of individuals, amount of habitat, condition of the habitat, and reproductive success. Extinction of an annual species, like the delta smelt, most likely would occur when rearing habitat conditions are poor enough for two consecutive years that some minimum number of fish fail to survive to reproduce. Habitat conditions could become poor enough if pumping at Federal and State water project facilities

and private diversions significantly reduce outflow from the Delta. If a sufficient number of delta smelt were entrained in Federal and State water project facilities and private diversions so that a minimal number survived to reproduce, the population could decline. Extinction could result. The focus of the exclusionary analysis was on those factors that pertain to these issues and included consideration of habitat condition, functioning of the Estuary ecosystem, and proximity of the delta smelt population to the Federal and State pumps during various life stages.

Criteria and Decision

In evaluating the designation of critical habitat to determine whether or not to exclude areas because of concerns over economic effects, the Service used the following process:

(1) Based upon the criteria described in this document, the geographical area essential to the conservation of the species was identified; and

(2) An economic analysis was conducted to ascertain the anticipated economic consequences of designating areas as critical habitat, using agricultural and urban sectors as the primary level of economic analysis.

(3) The Service balanced the costs and other impacts of designation with the benefits of designation.

Exclusion

Using the above described process, the Service has determined that no exclusions to critical habitat are appropriate. The entire geographic area designated as critical habitat is essential to conserve the delta smelt. Delta smelt are restricted to a limited geographic area, and retaining land and water areas contained within Suisun Bay and river reaches within the Delta and Montezuma, Goodyear, Suisun, Cutoff, and First Mallard (Spring Branch) sloughs is necessary to recover this annual species. These areas provide habitat necessary for each life stage of the species.

The economic consequences of designating the entire area as critical habitat are relatively small. Most economic costs can be avoided by project proponents by using timing and construction restrictions, and by using best management practices. Designation of critical habitat will reduce the need in the future to list fish and wildlife species currently in decline, and will improve the overall health of the Estuary. The benefits of designating the entire area outweigh the benefits of excluding any of the area from the designation.

Available Conservation Measures

The purpose of the Act, as stated in section 2(b), is to provide a means to conserve the ecosystems upon which endangered and threatened species depend and to provide a program for the conservation of listed species. Section 2(c)(1) of the Act declares that "* * * all Federal departments and agencies shall seek to conserve endangered and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.

The Act mandates the conservation of listed species through different mechanisms, such as: Section 7 (requiring Federal agencies to further the purposes of the Act by carrying out conservation programs and insuring that Federal actions will not likely jeopardize the continued existence of the listed species or result in the destruction or adverse modification of critical habitat); section 9 (wildlife research permits and habitat conservation planning on non-Federal lands); section 6 (cooperative State and Federal grants), land acquisition, and research. Other Federal laws also require conservation of endangered and threatened species, such as the National Forest Management Act and the National Environmental Policy Act, and various other State and Federal laws and regulations.

Critical habitat is not intended as a management or conservation plan. Critical habitat is primarily intended to identify the habitat that meets the criteria for the primary constituent elements. However, there are benefits that result from the designation. Designation will help retain recovery options and reduce the near-term risk until a long-term conservation plan is implemented.

Designation of critical habitat does not offer specific direction for managing delta smelt habitat. That type of direction, as well as any change in direction, will come through the administration of other facets of the Act (e.g., section 7, section 10 HCP process, and recovery planning).

Recovery Planning

Recovery planning under section 4(f) of the Act is the "umbrella"that eventually guides all the Act's activities and promotes a species' conservation and eventual delisting. Recovery plans provide guidance, which may include population goals and identification of areas in need of protection or special management. Recovery plans usually include management recommendations for areas proposed or designated as critical habitat.

The delta smelt and six other fish species that depend on the Estuary for a significant segment of their life history are included in the Sacramento-San Joaquin Delta Native Fishes Recovery Plan. The recovery plan is currently in draft form. The recovery plan will include recovery criteria based on population abundance and geographic distribution. Designation of critical habitat, along with the biological opinion evaluating the effects of the Federal and State water projects on the delta smelt, is consistent with the plan's objective to recover these fish species.

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to destroy or adversely modify critical habitat. This Federal responsibility accompanies, and is in addition to, the requirement in section 7(a)(2) of the Act that Federal agencies ensure that their actions do not jeopardize the continued existence of any listed species.

Jeopardy is defined at 50 CFR 402.02 as any action that would be expected to appreciably reduce the likelihood of both the survival and recovery of a species. Destruction or adverse modification of critical habitat defined at 50 CFR 402.02 as a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. The regulations also clearly state that 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.

Survival and recovery, mentioned in both the definition of adverse modification and jeopardy, are directly related. Survival may be viewed as a linear continuum between recovery and extinction of the species. The closer one is to recovery, the greater the certainty in the species continued survival. The terms "survival and recovery" are, thus, related by the degree of certainty that the species will persist over a given period of time. Survival relates to viability. Factors that influence a species' viability include population numbers, distribution throughout the range, stochasticity, expected duration, and reproductive success. A species may be considered recovered when there is a high degree of certainty for the species' continued viability.

The Act's definition of critical habitat indicates that the purpose of critical habitat is to contribute to a species' conservation, which by definition equates to recovery. Section 7

prohibitions against the destruction or adverse modification of critical habitat apply to actions that would impair survival and recovery of a listed species, thus providing a regulatory means of ensuring that Federal actions within critical habitat are considered in relation to the goals and recommendations of a recovery plan. As a result of the link between critical habitat and recovery, the prohibition against destruction or adverse modification of the critical habitat should provide for the protection of the critical habitat's ability to contribute to a species' recovery.

Federal actions that may affect the delta smelt or its critical habitat include those authorized, carried out, or funded by the Corps, Department of the Navy, the Bureau, NMFS, FERC, the Service, and EPA. The Corps funds projects and issues permits for water pumping and diversion facilities, levee construction or repair, bank protection activities, deep-water navigation channel dredging and dredge spoil disposal projects, sand and gravel extraction, marina and bridge construction, diking of wetlands for conversion to farmland, and tidal gate or barrier installation. The Corps also develops permits pursuant to section 404 of the CWA to the Department of the Navy so the Navy may dredge deep-water ship channels and dispose of dredge materials in Suisun Bay, San Pablo Bay, and San Francisco Bay. The Corps also conducts such activities for the Navy.

The Bureau and DWR construct, operate, and manage water export facilities. EPA reviews State water quality standards and promulgates replacement standards, pursuant to the CWA, if the State standards are found to be inadequate. FERC licenses water storage facilities on tributaries to the Sacramento-San Joaquin Delta. In 1991, EPA disapproved portions of the State Board's Water Quality Control Plan for Salinity for the Estuary. Accordingly, EPA has prepared proposed and finalized replacement standards for those portions of the State's salinity standards that were disapproved. Measures to protect the federally listed winter-run chinook salmon, for which NMFS has jurisdiction under the Act, also may affect the delta smelt and may require consultation with the Service.

The Service and the Bureau are jointly responsible for implementing the Central Valley Project Improvement Act (CVPIA). Activities under the CVPIA include, but are not limited to, management of a portion of the CVP water supply dedicated for fish and wildlife protection, restoration, and enhancement, acquisition of additional water supplies for the same purposes, and screening unscreened diversions in the Sacramento-San Joaquin watershed. Both the Bureau and Service activities under the CVPIA may affect delta smelt or its critical habitat, requiring consultation with the Service.

Under section 4 of the Act, listing of the delta smelt provided a requirement for the development of a recovery plan. The Service convened the Delta Native Fishes Recovery Team to prepare a Recovery Plan for declining native fishes in the Estuary. The Recovery Plan, currently in draft form, will develop a framework for Federal, State, and private entities to coordinate activities and cooperate with each other in conservation efforts. The plan will set recovery priorities and estimate the costs of various tasks necessary to accomplish recovery goals. Site-specific management actions necessary to achieve survival and recovery of the delta smelt and other fishes native to the Estuary ecosystem also will be described in this plan.

Summary of Comments and Recommendations

Designation of critical habitat for the delta smelt was first proposed on October 3, 1991 (56 FR 50075), as part of the proposed rule to list the species. During the 4-month comment period following publication of the proposal, the Service received 360 written and oral comments from 348 individuals. Of the forty-four people who commented specifically on critical habitat, thirty-four opposed and ten supported the designation.

On March 16, 1993 (58 FR 14199), the Service published a notice that the public comment period on the original proposed critical habitat designation for the delta smelt was reopened until April 30, 1993, to allow the Service to consider any information that previously had not been submitted. In response, the Service received seven letters—two in support of critical habitat designation as proposed, four in opposition, and a letter from EPA requesting that the Service consider the biological and hydrological information described in EPA's draft proposed rule to promulgate Bay/Delta water quality standards.

On January 6, 1994 (59 FR 852), the Service revised the geographical area and refined the primary constituent elements described in the original critical habitat proposal. The public comment period for the revised proposed critical habitat designation was open from January 6, 1994, to March 7, 1994, and later extended to March 11, 1994 (59 FR 3829). During the 65-day comment period, the Service received written comments from forty-three parties on both the critical habitat designation and EPA's proposed water quality standards for the Bay/Delta. Thirty-two commenters were opposed to critical habitat designation, nine supported the decision, and two expressed no preference. Several commenters either referenced or supported the comments of the California Urban Water Agencies (CUWA).

Four joint public hearings were held to solicit comments on the revised proposed critical habitat designation, the proposed threatened status for the Sacramento splittail, and the proposed water quality standards developed by EPA. A total of 125 people presented oral testimony and submitted written comments at the hearings, primarily on delta smelt critical habitat and Bay/Delta water quality standard issues. The Service received comments from elected officials, interested persons, municipal and agricultural water districts and associations, environmental organizations, business and industry owners and managers, fishing enthusiasts, farmers, agricultural commissions and dairy interests, biologists, county and municipal officials, power agency representatives, hospital and school district representatives, and building industry spokespeople.

At the February 23, 1994, hearing in Fresno, thirty-eight people presented oral testimony—thirty-six people opposed and two supported critical habitat designation. Nineteen people testified at the February 24, 1994, Sacramento meeting—fifteen people were opposed to the designation, three were in support, and one person was neutral.

Twelve people testified at the February 25, 1994, hearing in San Francisco—nine people supported and three opposed the critical habitat designation. At the February 28, 1994, hearing in Irvine, fifty-six people presented oral and written comments (fifty-one people testified and five submitted only written comments)—fifty of the fifty-six commenters opposed critical habitat, five were neutral, and one supported the designation.

Comments addressing the issue of available scientific information used to revise the proposed rule were addressed in the revised proposed rule of January 6, 1994 (59 FR 852). The Service addressed EPA's comments, as well as comments provided by the State. All other comments are addressed below in this final rule. Because EPA can better respond to comments regarding the

economic analysis and the assumptions used to develop its Bay/Delta water quality standards, the Service refers to EPA's "Response to Comments" document for responses to comments specific to those issues. However, the Service will respond to any comments regarding the relationship between EPA's water quality standards and the biological requirements of the delta smelt in this section, and to comments regarding the economic analysis as it is associated with the critical habitat designation.

Comments are part of the administrative record and are available for public review. Written comments and oral statements presented at the public hearings and received during the comment periods are covered in the following summary. Comments of a similar nature or point are grouped into a number of general issues. These issues, and the Service's response to each, are discussed below.

Estuarine Standard Issues

Comment 1: One commenter thought the Service should not adopt EPA's Bay/Delta water quality standards as part of the designation of critical habitat for the delta smelt. The commenter asserted that because the Service had not described the biological relevance of the standards, adopting the standards would be "throwing water at the problem". Another commenter thought EPA's criteria were developed to serve non-habitat purposes, reasoning that their purpose was to remove organisms from risk of mortality at the pumps. Another commenter thought flow, rather than salinity or the location of the entrapment zone, was a more appropriate parameter to protect the western Delta and Suisun Marsh. A commenter at the public hearings believed the Service should not have selected such a strict standard of salinity (2 ppt) for the delta smelt's critical habitat.

Service Response: The Service does not adopt EPA's water quality standards in the designation of critical habitat for the delta smelt. The Service identifies water quality (salinity) as a primary constituent element to protect and recover the delta smelt. This point is described in detail in comment 27, below, and is clarified in the section entitled "Primary Constituent Elements" in this final rule.

The Service has considered and discussed the biological relevance of EPA's water quality standards. The biological relevance of providing ample estuarine habitat for the delta smelt was first discussed in the original proposed designation of critical habitat for the delta smelt in 1991. The biological significance of salinity in the Estuary was again discussed in the sections entitled "Revisions to the October 3, 1991, Critical Habitat Proposal", "Habitat Requirements", and "Primary Constituent Elements" in the January 6, 1994, revised proposed designation of critical habitat. These sections discuss the habitat requirements of the delta smelt, the need for temporal and spatial variability of low-salinity waters in the Estuary, and the identification of primary constituent elements essential for the recovery of the smelt.

As the above cited discussions illustrate, EPA's water quality standards were developed to mimic historical habitat conditions and were not developed to simply serve non-habitat purposes. The standards may incidentally serve "non-habitat" purposes by removing organisms from risk of mortality at the pumps. This topic is discussed in this final rule in the "Primary Constituent Element" section for larval and juvenile transport.

Requiring flows to maintain salinity at critical locations in the Delta will not be "throwing water at the problem." The Service has used the best scientific data available to prescribe conditions that will facilitate the recovery of the delta smelt, relying on scientific evidence and testimony presented during the State Board's 1992 hearing process, as well as information from the Service and the panel of scientists who participated in the San Francisco Estuary Project (SFEP).

In accordance with the Act and its regulations, the Service may refer to either flow or salinity as water quality criteria when critical habitat is designated for the delta smelt. Because the Act is flexible, the Service may accomplish recovery in a variety of ways, so long as listed species are recovered. With critical habitat defined, the Service must identify the physical and biological features essential to the conservation of the species, and which may require special management considerations or protection. A primary constituent element may include either water quality or water quantity. Special management considerations include "any methods or procedures useful in protecting physical and biological features of the environment for the conservation of a listed species." (50 CFR 424.12(b); 424.02(j)).

Based on the best available information, the Service concludes that the criteria are necessary to protect and recover the delta smelt. Delta smelt are associated with the freshwater edge of the mixing zone, where the salinity is approximately 2 ppt (Ganssle 1966, Moyle *et al.* 1992, Sweetnam and Stevens 1993). In most years, the majority of the delta smelt population lives at salinities of less than 2 ppt for most of the year (Moyle 1976, Ganssle 1966).

Comment 2: Although several water purveyors agreed with EPA that there is a relationship between the average position of the 2 ppt isohaline and the health of the Estuary, they believed that the Roe Island criterion was too protective and should be abolished. However, another commenter thought the water quality standards as proposed by EPA were not protective enough of the delta smelt (addressed in comment 7). Several commenters thought that requiring compliance at Roe Island may (1) reduce the within-year variability in hydrology in Suisun Bay, thus having an adverse impact on the biology of the Estuary; (2) place the entrapment zone too far downstream of Suisun Bay, thereby pushing phytoplankton and delta smelt out past Carquinez Strait into San Pablo Bay; and (3) either greatly benefit or adversely affect native and introduced estuarine species by enhancing or adversely affecting habitat quantity and quality

Service Response: To the extent feasible, maintenance of near-historical water quality conditions at Roe Island is essential to recovery of the delta smelt. Not only is it important to maintain low-salinity conditions at critical locations in the Estuary depending on the life-stage of the delta smelt, but also to simulate year-to-year natural spring storm cycles so that natural processes and historical conditions can be mimicked in the Estuary The water quality standards developed by EPA, including criteria at Roe Island, Chipps Island, and the Sacramento-San Joaquin River confluence, were developed to provide both within-year and between-year variability in salinity levels, characteristic of the Estuary in the late 1960's and early 1970's. This variability does not currently occur frequently enough in the Estuary to maintain estuarine processes, because the construction of water conveyance facilities in the Central Valley and Delta as well as the operation of diversions and upstream dams, have reduced and dampened annual fluctuations in Delta outflow.

A low-salinity reference point at Roe Island will provide within-year and year-to-year variability essential to maintenance of a healthy Estuary Requiring salinity be maintained intermittently at Roe Island also will provide flows to carry juvenile fish from the Delta downstream to Suisun Bay, and will maximize nutrient inputs from

Suisun Marsh and the shallows of Suisun Bay into the mixing zone. Providing periodic low-salinity water at Roe Island will significantly increase the total area of medium to low-salinity nursery habitat available for delta smelt. Spring storm events are also beneficial to aquatic resources of the Estuary, providing areas of flooded vegetation for the spawning of some estuarine species.

Moreover, the 2 ppt isohaline is needed sporadically at Roe Island to mimic seasonal variability of Delta flow to deter the invasion of introduced species. The lack of seasonal and yearly variability of Delta outflows has contributed to the invasions of introduced species. Because variable salinity is one of the dominant features of an estuary, ensuring natural variability in the Estuary can only benefit native estuarine species.

Providing low-salinity water at the Roe Island historical reference point will not put the mixing zone too far downstream into the Carquinez Strait. Conversely, completely abolishing the Roe Island reference point and relying exclusively on the Chipps Island and Sacramento-San Joaquin River confluence locations may leave an important area in the western-most portion of Suisun Bay (which is included in critical habitat) outside the mixing zone (CCCWA/EDF 1987). The western portion of Suisun Bay is important habitat for the delta smelt. Delta smelt were most abundant at the Western Suisun Bay and Carquinez Strait sampling sites in the San Francisco Bay-Outflow Study in the years 1980–1988 (Stevens *et al.* 1990). Apart from the ship channel, the southwestern portion of Suisun Bay contains expansive shoal areas that are less than 2 meters deep (Mortensen 1987). The best survival and growth of delta smelt larvae occur when optimum conditions in the mixing zone occupy a large area that includes extensive shoal regions containing suitable rearing substrates within the euphotic zone (depths less than 4 meters).

Moreover, because the Roe Island historic reference point was developed to mimic historical conditions in the Estuary, requiring periodic low-saline waters at that location will not be an abnormal occurrence. Historically, delta smelt have been flushed out into the Carquinez Strait and into Suisun Bay in high flow years, similar to what occurred in 1983 and 1993. The delta smelt is adapted to living in the Estuary, where salinity varies spatially and temporally according to tidal cycles and the amount of freshwater inflow. Nonetheless, the historical Estuary probably offered relatively constant suitable habitat conditions to delta smelt, which could move upstream or downstream with the entrapment zone (Peter Moyle, University of California, pers. comm., 1993).

The Service does not believe EPA's Roe Island salinity criteria would be detrimental to native estuarine species. A qualitative and graphic analysis of habitat preferences for Estuary species (including eggs and larvae, juveniles, adults and spawning adults life stages) presented by a commenter which predicted that EPA's salinity criteria at Roe Island would put some species at risk or greatly benefit others was overly broad and too simplistic. The commenter included introduced species (e.g., inland silverside *Menidia beryllina*, threadfin shad *Dorosoma petenese*) and marine species (e.g., several surfperches, English sole *Parophrys vetulis*) in the analysis. Its analysis did not give any preference to species having protected status, or to species that rely solely on estuarine habitat. Freshwater, marine and estuarine-dependent species were treated equally. The analysis described habitat in terms of salinity alone, when other measures of habitat, such as temperature, turbidity, and depth, are important for some estuarine-dependent species. Since the quantity of habitat available for a species was described only by river kilometer, complex bathymetry was ignored in the investigation. The Service does not intend to benefit or recover species outside the Estuary, nor does it intend to protect introduced estuarine species. To comply with the Act, the Service must promote the recovery of the delta smelt. Impeding the establishment and success of introduced species, and providing suitable habitat for delta smelt, are significant and complementary components to recovering the species. The Service does not foresee a significant decline in other native estuarine species due to critical habitat designation for the delta smelt. The Service expects the opposite to occur and has evaluated the impacts of EPA's water quality standards through section 7 consultations.

Comment 3: One commenter thought the Roe Island criteria would not benefit the delta smelt because the relationship between the 2 ppt isohaline location and the abundance indices of delta smelt become uncertain as the entrapment zone moves downstream from Chipps Island.

Service Response: The Service need not show statistical significance between the location of the mixing zone and fishery abundance to include variable, low-salinity habitat as a primary constituent element. Under the Act, the Service must base a critical habitat designation on the best scientific information available. A statistical correlation between a primary constituent element and its effect on species recovery is not required. The complexity of the Delta ecosystem and the numerous factors contributing in time and space to the species' decline make it highly unlikely that any one factor would show a direct correlation with its potential recovery.

Comment 4: One commenter thought the Roe Island salinity criteria would have significant impacts on carryover storage in the Sacramento River Basin since meeting those criteria would account for a large portion of carryover storage, and consequently, affect winter-run salmon temperature requirements.

Service Response: The Service is addressing, in recovery planning efforts and in section 7 consultations, the concern that compliance with Roe Island criteria will cause reductions in carryover storage in upstream reservoirs. Recovery planning recommendations for winter-run chinook salmon will be included in the delta smelt recovery plan process through coordination of the respective recovery teams for these species. Section 7 consultations will address any competing needs for winter-run storage in Shasta Reservoir.

Comment 5: One commenter thought that the State Water Project and the Central Valley Project reservoirs located upstream of the Delta lacked the capacity to release enough controlled outflow to regulate salinity at Roe Island on a continuous basis, when recreational safety, flooding, travel time and upstream riparian right constraints are taken into account.

Service Response: The Service notes the isohaline need not be located at Roe Island on a continuous basis, since EPA's Roe Island standard is triggered only when uncontrolled runoff has placed the 2 ppt isohaline seaward of Roe Island. The SWP and CVP reservoirs have the capacity to release outflow to meet the Roe Island criteria once the criteria are triggered.

Comment 6: One commenter believed sampling biases and temporal and spatial variability in the data can be factors that distort or confound the abundance indices used to support the EPA's water quality standards.

Service Response: The Service addressed the concerns regarding data bias in the final rule to list the delta smelt as a threatened species (58 FR 12856), noting that the Service is obliged under the Act to use the best available scientific and commercial information in making a listing

determination. The Service also must use the best available information in designating critical habitat, and must take into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat (section 4(b)(2)).

Comment 7: One commenter thought the salinity standards as proposed by the EPA were not protective enough of the delta smelt, and recommended that—(1) additional days be added to the Roe Island standard in below normal to critically dry years to buffer against years when storm flows or reservoir releases place the 2 ppt isohaline at Roe Island for the first time late in the year, (2) a stipulation be added for an eleventh-hour invocation" of the 2 ppt standard if it appears that the 2 ppt requirement will fail to be invoked at all, and (3) the Service include a Middle Ground standard in addition to the Roe Island standard, having the Middle Ground standard implemented independently of any type of trigger or stipulation. The commenter thought water quality criteria at Middle Ground were necessary not only to provide rearing habitat immediately west of Chipps Island (since habitat in that area is positively correlated with delta smelt abundance), but also would allow delta smelt to access the expansive shoals of Grizzly Bay through Honker Bay. Another commenter worried that simply reproducing historic habitat conditions would not be sufficient to recover the delta smelt.

Service Response: The Service believes that EPA's water quality standards, as proposed, will afford protection and promote recovery of the delta smelt. Adding additional independent (i.e., no trigger) criteria at Middle Ground location (between Roe Island and Chipps Island) would defeat the purpose of the Roe Island standard by dampening any variability in the yearly pattern of outflow as discussed in the preceding response.

Use of the term "conservation" in the definition of critical habitat indicates that its designation should identify areas that may be needed for a species' recovery and delisting. However, when critical habitat is designated at the time a species is listed, the Service frequently does not know exactly what may be needed for recovery. In this regard, critical habitat serves to preserve options for a species' eventual recovery. The Service will address the cause(s) and remedies for delta smelt decline in the recovery planning process and in future section 7 consultations as new information develops.

Comment 8: One commenter suggested a mechanism for phased compliance be developed for EPA's water quality standards. Another commenter suggested that the standards be set aside in critically dry years until their exact utility in recovering the delta smelt and the estuary is quantified.

Service Response: One of the purposes of designating critical habitat is to identify areas that may be needed for a species' recovery and delisting so that options can be retained for the realization of this goal. The Service recognizes that the degradation of delta smelt critical habitat has occurred over more than a century and that, as a result, it is unreasonable to expect that recovery will be achieved in a relatively short timeframe. Please refer to "The Effects of Critical Habitat" section above for a detailed discussion on how the Framework Agreement (1994), the section 7(a)(1) mandate, and CVP water contract renewals will, in essence, allow compliance with EPA's water quality standards to be phased in.

However, the Act does not permit the protections provided by critical habitat to be delayed in ways that may result in the destruction or adverse modification of critical habitat, such as what may occur in drier water years. Having threatened status under the Act means that the delta smelt is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Designating critical habitat will facilitate the recovery (i.e., delisting) of the delta smelt, rather than allowing the species to continue declining into endangered status.

Water quality (salinity) in the Estuary has been identified by the Service as a primary constituent element essential to the conservation of the delta smelt. A significant modification to EPA's water quality standards, or a substantial delay or break in designating critical habitat for the delta smelt, would not only postpone recovery of the species but could adversely impact the species. The delta smelt's pelagic life history, dependence on pelagic microzooplankton, 1-year life span, limited geographic range, and low fecundity make it susceptible to decimation if its reproductive or larval nursery areas are disturbed for more than two years.

In formulating the basis for the economic impact analysis, the Service assumed that destruction or adverse modification of critical habitat would not occur in any given water year, provided that Federal and State agencies and other parties comply with flows required in biological opinions interim to the State Board's implementation of water quality standards, and that Federal and State agencies are making satisfactory progress towards implementing recovery plan objectives.

Comment 9: Agricultural interests and municipal representatives making comments in the public hearings felt the designation of critical habitat for the delta smelt and EPA's estuarine standards would cause water allocation in California to be inflexible, especially in light of expanding municipal water needs for population growth, natural disasters (e.g., earthquakes and fires) and expanding industry. One commenter was concerned that by designating critical habitat for the delta smelt, construction of new Delta water conveyance facilities would be prevented.

Service Response: Designating critical habitat for the delta smelt will not cause water allocation in California to be inflexible. Section 7 of the Act requires Federal agencies to consult on actions that may affect delta smelt to ensure that their actions are not likely to destroy or adversely modify critical habitat The Service provides advisory recommendations under section 7 by consulting with other Federal agencies to identify and help resolve conflicts between listed species, their critical habitat, and proposed actions. Management actions designed to provide protection for delta smelt through formal consultation or the section 10 incidental take permit process can be achieved in a variety of ways by considering a range of project alternatives or measures. The consultation and permitting processes are flexible, designed to identify solutions on either a project-by-project or regional basis.

A critical habitat designation will not necessarily preclude the construction of new Delta water conveyance facilities The Service's economic analysis for designating critical habitat assumed that construction of water facilities for future economic growth is more affected by application of the jeopardy standard, rather than critical habitat designation Nonetheless, these economic assumptions do not constrain the Service's review of future water project proposals. The construction of a new Delta water conveyance facility may or may not jeopardize the continued existence of the delta smelt, and may or may not result in the destruction or adverse modification of its critical habitat, depending on numerous elements, including the facilities' design, location and operations criteria.

Comment 10: Several commenters believed that implementation of EPA's water quality standards will only remedy one factor contributing to the delta smelt's decline. Commenters

suggested that over-fishing, habitat modification, and the introduction of toxics and heavy metals to the Estuary have contributed to the decline of the delta smelt. Numerous respondents stated that introduced species in the Delta, such as the yellowfin goby (*Acanthogobius flavimanus*), striped bass and inland silversides are the real cause of the delta smelt's decline. Special concern was expressed over the effects that two species of exotic zooplankton and a species of the exotic Asian clam, (*Potamocorbula amurensis*) had on the Estuary ecosystem.

Service Response: Regardless of other related effects, the best available information indicates that diminished water quality and quantity are major factors contributing to the decline of the delta smelt. EPA's water quality (salinity) standards will contribute to the recovery of the delta smelt.

Under the Act, the Service may list species and designate critical habitat even though the interaction of many causes of the species' decline masks the relative contribution of any single factor. Critical habitat preserves options for a species' recovery. As such, designation of critical habitat preserves habitat conditions within which implementation of recovery actions can occur. As stated in the final rule to list the delta smelt, continuing studies may shed light on the causes of decline, and lead to recovery or management actions that may be of benefit to the species.

Comment 11: One commenter was concerned that water users could comply with EPA's water quality standards early in the February-June compliance period, hence adequate salinity would not be provided in later months if the delta smelt were to spawn late in June or early July. The same commenter suggested that a year-round standard might be a better and more reasonable approach.

Service Response: The Service generally agrees with this comment and recognized in the revised proposed rule that delta smelt may spawn as late as July. Providing water quality (salinity) to conserve the delta smelt and its critical habitat is not limited to a defined time period as EPA's standards are to the February through June period. As the "Primary Constituent Elements" section outlines, critical habitat for the delta smelt will be focused on the habitat needs of a particular life stage that may be affected by a project. Additional flows may be required after the February through June period to protect delta smelt present in the south and central Delta from being entrained in the State and Federal projects, and to avoid jeopardy to the species.

Biological Issues

Comment 12: One commenter suggested that the importance of habitat in Grizzly Bay and lower Suisun Bay should be weighted since the bays are a relatively large area of high quality habitat upon which some species rely heavily.

Service Response: Though Grizzly Bay and lower Suisun Bay are important areas of delta smelt habitat, habitat conditions elsewhere in Suisun Bay and upstream in the Estuary are just as important for spawning, larval and juvenile transport, rearing and adult migration. Habitat for each life stage is essential for the recovery of the species and is contained in this designation.

Comment 13: One commenter thought additional flow requirements would not be needed in July or August to protect larval and juvenile delta smelt from being entrained in the State and Federal water projects since delta smelt remain in particular locations despite flow conditions.

Service Response: The Service recognizes that juvenile and adult delta smelt, when given the opportunity, may remain in especially productive areas such as Suisun Bay, after the mixing zone has moved upstream. However, flows may be required in the July-August period to protect delta smelt present in the south and central Delta from being entrained in the State and Federal projects, and to avoid jeopardy to the species.

Comment 14: One respondent noted that the distribution of delta smelt is not determined by flow alone. The commenter cited 1993 tow-net and fall midwater trawl collections that found delta smelt upstream of the mixing zone near Decker Island, and found delta smelt considerably downstream of the mixing zone in Suisun Bay.

Service Response: The Service agrees that the distribution of delta smelt is not based exclusively on flow. When delta smelt are located in suitable, productive habitat, they may not travel with the mixing zone as it moves upstream, or downstream. After being transported to productive rearing habitat, delta smelt may remain and take advantage of safe and productive nursery areas.

Delta smelt do not become "trapped" in the mixing zone, but may remain in particular areas. In the text of the final rule, the Service clarifies this point by referring to the salt and freshwater mixing area as the "mixing zone," rather than the "entrapment zone," to clear any misconception that delta smelt and other estuarine species are associated exclusively or somehow become trapped within the vertical circulation currents created by the saltwater-freshwater interface. This type of circulation pattern is important because it mixes nutrients from the ocean and inland areas, resulting in a productive estuarine ecosystem.

The pattern of delta smelt distribution described by the commenter is consistent with distribution patterns in earlier years when dispersal of delta smelt was greater following wetter springs (Sweetnam and Stevens 1993). In 1993, about half the delta smelt population remained in Suisun Bay throughout the summer, even though the 2 ppt isohaline retreated upstream (Herbold 1994).

Comment 15: One commenter objected to the Service's use of EPA's proposed water quality standards as the factual and scientific basis for the delta smelt's critical habitat.

Service Response: The Service has not based critical habitat for the delta smelt on EPA's water quality standards. Space requirements for delta smelt population growth, cover, and shelter, as well as salinity, were described in detail and were included as primary constituent elements in the proposed rule to designate critical habitat for the delta smelt in 1991, well before EPA promulgated its proposed standards. Since 1991, the EPA and the Service have been working together to coordinate each agencies' actions.

Comment 16: Another commenter thought the Service simply identified the delta smelt's entire geographic range as critical habitat without considering whether the designation was essential to the conservation of the species. Other respondents believed the Service did not distinguish between areas of critical habitat that are essential and nonessential for the conservation of the delta smelt, thereby including marginal areas not necessary for delta smelt recovery.

Service Response: The Service agrees that critical habitat is limited to the specific areas within the geographic area that contain the physical and biological features needed by the species. As discussed in more detail at comment 37, below, the Service has described river, channel, slough and bay water habitats essential for the recovery of the smelt. Without these areas of habitat, the delta smelt cannot survive or reproduce, rear, or be transported between other suitable habitat areas.

Neither the Act or its regulations requires the Service to rank or identify areas of habitat that are more "essential" than others when critical habitat is designated. In the "Primary Constituent Elements"section of this rule, the Service has specifically described the

importance of habitat for each life stage of this annual species. Without adequate habitat for each of these life stages, the delta smelt would not survive or recover. The Service may highlight and propose specific management actions to protect and rehabilitate certain areas in the recovery planning process, such as areas in Cache Slough and the lower Sacramento River complex identified by one commenter.

Finally, the Service did not simply designate critical habitat based on the entire geographic range of the delta smelt. At the time the Service expanded the critical habitat boundary in 1994, larval delta smelt had been located as far north as the confluence of the Sacramento River with the Feather River. This area was not included in the revised proposed critical habitat boundary. Based on recent unpublished data (and brought to our attention in a comment), delta smelt in these most upstream observations may have been misidentified as pond smelt (*Hypomesus nipponensis*, or wakasagi). Portions of San Pablo Bay, the Napa River, and western Suisun Marsh known to support the species are not included in the critical habitat designation.

In addition, California Department of Fish and Game biologists contacted the Service with new information that in 1993, delta smelt were found spawning as far upstream as Sacramento. Based on this new information and the importance of this spawning habitat in some years, the Service expanded critical habitat in the 1994 proposal to extend to these important areas.

Comment 17: One commenter thought the Service did not identify areas currently occupied by the smelt.

Service Response: Delta smelt presently occur throughout the range designated as critical habitat. Delta smelt also occur outside the legal boundary of the Delta, in the Sacramento, San Joaquin, and Mokelumne rivers.

Comment 18: One respondent questioned the need for critical habitat, since delta smelt populations had increased seven-fold in 1993.

Service Response: Designation of critical habitat for the delta smelt is justified even though the 1992 and 1993 summer tow-net and fall midwater trawl abundance indices show increased abundance levels. Based on the best available information, the delta smelt has not recovered, and remains vulnerable to a variety of threats. Delta smelt were listed as threatened because the species was likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. A species has recovered if the status of the species, based on the best scientific and commercial data available, indicates listing is no longer appropriate under the criteria of the Act (50 CFR 402.02, 424.11(d)(2)). Listing remains appropriate under the Act until long-term population abundance indices remain at high levels and the population is widespread throughout the Estuary for a number of years. One or two years of high abundance levels is not sufficient to ensure recovery of an annual species such as the delta smelt. Specific recovery criteria are being developed in the recovery planning process.

Comment 19: Several commenters were concerned with the Service's "single species approach", whereas other individuals were worried that EPA's water quality standards, having been based on eight estuarine indicator species, were too broad because species other than the delta smelt would benefit from the standards. There was concern how delta smelt recovery would be coordinated with the recovery of other threatened and endangered estuarine fish species (e.g., winter-run chinook and Sacramento splittail), the salt marsh harvest mouse (*Reithrodontomys raviventris*), California clapper rail (*Rallus longirostris obsoletus*), Suisun Marsh management in general, and with other species outside the Estuary area.

Service Response: Designation of critical habitat and identifying water quality (salinity) as a primary constituent element for protection of the delta smelt may incidentally benefit other native estuarine species. Providing variable salinity regimes will facilitate the recovery of the Estuary to its natural state. The Service does not foresee a significant decline in other native estuarine species due to this critical habitat designation, or due to the implementation of EPA's water quality standards.

Delta smelt recovery will be coordinated with the habitat and water quality needs of other fish and other marsh and wetland species in the Estuary. The Delta Native Fishes Recovery Team was formed in 1993 to address the Estuary native fishes in general. The recovery team will consider the population decline of delta smelt and other native Estuary fishes that ultimately may require active management to restore sustainable populations. The recovery team has developed a draft Recovery Plan that has analyzed the needs and recommended management actions for the delta smelt, longfin smelt, Sacramento splittail, green sturgeon, spring-run chinook salmon, late fall-run chinook salmon and San Joaquin fall-run chinook salmon. Winter-run chinook salmon also was included in recovery planning for the delta smelt, using recommendations developed by the Winter-run Recovery Team.

Federal agencies that propose projects that may affect the salt marsh harvest mouse and the California clapper rail, both listed as endangered under the State and Federal Endangered Species Acts, must consult with the Service under section 7 of the Federal Act. All listed species have equal protection under the State and Federal Acts and the Service cannot develop solutions for one species that may jeopardize other listed species.

Comment 20: One commenter claimed that the Service misrepresented Moyle *et al.* (1992) by stating that delta smelt grow faster in the mixing zone.

Service Response: The Service is puzzled by the assertion that Moyle *et al.* (1992) was misrepresented in the revised proposed rule for delta smelt critical habitat. The Service stated: "[w]hen the entrapment zone is located in a broad geographic area with extensive shallow-water habitat within the euphotic zone (depths less than 4 meters), high densities of phytoplankton and zooplankton are produced (Arthur and Ball 1978, 1979, 1980), and larval and juvenile fish, including delta smelt, grow rapidly." (Moyle *et al.* 1992, Sweetnam and Stevens 1993).

Moyle *et al.* (1992) stated "[T]he mixing currents keep the larvae circulating with the abundant zooplankton also found here [in the mixing zone] (Orsi and Knutson 1979; Siegfried *et al.* 1979; Stevens *et al.* 1985). Growth is rapid, and the juvenile fish are 40–50 mm fork length (FL) by early August [citations omitted]."

Sweetnam and Stevens (1993) stated "[D]elta smelt are fast growing and short lived (Moyle 1976) * * * The majority of growth is within the first 7 to 9 months of life * * * "

The purpose of the paragraph written by the Service and pointed out by the commenter was to illustrate estuarine productivity, while explaining the dynamics of the Estuary's mixing zone and the delta smelt's association with the mixing zone. The Service has not knowingly misrepresented information, and does not believe any misrepresentation occurred in this instance.

Comment 21: One respondent commented that delta smelt spawn north of Suisun Bay in Montezuma Slough, Suisun Slough and their tributaries, and believed this fact contradicted the Service's assertion that

delta smelt spawn upstream of the mixing zone.

Service Response: Montezuma Slough, Suisun Slough, and their tributaries are upstream of the area where mixing between freshwater and salt water occurs in wetter water years. In dryer water years, the entrapment zone may move upstream as far upstream as the City of Sacramento in late summer, and these sloughs may become saline. If delta smelt were to spawn late (i.e., July or August), they would probably seek areas other than the sloughs to spawn in freshwater.

Comment 22: Several commenters at the public hearings suggested that the Service use hatcheries to produce enough delta smelt to make the population stable.

Service Response: The Service believes using hatcheries to propagate fish, including delta smelt, should not be a substitute for habitat protection and restoration. Dr. Moyle presented testimony in 1992 (Natural Heritage Institute 1992) summarizing the work of Hilborn (1992), which explained several reasons why hatcheries are not beneficial to the long-term maintenance of fisheries. His points included (1) though initially successful, hatchery effectiveness decreases after a few years; (2) hatchery fish often do poorly in the wild; (3) artificial production poses a threat to the maintenance of wild fish; (4) hatchery fish dilute the naturally adapted genes of wild fish; and (5) hatcheries provide an excuse for habitat loss. Assuming hatcheries could be used to stabilize delta smelt populations, propagated fish would require an environment that provides ample food, low levels of toxic compounds, and low entrainment losses (Moyle and Herbold 1989). Reliance on hatcheries would not adhere to one of the primary purposes of the Act, which is to conserve the ecosystem(s) upon which listed species depend (16 USC 1531(b)).

Comment 23: One commenter asked why the Service stated that delta smelt are more likely to be entrained in river channels than when downstream of the Sacramento-San Joaquin River confluence, when there is no relationship between salvage and subsequent delta smelt abundance. The commenter noted that entrainment also occurs in Pacific Gas and Electric (PG & E) cooling water diversions downstream from the confluence of the two rivers.

Service Response: DWR (1994) states that Federal and State pumps entrain delta smelt. A relationship has been found between the number of juvenile delta smelt salvaged at the State and Federal pumps and both the percent of inflow diverted and total Delta outflow (DWR 1994). Whether or not there is a statistical relationship between the number of delta smelt entrained at the State and Federal water project pumps and subsequent delta smelt abundance, water quality (salinity) is essential to the conservation of the delta smelt. Adequate salinity and flow provide the delta smelt with suitable habitat for all life stages, and will transport delta smelt away from major points of entrainment. The Service recognizes and has stated in previous rules that delta smelt are taken downstream of the Sacramento-San Joaquin River confluence in numerous agricultural, municipal and industrial diversions. Delta smelt are also taken upstream from the confluence in numerous (over one-thousand) agricultural diversions.

Comment 24: One commenter thought the Montezuma Slough Control Structure might aid, rather than interfere, with the distribution of delta smelt within Suisun Marsh.

Service Response: Based on the best available evidence, the Service maintains that operation of the Montezuma Slough Control Structure may result in the destruction or adverse modification of critical habitat. The Service is required by section 4(b)(8) of the Act to identify public or private activities that *may* result in destruction or adverse modification of critical habitat, and does so in the context of this rulemaking. Even though optimal operation of the Montezuma Slough Control Structure may provide valuable habitat to delta smelt, its operation for other purposes may interfere with the distribution of delta smelt to spawning and rearing habitat within Suisun Marsh. The effects of the salinity control structure on delta smelt are currently being investigated by the DWR, in coordination with the Bureau.

Social Issues

Comment 25: Some respondents believe humans are the real endangered species, and that neither delta smelt nor any other animal species should be considered more important than humans. Similarly, one commenter thought humans could survive just fine without delta smelt, but could not survive without farmers.

Service Response: The Act recognizes that species of fish, wildlife, and plants are of aesthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people (section 2(a)(3)). Delta smelt possess these attributes. The delta smelt is the only smelt endemic to California and one of only two native estuarine smelt species (the other being longfin smelt) found in the Estuary.

The purpose of the Act is to protect species in danger of becoming extinct in the immediate or foreseeable future. Humans are not in such danger. The number of humans has increased in the last century at a rapid rate. As pointed out in a report submitted by one commenter, total farm-related employment (agricultural services, food manufacturers, and agricultural chemicals) increased between 1977 and 1989 (Carter and Goldman 1992). Agricultural services provided 89,908 jobs in California in 1989, adding some 45,000 jobs and more than 4,000 agricultural firms in 12 years.

Comment 26: Congressman Gary Condit and several other commenters thought the critical habitat proposal failed to account for the human element involved, especially the "[E]ffect and toil of thousands of human hands and hearts to provide healthy and wholesome food for the United States and throughout the world".

Service Response: As required by the Act, the Service has adequately accounted for the "human element" by analyzing the economic impacts of designating critical habitat for the delta smelt. The draft economic analysis has been revised in response to public comments, in response to discussions held at five workshops sponsored by the EPA, and in light of additional research to better portray the economic reality of the critical habitat designation.

Procedural and Legal Issues

Comment 27: One commenter was concerned that efforts by the Federal agencies to manage the Bay/Delta were uncoordinated. On the other hand, one commenter presumed that the Service adopted EPA's water quality standards wholesale, and thought the Service had no authority to do so because the Service designates critical habitat under the narrow purposes of the Act, while the EPA promulgates water quality standards under the framework of the Clean Water Act. Similarly, another commenter thought the Service would, in effect, be interposing or substituting EPA's regulatory judgment for its own if the Service incorporated EPA's water quality standards in its designation of critical habitat.

Service Response: This final rule does not incorporate EPA's water quality standards *per se*, although implementation of these standards may be a means to promote recovery of the delta smelt. The January 6, 1994, revised critical habitat proposal for the delta smelt included a list of habitat conditions and a description of water quality primary constituent elements. These elements were developed in

accordance with the requirements of the Act and its regulations. The Service's proposal also reflects the coordinated approach provided by the Club Fed process. The Service participated with the Bureau, NMFS, and EPA in guaranteeing that the January 6, 1994, critical habitat and water quality proposals were based on the best available scientific and technical information. Another priority was for the proposals to take into account the goals and concerns of the agencies and public and private interests affected by the agencies' programs and activities.

The preservation of rare and endangered species is a substantive link between the proposals of the Service and the EPA. The EPA promulgated the Bay/Delta standards because they disapproved provisions of the 1991 Bay/Delta plan developed by the State Board. The EPA determined that the State had not adopted criteria sufficient to protect designated uses of the Estuary, including the "Preserv[ing] Rare and Endangered Species" designated use. Similarly, in discussing the "Relationship Between Fish and Wildlife Service and EPA Actions," the Service wrote—"* * * [T]he Clean Water Act requires protection of the most sensitive use within each category of designated uses. 'Protection of Endangered and Threatened Species' is considered a designated use within the meaning of the Clean Water Act; therefore, a species listing under the Endangered Species Act provides one method to identify the most sensitive use within the designated uses of a water body." (59 FR 854).

Biologically, the proposed critical habitat for the delta smelt and the salinity criteria that constituted EPA's proposed water quality standards are directly related. "* * * EPA's proposed water quality standards address the location of 2 ppt salinities from February to June and, therefore, address both critical habitat requirements for delta smelt and a range of interrelated parameters that affect other species that rely on estuarine habitat." (59 FR 854) Based on the common legal and biological underpinnings of the critical habitat designation and the proposed water quality standards, the Service's treatment of salinity as a primary constituent element and the textual references to the proposed salinity standards were appropriate and fully consistent with the goal of assuring substantive consistency between the two proposals.

Because the designation of critical habitat and EPA's proposed Bay/Delta standards have common elements, the critical habitat designation must address the standards, and, at a minimum, must not be inconsistent with them, and vice versa. The January 6, 1994, critical habitat proposal did not incorporate specific salinity standards into the regulatory designation of habitat, as was the case with the initial critical habitat proposal published in 1991. Rather, the 1994 proposal designated water quality as a primary constituent element, stating—"salinity concentrations [as] required to maintain delta smelt habitat for spawning, larval and juvenile transport, rearing, and adult migration."

The coordinated Federal effort and the substantive consistency of the EPA and Service proposals are a direct reflection of the agencies' intent to address Bay/Delta issues in an effective and responsible manner. The coordinated Club Fed process is intended to address concerns expressed by the State of California of a perceived lack of coordination among the Federal agencies.

Comment 28: One commenter thought designation of critical habitat was not prudent at this time, since critical habitat would not provide the delta smelt any more protection than the listing of the species had already provided. Another commenter thought designating critical habitat at the present time would interfere with the delta smelt recovery planning process.

Service Response: Designation of critical habitat is prudent at this time because the designation will provide substantive benefits to the delta smelt beyond those already resulting from its status as a threatened species. Critical habitat serves to preserve options for a species' eventual recovery. A critical habitat designation contributes to species conservation primarily by identifying important geographic areas, and by describing the features within the areas that are essential to the species. The designation puts public and private entities on notice that the area is important habitat. Section 7 of the Act requires Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to destroy or adversely modify designated critical habitat. This section requires parties to consult with the Service to avoid jeopardy and destruction or adverse modification to important habitat areas.

A designation of critical habitat provides a clearer indication to Federal agencies as to when consultation under section 7 is required, particularly in cases where the action would not result in direct mortality or injury to individuals of the listed species (e.g., an action occurring within the critical area when a migratory species is not present). The critical habitat designation, describing the essential physical or biological features of the habitat, also assists parties in determining which activities conducted outside the designated area are subject to section 7 consultation (i.e., activities that may affect primary constituent elements of the designated area).

Designating critical habitat also assists private, State, and Federal agencies in planning future actions, since the designation establishes, in advance, those habitats that will be given special consideration in section 7 consultations and section 10 incidental take activities. With the designation of critical habitat, potential conflicts between projects and endangered or threatened species can be identified and possibly avoided early in the agency's planning process.

Designating critical habitat will not interfere with recovery planning efforts now in progress. A recovery plan would be prepared for the delta smelt pursuant to the Act whether or not critical habitat was designated for the species.

Comment 29: One commenter thought Club Fed could not restore natural resources to levels existing during times of significantly fewer people under current California law. Another respondent believed the Service may not refer to EPA's water quality standards because the estuarine standards are based on historical conditions, rather than on "existing conditions" now occurring in the Estuary. The respondent claims there is a temporal element in the definition of critical habitat, stating that critical habitat is defined in the Act in terms of existing conditions, and the Service must look to specific areas which contain physical and biological features essential to the conservation of the species at the time it is listed. The commenter went on to say that critical habitat may only consist of those areas that currently contain essential physical and biological features.

Service Response: The definition of critical habitat does not require that all primary constituent elements necessarily be conditions existing at the time critical habitat is designated. Conditions existing historically in the Estuary are required to recover the delta smelt. Conditions now occurring in the Estuary have resulted in the decline of the delta smelt population, because the Estuary currently does not contain all of the physical and biological features (e.g., habitat requirements and salinity) necessary for each of the species' life stages. Critical habitat for the delta smelt identifies areas needed to conserve the species, so it may recover and, ultimately, be delisted. In order to accomplish recovery, it is necessary that

critical habitat encompass conditions that are superior to existing conditions, so that all of the physical and biological features necessary for the delta smelt are present in the Estuary. The Delta Native Fishes Recovery Team has identified 1968 as a time when the Estuary had appropriate hydrologic conditions that would allow recovery of the delta smelt. An interagency Statement of Principles (Plenert, Fullerton, and Seraydarian, *in litt.* 1992) among the Service, NMFS and EPA have found that the Estuary ecosystem and its anadromous and resident fisheries were relatively healthy during the years between 1960–1970. The Service recognizes no significant conflict with managing toward historic conditions for all primary constituent elements as a conservation strategy for the delta smelt.

The Service notes that the 1994 revised proposed critical habitat for the delta smelt contains the physical and biological features essential for the conservation of the delta smelt. Using equations developed by Kimmerer and Monismith (1992) to calculate salinity, DWR (1993) determined that the isohaline was located downstream of the Roe Island historic reference point 124 days, and was between Roe Island and Chipps Island habitat 14 days between February 1 and June 31 in 1993 (DWR 1993). Therefore, conditions for spawning, larval and juvenile transport, rearing and adult migration was, in fact, available for all life stages as recently as 1993. However, these physical and biological features do not occur frequently enough, and are not protected during critical periods in February through June, especially in drier water years. The mixing zone was pushed out beyond Roe Island during this period because 1993 was a wet year Water quality criteria are necessary to ensure habitat suitable for the delta smelt are available at critical times in all water-year types.

Comment 30: The Service did not identify a plan, any directives, or a goal to ensure that delta smelt are protected, or to indicate when the species is recovered.

Service Response: A critical habitat designation need not, and should not, include specific management plans or recovery goals. Designating critical habitat for a species does not result in a management or recovery plan. Critical habitat simply identifies areas where conservation efforts should be concentrated. Designating critical habitat alone will not dictate how the delta smelt should be protected, nor will it require identification of goals to measure the success of the designation. Plans, goals, and directives will be identified and set in motion during the recovery planning process. Section 4(f)(1) of the Act specifies what should be included in a recovery plan. Criteria for downlisting or delisting are contained in recovery plans, which function as goals to achieve species conservation. The Delta Native Fishes Recovery Team has developed a draft Recovery Plan for the delta smelt and other estuarine fish species, and will include recovery and delisting criteria for the delta smelt. The public will have the opportunity to comment on a draft delta smelt Recovery Plan before it is approved as a final plan as required by section 4(f)(4) of the Act.

Comment 31: Senator Phil Wyman and The California Farm Bureau were disappointed with the quality of the public hearings held in Fresno because only the Service and the EPA attended the meeting to hear testimony and answer questions. The Senator and the Farm Bureau believed the Bureau and NMFS should have been at the hearing, since the issues involved "Club Fed". Moreover, several of the participants in Fresno felt the hearings were simply a "going-through-the-motions" exercise.

Service Response: Section 4(b)(5)(E) of the Act requires the Service to hold a public hearing if one is requested within 45 days of the publication of a proposed rule. The Service received such a request, and held hearings in Fresno, Irvine, Sacramento, and San Francisco to accept public comment on two proposals by the Service and on one proposal by EPA—the proposed critical habitat designation for the delta smelt, listing of the Sacramento splittail, and Bay/Delta water quality standards.

The hearings are not a "going-through-the-motions" event. Service staff review all oral comments presented at the public hearings from the hearing transcripts. Oral comments are given the same weight and consideration as are comments submitted in written form.

Comment 32: Many commenters thought the Service should prepare an Environmental Impact Statement (EIS) required by NEPA, to comply with the holding in *Douglas County* v. *Lujan*. These commenters thought the Service should assess the environmental and social impacts that may occur in or near the Estuary, and outside the Estuary area as a result of designating critical habitat for the delta smelt. Commenters identified potential environmental impacts, including groundwater overdraft and subsequent land subsidence, sagging canals and leaking rivers, fugitive dust, warming of reservoir water, impacts on regional water quality control plans, increased energy use, impacts on listed and candidate species, loss of water for wetlands, loss of open-space habitat provided by farms, and impacts on regional recreational use at reservoirs.

Service Response: The decision in *Pacific Legal Foundation* v. *Andrus* (657 F.2d 829) held that an EIS is not required for listings under the Act. The decision noted that preparing an EIS on listing actions does not further the goals of NEPA or the Act. The Service believes that, under the reasoning of this decision, preparing an EIS for the delta smelt critical habitat designation would not further the goals of NEPA, or the Act, and is not legally required.

The United States District Court for the District of Oregon in *Douglas County* v. *Lujan* held that critical habitat designations should be analyzed under NEPA. However, the decision is stayed pending appeal to the Ninth Circuit.

In addition, see the discussion in this rule respecting NEPA compliance.

Comment 33: One commenter thinks the Service violated the Federal Advisory Committee Act (FACA) because it relied on scientific information developed by the San Francisco Estuary Project (SFEP) in developing the revised critical habitat designation.

Service Response: Section 4(b)(2) of the Act specifies that "The Secretary shall designate critical habitat * * * on the basis of the best scientific data available * * *." When the Service identifies critical habitat, it relies on scientific data in published literature, data gathered as a result of status reviews, data received during the public comment periods, and information communicated in conversations with biologists, economists and other specialists. A summary of the findings of the SFEP (1993) was included in the body of information that the Service used to revise the proposed rule to designate critical habitat.

Critical habitat for the smelt was first proposed in October, 1991. The Service revised the critical habitat boundaries in 1994, relying on the best scientific information available from California Department of Fish and Game biologists, Service biologists, and new scientific information received during the public comment period from the EPA and other commenters. Included in this information were the findings and recommendations of the SFEP.

Had the Service not used SFEP information, the Service would not have complied with section 4(b)(2) of the Act, which requires use of the best scientific evidence available. SFEP was created in 1988 as part of EPA's National Estuary Program. The SFEP is an Environmental Management Program of EPA, the State

of California and the Association of Bay Area Governments. The Service has participated in the SFEP extensively over the past several years. The SFEP developed recommendations for estuarine standards, and complied with FACA when they conducted workshops and meetings, and when they chose participants to work on the standards.

Comment 34: One commenter thought the critical habitat designation is defective since the data supporting the expansion of critical habitat for the delta smelt was based on personal communications not available for the public review.

Service Response: The Service relied on information that has been available to the public by contacting the California Department of Fish and Game, EPA or the Service. The administrative record for the critical habitat designation is and has been available for public inspection since publication of the initial proposed rule in 1991.

Comment 35: One commenter urged the Service and the EPA to exhaust all possible remedies to recover the delta smelt (e.g., by using the Delta Protection Act) before more burdens were placed on California's water users with the designation of critical habitat.

Service Response: Pursuant to 50 CFR 424.12, the Service must designate critical habitat unless it is not prudent to do so. The Service has not concluded that it is not prudent to designate critical habitat. Further, critical habitat is determinable. Therefore, the requirement at section 4(b)(6)(c)(ii) to publish a final designation by not more that one year after listing applies.

Comment 36: One commenter felt the proposed critical habitat designation should be withdrawn since the Service did not comply with the statutory time period for designating critical habitat for the delta smelt. The commenter cited *Idaho Farm Bureau Federation* v. *Babbitt*, 839 F.Supp. 739 (D. Idaho 1993) to support its contention.

Service Response: In this rulemaking, the Service first proposed critical habitat for the delta smelt in 1991. It revised its proposal in 1994 after public comment indicated that the Service had not included important spawning habitat for the species. These facts are significantly different from those of the case cited by the commenter. As such, the Service does not apply the holding in that case to this rulemaking effort.

Comment 37: One commenter thought measures implemented in the past to protect delta smelt habitat be given a "credit" in any future section 7 consultation or section 10 determination with the Service.

Service Response: Under sections 7 and 10 of the Act, the Service assesses the merits of project proposals on a case-by-case basis. In a formal section 7 consultation, the Service evaluates the effects of an action, creating an environmental baseline (50 CFR 402.14(g)(3)). This baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process (50 CFR 402.02). Conservation actions proposed by project proponents can be considered as suitable measures to reduce the impact of incidental take, or otherwise reduce, mitigate, and compensate for project effects.

Economic Issues

Comment 38: Many commenters thought the economic analysis prepared for the Service by the EPA was inadequate.

Service Response: The economic analysis is described and its results are summarized in this final rule. The Service believes the economic analysis is sufficient in that it adequately and appropriately identifies costs of designating critical habitat. As such, it enables the Secretary to exclude areas from critical habitat designation if the benefits of an exclusion are found to outweigh the benefits of including an area as critical habitat.

Comment 39: Several commenters accused the Service of incorrectly minimizing the economic impacts in the delta smelt critical habitat designation since the impacts associated with the critical habitat designation were separated from the economic impacts attributable to the listing of the species.

Service Response: Section 4(b)(2) of the Act requires the Service to consider the economic and other relevant impacts of designating critical habitat. It does not direct the Service to assess the economic impacts of both listing the species and designating its critical habitat. Section 4(b)(1)(A) of the Act explicitly precludes the Service from considering the economic impacts of listing a species as threatened or endangered. The congressional intent behind inclusion of this statutory provision was to ensure that only relevant biological criteria are used to assess the ecological status of a species.

The 1994 revised proposed critical habitat designation for the delta smelt explained the economic impacts attributable to listing and to critical habitat designation. Subsequent to listing and prior to this final critical habitat designation, protective measures for the delta smelt (e.g., as provided through section 7 consultation with the Bureau) have been in place and created economic impacts not associated with critical habitat designation. In a comprehensive economic analysis prepared by the EPA and other economists for the Service, the economic impacts attributed to designating critical habitat have been evaluated. The Service has not limited the examination of economic impacts so as to minimize the economic effects of designating critical habitat.

Comment 40: One commenter thought that the Service could not begin to define critical habitat until it fully considered the economic impacts of the designation. The commenter thought a proposed rule for critical habitat could not be drafted until an economic analysis was conducted, and an opportunity to comment on the analysis was provided to interested parties. Another commenter thought the public should be able to comment on a revised critical habitat designation in the event the Secretary excludes portions of habitat which were included in the revised proposed rule.

Service Response: The Service has not defined critical habitat prematurely for the delta smelt because the Act does not require completion of an economic analysis before the Service can propose critical habitat areas. In a critical habitat rulemaking conducted in accordance with the Act and the Administrative Procedure Act (APA), the Service defines and proposes critical habitat boundaries, conducts an economic impact analysis, takes public comment on the proposed critical habitat designation and the economic analysis, makes exclusions, if any, to critical habitat boundaries, and promulgates a final rule. The Secretary, through the Service, has the discretion to exclude critical habitat areas based on economics, in accordance with the section 4(b)(2) standard. The section allows the Secretary to exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of critical habitat, provided that exclusion will not result in extinction of a species. The Service has properly conducted critical habitat rulemaking for the delta smelt.

Neither the Act, nor its regulations, require the Service to allow public comment on revised critical habitat designations where the Secretary has excluded areas of proposed critical

habitat. The standard rulemaking process requires preparation of a proposed rule followed by a final rule. Publishing a draft final rule is not required. The Service acknowledges that the public was allowed to comment in the above described manner in the critical habitat designation for the Northern Spotted Owl, however, the opportunity for public comment was a policy decision made specifically for that rulemaking and is not required by law.

The Service has provided ample opportunity for the public to comment on the delta smelt critical habitat designation proposals and on the economic analysis during prescribed comment periods from October 3 to February 3, 1992; March 16 to April 30, 1993, and again from January 27 to March 11, 1994. Four public hearings also were held to solicit comments on the revised proposed critical habitat designation.

Comment 41: One commenter thought the critical habitat designation was flawed since the economic analysis could not properly analyze economic impacts likely to arise from the proposed designation, because the Service failed to present any focused or concrete indication of what specific management measures would be pursued. The commenter thought the public was not able to effectively comment on the critical habitat designation due to this inadequacy.

Service Response: Designating critical habitat does not result in a management plan. Specific management measures are identified in a draft Recovery Plan that currently is being prepared by the Service, and need not be identified in a proposed critical habitat designation.

As described in the above comment, the Service believes the public was given an opportunity to effectively comment on the critical habitat designation and the draft economic analysis. The draft RIA was available for review and provided sufficient detail so that the public could provide meaningful comments.

Comment 42: One commenter believes the critical habitat designation is deficient because the Service failed to analyze the potential economic impacts of any particular portion of the Delta.

Service Response: Section 4 of the Act requires the Secretary to take into consideration "The economic impact * * * of specifying any particular area as critical habitat." The Service may exclude any area from critical habitat if it is determined that the benefits of such exclusion outweigh the benefits of specifying such areas as part of critical habitat, unless failure to designate such area will result in the extinction of the species.

The Service believes it has adequately analyzed the potential economic impacts of the Estuary "area." The Act does not require an agency to analyze potential economic impacts for any specific or particular "area." An "area" is not limited to particular reaches of a river, or particular areas of a species' habitat.

Comment 43: The Department of the Army thought the Service did not sufficiently analyze the economic impacts of designating critical habitat, and did not include adequate economic data. They thought the Service should have included channel dredging activities and the maintenance of flood control levees in the economic analysis, including the economic impacts of potential failure and flooding since maintenance might be limited due to critical habitat designation.

Service Response: The Service believes the economic impacts of designating critical habitat have been sufficiently addressed, and include discussion of dredging and levee maintenance. As discussed in the final rule to list the delta smelt, and in the revised proposed rule to designate critical habitat for the species, the Service determined that the economic impact of restricting activities associated with deep water navigation channel dredging were attributable to the jeopardy standard imposed by the listing of the delta smelt as a threatened species. Hence, the economic impacts of these activities can not be associated with designating critical habitat.

The Service did determine that levee maintenance may adversely modify critical habitat without necessarily jeopardizing the delta smelt. The economic impacts of restrictions associated with the construction and implementation of these projects have been analyzed to determine the economic cost or benefit of critical habitat designation. Properly scheduling maintenance and construction activities to avoid periods critical to a species can allow projects to go forward without incurring large economic impacts.

National Environmental Policy Act

The Service has determined that an Environmental Assessment and/or an Environmental Impact Statement, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Act. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

Regulatory Flexibility Act and Executive Order 12866

This proposed rule has been reviewed under Executive Order 12866. The Department of the Interior has determined that the proposed rule will not have a significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). Based on the information discussed in this rule, significant economic impacts will not result from the critical habitat designation. Also, no direct costs, enforcement costs, information collection, or recordkeeping requirements are imposed on small entities by this designation. Further, the rule contains no recordkeeping requirements as defined by the Paperwork Reduction Act of 1980.

Takings Implications Assessment

The Service has analyzed the potential takings implications of designating critical habitat for the delta smelt in a Takings Implications Assessment prepared pursuant to requirements of Executive Order 12630, "Governmental Actions and Interference with Constitutionally Protected Property Rights." The Takings Implications Assessment concludes that the designation does not pose significant takings implications.

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Authors

The primary authors of this proposed rule are Nadine R. Kanim and Dana Jacobsen, Sacramento Field Office (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

Accordingly, the Service hereby amends 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

§ 17.11 [Amended]

2. Amend § 17.11(h), in the entry in the table under FISHES for "Smelt, delta," in the column under "Critical Habitat" by revising "NA" to read "17.95(e)."

3. Amend § 17.95(e) by adding critical habitat of the delta smelt in the same alphabetical order as the species occurs in § 17.11(h).

§ 17.95 Critical habitat—fish and wildlife.

(e) * * *

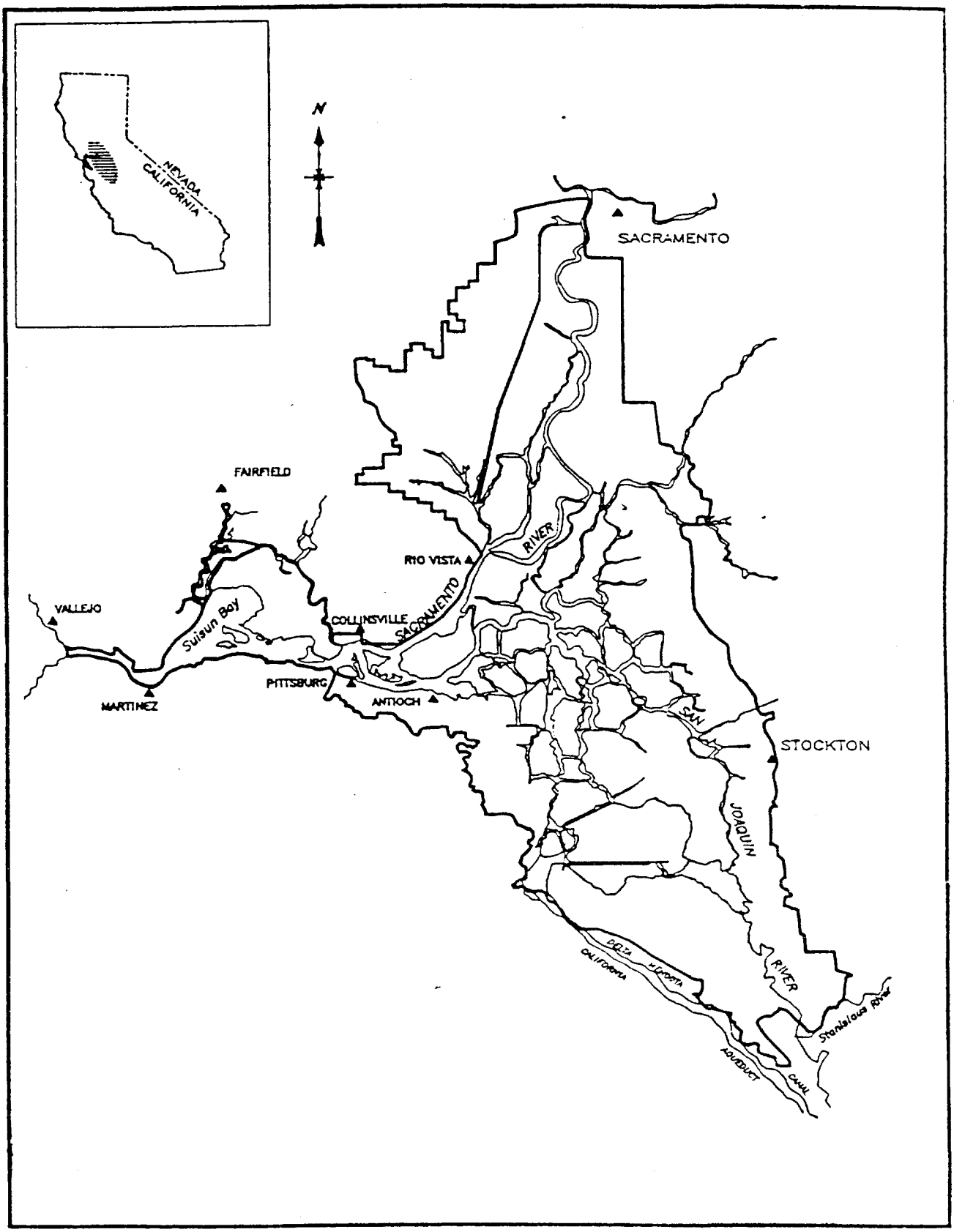
* * * * *

DELTA SMELT (*Hypomesus transpacificus*)

California—Areas of all water and all submerged lands below ordinary high water and the entire water column bounded by and contained in Suisun Bay (including the contiguous Grizzly and Honker Bays); the length of Montezuma Slough, and the existing contiguous waters contained within the Delta, as defined by section 12220, of the State of California's Water Code of 1969 (a complex of bays, dead-end sloughs, channels typically less than 4 meters deep, marshlands, etc.) as follows:

Bounded by a line beginning at the Carquinez Bridge which crosses the Carquinez Strait; thence, northeasterly along the western and northern shoreline of Suisun Bay, including Goodyear, Suisun, Cutoff, First Mallard (Spring Branch), and Montezuma Sloughs; thence, upstream to the intersection of Montezuma Slough with the western boundary of the Delta as delineated in section 12220 of the State of California's Water Code of 1969; thence, following the boundary and including all contiguous water bodies contained within the statutory definition of the Delta, to its intersection with the San Joaquin River at its confluence with Suisun Bay; thence, westerly along the south shore of Suisun Bay to the Carquinez Bridge.

BILLING CODE 4310-55-P



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Primary Constituent Elements—physical habitat, water, river flow, and salinity concentrations required to maintain delta smelt habitat for spawning, larval and juvenile transport, rearing, and adult migration.

Dated: December 8, 1994.

George T. Frampton, Jr.,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 94–31063 Filed 12–16–94; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 285

[Docket No. 940393–4093; I.D. 112894B]

Atlantic Tuna Fisheries; Bluefin Tuna

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Bluefin tuna quota transfer.

SUMMARY: NMFS transfers 5 metric tons (mt) of bluefin tuna from the longline-south Incidental subcategory to the longline-north Incidental subcategory. NMFS has determined that the fisheries landing bluefin under the longline-south Incidental subcategory will not achieve the full 1994 quota allocation. This action is being taken to extend the season for the longline-north Incidental subcategory, which will assure additional collection of biological assessment and monitoring data and increase the economic benefits from this fishery without contributing significantly to additional bluefin mortality. In addition, this action will prevent waste of bluefin tuna that might otherwise be discarded dead.

EFFECTIVE DATE: December 14, 1994 through December 31, 1994.

FOR FURTHER INFORMATION CONTACT: John Kelly, 301–713–2347 or Ray Baglin, 508–281–9140.

SUPPLEMENTARY INFORMATION: Bluefin tuna are currently leaving the fall feeding grounds in New England and migrating along the Mid-Atlantic waters, so high incidental catches by longline vessels operating south of 34° N. lat. are not expected to occur. After the addition of 5 mt, effective November 4, 1994 (59 FR 55821, November 9, 1994), the longline-north Incidental subcategory has only 0.6 mt remaining of its total new allocation of 28 mt for vessels fishing north of 34° N. lat. Once the quota is reached for this northern subcategory, any bluefin tuna incidentally taken by longline vessels must be discarded at sea. In order to prevent waste of bluefin tuna, which would otherwise be discarded dead, NMFS is transferring an additional 5 mt of quota from the southern to the northern subcategory. With the addition of this 5 mt, the total annual allocation to date for the Incidental subcategory longline-north will be 33 mt. This amount should be sufficient to account for incidental take of bluefin by the northern subcategory for the remainder of this year while any unharvested balance for the southern subcategory will be added to the 1995 quota. After the transfer of this 5 mt, approximately 12 mt remains available in the longline-south Incidental subcategory. Based on reported catches, bluefin taken from the southern subcategory will not exceed the 12 mt remaining of that quota.

Classification

This action is taken under 50 CFR 285.22(i) and is exempt from review under E.O. 12866.

Dated: December 13, 1994.

David S. Crestin,

Acting Director, Office of Fisheries Conservation and Management, National Marine Fisheries Service.

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