Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*	*	*
Splittail, Sacramento.	*Pogonichthys macrolepidotus.*	U.S.A. (CA)	Entire	T	.....	NA	NA
*	*	*	*	*	*	*	*

Dated: December 21, 1993.

Richard N. Smith,

Acting Director, U.S. Fish and Wildlife Service.

[FR Doc. 94–91 Filed 1–5–94; 8:45 am]

BILLING CODE 4310–55–P

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Notice of 1-Year Finding on a Petition to List the Longfin Smelt

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of petition finding.

SUMMARY: The U.S. Fish and Wildlife Service (Service) announces a 1-year finding on a petition to list the longfin smelt (*Spirinchus thaleichthys*) under the Endangered Species Act of 1973, as amended (Act). The Service determines that the petitioned action is not warranted at this time. The longfin smelt occurs from the San Francisco Bay-Sacramento-San Joaquin River Estuary in California to Prince William Sound in Alaska. Although the southernmost populations are declining, little or no population trend data are available for estuaries in Oregon and Washington. The species may be surviving and reproducing in Puget Sound, Skagit Bay, Grays Harbor, Willapa Bay, the Columbia River, Yaquina Bay, and Coos Bay. Large numbers are found in the Gulf of Alaska 5 to 6 miles off shore. The listing of a Sacramento-San Joaquin River estuary vertebrate population segment is also not warranted at this time because that population does not seem to be biologically significant to the species as a whole, and may not be sufficiently reproductively isolated.

DATES: Comments from all interested parties will be accepted until further notice.

ADDRESSES: Comments and materials concerning this document should be submitted to the Acting Field Supervisor, Sacramento Field Office, U.S. Fish and Wildlife Service, 2800 Cottage Way, E–1803, Sacramento, California 95825–1846.

FOR FURTHER INFORMATION CONTACT: H. Dale Hall, Assistant Regional Director, Ecological Services, U.S. Fish and Wildlife Service, 911 NE. 11th Avenue, Portland, Oregon 97232–4181 (503/231–6150).

SUPPLEMENTARY INFORMATION: On November 5, 1992, the Service received a petition from Mr. Gregory A. Thomas of the Natural Heritage Institute to add the longfin smelt to the List of Endangered and Threatened Wildlife and to designate critical habitat in the Sacramento and San Joaquin Rivers and estuary. In his letter, Mr. Thomas identified the following eight organizations as co-petitioners: American Fisheries Society, Bay Institute of San Francisco, Natural Heritage Institute, Planning and Conservation League, Save San Francisco Bay Association, Friends of the River, San Francisco Baykeeper, and the Sierra Club. On June 24, 1993, the Service issued a 90-day finding, a notice of which was published in the **Federal Register** on July 6, 1993 (58 FR 36184), that the petition presented substantial information indicating that the requested action may be warranted. The Service initiated a status review and analyzed available data on this species (Meng 1993). Additional sources of information describing the human factors and projects that may affect this species include expert testimonies presented to the California State Water Resources Control Board's 1987 Water Quality/Water Rights Proceeding on the San Francisco Bay and Sacramento-San Joaquin River Delta and 1992 Water Rights Phase of the Bay-Delta Estuary Proceedings.

Section 4(b)(3)(B) of the Act requires that the Service issue a finding within 1 year of the receipt of the petition on whether the petitioned action is (a) not warranted, (b) warranted, or (c) warranted but precluded from immediate proposal by other pending proposals of higher priority.

In casual conversations, the petitioner indicated that he intended the petition to be a request to list the Sacramento-San Joaquin River estuary population. However, the Service did not receive this request in writing and, in any case, was required to review the status of the species on a rangewide basis prior to considering the appropriateness of listing individual population segments. The Service determines that listing of the Sacramento-San Joaquin estuary population segment of the longfin smelt is not warranted.

Longfin smelt is an euryhaline species with a 2-year life cycle (Moyle 1976, Moyle and Yoshiyama 1992). Spawning occurs in fresh water over sandy-gravel substrates, rocks, or aquatic plants. Spawning may take place as early as November and extend into June, although the peak spawning period is from February to April (Wang 1986). After hatching, larvae move up into surface waters and are transported downstream into brackish-water nursery areas. Sacramento-San Joaquin River outflow into Suisun and San Pablo Bays has been positively correlated with longfin smelt recruitment (Stevens and Miller 1983) because higher outflow increases larval dispersal and the area available for rearing (Wang 1986). The main food of longfin smelt is opossum shrimp, although copepods and other crustaceans also are eaten (Moyle 1976). Longfin smelt are preyed upon by fishes, birds, and marine mammals (Monaco et al. 1991). Longfin smelt play a role in maintaining the structure and function of estuarine ecosystems because they are important as food for birds and piscivorous fishes.

As presently described, longfin smelt range from the San Joaquin-Sacramento River estuary and South San Francisco Bay, California, to Prince William Sound, Alaska (Miller and Lea 1972). The present-day distribution of longfin smelt is probably due to lower sea levels in the Pleistocene, which would have enlarged estuaries up and down the Pacific coast and shortened the distances between estuaries, as well as provide more habitat (Peter Moyle, University of California, Davis, pers. comm., 1993). Unverified reports of offshore collection of longfin smelt exist, approximately 5 to 6 miles off shore in Alaska (Bruce Wing, National Marine Fisheries Service, Auke Bay, Alaska, pers. comm., 1993) and 3 to 4 miles off shore in northern California (Larry

Quirollo, California Department of Fish and Game, pers. comm., 1993).

Based on inferred abundance, longfin smelt may be common in Willapa Bay, Skagit Bay, and Puget Sound in Washington and Coos Bay and Yaquina Bay in Oregon (Monaco *et al.* 1990). Largely using sampling data, Monaco *et al.* (1990) also reported that longfin smelt were common to highly abundant in the Columbia River and Grays Harbor, Washington. Few data exist on the recent status of the Oregon and Washington longfin smelt; however, indications are that this species may be reproducing and surviving in the Oregon and Washington estuaries (Bob Emmett, National Marine Fisheries Service, Hammond, Oregon, pers. comm., 1993). A land-locked population exists in Harrison Lake in British Columbia. British Columbia longfin smelt have also been recorded at the Fraser River estuary and near Prince Rupert and Vancouver (Hart 1973). Alaska longfin smelt are found at the Dixon Entrance, Yakutat Bay, Prince William Sound, and Cook Inlet (Wing, pers. comm., 1993). In California, the longfin smelt occurs (or did occur) in the Klamath River mouth, Humboldt Bay, Eel River mouth, Van Duzen River mouth, and the San Francisco Bay-Sacramento-San Joaquin Estuary (Moyle 1976; Moyle and Yoshiyama 1992; Ron Fritzsche, Humboldt State University, pers. comm., 1993). The Estuary supports the largest and most southerly longfin smelt population in California (Lee *et al.* 1980).

The strongest information on the decline of longfin smelt comes from the Sacramento-San Joaquin River Estuary of California. Longfin smelt were once one of the most abundant fish caught by trawl surveys in the Sacramento-San Joaquin (Herbold *et al.* 1992) and Humboldt Bay estuaries (Barnhart, pers. comm., 1993). Longfin smelt numbers in the Estuary fluctuated widely in the past, but since 1983 abundance has dropped dramatically and remained at record lows. In Humboldt Bay, longfin smelt were the fourth most abundant fish captured in trawls in the late 1960s and early 1970s (Roger Barnhart, National Biological Survey, pers. comm., 1993). However, since 1988, no longfin smelt have been captured in Humboldt Bay using similar sampling methods (Tim Mulligan, Humboldt State University, pers. comm., 1993). Historical records of longfin smelt from the mouth of the Van Duzen River exist; however, in recent years, no evidence of the fish exists for this location (Fritzsche, pers. comm., 1993). The Eel River, which is about 3.2 kilometers (2 miles) from Humboldt Bay, is relatively small and probably contains little habitat appropriate for longfin smelt. Longfin smelt likely occurred in the Eel River only when high river outflows introduced fish from Humboldt Bay. Longfin smelt numbers probably declined in the Eel River at the same time declines occurred in Humboldt Bay. Recent surveys have not found the longfin in the Eel estuary (Moyle, pers. comm., 1993). In Oregon and Washington, no population trend data exist for any of the estuaries, although the indications are that the species is surviving and reproducing in several estuaries (Emmett, pers. comm., 1993). In Alaska, large numbers of longfin smelt are found in the Gulf of Alaska (Bruce Wing, National Marine Fisheries Service, pers. comm., 1993).

In the Sacramento-San Joaquin River Estuary the decline in longfin smelt abundance is associated with fresh water diversions from the Delta to support California's agricultural industry in the Central Valley and the vast urban areas of southern California. Strong relationships between outflow and longfin smelt abundance indicate that outflows less than 3,400 cubic feet per second (cfs) result in reproductive failure for longfin smelt (Moyle and Yoshiyama 1992). Because of its 2-year life span, such flows for more than 2 or 3 consecutive years could push this species toward extinction. From 1986 to 1991, outflows hovered close to that number, partly due to high proportions of inflow diverted. Movement of the entrapment zone (mixing zone at the freshwater-saltwater interface) up-river due to low outflows has constricted the range of the longfin smelt and made it increasingly vulnerable to diversion into man-made structures. Low outflows have failed to disperse larvae downstream to the productive nursery areas in Suisun Bay away from the pumps. The water exports from the Delta by far exceed those from any other estuary on the west coast of North America.

Sediment production as a result of human activities and developments in the Humboldt, Eel, Van Duzen, and Klamath watersheds may be a cause of the decline of longfin smelt in those estuaries. Soil washed into the streams can deposit in estuaries downstream. Sedimentation in the spawning habitat could have reduced the spawning success of this species due to physical scouring or suffocation of eggs (Barnhart, pers. comm., 1993). Although human activities upstream of estuaries in Oregon, Washington, Canada, and Alaska would likely result in similar impacts, the Service does not have population trend data for these portions of the species' range.

Longfin smelt disappeared from the Humboldt Bay estuary in the 1980s (Barnhart, pers. comm., 1993), perhaps as a result of a dramatic loss of intertidal marsh habitat, which may have reduced productivity levels to a point at which they could no longer support the species. In addition, the loss of freshwater flows from the Mad River, as a result of water diversions and land reclamation, may have contributed to the loss of this species from the Humboldt Bay.

Longfin smelt may be particularly sensitive to adverse habitat alterations or to stochastic events because their 2-year life cycle increases the likelihood of extinction after consecutive periods of reproductive failure due to drought or other factors. Relatively brief periods of reproductive failure could lead to extirpations.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in this determination. This species does not appear to be threatened throughout all or a significant portion of its range or likely to become so in the foreseeable future. However, given the declines in the southern portion of the species' range and the general lack of population trend data for the remainder of its range, the Service will include the longfin smelt in category 2 of the next notice of review for animals.

Though the petition was not limited to a portion of the species' range, the petitioner focused on the resident longfin smelt in the Sacramento-San Joaquin River estuary population. In telephone conversations, the petitioner indicated that he was most interested in a population listing. Longfin smelt numbers in this estuary have declined by 90 percent since 1984 and by 50 percent annually since 1987.

The Service has listed vertebrate population segments where the entity being listed represented the entire coterminous United States population (e.g., marbled murrelet, grizzly bear). Some reproductively isolated (or nearly so) vertebrate population segments that are clearly important to the conservation of an entire species have also been listed under the Act (e.g., Mojave population of the desert tortoise, coastal population of the western snowy plover).

Although the longfin smelt reportedly is unable to swim between estuaries (Moyle, pers. comm., 1993), unverified reports of offshore collections exist (Quirollo, pers. comm., 1993; Wing, pers. comm., 1993). Furthermore, the current distribution is thought to be the

result of movements between estuaries that took place during the Pleistocene when lower sea levels reportedly would have enlarged estuaries along the Pacific coast and shortened the inter-estuarian distances (Moyle, pers. comm., 1993). Though geographically removed from the closest known extirpated or declining population (300 miles from the Eel River in California), this isolation does not necessarily indicate that the Sacramento-San Joaquin River estuary population is significant to a species that has a range of more than 1,900 miles. In addition, electrophoretic analysis revealed that the accumulated number of codon substitutions per locus (i.e., Nei's genetic distance) since the time of separation of the Sacramento-San Joaquin River estuary population and the longfin population in Lake Washington, Washington, connected to Puget Sound via a system of locks, has been small (0.005 according to Stanley *et al.*, submitted to *Copeia*). Thus, these populations, separated by approximately 1,000 miles, have genetically diverged only slightly since their separation.

The Sacramento-San Joaquin River estuary is clearly an important and significant wetland ecosystem. The longfin smelt formerly was the fourth most abundant fish in the Sacramento-San Joaquin River estuary; however, the role of this declining species in the estuary today is unknown.

Based on this evaluation the Service has determined that the listing of the longfin smelt under the Act is not warranted at this time. The listing of the Sacramento-San Joaquin River estuary population of the longfin smelt is also not warranted at this time.

References

A complete list of references used in the preparation of this finding is available from the Associate Manager—Endangered Species, U.S. Fish and Wildlife Service, Portland, Oregon (see **ADDRESSES** section).

Authority

The authority for this action is the Endangered Species Act (16 U.S.C. 1531 *et seq.*).

List of Subjects in 50 CFR Part 17

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

Dated: December 22, 1993.

Richard N. Smith,

Acting Director, U.S. Fish and Wildlife Service.

[FR Doc. 94–92 Filed 1–5–94; 8:45 am]

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