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[FR Doc. 2024–16570 Filed 7–29–24; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

42 CFR Part 71

[Docket No. CDC–CDC–2023–0051]

RIN 0920–AA82

Control of Communicable Diseases; Foreign Quarantine: Importation of Dogs and Cats; Correction

AGENCY: Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

ACTION: Final rule; correction.

SUMMARY: The Centers for Disease Control and Prevention (CDC) in the Department of Health and Human Services (HHS) announces a technical correction to the final rule published on May 13, 2024, regarding the importation of dogs and cats into the United States. The final rule contained a technical error. HHS/CDC is therefore publishing this amendment to the final rule correcting an error in amending instructions to the Office of the Federal Register.

DATES: Effective on August 1, 2024.

FOR FURTHER INFORMATION CONTACT: Ashley C. Altenburger, J.D., Division of Global Migration Health, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS–H16–4, Atlanta, Georgia 30329. Telephone: 1–800–232–4636.

SUPPLEMENTARY INFORMATION: On May 13, 2024, HHS/CDC published a final rule (89 FR 41726) that included a technical error. Therefore, HHS/CDC is publishing this notice to correct the technical error that was made in the final rule.

Section 553(b)(B) of the Administrative Procedure Act (APA), 5 U.S.C. 553(b)(B), provides that, when an agency for good cause finds that notice and public procedure are impracticable, unnecessary, or contrary to the public interest, the agency may issue a rule without providing notice and an opportunity for public comment. We have determined that it is unnecessary to provide prior notice and the opportunity for public comment because the technical correction being made, as discussed below, address only a minor publication error that does not substantially change agency actions taken in the final rule. For the same reasons we find good cause to make the correction effective on publication.

Summary of the Technical Correction to 42 CFR Part 71—Foreign Quarantine; Importation of Dogs and Cats

The final rule contains instructions to the Office of the Federal Register explaining how § 71.51, Dogs and cats, should appear once published in the Code of Federal Regulations. In amending instruction 3.j. to § 71.51, appearing at 89 FR 41837, HHS/CDC included instructions ''adding paragraphs (h) through (ff).'' However, the final rule contained updated provisions through paragraph (gg) and should have indicated that HHS/CDC is ''adding paragraphs (h) through (gg).'' We are therefore making this technical correction to ensure that paragraph (gg) is published in the Code of Federal Regulations as HHS/CDC intended and as discussed in the final rule.

Correction

For the reasons noted above, in FR Doc. 2024–09676, beginning on page 41726 in the **Federal Register** of Monday, May 13, 2024, the following correction is made:

§ 71.51 [Corrected]

■ 1. On page 41837, in the third column, in amendment 3.j. for § 71.51, the instruction ''Adding paragraphs (h) through (ff)'' is corrected to read ''Adding paragraphs (h) through (gg)''.

Elizabeth Gramling,

Executive Secretary, Department of Health and Human Services.

[FR Doc. 2024–16681 Filed 7–29–24; 8:45 am]

BILLING CODE 4163–18–P

DEPARTMENT OF DEFENSE

Defense Acquisition Regulations System

48 CFR Part 236

[Docket DARS–2024–0019]

RIN 0750–AM16

Defense Federal Acquisition Regulation Supplement: Architect and Engineering Service Fees (DFARS Case 2024–D019); Delay of Effective Date

AGENCY: Defense Acquisition Regulations System, Department of Defense (DoD).

ACTION: Final rule; delay of effective date.

SUMMARY: DoD is postponing the effective date of the final rule published in the **Federal Register** on June 27, 2024. As published, the rule was to be effective August 26, 2024.

DATES: The effective date for the final rule published June 27, 2024, at 89 FR 53502, is delayed from August 26, 2024, to September 16, 2024.

FOR FURTHER INFORMATION CONTACT: Ms. Jennifer D. Johnson, telephone 703–717–8226.

SUPPLEMENTARY INFORMATION: On June 27, 2024, DoD published a final rule amending the Defense Federal Acquisition Regulation Supplement (DFARS) to implement section 2881 of the National Defense Authorization Act for Fiscal Year 2024 (Pub. L. 118–31). Section 2881 increased the statutory limitation on the amount that may be earned by contractors providing certain architect and engineering services under contracts with the Departments of the Army, Navy, and Air Force. The effective date of the final rule has been postponed from August 26, 2024, to September 16, 2024, to comply with the Congressional Review Act; the final rule is a major rule as defined by 5 U.S.C. 804.

Jennifer D. Johnson,

Editor/Publisher, Defense Acquisition Regulations System.

[FR Doc. 2024–16715 Filed 7–29–24; 8:45 am]

BILLING CODE 6001–FR–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R8–ES–2022–0082; FXES1111090FEDR–245–FF09E21000]

RIN 1018–BG07

Endangered and Threatened Wildlife and Plants; Endangered Species Status for the San Francisco Bay-Delta Distinct Population Segment of the Longfin Smelt

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), determine endangered species status under the Endangered Species Act of 1973, as amended (Act), for the San Francisco Bay-Delta distinct population segment (DPS) of longfin smelt (*Spirinchus thaleichthys*), a fish species of the Pacific Coast. This rule extends the protections of the Act to this DPS and adds it to the List of Endangered and Threatened Wildlife.

DATES: This rule is effective August 29, 2024.

ADDRESSES: This final rule is available on the internet at *https://www.regulations.gov.* Comments and materials we received on the proposed rule are available for public inspection at *https://www.regulations.gov* at Docket No. FWS–R8–ES–2022–0082.

Availability of supporting materials: Supporting materials we used in preparing this rule, such as the species status assessment report, are available at *https://www.regulations.gov* at Docket No. FWS–R8–ES–2022–0082.

FOR FURTHER INFORMATION CONTACT: Donald Ratcliff, Field Supervisor, U.S. Fish and Wildlife Service, San Francisco Bay-Delta Fish and Wildlife Office, 650 Capitol Mall, Suite 8–300, Sacramento, CA 95814; telephone 916–930–5603. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, a species (including a distinct population segment of a species) warrants listing if it meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range) or a threatened species (likely to become endangered within the foreseeable future throughout all or a significant portion of its range). If we determine that a species warrants listing, we must list the entity promptly and designate the species' critical habitat to the maximum extent prudent and determinable. We have determined that the San Francisco Bay-Delta distinct population segment (DPS) of longfin smelt (hereafter Bay-Delta longfin smelt) meets the definition of an endangered species; therefore, we are listing it as such. Listing a species as an endangered species can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process (5 U.S.C. 551 *et seq.*).

What this document does. This rule lists the Bay-Delta longfin smelt as an endangered species under the Endangered Species Act and adds the Bay-Delta longfin smelt to the List of Endangered and Threatened Wildlife in title 50 of the Code of Federal Regulations at 50 CFR 17.11(h).

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined that the Bay-Delta longfin smelt is endangered due to the following threats: altered hydrology (Factor A; largely attributable to water management, including water diversions and channel modifications), nonnative species (Factors C and E), and the effects of climate change (Factor E; by exacerbating drought, decreasing river and stream flows, and increasing air and water temperatures).

Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary), to the maximum extent prudent and determinable, to designate critical habitat concurrent with listing. We will publish a proposed critical habitat rule in a future edition of the **Federal Register**.

Previous Federal Actions

On October 7, 2022, the proposed rule to list the Bay-Delta longfin smelt published in the **Federal Register** (87 FR 60957). On February 27, 2023, we published a document in the **Federal Register** (88 FR 12304) that announced a public hearing and reopened the comment period for the proposed rule. Please see the proposed listing rule for a detailed description of previous Federal actions concerning this species.

On December 22, 2023, San Francisco Baykeeper (Baykeeper), a nonprofit corporation, filed a complaint in the U.S. District Court for the Northern District of California (*San Francisco Baykeeper* v. *United States Fish and Wildlife Service, et al.* (Case 4:23–cv–06601–LB)) challenging the Service's failure to complete its statutory obligations to make a final listing determination for the Bay-Delta longfin smelt. On April 5, 2024, the court issued an order requiring us to submit the final listing determination to the Office of the Federal Register by July 22, 2024. This document satisfies our requirement for completion of our final listing rule.

Peer Review

A species status assessment (SSA) team prepared an SSA report for the Bay-Delta longfin smelt. The SSA team was composed of Service biologists, in consultation with other species experts including those from the California Department of Fish and Wildlife. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the Bay-Delta longfin smelt, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we solicited independent scientific review of the information contained in the draft Bay-Delta longfin smelt SSA report (Service 2021, entire). As discussed in the proposed rule, we sent the 2021 SSA report to five independent peer reviewers and received three responses. The peer reviews can be found at *https://www.regulations.gov* at Docket No. FWS–R8–ES–2022–0082 under supporting documents. In preparing the proposed rule, we incorporated the results of these reviews, as appropriate, into a revised draft SSA report (Service 2022, entire) and made this 2022 version available to the public on *https://www.regulations.gov* at Docket No. FWS–R8–ES–2022–0082 during the open comment periods. We have since incorporated any additional edits as appropriate based on public comments received during the public comment periods into the current SSA report, which is the foundation for this final rule (Service 2024, entire). A summary of the peer review comments and our responses can be found in the Summary of Comments and Recommendations, below.

Summary of Changes From the Proposed Rule

Since the October 7, 2022, proposed rule and February 27, 2023, document reopening the comment period and announcing a public hearing were published, we received comments from the public on the proposed listing rule and 2022 SSA report. After the second comment period closed on March 29, 2023, we also received additional comments on August 16, October 23, and December 12, 2023, from representatives of the Coalition for a Sustainable Delta. The Coalition also provided comments during the open comment periods for the proposed rule to *https://www.regulations.gov* at Docket No. FWS–R8–ES–2022–0082 (see documents FWS–R8–ES–2022–0082–0009 and –0024).

After reviewing all the information we received, we updated and revised the 2022 SSA report to incorporate any grammatical edits, clarifications, and formatting changes. We also revised the count-based population viability analysis (see Service 2024, appendix B) based on information received from comments on the proposed rule and peer review of the information associated with publication of the analysis (Tobias et al. 2023, entire) in a scientific journal. The revisions to the analysis were associated with our methodology of estimating population growth rates and assisted in accounting for observation error in our estimates. Additionally, we also compared density-dependent model formulations to confirm sufficiency of our density-independent model. The changes made to the SSA report and appendix B did not significantly change our determination of status of the Bay-Delta longfin smelt in this final rule.

Additionally, in the October 7, 2022, proposed listing rule, we determined the designation of critical habitat for the DPS to be not determinable due to a lack of necessary information to complete our analysis. We are currently in the review process of determining critical habitat for the DPS, and a proposed rule will be forthcoming (see Critical Habitat, below).

Summary of Comments and Recommendations

In the proposed rule published on October 7, 2022 (87 FR 60957), and reopening document published on February 27, 2023 (88 FR 12304), we requested that all interested parties submit written comments on the proposal by December 6, 2022, and March 29, 2023, respectively. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. A newspaper notice inviting general public comment was published in the Sacramento Bee on October 10, 2022 (McClatchy 2022, entire). On November 21, 2022, we received a written request from the public for a public hearing (Barajas et al. 2022, entire). We held a virtual public hearing on the proposed listing rule on March 14, 2023, as described in our February 27, 2023, **Federal Register** document (88 FR 12304 at 12305) reopening the comment period and announcing the virtual public hearing. All substantive information received during both comment periods or subsequently has either been incorporated directly into this final determination as appropriate or is addressed below.

Peer Reviewer Comments

As discussed in Peer Review above, we received comments from three peer reviewers on the draft SSA report (Service 2021, entire). We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding the information contained in the 2021 SSA report. The peer review comments primarily fell into two main categories: (1) comments that provided grammatical or editorial corrections or minor clarifications of fact or that had no suggestions for changes to the SSA report but were either just expressing agreement or opposition and (2) comments that would affect the interpretation of available data and information presented in the SSA report. Peer review greatly assisted us to clarify our presentation of the substantial body of scientific information on Bay-Delta longfin smelt in the revised draft SSA report (Service 2022, entire) and the current SSA report (Service 2024, entire). Peer reviewer comments are addressed in the following summary. As discussed above, because we conducted this peer review prior to the publication of our proposed rule, we had already incorporated all applicable peer review comments into 2022 version of the SSA report, which was the foundation for the proposed rule. Additional comments received from the public have also been incorporated into the current version of the SSA report as necessary (Service 2024, entire) and together they are the foundation of this final rule.

(1) Comment: One peer reviewer stated that use of survey indices is not a good metric for data analysis and suggested using catch data instead.

Our response: We acknowledge that survey indices are not absolute census measures. However, we did compare existing Bay-Delta longfin smelt catch data (catch-per-unit-effort (CPUE) values from Stompe et al. 2020, entire) to the survey indices used in our analysis and got very similar results to what is presented in appendix B of the 2022 and 2024 SSA reports (Service 2022, pp. 110–123, Service 2024, pp. 115–128). As noted in the introduction of the technical note, CPUE and the Interagency Ecological Program (IEP) estimates both constitute indices of Bay-Delta longfin smelt abundance. Our use of abundance indices was not to determine the exact number of Bay-Delta smelt individuals but to use the multiple survey indices to determine trend information for the Bay-Delta longfin smelt. We consider the multiple survey efforts, which use varying sampling methods, as an appropriate measure to determine such trend information.

(2) Comment: One peer reviewer mentioned that our analysis included a ‘‘temporal bias’’ in the 20-mm and fall midwater trawl (FMWT) survey data (referring to the ‘‘wet’’ period starting the data series compared to the recent dry period). The reviewer suggested that we consider comparing wet periods to wet periods and dry periods to dry periods to more appropriately demonstrate the decline.

Our response: The section of the draft SSA report referred to by the reviewer (Service 2021, pp. 124–158) was intended to be a descriptive discussion on the statistical analysis of the abundance indices by the various survey efforts through time. In the revised draft SSA report (Service 2022, pp. 107–192), we revised the section to focus more on the descriptive statistics without calculating percent declines to avoid any possible perception of false precision within a decades-long data series. In the population viability analysis presented in our revised draft SSA report (Service 2022, appendix B) and now the updated modeling effort (the analysis has since published as Tobias et al., 2023, entire) described in appendix B of the current SSA report (Service 2024, appendix B), we interpret the full-time course of the suite of available data that includes any variance between wet or dry years.

(3) Comment: One peer reviewer suggested that the geographic and depth bias to FMWT make it ineffective as a survey for longfin smelt due to the fact that the FMWT does not sample the entire estuary or the entire water column.

Our response: The comment correctly points out that there are differences in spatial coverage both geographically and within the water column amongst the various survey efforts. However, we did not rely entirely on the FMWT as the only information in our analysis. To avoid any bias from any one survey effort, we used the information from all survey efforts in our modeling and overall analysis. Because none of the currently existing long-term monitoring surveys' sampling designs provides estuary-wide and full water column coverage, we consider that our methodology as identified in appendix B of the current SSA report (Service 2024) to determine trend information and extinction risk is a robust technical analysis as it helps reduce the effects of inflated variance through inverse weighting and is based on the best available scientific information available.

(4) Comment: One peer reviewer disagreed with our description of the importance of freshwater flow into the San Francisco Bay estuary and cited an analysis that indicated that freshwater flow was not the primary factor contributing to the decline of Bay-Delta longfin smelt (Phillis 2019, entire). The peer reviewer points to information indicating that freshwater flow into the estuary did not cause as substantial population rebound during recent wet periods as has been observed in prior decades and that the relationship between freshwater flow and population abundance is weakening (Tamburello et al. 2019, entire). The peer reviewer further points out that juvenile-to-adult survival was not significantly affected by freshwater flow into the estuary (Nobriga and Rosenfield 2016, entire).

Our response: We acknowledge that the relationship between increased freshwater flow and population abundance has recently been found to be decreasing. As a result, we have amended the SSA report to state that freshwater flow, while a primary driver of abundances, is not necessarily the primary driver influencing abundance of the current population (Service 2024, pp. 28–43). However, the peer reviewer's statement overlooks the influence of a massively declining adult population on the abundance of offspring that can be produced when favorable freshwater flow conditions exist. Other factors such as the size of the current adult breeding population and food resource limitations also play a role in the current status of the DPS, and we made clarifications in the current SSA report to also point to these other factors (Service 2024, pp. 35–36).

Public Comments

Influences on Water Temperature and Salinity

(5) Comment: We received several comments contending that the 2022 SSA report and proposed rule mischaracterize the relationship between water temperatures and San Francisco Bay Delta outflow. The commenters stated that estuary water temperatures are governed by a multitude of complex factors related to prevailing atmospheric conditions and are not influenced by San Francisco Bay Delta outflow.

Our response: In the 2022 SSA report and proposed rule, we acknowledge the complexity of factors influencing water temperature in the San Francisco Bay Delta. We agree with commenters that estuary water temperatures are governed by a multitude of complex factors and that atmospheric forcing is the dominant factor in determining water temperature in the estuary. However, existing literature suggests increased inflow can influence San Francisco Bay Delta temperatures. Some studies have found evidence that increased San Francisco Bay Delta inflow can lead to cooler than predicted temperatures in the San Francisco Bay Delta over short timespans (Wagner et al. 2011, p. 551; Wagner 2012, p. 78). The current SSA report better clarifies the relationship between San Francisco Bay Delta inflow/outflow and water temperatures (Service 2024, pp. 27–28).

(6) Comment: One commenter suggested that our conclusions regarding water temperature conditions are not accurate. Specifically, the commenter stated that temperature conditions in the San Francisco Bay-Delta never exceed 20 degrees Celsius (°C) (68 degrees Fahrenheit (°F)) in the winter-spring in the low-salinity zone, suggesting that high water temperatures are not a threat to larval and post-larval Bay-Delta longfin smelt.

Our response: The commenter's statement that water temperatures never exceed 20 °C (68 °F) in the winter and spring within the low-salinity zone is incorrect. Water temperatures in May within the low-salinity zone have been found to exceed this temperature (California Department of Water Resources 2020, entire). Lab studies sampling Bay-Delta longfin smelt collected within the San Francisco Bay have shown that water temperatures above 20 °C (68 °F) cause molecular stress responses (Jeffries et al. 2016, entire) and that temperatures greater than 15 °C (59 °F) may impair the viability of larval Bay-Delta longfin smelt (Yanagitsuru et al. 2021, entire). Water temperatures are predicted to increase in the estuary as a result of climate change and are likely to be an important factor in the future condition of the DPS (Service 2024, pp. 63–71).

Food Limitation

(7) Comment: A commenter stated that the 2022 SSA report fails to support the conclusion that food limitation may act as a stressor on the Bay-Delta longfin smelt.

Our response: In our discussion of prey availability and the decline of the DPS in the 2022 SSA, we presented the current scientific understanding and our conclusions are based on the best scientific information available (Service 2022, pp. 35–36). We acknowledge in the current SSA report that the prey species *Eurytemora affinis* has not been statistically linked to the survival of larval longfin smelt (Service 2024, pp. 35–36). We also acknowledge in the 2024 SSA report that although DPS abundance was observed to decline following the overbite clam (*P. amurensis*) invasion, no direct statistical support for a bottom-up longfin-mysid link has been established (Service 2024, pp. 35–36). The two primary prey taxa of the DPS have substantially declined compared to historical levels when overbite clam was not present (Kimmerer and Orsi 1996, p. 412). Research into the invasion of the nonnative overbite clam into the estuary, although not definitive, does suggest there is a possible link between the invasion and the subsequent decline of longfin smelt (Kimmerer 2002, p. 47; Feyrer et al. 2003, pp. 284–286; Thomson et al. 2010, p. 1443) with more recent research finding a significant positive correlation between available prey biomass and feeding success of Bay-Delta longfin smelt in the estuary, suggesting prey availability could influence growth and survival (Barros et al. 2022, p. 1773). The inability to statistically link declines in prey directly with declines in the DPS does not eliminate the likelihood that prey abundances are somehow linked to survival, but it suggests that factors affecting survival are complex and they may be partly attributable to prey abundances.

Entrainment

(8) Comment: We received two comments regarding entrainment rates of the DPS as a result of water diversion from the estuary. One commenter suggested the entrainment rates cited in the 2022 SSA report were overestimates because estimates were based on data that did not cover the full geographic extent of DPS larvae within the San Francisco Bay-Delta. The other commenter stated that the 2022 SSA report underestimates entrainment in the studies cited in the 2022 SSA report because the models excluded juvenile/adult entrainment, underestimated the length of time larvae are vulnerable to entrainment, and failed to account for indirect mortality.

Our response: The research discussed in the 2022 SSA report regarding entrainment has since been published and is publicly available (Gross et al. 2022, entire; Kimmerer and Gross 2022, entire). The authors of these papers acknowledged longfin smelt extend beyond the geographic extent of the sampling scheme used in these studies and took measures to correct for this bias. The results of these studies suggest that under current Old and Middle Rivers (OMR) flow management strategies, entrainment of Bay-Delta longfin smelt has not been substantial enough to affect DPS population dynamics. Estimates from these two studies currently represent the best commercial and scientific data available and are discussed in the current SSA report (Service 2024, pp. 41–43). A pilot study examining entrainment of larval smelts is ongoing and aims to answer some of the current uncertainties. Over the next few years, life cycle modeling work by the Service will better quantify the cumulative impact of entrainment of multiple life stages on the DPS.

Contribution of Bay Tributaries

(9) Comment: We received multiple comments expressing concerns regarding how the 2022 SSA report and proposed rule addressed portions of the population that inhabit areas outside of the sampling footprint of most long-term surveys, particularly areas in and around Bay tributaries. Some of these commenters claim the Service disregarded this portion of the population in our determination and ignored the contribution of San Francisco Bay-Delta tributaries and recent restoration efforts of these areas to the DPS's current abundance, pointing to recent research (*i.e.,* Lewis et al. 2019a and 2019b) as evidence of population redundancy. The commenters concluded that because the Service did not consider the DPS's use of these areas in evaluating abundance of the Bay-Delta longfin smelt, the DPS is not experiencing population declines as evidenced by continued inhabitation of all geographic units in its range, and, therefore, the DPS is not at substantial risk of extinction or extirpation in any portion of its documented range.

Our response: Both the 2022 and 2024 SSA reports frequently acknowledge the inhabitation of Bay tributaries and recognize the important role they may have in reproduction, particularly in wet years (Service 2022, pp. 12, 19, 24; Service 2024, pp. 12, 21, 25). However, substantial contributions of recruits from these tributaries appear to be limited to wet years, and typically the majority of suitable spawning and rearing habitat is still the estuary's major low-salinity zone, which is usually located between Suisun Bay and the Delta (Kimmerer et al. 2013, figure 2, p. 7; Lewis et al. 2019a, p. 3; Lewis et al. 2019b, p. 6). Targeted sampling of some of these habitats in Bay tributaries has begun only recently; therefore, no time series exist on the time scale required to analyze population trends in these habitats. As such, there was no practical method to include data from these limited studies to inform our statistical analyses. However, recruits that hatched in Bay tributaries are available to the San Francisco Bay Study (SFBS) once they enter the larger Bays, so population contributions from Bay tributaries should be captured by SFBS indices.

We agree with commenters that restoration of the Bay tributaries would provide valuable benefits to the DPS. However, these benefits would likely occur during the spawning and rearing season of wet years rather than during the extended summer/fall occupancy of these habitats as the commenters suggested. During the summer and fall when Bay-Delta longfin smelt are occupying these areas, they appear to be mostly inhabiting deeper habitat as evidenced by the higher catch in the otter trawl surveys compared to the mid-water trawl surveys (Rosenfield and Baxter 2007, p. 1586). As such, restoration of shallower tidal wetlands in the lower Bay tributaries may not provide suitable habitat during the summer and early fall, as temperatures in these shallow habitats can approach and exceed the thermal tolerance of Bay-Delta longfin smelt during these times.

We disagree with the statement that the Bay-Delta longfin smelt is not experiencing population declines as evidenced by continued inhabitation of all geographic units in its range. The complex hydrodynamics of the estuary results in planktonic larvae and post-larvae with limited mobility to be widely distributed throughout the estuary, regardless of whether the habitat is suitable for any length of time. Likewise, spawning adults appear to be primarily oriented to cool water temperatures, which results in inhabitation of the ephemerally cool temperatures of Bay tributaries (Lewis et al. 2019b, p. 19). Inhabitation and spawning in these waters beyond the wettest years likely acts as a population sink as opposed to a source, as was observed by lack of recruitment from these habitats in most years. Lack of successful recruitment in most years from these tributaries suggests these habitats do not provide meaningful population redundancy.

Outflow-Abundance Relationship

(10) Comment: Some commenters took issue with our discussion on the relationship between freshwater flow and Bay-Delta longfin smelt abundance and questioned the validity and predictive power of the outflow-abundance relationship pointing to recent years when observed abundance indices were below indices predicted by the relationship.

Our response: The relationship of freshwater flow and longfin smelt production has consistently been reaffirmed for decades based on the published literature (Stevens and Miller 1983, pp. 431–432; Jassby et al. 1995, p. 285; Kimmerer 2002, p. 47; Rosenfield and Baxter 2007, p. 1585; Sommer et al. 2007, p. 274; Kimmerer et al. 2009, p. 381; MacNally et al. 2010, p. 1422; Thomson et al. 2010, pp. 1439–1440; Maunder et al. 2015, p. 108; Nobriga and Rosenfield 2016, p. 53; Kimmerer and Gross 2022, fig. 2, p. 2735). Nonetheless, we acknowledge that freshwater outflow is not a perfect predictor of Bay-Delta longfin smelt abundance due to the complexity and variable nature of habitat within the estuary and Bay-Delta longfin smelt population dynamics. The 2022 and 2024 SSA reports acknowledge what may be step-declines (where populations decline to a lower abundance level and do not rebound to previous levels) or changes in the intercept of the relationship (Service 2022, pp. 35–37; Service 2024, pp. 35–37) and acknowledge the decreasing explanatory power of the flow-abundance model (Service 2022, p. 37; Service 2024, p. 37). The decline of adult stock and its resulting egg supply is the most parsimonious reason why observed indices have been below what were predicted from data in the increasingly distant past. The SSA reports illustrate the point that when declining spawning stock is considered in the outflow-abundance model, the explanatory power of the flow-abundance model did not degrade over time (Service 2022, fig. 3.3, p. 38; Service 2024, p. 38). Understanding the biological mechanisms behind the flow-abundance relationship is an ongoing topic of research for the Service and the broader scientific community in the estuary.

Low-Salinity Zone Mechanism

(11) Comment: We received a comment suggesting the expansion of the low-salinity zone due to increased freshwater flow should not be considered a mechanism by which freshwater flow might influence Bay-Delta longfin smelt productivity. The commenter cited Kimmerer et al. (2013) as evidence that the volume of low-salinity habitat in the estuary is unrelated to the DPS's abundance.

Our response: We agree that current literature suggests higher outflow expanding the volume of the low-salinity zone is inadequate in explaining the population growth observed during wet years. In the 2022 SSA report, we acknowledged that expansion of the low-salinity zone may be beneficial to larvae but did not suggest this mechanism was a primary driver of the outflow-abundance relationship (Service 2022, p. 21). Dr. Kimmerer provided an additional comment on the proposed rule suggesting a predominant mechanism behind the outflow-abundance relationship may be a result of favorable larval transport and retention in the low-salinity zone and elevated prey concentrations occurring during periods of greater freshwater flow, resulting in higher survival and abundance. In the 2022 SSA report, we identified and discussed this mechanism as well as other postulated mechanisms that may contribute to the outflow-abundance relationship (Service 2022, p. 32). In the proposed rule summarizing the information from the 2022 SSA report, we may have underrepresented the transport and retention mechanism. We have further described this mechanism in the 2024 SSA report (Service 2024, pp. 21–22) and this final rule (see *Summary of Biological Status and Threats* below).

(12) Comment: We received a comment regarding the habitat use of larval/post-larval Bay-Delta longfin smelt. The commenter cited Yanagitsuru et al. (2022), Rahman et al. (2023), and a presentation to the Estuarine Ecological Team by Levi Lewis (2023) as new evidence that the Bay-Delta longfin smelt larvae are distributed further downstream and at higher salinities than previously thought.

Our response: The 2024 SSA report acknowledges the range of salinities that larval smelt are known to utilize in the estuary (Service 2024, p. 34). The lab studies that the commenter cites are informative of the physiological salinity tolerances of larvae but are not necessarily indicative of habitat use within the estuary, as such studies ignore predation, hydrodynamics, and other relevant physical and ecological processes. In the wild, larval abundance has been shown to rapidly decline above 10 practical salinity unit (PSU) (Lewis et al. 2019b, p. 30), and peak recruitment and abundance occur in the range of 2 to 4 PSU (Hobbs et al. 2010, p. 564; Grimaldo et al. 2017, p. 8; Grimaldo et al. 2020, pp. 12–14).

DPS Status

(13) Comment: We received comments stating that the San Francisco Bay-Delta longfin smelt does not meet the criteria of a DPS according to the Service's policy because it is not ''markedly separated'' from the rest of the longfin smelt population and that the Bay-Delta population is regularly mixing with other populations. The commenter points to research conducted since our 2012 DPS determination regarding dispersal and connectivity between the Bay-Delta population and nearby populations farther north along the California coast.

Our response: Our DPS policy does not require absolute separation of a DPS from other members of its species, because this can rarely be demonstrated in nature for any population of organisms (61 FR 4724; February 7, 1996). Our determination that the Bay-Delta longfin smelt meets the criteria of a DPS was published in the April 2, 2012, **Federal Register** (77 FR 19756). In the 2022 and 2024 SSA reports as well as our proposed listing rule, we identified and considered more recent research and reaffirmed that the Bay-Delta longfin smelt is a valid DPS (87 FR 60958–60959; October 7, 2022); Service 2022, p. 10; Service 2024, p. 10). Studies that have examined longfin smelt genetics have all found evidence that the Bay-Delta population is distinct from other northern populations (Israel and May 2010, p. 230; Sağlam et al. 2021, p. 1793).

We acknowledge that Sağlam et al. (2021) found evidence of northern dispersal of some individuals from the Bay-Delta population, as evidenced by some shared genetic structure with smaller populations in Northern California estuaries and the Columbia River. However, the study detected no significant gene flow from any northern estuaries southward into the Bay-Delta population, suggesting gene flow is unidirectional in a northerly fashion. These findings suggest the Bay-Delta population is genetically isolated, as it does not appear to be receiving immigrants from any northern populations. Sağlam et al. (2021, pp. 1793, 1802) concluded that the Bay-Delta population was distinct and is likely an important source for maintaining nearby populations.

A recent study published after the 2022 SSA report examined other, much smaller, longfin smelt populations along the California coast (Brennan et al. 2022, entire). The authors determined that estuaries in proximity of the San Francisco Bay estuary may not be permanently inhabited by longfin smelt, and that the Bay-Delta population may therefore lack the resilience typically provided by metapopulations. The authors also noted that abundance and distribution of longfin smelt appears to have declined in other estuaries along the California coast (Brennan et al. 2022, p. 12). This information may further support the hypothesis that reduction of the Bay-Delta longfin smelt abundance decreases the DPS's contribution to outside populations.

Population Viability Analysis

(14) Comment: We received comments expressing numerous concerns regarding our population viability analysis (PVA) and its use of population survey indices rather than actual abundance estimates for our determination of the status for the Bay-Delta longfin smelt. Specifically, the commenters took issue that the PVA relies on population indices data, which they contend do not fully sample the entire water column or habitat strata and introduce too much uncertainty on the size of the population. The commenters state that, because of these issues, the Service may have underestimated the size of the population and therefore overestimated the impact of threats facing the DPS; and the Service cannot use the PVA to determine time of extinction or base a listing decision on such uncertain data.

Our response: As we described in the 2022 and 2024 SSA reports (Service 2022, appendix B, pp. 111–123; Service 2024, appendix B, pp. 115–128), exact population abundance information is not necessary. A count-based PVA can be applied to index values, where a population index represents some portion of the total population as long as the proportion of the population that is observed remains relatively constant over time (Morris and Doak 2002, p. 51). General interpretation of the abundance indices for longfin smelt or any other species also requires this assumption or a correction for major deviations or inconsistencies. In the SSA reports, we acknowledge the different limitations of the long-term surveys and utilize them collectively to reduce potential biases that may be present in any single survey. As we state in our description of the methods used to conduct the PVA (Service 2022, appendix B, pp. 111–123; Service 2024, appendix B, pp. 115–128), we incorporated and applied our analysis in the PVA using several datasets that index the abundance of Bay-Delta longfin smelt, and these data capture the landscape of the available information regarding the estimation of abundance for the DPS.

In our review of the status of the Bay-Delta longfin smelt, we used all the best commercial and scientific information available to make our determination. The PVA was just one of the many tools we used in our analysis. We consider the PVA to be one of many appropriate tools that provide useful information for our decision on the listing status of the DPS. PVAs are best suited to test a range of possible conditions or demographic assumptions to provide a range of likely fates for a population (Morris et al.

1999, p. 2). We conducted sensitivity analyses to examine the effects of different potential starting population sizes and different minimum viable population sizes (quasi-extinction thresholds). The sensitivity analyses showed that in most demographic scenarios tested, the population is at a high risk of quasi-extinction in the near future (Service 2024, figures 3 & 4, pp. 121 and 122). It is noteworthy that the count-based PVA presented in appendix B predicts the time to quasi-extinction under current environmental conditions and does not account for the worsening environmental conditions associated with increases in drought intensity or frequency, warming water temperatures, and sea-level rise that are occurring and are predicted to continue.

(15) Comment: Some public commenters noted that the meta-analysis was conducted on multiple surveys and as a result obscured data from the San Francisco Bay study otter-trawl (SFBS OT) age-1 survey. The commenters stated that the mean population growth rate for the SFBS OT age-1 survey estimated in the PVA indicated a trend of increasing abundance and therefore is inconsistent with the Service's finding that the DPS is currently in danger of extinction.

Our response: In an effort to include all available data and produce the best estimates of population growth rates, a meta-analysis was performed using all surveys. The meta-analysis presented in appendix B of the 2022 and 2024 SSA reports (a method proposed by a reviewer of the 2021 SSA report) illustrates how pooling information from the full suite of available survey data can help reduce uncertainty in our overall estimate of the mean population growth rate. Two important features of a meta-analysis are that the meta-mean will be closer to the population mean on average than any of the individual surveys (sample means) and the confidence interval will be narrower, making it a more precise estimator of the population mean than the estimates from the samples.

Based on review and comment of the meta-analysis (Service 2022, appendix B, pp. 111–123), we revised our methods slightly for estimating mean population growth rates for the DPS. As a result of this modification, we obtained different estimates for each survey than were reported in the 2022 SSA report (Service 2022, appendix B, p. 120). Results indicate that all of the abundance indices show long-term population declines, and all except for the SFBS age-0 otter trawl are statistically significant downward trends (Service 2024, appendix B, table 2). In both the original and revised analyses, seven of the eight surveys examined indicate a negative mean growth rate. To exclude evidence from all seven other surveys and base our decision off the single potentially positive survey time series would sacrifice a substantial volume of available data and bias the results of the analysis.

(16) Comment: Several commenters stated that the 2022 SSA report and proposed rule indicate confirmation bias by relying on data from the FMWT survey without acknowledging the limitations of those data or evaluating competing data from the SFBS OT age-1 survey, which indicates that Bay-Delta longfin smelt DPS abundance is not declining. They further state that the FMWT survey should not be used as the primary determinant due to its limited extent in areas surveyed and that it may underrepresent the abundance of the DPS due to its sampling methods.

Our response: In the 2022 and 2024 SSA reports, we do not rely on the FMWT data any more than any other survey and acknowledge limitations of all available surveys within the estuary (Service 2022, pp. 107–109; Service 2024, pp. 108–110). As stated above, we utilized information from the entire suite of surveys including the SFBS OT. As previously discussed, the commenter's statement that the SFBS OT data imply that the DPS is not declining is not supported by analyses of those data (Tobias et al. 2023, entire).

In the SSA reports, we acknowledge that the FMWT does not sample the entire range of Bay-Delta longfin smelt during the fall; however, the survey does sample all of the low-salinity zone and some of the mesohaline water west of the low-salinity zone when Bay-Delta longfin smelt return to the upper estuary in the fall and early winter (Service 2022, pp. 43–46; Service 2024, pp. 43–47). Research on the Bay-Delta longfin smelt has found that a significant proportion of age-0 (fish younger than 1 year of age) and older individuals inhabit the low-salinity zone prior to and during spawning, making FMWT sampling in this region a reasonable index for population abundance (Rosenfield and Baxter 2007, p. 1590). We also acknowledge that the FMWT does not specifically target benthic habitat; however, except for a few particularly deep sampling stations, fish within a geographic location can still be sampled by the FMWT whether they are in the middle or the bottom of the water column (Service 2022, p. 44; Service 2024, p. 44). The ability of the FMWT to track changes in the DPS population is evidenced by its high correlation with SFBS data (Rosenfield and Baxter 2007, p. 1590). Ultimately, both the FMWT and SFBS OT surveys use their own standardized methods that are capable of indexing changes in relative abundance.

(17) Comment: One commenter pointed to the increase of FMWT abundance indices in the years of 2021–2022 as evidence of population resilience and stated that the Service needs to evaluate this information.

Our response: In our 2022 SSA report, we included analyses of the 2021 FMWT abundance indices (Service 2022, appendix B, p. 119) and considered this information in our proposed rule to list the Bay-Delta longfin smelt. Because the 2022 index was calculated after we had concluded our analyses and published our proposed rule, we reviewed the 2022 indices in making our final determination. The Bay-Delta longfin smelt population has historically had highly variable population growth and declines, and such short-term population changes are not unexpected based on the trend information over the full FMWT survey effort (Service 2024, p. 47). Similar increases in abundance have occurred in 2000, 2006, 2011, 2013, and 2017; however, all of these increases resulted in abundance estimates that are well below those prior to the declines experienced in the 1980s when population numbers were several orders of magnitude greater than those currently experienced by the DPS.

(18) Comment: Several comments point to the wide confidence intervals of estimated growth rates in the count-based PVA and interpret these intervals as evidence that the Bay-Delta longfin smelt population may be stable or increasing.

Our response: The commenters are correct in their interpretation of the confidence intervals around the mean growth rates for individual surveys. Bay-Delta longfin smelt population growth rates are highly variable from year to year depending on prevailing environmental conditions and spawning stock size. The wide confidence intervals are a result of this variation where in some years the population grows even though in most years it declines. To account for this variability and differences in confidence intervals of the studies, we developed the meta-analysis to pool estimates of the population growth rates from the individual surveys to get a more precise estimate. Based on the overall population trend over the length of all the studies, we determined that the Bay-Delta longfin smelt population is in decline.

(19) Comment: One commenter provided a technical review of the analyses presented in the appendices of the 2022 SSA report and stated the information presented in appendix B required additional documentation of the evaluation of the assumptions, reconsideration of how the analysis accounts for sample error, and comparisons of density-independent and density-dependent formulations of the models. In response, the commenter provided their own meta-analysis utilizing alternative methods to capture uncertainty.

Our response: The analysis and text of appendix B has gone through revisions since the publication of the 2022 SSA report and some of the points and corrections identified by the commenter have been addressed in our current SSA report (Service 2024, appendix B). Regarding the commenter's alternative analysis, we could not fully incorporate it because the methods used are not sufficiently described for us to fully evaluate them. However, taking their reported results at face value, an increase in confidence limits would suggest a less stable population growth rate than was reported in the SSA report. This scenario would tend to produce a shorter time to quasi-extinction, likely offsetting the small increase in mean that they also report. Therefore, we conclude that this alternative analysis would also support a conclusion that the DPS is at risk of quasi-extinction.

Contemporary Versus Pre-Development Outflow

(20) Comment: We received a comment that there has been no statistically significant reduction in outflow throughout the winter-spring period, nor on an annual basis when comparing contemporary to pre-development conditions. The commenter also critiqued our use of Reis et al. (2019) in the SSA report, stating that the study failed to account for evapotranspiration that occurred prior to development in the estuary.

Our response: One study comparing the pre-development conditions and contemporary conditions of the Central Valley and potential changes in the annual average San Francisco Bay Delta outflow found that the outflow has not changed substantially (Fox et al. 2015, pp. 4267–4271). However, annual average San Francisco Bay Delta outflow is not biologically relevant to Bay-Delta longfin smelt. Contemporary water operations have resulted in less San Francisco Bay Delta outflow during the winter and spring months and increased outflow during the summer months (Hutton et al. 2017a, fig. 5, p. 2507; Gross et al. 2018, fig. 4, p. 10). Winter and spring months are when Bay-Delta longfin smelt in the estuary spawn and larvae rear in the low-salinity zone, and reduced outflow in the winter and spring months has been repeatedly linked to reduced juvenile Bay-Delta longfin smelt production (Stevens and Miller 1983, pp. 431–432; Jassby et al. 1995, p. 285; Kimmerer 2002, p. 47; Rosenfield and Baxter 2007, p. 1585; Sommer et al. 2007, p. 274; Kimmerer et al. 2009, p. 381; MacNally et al. 2010, p. 1422; Thomson et al. 2010, pp. 1439–1440; Maunder et al. 2015, p. 108; Nobriga and Rosenfield 2016, p. 53; Kimmerer and Gross 2022, fig. 2, p. 2735). The reductions in February, April, and May outflows have been primarily attributed to reductions in San Francisco Bay Delta outflow as a result of water diversions (Hutton et al. 2017b, table 3, p. 2523).

We do not agree with the commenter's critique of Reis et al. (2019). Differences in evapotranspiration rates are primarily a concern when comparing pre-development and post-development outflows in the estuary because extensive wetlands and floodplains pre-development theoretically increased evapotranspiration (reducing San Francisco Bay Delta outflow), but levees constructed during development largely disconnected floodplains and resulted in decreased evapotranspiration. By 1930, almost the entire San Francisco Bay Delta had been leveed and reclaimed (Whipple et al. 2012, p. 25). Reis et al. (2019) examined the years 1930–2018 when no substantial changes in estuary evapotranspiration occurred. As a result, the authors were able to reasonably assess the relative impact of water operations on San Francisco Bay Delta outflows.

Underestimate of Threats

(21) Comment: One commenter stated that the Service understated the risk to the DPS by not considering specific current proposals to increase diversions of freshwater from the San Francisco Bay estuary and its watershed and that if realized these projects could result in changes to outflow in the estuary and further impact the Bay-Delta longfin smelt. The commenter points to several proposed projects including the Delta Conveyance Project, Sites Reservoir, and the State Water Resources Control Board's voluntary agreement process.

Our response: In the 2022 SSA report and proposed rule, we identified reduced freshwater flow and diversion as one of the primary threats driving the current and future status of the Bay-Delta longfin smelt (Service 2022, pp. 28–30; 71–73). In our analysis of future conditions, we also acknowledged that changes in water demand may be more severe as the information used in our analysis identified impacts only out to the year 2030 due to the uncertainty and difficulty in accurately identifying changes with the necessary specificity (Knowles et al. 2018, p. 7638). However, due to the ongoing refinement of these proposed projects a specific assessment of each project was not possible within the timeframe for completion of our final rule. These projects, and any attendant risk or benefits to Bay-Delta longfin smelt, will be evaluated as they are implemented through appropriate regulatory processes, including section 7 consultations and/or section 10 permits, and future recovery planning and implementation for the Bay-Delta longfin smelt.

(22) Comment: One commenter stated that neither the 2022 SSA report nor the proposed rule evaluated the threat posed by harmful algal blooms (HABs) such as the one observed in the summer of 2022.

Our response: We agree that in our 2022 SSA report and proposed rule, we did not include HABs as a threat to the Bay-Delta longfin smelt or a growing stressor to fish populations in the estuary. We agree that marine and brackish water HABs, such as the bloom that occurred in parts of San Francisco Bay in 2022, could plausibly affect Bay-Delta longfin smelt individuals in localized areas, but the impact of such blooms on the DPS overall is not well studied, and the best available information to date does not support a conclusion that HABs are a substantial threat to the status of the DPS. However, we agree that recent events are concerning. As emerging threats are defined and better understood, they will inform future consultations, permits, and recovery planning.

I. Final Listing Determination

Background

The longfin smelt is a small fish species 9–11 centimeters (cm) (3.5–4.3 inches (in)) in length with a relatively short lifespan of approximately 2 to 3 years. The Bay-Delta longfin smelt DPS occupies the San Francisco Bay estuary and areas of the Pacific Ocean out to the Farallon Islands (see figure 1). A thorough review of the taxonomy, life history, and ecology of the Bay-Delta longfin smelt is presented in the current SSA report (Service 2024, pp. 6–23).

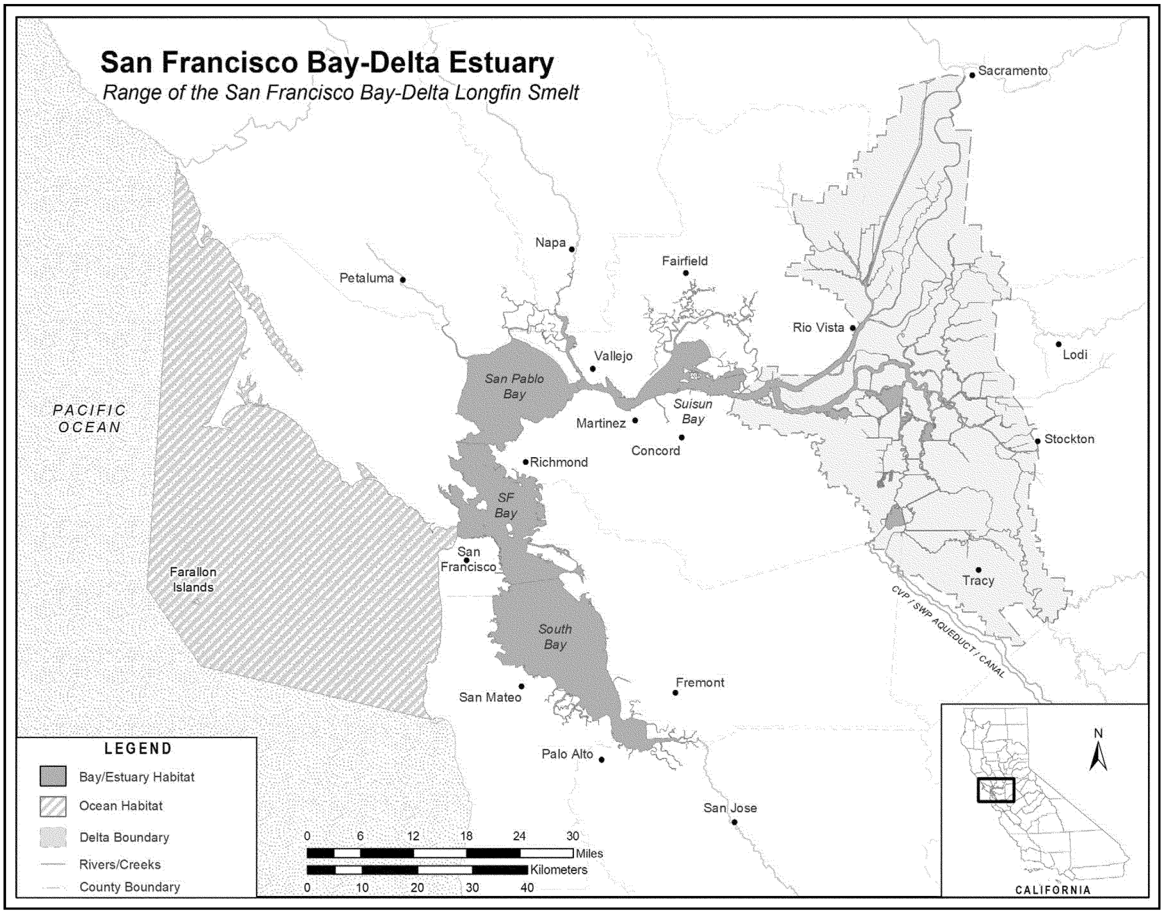

Figure 1. Range of the San Francisco Bay-Delta longfin smelt.

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations in title 50 of the Code of Federal Regulations set forth the procedures for determining whether a species is an endangered species or a threatened species, issuing protective regulations for threatened species, and designating critical habitat for endangered and threatened species. On April 5, 2024, jointly with the National Marine Fisheries Service, the Service issued a final rule that revised the regulations in 50 CFR part 424 regarding how we add, remove, and reclassify endangered and threatened species and what criteria we apply when designating listed species' critical habitat (89 FR 24300). On the same day, the Service published a final rule revising our protections for endangered species and threatened species at 50 CFR part 17 (89 FR 23919). These final rules are now in effect and are incorporated into the current regulations. Our analysis for this final decision applied our current regulations. Given that we proposed listing this species under our prior regulations (revised in 2019), we have also undertaken an analysis of whether our decision would be different if we had continued to apply the 2019 regulations; we concluded that the decision would be the same. The analyses under both the regulations currently in effect and the 2019 regulations are available on *https://www.regulations.gov.*

The Act defines an ''endangered species'' as a species that is in danger of extinction throughout all or a significant portion of its range, and a ''threatened species'' as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether any species is an endangered species or a threatened species because of any of the following factors:

(A) The present or threatened destruction, modification, or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes;

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

(E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

We use the term ''threat'' to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term ''threat'' includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term ''threat'' may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an ''endangered species'' or a ''threatened species.'' In determining whether a species meets either definition, we must evaluate all identified threats by considering the species' expected response and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an ''endangered species'' or a ''threatened species'' only after conducting this cumulative analysis and describing the expected effect on the species.

The Act does not define the term ''foreseeable future,'' which appears in the statutory definition of ''threatened species.'' Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis, which is further described in the 2009 Memorandum Opinion on the foreseeable future from the Department of the Interior, Office of the Solicitor (M–37021, January 16, 2009; ''M-Opinion,'' available online at *https://www.fws.gov/library/collections/national-listing-and-classification-guidance*). The foreseeable future extends as far into the future as the U.S. Fish and Wildlife Service and National Marine Fisheries Service (hereafter, the Services) can make reasonably reliable predictions about the threats to the species and the species' responses to those threats. We need not identify the foreseeable future in terms of a specific period of time. We will describe the foreseeable future on a case-by-case basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat-projection timeframes, and environmental variability. In other words, the foreseeable future is the period of time over which we can make reasonably reliable predictions. ''Reliable'' does not mean ''certain''; it means sufficient to provide a reasonable degree of confidence in the prediction, in light of the conservation purposes of the Act.

Analytical Framework

The current SSA report documents the results of our comprehensive biological review of the best scientific and commercial data available regarding the status of the Bay-Delta longfin smelt, including an assessment of the potential threats to the DPS. The SSA report does not represent our decision on whether the DPS should be listed as an endangered or threatened species under the Act. However, it does provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies.

To assess the Bay-Delta longfin smelt's viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency is the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years); redundancy is the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation is the ability of the species to adapt to both near-term and long-term changes in its physical and biological environment (for example, climate conditions, pathogens). In general, species viability will increase with increases in resiliency, redundancy, and representation (Smith et al. 2018, p. 306). Using these principles, we identified the DPS's ecological requirements for survival and reproduction at the individual, population, and DPS levels, and described the beneficial and risk factors influencing the DPS's viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated the individual DPS's life-history needs. The next stage involved an assessment of the historical and current condition of the DPS's demographics and habitat characteristics, including an explanation of how the DPS arrived at its current condition. The final stage of the SSA involved making predictions about the DPS's responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of the DPS to sustain populations in the wild over time. We use this information to inform our regulatory decision.

The following is a summary of the key results and conclusions from the current Bay-Delta longfin smelt SSA report (Service 2024, entire); the full SSA report can be found at Docket No. FWS–R8–ES–2022–0082 on *https://www.regulations.gov.*

Summary of Biological Status and Threats

In this discussion, we review the biological condition of the DPS and its resources, and the threats that influence the DPS's current and future condition, in order to assess the DPS's overall viability and the risks to that viability.

The needs of the Bay-Delta longfin smelt can be categorized into three main resource and biological condition categories, and include: (1) appropriate habitat salinity, by life stage; (2) appropriate habitat temperature conditions, by life stage; and (3) adequate food resources and availability, by life stage. As the Bay-Delta longfin smelt utilizes both freshwater and saline water conditions across its life cycle, its habitat is extremely variable. These variable conditions, along with other factors including the interaction among these dynamic variables, exert a strong influence on habitat suitability across space and time.

Bay-Delta longfin smelt have temperature tolerances that impact the volume and seasonality of suitable habitat. It is logical to presume that the Bay-Delta DPS, inhabiting as it does the most southern portion of the species' range, has historically been (and is) at the uppermost temperature tolerance range of the species. Larvae appear to be adapted to cool water conditions. Larvae inhabit water temperatures between 8 and 12 °C (46 and 54 °F) (Grimaldo et al. 2017, p. 8). Available research indicates that temperatures approaching and exceeding 15 °C (59 °F) impair larval viability, and hence this benchmark may be ecologically significant. At later larval stages, longfin smelt are still likely restricted to water temperatures below 20 °C (68 °F) (Jeffries et al. 2016, p. 1709). In general, age-1 and age-0 fish inhabit 16–18 °C (61–64 °F) water in summer and fall. Adults are thought to be limited by water temperature >22 °C (>72 °F) during the summer and likely spend the majority of this time in cooler Bay habitats and the open ocean (see Service 2024, p. 25). Fish return to spawn where water quality conditions are favorable for egg survival. These conditions vary in location depending on Delta outflow, as well as flows from Bay Area tributaries. Spawning occurs at or below water temperatures of 13 °C (55 °F), but has been documented at up to 16 °C (61 °F) (see Service 2024, p. 25).

Bay-Delta longfin smelt have a defined salinity tolerance range that increases as fish mature. This is consistent with their anadromous life history requiring spawning and early rearing in fresher San Francisco Bay Delta and Bay tributary waters. Yolk-sac larvae survive the longest and grow the largest at 5 and 10 parts per thousand (ppth) and are able to maintain water balance equally between 0.4 and 10 ppth, but the same lifestage is unable to survive at 32 ppth (ocean salinity). Yolk-sac larvae cannot complete yolk resorption in freshwater. In field surveys, peak yolk-sac larval densities have been found at 2–4 ppth (Grimaldo et al. 2017, p. 8), which is also concordant with the early life salinities that produce highest survival to later life stages (Hobbs et al. 2010, p. 564). The California Department of Fish and Wildlife's (CDFW) 20-mm surveys have also shown peak larval distribution near this same salinity zone (*i.e.,* 2–4 ppth), although larvae have been detected in salinities as high as 12 ppth (see Service 2024, pp. 25–26). The 20-mm survey gets its name from the size at which Bay-Delta longfin smelt are retained and readily identifiable at the fish facilities associated with the State and Federal pumping facilities.

Available data clearly indicate a very strong association of Bay-Delta longfin smelt to turbid water conditions. Aquatic turbidity provides simultaneous feeding and predator avoidance advantages for larval fishes (Utne-Palm 2002, p. 115; Pangle et al. 2012, pp. 10–11). Turbidity enhances prey avoidance at detection distances typical of predatory fish species. Further, the sediment and algal particles often backlight relatively translucent zooplankton, helping larval fishes see these prey more easily (Utne-Palm 2002, p. 119). In contrast, larger fishes that may prey on fish larvae have longer search and reactive distances so more sediment and algal particles are in between these larger fish and their potential prey (Utne-Palm 2002, pp. 122–123). We assume that these turbidity mechanisms that apply broadly to larval fishes also apply to later life stages of Bay-Delta longfin smelt. Taken together, recent laboratory experiments, combined with field results, provide an assessment of early-life habitat needs favoring more turbid conditions (Utne-Palm 2002, entire; Pangle et al. 2012, entire).

Bay-Delta longfin smelt exhibit high prey-specificity. During the time that longfin smelt larvae and small juveniles are feeding in low-salinity habitats, they appear to focus on only two prey taxa. Smaller larvae appear to primarily use the copepod *Eurytemora affinis* as prey, while larger larvae and small juveniles appear to require mysids as prey. Longfin smelt pre-spawning adults in Suisun Marsh have shown a strong dietary preference for mysids, while relying on copepods and amphipods when mysids are scarce (see Service 2024, pp. 26–27). As longfin smelt exhibit very little variation in prey use, they are considered more susceptible to food web changes than some other fishes (Feyrer et al. 2003, p. 281). The current SSA report (Service 2024, p. 27) discusses some observations from various studies regarding affects to the low-salinity zone from invasion by the overbite clam (*Potamocorbula amurensis*) in the 1980s and potential impacts to the Bay-Delta longfin smelt as a food limitation stressor (see below, and also Service 2024, pp. 35–37).

Threats Influencing the Bay-Delta Longfin Smelt

The threats facing the Bay-Delta DPS of the longfin smelt include habitat alteration (Factor A) and changes to hydrology associated with reduced and altered freshwater flows (Factor A); increased water temperatures (Factor A); reduced food resource availability (Factor E); predation (Factor C); entrainment from freshwater diversion facilities (Factor E); and contaminants (Factor E). We consider reduced and altered freshwater flows resulting from human activities and impacts associated with current climate change conditions (increased magnitude and duration of drought and associated increased temperatures) as the main threat facing the Bay-Delta longfin smelt due to the importance of freshwater flows to maintaining the life-history functions and species needs of the DPS. However, because the Bay-Delta longfin smelt is an aquatic species and the needs of the species are closely tied to freshwater input into the estuary, the impact of many of the other threats identified above are influenced by the amount of freshwater inflow into the system (*i.e.,* reduced freshwater inflows reduce food availability, increase water temperatures, and increase entrainment potential).

Reduced and Altered Freshwater Flows

The development of dams and water delivery infrastructure built throughout the Sacramento and San Joaquin River basins for flood protection and water supply for agriculture and human consumption has greatly impacted freshwater flows into the San Francisco Bay estuary (Service 2024, section 3.1.1). The creation of this water storage and delivery system, where water is stored during the wet season and conveyed to farms and cities during the dry season, has resulted in one of the largest human-altered water systems in the world (Nichols et al. 1986, p. 569). Operation of this system has resulted in a broader, flatter hydrograph with less seasonal variability, thus changing the timing, magnitude, and duration of freshwater flows into the San Francisco Bay-Delta (Kimmerer 2004, p. 15; Andrews et al. 2017, p. 72; Gross et al. 2018, p. 8). It is estimated that the Federal and State water projects annually reduce an average of about 5 million acre-feet (MAF) of freshwater into the San Francisco Bay Delta, while other municipal or private reservoirs or diverters annually divert an additional 8 MAF of potential freshwater into the San Francisco Bay Delta (Hutton et al. 2017b, fig. 4, p. 2523). The cumulative effect of this annual average of about 13 MAF of freshwater supplies has resulted in a long-term decline in freshwater inflow into the estuary during the period of February through June relative to estimates of what flows would have been available absent water development (Gross et al. 2018, fig. 6, p. 12; Reis et al. 2019, fig. 3, p. 12). This situation has further increased the frequency of very low outflow years that, prior to water development, would have been very rare and associated only with extreme drought (Reis et al. 2019, fig. 3, p. 12).

From 1956 to the 1990s, water exports (water removed from the San Francisco Bay Delta as a result of State (State Water Project) and Federal (CVP) water projects) increased, rising from approximately 5 percent of the Delta freshwater inflow to approximately 30 percent of the Delta inflow (Cloern and Jassby 2012, p. 7). By 2012, an estimated 39 percent of the estuary's unimpaired freshwater flow in total was either consumed upstream or diverted from the estuary (Cloern and Jassby 2012, p. 8). Water exports continue to the present day and are expected to continue in the future.

A reduction in freshwater flows into the estuary influences and impacts the location and function of the low-salinity zone (spawning and rearing habitat for longfin smelt). Freshwater inflow into the estuary and other co-linear indicators of wet versus dry conditions during the winter and spring have been statistically associated with recruitment of larvae to the juvenile life stage of Bay-Delta longfin smelt (Service 2024, section 3.1.1). Prior to large-scale water exports and reduced freshwater flows, the location of the low-salinity zone (as represented by the 2 percent bottom salinity position, known as X2) reached the ≤55-km (≤34-mi) point in the estuary (monthly averages from February through May) in about half of all years. More recently the position of X2 reaching at least the 55-km (34-mi) point occurred only very rarely as a result of wet year conditions (Gross et al. 2018, fig. 6, p. 12 and fig. 7, p. 13) (Service 2024, section 3.1.1). In the case of Bay-Delta longfin smelt, optimal growth and rearing conditions (food and water conditions (salinity, turbidity, circulation patterns)), especially for early life stage fish, is directly linked to freshwater inflow to the estuary.

Drought Conditions

California's precipitation patterns can be extremely variable, and several years of dry conditions have occurred over numerous extended periods resulting in varying levels of drought (California Department of Water Resources (DWR) 2020, entire). Drought periods can be characterized as having less freshwater flow, as well as shorter duration and lower magnitude of peak flows. The current trend in drought conditions has recently increased in frequency, duration, and magnitude (Swain et al. 2018, pp. 427–433). Prior to the 21st century, dry and critically dry years occurred approximately 33 percent of the time. However, since the year 2000, the dry and critically dry year frequency has increased to 43 percent. Based on soil moisture reconstruction, the period between 2000 and 2021 was probably the driest 22-year period on record (Williams et al. 2022, p. 1). As the existing impacts from climate change (*i.e.,* warmer temperatures) increase evapotranspiration in the watershed, the aforementioned water supply needs can exacerbate the magnitude of realized dry conditions over and above these natural patterns in precipitation and reduced San Francisco Bay Delta freshwater inflow.

Bay-Delta longfin smelt exhibit poor survival and reproduction during droughts (Thomson et al. 2010, pp. 1438–1446; Mahardja et al. 2021, pp. 9–10). The survival of Bay-Delta longfin smelt through their early life stages is lower during dry conditions and higher during wet conditions, as evidenced by Bay-Delta longfin smelt abundance indices nearly always declining sharply during dry periods then rebounding when wet weather returns (Mahardja et al. 2021, pp. 9–10). However, such recovery does not always occur after each drought cycle, leading to lower baseline numbers for the DPS (Moyle 2002, p. 237; Sommer et al. 2007, pp. 270–276). In addition, extended dry years compound the negative impacts to Bay-Delta longfin smelt as the DPS has not shown an ability to quickly recover and reoccupy upstream spawning habitats following drought. These drought conditions have exacerbated the impact of reduced freshwater flows from human activities and have been attributed to accelerating the establishment of the overbite clam (*Potamocorbula amurensis*) (see *Reduced Food Resources* and *Pelagic Organism Decline (POD),* below) by making saline water conditions more available throughout areas typically associated with more freshwater (Carlton et al. 1990, pp. 90–91).

Habitat Alteration

Large-scale habitat alteration such as channelization and dredging of streams and bays, building of levees and canals, and draining of wetlands has occurred since the 1850s. The impacts of such in-water and adjacent upland habitat alterations greatly affected and continues to impact the bathymetry of the estuary by collectively making the estuary deeper and less hydrodynamically connected to the surrounding landscape (Andrews et al. 2017, fig. 5, p. 64). The altered waterways create more space and avenues for the incoming tides to bring more saline water landward. Specifically, landscape changes since 1850 are estimated to have resulted in an average landward shift of X2 of over 3 km (2 mi) (Andrews et al. 2017, p. 68). This change along with reductions in freshwater input into the estuary (see *Reduced and Altered Freshwater Flows,* above) has caused a winter-spring upstream (landward) shift of X2 on the order of 10–20 km (6–12 mi). Taken together, the landscape changes discussed above and changes to the estuary's flow regime have changed how mixing processes function, and thus altered the habitat and food resource opportunities available for the estuary's biota, including the Bay-Delta longfin smelt.

Water Temperature Alterations

As described in the *Life History and Biology* section of the current SSA report (Service 2024, section 2.4), Bay-Delta longfin smelt spawning occurs within cool-water conditions below 16 °C (61 °F), while larvae and young juveniles show a preference for temperatures below 15 °C (59 °F) and 20 °C (68 °F), respectively. The embryonic through early juvenile life stages are when Bay-Delta longfin smelt are believed to be most vulnerable to warming temperatures because these early life stages do not possess the ability to migrate to the cooler waters of central San Francisco Bay and the coastal ocean due to limited motility and increases in potential predation. Subadults and adults are thought to be limited to water temperature below 22 °C (72 °F). Studies and datasets indicate water temperatures in the San Francisco Bay Delta commonly exceed 22 °C (72 °F) during the summer (Vroom et al. 2017, p. 9904; data from California Data Exchange Center, Central & Northern California Ocean Observing System, and U.S. Geological Survey (Blodgett et al. 2011, entire). Age-1 to age-3 individuals should possess the capacity to move to cooler waters during such times, making them less vulnerable than larvae and age-0 juveniles. However, climate change is predicted to substantially increase the number of days that water temperatures are inhospitable to all life stages, likely decreasing the duration of suitable spawning and larval rearing windows (Service 2024, section 4.2.2).

Reduced Food Resources

As discussed above and in the current SSA report (Service 2024, section 3.1.2), the Bay-Delta longfin smelt historically limited their diet to a relatively small number of crustacean meso- and macrozooplankton taxa. Bay-Delta longfin smelt larvae have diets dominated by a copepod, *Eurytemora affinis,* that is common in the low-salinity zone during the spring (CDFW, unpublished data). The two most common prey taxa for larger longfin smelt are epibenthic mysids and amphipods (Burdi 2022, pers. comm.; CDFW unpub. Diet Study Data). The copepod *E. affinis* was also at one time an important prey item for a now much-depleted mysid species, *Neomysis mercedis* (Knutson and Orsi 1983, p. 478), a prey species of juvenile and adult Bay-Delta longfin smelt.

Since the 1970s, the *Eurytemora affinis* population in the estuary has been in decline, but beginning in the late 1980s, the zooplankton community for the San Francisco Bay estuary started undergoing about a decade of rapid change in species composition, trophic structure, and utility for fish production (Winder and Jassby 2011, pp. 683–685; Kratina et al. 2014, p. 1070; Brown et al. 2016, p. 8). This decline coincided with the rapid invasion of the estuary by the nonnative overbite clam (Carlton et al. 1990, pp. 81 and 85, fig. 3) and with an extended drought in the Central Valley in the period 1987–1994 (Rosenfield and Baxter 2007, p. 1589).

The overbite clam is a filter feeder that is thought to have diverted food resources from the primary food sources of, or fed directly on, the nauplii (first larval stage) of common calanoid copepods and resulted in their decline. These native copepods are one of the main sources of prey of larval Bay-Delta longfin smelt (Carlton et al. 1990, pp. 90–91; Kimmerer et al. 1994, p. 87; Feyrer et al. 2003, pp. 284–286; Rosenfield and Baxter 2007, p. 1589). Mysids have experienced an over tenfold decrease in abundance and accounted for less than 4 percent of total zooplankton biomass within the estuary after 1994 (Winder and Jassby 2011, p. 684). In addition to lower abundance, the average individual sizes of mysids in the estuary have decreased over time, with a species composition shift towards *Hyperacanthomysis longirostris,* an invasive species that reaches maturity at a smaller mass than *Neomysis* species (Hennessy 2011, entire). Although Bay-Delta longfin smelt consume these nonnative species, they are not preferred and the change in food resources most likely results in an increased effort for the DPS to meet its food resource needs.

To further exacerbate the impacts of the change in food resources, the decline of the Bay-Delta longfin smelt's historical prey base has not been accompanied by a large change in prey use by the DPS (Barros et al. 2019, p. 15; Feyrer et al. 2003, p. 285). This finding suggests that Bay-Delta longfin smelt had formed strong predator–prey interactions with their primary prey, a hypothesis supported by empirical data (MacNally et al. 2010, p. 1426). Because the DPS exhibits very little variation in prey use despite the reduction in natural prey availability, they are considered more susceptible to food web changes than some other fishes (Feyrer et al. 2003, p. 281). The decline in food resources is likely affecting juvenile and adult longfin smelt growth and fitness as well as increasing the effort needed to meet food resource demands (Kimmerer and Orsi 1996, pp. 418–419; Feyrer et al. 2003, p. 281).

Predation

In the proposed rule and 2024 SSA report, we discussed the role predation may play on individuals and various life stages of the Bay-Delta longfin smelt (see the 2024 SSA report and proposed rule for additional information). Because little information is available on the exact predators of the Bay-Delta longfin smelt or the impact predation has on the status of the DPS, we do not consider the impacts from predation to be a primary driver, but we still include this consideration as part of the cumulative impact from all threats for the DPS, especially during poor habitat conditions when food is lacking.

Entrainment

Freshwater diversion occurs throughout the estuary through intake structures for agricultural, municipal, and environmental purposes and in some cases may lead to entrainment of Bay-Delta longfin smelt. Entrainment occurs when the suction caused by pumping water creates an opportunity for fish to follow or be captured by the flow of water and become trapped and transported by the hydrodynamic footprint of those diversions. This entrainment may result in fish, especially early-life-stage fish, being killed or removed from the estuary. Bay-Delta longfin smelt can be entrained in water exported by the major pumping facilities in the South Delta (see *Water Project Exports,* below) when adults and commingling age-1 individuals move upstream into the freshwater portions of the San Francisco Bay Delta (CDFW 2020a, fig. 13, p. 53). Bay-Delta longfin smelt larvae and small juveniles that are either rearing or being tidally dispersed landward of X2 can also be entrained (CDFW 2020a, fig. 13, p. 53). During periods of high freshwater flow into the estuary, Bay-Delta longfin smelt (adults, juveniles, and larvae) are much less likely to be entrained by the major pumping facilities in the South Delta because the low-salinity zone is further downstream (or seaward) of the San Francisco Bay Delta. However, changes to the estuary's landscape (see *Habitat Alteration,* above) have caused the tidal flows to reach further into the Old and Middle Rivers (Andrews et al. 2017, p. 66), which, as discussed below, may further impact Bay-Delta longfin smelt (see *Water Project Exports,* below). Below we describe the types of freshwater diversions and exports and their impacts on Bay-Delta longfin smelt.

Water Project Exports: The State of California through the DWR and the U.S. Bureau of Reclamation (Reclamation) operate freshwater diversion facilities and infrastructure associated with the SWP and CVP, respectively, which export fresh water from the Delta. The operation of these facilities can exert a strong influence on regional hydrodynamics (Kimmerer and Nobriga 2008, fig. 7, p. 12; Hutton et al. 2019, fig. 7, p. 11). That hydrodynamic influence can result in the entrainment of fish, sometimes from considerable distances (Kimmerer 2008, p. 2, fig. 1, p. 3). Several methods have been implemented to limit and offset the entrainment impacts at the SWP and CVP facilities, including construction of forebays (areas used to collect fish before they enter the pumps), fish screens, gate systems (used to divert fish away from pumps), and salvage operations (active collection and transport of fish back into the estuary). In most years, Bay-Delta longfin smelt have been collected (''salvaged'') in the fish facilities that are in front of each pumping plant. The salvage of fish is an indicator that individuals are being entrained by pumping of water at these facilities and either being killed or removed from the estuary. The peak of salvage of age-1 and older Bay-Delta longfin smelt typically occurred in January (Grimaldo et al. 2009, fig. 5, p. 1262). These adult and age-1 fish likely represented individuals searching for spawning habitats and immature individuals commingling with the adults. The peak of salvage of age-0 fish typically occurred in April or May as larval fish reach sizes at which they could be retained on the fish screens of the CVP and SWP fish collection facilities. However, it is likely some larvae began to be entrained once they started hatching in December or January, but remained undetected until about March, with salvage efficiency increasing in April–May as the fish grow larger.

It is possible that past entrainment and loss of Bay-Delta longfin smelt may have reached levels of concern (CDFW 2020a, fig. 10, p. 47). However, since 2009, the entrainment of longfin smelt has not been substantial (Service 2024, fig. 3.4), perhaps partly due to monitoring and management of flows in the Old and Middle Rivers (OMR) between the Sacramento/San Joaquin River confluence and the export facilities. When net OMR flow is positive, San Joaquin River water is generally moving seaward through the San Francisco Bay Delta and away from the pumping facilities. The more net negative OMR is flowing, the more the water in the San Francisco Bay Delta is moving back upstream toward the pumping plants and the faster that water is moving south, thereby increasing entrainment potential. The additional negative flow causes Sacramento River water entering the northwest portion of the San Francisco Bay Delta to be diverted southward toward the pumping facilities rather than seaward, which allows saltier tidal flows to move further toward the San Francisco Bay Delta.

In order to address and minimize effects to federally listed fish species (delta smelt (*Hypomesus transpacificus*), chinook salmon (Sacramento River winter-run and Central Valley spring-run salmon (*Oncorhynchus tshawytscha*), Central Valley steelhead (*Oncorhynchus mykiss*), and green sturgeon (*Acipenser* *medirostris*)), restrictions to pumping and other water operations management strategies have been implemented by the DWR and Reclamation to limit negative OMR flows and associated entrainment through the section 7 process of the Act (Service 2008, entire; National Oceanic and Atmospheric Administration, National Marine Fisheries Service [NMFS] 2009, entire; Service 2019, entire; NMFS 2019, entire). In addition, the DWR has implemented similar measures for State-listed species (including longfin smelt) (CDFW 2009b Incidental Take Permit (ITP), entire; CDFW 2020b, ITP, entire).

The results of two different analytical approaches using smelt larval survey (SLS) data suggest that entrainment of fish has not exceeded 3 percent since 2009 (Kimmerer and Gross 2022). Gross et al. (2022) coupled particle tracking modeling with the SLS data set and found an upper 95 percent credible interval of proportional entrainment was 2.9 percent in the critically dry winter of 2013 and nearly zero in the wet winter of 2017. Kimmerer and Gross (2022) analyzed all of the SLS data in the period 2009–2020. Similarly, this approach also found proportional entrainment was unlikely to have exceeded 3 percent (range = 0.5 to 2.9 percent) (Kimmerer and Gross 2022, table 1). We interpret these findings, as well as previously published information (CDFW 2020a, entire), to indicate that the OMR management strategies in place since 2009 have been an effective conservation strategy for limiting the impact of entrainment and its consequences for the Bay-Delta longfin smelt. As a result, the best information currently available indicates that management actions for operating water diversion facilities are assisting in limiting entrainment impacts for the Bay-Delta longfin smelt.

Contaminants

The San Francisco Bay estuary has been identified as an impaired water body due to it containing numerous and persistent contaminant compounds (California State Water Resources Control Board 2018, appendix A). The list of contaminant compounds identified within the estuary includes elemental contaminants or 'metals' (*e.g.,* mercury and selenium), toxic organic compounds (dioxins, furans, polychlorinated biphenyls), and pesticides (chlordane dieldrin, DDT). Additional emerging contaminants of concern include newer pesticides, flame retardants, nutrients, naturally occurring toxins, microplastics, and pharmaceuticals and personal care products (*i.e.,* plastic microbeads, insect repellant, sunscreen, cosmetics, etc.) (Klosterhaus et al. 2013, pp. 97–98, table 1; Sutton et al. 2017, entire). Ongoing analysis of water in the San Francisco Bay Delta suggests that on average 10 new synthetic organic pesticide chemicals are detected every year (California Department of Pesticide Regulation 2020, dataset). Water sampling in one study of the San Francisco Bay Delta indicated the presence of more than 50 chemical compounds from a single 1-liter (L) (34-ounce (oz)) water sample (Moschet et al. 2017, pp. 1557–1560).

The sources of contaminants include discharge from municipal wastewater treatment plants, agricultural outfalls, stormwater runoff, anti-fouling paints on boat and ship hulls, and direct human application of pest and aquatic plant control compounds (Service 2024, section 3.1.6). Legacy contaminants in the Bay-Delta (those from historical loading, such as organochlorine chemicals (*e.g.,* DDT) from past agricultural use and mercury from past mining activity) have been shown to persist in the environment and continue to impact ecosystems and can bioconcentrate through the food web, posing additional health risks (Connor et al. 2006, pp. 87–88; Marvin-DiPasquale and Cox 2007, p. 2). Regulation has reduced the use of some contaminants, only to be replaced by other more potent alternative water-soluble chemicals such as neonicotinoids, which have additional impacts on nontarget species such as aquatic invertebrates and fish (Buzby et al. 2020, pp. 15–21).

Field-based toxicity is difficult to determine, as impacted fish are not recovered in order to be examined (*i.e.,* fish either die from direct exposure and resulting disease, or are eaten). Risk of exposure and effect, as determined by comparison to other species (*e.g.,* delta smelt and the introduced inland silverside (*Menidia beryllina*)), potentially include direct effects on development, growth, and reproduction; impacts resulting from impairments to bioenergetic demands; and impaired locomotion, reducing feeding success, which can lead to increased susceptibility to predation, disease, and entrainment (Brander et al. 2012, p. 2854; Connon et al. 2009, p. 12; Hasenbein et al. 2014, p. 696; Jeffries et al. 2015a, p. 17407; Jeffries et al. 2015b, p. 55; Cole et al. 2016, p. 219; DeCourten and Brander 2017, p. 2).

Pelagic Organism Decline (POD)

Between the years 2002 through 2004, abundance indices for multiple fish species within the San Francisco Bay estuary declined abruptly in what is known as the pelagic organism decline, or POD. Specifically, the POD referred to a drop in survey catches of four fish species (Bay-Delta longfin smelt, delta smelt, striped bass (*Morone saxatilis*), and threadfin shad (*Dorosoma petenense*)) (Sommer et al. 2007, p. 273). The POD event is generally recognized as a population step-decline for numerous fish species in the estuary. The coincident declines of multiple species suggested a possible common cause, but a single mechanism for decline that applied to all four fish has not been identified (MacNally et al. 2010, p. 1426; Thomson et al. 2010, pp. 1442–1443). As a result, researchers have focused on multiple causes, from habitat changes, reductions in freshwater inflow, water diversions, food resource changes, competition, predation, and contaminants, as contributing to the POD (Sommer et al. 2007, pp. 271–276; MacNally et al. 2010, p. 1418; Fong et al. 2016, pp. 20–21). As outlined above, all of these factors have been identified as threats impacting the Bay-Delta longfin smelt to varying degrees. Although the POD event is not a threat in itself, but is instead most likely a result of multiple threats, the subsequently smaller DPS population is more susceptible to poor habitat conditions and has a reduced capability of rebounding from lower abundance years.

Bay-Delta Longfin Smelt Current Condition

Current Abundance

Several long-term survey efforts have been established for monitoring San Francisco Bay estuary fish populations including the Bay-Delta longfin smelt. These established survey efforts include the 20-mm survey, the SFBS, and the FMWT. The 20-mm survey has been conducted since 1995, and although it does not produce an abundance index for Bay-Delta longfin smelt, we adapted the methods for the delta smelt abundance index for the Bay-Delta longfin smelt. Our methods and information on how we adapted the study information are outlined in the current SSA report (Service 2024, appendix B). The SFBS has sampled low-salinity to fully marine waters of the estuary using standardized sampling methods since 1980. However, sampling was more sporadic in the 1990s and again in several recent years. The SFBS samples near bottom as well as midwater to surface-oriented fishes (Feyrer et al. 2015, Fig. 5, p. 3614) and provides separate abundance indices for ages 0, 1, and 2+ Bay-Delta longfin smelt. The longest of these survey efforts is the FMWT, which was initiated in 1967 and has surveyed pelagic waters from the Delta into San Pablo Bay monthly from September through December each year. The FMWT captures mostly juvenile and adult fish 50–150 mm (2–6 in) in length and has been used to monitor the abundance of sampled fish species since the late 1970s (Stevens and Miller 1983, pp. 431–432). In the case of Bay-Delta longfin smelt, the FMWT samples adults and juveniles, most likely those returning from more marine environments to low-salinity and freshwater areas associated with spawning. Similar abundance estimates are reflected in the 20-mm survey, SFBS, and other modeling efforts (Service 2024, section 3.2.1). Collectively, these survey efforts encompass abundance estimates of all life stages of the Bay-Delta longfin smelt in the estuary.

Figure 2 identifies FMWT abundance information for Bay-Delta longfin smelt since its inception in 1967 with emphasis on the years 2000 to 2020. The FMWT time series is an index of fish numbers returning to spawn in the San Francisco Bay Delta, which is an indicator of abundance patterns as observed over this relatively longer time interval presented to give a simplified visual presentation of overall population trend during the last several decades. A more detailed analysis of overall trends and attendant risk is discussed, below.

Bay-Delta Longfin Smelt Abundance Indices Through Time

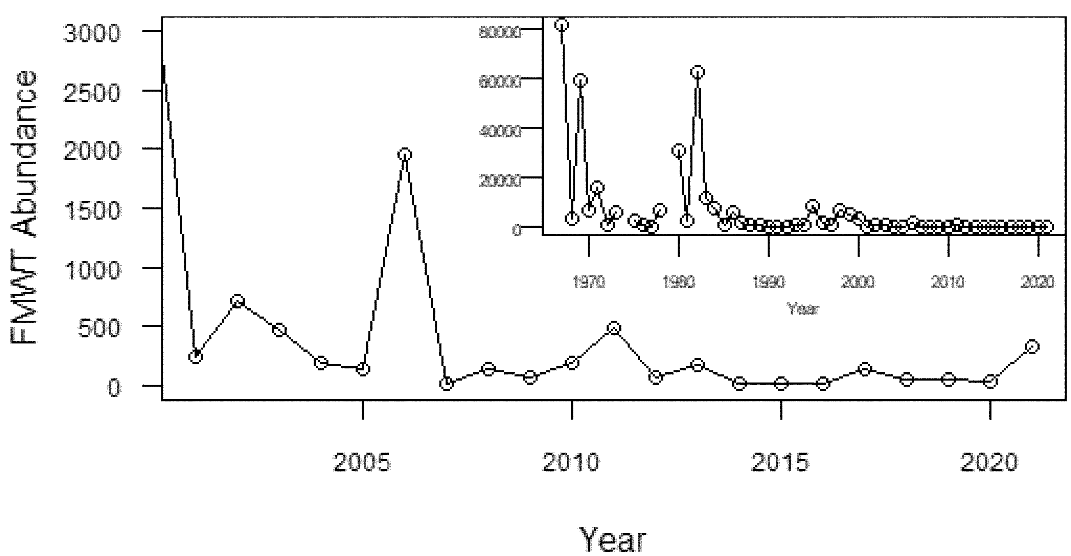

Figure 2. San Francisco Bay-Delta longfin smelt abundance indices for the period 2000–2020 from the fall midwater trawl survey. (Inset displays time series since 1967; source: adapted from California Department of Fish and Wildlife 2021.)

Population Trends and Risk of Quasi-Extinction

All the best available field surveys for documenting long-term abundance trends indicate Bay-Delta longfin smelt numbers have substantially declined over time, with current relative abundance reflecting small fractions of the species' historical relative abundance and representing a decline of three to four orders of magnitude over the course of available historical abundance records. Even considering the small periodic increases in numbers in occasional years in the most recent survey results (past 20 years), the general trend over time has been lower highs and lower lows in abundance for the DPS. This finding supports the conclusion that abundance of all life stages has declined substantially over the course of several decades and that the overall decline has continued in recent years (Service 2024, section 3.2). A meta-analysis of annual population growth rates derived from the monitoring data showed that the DPS has a negative population growth rate (Service 2024, section 3.2.2). Figure 3 displays quasi-extinction risk projections (including confidence intervals) over time for the Bay-Delta longfin smelt from our risk assessment (Tobias et al. 2023, fig. 4, p. 7; Service 2024, appendix B).

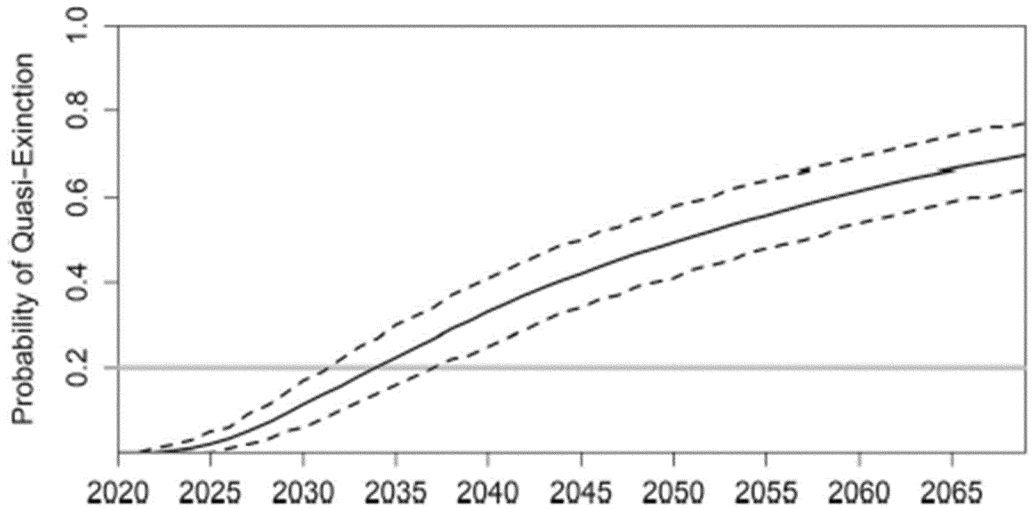

Figure 3. Quasi-extinction risk projections (including confidence intervals) over time for the San Francisco Bay-Delta longfin smelt. (Mean probability of quasi-extinction (solid line), with bootstrapped 95 percent confidence bands (dashed lines). The wide, horizontal line (gray line) highlights a 20 percent probability of quasi-extinction.)

Effects of Threats Impacting the Bay-Delta Longfin Smelt

Reduced and altered freshwater flows into the estuary greatly impact the physical and ecological processes important to Bay-Delta longfin smelt spawning and larval rearing habitat. Reductions in freshwater flow reduce the number of young that survive to later reproduce. Reduced freshwater flows also require the DPS to move farther inland to find appropriate low-salinity conditions for spawning and rearing. Although management actions to limit the impact of water diversions at export facilities have been implemented, this movement farther inland makes the DPS's larvae and young more vulnerable to entrainment as a result of water diversion from water export facilities.

The amount of freshwater input into the estuary is dependent on natural wet/dry precipitation patterns. These patterns have been influenced by the effects of current climate change conditions, which have resulted in more frequent, prolonged, and intense drought conditions (reduced flows) and increased water temperatures (poor habitat conditions). Freshwater flows into the estuary have also been greatly influenced by human-caused alteration of rivers and streams leading into the estuary as well as diversion and export of freshwater from the estuary. These human-caused impacts of water management have exacerbated the impacts of environmental variability of natural wet/dry precipitation patterns.

In addition to altered habitat conditions for the Bay-Delta longfin smelt, the available food resources for the DPS have also been severely impacted. A rapid change to the zooplankton community in the estuary beginning in the late 1980s along with the introduction of the nonnative species such as the overbite clam and others has greatly reduced the natural prey base for the DPS and replaced it with a smaller nonnative mysid. Because the fish in the DPS continue to exhibit very little variation in prey use despite the reduction in natural prey availability, they are considered more susceptible to food web changes than some other fishes. The decline in food resources is likely affecting juvenile and adult longfin smelt growth and fitness as well as increasing the effort needed to meet food resource demands.

After the review of the threats of predation, entrainment, and contaminants, we have determined that they are not primary driving factors currently influencing the Bay-Delta longfin smelt. However, these threats are likely still contributing cumulatively to the overall impacts acting on the DPS.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have analyzed the cumulative effects of identified threats and conservation actions on the species. To assess the current and future condition of the species, we evaluate the effects of all the relevant factors that may be influencing the species, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative-effects analysis.

Resiliency, Redundancy, and Representation for the Bay-Delta Longfin Smelt

In the current SSA report for the Bay-Delta longfin smelt (Service 2024, chapter 3), we evaluated the Bay-Delta longfin smelt's resiliency, redundancy, and representation under our SSA framework (Service 2016, entire).

Resiliency describes the ability of a species to withstand stochastic disturbance. Because the Bay-Delta longfin smelt is a single, intermixed population, we did not identify multiple resiliency units but looked at the population as a whole. As discussed above, the Bay-Delta longfin smelt is subject to multiple interacting threats, including saltwater intrusion and reduced freshwater flows, that are altering and degrading habitat conditions. The resulting impact of these threats limits the extent, duration, and availability of appropriate habitat conditions needed for spawning, rearing, and ultimate recruitment of individuals into the population. These threats include anthropogenic actions (such as freshwater management, freshwater diversion, and physical alterations to the bathymetry of the estuary) or poor or altered environmental conditions (such as increased frequency and magnitude of drought resulting from current climate change conditions). Disruptions to the estuary's food web associated with reductions in freshwater flow or introductions of nonnative species are also limiting resiliency for the DPS.

Redundancy is the ability of a species to withstand catastrophic events. The Bay-Delta longfin smelt is a single intermixed population and occurs in areas within the San Francisco Bay estuary as dictated by the extremely modified and altered habitat and resource conditions. The San Francisco Bay estuary is also subject to extreme environmental variability as a result of climate change conditions resulting in increased temperatures and frequency, magnitude, and duration of drought. As a result of these changes, the ability of the system and organisms within the estuary to withstand catastrophic events and rebound during periods of more favorable conditions is greatly reduced. Large-scale estuary-wide ecosystem population collapses of fish and native zooplankton have occurred in the estuary. Although no single cause for the collapses has been identified, both native and nonnative fish populations have not recovered. The result has been step-declines of the Bay-Delta longfin smelt population size since the mid-1980s, thereby reducing the redundancy of the DPS.

Representation describes the ability of a species to adapt to changing environmental conditions over time. This definition includes the ability of a species to adapt to both near-term and long-term changes in its physical and biological environments. The Bay-Delta longfin smelt population occurs in the San Francisco Bay estuary and is a single, genetically indistinguishable population. The Bay-Delta longfin smelt represents the southern extent of the species as a whole and most likely is a source for populations along the coast north of San Francisco Bay, but the number of individuals contributing to populations further north has substantially declined. Due to ocean currents and the species' poor swimming capability, populations north of the San Francisco Bay are unlikely to have the ability to move south and assist in reestablishing a population in the San Francisco Bay-Delta once they have been extirpated from the San Francisco Bay-Delta. The DPS's ability to adapt behaviorally to environmental changes (to have adaptive capacity) is also limited. This limitation is exemplified by the DPS's behavioral tendency of not adapting to food resource changes. As discussed, food resources for the DPS have changed significantly yet the DPS's behavior has not shifted to adapt to those changes.

In our evaluation of the current condition of the Bay-Delta longfin smelt, we evaluated several population viability analyses (PVAs) that quantitatively derive probabilities of extinction over time based on the DPS's historical and current abundance estimates (Service 2024; appendix B). The PVAs used information from the existing suite of surveys, including the FMWT, the 20-mm survey, and the SFBS (Service 2024, figure 3.11). The PVAs modeled extinction probability based on a continuation of existing threats currently facing the DPS under varying levels of population recruitment. Population growth rates were further synthesized by conducting a meta-analysis on the growth rates of the different surveys. The results of the count-based PVA meta-analysis identified that the probability of quasi-extinction for the Bay-Delta longfin smelt is estimated at 33 percent over 20 years and reaches 50 percent in 30 years (Service 2024, appendix B).

As a result of our review of the best scientific and commercial data available on the Bay-Delta longfin smelt, we have determined that the DPS's resiliency is low. Numerous decades of declining abundance indices for the Bay-Delta longfin smelt document the inability of the DPS to rebound during more favorable environmental conditions and respond to the threats it is facing in the contemporary San Francisco Bay estuary. The Bay-Delta longfin smelt also has extremely limited redundancy because it effectively represents a single, small population inhabiting the San Francisco Bay-Delta and nearshore ocean environment, and because it continues to be impacted by large-scale stochastic events and is subject to catastrophic events. We have determined that the representation of the Bay-Delta longfin smelt is limited as well, reflecting that same declining abundance trend and no discernible and quantifiable compensatory adaptation to current ecological conditions. Based on our evaluation of the current resiliency, redundancy, and representation for the Bay-Delta longfin smelt, we conclude the current ability of the DPS to maintain populations in the wild is low.

Future Conditions

As part of the SSA, we also developed future-condition scenarios to capture the range of uncertainties regarding future threats and the projected responses by the Bay-Delta longfin smelt. To assess the future condition of the Bay-Delta longfin smelt, we used published information related to the varying environmental conditions of the San Francisco Estuary, including future climate change information and projected increases in water demand, and how these changes may impact how well the estuary can support the Bay-Delta longfin smelt into the future. In our analyses, we considered two plausible future scenarios based on representative concentration pathways (RCP) 4.5 and 8.5 as the bookends for our analysis. The scenarios assessed climate change information (temperature increases, changes in precipitation patterns, sea-level rise) through 2100, as published information was available. The information identified that declines in Bay-Delta longfin smelt population abundance will continue into the future under both the RCP 4.5 and 8.5 scenarios. Because we determined that the current condition of the Bay-Delta longfin smelt was consistent with an endangered species (see Determination of the Bay-Delta Longfin Smelt's Status, below), we are not presenting the results of the future scenarios in this final rule. Please refer to the current SSA report (Service 2024, chapter 4) for the full analysis of future scenarios.

Conservation Efforts and Regulatory Mechanisms

Numerous efforts have been initiated regarding conservation and regulation of the San Francisco Bay estuary and its resources, including managing water flows into and export from the estuary, improving water quality, conducting habitat restoration, and implementing measures or regulations to protect native fish. This effort includes establishment of multiagency collaborations such as the Interagency Ecological Program (IEP), which focuses on coordinating and prioritizing science needs and research to meet responsibilities under State and Federal regulatory requirements (IEP 2014, entire).

The State of California listed the longfin smelt in the San Francisco Bay estuary and along the California Coast as a threatened species under the California Endangered Species Act in 2009 (CDFW 2009a, entire; California Natural Diversity Database 2022, entire) and has issued restrictions and requirements for the export of water for the State Water Project (see *Entrainment,* Water Project Exports, above). Several other fish species (delta smelt, several salmonid species) are listed under both the Act and the California Endangered Species Act, and the Service and NMFS have also issued biological opinions regarding the effects to these species and their habitats for delivery and export of water from the estuary (see *Entrainment,* Water Project Exports, above). The State Water Board is responsible for issuing water quality standards and monitors contaminants within the estuary (see *Contaminants,* above). However, despite efforts such as those identified above, the current condition of the estuary and continued threats facing the estuary and Bay-Delta longfin smelt, such as reduced freshwater inflow, severe declines in population size, and disruptions to the DPS's food resources, have not been ameliorated.

Determination of the Bay-Delta Longfin Smelt's Status

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines an ''endangered species'' as a species in danger of extinction throughout all or a significant portion of its range and a ''threatened species'' as a species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether a species meets the definition of endangered species or threatened species because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence.

Status Throughout All of Its Range

The Bay-Delta longfin smelt's current abundance and density throughout the San Francisco Bay estuary have substantially declined. Currently, the DPS exists in very low abundance despite periods when appropriate habitat conditions, which typically would allow for population rebounds, are available. The best scientific and commercial information available and our analysis of that information revealed that several threats are causing or contributing to this decline and currently pose a meaningful risk to the viability of the DPS. These threats have put the Bay-Delta longfin smelt largely into a state of chronic population decline due to habitat loss (reduction in freshwater flows into the estuary), which is exacerbated by limited food resources and the impacts associated with climate change, thereby limiting its resiliency and ability to withstand catastrophic events (reduced redundancy). This decline in numbers of the Bay-Delta longfin smelt is also a reflection of the DPS's ability to adapt to the ecosystem changes.

As a result of the DPS's poor performance in adapting to the suite of stressors acting upon it, we consider the Bay-Delta longfin smelt's adaptive capacity and, therefore, its current representation to be low. The Bay-Delta longfin smelt's continued reduced population size makes the DPS vulnerable to varying habitat conditions from year to year due to both anthropogenic and environmental conditions that are being influenced by the effects of climate change. Historically, with a larger population size, the DPS was more resilient to such stochastic and catastrophic events due to its ability to rebound in abundance when habitat conditions and resources would allow. The habitat changes, limitations to food resources, and resulting small population size now limit the DPS's ability to maintain its current population.

After evaluating threats to the DPS and assessing the cumulative effect of the threats under the section 4(a)(1) factors, we find that the threats facing the San Francisco Bay-Delta DPS of the longfin smelt are current and ongoing and include habitat degradation and loss from reduced freshwater flow into the estuary (Factor A), increased intrusion of saltwater into spawning habitat areas (Factor A), alteration of food resources and availability (Factor E), nonnative species competition and food resource effects (Factor E), and the effects associated with climate change such as increased temperatures and frequency, magnitude, and duration of drought (Factor E). Because these threats are ongoing and currently impacting the DPS, and have already been shown to have caused a significant decline in the DPS's current resiliency, redundancy, and representation, the DPS meets the Act's definition of endangered status.

Thus, after assessing the best scientific and commercial information available, we determine that the San Francisco Bay-Delta DPS of the longfin smelt is in danger of extinction throughout all of its range.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. We have determined that the San Francisco Bay-Delta DPS of the longfin smelt is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of any significant portions of its range. Because the San Francisco Bay-Delta DPS of the longfin smelt warrants listing as endangered throughout all of its range, our determination does not conflict with the decision in *Center for Biological Diversity* v. *Everson,* 435 F. Supp. 3d 69 (D.D.C. 2020), because that decision related to significant portion of the range analyses for species that warrant listing as threatened, not endangered, throughout all of their range.

Determination of Status

Our review of the best scientific and commercial information available indicates that the San Francisco Bay-Delta DPS of the longfin smelt meets the definition of an endangered species. Therefore, we are listing the San Francisco Bay-Delta DPS of the longfin smelt as an endangered species in accordance with sections 3(6) and 4(a)(1) of the Act and our February 7, 1996, policy regarding distinct population segments (61 FR 4722).

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition as a listed species, planning and implementation of recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and conservation by Federal, State, Tribal, and local agencies, foreign governments, private organizations, and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies, including the Service, and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

The recovery planning process begins with development of a recovery outline made available to the public soon after a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions while a recovery plan is being developed. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) may be established to develop and implement recovery plans. The recovery planning process involves the identification of actions that are necessary to halt and reverse the species' decline by addressing the threats to its survival and recovery. The recovery plan identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened (''downlisting'') or removal from protected status (''delisting''), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery outline, draft recovery plan, final recovery plan, and any revisions will be available on our website as they are completed (*https://www.fws.gov/program/endangered-species*), or from our San Francisco Bay-Delta Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (*e.g.,* restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

Once this species is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost-share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the State of California will be eligible for Federal funds to implement management actions that promote the protection or recovery of the San Francisco Bay-Delta DPS of the longfin smelt. Information on our grant programs that are available to aid species recovery can be found at: *https://www.fws.gov/service/financial-assistance.*

Please let us know if you are interested in participating in recovery efforts for the San Francisco Bay-Delta DPS of the longfin smelt. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7 of the Act is titled Interagency Cooperation and mandates all Federal action agencies to use their existing authorities to further the conservation purposes of the Act and to ensure that their actions are not likely to jeopardize the continued existence of listed species or adversely modify critical habitat. Regulations implementing section 7 are codified at 50 CFR part 402.

Section 7(a)(2) states that each Federal action agency shall, in consultation with the Secretary, ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Each Federal agency shall review its action at the earliest possible time to determine whether it may affect listed species or critical habitat. If a determination is made that the action may affect listed species or critical habitat, formal consultation is required (50 CFR 402.14(a)), unless the Service concurs in writing that the action is not likely to adversely affect listed species or critical habitat. At the end of a formal consultation, the Service issues a biological opinion, containing its determination of whether the Federal action is likely to result in jeopardy or adverse modification.

Examples of discretionary actions for the San Francisco Bay-Delta DPS of the longfin smelt that may be subject to consultation procedures under section 7 are land management or other landscape-altering activities on Federal lands administered by the Service, National Park Service, Department of Defense, Reclamation, U.S. Army Corps of Engineers, or U.S. Department of Agriculture, as well as actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, Tribal, local, or private lands that are not federally funded, authorized, or carried out by a Federal agency—do not require section 7 consultation. Federal agencies should coordinate with the local Service Field Office (see **FOR FURTHER INFORMATION CONTACT**) with any specific questions on section 7 consultation and conference requirements.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The prohibitions of section 9(a)(1) of the Act, and the Service's implementing regulations codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit or to cause to be committed any of the following acts with regard to any endangered wildlife: (1) import into, or export from, the United States; (2) take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect) within the United States, within the territorial sea of the United States, or on the high seas; (3) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such wildlife that has been taken illegally; (4) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of commercial activity; or (5) sell or offer for sale in interstate or foreign commerce. Certain exceptions to these prohibitions apply to employees or agents of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits for endangered wildlife are codified at 50 CFR 17.22, and general Service permitting regulations are codified at 50 CFR part 13. With regard to endangered wildlife, a permit may be issued: for scientific purposes, for enhancing the propagation or survival of the species. The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

It is the policy of the Services, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify, to the extent known at the time a species is listed, specific activities that will not be considered likely to result in violation of section 9 of the Act. To the extent possible, activities that will be considered likely to result in violation will also be identified in as specific a manner as possible. The intent of this policy is to increase public awareness of the effect of a listing on proposed and ongoing activities within the range of the species.

As discussed above, certain activities that are prohibited under section 9 may be permitted under section 10 of the Act. In addition, to the extent currently known, the following activities will not be considered likely to result in violation of section 9 of the Act: (1) take of the longfin smelt outside the range of the DPS as identified in figure 1 above; (2) take as a result of recreational fishing as permitted by the State of California; or (3) recreational boating on open-water areas of the San Francisco Bay-Delta Estuary.

This list is intended to be illustrative and not exhaustive; additional activities that will not be considered likely to result in violation of section 9 of the Act may be identified during coordination with the local field office, and in some instances (*e.g.,* with new information), the Service may conclude that one or more activities identified here will be considered likely to result in violation of section 9.

To the extent currently known, the following is a list of examples of activities that will be considered likely to result in violation of section 9 of the Act in addition to what is already clear from the descriptions of the prohibitions found at 50 CFR 17.21: (1) handling or collecting individuals of the DPS; (2) destruction/alteration of the Bay-Delta longfin smelt's habitat by discharge of fill material, dredging, draining, ditching, or stream channelization or diversion; (3) unauthorized diversion or alteration of surface flow into the San Francisco Bay-Delta estuary by removal of freshwater from rivers, streams, wetlands, and other aquatic features; (4) introduction of contaminants that may degrade water quality of the San Francisco Bay-Delta estuary; or (5) introduction of nonnative species that compete with or prey upon the Bay-Delta longfin smelt or alter food resources for the DPS.

This list is intended to be illustrative and not exhaustive; additional activities that will be considered likely to result in violation of section 9 of the Act may be identified during coordination with the local field office, and in some instances (*e.g.,* with new or site-specific information), the Service may conclude that one or more activities identified here will not be considered likely to result in violation of section 9.

Questions regarding whether specific activities would constitute violation of section 9 of the Act should be directed to the San Francisco Bay-Delta Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

II. Critical Habitat

Section 4(a)(3) of the Act and implementing regulations (50 CFR 424.12) require that we designate critical habitat at the time a species is determined to be an endangered or threatened species, to the maximum extent prudent and determinable. In the October 7, 2022, proposed listing rule (87 FR 60957 at 60970), we determined that designation of critical habitat was prudent but not determinable because specific information needed to analyze the impacts of designation was lacking. Since the publication of the proposed listing rule, we have obtained the necessary information and are in the process of developing a proposed critical habitat designation for the Bay-Delta longfin smelt. We plan to publish a proposed critical habitat rule in the near future and complete a final designation as required by sections 4(a)(3) and 4(b)(6)(C)(ii) of the Act.

Required Determinations

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*) in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County* v. *Babbitt,* 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951, May 4, 1994), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), the President's memorandum of November 30, 2022 (Uniform Standards for Tribal Consultation; 87 FR 74479, December 5, 2022), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally recognized Tribes and Alaska Native Corporations on a government-to-government basis. In accordance with Secretaries' Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. No Tribal lands were identified within the range of the Bay-Delta longfin smelt, and we did not receive any information during our development of the SSA report for the DPS or the two open public comment periods. We will continue to reach out and coordinate with Tribal entities during the development of our recovery planning and critical habitat designation processes for the Bay-Delta longfin smelt.

References Cited

A complete list of references cited in this rulemaking is available on the internet at *https://www.regulations.gov* and upon request from the San Francisco Bay-Delta Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this rule are the staff members of the Fish and Wildlife Service's Species Assessment Team and the San Francisco Bay-Delta Fish and Wildlife Office.

List of Subjects in 50 CFR Part 17

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

Signing Authority

Martha Williams, Director of the U.S. Fish and Wildlife Service, approved this action on June 14, 2024, for publication. On July 22, 2024, Martha Williams authorized the undersigned to sign the document electronically and submit it to the Office of the Federal Register for publication as an official document of the U.S. Fish and Wildlife Service.

Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

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

Authority: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

■ 2. Amend § 17.11 in paragraph (h), in the List of Endangered and Threatened Wildlife, by adding an entry for ''Smelt, longfin [San Francisco Bay-Delta DPS]'' in alphabetical order under FISHES to read as follows:

§ 17.11 Endangered and threatened wildlife.

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(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * *	*	*	*	* * *
		FISHES		
* * *	*	*	*	* * *
Smelt, longfin [San Francisco Bay-Delta DPS].	*Spirinchus thaleichthys*	U.S.A. (CA)	E	89 FR [INSERT FIRST PAGE OF **FEDERAL REGISTER** PUBLICATION], 7/30/2024.
* * *	*	*	*	* * *

Madonna Baucum,

Regulations and Policy Chief, Division of Policy, Economics, Risk Management, and Analytics of the Joint Administrative Operations, U.S. Fish and Wildlife Service.

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