

90-DAY FINDING PETITION REVIEW FORM

[LISTING AS A THREATENED OR AN ENDANGERED SPECIES]

Federal Docket No. FWS-R8-ES-2024-0049

90-DAY FINDING ON A PETITION TO LIST THE SAN FRANCISCO ESTUARY WHITE STURGEON (*Acipenser transmontanus*) POPULATION AS A THREATENED DISTINCT POPULATION SEGMENT UNDER THE ENDANGERED SPECIES ACT

Petitioned action being requested:

- List as an endangered or a threatened species
- Reclassify (uplist) from a threatened species to an endangered species
- Other

Petitioned entity:

- Species
- Subspecies
- DPS of vertebrates [list DPS of a non-listed species]

Background

Section 4(b)(3)(A) of the Endangered Species Act (Act) requires that we make a finding on whether a petition to list, delist, uplist (reclassify the species from a threatened species to an endangered species), or downlist (reclassify the species from an endangered species to a threatened species) a species presents substantial scientific or commercial information indicating that the petitioned action may be warranted. Our regulations provide that, for a petition to meet the “substantial scientific or commercial information” standard, we must determine in the 90-day petition finding that the petition includes “credible scientific or commercial information in support of the petition’s claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted” (50 CFR § 424.14(h)(1)(i)).

The Act and our regulations are clear that the responsibility is squarely on the petitioner to present the requisite level of information to meet the substantial information test to demonstrate that the petitioned action may be warranted. This means that the petitioner must not only present credible information that threats may be present; they also need to present credible information concerning a species’ documented or likely response to that threat, and that the species’ response is to such a level that listing or uplisting may be warranted. Where the petitioner has failed to do so, we should make a not-substantial finding on the petition -- we should not augment their petition with our own knowledge or other information we are aware of. If we are aware of species that may be in danger of extinction, we should undertake a status review on our own accord, regardless of the receipt of a petition.

Our regulations further state that we will consider whether a petition presents a complete and balanced representation of the relevant facts when making our finding of whether a petition presents substantial information that the requested action may be warranted. Thus, if we find that a petition cherry-picked information, ignored relevant and readily available information, and presented a biased and incomplete representation of facts, we should consider whether the petition has met the requirement to present substantial information (see instructions below for more information).

We note that designating critical habitat is not a petitionable action under the Act. Petitions to designate critical habitat (for species without existing critical habitat) are reviewed under the Administrative Procedure Act and are not addressed here. See 50 C.F.R. § 424.14(j). To the maximum extent prudent and determinable, any proposed critical habitat will be addressed concurrently with a proposed rule to list a species, if applicable.

Petition History

On December 6, 2023, we received a petition from San Francisco Baykeeper, The Bay Institute, Restore the Delta, and California Sportfishing Protection Alliance, requesting that the San Francisco Estuary white sturgeon population be listed as a threatened distinct population segment and critical habitat be designated for this species under the Act. The petition clearly identified itself as such and included the requisite identification information for the petitioner, required at 50 CFR 424.14(c). This finding addresses the petition.

Evaluation of a Petition to List the San Francisco Estuary white sturgeon population as a Threatened distinct population segment Under the Act

Species and Range

Does the petition present substantial information that the petitioned entity may be a listable entity (i.e., a species, subspecies, or distinct population segment)?

Yes

No

White sturgeon [San Francisco Estuary DPS] (*Acipenser transmontanus*) (=San Francisco Estuary white sturgeon)—provisional determination; see following discussion for details.

Historical range: Sacramento, San Joaquin, Feather, Russian, Klamath, Trinity, and Eel Rivers in California

Current range: Sacramento and San Joaquin Rivers in California

Petitioned Entity

The petition references Hildebrand et al. (2016) when discussing the taxonomy of white sturgeon and the recognition of several populations within the species, including the San Francisco

Estuary population that spawns in the Sacramento and San Joaquin Rivers. The petition also references that the California Department of Fish and Wildlife considers the white sturgeon population in the Sacramento and San Joaquin Rivers to be a distinct population segment (DPS) due to the documented genetic differentiation between river basins (CDFW 2015, p. 102). The white sturgeon is a recognized species by the Integrated Taxonomic Information System (<http://itis.gov>).

Distinct Population Segment

For the purposes of this 90-day finding, we will evaluate whether the petition presents substantial information that the petitioned entity may satisfy both the “discreteness” and “significance” elements of our 1996 DPS policy (61 FR 4722). Under the DPS Policy, three elements are considered in the decision regarding the establishment and classification of a population of a vertebrate species as a possible DPS: (1) The discreteness of a population segment in relation to the remainder of the species to which it belongs; (2) the significance of the population segment to the species to which it belongs; and (3) the population segment’s conservation status in relation to the Act’s standards for listing, delisting, or reclassification. Both discreteness and significance are used to determine whether the population segment constitutes a valid DPS. If it does, then the population segment’s conservation status is used to consider whether that DPS warrants listing.

The petitioner includes information on the population’s discreteness (San Francisco Baykeeper et al. 2023, pp. 37–38) and significance (San Francisco Baykeeper et al. 2023, pp. 38–239). Sources cited in the petition and other readily available information also inform this topic.

Discreteness

Under the DPS policy, a population segment of a vertebrate species may be considered discrete if it satisfies either one of the following conditions: (1) It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors (quantitative measures of genetic or morphological discontinuity may provide evidence of this separation); or (2) it is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act.

The petitioned population segment occurs in the watersheds of the Sacramento and San Joaquin Rivers in California. These watersheds are over 700 miles away from the closest other population of white sturgeon that spawn in the Columbia River estuary, and the petitioners state that this represents marked geographical separation of the San Francisco Estuary white sturgeon from the other populations of this species. Genetic data indicate that the San Francisco Estuary white sturgeon population is genetically distinct from other known spawning populations of white sturgeon (Drauch Schreier et al. 2013, p. 1273; Willis et al. 2022, p. 6; Bartley et al. 1985, p. 109). The California Department of Fish and Wildlife states that there is “sufficient evidence” from genetic analyses to treat the San Francisco Estuary white sturgeon population (i.e., those spawning in the Sacramento and San Joaquin Rivers) as a distinct population segment (CDFW 2015, p. 102; CDFW 2023, slide 8). Hildebrand et al. (p. 2016, p. 264 citing Duke et al. 2004) states that the

International Union for the Conservation of Nature (IUCN) identifies the Sacramento-San Joaquin population of white sturgeon as one of five population groups of white sturgeon and recommends that this population be considered a separate population based on genetic information and management considerations. We find that the petition presents substantial information that the San Francisco Estuary white sturgeon population may be discrete based on marked separation from other populations of the taxon as a consequence of physical separation and genetic differences.

Significance

Under the DPS policy, a discrete population segment of a vertebrate species may be considered significant if there is: (1) Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon; (2) evidence that loss of the discrete population segment would result in a significant gap in the range of the taxon; (3) evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historical range; or (4) evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

Available information suggests that the petitioned population segment is genetically different from other populations of white sturgeon (see the Discreteness section, above). This suggests that the petitioned population segment differs markedly from other populations of white sturgeon in its genetic characteristics. As such, the petitioned population segment may be significant per criterion 4 of our DPS policy due to evidence that the population segment differs markedly from other populations of the species in its genetic characteristics (61 FR 4722, p. 4725). We did not consider other significance criteria for purposes of this 90-day finding evaluation, but other criteria may also apply, as suggested by the petitioner (San Francisco Baykeeper 2023, p. 38). We will evaluate these other criteria in our 12-month finding.

DPS Summary

Based on our review of the petition, sources cited in the petition, and other readily available information, we find that the petition provides substantial scientific or commercial information indicating that the petitioned entity may qualify as a DPS and, therefore, that it may be a listable entity under the Act. For the purposes of this 90-day finding evaluation, we will use the generally recognized common name—San Francisco Estuary white sturgeon—to refer to the California population of white sturgeon that occurs in the watersheds of the Sacramento and San Joaquin Rivers.

Statutory and Regulatory Standards for Evaluation of the Petition

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 is an “endangered species” or a “threatened species.” 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.

In accordance with 50 CFR 424.14(d), the Service’s determination as to whether the petition provides substantial scientific or commercial information indicating that the petitioned action may be warranted will depend in part on the degree to which the petition includes the following types of information: (1) Information on current population status and trends and estimates of current population sizes and distributions, both in captivity and the wild, if available; (2) Identification of the factors under section 4(a)(1) of the Act that may affect the species and where these factors are acting upon the species; (3) Whether and to what extent any or all of the factors alone or in combination identified in section 4(a)(1) of the Act may cause the species to be an endangered species or threatened species (i.e., the species is currently in danger of extinction or is likely to become so within the foreseeable future), and, if so, how high in magnitude and how imminent the threats to the species and its habitat are; (4) Information on adequacy of regulatory protections and effectiveness of conservation activities by States as well as other parties, that have been initiated or that are ongoing, that may protect the species or its habitat; and (5) A complete, balanced representation of the relevant facts, including information that may contradict claims in the petition.

Evaluation of Information in the Petition

When evaluating a petition, we assess the information in the petition and the sources that it includes as references. While we may use any readily available information (e.g., in our files or published literature that we are aware of) to determine the credibility of the information presented in the petition, we do not use readily available information to bolster the petition, should the petitioner fail to provide substantial information, because the Act requires that we make a finding as to whether the petition itself presents substantial information indicating that the petitioned action may be warranted. Our implementing regulations at 50 CFR 424.14(h)(1)(i) state that conclusions drawn in the petition without the support of credible scientific or commercial information will not be considered “substantial information.” “Credible scientific or commercial information” may include all types of data, such as peer-reviewed literature, gray literature, traditional ecological knowledge, etc. Thus, we first must determine whether the information provided in the petition is credible. In other words, the Service must evaluate whether the information in the petition is substantiated and not mere speculation or opinion. Any claims that are not supported by credible scientific or commercial information do

not constitute substantial information and will not be further evaluated. Next, we determine whether the conclusions drawn in the petition are reasonable (i.e., actually supported by that credible information).

After identifying the claims that the petition supports with credible information, we consider those claims in the context of the factors in section 4(a)(1) of the Act. When evaluating information presented in the petition, we consider factor D in light of the other factors, not independently. In other words, we consider whether the petition presents substantial information indicating that existing regulatory mechanisms may be inadequate to address the magnitude or imminence of threats identified in the petition related to the other four factors; therefore, we consider existing regulatory mechanisms in conjunction with each relevant claim presented in the petition.

To complete our analysis for a 90-day finding on a petition to list or uplist, we first identify the claims in the petition that are supported by credible information indicating that a potential threat is occurring or is likely to occur within the species' range. After identifying the claims that are supported by credible information that a threat is occurring or likely to occur, we next determine whether the petition has presented credible information that those threats affect the species at a population or species level, after taking into account any mitigating actions or conditions that may ameliorate those threats, such that the petitioned action may be warranted. If we find that the petition does not present substantial information that the petitioned action may be warranted based on the information provided regarding the status and trends of the species or on one or more factors, we consider the cumulative impact of all of the threats that are supported by credible information.

After evaluating the petition and the credible information it provides in support of these claims, we make a finding based on the standard for 90-day findings, which is whether the petition presents "credible scientific or commercial information in support of the petition's claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted." Our evaluation assesses the extent to which the credible information in the petition indicates that a reasonable person would conclude that the petitioned action may be warranted.

In accordance with 50 CFR 424.14 (h)(1)(iii), the "substantial scientific or commercial information" standard must be applied in light of any prior reviews or findings the Services have made on the listing status of the species that is the subject of the petition. The San Francisco Estuary white sturgeon (*Acipenser transmontanus*) has not previously been petitioned for listing as a distinct population segment (DPS) under the Endangered Species Act.

Claims Addressing Threats

We first assess whether the petition supported its claims with credible information (i.e., whether the petition has presented credible information that the threat is occurring or is likely to occur and that the species may be exposed to the threat) (Table 1). If the supporting information indicates that the threat is occurring or is likely to occur in the future and that the species may be exposed to it, we then assess whether the petition presented credible information that reasonably indicates the

presence of negative effects on the species as a whole.

If the petition did not present credible information indicating population-level effects, our analysis of that individual threat presented in the petition is complete, as there would be no species-level effects; we may then analyze that threat later if we need to evaluate cumulative effects. If the credible information about the particular threat indicates species-level effects, our analysis of that individual threat presented in the petition is complete. If the credible information about the particular threat does not indicate species-level effects but does indicate population-level effects, we assess the extent to which the credible information in the petition indicates that the scale of the effects of that threat are such that a reasonable person would conclude that listing or uplisting may be warranted.

If we find that there is credible information indicating that threats are having or are likely to have a negative effect on the species as a whole, such that a reasonable person would conclude that listing may be warranted, we can stop and make a positive “substantial information” finding. We would then evaluate all of the threats in detail based on the best scientific and commercial data available when we conduct the status assessment and make the 12-month finding. A positive 90-day petition finding does not indicate that the petitioned action is warranted. Such a finding indicates only that the petition presents substantial information that the petitioned action may be warranted and that a full review should occur.

TABLE 1: Evaluation of claims in the petition. Assessment of the credibility of scientific and commercial information in the petition and the extent to which claims supported by credible scientific or commercial information in the petition corroborates the presence of negative impacts to populations, or the species.

Threat or Activity	Exposure. Is the claim of the threat in the petition supported by credible scientific and commercial information? Does the petition support the claim that there is a potential threat and it is occurring or is likely to occur within the range of the species? If no, explain. If yes, include brief summary statement and citations to the credible information.	Response (Populations/Species). Do the claims and the supporting information indicate negative effects such that listing or uplisting may be warranted? Yes or no. Explain and describe below.
Harmful algal blooms (Factor E)	<p>Yes. The petition presents credible information that harmful algal blooms (HABs) are occurring and present threats to water quality within the species range and within locations where the species is likely to occur.</p> <p>The petition presents credible information supporting the claim that the San Francisco Bay and Sacramento-San Joaquin River estuary are over-enriched by nitrogen (N) and phosphorous (P) compounds due to effluent discharge from urban water treatment facilities, stormwater runoff from urban areas, and runoff from agricultural areas (Cloern et al. 2020, p. 7). The petition also presents credible information that harmful red tide (<i>Heterosigma akashiwo</i>) algal blooms occur in the San Francisco Bay (CFGC 2023, pp. 52-54) and that harmful blooms of <i>Microcystis</i> cyanobacteria are becoming more common in the San Joaquin River (Kudela et al. 2023, entire). The petition further provides credible information indicating that increased water temperatures associated with climate change may also contribute to increased algal blooms within the range of the species (CDFW 2015, p. 369).</p>	<p>Yes. The claims and the supporting information in the petition indicate potential negative population-level effects (such as mass sturgeon die-offs) due to harmful algal blooms (HABs) throughout the species range.</p> <p>As presented in the petition, harmful algal blooms impact fish through both the release of toxins (ex: microcystin) and through depleting dissolved oxygen and increasing dissolved carbon dioxide, which are known to cause morbidity and mortality in white sturgeon at all life stages (CDFW 2015, p. 108, citing Check and Crocker 2002 and Crocker and Cech 2002). The San Francisco Bay experienced significant blooms of harmful red tide (<i>Heterosigma akashiwo</i>) in 2022 and 2023 that resulted in mass die-offs of San Francisco Estuary white sturgeon (CFGC 2023, pp. 17, 43-54). Harmful blooms of <i>Microcystis</i> cyanobacteria in the San Joaquin River system also occur, and these blooms create poor water conditions that are likely to act as a barrier to migrating San Francisco Estuary white sturgeon (CBDA & CV RWQCB 2006, unpaginated) and to limit its geographic range.</p> <p>The petition presents credible information that existing conservation efforts and regulatory mechanisms may be inadequate to ameliorate this threat. The petition claims that under current effluent and runoff regulations, the San Francisco Estuary has a high level of nutrient-enrichment (Cloern et al. 2020, entire), which contributes to HABs. The petitioners also claim that current water quality (flow) standards</p>

		are not sufficient to mitigate HABs and support strong spawning of white sturgeon, especially in dry years (SWRCB 2017, pp. 196-197, 252).
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In accordance with 50 CFR 424.14 (h)(1)(iii), the “substantial scientific or commercial information” standard must be applied in light of any prior reviews or findings the Services have made on the listing status of the species that is the subject of the petition.

Cumulative Effects of Claims Supported by Credible Information

Because we have found that the petition presented substantial information that one or more threats are having an impact on the species to the point that the species’ status may have changed, the petition presents substantial information indicating that the species may warrant listing. We do not need to assess cumulative effects at the 90-day finding stage because we will address cumulative effects of all threats in the 12-month finding.

Evaluation of Information Summary

We reviewed the information provided by the petitioners and have determined the petition presented credible information to support impacts to the San Francisco Estuary population of white sturgeon such that the species may warrant listing. The petitioner provided credible information indicating potential threats to the San Francisco Estuary white sturgeon from harmful algal blooms (Factor E). The petitioner also provided credible information that the existing regulatory mechanisms may be inadequate to address that potential threat (Factor D). The petitioners also presented claims about dams, water diversions, entrainment mortality, recreational harvest, poaching, pollution, climate change, proposed hatchery supplementation, ship strikes, and dredging as threats to the San Francisco Estuary white sturgeon, which we will evaluate during our 12-month finding.

Petition Finding

We reviewed the petition, sources cited in the petition, and other readily available information (within the constraints of the Act and 50 CFR 424.14(h)(1)). We considered the credible information that the petition provided regarding effects of the threats that fall within factors under the Act’s section 4(a)(1) as potentially ameliorated or exacerbated by any existing regulatory mechanisms or conservation efforts. Based on our review of the petition and readily available information regarding harmful algal blooms (Factor E), we find that the petition presents substantial scientific or commercial information indicating that listing the San Francisco Estuary population of white sturgeon (*Acipenser transmontanus*) may be warranted. The petitioners also presented information suggesting dams, water diversions, entrainment mortality, recreational harvest, poaching, pollution, climate change, proposed hatchery supplementation, ship strikes, and dredging may be threats to the San Francisco Estuary white sturgeon. We will fully evaluate these potential threats during our 12-month status review, pursuant to the Act’s requirement to review the best scientific and commercial information available when making that finding.

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