



DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R6–ES–2020–0057; FXES1111090FEDR–245–FF09E21000]

RIN 1018–BE07

Endangered and Threatened Wildlife and Plants; Reclassification of the Razorback

Sucker from Endangered to Threatened with a Section 4(d) Rule

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), are reclassifying the razorback sucker (*Xyrauchen texanus*) from endangered to threatened (downlist) under the Endangered Species Act of 1973, as amended (Act). This action is based on our evaluation of the best scientific and commercial data available, which indicates that the species' status has improved such that it is not currently in danger of extinction throughout all or a significant portion of its range, but that it is still likely to become so within the foreseeable future. We also finalize protective regulations under the authority of section 4(d) of the Act that are necessary and advisable to provide for the conservation of this species.

DATES: This rule is effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: This final rule is available on the Internet at <http://www.regulations.gov>. Comments and materials we received are available for public inspection at <http://www.regulations.gov> at Docket No. FWS–R6–ES–2020–0057.

Availability of supporting materials: Supporting materials we used in preparing this rule, including the 5-year status review and the species status assessment report, are

available on the Service's website at <https://ecos.fws.gov/ecp/species/530> and at <http://www.regulations.gov> at Docket No. FWS-R6-ES-2020-0057.

FOR FURTHER INFORMATION CONTACT: Julie Stahli, Program Director, U.S. Fish and Wildlife Service, Upper Colorado River Endangered Fish Recovery Program; 720-697-4933, julie_stahli@fws.gov. 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 warrants reclassification from endangered to threatened if it no longer meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range). The razorback sucker is listed as endangered, and we are reclassifying (downlisting) the razorback sucker as threatened. We have determined the razorback sucker does not meet the Act's definition of an endangered species but does meet the definition of a threatened species (likely to become an endangered species throughout all or a significant portion of its range within the foreseeable future). Reclassifying a species as a threatened 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 downlists the razorback sucker from endangered to threatened on the Federal List of Endangered and Threatened Wildlife, with a rule issued under section 4(d) of the Act, based on the species' current status, which has been improved through implementation of conservation actions.

The basis for our action. Under the Act, we may determine that a species is an

endangered species 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 may reclassify a species if the best available commercial and scientific data indicate the species no longer meets the applicable definition in the Act. Based on the status review, the current threats analysis, and evaluation of conservation measures discussed in this proposed rule, we conclude that the razorback sucker no longer meets the Act's definition of an endangered species and should be reclassified to a threatened species. The species is no longer in danger of extinction throughout all or a significant portion of its range but is likely to become so within the foreseeable future.

We have determined that the razorback sucker is a threatened species due to the following threats: changes in river flows (Factor A), predation (Factor C), and competition with nonnative fish species (Factor E). Dam installations and subsequent alterations to river flow regimes limit access to floodplain nursery habitat and reduce in-river channel complexity, such as backwaters and submerged vegetative cover needed by larval and juvenile razorback sucker (Factor A). Predation of young razorback sucker by nonnative fish species is a major cause of recruitment failure throughout the basin, and some larger nonnative species are capable of consuming adults (Factor C). Nonnative fishes may also hybridize and compete for food and habitat with razorback sucker (Factor E).

We are promulgating a section 4(d) rule. We are issuing a rule under the authority of section 4(d) of the Act (a "4(d) rule") for the razorback sucker. The 4(d) rule specifically tailors the incidental take exceptions for the razorback sucker to provide protective mechanisms to State and Federal partners so that they may continue certain

activities that will further recovery of the species. The 4(d) rule will accommodate recovery activities such as propagation and stocking, educational display, habitat restoration, catch-and-release angling, and nonnative control efforts.

Previous Federal Actions

Please refer to the proposed rule to reclassify the razorback sucker published on July 7, 2021 (86 FR 35708), for a detailed description of previous Federal actions concerning this species.

Peer Review

A species status assessment (SSA) team prepared an SSA report for the razorback sucker (Service 2018a, entire; Service 2023, entire). The SSA team was composed of Service biologists, in consultation with other species experts. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy with the National Marine Fisheries Service (NMFS) 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 and recovery actions under the Act (<https://www.fws.gov/sites/default/files/documents/peer-review-policy-directors-memo-2016-08-22.pdf>), we solicited independent scientific review of the information contained in the razorback sucker SSA report. As discussed in the proposed rule, we sent the SSA report to three independent peer reviewers and received three responses. The peer reviews can be found at <https://www.regulations.gov>. In preparing the proposed rule, we incorporated the results of these reviews, as appropriate, into the SSA report, which was the foundation for the proposed rule and this final rule. A summary of the peer review

comments and our responses can be found in **Summary of Comments and Recommendations** below.

After our proposed rule published and the public comment period ended, we updated the razorback sucker SSA report (Service 2023, entire) to incorporate the best scientific and commercial data available related to population monitoring results, climate change information, and developments in management actions. We did not change or update the analytical methodology used to evaluate current and future conditions of the eight populations of the razorback sucker. Based on the best scientific and commercial data available, we updated the resiliency for one of the eight populations, the “Colorado River below Parker Dam” population, from extirpated to low resiliency. Because these updates were minor and did not change our overall assessment of species viability, we did not seek additional peer review of the updated SSA report. This final rule is informed by the updated SSA report.

Summary of Changes From the Proposed Rule

Changes to the final rule, based on the updated SSA report and our review of the comments received on our July 7, 2021, proposed rule (86 FR 35708), were minor and have not affected our conclusions regarding the status of the razorback sucker. As a result, this final rule is very similar to the proposed rule. The majority of changes from the proposed rule are updates to scientific information on the species in *Summary of Biological Status and Threats*, as summarized below:

- We updated population information for all of the species’ extant populations, including an update to the current condition of the “Colorado River below Parker Dam” population from extirpated to low resiliency, based on recent monitoring that documented a measurable and increasing stocked population with high annual survival.
- We updated our summary and analysis of the effects of climate change and potential impacts on the species and its habitats.

- We updated information regarding recent management actions performed by the three multi-stakeholder recovery and conservation programs (Upper Colorado River Endangered Fish Recovery Program [Upper Colorado Program], San Juan River Basin Recovery Implementation Program [San Juan Program], and Lower Colorado River Multi-Species Conservation Program [LCR MSCP]), including actions related to river flows, nursery habitat creation and access, and nonnative fish control.
- We summarized new information regarding the funding and future for two multi-stakeholder recovery programs (the Upper Colorado and San Juan programs) that implement management actions to benefit razorback sucker.
- We clarified that the section 4(d) rule provides exceptions for intentional take, not just incidental take.
- We clarified under the section 4(d) rule that reasonable care is required, not just to be considered, by the Federal, State, and Tribal agencies when allowing incidental catch and release and establishing new recreational angling opportunities for razorback sucker.

Summary of Comments and Recommendations

In the proposed rule published on July 7, 2021 (86 FR 35708), we requested that all interested parties submit written comments on the proposal by September 7, 2021. We also contacted appropriate Federal and State agencies, Tribal entities, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. Newspaper notices inviting general public comment were published in the Arizona Daily Sun (Arizona), the Salt Lake City Tribune (Utah), the Las Vegas Review Journal (Nevada), and the Grand Junction Sentinel (Colorado). We did not receive any requests for a public hearing. All substantive information received during the comment period is either incorporated directly into this final determination or addressed below.

Peer Reviewer Comments

As discussed in **Peer Review** above, we received comments from three peer reviewers on the draft SSA report. We reviewed all comments we received from the peer reviewers for substantive issues and new information. 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 the SSA report, which was the foundation for this proposed rule and this final rule. The peer reviewers generally agreed with our analysis and conclusions and provided additional information, clarifications, and suggestions to improve the SSA report. Peer reviewers helped improve our description of species needs and clarify the analytical framework used to evaluate resiliency. They also provided editorial suggestions, including ways to shorten the report and remove duplication.

Federal Agency Comments

We received one letter from the U.S. Bureau of Indian Affairs, indicating support for the proposed action.

Comments from States

We solicited and received comments from the States of Arizona (Arizona Game and Fish Department), Colorado (Colorado Department of Natural Resources), New Mexico (New Mexico Department of Game and Fish), Utah (Utah Public Lands Policy Coordinating Office), and Wyoming (Wyoming Game and Fish Department). The comments received from the five States indicate support for our reclassification of razorback sucker to a threatened species with a section 4(d) rule.

(1) Comment: The State of Colorado suggested clarifying if provisions in the proposed 4(d) rule calling for “reasonable care” by Federal and State agencies and Tribes prior to allowing incidental catch and release in critical habitat and prior to initiating the establishment of a new recreational fishery are mandatory. The State of Colorado also

noted that paragraph (gg)(3) of the proposed 4(d) rule referred solely to incidental take, while the text describes exceptions for both incidental and intentional take.

Our response: Based on this comment, we revised *Provisions of the 4(d) Rule* and the regulatory text of the 4(d) rule to reflect that “reasonable care” is mandatory when Federal, State, and Tribal agencies address the angling exceptions. Additionally, we removed “incidental” from the heading of paragraph (gg)(3) of the 4(d) rule.

(2) Comment: The State of Arizona supported reclassification and the 4(d) rule, and clarified the management status of razorback sucker in the Gila River subbasin. Their letter stated that the species in this subbasin would continue to be managed in accordance with the Upper Verde River Watershed Plan, including two potential fish barriers to address the threat of nonnative species.

Our response: We added the additional details of razorback sucker management in the Gila River subbasin to the SSA report (Service 2023, pp. 92–93).

(3) Comment: The States of Arizona and New Mexico commented about the need to update the recovery plan and goals for the razorback sucker.

Our response: We recognize this need and recommended updating the recovery plan for the razorback sucker in our last 5-year status review (Service 2018b, p. 21). We anticipate revising the species’ recovery plan in the future, and we will engage State partners and others in that effort. However, revising the recovery plan is outside the scope of this current rulemaking.

Comments from Tribes

We received one letter from a Native American Tribe, the Southern Ute Indian Tribe. In this letter, the Southern Ute Indian Tribe expressed support for our reclassification of razorback sucker with a section 4(d) rule, with an additional comment summarized below.

(4) *Comment:* The Southern Ute Indian Tribe noted its participation as a partner in the San Juan Program. They acknowledged that management actions for razorback sucker recovery needed to continue, that those actions are dependent on future funding of the recovery programs, and that San Juan Program partners are actively pursuing that funding.

Our response: We updated the SSA report (Service 2023, pp. 46, 108) to reflect the current funding situation of the Upper Colorado and San Juan programs. Both programs are operating under cooperative agreements and funding through 2031.

Public Comments

We received 29 letters from the public that provided comments on our July 7, 2021, proposed rule (86 FR 35708). We received letters from the general public and nongovernmental organizations, such as water users, power customers, and environmental organizations. All of the comments included views on whether the razorback sucker should be reclassified, with comments of support for and opposition to the downlisting. Many addressed similar topics, summarized below.

Comment topic (1): Commenters stated that the razorback sucker should not be reclassified because the population demographics do not meet the 2002 recovery goal criteria, including a lack of recruitment in all but one population.

Our response: As summarized in *Recovery Criteria*, below, without natural recruitment, Criterion 1 of the 2002 recovery goals (Service 2002, entire), which supplemented the 1998 recovery plan (Service 1998, entire), has only partially been met. Recovery plans provide a roadmap for the Service and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measurable criteria against which to evaluate progress towards recovery. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of a

species is ultimately based on an analysis of the best scientific and commercial data available to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan. As described in *Determination of Status* below, our review of the best scientific and commercial data available indicates that the razorback sucker meets the definition of a threatened species throughout all of its range. We updated the SSA report (Service 2023, entire) and *Summary of Biological Status and Threats*, below, with the best scientific and commercial data available regarding recruitment of razorback sucker and expect to revise the species' recovery plan in the future.

Comment topic (2): Commenters stated that conservation actions, such as stocking, may cease and the species would receive less protection under the Act if reclassified as a threatened species. A commenter also stated that we should not reclassify razorback sucker due to continued threats from future water development and hydropower projects.

Our response: Reclassification from endangered to threatened would not remove the species from the Federal List of Endangered and Threatened Wildlife. Therefore, this rule would not eliminate the protections afforded by the Act, including prohibitions of take under section 9 of the Act, except for specific conservation activities identified under the section 4(d) rule for the species. Additionally, reclassification would not change in any way the recovery planning provisions of section 4(f) of the Act, the consultation requirements under section 7 of the Act, or the ability of the Service to enter into partnerships for the management and protection of the razorback sucker. This rule acknowledges that current and potential future alterations to flow regimes and predation by nonnative fish are the species' primary stressors and recognizes the species' continued need for management and conservation actions, such as stocking and nonnative species control.

Comment topic (3): Commenters noted that the abundance and distribution information summarized for some razorback sucker populations was inaccurate or outdated. Specifically, commenters stated that the map of the species' current range was too broad, Green River subbasin abundance estimates were too imprecise to be used to characterize the population as large, Colorado and San Juan River subbasin abundance estimates were inconsistently reported, and the source for the Colorado arm of Lake Powell abundance estimates could not be located. Comments suggested that populations in Lakes Mead and Mohave are declining and that the population downstream of Parker Dam is too small to measure. Furthermore, for the Lake Mohave estimates, one commenter noted that we presented only results that employed both traditional sampling and passive detection data (which show an increase in population size), rather than results using only traditional sampling (which show a decline).

Our response: Our SSA report for the razorback sucker provides a compilation and analysis of the best scientific and commercial data available regarding the razorback sucker and its biological status. Since our proposed rule, we updated the SSA report (Service 2023, entire) and *Summary of Biological Status and Threats*, below, with the best scientific and commercial data available regarding the distribution and estimated abundance of the eight razorback sucker populations in the upper Colorado River basin (upstream of Glen Canyon Dam; "upper basin") and lower Colorado River basin (downstream of Glen Canyon Dam; "lower basin"), including information from researchers and organizations that have monitored the razorback sucker for decades.

Individual razorback suckers are known to range widely and occupy all thermally suitable habitats throughout the upper basin, with movements greater than 500 kilometers (310 miles) among Lake Powell and the Green, Colorado, and San Juan River subbasins (Service 2023, pp. 61–63). In the Green River subbasin, the imprecise abundance estimates are associated with low recapture rates and likely indicate a very large

population. Essentially, there were so many fish in the system that very few were ever encountered more than once (Zelasko and Bestgen 2022, pp. 7–8). Within the Colorado River subbasin, the discrepancy in abundance estimates described by the commenter is the result of limited sizes of fish being included in earlier analyses (Elverud et al. 2016, p. 4). Razorback sucker population estimates were updated for the San Juan River subbasin (Service 2023, pp. 78–79). Abundance estimates for the Colorado River arm of Lake Powell were not published (B. Albrecht, pers. comm.); the potential role of the lake and any associated information is acknowledged as being preliminary in the SSA report (Service 2023, p. 81).

In the lower basin, the population estimates in Lake Mead and Lake Mohave have been updated with the most recent data and are higher than in previous years (Service 2023, pp. 87–89). Estimates calculated from traditional, physical mark-recapture data combined with passive detection data, like those in Lake Mohave, are more precise than those from traditional sampling alone (Conner et al. 2020, entire; Francis et al. 2022, pp. 37, 74, 77). In the Colorado River reach downstream of Parker Dam, the most recent available data demonstrate that the population is measurable and increasing, though the increase is partially attributed to greater sampling coverage (Heishman et al. 2023, pp. 25, 34). The addition of this information did not change our determination regarding the status of the razorback sucker.

Comment topic (4): Commenters suggested that we more thoroughly discuss the effects of climate change in the Colorado River basin and provided references on drought in the Colorado River basin and its potential effects on river flows. A commenter also suggested that we explore how climate change could affect hatchery propagation, an important recovery action for the species.

Our response: Adequate flow regimes are key to the conservation of razorback sucker and climate change may reduce these flows in the future by reducing precipitation,

increasing air and water temperatures, lowering snowpack, drying soils, and increasing evapotranspiration. We evaluated the potential effects of climate change on the razorback sucker in our SSA report, including how water managers operating under Federal legislation and interstate compacts may reduce the effects of climate change by continuing to provide adequate flows for the razorback sucker and other species (Service 2023, pp. 24–28).

Based on these comments, we updated the SSA report (Service 2023, pp. 24–28) and the Summary of Biological Status and Threats, below, with additional information and citations regarding climate change and its potential effects to the razorback sucker. We also incorporated information regarding potential effects to hatcheries as a result of decreased water supply due to climate change (Service 2023, p. 28) in updates to the SSA report and in this rule. We note that water flows and water temperatures are currently adequate for razorback sucker in both basins. The addition of this information did not change our determination regarding the species' status.

Comment topic (5): Some commenters stated that we should not reclassify the razorback sucker as a threatened species because the threat of predation by nonnative fish species has not been abated. In addition, two comments noted that we did not adequately address the threat of predation of larvae by small-bodied nonnative fish, such as shiner and minnow species.

Our response: The SSA report provides a thorough description and analysis of the numerous conservation measures implemented to address nonnative fish species within the razorback sucker's overall range (Service 2023, pp. 45–48). Most notable are actions in the upper basin, where northern pike abundance has been successfully reduced by shifting effort to more effective times of year and capture methods, and where experimental flows from Flaming Gorge Dam have proven useful to reduce smallmouth bass reproductive success during certain hydrologic year types.

The role of small-bodied nonnative fish species, such as red shiner, sand shiner, and fathead minnow, in competition with and predation on razorback sucker larvae is addressed in the SSA report (Service 2023, pp. 13, 32, 38). We acknowledge that the challenge of controlling small-bodied nonnative fish species remains (Martinez et al. 2014, pp. 21, 29, 32). However, the Lake Mead population of razorback sucker is actively recruiting, and most other populations have high adult survival, all in the presence of nonnative piscivores. The threat of nonnative fish species is considered in this final determination, and we continue to conclude that razorback sucker meets the definition of a threatened species.

Comment topic (6): Commenters suggested that off-channel habitats may be important to the recovery of the razorback sucker and that more razorback sucker populations should be established in predator-free, isolated, off-channel ponds.

Our response: In the SSA report, we summarize that the lower basin employs off-channel habitats (both connected to and isolated from the main stem Colorado River) as razorback sucker stocking locations (Service 2023, pp. 66, 86, 90–91). These are primarily located in reaches downstream of Lake Mohave. We added more recent abundance estimates for razorback sucker stocked into three ponds within Imperial Ponds Conservation Area, a location with six total ponds and 80 acres of habitat for razorback sucker and bonytail (*Gila elegans*) (Service 2023, p. 91). The contributions of those ponds and other off-channel habitats to recovery of razorback sucker are unknown at this time.

In the upper basin, the successful management of multiple floodplain wetlands, coincident with carefully planned dam releases, has restored missing nursery habitat for wild-produced razorback sucker larvae. We updated *Summary of Biological Status and Threats*, below, and the SSA report with the most recent results of that wetland management (Service 2023, pp. 74–76). Those habitats are neither isolated from main

channels nor free of predators but have produced over 9,000 wild-reared juvenile razorback suckers. The recovery programs continue to explore management techniques for existing wetland habitats and opportunities to establish more of these habitats.

Comment topic (7): A commenter asked for additional consideration regarding the uncertain future funding of conservation and recovery actions, including the cooperative agreement that funds the Upper Colorado and San Juan programs, which expires in 2024. The commenter also stated that, in the lower basin, reduced flows may result in decreased hydropower revenues, which fund LCR MSCP and the Glen Canyon Dam Adaptive Management Program conservation activities.

Our response: The many conservation actions implemented in both the upper and lower Colorado River basins remain essential to recovery of razorback sucker. Cooperative agreements for both the Upper Colorado and San Juan programs have been extended in perpetuity, and the programs are funded through 2031. We updated *Summary of Biological Status and Threats*, below, and the SSA report (Service 2023, pp. 41, 44, 108) with that development. Confidence in the continuation of those programs remains high as all partners remain wholly engaged in the recovery of the species they manage. A decrease in hydropower revenue has been seen in recent years because of drought conditions. However, funding for compliance activities across the basin has remained a priority for the Bureau of Reclamation, who assumed many of those costs as hydropower revenues declined.

Comment topic (8): Several commenters suggested a deficiency in essential razorback sucker knowledge and data, such as unknown species' ecology and population drivers, as well as lack of reliable monitoring data and quantifiable analyses. One commenter noted that upper basin populations would benefit from additional genetics research.

Our response: As compiled, summarized, and evaluated in our SSA report (Service 2023, entire), the razorback sucker's life history, ecology, resource needs, population dynamics, stressors, population sizes and trends, and conservation actions have been well studied and documented for decades. All eight razorback sucker populations have multiple years or decades of abundance and survival estimates (Service 2023, pp. 72–94). Updated genetic analyses of the upper basin stocked populations, their broodstock, and the potential effect continued stocking may have on the genetic makeup of any future wild-produced portions of the populations would be beneficial, as noted in the SSA report (Service 2023, p. 29). However, our determination in this rule is based on the best scientific and commercial data available. Classification decisions are not dependent on the availability (or lack thereof) of information that would be beneficial or definitive.

Comment topic (9): Some commenters stated that the provisions of the 4(d) rule for razorback sucker would not protect the species, specifically the angling and exhibition provisions.

Our response: We determined that the specific provisions in the 4(d) rule adequately protect razorback sucker, while facilitating the conservation and management of razorback sucker where they currently occur and may occur in the future. Catch-and-release angling and educational exhibition of the species are two activities that afford public engagement with razorback sucker and contribute to its conservation by providing a unique opportunity for the public to see and interact with rare native species. Recreational angling is the primary mechanism by which the public may interact with the razorback sucker, and angling regulations are an important tool for raising public awareness and action. Additionally, educational exhibitions of captive-reared razorback sucker provide a unique opportunity for the public to see and interact with rare native species. *Provisions of the 4(d) Rule*, below, provides additional detail regarding how

these and other activities contribute to the conservation of the species with descriptions of reasonable considerations to limit the take of razorback sucker during these conservation activities.

Final Reclassification Determination

Background

A thorough review of the razorback sucker is presented in the SSA report (Service 2023, entire), which we summarize here.

Species Description

The razorback sucker is a freshwater fish species endemic to warm-water portions of the Colorado River basin in the southwestern United States, uniquely identified by a bony, dorsal keel (ridge) located behind its head. The species tolerates wide-ranging temperatures, high turbidity and salinity, low dissolved oxygen, and wide-ranging flow conditions. Razorback suckers sexually mature at 3 to 4 years of age, grow up to 1 meter (3 feet) long, can live for more than 40 years, and spawn multiple times over a lifespan.

Habitat and Range

Razorback sucker are found throughout the Colorado River basin and are most common in low-velocity habitats such as backwaters, floodplains, flatwater river reaches, and reservoirs. The species' historical range includes most of the Colorado River basin, from Wyoming to the delta in Mexico, including the States of Colorado, Utah, New Mexico, Arizona, Nevada, and California, and Mexican States of Baja and Sonora. Dam construction across the basin dramatically altered flow-regimes and habitat, disconnecting floodplain habitats and converting long reaches of river to reservoirs. These reservoirs initially supported some of the largest populations of razorback sucker (greater than 70,000 individuals) until nonnative sportfish were introduced and became abundant, at which time recruitment, or the survival of young to become adults, became rare and populations declined.

Recovery Criteria

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Under section 4(f)(1)(B)(ii), recovery plans must, to the maximum extent practicable, include objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of section 4 of the Act, that the species be removed from the Lists of Endangered and Threatened Wildlife and Plants.

Recovery plans provide a roadmap for us and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measurable criteria against which to evaluate progress towards recovery and assess the species' likely future condition. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of a species or to delist a species is ultimately based on an analysis of the best scientific and commercial data available to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan.

There are many paths to accomplishing recovery of a species, and recovery may be achieved without all of the criteria in a recovery plan being fully met. For example, one or more criteria may be exceeded while other criteria may not yet be accomplished. In that instance, we may determine that the threats are minimized sufficiently and that the species is robust enough that it no longer meets the definition of an endangered species or a threatened species. In other cases, we may discover new recovery opportunities after having finalized the recovery plan. Parties seeking to conserve the species may use these opportunities instead of methods identified in the recovery plan. Likewise, we may learn new information about the species after we finalize the recovery plan. The new

information may change the extent to which existing criteria are appropriate for identifying recovery of the species. The recovery of a species is a dynamic process requiring adaptive management that may, or may not, follow all of the guidance provided in a recovery plan.

We published the first recovery plan for the razorback sucker in 1998, which outlined a suite of recovery actions, including maintaining genetic diversity, reversing the declining population trends in Lake Mohave and the Green River subbasin, protecting and restoring habitat, and augmenting or reestablishing five additional populations of razorback sucker in designated critical habitat (Service 1998, p. vi). In 2002, the razorback sucker recovery goals supplemented and amended the 1998 recovery plan, providing demographic criteria and management actions needed for recovery (Service 2002, entire). For a detailed description of recovery planning and recovery criteria for the razorback sucker, please refer to *Recovery Criteria* in the July 7, 2021, proposed rule (86 FR 35708).

The current condition of the razorback sucker partially meets the 2002 recovery criteria. Demographic criteria in the upper basin have been partially met, as adult abundance exceeds the minimum viable population (MVP) benchmark of 5,800 adults in both the Green and Colorado River populations. However, all of the adult razorback sucker are stocked, not wild-produced, due to the lack of natural recruitment (survival of wild-spawned individuals to adult stage) as a result of predation and habitat alteration. All stages of the life cycle are routinely observed until the juvenile life stage, which has been generally absent on a wide scale but increasingly documented in the upper basin. Demographic criteria in the lower basin have also been partially met, as Lake Mead is home to the only naturally recruiting population in either basin, but abundance is low. Adult populations of thousands of razorback sucker persist in both Lake Mohave and Lake Havasu (and their associated river reaches), but neither population is naturally

recruiting or meets the MVP benchmark. Without continued stocking, these populations would decline due to the lack of natural recruitment from the ongoing threat of predation from nonnative fish. The criterion for a genetic refuge in Lake Mohave has been met. Site-specific management actions have managed or abated several threats to the species, though nonnative fish remain a persistent threat in both basins.

Since 2002, the amount of available science regarding razorback sucker has increased, including knowledge about the species and its associated threats. For example, the 5-year period recommended in the recovery plan to evaluate demographic criteria may not capture the natural variability for such a long-lived species. Furthermore, the minimum viable population criterion of 5,800 adults was established without considering the extent or boundary of each population and excluded Lake Powell and its river inflows. Finally, several site-specific management actions have been achieved, others are ongoing and still needed, and a number are no longer considered necessary to the species' recovery. As such, the 2018 5-year review of the status of the species (Service 2018b, p. 21) recommended revising the 2002 recovery goals to incorporate new information about the species. We expect to revise the recovery plan for razorback sucker in the future.

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 reclassifying 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 consider these same five factors in downlisting a species from endangered to threatened.

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.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/M-37021.pdf>). The foreseeable future extends as far into the future as 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 SSA report documents the results of our comprehensive biological review of the best scientific and commercial data available regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent our decision on whether the species should be reclassified as a 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 razorback sucker 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 species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability.

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

The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket No. FWS-R6-ES-2020-0057 on <https://www.regulations.gov> and at <https://ecos.fws.gov/ecp/species/530>.

Summary of Biological Status and Threats

In this discussion, we review the biological condition of the species and its resources, and the threats that influence the species' current and future condition, in order to assess the species' overall viability and the risks to that viability. In addition, the SSA report (Service 2023, entire) documents our comprehensive biological status review for the species, including an assessment of the potential threats to the species. The following is a summary of this status review and the best scientific and commercial data available gathered since that time that have informed this decision.

For our analysis, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the factors, both positive and negative, that influence the viability of the razorback sucker, currently and into the future (Service 2023, entire). We evaluated the species' current levels of resiliency, redundancy, and representation, and projected plausible changes into the future (Service 2023, entire).

Summary of Species Needs

Individual razorback suckers need complex lotic (rapidly moving freshwater) and lentic (still freshwater) habitats for spawning, rearing, feeding, and sheltering; suitable water temperatures and quality for spawning, egg incubation, larval development, and growth; variable flow regimes in lotic systems to provide access to off-channel wetland habitats; and an adequate and reliable food supply (Service 2023, pp. 17–23). Razorback sucker populations need the ability to rebound from stochastic events (resiliency), which is facilitated by an abundance of individuals and their successful growth and survival through all life stages. Population resiliency is aided by habitats with few predatory nonnative fish species, allowing the young to survive and grow; suitable water quality with few toxic inputs, such as fire ash or other contaminants, supporting survival of all life stages; and unimpeded range and connectivity, providing free movement of individuals among populations. Natural recruitment, the survival of wild-spawned individuals to the adult life stage, is rare due to predation on juveniles by nonnative fish and limited access to nursery habitats. Therefore, population resiliency currently depends on management actions, primarily the stocking of hatchery-reared individuals. At the species level, the razorback sucker needs multiple populations to withstand potential catastrophic events (redundancy) and genetic and ecological diversity to maintain the adaptive traits of the species (representation; Service 2023, pp. 22–23). Before dam

construction in the 1960s, there were nine populations of razorback sucker, and the species is currently found in eight populations throughout the Colorado River basin.

Risk Factors

To determine the condition of razorback sucker populations, we evaluated several stressors that influence the resiliency of razorback sucker populations, such as river flows, nonnative fish, genetic factors, habitat alterations, overutilization, parasites, disease, pollutants, and the effects of climate change (Service 2023, pp. 24–40). The stressors that most influence the resiliency of razorback sucker populations are alterations to flow regimes, which reduce available habitat and connectivity, and predation by nonnative fish species. Those two stressors relate to listing factor (A): the present or threatened destruction, modification, or curtailment of its habitat or range, and (C): disease or predation, respectively. The effects of climate change could affect habitat connectivity, flow conditions, and densities of predatory nonnative fish over longer timeframes (Service 2023, pp. 24–28).

Altered flow regimes reducing access to nursery habitat—Complex backwater and floodplain wetland habitats support the growth of larval and juvenile razorback sucker. Dam installations in the 20th century altered river flow regimes by reducing spring peak flows, which limited access to the floodplain habitat needed by larvae and juveniles. Altered flow regimes also reduced the complexity of in-river habitat by encouraging establishment of nonnative vegetation on previously dynamic sandbars, which prevented the development of backwater pools and reduced in-river vegetative cover used by larvae and juvenile razorback sucker.

Nonnative fish species—Razorback sucker lack competitive and predator defense abilities compared to fish that evolved in more species-rich regions (Martinez et al. 2014, p. 1). Predation of young razorback sucker by large, nonnative piscivores (carnivores that eat fish) is a major cause of recruitment failure throughout the basin. Nonnative species

of particular concern in the upper basin include smallmouth bass (*Micropterus dolomieu*), northern pike (*Esox lucius*), and walleye (*Sander vitreus*) in the Green and Colorado River basins and channel catfish (*Ictalurus punctatus*) in the San Juan River basin. Smallmouth bass, in particular, are adept at establishing large riverine populations. Nonnative species of particular concern in the lower basin include striped bass (*Morone saxatilis*) and flathead catfish (*Pylodictis olivaris*), both of which can consume all life stages of razorback sucker, including adults. Nonnative fishes may also hybridize and compete for food and habitat with razorback sucker.

Effects of climate change—Despite the severe drought during the past 20 years, management of river flows and delivery to downstream users have restored much of the important variability of discharge that the razorback sucker needs to survive and reproduce. Experimental flows in the upper basin have provided main channel connections to off-channel nursery habitats under a variety of hydrologic conditions. However, future climatic conditions could outstrip management flexibility or increase frequency of drier hydrologic years, which benefit nonnative species.

Climate models for the Colorado River basin predict higher temperatures with seasonal drying, lower flows, and increases in fall and winter precipitation in some areas (Reclamation 2016, pp. 3–9). Warming may produce a shift to decreased snowpack, lower snow-water equivalents, and earlier and lower runoff (Christensen et al. 2004, pp. 347–351; McCabe et al. 2017, entire; Salehabadi et al. 2022, p. 1071). In the upper basin, reduced runoff and altered timing and magnitude could affect reproductive success of razorback sucker through elimination of spawning habitats, precluded access to floodplain nursery habitats, and reduction of cover to avoid predation. In the lower basin, increased temperature of flows released from Glen Canyon Dam could improve thermal suitability of downstream reaches. Warmer water temperatures may also increase growth and developmental rates of razorback sucker in some settings (Clarkson and Childs 2000,

entire; Bestgen 2008, entire). However, those same conditions could also benefit survival, reproduction, and distribution of nonnative, warm-water species that are known to have negative impacts on razorback sucker survival and recruitment (Bruckerhoff et al. 2022, pp. 663–665).

Decreased discharge may negatively affect operations at razorback sucker propagation facilities supplied by municipal or surface water sources; however, groundwater recharge in the upper basin is predicted to increase in the expected wetter climate (Tillman et al. 2016, pp. 6971–6972), benefitting hatcheries supplied by groundwater wells. During a period when air and water temperatures have increased and flows have declined in the Colorado River basin (Service 2023, pp. 24–28), razorback sucker survived at high rates of 70–99 percent throughout much of their range (Miller et al. 2020, p. 36; Zelasko et al. 2022, p. 12; Rogers et al. 2023, p. 46). Climate change is not expected to be the source of significant stressors in the near term, but the effects could increase in the long term (i.e., greater than 30 years; Service 2023, pp. 99–104).

Conservation Actions

Ongoing management actions to benefit razorback sucker are primarily undertaken by three expansive, multi-stakeholder management programs: the Upper Colorado Program, established in January 1988 and funded through 2031; the San Juan Program, established in 1992 and funded through 2031; and the LCR MSCP, established in 2005 and funded, permitted, and committed through 2055; as well as a variety of smaller working groups. These conservation programs' goals are to work toward improving population resiliency by augmenting adult populations, providing beneficial flows, creating habitat, and reducing nonnative predators and competitors, each of which is briefly discussed below. Our SSA report provides additional information on these conservation programs and their actions (Service 2023, pp. 46–47).

To conduct augmentation in the upper basin, each of three hatcheries maintains its own razorback sucker broodstock according to genetic and management plans developed by the programs they serve (Czapla 1999, entire; Ryden 2005, entire; Integrated Stocking Plan Revision Committee 2015, entire; Wilson 2012, entire). Fish are reared and stocked annually into the Green, Colorado, and San Juan subbasins. In the lower basin, the established population in Lake Mohave is the broodstock for most augmentation efforts, as it has the most genetically diverse population. Commonly referred to as repatriation, wild larvae are collected, reared at multiple facilities, and released into Colorado River reaches managed by LCR MSCP (LCR MSCP 2015, pp. 9–12). Augmentation is the primary tool used to enhance the resiliency of razorback sucker in the lower basin. In the upper basin, stocking is coupled with other management actions that all contribute to population resiliency on the landscape.

Flow recommendations have been developed for most major rivers in the upper basin (Holden 1999, entire; McAda 2003, entire; LaGory et al. 2019, entire) to support conservation of native fish species, including razorback sucker. Flow recommendations commonly set both peak and base flow recommendations based on the hydrology of the system in a given year and their effects on native fish species and downstream geomorphology. Most important for razorback sucker in the Green River are spring peaks timed to move wild-produced larvae into warm, food-rich floodplain wetlands that are managed to exclude nonnative fish.

Successful floodplain management for razorback sucker nursery habitat requires: (a) flow management that provides floodplain connection when larval razorback sucker are present in the system; (b) floodplains that are retrofitted with water control structures that restrict entry of large-bodied fish and allow managers to fill and drain the habitat at the beginning and end of the growing season, respectively; and (c) a supplemental water source to freshen floodplain water quality through the summer. The Upper Colorado

Program has developed multiple wetlands that can connect under various flow regimes in the Green River downstream of Flaming Gorge Dam. One wetland, Stewart Lake, has provided the largest naturally produced cohort of wild razorback sucker surviving through their first summer of life to date in the upper basin (Partlow et al. 2022, pp. 4–5).

The Upper Colorado and San Juan programs are working to reduce the numbers of nonnative fishes, focusing primarily on smallmouth bass, northern pike, and walleye in the Green and upper Colorado River subbasins and channel catfish in the San Juan subbasin. A comprehensive nonnative fish control strategy was developed by the Upper Colorado Program encompassing active removal from riverine habitats, escapement prevention from upstream reservoirs, revised stocking guidelines, harvest regulation changes, and outreach messaging (Martinez et al. 2014, entire). In-river removal efforts are scientifically evaluated and adjusted as appropriate to increase effectiveness.

In addition, both the Upper Colorado and San Juan programs have installed fish passage facilities to support range expansion of the species and have screened irrigation canals to prevent entrainment. Research, monitoring, and habitat management occur throughout the Colorado River basin.

Current Condition

The SSA assesses eight populations of razorback sucker: four populations in the upper basin (Green, upper Colorado, and San Juan River subbasins, and Lake Powell) and four in the lower basin (Lake Mead [including the Grand Canyon], Lake Mohave, the Colorado River between Davis and Parker Dams [Lake Havasu], and the Colorado River below Parker Dam). Razorback sucker were historically present in the Gila River system, but the system was not evaluated in the SSA because wild razorback sucker were extirpated from the system and subsequent stocking efforts have ceased without establishing a population. The SSA evaluates the current condition for each population in terms of four resiliency categories (high, medium, low, and extirpated), which is an

average of our evaluation of condition for the population factors of population size, evidence of reproduction, and recruitment that influence the resiliency of each population. Definitions of population factors for each category (high, medium, low, and extirpated) were developed to calibrate our understanding of these factors in terms of resiliency (Service 2023, pp. 51–53). In general, populations in higher resiliency categories are better able to withstand stochastic events than populations in lower resiliency categories. To calculate an overall score for resiliency for each population, we assigned a 3 for population factors with high condition, 2 for medium condition, 1 for low condition, and 0 for extirpated condition, and then calculated an average (high resiliency 2.26–3; medium resiliency 1.51–2.25; low resiliency 0.76–1.5; and extirpated 0–0.75) (Service 2023, pp. 94–95). Currently, Lake Mead has high resiliency, the Green River subbasin has medium resiliency, the Colorado and San Juan river subbasins, Lake Powell, Lake Mohave, Lake Havasu, and the Colorado River below Parker dam have Low resiliency (Service 2023, p. 95). Our SSA report provides additional detail regarding our evaluation of current condition (Service 2023, pp. 51–93).

Below, we summarize the current condition for each known population of razorback sucker, taking into account the primary stressors and conservation actions for each population.

The Upper Basin—The four upper basin populations currently have adequate food and unimpeded connectivity, except for a waterfall that blocks upstream movement of razorback sucker from Lake Powell into the San Juan River. In other areas, fish passage structures have been constructed to allow movement between populations. Populations in the upper basin generally have medium-condition habitat, water temperature, water quality, and variable flow, except in the Green River subbasin, where water temperature and quality and variable flow are in high condition (Service 2023, pp. 64–65).

Since the early 2000s, management of river flows has restored much of the important intra- and inter-annual variability of river flow needed to support razorback sucker. Flows in the Green River are actively managed to benefit razorback sucker by using biologically triggered releases from Flaming Gorge Dam to increase connectivity with several floodplain wetlands that provide nursery habitat. Floodplain wetlands are being developed adjacent to the Colorado River near Grand Junction, Colorado, and Moab, Utah, to provide more nursery habitat in that subbasin. Reservoirs in the Aspinall Unit along the Gunnison River changed release patterns to provide downstream flows that support razorback sucker. In addition, the Upper Colorado Program acquired water stored in reservoirs in the Yampa and Colorado Rivers to enhance flow conditions when needed, such as during low flow periods in summer. In the San Juan River, flow recommendations for Navajo Reservoir support creation and sustained presence of habitat. Therefore, conservation actions have helped restore flow regimes to increase connectivity to floodplain habitats, such that the stressor of altered flow regimes has been reduced in the upper basin populations.

Predation by nonnative fish species remains a significant stressor to razorback sucker in the upper basin, resulting in populations with low conditions for that factor throughout most of the upper basin. More than 50 nonnative fish species, some of which prey on or compete with razorback sucker, have been introduced into the upper basin. Most upper basin populations have substantial levels of predatory nonnative fish species, including channel catfish, smallmouth bass, northern pike, and walleye, which likely prevent recruitment of young razorback sucker to the adult life stage on a large scale. In addition, small-bodied nonnative fish are ubiquitous across the upper basin and likely prey on younger life-stages of razorback sucker. The Upper Colorado Program implements nonnative fish management actions, such as removing predatory fish from approximately 966 km (600 mi) of river and screening reservoir outlets to prevent

predators from escaping into downstream habitats used by razorback sucker. State partners in the Upper Colorado Program no longer stock certain nonnative predators and instead implement harvest regulations that promote the removal of predatory fish throughout the upper basin. The San Juan River subbasin is free from nonnative predators, except channel catfish. Removal efforts successfully reduced the population's size-structure to relieve some predation pressure on native species.

Upper Colorado River basin populations of razorback sucker are monitored using mark-recapture population estimation, some with estimates dating back to the late 1980s. Population monitoring in the late 1980s and early 1990s, after the species had already begun to decline, estimated populations of hundreds of individuals in the middle Green River. By 2000, the estimates had declined to approximately 100 wild adults, prompting the development of a stocking program in the upper basin. The most recent abundance estimates from 2011 to 2013 indicate the Green River subbasin population totals more than 30,000 adult stocked razorback sucker (Zelasko et al. 2018, pp. 11–13). The estimates resulted from thousands of captures but are imprecise due to low number of recaptures, which indicates a large population.

Successful reproduction is documented annually by larval presence in the Green River population, but natural recruitment has been rare due to predation by nonnative fish and limited access to nursery habitats. This population is not self-sustaining, though young-of-year razorback sucker (surviving through the first summer of life) have been documented annually since 2013 in off-channel wetlands of both the Green and Colorado River subbasins. Managed flows and wetland operations produced more than 4,000 juvenile razorback sucker in 2022, which doubled the number produced in all previous years. Subsequent encounters of wild-produced razorback sucker have increased in the Green River subbasin, including detections of several age-2 and age-3 juveniles and two age-6 adults at or near a known spawning location (Partlow et al. 2020, pp. 6–7). These

encounters suggest that survival of young razorback sucker is increasing in the basin. The Upper Colorado Program stocks 6,000 adult razorback sucker into the Green River subbasin annually to support the population.

The number of wild razorback sucker in the upper Colorado River subbasin decreased by the 1970s, and the population was functionally extirpated by 2000. The most recent abundance estimates (2013 to 2015) indicate that the population ranges from approximately 5,000–8,000 adults (Elverud 2020, pp. 26, 92). The upper Colorado River subbasin population is not self-sustaining, but reproduction and larval presence have been documented. Survival to the juvenile stage is rare but has been confirmed at low levels. As in the Green River, recruitment to the adult life stage is rare, likely due to persistent predation from nonnative fishes and the lack of nursery habitat. The Upper Colorado Program stocks 6,000 adults annually into the upper Colorado River subbasin to support the population. There is one managed floodplain wetland on the Colorado River.

Sampling efforts from 1987 and 1993 failed to collect any razorback sucker in the San Juan River, prompting stocking efforts in the basin. Populations in the San Juan River subbasin have recently been monitored using catch-per-unit effort, which saw a significant increase after 2010 (Schleicher 2016, pp. 17–18). Recent abundance estimates indicate the adult population is relatively stable around 3,000 individuals (Schleicher et al. 2022, pp. 6–7). Successful reproduction and larval presence are documented annually, but recruitment to the juvenile and adult life stages is also rare in the San Juan River subbasin. The population is not self-sustaining, and 11,400 adult razorback sucker are stocked annually to support it.

The fourth upper basin population is found in the Colorado and San Juan River inflow areas to Lake Powell. Although this population may functionally be an extension of the other three upper basin populations, its habitat conditions and the methods used to monitor it vary enough from the other three populations that it is evaluated separately.

Little is known about this population, as monitoring has only recently expanded to reaches. However, mark-recapture population estimates indicate there are persistent populations in both the San Juan and Colorado River arms, with approximately 647 and 2,184 individuals, respectively (Pennock and Gido 2019, p. 2; Service 2023, p. 81), primarily composed of stocked adults. Reproduction is occurring annually, and larval razorback sucker have been captured in both inflow areas. Recruitment has yet to be confirmed, but untagged adults have been captured in Lake Powell. Lake Powell also supports populations of nonnative predatory fish species, including smallmouth bass, largemouth bass (*Micropterus salmoides*), striped bass, walleye, channel catfish, black crappie (*Pomoxis nigromaculatus*), and bluegill (*Lepomis macrochirus*). However, inflow areas commonly have inflow- or wind-driven turbidity and inundated terrestrial vegetation, which may offer protection for razorback sucker from predation by nonnative fish species (Albrecht et al. 2017, pp. 510–511). The Upper Colorado and San Juan programs continue to explore the Lake Powell population, which is not actively managed like the other three riverine populations in the upper basin.

Summary of Current Condition in the Upper Basin—Four populations of razorback sucker occur in the upper basin. The Upper Colorado and San Juan programs' conservation and management actions have maintained and improved resource conditions for three of the four populations in the upper basin over the last 20 years. The SSA assessed demographic factors in the Green River subbasin as being in medium condition and the three remaining upper basin populations to be in low condition. Populations of stocked adults use fish passage facilities to access all available habitat. Successful reproduction, as evidenced by the collection of wild-produced larvae, is common in all populations. Signs of survival to later life stages are increasing but have not reached levels of self-sustainability. Razorback sucker populations in the upper basin rely on management actions to maintain resiliency.

The Lower Basin—Dams on the mainstem of large rivers that provide water storage and hydropower dramatically altered the aquatic habitat in the lower Colorado River, such that these dams now define the boundaries of the razorback sucker populations in the lower basin. Three of the four lower basin populations generally have high-quality habitat, water quality, and temperature, and adequate food for razorback sucker. The reservoirs provide suitable habitat for razorback sucker, and the largest populations ever documented occurred in these reservoirs after filling. There are few natural barriers to movement within these populations, but connectivity among populations across the dams depends on management actions. Flows are heavily managed in the lower basin, with the dams reducing spring peak flows and providing stable downstream flows year-round, so there are few natural flows. Due to dam management of flows, variable flows are not available in the lower basin, which are essential to connect off-channel floodplains in the upper basin. Despite the presence of nonnative predatory fish, the reservoirs behind the dams provide suitable nursery habitat for juvenile razorback sucker that supports recruitment in Lake Mead.

As in the upper basin, predation of razorback sucker by nonnative fish in the lower basin is a significant stressor that influences the resiliency of the populations. More than 20 nonnative fish species occupy razorback sucker habitat, and all the lower basin mainstem reservoirs have populations of bluegill, striped bass, smallmouth bass, and largemouth bass that are managed as sport fisheries. Both striped bass and flathead catfish easily consume all life stages of razorback sucker, including large adults, so are especially detrimental to population recruitment. Flathead catfish have established populations in Lake Havasu, downstream of Parker Dam and in the Gila River subbasin. These predatory nonnative fish species have largely eliminated recruitment to the adult life stage in all lower basin populations except Lake Mead. The Lake Mead population is the only population that demonstrates sufficient recruitment, to a level that it is self-

sustaining that does not require stocking. Managers hypothesize that portions of Lake Mead have physical conditions (vegetation and high turbidity) that provide some cover from site-feeding predatory nonnative fishes, and that this cover has led to a level of recruitment that is sustaining this population at its current level.

The LCR MSCP oversees management actions to support razorback sucker in the Colorado River mainstem in the lower basin. Management focuses primarily on capturing wild-produced larvae and raising them to adult size in protected environments; stocking, creating, and managing predator-free off-channel habitats; and monitoring populations. Nonnative fish are not actively controlled in the lower basin, except in the Grand Canyon, where they are managed by the Glen Canyon Dam Adaptive Management Program. Many of the nonnative species are valuable sport fish managed by State wildlife agencies.

LCR MSCP produces annual mark-recapture population estimates for all razorback sucker populations in its geographic scope. The Lake Mead population, though large during the initial filling of the reservoir, was recently estimated to be 578 adults (Rogers et al. 2023, p. 46). Ten years of population estimates document that the population is stable, but small. Reproduction and natural recruitment have been documented annually since the 1990s in turbid inflow areas, making Lake Mead home to the only self-sustaining razorback sucker population in either basin. Cover, in the form of turbidity and submerged vegetation, may explain why recruitment to the adult life stage occurs in Lake Mead, despite the presence of many nonnative predatory fish species.

Lake Mohave remains an important genetic refuge for razorback sucker, annually providing wild-spawned larvae for reintroduction efforts across the lower basin. Recent genetic studies document the persistence of high levels of genetic diversity in both wild and stocked individuals. The population exceeded 60,000 individuals in the 1980s but declined to fewer than 250 wild individuals in 2011. In both 2020 and 2021, the population was estimated to be approximately 5,000 hatchery-raised and stocked adults

(Kesner et al. 2022, p. 19; Saucier et al. 2023, p. 24). Reproduction and larval presence are observed annually. Recruitment to the adult life stage has not been documented in this population and is unlikely due to high rates of predation. Each year, wild larvae are captured, raised in hatcheries, and repatriated at sizes larger than can be consumed by most nonnative fish species. Reintroduction occurs annually, but the number of reintroduced adults varies.

Razorback sucker were extirpated from the Colorado River between Davis and Parker Dams, including Lake Havasu. Reintroduction has established a population with estimates of nearly 5,000 adults in both 2018 and 2019 (Bullard et al. 2022, p. 25), and the population is maintained through continual stocking. Spawning and larval presence occur annually. Recruitment to the adult life stage has not been documented in this population and is unlikely due to high rates of predation.

In the Colorado River downstream of Parker Dam, razorback sucker are augmented annually. Survival rate and abundance estimates have been increasing annually, with the population in 2021 estimated to be 1,162 individuals (Heishman et al. 2023, p. 25). Larval production occurs at low levels, but no evidence of natural recruitment has been documented.

Summary of the Lower Basin—Four populations of razorback sucker are currently extant in the lower basin. The LCR MSCP's conservation and management actions continue to reintroduce razorback sucker and actively develop off-channel habitat. The Lake Mead population is small, persistent, and the only self-sustaining population of the species. The SSA rated the population condition as high relative to other populations. Populations of reintroduced adults in Lake Mohave, Lake Havasu, and downstream of Parker Dam are maintained through stocking. The SSA rated all three populations in low condition. Successful spawning and larval production are common in three of the four populations, with minimal larval production in the population below Parker Dam.

Razorback sucker populations in the lower basin rely on management actions to be persistent.

Summary of Current Condition—The razorback sucker has many traits that enable individuals to be resilient in the face of stochasticity, including a long lifespan; high reproductive potential; flexibility in habitat conditions; adaptation to a wide variety of water-quality conditions, flow and thermal regimes; and a variable omnivorous diet. Although individual adult razorback sucker are persistent, seven of the eight populations are maintained through stocking. Overall, one population is rated in high condition; one, in medium condition; and six, in low condition. Only one population, the Lake Mead population, exhibits natural recruitment and stability. The overall status of each population depends on ongoing management actions, such as population augmentation and the removal of nonnative predatory fish species, to maintain resiliency.

Redundancy for razorback sucker is currently provided by eight established populations. Further, the expansive distribution of each population, with individuals distributed and established in multiple locations across wide areas, also provides redundancy to help reduce risk associated with catastrophic events, such as widespread wildfire and extended drought. Due to this widespread distribution, existing populations are likely to survive localized and even regional catastrophic events. Representation is sufficient in terms of genetic diversity and genetic relatedness, as genetic diversity has been maintained through augmentation. Ecological representation is demonstrated by the species exhibiting a high degree of plasticity by inhabiting both lentic and lotic habitats. However, the lack of natural recruitment may reduce levels of genetic diversity for the species.

Future Conditions

We projected the resiliency, redundancy, and representation of the razorback sucker under five plausible future scenarios, 30 years into the future, based on various

levels of conservation actions. Over the past 30 years, management actions have increased and supported populations across the Colorado River basin and have, in many cases, developed the populations currently in place through active intervention. Because of the reliance of this species on continued management, the future scenarios represent different levels of management action or intervention in the system and their subsequent effect on the populations based on the effectiveness of those management actions. The future scenarios we evaluated are summarized below and discussed in greater detail in the SSA report (Service 2023, pp. 104–118). The future scenarios range from a reduction in conservation actions to an increase and improvement in the effectiveness of conservation actions. We selected the 30-year timeframe because it accounts for approximately three generations of razorback sucker (time to sexual maturity) and is a timeframe within which we can make reasonably reliable predictions about the threats to the species and the species' response to those threats.

Scenario 1 of the SSA describes a reduction in recovery and conservation actions for razorback sucker to minimal levels due to funding reductions or the expiration of recovery programs. Scenario 2 of the SSA describes a reduction in the effectiveness of stocking and reintroduction efforts, which is currently a key management tool supporting most populations. Scenarios 3, 4, and 5 of the SSA show continued management actions under various levels of effectiveness. Scenario 3 represents a continuation of current management actions and their current level of effectiveness at reducing some threats. Scenarios 4 and 5 assume increases in the effectiveness of management actions based on more effective flow and nursery habitat management or the development of novel techniques to control nonnative predators.

Under Scenario 1, conditions would presumably severely degrade in 30 years in the upper basin, primarily because the assumed reduction in conservation activities that would occur in the absence of the Upper Colorado and San Juan programs would likely

result in all four populations reaching an extirpated condition in the foreseeable future. Under Scenario 1, conditions are not likely to change in the lower basin because the LCR MSCP has committed conservation actions under their consultation requirements under section 7 of the Act and a habitat conservation plan and its associated permit issued under section 10 of the Act until 2055. The most dramatic declines in condition are likely under Scenario 2 under which most populations would decline to an extirpated condition, underscoring the importance of stocking and reintroduction programs to the species across the basin. In Scenarios 1 and 2, both resiliency and redundancy are likely to decline in all populations. Scenario 2 predicts a decline in representation because genetics are currently managed and distributed using stocking and reintroduction programs.

Scenarios 3, 4, and 5 all predict increasing resource and population conditions because conservation actions are assumed to continue to improve the resiliency of populations, differentiated by the effectiveness of said actions. Scenario 3 predicts restoration of all upper basin populations and the Lake Mohave population to a medium condition based on continued implementation of management actions, which support resiliency, redundancy, and representation. Under Scenario 3, populations are likely to continue to expand, but resiliency of the species would require ongoing management actions. Scenario 4 predicts an increase in effectiveness of management actions to support wild recruitment, including the management of additional nursery habitat in the upper basin and additional off-channel habitat in the lower basin. Under Scenario 4, all populations are predicted to reach high or medium condition. Under Scenario 5, which assumes availability of a novel tool to address nonnative fish, most populations would be expected to reach high condition. In Scenarios 3, 4, and 5, improvements in the upper basin populations are likely larger than those in the lower basin as a broader suite of actions are occurring in the upper basin.

Cumulative Effects

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.

Determination of Razorback Sucker 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 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.

We have carefully assessed the best scientific and commercial data available regarding the past, present, and future threats to the razorback sucker.

Threats to the razorback sucker include changes in flow regime and habitat connectivity (which could be affected by climate change in the long term; Factor A), and predation and competition with nonnative fish species (Factor C) (Service 2023, pp. 24–

40, 98–104). There is no evidence that overutilization (Factor B), disease (Factor C), or other natural and manmade factors affecting the species (Factor E) are occurring.

Adequate regulatory mechanisms (Factor D) are in place. We evaluated each potential stressor, including its source, affected resources, exposure, immediacy, geographic scope, magnitude, and impacts on individuals and populations, and our level of certainty regarding this information, to determine which stressors were likely to be drivers of the species' current condition (Service 2023, pp. 24–40). We have also analyzed potential cumulative effects of stressors, such as low river flows and warm water temperatures that may act cumulatively to increase predation by nonnative predators.

The SSA framework considers the presence of the factors influencing the species, including threats and conservation efforts, and to what degree they collectively influence risk to the entire species at the current time and in the future. Our analysis found that the primary drivers for the razorback sucker's current and future condition in the wild are lack of access to rearing habitat in the upper basin, and persistent populations of predatory nonnative fish species, which, together, prevent natural recruitment from occurring at a population scale in both basins.

Status Throughout All of Its Range

The razorback sucker currently demonstrates sufficient individual and population resiliency, redundancy, and representation across eight populations, four in the upper basin and four in the lower basin, supplemented by augmentation across the range, such that the potential extirpation of multiple populations is not likely to occur now or in the short term. The current resiliency of the relatively small, naturally recruiting Lake Mead population, in conjunction with the resiliency and redundancy afforded by management-based populations across both basins, decreases risk to the species from stochastic and catastrophic events. Wide-ranging adult populations, successful spawning, established

stocking and reintroduction programs, and continued threat management programs provide resiliency and redundancy, which decrease risks to the species.

After evaluating threats to the species and assessing the cumulative effect of the threats under the section 4(a)(1) factors, we determine that the risk of extinction is currently low, given the presence of one recruiting wild population and seven additional stocked populations with high survival. Thus, after assessing the best scientific and commercial data available, we conclude that the razorback sucker is not in danger of extinction throughout all of its range.

We therefore proceed with determining whether the razorback sucker is likely to become endangered within the foreseeable future throughout all of its range.

For this finding, the foreseeable future is 30 years, a biologically meaningful timeframe for the species for which we can make reasonably reliable predictions about the threats to the species and the species' response to those threats (Service 2023, pp. 98–99). In the foreseeable future, the condition of the eight populations distributed across the upper and lower basins depends on management actions, such as stocking efforts, which are effective and ongoing, in order to counteract nonnative predators that prevent nearly all natural recruitment of razorback sucker to the adult life stage in most habitats. Management actions have ensured that stocked razorback sucker are migrating, spawning, and producing viable larvae in most populations. Signs of recruitment to the juvenile life stage are increasing in the upper basin but are not yet sufficient for self-sustainability in any population. Although the current risk of extinction is low, such that the species is not in danger of extinction, there is enough risk associated with the species' reliance on management actions and the potential loss of these important management actions such that the species is at risk of extinction in the foreseeable future. The primary management organization in the lower basin, LCR MSCP, will not expire until at least 2055, so will continue through the foreseeable future, which ensures that conservation

actions will continue in the lower basin to maintain populations in their current state.

Reduction or elimination of ongoing management actions in the upper basin could slow or reverse the positive trajectory in the upper basin populations.

Thus, after assessing the best scientific and commercial data available, we conclude that the razorback sucker is not in danger of extinction, but is likely to become in danger of extinction within the foreseeable future 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 within the foreseeable future throughout all or a significant portion of its range. The court in *Ctr. for Biological Diversity v. Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020) (*Everson*), vacated the provision of the Final Policy on Interpretation of the Phrase “Significant Portion of Its Range” in the Endangered Species Act’s Definitions of “Endangered Species” and “Threatened Species” (hereafter Final Policy; 79 FR 37578; July 1, 2014) that provided that if the Services determine that a species is threatened throughout all of its range, the Services will not analyze whether the species is endangered in a significant portion of its range.

Therefore, we proceed to evaluating whether the species is endangered in a significant portion of its range—that is, whether there is any portion of the species’ range for which both (1) the portion is significant; and (2) the species is in danger of extinction in that portion. Depending on the case, it might be more efficient for us to address the “significance” question or the “status” question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species’ range.

Following the court’s holding in *Everson*, we now consider whether there are any significant portions of the species’ range where the species is in danger of extinction (i.e.,

endangered). In undertaking this analysis for the razorback sucker, we choose to address the status question first—we consider information pertaining to the geographic distribution of both the species and the threats that the species faces to identify portions of the range where the species may be endangered.

We evaluated the range of the razorback sucker to determine if the species is in danger of extinction now in any portion of its range. The range of a species can theoretically be divided into portions in an infinite number of ways. We focused our analysis on portions of the species' range that may meet the definition of an endangered species. For razorback sucker, we considered whether the threats or their effects on the species are greater in any biologically meaningful portion of the species' range than in other portions such that the species is in danger of extinction in that portion.

We examined the following threats: changes in flow regime and habitat connectivity (which could be affected by effects of climate change in the long term) (Factor A), predation and competition with nonnative fish species (Factor C), overutilization (Factor B) of razorback sucker, disease (Factor C), or other natural and manmade factors affecting the species (Factor E), including cumulative effects. We determined that threats to the razorback sucker include changes in flow regime and habitat connectivity (which could be affected by climate change in the long term) (Factor A), and predation and competition with nonnative fish species (Factor C) (Service 2023, pp. 24–40, 98–104). There is no evidence that overutilization (Factor B), disease (Factor C), or other natural and manmade factors affecting the species (Factor E) are occurring.

In the upper basin, large dams historically changed flow regimes, which altered water temperatures and reduced connectivity and access to rearing habitat needed by the razorback sucker. Currently, flow recommendations in the upper basin are providing access to rearing habitat in the form of off-channel wetlands and floodplains. In the lower basin, large dams created large on-channel reservoirs that supported large populations of

wild razorback sucker before the introduction of nonnative fish species. Both the upper and lower basins now support large, augmented populations of razorback sucker.

Although in the future, regional climatic patterns and water availability could affect the river flows and water temperatures needed by the razorback sucker, flow regimes are currently not a threat to the species and there are no geographically concentrated changes to flow regimes operating at biologically meaningful scales, whether at a population level, across the upper or lower basin, or for the species rangewide.

Across the upper and lower basins, the razorback sucker evolved in an environment relatively free of predators and competitors and, as a soft-rayed fish with no defense mechanisms against predation, it is ill-adapted to live with the many nonnative piscivorous fish introduced into the Colorado River basin. By feeding on juvenile razorback sucker, and some adults in the lower basin, predatory, nonnative fish species reduce recruitment of the razorback sucker to adult life stages. Nonnative fish can also compete for resources with all life stages of razorback sucker. As a result, predation and competition by nonnative fish species are threats to the razorback sucker in both the upper and lower basins. All razorback sucker populations in the upper and lower basins have established populations of nonnative predators; however, predation pressure is considered low in the San Juan River in the upper basin, and only Lake Mead in the lower basin remains unmanaged and naturally recruiting despite abundant nonnative predators. Although nonnative species differ between basins, predation and competition by nonnative fish species occurs across both the upper and lower basins and there are no geographical concentrations of this threat across biologically meaningful scales, either at the population level, across the upper or lower basin, or for the species rangewide.

We found no portion of the razorback sucker's range where threats are impacting individuals differently from how they are affecting the species elsewhere in its range, or where the biological condition of the species differs from its condition elsewhere in its

range such that the status of the species in that portion does not differ from any other portion of the species' range.

Therefore, no portion of the species' range provides a basis for determining that the species is in danger of extinction in a significant portion of its range, and we determine that the species is likely to become in danger of extinction within the foreseeable future throughout all of its range. This does not conflict with the courts' holdings in *Desert Survivors v. U.S. Department of the Interior*, 321 F. Supp. 3d 1011, 1070-74 (N.D. Cal. 2018) and *Center for Biological Diversity v. Jewell*, 248 F. Supp. 3d 946, 959 (D. Ariz. 2017) because, in reaching this conclusion, we did not apply the aspects of the Final Policy, including the definition of "significant" that those court decisions held to be invalid.

Determination of Status

Based on the best scientific and commercial data available, we determine that the razorback sucker meets the Act's definition of a threatened species. Therefore, we are downlisting the razorback sucker as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Available Conservation Measures

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. Once we have downlisted the razorback sucker, conservation measures continue to be provided to species listed as threatened species under the Act including recognition as a listed species, planning and implementation of recovery actions, requirements for Federal protection, and prohibitions against certain practices. As discussed above, the current condition of razorback sucker partially meets the 2002 recovery criteria and three expansive, multi-stakeholder management programs

oversee ongoing management actions to benefit the species. In addition, section 7(a)(1) and 7(a)(2) responsibilities of Federal agencies remain.

Section 7 of the Act is titled, “Interagency Cooperation,” and it 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 razorback sucker that may be subject to consultation procedures under section 7 are management of Federal lands administered by the National Park Service, the U.S. Bureau of Reclamation, and the Western Area Power Administration, as well as actions 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 actions funded by Federal agencies such as 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.

Please let us know if you are interested in participating in recovery efforts for the razorback sucker. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery implementation purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 9 of the Act provides a specific list of prohibitions for endangered species but does not provide these same prohibitions for threatened species. Instead, pursuant to section 4(d) of the Act, for any species listed as a threatened species, the Secretary must issue protective regulations that are “necessary and advisable to provide for the conservation of such species” (these are referred to as “4(d) rules”). Additional measures for the razorback sucker are described below (see **Protective Regulations Under Section 4(d) of the Act**, below).

We may issue permits to carry out otherwise prohibited activities involving threatened wildlife under certain circumstances. Regulations governing permits for threatened wildlife are codified at 50 CFR 17.32, and general Service permitting regulations are codified at 50 CFR part 13. With regard to threatened wildlife, a permit may be issued: for scientific purposes, for enhancing the propagation or survival of the species, or for take incidental to otherwise lawful activities. 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. Although most of the prohibitions in section 9 of the Act apply to endangered species, sections 9(a)(1)(G) and 9(a)(2)(E) of the Act prohibit the violation of any regulation under section 4(d) pertaining to any threatened species of fish or wildlife, or threatened species of plant, respectively. Section 4(d) of the Act directs the Secretary to promulgate protective regulations that are necessary and advisable for the conservation of threatened species. As a result, we interpret our policy to mean that, when we list a species as a threatened species, to the extent possible, we identify activities that will or will not be considered likely to result in violation of the protective regulations under section 4(d) for that species.

At this time, we are unable to identify specific activities that will or will not be considered likely to result in violation of section 9 of the Act beyond what is already clear from the descriptions of prohibitions and exceptions established by protective regulation under section 4(d) of the Act.

Questions regarding whether specific activities would constitute violation of section 9 of the Act should be directed to the Upper Colorado River Endangered Fish Recovery Program (see **FOR FURTHER INFORMATION CONTACT**).

Protective Regulations Under Section 4(d) of the Act

Background

As discussed in **Available Conservation Measures**, section 9 of the Act provides a specific list of prohibitions for endangered species but does not provide these same prohibitions for threatened species. Instead, pursuant to section 4(d) of the Act, for any species listed as a threatened species, the Secretary must issue protective regulations that

are “necessary and advisable to provide for the conservation of such species” (these are referred to as “4(d) rules”). Section 4(d) of the Act contains two sentences. The first sentence states that the Secretary shall issue such regulations as they deem necessary and advisable to provide for the conservation of species listed as threatened species.

Conservation is defined in the Act to mean the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Additionally, the second sentence of section 4(d) of the Act states that the Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants. With these two sentences in section 4(d), Congress delegated broad authority to the Secretary to determine what protections would be necessary and advisable to provide for the conservation of threatened species, and even broader authority to put in place any of the section 9 prohibitions, for a given species.

Courts have recognized the extent of the Secretary’s discretion under section 4(d) to develop regulations that are appropriate for the conservation of threatened species. For example, courts have upheld, as a valid exercise of agency authority, rules developed under section 4(d) that included limited prohibitions against takings (see *Alsea Valley Alliance v. Lautenbacher*, 2007 WL 2344927 (D. Or. 2007); *Washington Environmental Council v. National Marine Fisheries Service*, 2002 WL 511479 (W.D. Wash. 2002)). Courts have also upheld 4(d) rules that do not address all of the threats a species faces (see *State of Louisiana v. Verity*, 853 F.2d 322 (5th Cir. 1988)). As noted in the legislative history when the Act was initially enacted, “once an animal is on the threatened list, the Secretary has an almost infinite number of options available to [them] with regard to the permitted activities for those species. [They] may, for example, permit taking, but not importation of such species, or [they] may choose to forbid both taking

and importation but allow the transportation of such species” (H.R. Rep. No. 412, 93rd Cong., 1st Sess. 1973).

Under our 4(d) authorities, we put in place protections intended to both prevent a threatened species from becoming an endangered species and to promote its recovery. We have two ways to put in place these protections for a threatened species: (1) we can issue a species-specific 4(d) rule (at 50 CFR 17.40–17.47 or 17.73–17.74), which would contain all of the protective regulations for that species; or (2) we can apply a “blanket rule” (for more information, see 89 FR 23919, April 5, 2024), which extends to threatened species without a species-specific rule all of the prohibitions that apply to endangered species under section 9 (with certain exceptions applicable to threatened species).

Both “blanket rules” and species-specific 4(d) rules explain what is prohibited for a threatened species, thus making the activity unlawful without a permit or authorization under the Act for the prohibited activity unless otherwise excepted in the 4(d) rule (species-specific 4(d) rules may also include affirmative requirements). Section 4(d) rules are therefore directly related to what actions may require permits in the future. As discussed in **Available Conservation Measures**, permits may be issued for purposes described in our threatened species permitting regulations at 50 CFR 17.32 and 17.72, including for recovery actions, conservation benefit agreements (previously referred to as candidate conservation agreements with assurances and safe harbor agreements), or habitat conservation plans. We may also except otherwise prohibited activities through a 4(d) rule itself, in which case threatened species permits would not be required for those activities. For example, there are two categories of exceptions that we frequently include in 4(d) rules, and these are for otherwise prohibited acts or forms or amounts of “take” that are: (1) unavoidable while conducting beneficial actions for the species, or (2) considered inconsequential (de minimis) to the conservation of the species. For otherwise

prohibited take activities that require section 10 permits, programmatic approaches—such as general conservation plans and template habitat conservation plans—may be available as another way for project proponents to comply with take prohibitions or requirements applicable to one or more species while reducing the time that would otherwise be associated with developing individual permit applications. In addition, the Service and project proponents can reduce the need for such permits by developing standardized conservation measures that avoid the risk of “take.”

The provisions of this species’ protective regulations under section 4(d) of the Act are one of many tools that we will use to promote the conservation of the razorback sucker. Nothing in 4(d) rules change in any way the recovery planning provisions of section 4(f) of the Act or the consultation requirements under section 7 of the Act. As mentioned previously in **Available Conservation Measures**, Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. These requirements are the same for a threatened species regardless of what is included in a 4(d) rule.

Section 4(d) rules do not alter section 7 obligations, including the criteria for informal or formal consultations or the analytical process used for biological opinions or concurrence letters. Section 7 consultation is required for Federal actions that “may affect” a listed species regardless of whether take caused by the activity is prohibited or excepted by a 4(d) rule. For example, as with an endangered species, if a Federal agency determines that an action is “not likely to adversely affect” a threatened species, this will require the Service’s written concurrence (50 CFR 402.13(c)). Similarly, if a Federal agency determines that an action is “likely to adversely affect” a threatened species, the action will require formal consultation with the Service and the formulation of a

biological opinion (50 CFR 402.14(a)). Because consultation obligations and processes are unaffected by 4(d) rules, we may consider developing tools to streamline future intra-Service and inter-Agency consultations for actions that result in forms of take that are not prohibited by the 4(d) rule (but that still require consultation). These tools may include consultation guidance, online consultation processes via the Service's digital project planning tool (Information for Planning and Consultation; <https://ipac.ecosphere.fws.gov/>), template language for biological opinions, or programmatic consultations.

Provisions of the 4(d) Rule

Exercising the Secretary's authority under section 4(d) of the Act, we have developed a rule that is designed to address the razorback sucker's conservation needs. As discussed previously in **Summary of Biological Status and Threats**, we have concluded that the razorback sucker is likely to become in danger of extinction within the foreseeable future primarily due to the loss and fragmentation of habitats due to changes in flow regimes and predation and competition with nonnative fish species. Section 4(d) requires the Secretary to issue such regulations as he deems necessary and advisable to provide for the conservation of each threatened species and authorizes the Secretary to include among those protective regulations any of the prohibitions that section 9(a)(1) of the Act prescribes for endangered species. We are not required to make a "necessary and advisable" determination when we apply or do not apply specific section 9 prohibitions to a threatened species (*In re: Polar Bear Endangered Species Act Listing and 4(d) Rule Litigation*, 818 F. Supp. 2d 214, 228 (D.D.C. 2011) (citing *Sweet Home Chapter of Cmty. for a Great Or. v. Babbitt*, 1 F.3d 1, 8 (D.C. Cir. 1993), *rev'd on other grounds*, 515 U.S. 687 (1995))). Nevertheless, even though we are not required to make such a determination, we have chosen to be as transparent as possible and explain below why we find that, if finalized, the protections, prohibitions, and exceptions in this rule as a whole

satisfy the requirement in section 4(d) of the Act to issue regulations deemed necessary and advisable to provide for the conservation of the razorback sucker.

The protective regulations for razorback sucker incorporate prohibitions from section 9(a)(1) to address threats to the species. The prohibitions of section 9(a)(1) of the Act, and 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. This protective regulation includes all of these prohibitions because the razorback sucker is at risk of extinction within the foreseeable future and putting these prohibitions in place will help to prevent further declines, preserve the species' remaining populations, slow its rate of decline, and decrease synergistic, negative effects from other ongoing or future threats.

In particular, this 4(d) rule will provide for the conservation of the razorback sucker by prohibiting the following activities, unless they fall within specific exceptions or are otherwise authorized or permitted: importing or exporting; take; possession and other acts with unlawfully taken specimens; delivering, receiving, carrying, transporting, or shipping in interstate or foreign commerce in the course of commercial activity; or selling or offering for sale in interstate or foreign commerce.

Under the Act, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Some of these

provisions have been further defined in regulation at 50 CFR 17.3. Take can result knowingly or otherwise, by direct and indirect impacts, intentionally or incidentally. Regulating take will help preserve the species' remaining populations, slow their rate of decline, and decrease cumulative effects from other ongoing or future threats. Therefore, we are prohibiting take of the razorback sucker, except for take resulting from those actions and activities specifically excepted by the 4(d) rule.

Exceptions to the prohibition on take include all of the exceptions to the prohibition on take of endangered wildlife, as set forth in 50 CFR 17.21 and additional exceptions, as described below.

The 4(d) rule will also provide for the conservation of the species by allowing exceptions that incentivize conservation actions or that, while they may have some minimal level of take of the razorback sucker, are not expected to rise to the level that would have a negative impact (i.e., would have only de minimis impacts) on the species' conservation. The exceptions to these prohibitions include:

- Take resulting from population restoration efforts including captive-breeding, stocking, and reintroduction of individuals;
- Take resulting from display of razorback sucker for educational purposes;
- Take resulting from creating and managing nursery habitat for razorback sucker;
- Take resulting from the removal or suppression of nonnative fish species;
- Take resulting from catch-and-release angling activities associated with razorback sucker in accordance with all applicable laws, including incidental take from nontargeted angling in critical habitat and take from targeted angling for razorback sucker in any newly established areas; and
- Take associated with chemical treatments in support of the recovery of razorback sucker.

These exceptions are expected to have negligible impacts to the razorback sucker and its habitat and are described in more detail below.

Captive-Breeding, Reintroduction, and Stocking

Robust hatchery and reestablishment programs have been developed as a result of catastrophic historical declines in wild populations and are essential management tools used by agencies across the Colorado River basin. Population restoration efforts provide the flexibility to perform supplemental stocking into existing populations or reintroduction of individuals to extirpated areas. Stocking hatchery-reared razorback sucker and reintroducing wild-spawned larvae as adults too large for predation are important management actions supporting the managed viability of the species.

Introducing individuals into new areas can provide increased redundancy and decreased risk to catastrophic events by expanding the range of the species. Introducing individuals into wild populations can increase resiliency of extant populations by potentially offsetting population declines or increasing genetic diversity. Currently, the genetic diversity of razorback sucker exists in captive broodstock and wild-spawned larvae in Lake Mohave. Broodstock are maintained at multiple locations across the upper and lower basin.

The process of establishing or supplementing broodstock or enhancing populations by reintroducing wild-collected larvae as adults can require take in the form of collection of wild individuals of various life stages. Furthermore, the long-term care and maintenance of broodstock or hatchery stock can result in take, including take related to disease, parasites, genetic assessment, and management of captive populations, and natural mortality of individuals existing in broodstock or refuge populations. The process of culturing and stocking individuals can also result in take via hatchery methods or incidental mortality of stocked individuals.

This 4(d) rule describes captive-breeding, stocking, and reintroduction of razorback sucker excepted from take as any activity undertaken to expand the range of razorback sucker or to supplement existing wild populations. Under this 4(d) rule, take resulting from captive-breeding, stocking, and reintroduction for razorback sucker by qualified personnel will not be prohibited as long as reasonable care is practiced to minimize the effects of such taking. Qualified personnel are full-time fish biologists or aquatic resources managers employed by any of the Colorado River Basin State or Tribal wildlife agencies, the Department of the Interior bureau offices located within the Colorado River basin, or fish biologists or aquatic resource managers employed by a private consulting firm. Reasonable care should include, but is not limited to: (1) Ensuring that the number of individuals removed minimally impacts extant wild populations; (2) acting in accordance with the Service's Policy Regarding Controlled Propagation of Species Listed Under the Endangered Species Act (65 FR 56916, September 20, 2000) and all Federal, State, and Tribal laws and regulations; (3) implementing methods that result in the least harm, injury, or death to razorback sucker as feasible; (4) preserving specific genetic groupings of razorback sucker as defined by the best available science to maintain the genetic diversity of the species; and (5) ensuring no detrimental impacts to existing razorback sucker populations from disease, parasites, or genetic drift. Any stocking of razorback sucker must be approved by the Service.

Exhibitions of Captive-Bred Razorback Sucker

Live fish exhibits provide a unique opportunity for the public to see and interact with rare native species. Exhibits are currently distributed throughout the basin in educational classrooms and public buildings holding hatchery-propagated fish. In cooperation with the Service, an educational message shall be presented with each animal and shall include the following minimal information: Common and scientific names,

historical and current distribution, Endangered Species Act listing status, and a brief history of recovery. The long-term care and maintenance of live individuals in exhibits can result in take, including take related to disease, parasites, and natural mortality of individuals existing in captivity. Wild-caught razorback sucker are not permitted to be used for this purpose. Fish used in exhibitions may not be released into natural waterways without written permission from the Service defining time, location, and procedures to be used during release. Any releases must be in compliance with all Federal, State, and Tribal laws and regulations. Reasonable care must be taken to reduce take including, but not limited to: (1) Holding razorback sucker in aquaria of appropriate size for the life stage on exhibit (no less than 10 gallons (37.8 L)); and (2) providing routine care by individuals trained and knowledgeable in fish and aquarium care and the management of parasites and disease.

Creation and Management of Nursery Habitat

Floodplain wetlands and other habitats support growth of larval and juvenile razorback sucker (see *Summary of Biological Status and Threats*, above). Successful floodplain management for razorback sucker can require: (a) Flow management that provides floodplain connection when larval razorback sucker are present in the system; (b) floodplains that are retrofitted with water control structures that restrict entry of large-bodied fish and allow managers to fill and drain the habitat at the beginning and end of the growing season, respectively; (c) supplemental water to freshen floodplain water quality through the summer; and (d) periodic monitoring of fish communities in the wetland to determine species composition. Take of razorback sucker can occur when the floodplains are drained and razorback sucker are inadvertently left in the floodplain or when water quality or other physical habitat conditions become insufficient to support the species. Incidental take may also occur when individuals of the species are handled, either during population sampling or draining of the wetland.

Currently, management of floodplain wetlands occurs at multiple locations in the Green River basin and in one location along the Colorado River, near Moab, Utah. Creation of floodplain habitat is in development in the San Juan River basin. In the lower basin, razorback sucker are common in off-channel pond habitat. Both the floodplain and pond habitats are constructed and managed to keep large-bodied nonnative predators out. New construction designs or management techniques, as available and feasible, may also need to be implemented in the future.

This 4(d) rule describes creation and management of nursery habitat excepted from take prohibitions as any action with the primary or secondary purpose of enhancing or providing nursery habitat for razorback sucker, and that is approved in writing by the Service for that purpose.

Under this 4(d) rule, take resulting from actions to create or manage nursery habitats to benefit razorback sucker by qualified personnel will not be prohibited as long as reasonable care is practiced to minimize the effects of such taking. Reasonable care may include, but is not limited to: (1) Performance of management treatments at times and locations that reduce the impacts to razorback sucker; (2) compliance with all Federal, State, and Tribal regulations for construction in wetland habitats; (3) attention to water quality conditions while razorback sucker are thought to be present; and (4) performance of robust salvage efforts to remove any razorback sucker before draining occurs. Whenever possible, razorback sucker that are salvaged should be moved to a location that supports recovery of the species.

Nonnative Fish Removal

Control of nonnative fishes is vital for the continued recovery of razorback sucker because predatory, nonnative fishes are a principal threat to razorback sucker (see *Summary of Biological Status and Threats*, above). The goal of removing nonnative fishes is to reduce predation and competition pressure on razorback sucker to such a level

that it results in increasing razorback sucker survival, recruitment, and access to resources. During the course of removing nonnative fishes, take of razorback sucker may occur from incidental captures, resulting in handling, injury, or possible mortality. However, nonnative removal activities in razorback sucker habitats are designed to be selective, allowing for the removal of predatory, nonnative fish while razorback sucker are returned safely to the river. Therefore, if nonnative fish removal is performed under deliberate, well-designed programs, the benefits to razorback sucker can greatly outweigh losses.

Currently, active nonnative fish removal is widespread in the upper basin but is less common in the lower basin. Control of nonnative fishes is conducted by qualified personnel in the upper basin via mechanical removal using boat-mounted electrofishing, nets, and seines, primarily focusing on removal of smallmouth bass, northern pike, and walleye. Removal of nonnative fishes in the upper basin is performed under strict standardized protocols to limit impacts to razorback sucker. In the lower basin, nonnative fish actions primarily focus on preventing establishment of new species (such as removal of green sunfish below Glen Canyon Dam) and controlling populations of trout in tributary habitats (such as removal of brown trout in Bright Angel Creek). New techniques, as available and feasible, may also need to be implemented in the future.

This 4(d) rule describes nonnative fish removal excepted from take prohibitions as any action with the primary or secondary purpose of mechanically removing nonnative fishes that compete with, predate, or degrade the habitat of razorback sucker and that is approved in writing by the Service for that purpose. These methods include mechanical removal within occupied razorback sucker habitats, including, but not limited to, electrofishing, seining, netting, and angling, or other ecosystem modifications such as altered flow regimes or habitat modifications. All methods must be conducted by

qualified personnel and equipment used in compliance with applicable Federal, State, and Tribal regulations.

Under this 4(d) rule, incidental take resulting from actions implementing nonnative fish control activities to benefit razorback sucker will not be prohibited as long as reasonable care is practiced to minimize the effects of such taking. Reasonable care may include, but is not limited to: (1) Performing removal actions at times and locations that reduce the impacts to razorback sucker; (2) complying with all applicable regulations and following principles of responsible removal; and (3) judiciously using methods and tools to reduce the likelihood that razorback sucker are captured, injured, or die in the removal process. Whenever possible, razorback sucker that are caught alive as part of nonnative fish removal should be returned to their capture location as quickly as possible.

Catch-and-Release Angling of Razorback Sucker

Recreational angling is an important consideration for management of all fisheries, as recreational angling provides many indirect conservation benefits, such as anglers funding and volunteering for conservation efforts (Cook et al. 2016, entire). While the razorback sucker is not currently a species that is prized for its recreational or commercial value, the species is a large-bodied, catchable-sized fish that could offer potential recreational value in certain situations. Conservation value from public support for razorback sucker could arise through newly established fishing locations and public engagement with this species. Furthermore, anglers target species that co-occur with razorback sucker at some locations. As a result, otherwise legal angling activity in razorback sucker habitats could result in the unintentional catch of razorback sucker by the angling public. Catch-and-release angling, both intentional and incidental, can result in take of razorback sucker through handling, injury, and potential mortality. However, the conservation support that angling provides can outweigh losses to razorback sucker if the angling program is designed appropriately.

Currently, State angling regulations require the release of all incidental catches of razorback sucker and do not allow anglers to target the species. Based on current angling regulations for razorback sucker, the States of Arizona, California, Colorado, New Mexico, Nevada, and Utah have demonstrated a willingness to enact appropriate regulations for the protection of the razorback sucker. It is important to continue to protect razorback sucker from intentional angling pressure in critical habitat to support recovery of the species. Supporting recreational fishing access to these areas for species other than razorback sucker is an important economic consideration for State and Tribal entities. This 4(d) rule will allow take of razorback sucker from angling activities that are in accordance with State and Tribal fishing regulations in razorback sucker critical habitat, but that do not target razorback sucker. That is, take associated with incidental catch-and-release of razorback sucker in the core populations will not be prohibited. Reasonable consideration by the States and Tribes for incidental catch of razorback sucker in critical habitat includes, but is not limited to: (1) Regulating tactics to minimize potential injury and death to razorback sucker if caught; (2) communicating the potential for catching razorback sucker in these areas; and (3) promoting the importance of the populations across the Colorado River basin.

Outside of critical habitat, we foresee that Federal, State, or Tribal governments may want to establish new recovery locations where razorback sucker could be targeted for catch-and-release angling or new locations without recovery value, where the sole purpose is recreational angling for razorback sucker. Newly established locations could offer a genetic refuge for core populations of razorback sucker, provide a stocking location for hatchery-reared fish (see *Captive-Breeding, Stocking, and Reintroduction*, above), and offer the public a chance to interact with the species in the wild. Therefore, this 4(d) rule will allow take of razorback sucker from catch-and-release angling

activities that target razorback sucker and are in accordance with State and Tribal fishing regulations in new areas outside of critical habitat.

Sport fishing for razorback sucker will be allowed only through the 4(d) rule and subsequent State or Tribal regulations. This rule will allow recreational catch-and-release fishing of razorback sucker in new, specified waters outside of critical habitat.

Management as a recreational species will be conducted after completion of, and consistent with the goals within, a revised recovery plan for the species. The principal effect of this 4(d) rule is to allow take in accordance with fishing regulations enacted by States or Tribes.

Recreational opportunities may be developed by the States and Tribes in new waters following careful consideration of the locations and impacts to the species. Reasonable consideration for establishing new recreational locations for razorback sucker includes, but is not limited to: (1) Carefully evaluating each water body and determining whether the water body can sustain angling; (2) ensuring the population does not detrimentally impact populations of razorback sucker through such factors as disease or genetic drift; (3) ensuring adequate availability of razorback sucker to support angling; and (4) monitoring to ensure there are no detrimental effects to the population from angling. If monitoring indicates that angling has a negative effect on the conservation of razorback sucker in the opinion of the Service, the fishing regulations must be amended or the fishery could be closed.

Chemical Treatments Supporting Razorback Sucker

Chemical treatments of water bodies are an important fisheries management tool because they are the principal method used to remove all fishes from a defined area. That is, chemical treatments provide more certainty of complete removal than other methods, such as mechanical removal. Therefore, chemical treatments are used for a variety of restoration and conservation purposes, such as preparing areas for stocking efforts,

preventing nonnative fishes from colonizing downstream areas, and resetting locations after failed management efforts. Chemical treatments of water bodies could take razorback sucker if individuals reside in the locations that are treated and cannot be salvaged completely prior to treatment. However, the overall benefit of conservation actions implemented using chemical treatment can outweigh the losses of razorback sucker if reasonable care and planning are taken prior to treatments.

Chemical piscicides (chemicals that are poisonous to fish) have been used in the upper and lower basin to remove upstream sources of nonnative fishes in support of razorback sucker. For example, Red Fleet Reservoir (Green River, Utah) was treated by the Utah Division of Wildlife Resources to remove walleye that were escaping downstream, and a slough downstream of Glen Canyon Dam (Colorado River, Arizona) was treated by the National Park Service to remove green sunfish. At Red Fleet Reservoir, chemical treatment also provided the Utah Division of Wildlife Resources with the ability to establish a new fish community that supported angling interests and provided greater compatibility with downstream conservation efforts.

Chemical treatments could support a variety of activities to assist in the conservation of razorback sucker, including certain other actions described in this 4(d) rule. For example, chemical treatments could be used prior to introducing razorback sucker through stocking. Nonnative fishes can also be removed using chemical treatments, providing faster and more complete removal than mechanical means. Furthermore, chemical treatments offer the ability to fully restore a location after a failed introduction effort. For example, if razorback sucker were stocked into a new area but did not successfully establish, landowners may want to restore this location for another purpose.

Chemical treatments will be allowed under this 4(d) rule with specific requirements described below. Necessary precautions and planning should be applied to

avoid impacts to razorback sucker. For example, treatments upstream of occupied razorback sucker habitats should plan for unintended consequences (e.g., dispersal of piscicide beyond treatment boundaries). Chemical treatments that take place in locations where razorback sucker occur, or may occur, must take place only after a robust salvage effort takes place to remove razorback sucker in the area. Any chemical treatment that takes place in an area where razorback sucker may reside will require written approval from the Service, but treatments of unoccupied habitat will not need to be approved. Once the location of a chemical treatment is approved in writing by the Service, the take of razorback sucker by qualified personnel associated with performing a chemical treatment will not be regulated by the Service.

Under this 4(d) rule, take resulting from actions implementing chemical treatments to benefit razorback sucker will not be prohibited as long as reasonable care is practiced to minimize the effects of such taking. Reasonable care includes, but is not limited to: (1) Performance of treatments at times and locations that reduce the impacts to razorback sucker; (2) compliance with all Federal, State, and Tribal regulations for the use of fish toxicants and piscicides; (3) adherence to all protocols to limit the potential for fish toxicants and piscicides travelling beyond treatment boundaries; and (4) performance of robust salvage efforts to remove any razorback sucker in the treatment area. Whenever possible, razorback sucker that are salvaged should be moved to a location that supports recovery of the species.

Reporting and Disposal of Razorback Sucker

Under this 4(d) rule, if razorback sucker are killed during actions described in the 4(d) rule, the Service must be notified of the death and may request to take possession of the animal. Notification should be given to the appropriate Service Regional Law Enforcement Office or associated management office. Information on the offices to contact is set forth under Regulation Promulgation, below. Law enforcement offices must

be notified within 72 hours of the death, unless special conditions warrant an extension. The Service may allow additional reasonable time for reporting if access to these offices is limited due to closure or if the activity was conducted in an area without sufficient communication access.

Permits

Despite these prohibitions regarding threatened species, we may under certain circumstances issue permits to carry out one or more otherwise-prohibited activities, including those described above. The regulations that govern permits for threatened wildlife state that the Director may issue a permit authorizing any activity otherwise prohibited with regard to threatened species. These include permits issued for the following purposes: for scientific purposes, to enhance propagation or survival, for economic hardship, for zoological exhibition, for educational purposes, for incidental taking, or for special purposes consistent with the purposes of the Act (50 CFR 17.32). The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

This 4(d) rule will not impact existing or future permits issued by the Service for take of razorback sucker. Any person with a valid permit issued by the Service under § 17.22 or § 17.32 may take razorback sucker, subject to all take limitations and other special terms and conditions of the permit.

In addition, to further the conservation of the species, any employee or agent of the Service, any other Federal land management agency, the National Marine Fisheries Service, a State conservation agency, or a federally recognized Tribe, who is designated by their agency or Tribe for such purposes, may, when acting in the course of their official duties, take threatened wildlife without a permit if such action is necessary to: (i) Aid a sick, injured, or orphaned specimen; or (ii) dispose of a dead specimen; or (iii) salvage a dead specimen that may be useful for scientific study; or (iv) remove specimens

that constitute a demonstrable but nonimmediate threat to human safety, provided that the taking is done in a humane manner. The taking may involve killing or injuring only if it has not been reasonably possible to eliminate such threat by live-capturing and releasing the specimen unharmed, in an appropriate area.

We recognize the special and unique relationship that we have with our State natural resource agency partners in contributing to conservation of listed species. State agencies often possess scientific data and valuable expertise on the status and distribution of endangered, threatened, and candidate species of wildlife and plants. State agencies, because of their authorities and their close working relationships with local governments and landowners, are in a unique position to assist us in implementing all aspects of the Act. In this regard, section 6 of the Act provides that we must cooperate to the maximum extent practicable with the States in carrying out programs authorized by the Act. Therefore, any qualified employee or agent of a State conservation agency that is a party to a cooperative agreement with us in accordance with section 6(c) of the Act, who is designated by his or her agency for such purposes, will be able to conduct activities designed to conserve the razorback sucker that may result in otherwise prohibited take without additional authorization.

Required Determinations

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

Under the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; title II of Pub. L. 104–121, March 29, 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will

not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying the rule will not have a significant economic impact on a substantial number of small entities.

While we do not conduct RFA analyses on our classification determinations under the Act, in accordance with recent caselaw (*Kansas*) we comply with RFA through consideration of conservation and economic impacts when promulgating 4(d) rules. Under the RFA, as amended, and as understood in light of recent court decisions, Federal agencies are required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself; in other words, the RFA does not require agencies to evaluate the potential impacts to indirectly regulated entities.

Some of the actions regulated by the proposed 4(d) rule are likely to involve Federal action agencies. 4(d) rules do not alter any obligations for Federal agencies under section 7 of the Act. Federal agencies, in consultation with the Service, are required to ensure that any action authorized, funded, or carried out by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7, only Federal action agencies are directly subject to the specific regulatory requirements. Consequently, it is our position that only Federal action agencies would be directly regulated during section 7 consultations (regardless of what is prohibited in 4(d) rules). The RFA does not require evaluation of the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities.

During the development of this final rule, we reviewed and evaluated all information submitted during the comment period on the proposed rule (86 FR 35708; July 7, 2021) that may pertain to our consideration of the probable impacts of the 4(d) rule. As discussed above, there are no new regulatory requirements due to reduced costs associated with the 4(d) rule. The razorback sucker is currently an endangered species

and all section wildlife 9(a)(1) prohibitions currently apply with limited exceptions. The 4(d) rule provides increased flexibilities in management and reduced permitting requirements for the razorback sucker. Please see our April 21, 2026, “Consideration of Economic Impacts for the 4(d) Rule for the Razorback Sucker” on <https://www.regulations.gov> for our consideration of economic impacts. We have examined this final rule’s potential effects on small entities as required by the RFA, and based on our current information, we certify that this action will not have a significant economic impact on a substantial number of small entities.

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

Regulations adopted pursuant to section 4(a) of the Act are exempt from the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) and do not require an environmental analysis under NEPA. We published a notice outlining our reasons for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244). This includes listing, delisting, and reclassification rules, as well as critical habitat designations and species-specific protective regulations promulgated concurrently with a decision to list or reclassify a species as threatened. The courts have upheld this position (*e.g.*, *Douglas Cnty. v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995) (critical habitat); *Ctr. for Biological Diversity v. U.S. Fish and Wildlife Serv.*, 2005 WL 2000928 (N.D. Cal. Aug. 19, 2005) (concurrent 4(d) rule)).

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), E.O. 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior’s manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally recognized Tribes 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.

In developing this rulemaking action, we coordinated with Tribes in the range of the razorback sucker and requested their input on the proposed rule. The South Ute Indian Tribe provided a letter of support for downlisting with a 4(d) rule.

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 Upper Colorado River Endangered Fish Recovery Program Office (see **FOR FURTHER INFORMATION CONTACT**).

List of Subjects in 50 CFR Part 17

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

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. In § 17.11, in paragraph (h), amend the List of Endangered and Threatened Wildlife by revising the entry for “Sucker, razorback” in alphabetical order under FISHES to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * * * *				
FISHES				
* * * * *				
Sucker, razorback	<i>Xyrauchen texanus</i>	Wherever found	T	56 FR 54957, 10/23/1991; 89 FR [INSERT <i>FEDERAL REGISTER</i> PAGE WHERE THE DOCUMENT BEGINS], [INSERT DATE OF PUBLICATION IN THE <i>FEDERAL REGISTER</i>]; 50 CFR 17.44(gg); ^{4d} 50 CFR 17.95(e). ^{CH}
* * * * *				

3. Amend § 17.44 by adding paragraph (gg) to read as follows:

§ 17.44 Species-specific rules—fishes.

* * * * *

(gg) Razorback sucker (*Xyrauchen texanus*).

(1) *Prohibitions.* The following prohibitions that apply to endangered wildlife also apply to the razorback sucker. Except as provided under paragraphs (gg)(2) and (3) of this section and §§ 17.4 and 17.5, it is unlawful for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit, or cause to be committed, any of the following acts in regard to this species:

(i) Import or export, as set forth at § 17.21(b) for endangered wildlife.

(ii) Take, as set forth at § 17.21(c)(1) for endangered wildlife.

(iii) Possession and other acts with unlawfully taken specimens, as set forth at § 17.21(d)(1) for endangered wildlife.

(iv) Interstate or foreign commerce in the course of commercial activity, as set forth at § 17.21(e) for endangered wildlife.

(v) Sale or offer for sale, as set forth at § 17.21(f) for endangered wildlife.

(2) *Exceptions from prohibitions.* In regard to this species, you may:

(i) Conduct activities as authorized by a permit under §17.32.

(ii) Conduct activities as authorized by a permit issued prior to [INSERT DATE 30 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER] under § 17.22 for the duration of the permit.

(iii) Take, as set forth at § 17.21(c)(2) through (c)(4) for endangered wildlife.

(iv) Take, as set forth at § 17.31(b).

(v) Possess and engage in other acts with unlawfully taken wildlife, as set forth at § 17.21(d)(2) for endangered wildlife.

(3) *Exceptions from prohibitions for specific types of take.* You may take razorback sucker while carrying out the following legally conducted activities in accordance with this paragraph:

(i) *Definitions.* For the purposes of this paragraph (gg)(3):

(A) *Person* means a person as defined by section 3(13) of the Act.

(B) *Qualified person* means a full-time fish biologist or aquatic resources manager employed by any of the Colorado River Basin State or Tribal wildlife agencies or the Department of the Interior bureau offices located within the Colorado River basin, or a fish biologist or aquatic resource manager employed by a private consulting firm, provided the firm has received a scientific collecting permit from the appropriate State or Tribal agency.

(C) *Reasonable care* means limiting the impacts to razorback sucker individuals and populations by complying with all applicable Federal, State, and Tribal regulations for the activity in question; using methods and techniques that result in the least harm,

injury, or death, as feasible; undertaking activities at the least impactful times and locations, as feasible; salvaging individuals from treatment areas, as feasible, and returning them to a location that supports recovery of the species; ensuring the number of individuals removed or sampled minimally impacts existing extant wild populations; ensuring no disease or parasites are introduced into existing extant wild populations; and preserving the genetic diversity of extant wild populations.

(ii) *Captive-breeding, reintroduction, and stocking.* A qualified person may take razorback sucker while engaging in captive-propagation, stocking, or reintroduction, provided that reasonable care is practiced to minimize the effects of that taking. All captive-breeding shall be conducted by a qualified person in accordance with Service policies pertaining to the propagation of listed species and all Federal, State, and Tribal laws and regulations. Methods of allowable take include, but are not limited to, removing wild individuals via electrofishing, nets, and seines from the six core populations; managing captive populations, including handling, rearing, and spawning of captive fish; and sacrificing individuals for hatchery management, such as parasite and disease certification.

(iii) *Exhibitions of captive-bred razorback sucker in aquaria for educational purposes.* A person may exhibit live, captive-bred razorback sucker in aquaria for educational purposes. Allowable take includes, but is not limited to, incidental take associated with the care and display of captive-bred razorback sucker in aquaria for educational purposes.

(A) An educational message shall be presented with each animal and shall include the following minimal information: Common and scientific names, historical and current distribution, Endangered Species Act listing status as threatened, and a brief history of recovery.

(B) All exhibitions must be provided routine care and be housed in aquaria of 10 gallons (38 liters) or more.

(C) Captive-bred razorback sucker used in exhibitions may not be released into natural waterways without written permission from the Service, which will define time, location, and procedures to be used during release. Any releases of captive-bred razorback sucker used for educational purposes must be in compliance with all Federal, State, and Tribal laws and regulations.

(iv) *Creation and management of nursery habitats.* A qualified person may take razorback sucker to create or manage nursery habitats to support the growth of larval and juvenile razorback sucker, provided that reasonable care is practiced to minimize the effects of that taking. The Service must approve, in advance and in writing, the development of any nursery habitat with the primary or secondary purpose of conserving razorback sucker. Methods of allowable take include, but are not limited to, draining or drying an occupied floodplain wetland to remove fish or perform habitat maintenance; construction activities to improve or maintain the wetland; and habitat management activities to alter vegetation including but not limited to mechanical, chemical, and burning treatments.

(v) *Nonnative fish removal.* A qualified person may take razorback sucker in order to perform nonnative fish removal for conservation purposes if reasonable care is practiced to minimize effects to razorback sucker. Nonnative fish removal for conservation purposes means any action with the primary or secondary purpose of mechanically removing nonnative fishes that compete with, predate, or degrade the habitat of razorback sucker. The Service and all applicable landowners must approve, in advance and in writing, any nonnative fish removal activities. Methods of allowable take include but are not limited to mechanical removal of nonnative fish within occupied razorback sucker habitats, including but not limited to electrofishing, seining, netting, and

angling and the use of other ecosystem modifications, such as altered flow regimes or habitat modifications, for the purpose of managing nonnative species populations that may impact razorback sucker populations.

(vi) *Catch-and-release angling of razorback sucker.* States and Tribes may enact Federal, State, and Tribal fishing regulations that address catch-and-release angling. In federally designated critical habitat for the razorback sucker, angling activities may include nontargeted (incidental) catch and release of razorback sucker when targeting other species in accordance with Federal, State, and Tribal fishing regulations. In areas outside of federally designated critical habitat for the razorback sucker, angling activities may include targeted catch and release of razorback sucker in accordance with Federal, State, and Tribal fishing regulations.

(A) Angling activities for razorback sucker may cause take via handling, injury, and unintentional death of razorback sucker that are caught via angling.

(B) Reasonable care required by the Federal, State, and Tribal agencies for incidental catch and release of razorback sucker in critical habitat includes, but is not limited to, communicating the potential for catching razorback sucker in these areas and regulating tactics to minimize potential injury and death to razorback sucker if caught.

(C) Reasonable care required for establishing new recreational angling locations for razorback sucker includes, but is not limited to, evaluating each water body's ability to support razorback sucker and sustain angling; ensuring the recreational fishing population does not detrimentally impact populations of razorback sucker through such factors as disease or genetic drift; and monitoring to ensure there are no detrimental effects to the razorback sucker population from angling.

(D) The Service and all applicable State, Federal, and Tribal landowners must approve, in advance and in writing, any new recreational fishery for razorback sucker.

(vii) *Chemical treatments to support razorback sucker.* A qualified person may take razorback sucker by performing a chemical treatment in accordance with Federal, State, and Tribal regulations that would support the conservation and recovery of razorback sucker, provided that reasonable care is practiced to minimize the effects of such taking. For treatments outside of occupied razorback sucker habitat, Service approval is not required, and care should be taken to limit the potential for fish toxicants and piscicides traveling beyond treatment boundaries and impacting razorback sucker. For treatments in known or potentially occupied razorback sucker habitat, the Service must approve any treatment, in advance and in writing.

(viii) *Reporting and disposal requirements.* Any mortality of razorback sucker associated with the actions authorized under the provisions of this paragraph (gg) must be reported to the Service within 72 hours, and specimens may be disposed of only in accordance with directions from the Service. Reports in the upper basin (upstream of Glen Canyon Dam) must be made to the Service's Mountain-Prairie Region Law Enforcement Office, or the Service's Upper Colorado River Endangered Fish Recovery Office. Reports in the lower basin (downstream of Glen Canyon Dam) must be made to the Service's Southwest Region Law Enforcement Office, or the Service's Arizona Fish and Wildlife Conservation Office. Contact information for the Service's regional offices is set forth at 50 CFR 2.2. The Service may allow additional reasonable time for reporting if access to these offices is limited due to office closure or if the activity was conducted in an area without sufficient communication access.

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Brian R. Nesvik
Director
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