DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R2-ES-2019-0019; FF09E21000 FXES1111090FEDR 223]

RIN 1018–BD29

Endangered and Threatened Wildlife and Plants; Endangered Species Status for Peppered Chub and Designation of Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), determine endangered species status under the Endangered Species Act of 1973 (Act), as amended, for the peppered chub *(Macrhybopsis tetranema)*, a freshwater fish species historically found in Colorado, Kansas, New Mexico, Oklahoma, and Texas, which is now extirpated from all but six percent of its historical range. We also designate critical habitat. In total, approximately 872 river miles (1,404 river kilometers) in New Mexico, Oklahoma, and Texas fall within the boundaries of the critical habitat designation. We are excluding approximately 197 river miles (317 river kilometers) of critical habitat in Kansas that was included in the proposed critical habitat designation. This rule adds the species to the List of Endangered and Threatened Wildlife and extends the Act's protections to the peppered chub designated critical habitat.

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 *https://www.regulations.gov* and *https://www.fws.gov/southwest/es/arlingtontexas*. Comments and materials we received, as well as supporting documentation we used in preparing this rule, are

available for public inspection at *https://www.regulations.gov* at Docket No. FWS-R2-ES-2019-0019.

The coordinates or plot points or both from which the maps are generated are included in the decision file for this critical habitat designation and are available at *https://www.regulations.gov* at Docket No. FWS-R2-ES-2019-0019 and at *https://www.fws.gov/southwest/es/arlingtontexas*. Any additional tools or supporting information that we developed for this critical habitat designation will also be available at the Service's website set out above and at *https://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Debra Bills, Field Supervisor, U.S. Fish and Wildlife Service, Arlington, Texas, Ecological Services Field Office, 2005 Northeast Green Oaks Boulevard, Suite 140, Arlington, TX 76006; telephone 817–277–1100. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, a species warrants listing if it meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range) or a threatened species (likely to become endangered in the foreseeable future throughout all or a significant portion of its range). If we determine that a species warrants listing, we must list the species promptly and designate the species' critical habitat to the maximum extent prudent and determinable. We have determined that the peppered chub meets the definition of an endangered species; therefore, we are listing it as such and finalizing a designation of its critical habitat. Both listing a species as an endangered or threatened species and designating critical habitat can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process.

What this document does. This rule lists the peppered chub *(Macrhybopsis tetranema)* as an endangered species and designates 872 river miles (1,404 river kilometers) in three units in Oklahoma, New Mexico, and Texas as critical habitat.

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

We have determined that habitat degradation and fragmentation (Factor A), resulting from altered flow regimes, impoundments, and other stream fragmentation, adversely modified geomorphology, decreased water quality, and the introduction and proliferation of invasive species (aquatic and vegetative), pose the largest risk to the viability of the species. Changes in the hydrological regime are primarily related to habitat changes: The loss of flowing water, instream habitat fragmentation, disconnection of the floodplain, and impairment of water quality. The effects of climate change (Factor E) may be exacerbating habitat degradation and fragmentation.

Although habitat degradation and fragmentation are the primary stressors to the peppered chub, we present a broader discussion of the threats to the species below. Additionally, we found that the existing regulatory mechanisms do not adequately reduce or remove the threats acting on the species and the threats continue to affect the species such that it warrants listing (Factor D). We are aware of no conservation efforts at this time that sufficiently reduce or remove the identified threats to the species and the threats continue to affect the species such that listing is warranted. The Service, States (New Mexico and Texas), and academic partners are conducting monitoring efforts, and plans for captive propagation efforts are underway, but none are finalized yet.

Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary) to designate critical habitat concurrent with listing to the maximum extent prudent and determinable. Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species. Section 4(b)(2) of the Act states that the Secretary must make the designation on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impacts of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if she determines that the benefits of such exclusion outweigh the benefits of specifying such areas as part of critical habitat, unless she determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species.

Previous Federal Actions

Please refer to the proposed listing and critical habitat rule (85 FR 77108) for the peppered chub published on December 1, 2020, for a detailed description of previous Federal actions concerning this species.

Summary of Changes from the Proposed Rule

We reviewed the comments related to our proposed listing determination and critical habitat for the peppered chub (see **Summary of Comments and Recommendations**, below), completed our analysis of areas considered for exclusion under section 4(b)(2) of the Act, reviewed our analysis of the physical or biological features essential to the long-term conservation of the peppered chub, and finalized the

economic analysis of the designation. This final rule incorporates changes from our 2020 proposed listing and critical habitat rule (85 FR 77108; December 1, 2020) based on the comments that we received and have responded to in this document and considers efforts to conserve the peppered chub.

Specifically, during the public comment period for the proposed rule, we received a request to exclude critical habitat from the State of Kansas because of an ongoing effort to include peppered chub in a candidate conservation agreement with assurances (CCAA) and a safe harbor agreement (SHA). The Kansas Aquatic Species Conservation Agreement: A Programmatic Safe Harbor Agreement and Candidate Conservation Agreement with Assurances for Fourteen Aquatic Species in Kansas (Agreement) was completed on December 15, 2021. The conservation efforts that will be undertaken because of the Agreement, and subsequent benefit to the species, outweigh the benefits of including these areas in the critical habitat designation. Based on our analysis, which incorporates the value of the Agreement, we are excluding Unit 3 and a portion of Unit 4 in Kansas, a net decrease of 196 river miles (rmi) from the proposed rule (table 3, below). More information can be found below in the **Exclusions** section.

Summary of Comments and Recommendations

In the proposed rule published on December 1, 2020 (85 FR 77108), we requested that all interested parties submit written comments on the proposal by February 1, 2021. We also contacted appropriate Federal and State agencies, 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 USA Today on December 3, 2020. We did not receive any requests for a public hearing.

During the comment period on the proposed listing and critical habitat rule, we received approximately 22 written comment letters. All substantive information received

during the comment period has either been incorporated directly into this final determination or addressed in our responses below.

Peer Reviewer Comments

As discussed in **Supporting Documents** above, we received comments from one peer reviewer. We reviewed all comments we received from the peer reviewer for substantive issues and new information regarding the information contained in the species status assessment (SSA report). The peer reviewer generally concurred with our methods and conclusions, and provided additional information, clarifications, and suggestions that improved the SSA report.

Comments from States

(1) Comment: Multiple State agency and industry commenters did not support designating unoccupied critical habitat within those States. Several indicated their view that the proposed unoccupied units would not support peppered chubs in their current conditions.

Our response: Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species. Unoccupied areas designated as critical habitat are not limited to areas that could support a self-sustaining population in their current condition but rather must contain at least one of the physical or biological features (PBFs) determined by the Secretary to be essential for the conservation of the species (50 CFR 424.12).

The areas that we have identified as critical habitat that are unoccupied contain at least one of the PBFs required by the peppered chub and are essential for the conservation of the species. The areas are more fully described below in the individual unit descriptions. Establishing healthy populations in these two currently unoccupied units (Unit 2 and Unit 4) would increase the resiliency, representation, and redundancy—and therefore, the viability—of the species. If established, each unoccupied unit contributes ecological diversity (representation) or guards against catastrophic events (redundancy) or both.

(2) Comment: A State and multiple public commenters stated that designation of both occupied and unoccupied critical habitat would discourage private landowners from allowing access for monitoring and habitat restoration, as well as participating in reintroduction efforts.

Our response: According to section 4(a)(3)(A) of the Act, the Secretary of the Interior shall, to the maximum extent prudent and determinable, concurrently with making a determination that a species is an endangered species or a threatened species, designate critical habitat for that species. As directed by the Act, we proposed as critical habitat those areas occupied by the species at the time of listing and that contain the physical or biological features essential for the conservation of the species, which may require special management considerations or protection. The Act does not provide for any distinction between landownerships in those areas that meet the definition of critical habitat.

When prudent, the Service is required to designate critical habitat under the Act. The Act does not authorize the Service to regulate private actions on private lands or confiscate private property as a result of critical habitat designation. Designation of critical habitat does not affect land ownership, or establish any closures, or restrictions on use of or access to the designated areas. The designation of critical habitat does not affect

land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands.

The designation of critical habitat has little effect on private lands. This designation provides protection under section 7 of the Act and requires only Federal agencies to consult with the Service and ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. Because of this, we hope that we can continue our partnerships with local landowners within the historical range of the peppered chub and move collaboratively towards recovery of the species.

(3) Comment: Several commenters stated that the designation of critical habitat is unnecessary because it would not provide any additional benefit to the species, and that existing regulatory mechanisms and habitat restoration efforts (e.g., the Arkansas River Shiner Management plan) are adequate for the conservation of the species.

Our response: The Service is not relieved of its statutory obligation to designate critical habitat based on the contention that it will not provide additional conservation benefit. In *Ctr. for Biological Diversity* v. *Norton,* 240 F. Supp. 2d 1090 (D. Ariz. 2003), the court held that the Act does not direct us to designate critical habitat only in those areas where "additional" special management considerations or protection is needed. See also *Cape Hatteras Access Preservation Alliance* v. *U.S. Dept. of Interior,* 731 F.Supp.2d (D.D.C. 2010). If any area provides the PBFs essential to the conservation of the species, even if that area is already well managed or protected, that area may still qualify as critical habitat under the statutory definition.

The Canadian River Municipal Water Authority's Arkansas River Shiner Management Plan aims to maintain minimum flows and control invasive vegetative (e.g., saltcedar) encroachment in the South Canadian River upstream of Lake Meredith in Texas to Logan, New Mexico. Although we commend the Canadian River Municipal

Water Authority and its partners for investing time, effort, and funding for conservation on the Canadian River, the habitat conservation efforts for Arkansas River shiner to date have not resulted in an improvement of the status of the peppered chub. In identifying critical habitat for peppered chub, we identified those areas that meet the definition of critical habitat under section 3(5)(A) of the Act. Although management actions for one listed species may overlap other species' habitat or be mutually beneficial to multiple listed species, our analysis indicates that habitat conditions such as adequate stream flow and appropriate stream geomorphology have continued to decline from the condition needed to conserve the peppered chub. As a result, we conclude that this conservation plan, in its current form, is not sufficient to reduce the threats to the last population of peppered chub. Even with this conservation plan in place, the current resiliency of the Upper South Canadian River Resiliency Unit is in low condition.

(4) Comment: Several commenters took issue with the SSA report not being peer reviewed at the time of the publication of the proposed rule. One commenter stated that the proposed rule format does not comply with the ESA and applicable implementing regulations in relying on an SSA that is not peer reviewed. The commenter cites the Service's peer review policy (59 FR 34270; July 1, 1994) and section II of the Office of Management and Budget's (OMB) December 16, 2004, Final Information Quality Bulletin for Peer Review (revised June 2012), which both require agencies to conduct peer review on influential scientific information prior to dissemination.

Our response: Section II of the OMB December 16, 2004, Final Information Quality Bulletin for Peer Review requires each agency to subject influential scientific information to peer review prior to dissemination. The document further requires that, for dissemination of influential scientific information, agencies have broad discretion in determining what type of peer review is appropriate and what procedures should be employed to select appropriate reviewers. The Service follows its peer review policy (59

FR 34270), also referenced by the commenter. Section A(1)(a) of the peer review policy states that the Service will solicit the expert opinions of three appropriate and independent specialists regarding pertinent scientific or commercial data and assumptions relating to the taxonomy, population models, and supportive biological and ecological information for species under consideration for listing. The policy does not state that the peer review must occur prior to the comment period for a proposed listing nor that the Service is required to receive responses from peer reviewers prior to the comment period provided for the proposed listing.

The Service actively sought peer review of the SSA and proposed rule as required by both the Final Information Quality Bulletin for Peer Review and the Service's peer review policy. We solicited peer review from nine independent peer reviewers on December 4, 2020. Since publication of the proposed rule, we solicited peer review a second time and received a response from one peer reviewer. Per the peer review policy, we summarize the peer review we received here in the *Peer Reviewer Comments* section.

(5) Comment: One commenter stated that current restoration efforts, which depend on Federal funding, include the treatment of nonnative invasive species, mastication of standing dead invasive species, installation of riparian fencing where necessary, and maintenance of previously treated areas. Due to the dependence on Federal funding, any successful restoration efforts would be delayed and constrained by the consultation requirements imposed by the peppered chub's listing and critical habitat designation.

Our response: The Act states that the Secretary shall make determinations required by subsection (a)(1) of the Act solely on the basis of the best scientific and commercial data available to her after conducting a review of the status of the species. Listing decisions are not dependent on possible funding delays caused by new consultation requirements imposed by the listing. However, critical habitat designations

do consider the economic impacts including section 7 consultations. We conducted an economics analysis that found that there was likely to be no significant economic impact from this designation of critical habitat and that the additional costs are expected to be due to the additional incremental administrative costs from the consultation process in considering adverse modification of the critical habitat (IEc 2019, Section 6).

Additionally, as stated below in the **Available Conservation Measures** section, following publication of this final rule, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost-share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the States of Colorado, Kansas, New Mexico, Oklahoma, and Texas will be eligible for Federal funds to implement management actions that promote the protection or recovery of the peppered chub.

(6) Comment: Several States and one industry commenter raised concerns about how the listing and designation of critical habitat will affect deliveries of water from reservoirs and groundwater pumping for municipal use and agriculture, and the potential regulatory and financial burdens of the proposed action on water delivery and use.

Our response: Additional information about how we conducted our economic analysis, and how we incorporated water delivery and use, can be found in our screening memo (IEC 2019, entire) and our incremental effects memo (Service 2019, entire). The designation of critical habitat would not impose any such regulatory or financial burdens on non-Federal actions such as those indicated, where no Federal nexus exists. Groundwater pumping that does not occur on Federal lands would not be subject to regulation under section 7, so long as there is no Federal nexus. Further, no reservoirs and dams occur within the designated critical habitat units and would only be subject to section 7 consultation if there is a Federal nexus and an upstream dam may adversely

modify the critical habitat designation. Additionally, when there is a Federal nexus, under section 7 of the Act when evaluating the effects on critical habitat, we consider impacts from ongoing State water management operations that are not within the agencies' discretion to modify to be part of the baseline of an effects analysis. Service policy states that section 7 consultation should result in measures that minimize the impacts of incidental take to the extent reasonable and prudent (Endangered Species Consultation Handbook, 4-50 (March 1998)). They should be developed in coordination with the action agency and applicant, if any, to ensure that the measures are reasonable, that they cause only minor changes to the project, and that they are within the legal authority and jurisdiction of the agency or applicant to carry out. Therefore, they must be implementable under the legal regimes that apply in the situation being analyzed.

(7) Comment: Several commenters state that introducing section 10(j) experimental populations within the unoccupied critical habitat units stand a greater chance of making significant progress toward recovery of the species than does continued regulation of critical habitat and potential associated litigation.

Our response: The Service has determined that the areas being designated as unoccupied critical habitat units are essential for the conservation of the species. Therefore, they meet the Act's definition of critical habitat and should be designated as such. Further, we find that section 10(j) experimental population would not provide for the protection for the habitat within these areas that we have determined is needed for the conservation of the species.

(8) Comment: Two commenters raised concerns that the use of relative abundance as presented lacked scientific rigor and is being inappropriately interpreted. The commenters argued that conducting a trend analysis with relative abundance data provides weak evidence of one species' resiliency. Further, it is potentially misleading

because it is affected by changes in abundance of other species in the catch, which may have no bearing on the status of the target species.

Our response: Using relative abundance (also referred to as percent composition) to infer species abundance is not appropriate and would be misleading, as it is inherently driven by the abundance of other species. Although measures of absolute abundance and densities would have provided additional useful metrics for our resiliency analysis, the analysis was not possible due to data limitations. Instead, we calculated relative abundance to standardize the data (Anderson et al. 1995, p. 315; Brewer et al. 2007, p. 328; Perkin and Gido 2011, p. 373). As discussed in our SSA report, we assessed relative abundance "as one means to evaluate potential shifts in fish community structure" (not overall abundance), which is well established in the literature (Mendelson and Jennings 1992, entire; Weaver and Garman 1994, pp. 163, 166; Bonner and Wilde 2000, pp. 192–194; Onorato et al. 2000, pp. 142, 145–152). Potential change in community structure is one important indicator of ecosystem change and has implications for species resiliency within that system. We also examined two relative abundance metrics (Baseline Condition and Trend Analysis), but only the former was included as a metric for assessing peppered chub resiliency. Due to limited data for peppered chub, we determined that the quasi-Poisson regression that we used for trend analysis (which does account for variability in the data) was not appropriate for that species.

Regarding the comment that the use of relative abundance data alone provides weak evidence of population resiliency, we agree. One should not draw conclusions from this measure alone assessing the resiliency of a population. As provided in our SSA, resiliency analyses for peppered chub considered eight metrics: Three examining population demographics and five examining habitat/flow metrics.

(9) Comment: One commenter noted that the SSA considered the decade with the highest capture ratios (1990s; 95 percent) to be the baseline condition and deemed

"good" condition to be within 20 percent of that scenario. The commenter argued that capture ratios in no other decade approach 95 percent, suggesting that this may be an anomalously high number rather than a true baseline.

Our response: We evaluated the overall resiliency of each population of peppered chub using eight different metrics, one of those metrics was the capture ratio. Our capture ratio assessment was based on approximately 70 years of survey data, including 555 unique survey events. We separated the analysis by decade to evaluate differences over time, while still providing adequate number of surveys (per decade) to determine an "optimal" reference condition for this population resiliency metric. The decade referenced by the commenter included a total of 185 surveys spanning a ten-year period. Given the large number of surveys and relatively long span of time (particularly for a species that spawns annually), it is our determination that this decade serves as a reasonable representation of optimal capture ratios for a peppered chub population. We should also note that using the next best decade (2000s) as our optimal reference condition would still have resulted in a 'fair' resiliency score for this metric. Our database indicates a total of 185 fish collection surveys in the 1990s from the Upper South Canadian River between Ute Reservoir and Lake Meredith, of which 176 surveys collected at least one peppered chub, resulting in a capture ratio of 95 percent. This compares to the 2000s, at which time 142 of 189 surveys (75 percent) collected peppered chub, and the 2010s during which the survey results were 48 of 101 (48 percent). Two variables that could artificially inflate the likelihood of capturing a peppered chub, thus affecting capture ratios, are greater survey effort and/or surveying locations more likely to have peppered chub. Neither of these two variables apply to the 1990s surveys. The total number of fish collected per site, on average, was greater in both the 2000s and 2010s, indicating effort in those decades was greater than in the 1990s. Additionally, the geographical distribution of surveys was relatively similar among decades, indicating that

the higher ratios in the 1990s were not artificially driven by surveying sites more likely to have peppered chub. Based on information from our survey database, capture ratios of 95 percent in the 1990s correctly represent peppered chub presence at that time.

(10) Comment: One commenter stated that the proposed rule overly relies on the SSA for an evaluation of species threats under each of the five listing factors, and neither the proposed rule nor SSA provides a systematic factor-by-factor evaluation of threats. The SSA is not intended to evaluate the identified threats for a species under each of the five listing factors, as is done in a 12-month finding and proposed rule under section 4(a)(1) of the Act. The commenter argues that the Service has failed to provide the most fundamental evaluation of the listing factors from the 12-month findings, as provided in section 4(a)(1) of the ESA.

Our response: Under section 4(a)(1) of the Act, the Service may determine that a species is an endangered or threatened species based on 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 are also required to consider any conservation measures made by any State or foreign nation regarding the species. The Service provided the evaluation of the listing factors in the proposed rule in *The basis for our action* section and the **Determination of Peppered Chub Status** section (85 FR 77108; December 1, 2020).

Using the SSA framework results in a biological risk assessment, the SSA report, which is designed to aid decisionmakers who must use the best available scientific information to make policy-guided decisions. The SSA informs, but is not, the decision. Using the conservation biology principles of representation, resiliency, redundancy, the SSA provides a scientifically rigorous characterization of species status that focuses on

the likelihood that the species will sustain populations within in the wild beyond a biologically meaningful timeframe, its level of viability, along with key uncertainties in that characterization.

The **Determination of Peppered Chub Status** section clearly articulates how we arrived at our determination for an endangered status using the five factors from section 4 of the Act (16 U.S.C. 1533).

(11) Comment: One commenter asserted that the proposed rule relies on a paradigm that the peppered chub eggs and larvae need high water to keep the propagules suspended with subsequent return of fish to natal areas, tens or hundreds of miles upstream. The commenter argues that this paradigm ignores an alternative paradigm that the semi-buoyant eggs and larvae were historically retained near natal areas in laterally expansive floodplains and are now transported downstream because of a contemporary narrow and entrenched river channel. The commenter states that, in focusing on the perceived need to keep the propagules afloat with high water, the Service fails to recognize that, historically, most propagules probably did not drift longitudinally downstream but laterally into inundated floodplains and returned to the main channel with receding water levels.

Our response: The proposed rule and SSA report recognize the potential utility of wetted floodplain habitats to support larval nursery habitat for peppered chub. The semi-buoyant eggs of peppered chub remain suspended in water until hatching, and thereby require currents to maintain suspension in the water column until sufficient development to a free-swimming stage (Bottrell et al 1964, p. 398; Robison and Buchanan 1988 p. 183; Wilde et al. 2000, p. 107). In more lentic habitats, eggs may be deposited on sediment and covered, leading to lack of oxygen and suffocation. This requirement for flows of some velocity does not necessarily translate to a need for “high water” in all natal areas. However, discharges of likely increased magnitude would be required for

inundation of floodplains to serve as nursery habitats. Restored floodplains and managed river flows have potential to benefit peppered chub habitats. However, in recent history, there is often less water in the system and because of this water less frequently reaches the floodplain.

Because the floodplains are less available for the reproduction of peppered chub, compared to historical conditions, river length is now more important for successful reproduction. The proposed rule and SSA use reach length as an indicator of habitat condition, since fish can successfully reproduce given adequate uninterrupted stream length as well. Sufficient reach length is needed to allow the time necessary for development of eggs and larvae floating downstream until they reach a motile, free-swimming stage. Larval fish may require strong currents to keep them suspended until they are capable of horizontal movement and are strong enough to leave the main channel. Physical barriers are likely unpassable by egg and larval fishes, and adults passing downstream remain isolated and unable to move downstream. This situation results in progressive impacts over time from upstream to downstream. Longer reach lengths may not be necessary to meet the needs of an individual peppered chub within its short lifetime. By facilitating reproduction and population growth, these unfragmented river segments guard against extirpation, and increase species resiliency. We are unaware of any data/information to conclude that a wetted floodplain in close proximity to natal areas would have the velocities to keep eggs buoyant for the appropriate amount of time necessary for fry development.

(12) Comment: One commenter notes the discrepancies among definitions of proposed critical habitat for peppered chub (up to bankfull) and existing definitions of critical habitat for Arkansas River shiner (300 feet on each side of the river channel at bankfull) and the sharpnose and smalleye shiners (areas beyond the bankfull river channel by 98 feet on each side). The commenter recommends that these discrepancies be

better explained and justified, as areas above bankfull discharge are important to provide food sources and are subject to encroachment by saltcedar and other invasive vegetation that translate into impacts on river geomorphology, instream habitat for imperiled fishes, and stream flows.

Our response: Adjacent upland or terrestrial areas that are not below the ordinary bankfull (or high-water line) are not included in designated critical habitat. However, we would anticipate conducting section 7 consultations with Federal agencies for projects on Federal lands or for projects with a Federal nexus if a project had indirect impacts to the peppered chub's critical habitat or on the species itself. In general, activities in riparian areas should be conducted in such a manner as to protect adjacent streams. See **Physical or Biological Features Essential to the Conservation of the Species** (below). Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Public Comments

(13) Comment: One commenter stated that oil and gas activity is widespread and designation of unoccupied critical habitat would impose unnecessarily significant costs without providing measurable, probable benefits for the protection of the species. These costs may preclude or render economically impractical oil and gas activities preventing private landowners from developing their minerals. Another commenter was concerned that the Service had not clearly delineated in the proposed rule to what extent, in the geographic areas occupied by the species, that livestock production might be subject to a section 9 enforcement and what economic impact such a critical habitat designation

might have.

Our response: The designation of critical habitat would not impose any such regulatory or financial burdens on non-Federal actions for private landowners such as those indicated, so long as there was no Federal nexus. If there is a Federal nexus and the action of the Federal agency may affect the species or its critical habitat designation, then the Federal agency would need to consult with the Service. We do identify oil and gas exploration and extraction activities as an activity that may require consultation to avoid adversely modifying critical habitat, under section 7(a)(2) of the Act and if there is a Federal nexus. If during consultation with a Federal agency, the Service finds that an activity is likely to adversely modify a critical habitat designation, the Service will work with the Federal agency to identify reasonable and prudent alternatives. Livestock production and exploration and extraction were taken into consideration during our economic analysis. For each unit, we found that there would be a non-significant incremental administrative cost from the designation to the Service and the Action agencies (IEc 2019, pg. 2). For further information, the full economic screening analysis can be viewed on *https://www.regulations.gov*.

Section 9 of the Act covers prohibited acts as they relate to endangered species. The actions outlined in section 9 of the Act are prohibited after the effective date of this rule (see **DATES**, above). However, in the **Available Conservation Measures** section (below), we identify activities that are unlikely to result in a violation of section 9, if these activities are carried out in accordance with existing regulations and permit requirements. In that list we include, normal livestock grazing and other standard ranching activities within riparian zones that do not destroy or significantly degrade peppered chub habitat. We had also included this in the proposed rule as well (85 FR 77108).

(14) Comment: One commenter noted that the proposed rule suggests the Act

would allow normal livestock grazing and other standard ranching activities within riparian zones that do not destroy or significantly degrade peppered chub habitat. However, the proposed rule does not identify what livestock activities would not constitute normal livestock grazing.

Our response: We are not able to provide an exhaustive list of what activities would and would not constitute normal livestock grazing. However, activities that do not result in a violation of section 9 of the Act and are not subject to a Federal nexus would not be subject to section 11 (penalties and enforcement) of the Act. Based on our section 7 consultation experience within the historical range of peppered chub and because we contacted Federal agencies during our economics analysis and they did not comment on an increase in consultation for grazing (while they did anticipate increases in consultations for other activities; IEc 2019, entire), we anticipate consultations to be rare for grazing and ranching activities. We encourage all local landowners with questions specific to their property or project to contact their local Ecological Services Field Office. A list of field offices and their contact information can be found at: *https://www.fws.gov/ecological-services/map/directory.html.*

(15) Comment: One commenter stated that the economic impact analysis does not discuss what impact the proposed critical habitat designation would have on Confined Animal Feeding Operations that discharge under Clean Water Act section 402 permits. Typically, each feedyard with over 1,000 head of cattle will have and maintain a National Pollution Discharge Elimination System (NPDES) permit under section 402 of the Clean Water Act. These permits are subject to renewal every 5 years. Under the proposed rule, feedyards with NPDES permits in the river basins where critical habitat is being proposed would likely be required to undergo a section 7 consultation.

Our response: We considered animal feeding operations in our incremental effects memo (IEM) (IEM 2019, p. 9). Additionally, pollutant discharge and

consultations with the Environmental Protection Agency were covered in the screening analysis that would cover the activity mentioned by the commenter (IEc 2019, pp. 7 & 8). The screening analysis found that the rule is unlikely to meet the threshold for an economically significant rule, with regard to costs (IEc 2019, pg. 2). Both documents can be found at: *https://www.regulations.gov;* Docket No. FWS-R2-ES-2019-0019.

Supporting Documents

A species status assessment (SSA) team prepared an SSA report for the Arkansas River shiner *(Notropis girardi)* and the peppered chub. 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 these species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we sought peer review of the SSA report. We sent the SSA report to nine independent peer reviewers during two separate peer review requests and received one response. We solicited peer review a second time because we received no responses to our first request. The purpose of peer review is to ensure that our listing determinations and critical habitat designations are based on scientifically sound data, assumptions, and analyses. The peer reviewer who responded has expertise in the biology, habitat, and threats to several broadcast-spawning fish species. The Service also sent the SSA report to 21 partners, including scientists with expertise in peppered chub threats and habitat, for review. We received review from eight partners (Colorado Parks and Wildlife, New Mexico Game and Fish, Texas Parks and Wildlife, two individuals from Oklahoma Department of

Wildlife Conservation, and three individuals from universities in Oklahoma). Information received from the peer reviewer and partners is incorporated into this final rule and informed our determination. We also considered all comments and information received from the public during the comment period.

I. Final Listing Determination

Background

A full description of the species and its habitat can be found in chapter 2 of the SSA report. The peppered chub was historically known throughout the Arkansas River basin in Colorado, Kansas, New Mexico, Oklahoma, and Texas. Peppered chub were typically found in main channels of wide, shallow, sandy-bottomed rivers. The species prefers shallow channels where currents flow over clean fine sand, and, generally, adults avoid calm waters and silted stream bottoms. Peppered chub have adapted to tolerate the adverse conditions of the drought-prone prairie streams that they inhabit. The peppered chub is a small cyprinid minnow with a fusiform (tapering at both ends) body shape rapidly tapering to a conical head. It has a nearly transparent slender body with dark dots scattered on its back. Generally, adult fish reach a maximum length of 3 inches (in) (77 millimeters (mm)) and do not live beyond 2 years.

Gilbert first described the peppered chub in 1886 (pp. 208–209). Prior to Eisenhour's 1999 dissertation (published 2004), the peppered chub was classified as one of six subspecies within the *Macrhybopsis aestivalis* (commonly: speckled chub) complex. Eisenhour examined morphometrics (measurements of external shape), meristics (counts of features of fish), pigmentation, and tuberculation across the range of the complex. He concluded that the results supported the recognition of five individual species, including *Macrhybopsis tetranema*, or peppered chub. The American Fisheries Society also accepts the species as the peppered chub (Page et al. 2013, p. 28).

Habitat for the peppered chub historically consisted of the main channels of wide, shallow, sandy-bottomed rivers and larger streams of the Arkansas River basin, with a noted preference for river segments nearer the headwaters, as compared to other *Macrhybopsis* in the Arkansas River basin. Adults prefer shallow channels where currents flow over clean fine sand and generally avoid calm waters and silted river bottoms. Peppered chub have key adaptations that enable them to tolerate the adverse conditions of the drought-prone prairie rivers that they inhabit, including a relatively high capacity to endure elevated temperatures and low dissolved oxygen concentrations. They also appear to be often associated with turbid waters.

Peppered chub are members of a reproductive guild that broadcast-spawn semibuoyant eggs, which remain suspended in the water column by the current until hatching. This reproductive strategy appears to be an adaptation to highly variable environments where stream flows are unpredictable and suspended sediment deposition can cover eggs laid in nests or crevices. Without continuous stream flow of sufficient distance, eggs sink to the bottom where they may be covered with silt and suffocate due to the lack of oxygen. In addition to adequate stream discharge, an appropriate reach length is also needed to allow the time necessary for egg and larval development into a motile, free-swimming stage. After hatching, flowing water provides the extended development time needed by larval fish. Larval fish may require strong currents to keep them suspended in the water column until they are capable of horizontal movement and until the fish are strong enough to leave the main channel.

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species is an endangered species or a threatened species. The Act defines an “endangered species” as a species that

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

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

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

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

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

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

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 expected response by the species, 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 now and in the foreseeable future.

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. The term "foreseeable future" extends only so far into the future as the Service can reasonably determine that both the future threats and the species' responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. "Reliable" does not mean "certain"; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species' likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species' biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

Analytical Framework

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent a decision by the Service on whether the species should be listed as an endangered or threatened species under the Act. However, it does provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies. The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket FWS-R2-ES-2019-0019 on *https://www.regulations.gov*.

To assess peppered chub viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency supports the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm, or cold years), redundancy supports the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation supports the ability of the species to adapt over time to long-term changes in the environment (for example, climate changes). In general, the more resilient and redundant a species is and the more representation it has, the more likely it is to sustain populations over time, even under changing environmental conditions. 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 the 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 available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.

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. For a more detailed description, refer to the SSA report (Service 2022, entire) and the proposed rule (85 FR 77108; December 1, 2020).

Summary of Analysis

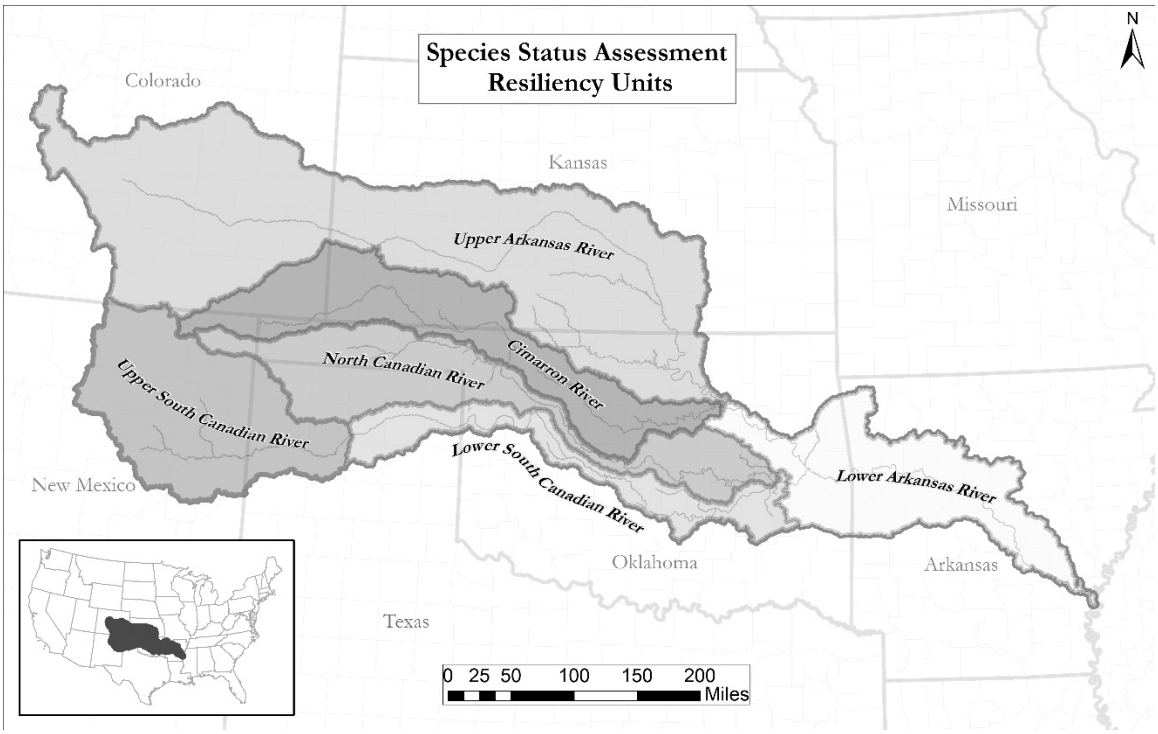
A full description of our analysis (analytical methods, threats, current condition, and future condition for the peppered chub can be found in the SSA report (Service 2022); below, we present a summary of the results of the SSA.

The peppered chub is a small cyprinid minnow once widespread and common in the western portion of the Arkansas River basin in Kansas, New Mexico, Oklahoma, Arkansas, and Texas.

Habitat historically consisted of the main channels of wide, shallow, sandy bottomed rivers and larger streams of the Arkansas River basin, with peppered chubs appearing more adapted for headwater areas. Adults prefer shallow channels where currents flow over clean fine sand, and generally avoid calm waters and silted stream bottoms. Peppered chub have adapted to tolerate the adverse conditions of the drought-prone prairie streams they inhabit, including a high capacity to endure elevated temperatures and low dissolved oxygen concentrations.

Peppered chub are members of a reproductive guild that broadcast spawns semibuoyant eggs, which are kept suspended until hatching in flowing water. This reproductive strategy appears to be an adaptation to highly variable environments where stream flows are unpredictable and suspended sediments and shifting sand can cover eggs laid in nests or crevices. Without stream flow, eggs sink to the bottom where they may be covered with silt and die. After hatching, adequate stream length likewise provides the extended flow time needed by larval fish which may require strong currents to keep them suspended in the water column until they are capable of horizontal movement and strong enough to leave the main channel. Channel complexity is also correlated with stream length resulting in slower transport rates in streams with wider and more braided channel morphology which allow more time for developing eggs and larva to reach their free-swimming stage.

The peppered chub historically inhabited numerous rivers of the Arkansas River basin and, without the presence of dams or other structures, it is likely that individuals within populations exhibited some level of genetic exchange among these rivers. To analyze population-level resiliency, we divided the range of the peppered chub into five "resiliency units" or populations (we use those terms interchangeably in this document) (see figure below; we do not include the Lower Arkansas River in the resiliency units for the SSA for the peppered chub because that portion of the watershed is not part of the current or historical range of the species). We described population resiliency and assessed representation and redundancy among these units. However, to assess conditions within each resiliency unit at a somewhat finer scale, we subdivided each resiliency unit into multiple subunits. This downscaling allows us to compare differences in conditions within a given resiliency unit and to understand the drivers affecting current condition (see the SSA report for further details).



Figure—Map depicting resiliency units (excluding Lower Arkansas River) for the Peppered Chub Species Status Assessment.

Maintaining representation in the form of genetic or ecological diversity is important to maintain the peppered chub's capacity to adapt to future environmental changes. The peppered chub must retain populations throughout its range to maintain the overall potential genetic and life-history attributes that can buffer the species' response to environmental changes over time. We define redundancy for the peppered chub as multiple, sufficiently resilient populations distributed throughout the species' historical range. Thus, multiple, adequately resilient populations, coupled with a relatively broad distribution, contribute to species-level viability.

Risk Factors for Peppered Chub

Stressors affecting the viability of the peppered chub include altered flow regimes (Factor A), impoundments and other stream fragmentation (Factor A), modified geomorphology (Factor A), decreased water quality (Factor A), and the introduction of invasive species (Factors A and C). The source of many of these stressors is the construction of dams and their impoundments (a body of water confined within an enclosure) which, in most cases, has drastically altered the natural flow regime and

fragmented habitat. For example, a U.S. Geological Survey (USGS) stream gage on the Canadian River (near Amarillo, Texas) in the Lower South Canadian River resiliency unit has had a 69 percent decline in mean hydroperiod from pre-impoundment to post-impoundment, and the mean daily discharge (post-impoundment) is markedly lower (68 percent decline) since the completion of the reservoir. For a detailed description of the risk factors for peppered chub, see chapter 3 of the SSA report (Service 2022, pp. 22–38), below is only a summary of the risk factors.

Altered Flow Regimes

Peppered chub need a combination of varying flows (timing, duration, and magnitude) to support viable populations and maintain suitable habitat. Low flow periods (including isolated pooling) can impair or eliminate appropriate habitat for the species, and while adult peppered chub are adapted to and can typically survive these events for a short time, populations that regularly experience these conditions face compromised reproductive success and may not persist. Flow regime alterations that we considered during the SSA process include dams and their associated impoundments, the effects dams have on the natural flow regime, surface and groundwater extraction, and the effect of climate change on precipitation and drought.

Stream Fragmentation

Dams often fragment aquatic habitat and create impassable physical barriers to fish movement. Juvenile and adult peppered chub would likely be capable of passing downstream through small fish barriers such as weirs (low dams built to raise the level of water upstream), low-water crossings, and natural or manmade falls. However, no life stage of peppered chub is likely capable of successfully passing downstream through most reservoirs large enough to act as water supply or hydroelectric sources. Likewise, due to the small size and limited swimming ability of the peppered chub, upstream movement of adults (during spawning) would likely be prohibited by any impoundments

(regardless of type or function), weirs, falls, pipeline reinforcements structures, and some low-water crossings.

It is unlikely that egg and larval stages of peppered chub are capable of passing over a fish barrier. When fish (typically adults only) pass downstream of a smaller barrier, they remain isolated below the barrier and are unable to return to spawning areas upstream. This often results in incremental and progressive extirpation from an upstream to downstream direction (Perkin and Gido 2011, p. 374). Because of its need for flowing water to reproduce, peppered chub have been eliminated from shorter (generally less than 136 mi) reaches and typically persist only in river segments that are above a minimum threshold (Perkin and Gido 2011, p. 374). In addition, the blocking of movement of adult fish limits their ability to seek suitable habitat in more perennial, headwater reaches during drought conditions.

Modified Geomorphology

Decreases in stream flows in the South Canadian River have contributed to the decline or loss of wide, shallow sand-bed river channels that are characteristic of peppered chub habitat. Impoundments often reduce the magnitude and frequency of high flows, leading to bank stabilization and channel narrowing; alter streambank riparian communities; restrict downstream transport of nutrients that support ecosystem development; and alter river substrate (Poff et al. 1997, pp. 773-777; Mammoliti 2002, pp. 223-224). Impoundments also alter streamflow by reducing the availability or timing of water, leading to more frequent low-flow conditions, channel drying, pool isolation, and vegetative encroachment into the river channel. Reduction in flows reduces the peppered chub's reproductive success and decreases population resiliency.

Additional alteration of historical physical habitat occurs when dams release sediment-starved water that alters the composition and distribution of the bed substrate. River and stream water velocity slows rapidly where water enters the standing water of

reservoirs, resulting in the settlement of suspended sediment within the reservoir (Poff et al. 1997, p. 773). The resulting release of low turbidity, high-velocity water from dams scours the downstream reaches, causing the channel to incise and become further isolated from its natural floodplain. Further, such dam releases remove sand and gravel substrate preferred by the peppered chub. Decreased turbidity provides a competitive advantage to fishes that are not as well adapted to the naturally turbid water. When water is released from a main channel reservoir, fish species adapted to naturally turbid conditions of the South Canadian River, such as the peppered chub, are displaced by fish with competitive advantage in less turbid conditions, resulting in a reduction in available habitat and increased predation (Bonner and Wilde 2002, pp. 1205-1206), thereby negatively influencing species distribution and abundance.

Degraded Water Quality

Suitable water quality is necessary for a healthy aquatic community. Water quality may become impaired through direct contamination or the alteration of freshwater chemistry. Contaminants enter the environment through both point and nonpoint sources including spills, industrial pathways, municipal effluents, and agricultural runoff. These sources may contribute organic compounds, heavy metals, pesticides, herbicides, and a wide variety of newly emerging contaminants to the aquatic environment. An additional type of water quality impairment is the alteration of water quality parameters such as dissolved oxygen, temperature, and salinity levels. Dissolved oxygen levels may be reduced due to increased nutrient levels (i.e., nitrogen and phosphorous) from agricultural runoff or wastewater effluent (eutrophication). Increased water temperature from more frequent low-flow/drought conditions and climate change can also exacerbate low dissolved oxygen levels, particularly when low-flow conditions strand fish in isolated pools. Similarly, fish stranded in isolated pools can be subjected to naturally concentrated salinity. Additionally, many freshwater systems and shallow aquifers have become

increasingly saline due to salinized water recharge (Hoagstrom 2009, p. 35). This effect largely stems from irrigation return flows that have flushed accumulated salts from irrigated lands back into the system.

Chloride concentrations have been increasing in the upper South Canadian River (Service 2022, p. 127). Additionally, arsenic levels in many of the rivers within the historical range of the peppered chub are above the Environmental Protection Agency's established levels for human health for the consumption of organisms but not above levels designed to protect freshwater aquatic communities. Arsenic levels have increased over time in the Cimarron River to the point that golden shiners (*Notemigonus crysoleucas*) exhibited avoidance behavior even though concentrations were below a toxic level (Hartwell et al. 1989, p. 452). It is a reasonable presumption that peppered chub would also demonstrate avoidance behavior at similar concentrations of arsenic, causing peppered chub distribution and movements to be disrupted, possibly further fragmenting or reducing the amount of available stream length necessary for all life stages.

Introduction of Invasive Species

The alteration of the hydrologic regime and geomorphology of rivers resulting from impoundments can cause the proliferation of larger, piscivorous fish not normally associated with unimpounded prairie rivers. This fish community conversion is exacerbated by the transfer or stocking of game species in areas that have undergone hydrologic regime or geomorphologic alterations. These species may include smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides salmoides*), Florida largemouth bass (*Micropterus salmoides floridanus*), striped bass (*Morone saxatilis*), and channel catfish (*Ictalurus punctatus*) (Howell and Mauk 2011, pp. 11-12), which may prey upon peppered chubs. In a system similar to the Arkansas River Basin, eighteen fish species were introduced or immigrated into the Solomon River basin

following impoundment and increased competition from these nonnative species may have contributed to the decline of native fish species (Eberle et al. 2002, p. 182, 188). While peppered chub declines throughout the species' range cannot be fully attributed to predation by invasive fishes, a shifting fish community (to more lentic (still water) adapted species) throughout the Lower South Canadian River has coincided with the extirpation of the peppered chub throughout this lower basin. The Upper South Canadian River (between Ute Reservoir and Lake Meredith) is an exception, where the natural fish community is still mostly intact (Service 2022, pp. 66-68).

Synergistic Effects

Many of the above-summarized risk factors may act synergistically or additively on the peppered chub. The combined impact of multiple stressors is likely more harmful than a single stressor acting alone. For example, resiliency of the peppered chub (in the Upper South Canadian River resiliency unit) is considered low due to river impoundment in combination with other stressors acting synergistically. The river is unimpeded for 179 river miles (288 river kilometers), which translates to a fair condition (see table 1, below). However, our flood frequency analysis in the Upper South Canadian River resiliency unit shows a decline to a level of null to fair, meaning flood events have significantly declined compared to historical conditions. As a result, the river channel has narrowed dramatically in many areas, resulting in unfavorable habitat for the peppered chub and a poor condition category for this habitat metric. This condition limits the access to and formation of new habitat necessary for egg/larval retention and nursery. The hydroperiod (a comparison between pre-impoundment and post-impoundment discharge) has changed so that discharge is in a null (greater than 90 percent decrease in discharge) to fair condition for peppered chub. Lastly, the low-flow conditions in the stretch are in a poor to fair condition, meaning that low-flow days are common or increasing and some areas are vulnerable to drying in drought years, which could affect

the length of unimpeded river and lead to additional channel narrowing. For a full explanation of our habitat factor analysis, see chapter 4 of the SSA report.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have not only analyzed individual effects on the species, but we have also analyzed their potential cumulative effects. We incorporate the cumulative effects into our SSA analysis when we characterize the current and future condition of the species. To assess the current and future condition of the species, we undertake an iterative analysis that encompasses and incorporates the threats individually and then accumulates and evaluates the effects of all the 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.

Current Condition of Peppered Chub

Our analysis of current condition of the peppered chub is based on numerous scientific publications from species experts who concluded that by the year 2000, the peppered chub had significantly declined and was isolated to the Ninnescah River in Kansas and the South Canadian River between Ute Reservoir in New Mexico and Lake Meredith in the Texas panhandle (Luttrell et al. 1999, p. 983; Eisenhour 1999, p. 975; Eisenhour 2004; Service 2022, pp. 53–57). More recently, we assessed the current condition using survey efforts from 1,826 collections (from 2013 to 2017) with only 38 of those (2 percent) containing the peppered chub. Extensive recent survey efforts show that the peppered chub distribution is currently limited to the South Canadian River between Ute Reservoir in New Mexico and Lake Meredith in the Texas panhandle, which represents 6 percent of its historical range. The capture ratio in the Upper South Canadian River dropped to 45 percent, and peppered chubs were not collected in the Ninnescah

River during this time.

Historically, the peppered chub was known from five populations found in Colorado, Kansas, New Mexico, Oklahoma, and Texas. Several factors were responsible for the extirpation or abundance decline of the peppered chub in each of the resiliency units, as more fully set forth in the SSA report. However, habitat degradation and fragmentation has been primarily a result of water diversion and impoundments (i.e., dams). Thus, the single remaining population (Upper South Canadian River) has low resiliency (see table 1, below).

We consider the peppered chub to have limited representation in the form of genetic and ecological diversity because only a single functioning population remains. Extirpated populations of peppered chub contained genetic and morphological variation that have been lost. The peppered chub has "considerable stocks of genetic diversity" within this single population; however, the species lacks the representation of species with multiple populations occurring across varying landscapes (Osborne 2017, p. 9). Despite restrictions of its range due to impoundments and other habitat alterations, and a decline in abundance, it is possible that genetic variation is sufficient to allow for survival in the naturally occurring conditions of the arid prairie stream environments in which the species evolved. However, it is unknown if this species has the genetic variability or the time required to adapt to continuing habitat and flow alterations.

To assess resiliency within each unit, we analyzed capture ratios, probability of capture trends, and relative abundance (demographic factors). We also analyzed habitat factors that were determined to have the most influence on the species: stream fragment length, channel narrowing, flood frequency, hydroperiod (changes to the annual hydrograph most relevant to the species' lifecycle), and low flow conditions (habitat/flow factors). See table 1, below. Overall condition rankings for each resiliency unit were determined by combining the three demographic factors and five habitat/flow factors.

For a more detailed description of the condition categories, see chapter 4 in the SSA report.

TABLE 1—CURRENT RESILIENCY OF THE PEPPERED CHUB

Population	Demographic Factors			Habitat Factors*					Current Resiliency
	Capture Ratio	Probability of Capture Trend	Relative Abundance	Stream Fragment Length	Channel Narrowing	Flood Frequency	Hydroperiod	Low Flow	
Upper Arkansas (includes Ninnescah and Salt Fork)	Ø**	Ø	Ø	Fair	Fair to Good	Poor and Good	Poor and Good	Poor and Good	Ø
Cimarron	Ø	Ø	Ø	Good	Null to Good	Null and Fair	Poor and Fair	Poor and Good	Ø
North Canadian	Ø	Ø	Ø	Fair	Null	Null to Good	Poor to Fair	Poor to Good	Ø
Lower South Canadian	Ø	Ø	Ø	Good	Null to Good	Poor to Fair	Poor to Fair	Fair and Good	Ø
Upper South Canadian	Fair	Good	Poor	Fair	Poor	Null to Fair	Null to Fair	Poor to Fair	Low

*The habitat factors are presented as gradients (to) or multiple conditions (and) per population. Because of the great lengths of the stream stretches, the habitat quality can vary widely throughout the unit. (See the SSA report for further information.)

**The Ø symbol means null (having or associated with the value zero).

Because the peppered chub has been extirpated from all but one resiliency unit, it has a higher risk of extinction from a catastrophic event, due to a lack of redundancy across its range, compared to historical conditions. See the SSA report for the complete current condition analysis for the peppered chub (Service 2022).

Future Condition of Peppered Chub

As part of the SSA, we also developed multiple future condition scenarios to capture the range of uncertainties regarding future threats and the projected responses by the peppered chub. Our scenarios included a continuation of existing trends scenario and a water conservation with flow trends stabilizing scenario, which incorporated the current risk factors continuing the same trajectory that they are on now. These future scenarios project conditions that are worse for the peppered chub than the current condition or the water conservation with flow trends stabilizing scenario. Because we determined that the current condition of the peppered chub is consistent with an endangered species (see **Determination of Peppered Chub Status**, below), we are not presenting the results of the other future scenarios in this final rule. The other projected scenarios would also be endangered, as they forecast conditions that are the same or more at risk of extinction than the current condition. Please refer to the SSA report (Service 2022) for the full analysis of future scenarios.

Conservation Efforts and Regulatory Mechanisms

Since we proposed to list the peppered chub as endangered, The Kansas Aquatic Species Conservation Agreement: A Programmatic Safe Harbor Agreement and Candidate Conservation Agreement with Assurances for Fourteen Aquatic Species in Kansas (Agreement) was completed and includes the peppered chub. Further information about the agreement can be found in the **Exclusions** section below. The area of the range that is covered by the Agreement is currently unoccupied; therefore, the Agreement does

not change our conclusions in the SSA report or the determination of status, outlined below.

This species is listed as endangered in Kansas and protected under the authority of the State's Nongame and Endangered Species Conservation Act of 1975. The Kansas Department of Wildlife, Parks and Tourism (KDWPT) finalized a recovery plan for the peppered chub in May 2005. The recovery plan outlines specific strategies and methods to recover and delist the peppered chub in Kansas. The recovery plan also includes designated critical habitat as required for endangered species conservation and recovery. Kansas Administrative Regulations (K.A.R.) 115–15–3 provides for review and a permit system for any alterations to the critical habitat administered by KDWPT Ecological Services Section.

The peppered chub has been listed as threatened in New Mexico since 1978 under the Wildlife Conservation Act (WCA). The State Game Commission is authorized and directed to establish such regulations as it may deem necessary to carry out all the provisions and purposes of the WCA. The WCA prohibits any person to take, possess, transport, export, process, sell or offer for sale, or ship the peppered chub, within the State of New Mexico.

The species is listed as threatened in Texas and protected under Texas Parks and Wildlife Department (TPWD) Code. Under chapter 67 of this Code, Texas Parks and Wildlife Commission is authorized to establish any limits on the taking, possession, propagation, transportation, importation, exportation, sale, or offering for sale of nongame fish or wildlife that TPWD considers necessary to manage the species. TPWD designation of the peppered chub as a threatened species prohibits take of the species.

As discussed in the proposed rule, the Canadian River Municipal Water Authority (in conjunction with several partners) has a management plan in place for the Arkansas River shiner, a similar species that shares many of the same life-history characteristics

and habitat requirements as the peppered chub. However, the management plan includes no conservation efforts specific to the peppered chub.

Efforts are underway to begin a captive propagation program at the Kansas Aquatic Biodiversity Center and at the Tishomingo National Fish Hatchery in Oklahoma. However, these efforts are early in development and have not yet yielded improvements to the status of the species.

Approximately 95 percent of the adjacent land within the historical range of the peppered chub is private land. Except for those management activities included above, during the comment period for the proposed rule, we were not made aware of other conservation plans or management activities that are in place with private landowners that are specific to the peppered chub.

Despite the existing regulatory mechanisms and conservation efforts described above, the identified stressors continue to act on the species such that listing is warranted.

Determination of Peppered Chub 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 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 a species meets the definition of endangered species or threatened species because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence.

The peppered chub faces threats from altered flow regimes (e.g., dams and impoundments, groundwater extraction, and climate change effects on precipitation) (Factors A and E), stream fragmentation (Factor A), modified geomorphology (Factor A), poor water quality (Factor A), and introduction and proliferation of invasive species (Factors A and C). Because peppered chub rarely live beyond 2 years, the risk of species extinction from 2 (or more) successive years of low flow or drought conditions is high. These threats are currently acting on the peppered chub, and we expect them to continue or worsen into the future. We found no evidence of population- or species-level impacts from overutilization for commercial, recreational, scientific, or educational purposes (Factor B). In our analysis of the factors affecting the peppered chub, we found that despite the existing regulatory mechanisms and conservation efforts, the threats continue to affect the species such that listing is warranted (Factor D).

The range of the peppered chub once included Colorado, Kansas, New Mexico, Oklahoma, and Texas, with populations in several streams and rivers. The peppered chub is now confined to a single population in the upper portion of the South Canadian River in Texas and New Mexico, which represents approximately 6 percent of the species' historical range. The one remaining population has declined from an average of approximately 14 percent relative abundance (a component of biodiversity) historically, to a current relative abundance of under 2 percent, meaning the fish community structure has shifted significantly from its baseline condition. Explained in detail in the SSA report, the fish community in this population is shifting away from its historical state, the peppered chub is becoming less common compared to other species in the community, and the species richness of the community is declining (Service 2022, pp. 63–68). This population has low resiliency, meaning that the population has a low probability of remaining extant and withstanding periodic or stochastic disturbances under its current condition. Representation has been reduced with the complete extirpation of populations

in all but one resiliency unit and a range reduction of approximately 94 percent from its historical distribution. Species-level genetic and ecological diversity has been lost over time, as populations have become extirpated. Redundancy has declined dramatically because the peppered chub remains on the landscape in only one population. As such, the peppered chub is at greater risk of extinction due to a catastrophic event when compared to historical conditions.

Status Throughout All of Its Range

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats and the cumulative effect of the threats under the section 4(a)(1) factors to peppered chub. We find that the species' resiliency, representation, and redundancy are at levels that put the species at risk of extinction throughout its range. Thus, we conclude that the peppered chub meets the definition of an endangered species because it is in danger of extinction throughout all of its range. We find that a threatened species status is not appropriate for the peppered chub because it is currently at risk of extinction, based on the threats and their current impacts on the species and the resulting current condition of the species.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. We have determined that the peppered chub is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of any significant portions of its range. Because the peppered chub warrants listing as endangered throughout all of its range, our determination is consistent with the decision in *Center for Biological Diversity* v. *Everson*, 2020 WL 437289 (D.D.C. Jan. 28, 2020), in which the court vacated the aspect 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" (79 FR 37578; July 1, 2014) that provided the Services do not undertake an analysis of significant portions of a species' range if the species warrants listing as threatened throughout all of its range.

Determination of Status

Our review of the best available scientific and commercial information indicates that the peppered chub meets the definition of an endangered species. Therefore, we are listing the peppered chub as an endangered species in accordance with sections 3(6) and 4(a)(1) of the Act.

Available Conservation Measures

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

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning consists of preparing draft and final recovery plans, beginning with the development of a recovery outline and making it available to the public within 30 days of a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened ("downlisting") or removal from protected status ("delisting"), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website (*http://www.fws.gov/endangered*), or from our Arlington, Texas, Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

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

Following publication of this final rule, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost-

share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the States of Colorado, Kansas, New Mexico, Oklahoma, and Texas will be eligible for Federal funds to implement management actions that promote the protection or recovery of the peppered chub. Information on our grant programs that are available to aid species recovery can be found at: *http://www.fws.gov/grants*.

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

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of any endangered or threatened species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by the Service, U.S. Forest Service, Bureau of Land Management, and National Park Service; issuance of section 404 Clean Water Act (33 U.S.C. 1251 *et seq*.) permits by the U.S. Army Corps of Engineers; and construction and maintenance of roads or highways by the Federal Highway Administration.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The prohibitions of section 9(a)(1) of the Act, codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these) endangered wildlife within the United States or on the high seas. In addition, it is unlawful to import; export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any species listed as an endangered species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to employees of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22. With regard to endangered wildlife, a permit may be issued for the following purposes: for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with 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 our policy, as published in the *Federal Register* on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a final listing on proposed and ongoing activities within the range of a listed species. Based on the best available information, the following actions are unlikely to result in a violation of section 9, if

these activities are carried out in accordance with existing regulations and permit requirements; this list is not comprehensive:

(1) Authorized taking of peppered chub in accordance with a permit issued by us pursuant to section 10 of the Act or with the terms of an incidental take statement pursuant to section 7 of the Act, or possessing specimens of this species that were collected prior to the effective date of this final regulation adding this species to the List of Endangered and Threatened Wildlife (see **DATES**).

(2) Normal, lawful recreational activities such as hiking, trail rides, camping, boating, hunting, and fishing, provided unused bait fish are not released back into the water.

(3) Normal livestock grazing and other standard ranching activities within riparian zones that do not destroy or significantly degrade peppered chub habitat.

(4) Routine implementation and maintenance of agricultural conservation practices specifically designed to minimize erosion of cropland (e.g., terraces, dikes, grassed waterways, and conservation tillage).

(5) Existing discharges into waters supporting the peppered chub, provided these activities are carried out in accordance with existing regulations and permit requirements (e.g., activities subject to sections 402, 404, and 405 of the Clean Water Act), and improvements to existing irrigation, livestock, and domestic well structures, such as renovations, repairs, or replacement.

Based on the best available information, the following activities may potentially result in a violation of section 9 of the Act if they are not authorized in accordance with applicable law; this list is not comprehensive:

(1) Unauthorized handling, collecting, possessing, selling, delivering, carrying, or transporting of the peppered chub, including interstate transportation across State lines and import or export across international boundaries

(2) Capture, survey, or collection of peppered chub specimens without a permit from the Service under section 10(a)(1)(A) of the Act.

(3) Introduction of nonnative fish species that compete or hybridize with, displace, or prey upon peppered chub.

(4) Unauthorized destruction or alteration of peppered chub habitat by dredging, channelization, impoundment, diversion, recreational vehicle operation within the stream channel, sand or gravel removal, or other activities that result in the destruction or significant degradation of channel stability, streamflow/water quantity, substrate composition, and water quality used by the species for foraging, cover, and spawning.

(5) Unauthorized discharges (including violation of discharge permits), spills, or dumping of toxic chemicals, silt, household waste, or other pollutants (e.g., sewage, oil and gasoline, heavy metals) into surface or ground waters or their adjoining riparian areas that support/sustain peppered chub.

(6) Applications of pesticides, herbicides, fungicides, and other chemicals, including fertilizers, in violation of label restrictions.

(7) Withdrawal of surface or ground waters to the point at which baseflows in water courses (e.g., creeks, streams, rivers) occupied by the peppered chub diminish and habitat becomes unsuitable for the species.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Arlington, Texas, Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

II. Critical Habitat

Background

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Our regulations at 50 CFR 424.02 define the geographical area occupied by the species as an area that may generally be delineated around species' occurrences, as determined by the Secretary (i.e., range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely, by vagrant individuals). Additionally, our regulations at 50 CFR 424.02 define the word "habitat," for the purposes of designating critical habitat only, as the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation also does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the Federal agency would be required to consult with the Service under section 7(a)(2) of the Act. However, even if the Service were to conclude that the proposed activity would result in destruction or adverse modification of the critical habitat, the Federal action agency and the landowner are not required to abandon the proposed activity, or to restore or recover the species; instead, they must implement "reasonable and prudent alternatives" to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (PBFs) (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those PBFs that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those PBFs that occur in specific occupied areas, we focus on the specific features that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, prey, vegetation, symbiotic species, or other features. A feature may be a single

habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. The implementing regulations at 50 CFR 424.12(b)(2) further delineate unoccupied critical habitat by setting out three specific parameters: (1) when designating critical habitat, the Secretary will first evaluate areas occupied by the species; (2) the Secretary will only consider unoccupied areas to be essential where a critical habitat designation limited to geographical areas occupied by the species would be inadequate to ensure the conservation of the species; and (3) for an unoccupied area to be considered essential, the Secretary must determine that there is a reasonable certainty both that the area will contribute to the conservation of the species and that the area contains one or more of those PBFs essential to the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the *Federal Register* on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information from the SSA report and information developed during the listing process for the species. Additional information sources may include any generalized conservation strategy, criteria, or outline that may have been developed for the species; the recovery plan for the species; articles in peer-reviewed journals; conservation plans developed by States and counties; scientific status surveys and studies; biological assessments; other unpublished materials; or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act; (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species; and (3) the prohibitions found in section 9 of the Act. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of the species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans, or other species conservation planning efforts if new information available at the time of those planning efforts calls for a different outcome.

In our SSA report and the proposed listing determination for the peppered chub, we determined that the present or threatened destruction, modification, or curtailment of habitat or range is a threat to the peppered chub and that those threats in some way can be addressed by section 7(a)(2) consultation measures. Accordingly, such a designation could be beneficial to the species. Therefore, because none of the circumstances enumerated in our regulations at 50 CFR 424.12(a)(1) has been met and because there are no other circumstances the Secretary has identified for which this designation of critical habitat would be not prudent, we have determined that the designation of critical habitat is prudent for the peppered chub. We have also reviewed the available information pertaining to the biological needs of the species and habitat characteristics where the species is located. This and other information represent the best scientific data available and led us to conclude that the designation of critical habitat is determinable for the peppered chub.

Physical or Biological Features Essential to the Conservation of the Species

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas we will designate as critical habitat from within the geographical area occupied by the species at the time of listing, we consider the physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. The regulations at 50 CFR 424.02 define "physical or biological features essential to the conservation of the species" as the features that occur in specific areas and that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions.

Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. For example, physical features essential to the conservation of the species might include gravel of a particular size required for spawning, alkaline soil for seed germination, protective cover for migration, or susceptibility to flooding or fire that maintains necessary early-successional habitat characteristics. Biological features might include prey species, forage grasses, specific kinds or ages of trees for roosting or nesting, symbiotic fungi, or a particular level of nonnative species consistent with conservation needs of the listed species. The features may also be combinations of habitat characteristics and may encompass the relationship between characteristics or the necessary amount of a characteristic essential to support the life history of the species.

In considering whether features are essential to the conservation of the species, we may consider an appropriate quality, quantity, and spatial and temporal arrangement of habitat characteristics in the context of the life-history needs, condition, and status of the species. These characteristics include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance.

We have analyzed: (1) The PBFs that are essential to the conservation of the species and which may require special management considerations or protection under the Act; (2) the criteria used to define the areas occupied at the time of listing for the species; and (3) the criteria used to identify critical habitat boundaries or unoccupied habitat suitable for designation. Any comments received on the proposed rule were taken into account when this analysis was undertaken to revise PBFs where necessary. Based on public comment we did not need to revise PBFs, identification criteria for the species,

or where the PBFs exist on the landscape to determine the geographic extent of each critical habitat unit.

Summary of Essential Physical or Biological Features

We derive the specific PBFs essential to the conservation of peppered chub from studies of the species' habitat, ecology, and life history as described below. Additional information can be found in the SSA report (Service 2022, entire) and the discussion in the "Summary of Essential Physical or Biological Features" section of the preamble to the proposed rule (85 FR 77108; December 1, 2020).

We have determined that the following PBFs are essential to the conservation of peppered chub:

PBF 1: Unobstructed river segments greater than 127 river miles (rmi) (205 river kilometers (rkm)) in length that are characterized by a complex braided channel and substrates of predominantly sand, with some patches of silt, gravel, and cobble.

PBF 2: Flowing water with adequate depths to support all life stages and episodes of elevated discharge to facilitate successful reproduction, channel and floodplain maintenance, and sediment transportation.

PBF 3: Water of sufficient quality to support survival and reproduction, which includes, but is not limited to, the following conditions:

(i) Water temperatures generally less than 98.2 degrees Fahrenheit (°F) (36.8 degrees Celsius (°C));

(ii) Dissolved oxygen concentrations generally greater than 3.7 parts per million (ppm);

(iii) Conductivity generally less than 16.2 millisiemens per centimeter (mS/cm);

(iv) pH generally ranging from 5.6 to 9.0; and

(v) Sufficiently low petroleum and other pollutant concentrations such that

reproduction and/or growth is not impaired.

PBF 4: Native riparian vegetation capable of maintaining river water quality, providing a terrestrial prey base, and maintaining a healthy riparian ecosystem.

PBF 5: A level of predatory or competitive, native or nonnative fish present such that any peppered chub population's resiliency is not affected.

Special Management Considerations or Protection

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features which are essential to the conservation of the species and which may require special management considerations or protection. The features essential to the conservation of the peppered chub may require special management considerations or protections to reduce the following threats: (1) Altered flow regimes, including (but not limited to) dams and impoundments and groundwater extraction; (2) stream fragmentation; (3) modified geomorphology; (4) poor water quality; (5) impacts from introduction of invasive species (fish and vegetation) and the introduction of native competitors for sport fishing; and (6) other stressors including (but not limited to) gravel mining and dredging, commercial bait fish harvesting, and off-road vehicle use.

Management activities that could ameliorate these threats include, but are not limited to: Development of groundwater conservation strategies; removal of impoundments or creation of fish passage, development of water release strategies for reservoirs; minimization of in-channel work from utility or road projects; maintenance of bank stability and revegetation of impacted areas; incorporation of integrated pest management strategies (for saltcedar (*Tamarix* spp.) and other invasive plants); and development of best management practices to reduce pollutant discharges and to develop water conservation measures that reduce the need for water diversions.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat. We are designating critical habitat in areas within the geographical area occupied by the species at the time of listing. We also are designating specific areas outside the geographical area occupied by the species because we have determined that a designation limited to occupied areas would be inadequate to ensure the conservation of the species.

Designation of occupied areas alone is inadequate for conservation of the species because the current distribution of the species is much reduced from its historical range. We anticipate that recovery will require continued protection of the existing population and its habitat, as well as reintroduction of peppered chub into historically occupied areas, ensuring there are adequate numbers in stable populations and that these populations occur over a wide geographic area. This strategy will help to ensure that catastrophic events, such as the effects of drought, are unlikely to simultaneously affect all known populations. For these reasons, we are reasonably certain that these unoccupied areas will contribute to the conservation of the species. Moreover, both of the unoccupied areas that we are designating as critical habitat contain one or more of the PBFs required by the peppered chub and fall within the regulatory definition of "habitat" at 50 CFR 424.02. Additionally, rangewide recovery considerations, such as maintaining existing genetic diversity and striving for representation of all major portions of the species' current range, were considered in formulating this critical habitat designation.

Sources of data for this critical habitat designation include multiple databases maintained by Arkansas Game and Fish Commission; Fishes of Texas; Colorado Parks and Wildlife Department; Kansas Department of Wildlife, Parks and Tourism; New Mexico Department of Game and Fish; New Mexico Interstate Stream Commission; Oklahoma Department of Environmental Quality; Texas Parks and Wildlife Department; Oklahoma State University; University of New Mexico Museum of Southwestern Biology; and New Mexico Department of Game and Fish, as well as numerous survey reports on rivers and streams throughout the species' range (see SSA report). We have also reviewed available information that pertains to the habitat requirements of this species. Sources of information on habitat requirements include studies conducted at occupied sites and published in peer-reviewed articles and agency reports, and data collected during monitoring efforts.

Our review of occupied range of the peppered chub is based on numerous species experts who concluded that, by the year 2000, the peppered chub had significantly declined and was isolated to the South Fork Ninnescah River in Kansas and the South Canadian River between Ute Reservoir in New Mexico and Lake Meredith in the Texas panhandle (Luttrell et al. 1999, entire; Eisenhour 1999, entire; Eisenhour 2004, entire). Using data from more than 1,800 fish collections, we define "currently occupied" as river reaches with positive surveys from 2013 to 2017 (Service 2022, chapter 4). By the year 2013, the peppered chub was no longer being observed in the Ninnescah River in Kansas, despite extensive survey efforts. The peppered chub continues to be observed in surveys in the South Canadian River between the Ute Reservoir and Lake Meredith, and this is the only area we considered to be currently occupied. We are designating one occupied unit as critical habitat for the peppered chub in the upper South Canadian River.

In summary, for areas within the geographic area occupied by the species at the time of listing (Upper South Canadian River; Unit 1), we delineated the critical habitat unit boundary using the following criteria:

The one remaining population of peppered chub has a low level of resiliency (see table 1, above), and, because of its relatively short life cycle (~2 years), a series of back-to-back stochastic events could significantly reduce or extirpate the remaining population. The peppered chub range has been highly restricted (~6 percent remaining); therefore, its adaptive capacity (representation) has been dramatically reduced. The significantly reduced range reduces peppered chub exposure to ecologically diverse habitats and reduces its ability to adapt to changing environments over time.

A low-resiliency single population provides little redundancy for the species, and a single catastrophic event could cause species extinction. Consequently, we have determined that occupied areas alone are not adequate for the conservation of the species. We evaluated whether any unoccupied areas are essential for the conservation of the species, and we are designating critical habitat in two units that are currently unoccupied. We have determined that each is essential for the conservation of the species. Both units have at least one of the PBFs essential to the conservation of the species, and we are reasonably certain that each will contribute to the conservation of the species. Our specific rationale for each unit can be found below in the unit descriptions.

Peppered chub has been completely extirpated from all but a single river reach within its historical range. Additionally, the one remaining population was found to be in "low" condition in our resiliency analysis and protecting it alone would not sufficiently conserve the species. Additional healthy populations are needed because of the inherent threat from environmental stochasticity (such as a multiyear drought) and the possibility that the species could be extirpated in a relatively short period of time, given a 2-year life

cycle. Furthermore, a single catastrophic event could extirpate the last remaining population, resulting in species extinction.

As a result, additional healthy populations of the peppered chub must be established to increase its viability and to recover the species. Having at least two sufficiently resilient populations in the Canadian River and at least one population in each of the Ninnescah and Cimarron Rivers is essential for the conservation of the peppered chub. Representation and redundancy have both been dramatically reduced by the species' limited current range. Due to the species' constricted range, it currently has a limited scope of its historical ecological setting and, therefore, has little to no opportunity to adapt to a changing environment over time.

The specific areas in these units encompass the minimum area of the species' historical range within the critical habitat designation, while still providing ecological diversity so that the species has the ability to evolve and adapt over time (representation) and ensure that the species has an adequate level of redundancy to guard against future catastrophic events.

These areas also represent the areas within the historical range with the best potential for recovery of the species due to their current conditions and likely suitability for reintroductions, based on uninterrupted stream length, overall habitat condition, and the presence of some or all of the PBFs essential to the conservation of the species. The unoccupied units that we have selected to designate for the peppered chub represent the smallest number of units that could be designated while still capturing the widest range of historical ecological settings and increasing redundancy. We are finalizing a designation with only three units (see table 2, below), because one unit from the proposed rule is being excluded based on our analysis under section 4(b)(2) of the Act (see **Exclusions** section below).

In addition to representation concerns, redundancy has been dramatically reduced and must be improved in order for the species to maintain viability into the future. The peppered chub was once common among several streams throughout the Arkansas River Basin and was highly redundant because it existed in many streams across a range. The species now occurs in one river segment in a small portion of its historical range. The species needs healthy populations distributed across its historical range to guard against catastrophic events. The two unoccupied units that were selected to capture the species' historical ecological settings are also essential to increasing the redundancy of the species.

Accordingly, we designate one unoccupied unit in the Canadian River and one unoccupied unit in the Cimarron River. Establishing healthy populations in these two currently unoccupied units would increase the resiliency, representation, and redundancy (viability) of the species. If reintroduced populations become established, each unoccupied unit will contribute ecological diversity (representation) or guard against catastrophic events (redundancy) or both. As described below in the individual unit descriptions, each unit contains one or more of the PBFs and is reasonably certain to contribute to the conservation of the species and meet the definition of habitat at 50 CFR 424.02.

See table 2, below for a summary of the critical habitat unit boundaries for areas outside the geographic area occupied by the species at the time of listing.

When determining critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack the PBFs necessary for peppered chub. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this rule have

been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action involving these lands will not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the PBFs in the adjacent critical habitat.

We are designating as critical habitat three critical habitat units, totaling approximately 872 rmi (1,404 rkm), one unit of which is currently occupied by the peppered chub and two units that are unoccupied. All three units are designated based on one or more of the PBFs being present to support peppered chub's life-history processes. Some units contain all of the identified PBFs and support multiple life-history processes. Some units contain only some of the PBFs necessary to support the peppered chub's particular use of that habitat. We are designating two unoccupied units because we have determined that the single occupied area is inadequate to ensure the conservation of the species. Therefore, we have also identified and designated as critical habitat unoccupied areas that contain one or more of the PBFs that are essential to support life-history processes of the species and that are essential for the conservation of the species.

The critical habitat designation is defined by the map or maps, as modified by any accompanying regulatory text, presented at the end of this document under **Regulation Promulgation**. We include more detailed information on the boundaries of the critical habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on *https://www.regulations.gov* at Docket No. FWS-R2-ES-2019-0019 and on our internet site *https://www.fws.gov/southwest/es/ArlingtonTexas* (see **FOR FURTHER INFORMATION CONTACT**).

Final Critical Habitat Designation

We are designating three units as critical habitat for peppered chub. The critical habitat areas we describe below constitute our current best assessment of areas that meet

the definition of critical habitat for peppered chub. The three areas we designate as critical habitat are: (1) Upper South Canadian River, (2) Lower South Canadian River, and (4) Cimarron River. Table 2, below shows the critical habitat units and the approximate area of each unit.

TABLE 2—FINAL CRITICAL HABITAT UNITS FOR PEPPERED CHUB

Critical Habitat Unit	Land Ownership by Type	Size of Unit in River Miles (Kilometers)	Occupied?
1. Upper South Canadian River	Federal; State; Private; Other	197 (317)	Yes
2. Lower South Canadian River	Federal; Tribal; Private; Other	400 (644)	No
4. Cimarron River	Federal; Tribal; State; Private; Other	275 (443)	No
Total		872 (1,404)	

Notes: Area estimates reflect all land within critical habitat unit boundaries. Area sizes may not sum due to rounding.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for peppered chub, below.

Unit 1: Upper South Canadian River, New Mexico and Texas

Unit 1 consists of approximately 197 river miles (rmi) (317 river kilometers (rkm)) comprising a portion of the South Canadian River originating below the Ute Dam west of Logan, New Mexico, and extending downstream to the delta of Lake Meredith, Texas; and a portion of Revuelto Creek originating at the Interstate Highway 40 bridge extending downstream to the confluence with the South Canadian River, New Mexico. Revuelto Creek is an important source of water and sediment for the Upper South Canadian River and is considered occupied. Unit 1 occurs largely within private land or land described as "other," which is land with non-Federal ownership that could not be determined but is likely to be Tribal or private.

Approximately 21 rmi (34 rkm) of adjacent lands are federally owned and managed by the National Park Service, and the Bureau of Reclamation. In addition, several small segments of public lands occur at bridge crossings, road easements, and the

like. There are state own lands adjacent to approximately 9 rmi (~15 rkm). The remaining lands are in private ownership status and are adjacent to approximately 167 rmi (~268 rkm) of the unit 1 designation.

This unit possesses those characteristics as described by PBF 1 (see **Physical or Biological Features Essential to the Conservation of the Species**, above). PBFs 2 and 3 are in degraded condition in this unit during some times of the year and are dependent upon water releases from Ute Reservoir, precipitation, and groundwater, but these PBFs are currently sufficient to maintain self-sustaining populations. Water management strategies could enhance PBFs 2 and 3 within this unit. Current management to address native riparian vegetation is ongoing throughout this unit as it pertains to PBF 4; however, additional efforts to improve streamflow and channel morphology/complexity (removal of flow obstructions, restoration of historical channel characteristics, etc.) could further benefit this species. Predatory and other fish that may compete with peppered chub are present in this unit, but any effect to peppered chub resiliency is unclear. Thus, management actions to achieve PBF 5 may be necessary if additional information indicates the species' resiliency is affected by predation or competition.

Unit 2: Lower South Canadian River, Texas and Oklahoma

Because we have determined occupied areas alone are not adequate for the conservation of the species, we have evaluated whether any unoccupied areas are essential for the conservation of the species and identified this area as essential for the conservation of the species. Unit 2 comprises approximately 400 rmi (644 rkm) consisting of the South Canadian River originating at the U.S. 83 bridge north of Canadian, Texas, and extending downstream to the U.S. 75 bridge northwest of Calvin, Oklahoma. Unit 2 occurs almost entirely within land under "other" land ownership, as described above under Unit 1. Approximately 13 rmi (21 rkm) is managed by the U.S. Army Corps of Engineers, and approximately >1 rmi (1 rkm) is held in trust by the

Bureau of Indian Affairs as Cheyenne-Arapaho Trust Land. In addition, several small segments of public land occur at bridge crossings, road easements, and the like. Historically, peppered chubs were observed in the lower portions of the South Canadian River. Peppered chubs were last reported in the South Canadian River resiliency unit in 1999. Currently, this river supports other pelagic-spawning prairie fish, such as the threatened Arkansas River shiner. This unit has at least one of the PBFs essential to the conservation of the species, and we are reasonably certain that this unit will contribute to the conservation of the species.

Although it is considered unoccupied, portions of this unit contain some or all of the PBFs essential for the conservation of the species (see **Physical or Biological Features Essential to the Conservation of the Species**, above.) Unit 2 possesses those characteristics as described by PBF 1 and is the longest unfragmented river segment within the historical range of the peppered chub. Although we have determined that peppered chubs require 127 rmi of unobstructed river characterized by a complex braided channel and substrates of predominantly sand, with some patches of silt, gravel, and cobble, that is the minimum number of river miles required to adequately facilitate reproduction and maintain a population, assuming all of the physical habitat requirements exist throughout the stretch of river (Service 2022, pp. 32 & 116). In order to establish populations, peppered chub need a longer river length that will not only adequately facilitate reproduction but also population growth (Service 2022, p. 97). Additionally, the required habitat factors (from PBF 1) do not exist throughout the entire river segment and, because the peppered chub has an approximate 2-year life cycle, any additional stream length would guard against extirpation due to multiyear droughts.

PBF 2 is degraded in the upper portion of this unit during some times of the year and is dependent upon precipitation and groundwater. Based on available data (OWRB 2017, pp. 39–43), PBF 3 is present throughout this unit. Current management to address

native riparian vegetation is ongoing throughout this unit as it pertains to PBF 4; however, these management efforts are not specifically directed at benefiting the peppered chub, and additional management efforts may be necessary. Management actions to control nonnative phreatophytic (deep rooted) vegetation upstream and within the upper portion of this unit could also improve PBF 2 by reducing evapotranspiration. Predatory and other fish that may compete with peppered chub are present in this unit, but any effect to peppered chub resiliency is unclear. Thus, management actions to achieve PBF 5 may be necessary if additional information suggests the species' resiliency is affected by predation or competition.

If a healthy population is established in this unit, it would likely be a moderately to highly resilient population due to longer stream length compared to other units and would increase the species' redundancy by one population. This unit is essential for the conservation of the species because it will provide habitat for range expansion in portions of known historical habitat that is necessary to increase viability of the species by increasing its resiliency, redundancy, and representation. A portion (approximately 238.2 rmi (383.3 rkm)) of listed Arkansas River shiner critical habitat is present in Unit 2.

For these reasons, we are reasonably certain that this unit will contribute to the conservation of the species. Additionally, the need for conservation efforts is recognized and is being discussed by our conservation partners, and researchers are working on methods for restoring and reintroducing the species into unoccupied habitat. The State of Oklahoma has identified the peppered chub as a tier III species of greatest conservation need (moderate level of conservation need) in the Oklahoma Comprehensive Wildlife Conservation Strategy (ODWC 2016, p. 399). The State strategy was developed to articulate the conservation strategies necessary to conserve their rare and declining wildlife species and maintain Oklahoma's rich biological heritage for present and future generations (ODWC 2016, p. 3). The strategy identifies several general conservation

actions that would improve PBFs 2, 3, and 4 and benefit the peppered chub, if a population were established and if the actions were implemented, such as providing funding to landowners to restore channel morphology, water conservation, coordinating further with the Service, and public education (ODWC 2016, pp. 45–46). State and Federal partners have shown interest in propagation and reintroduction efforts for the peppered chub in this area. As previously mentioned, efforts are underway regarding a captive propagation program for peppered chub at the Tishomingo National Fish Hatchery in Oklahoma. The State of Kansas, Tishomingo National Fish Hatchery, and the Oklahoma Fish and Wildlife Conservation Office collaborate regularly on conservation actions.

The State of Texas also recognizes the peppered chub as a species of greatest conservation need and gives the species a rank of S1 (i.e., at very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors). Texas is one of only two States where the species remains extant. The State has also identified the portion of the Canadian River within the boundaries of the State of Texas (portions of which are currently occupied and unoccupied areas inside this unit) as an ecologically significant stream because it has threatened and endangered species/unique communities present (Texas Water Development Board (TWDB) 2016, p. 8-2). The Canadian River segment in the panhandle of Texas is also significant because of the presence of unique, exemplary, or unusually extensive natural communities upon which water development projects would have significant detrimental effects (TWDB 2016, p. 8-2).

Proposed Unit 3: Arkansas/Ninnescah River, Kansas and Oklahoma

Proposed Unit 3 comprised approximately 179 rmi (288 rkm) consisting of the South Fork Ninnescah River originating at the Highway 54/400 bridge east of Pratt, Kansas, and extending downstream to the River Road Bridge east of Newkirk,

Oklahoma. The proposed unit occurs almost entirely on land under "other" land ownership, as described above under Unit 1. A small amount of this unit is publicly owned in the form of bridge crossings, road easements, and the like. Peppered chub were observed in the Ninnescah River in surveys between the years 2000 and 2013. We have excluded the entire unit from the final designation (see **Exclusions**, below). A description and map of this unit is maintained in the proposed rule for this designation (85 FR 77108).

Approximately 93 percent of this unit is located in the State of Kansas and contains the PBFs essential for the conservation of the species. In 2021, the State of Kanas signed The Kansas Aquatic Species Conservation Agreement: A Programmatic Safe Harbor Agreement and Candidate Conservation Agreement with Assurances for Fourteen Aquatic Species in Kansas (Agreement) that includes the peppered chub and covers the entire portion of this unit that falls within the boundaries of the State of Kansas. Because of the existence of the Agreement, the remaining 12 miles (less than seven percent) of the unit in Oklahoma no longer meets our criteria for designating critical habitat, we have excluded the entire unit from the final critical habitat designation (see **Exclusions**, below).

Unit 4: Cimarron River and Oklahoma

Because we have determined that occupied areas alone are not adequate for the conservation of the species, we evaluated whether any unoccupied areas are essential for the conservation of the species and identified this area as essential for the conservation of the species. Unit 4 comprises approximately 275 rmi (443 rkm) consisting of the Cimarron River originating at the border of Kansas and Oklahoma and extending downstream to the OK 51 bridge northeast of Oilton, Oklahoma. This unit occurs almost entirely on land under "other" land ownership, as described above under Unit 1. Approximately 0.86 rmi (1.38 rkm) is managed by the U.S. Army Corps of Engineers;

approximately 0.56 rmi (0.91 rkm) is managed by the Bureau of Land Management; and approximately 0.94 rmi (1.51 rkm) is held in trust by the Bureau of Indian Affairs as Sac and Fox Nation Trust Land and Pawnee Trust Land. In addition, small amounts of the unit are publicly owned in the form of bridge crossings, road easements, and the like. Historically, peppered chubs were observed in the Cimarron River. The peppered chub was last observed in the Cimarron River resiliency unit in 2011. This unit has at least one of the PBFs essential to the conservation of the species, and we are reasonably certain that it will contribute to the conservation of the species. Our specific rationale for this unit can be found below in this unit description.

Unit 4 is considered unoccupied; however, portions of this unit contain some or all of the PBFs necessary for the conservation of the species (see **Physical or Biological Features Essential to the Conservation of the Species**, above.) PBF 1 is present within this unit, as described in the Unit 2 description. PBF 2 is degraded in upstream portions of this unit during some times of the year (absent during elevated drought conditions) and is dependent upon precipitation and groundwater. Based on available data, PBF 3 is present throughout this unit with the exception of PBF 3(iii) (conductivity generally less than 16.2 mS/cm) along an approximate 79-mile portion upstream of Waynoka to Ames, Oklahoma. Management actions would likely be necessary to reduce conductivity in this area (OWRB 2017, pp. 49–56). Current management to enhance native riparian vegetation is ongoing throughout this unit as it pertains to PBF 4 and involves the removal/control of nonnative phreatophytic vegetation such as saltcedar, common reed, etc. Management actions to control nonnative phreatophytic vegetation upstream and within the upper portion of this unit could also improve PBFs 2 and 3 by reducing evapotranspiration. Phreatophytic plants such as saltcedar have high water consumption (increasing evapotranspiration) and stress aquatic habitats by lowering groundwater levels. Predatory and other fish that may compete with peppered chub are present in this

unit, but any effect to peppered chub resiliency is unclear. Thus, management actions to achieve PBF 5 may be necessary if additional information indicates the species' resiliency is affected by predation or competition.

As discussed above, peppered chub currently has little to no representation and redundancy. If established in this unit, a population would increase redundancy by one population, thereby guarding against catastrophic events, and would increase the species' ecological diversity (representation). This unit is essential for the conservation of the species because it will provide habitat for range expansion in portions of known historical habitat that is necessary to increase viability of the species by increasing its resiliency, redundancy, and representation. Critical habitat for the Arkansas River shiner is present within a portion (approximately 201.5 rmi (324.30 rkm)) of Unit 4 and, accordingly, similar conservation activities are already ongoing.

For these reasons, we are reasonably certain that this unit will contribute to the conservation of the species. Additionally, the need for conservation efforts has been recognized and is being discussed by our conservation partners, and methods for restoring and reintroducing the species into unoccupied habitat are ongoing. The State of Oklahoma has identified the peppered chub as a tier III species of greatest conservation need in the Oklahoma Comprehensive Wildlife Conservation Strategy (ODWC 2016, p. 399). The Oklahoma strategy was developed to articulate the conservation strategies necessary to conserve their rare and declining wildlife species and maintain Oklahoma's rich biological heritage for present and future generations (ODWC 2016, p. 3). The strategy identifies several general conservation actions that would improve PBFs 2, 3, and 4 and benefit the peppered chub, if a population were established and if the actions were implemented, such as providing funding to landowners to restore channel morphology, water conservation, coordinating further with the Service, and public education (ODWC 2016, pp. 45–46). Also, in Oklahoma, State and Federal partners have

shown interest in propagation and reintroduction efforts for the peppered chub. As previously mentioned, efforts are underway regarding a captive propagation program for peppered chub at the Tishomingo National Fish Hatchery in Oklahoma.

It is possible that significant drought conditions in the late 1980s and early 1990s led to the peppered chub decline and eventual extirpation in the Cimarron River (in Unit 4). The current condition of the unit, however, is likely to support populations once again (Service 2022, p. 150). Consequently, the shoal chub *(Macrhybobsis hyostoma)*, a species in the same genus as the peppered chub, has reestablished populations and continues to persist in the Cimarron River after previously experiencing significant declines (Lutrell et al. 1999, pp. 984–985), demonstrating that this unit would similarly be suitable for the peppered chub.

A relatively small portion of Unit 4 extends into the State of Kansas (approximately six percent) and is covered by The Kansas Aquatic Species Conservation Agreement: A Programmatic Safe Harbor Agreement and Candidate Conservation Agreement with Assurances for Fourteen Aquatic Species in Kansas. We have excluded approximately 17 miles (27 kilometers) of this unit from the final critical habitat designation because the benefits of exclusions outweigh the benefits of inclusion (see **Exclusions**, below).

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, 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.

We published a final rule revising the definition of destruction or adverse modification on August 27, 2019 (84 FR 44976). Destruction or adverse modification

means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq*.) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, Tribal, local, or private lands that are not federally funded, authorized, or carried out by a Federal agency—do not require section 7 consultation.

Compliance with the requirements of section 7(a)(2) is documented through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect, and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

(1) Can be implemented in a manner consistent with the intended purpose of the action,

(2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,

(3) Are economically and technologically feasible, and

(4) Would, in the Service Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 set forth requirements for Federal agencies to reinitiate formal consultation on previously reviewed actions. These requirements apply when the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law) and, subsequent to the previous consultation: (1) if the amount or extent of taking specified in the incidental take statement is exceeded; (2) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (4) if a new species is listed or critical habitat designated that may be affected by the identified action.

In such situations, Federal agencies sometimes may need to request reinitiation of consultation with us, but the regulations also specify some exceptions to the requirement to reinitiate consultation on specific land management plans after subsequently listing a

new species or designating new critical habitat. See the regulations for a description of those exceptions.

Application of the "Adverse Modification" Standard

The key factor related to the destruction or adverse modification determination is whether implementation of the proposed Federal action directly or indirectly alters the designated critical habitat in a way that appreciably diminishes the value of the critical habitat as a whole for the conservation of the listed species. As discussed above, the role of critical habitat is to support PBFs essential to the conservation of a listed species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may violate section 7(a)(2) of the Act by destroying or adversely modifying such habitat, or that may be affected by such designation.

Activities that the Service may, during a consultation under section 7(a)(2) of the Act, consider likely to destroy or adversely modify critical habitat include, but are not limited to:

(1) Replacement and maintenance of river crossings and bridges;

(2) Construction, replacement, maintenance, or removal of pipelines, or abandonment of pipelines or electrical lines crossing streams;

(3) Park maintenance and authorization of recreational activities by the U.S. National Park Service (e.g., permitting recreational off-road vehicle use at Lake Meredith Recreational Area);

(4) Operation and maintenance of salinity control programs;

(5) Dam maintenance, water releases from dams, and flow management via dams;

(6) Water withdrawals and groundwater withdrawals from reservoirs;

(7) Water development projects (such as new impoundments, diversions, or

reservoir projects);

(8) Watershed restoration activities;

(9) Stream restoration and habitat improvement;

(10) Stocking of nonnative fish or native fish that compete with the peppered chub;

(11) Oil and gas exploration and extraction; and

(12) New or expanded development of municipal or agricultural water supplies.

Exemptions

Application of Section 4(a)(3) of the Act

Section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) provides that the Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense (DoD), or designated for its use, that are subject to an integrated natural resources management plan (INRMP) prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation. There are no DoD lands with a completed INRMP within the final critical habitat designation.

Consideration of Impacts under Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate

whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise discretion to exclude the area only if such exclusion would not result in the extinction of the species. In making the determination to exclude a particular area, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor. We describe below the process that we undertook for taking into consideration each category of impacts and our analyses of the relevant impacts.

On December 18, 2020, we published a final rule in the *Federal Register* (85 FR 82376) revising portions of our regulations pertaining to exclusions of critical habitat. These final regulations became effective on January 19, 2021, and apply to critical habitat rules for which a proposed rule was published after January 19, 2021. Consequently, these new regulations do not apply to this final rule.

The Act affords a great degree of discretion to the Services in implementing section 4(b)(2). This discretion is applicable to a number of aspects of section 4(b)(2) including whether to enter into the discretionary 4(b)(2) exclusion analysis and the weights assigned to any particular factor used in the analysis. Most significant is that the decision to exclude is always discretionary, as the Act states that the Secretaries "may" exclude any areas. Under no circumstances is exclusion required under the second sentence of section 4(b)(2). There is no requirement to exclude, or even to enter into a discretionary 4(b)(2) exclusion analysis for any particular area identified as critical habitat. Accordingly, per our discretion, we have only done a full discretionary exclusion analysis when we received clearly articulated and reasoned rationale to exclude the area from this critical habitat designation.

Consideration of Economic Impacts

Section 4(b)(2) of the Act and its implementing regulations require that we consider the economic impact that may result from a designation of critical habitat. In order to consider economic impacts, we prepared an incremental effects memorandum (IEM) and screening analysis which, together with our narrative and interpretation of effects, we consider our draft economic analysis (DEA) of the proposed critical habitat designation and related factors (IEc 2019, entire). The analysis, dated February 19, 2019, was made available for public review from December 1, 2020, through February 1, 2021 (85 FR 77108). The DEA addressed probable economic impacts of critical habitat designation for peppered chub. Following the close of the comment period, we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of this critical habitat designation. Information relevant to the probable incremental economic impacts of the critical habitat designation for the peppered chub is summarized below and available in the screening analysis for the peppered chub (IEc 2019, entire), available at *https://www.regulations.gov*.

The full description of the findings from the DEA are outlined in the proposed rule (85 FR 77108; December 1, 2020). No more than 153 peppered chub consultations (148 informal and 5 formal) are anticipated in any given year (IEc 2019, p. 17). Proposed Unit 3 (Arkansas/Ninnescah River) had the highest potential costs, due in part to the fact that there is no overlapping critical habitat designation with the Arkansas River shiner in this unit. However, the Service is excluding proposed Unit 3 from the final critical habitat designation (see **Exclusions**, below). The estimated incremental costs of the total proposed critical habitat designation for the peppered chub in the first year was found to be unlikely to exceed $900,000, with proposed Unit 3 accounting for $500,000 of the total costs (2018 dollars) (IEc 2019, p. 17). Therefore, with the exclusion of proposed Unit 3, the estimated incremental costs of the total proposed critical habitat designation

for the peppered chub within the first year is unlikely to exceed $400,000. Thus, the annual administrative burden would not reach $100 million and, therefore, would not be significant (see Executive Order 12866: Regulatory Planning and Review).

Consideration of Impacts on National Security and Homeland Security

The Service must consider impacts on national security, including homeland security, under section 4(a)(3)(B)(i) and on those DoD lands or areas not covered by section 4(a)(3)(B)(i), because section 4(b)(2) requires the Service to consider those impacts whenever it designates critical habitat. Accordingly, if DoD, Department of Homeland Security (DHS), or another Federal agency has requested exclusion based on an assertion of national-security or homeland-security concerns, or we have otherwise identified national-security or homeland-security impacts from designating particular areas as critical habitat, we generally have reason to consider excluding those areas.

Consideration of Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security discussed above. Other relevant impacts may include, but are not limited to, impacts to Tribes, States, local governments, public health and safety, community interests, the environment (such as increased risk of wildfire or pest and invasive species management), Federal lands, and conservation plans, agreements, or partnerships. To identify other relevant impacts that may affect the exclusion analysis, we consider a number of factors, including whether there are permitted conservation plans covering the species in the area—such as habitat conservation plans (HCPs), safe harbor agreements (SHAs), or candidate conservation agreements with assurances (CCAAs)—or whether there are non-permitted conservation agreements and partnerships that may be impaired by designation of, or exclusion from, critical habitat (see Policy Regarding Implementation of Section 4(b)(2) of the Endangered Species Act: 81 FR 7226; February 11, 2016). In addition, we look at

whether Tribal conservation plans or partnerships, Tribal resources, or government-to-government relationships of the United States with Tribal entities may be affected by the designation. We also consider any State, local, public-health, community-interest, environmental, or social impacts that might occur because of the designation.

Exclusions

Exclusions Based on Economic Impacts

The Service considered the economic impacts of the critical habitat designation as described above. Based on this information, the Secretary has determined not to exercise her discretion to exclude any areas from this designation of critical habitat for the peppered chub based on economic impacts.

Exclusions Based on Impacts on National Security and Homeland Security

In preparing this rule, we have determined that the lands within the designation of critical habitat for peppered chub are not owned or managed by DoD or DHS. We also received no requests for exclusion from DoD or DHS. Therefore, we anticipate no impact on national security or homeland security. Based on this information, the Secretary has determined not to exercise her discretion to exclude any areas from this designation of critical habitat for the peppered chub based on impacts on national security or homeland security.

Exclusions Based on Other Relevant Impacts

When analyzing other relevant impacts of including a particular area in a designation of critical habitat, we weigh those impacts relative to the conservation value of the particular area. To determine the conservation value of designating a particular area, we consider a number of factors, including, but not limited to, the additional regulatory benefits that the area would receive due to the protection from destruction or adverse modification as a result of actions with a Federal nexus, the educational benefits of mapping essential habitat for recovery of the listed species, and any benefits that may

result from a designation due to State or Federal laws that may apply to critical habitat.

In the case of peppered chub, the benefits of critical habitat include public awareness of the presence of peppered chub and the importance of habitat protection, and, where a Federal nexus exists, increased habitat protection for peppered chub due to protection from destruction or adverse modification of critical habitat. Continued implementation of an ongoing management plan that provides conservation equal to or more than the protections that result from a critical habitat designation would reduce those benefits of including that specific area in the critical habitat designation.

We evaluate the existence of a conservation plan when considering the benefits of inclusion. We consider a variety of factors, including, but not limited to, whether the plan is finalized; how it provides for the conservation of the essential PBFs; whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan will be implemented into the future; whether the conservation strategies in the plan are likely to be effective; and whether the plan contains a monitoring program or adaptive management to ensure that the conservation measures are effective and can be adapted in the future in response to new information.

After identifying the benefits of inclusion and the benefits of exclusion, we carefully weigh the two sides to evaluate whether the benefits of exclusion outweigh those of inclusion. If our analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, we then determine whether exclusion would result in extinction of the species. If exclusion of an area from critical habitat will result in extinction, we will not exclude it from the designation.

Based on the information provided by entities seeking exclusion, as well as any additional public comments we received, we evaluated whether certain lands in the proposed critical habitat Units 3 and 4 are appropriate for exclusion from the final designation under section 4(b)(2) of the Act. This analysis indicates that the benefits of

excluding lands from the final designation outweigh the benefits of designating those lands as critical habitat; thus, the Secretary is exercising her discretion to exclude the lands from the final designation.

Based on the existence of private or non-Federal conservation plans, as discussed below, we are excluding the following areas under section 4(b)(2) of the Act from the final critical habitat designation for peppered chub. Table 3, below provides approximate areas (rmi, rkm) that meet the definition of critical habitat but which we are excluding under section 4(b)(2) of the Act from the final critical habitat designation.

TABLE 3—AREAS EXCLUDED BY CRITICAL HABITAT UNIT FOR THE PEPPERED CHUB

Proposed Critical Habitat Unit	Proposed Critical Habitat (rmi (rkm))	Area Excluded (rmi (rkm))	Final Critical Habitat (rmi (rkm))
3: Arkansas/Ninnescah River	179 (288)	179 (288)	0
4: Cimarron River	292 (470)	17 (27)	275 (443)

Private or Other Non-Federal Conservation Plans Related to Permits Under Section 10 of the Act

HCPs for incidental take permits under section 10(a)(1)(B) of the Act provide for partnerships with non-Federal entities to minimize and mitigate impacts to listed species and their habitat. In some cases, HCP permittees agree to do more for the conservation of the species and their habitats on private lands than designation of critical habitat would provide alone. We place great value on the partnerships that are developed during the preparation and implementation of HCPs.

CCAAs and SHAs are voluntary agreements designed to conserve candidate and listed species, respectively, on non-Federal lands. In exchange for actions that contribute to the conservation of species on non-Federal lands, participating property owners are covered by an “enhancement of survival” permit under section 10(a)(1)(A) of the Act, which authorizes incidental take of the covered species that may result from implementation of conservation actions, specific land uses, and, in the case of SHAs, the

option to return to a baseline condition under the agreements. The Service also provides enrollees assurances that we will not impose further land-, water-, or resource-use restrictions, or require additional commitments of land, water, or finances, beyond those agreed to in the agreements.

When we undertake a discretionary section 4(b)(2) exclusion analysis based on permitted conservation plans such as CCAAs, SHAs, and HCPs, we consider the following three factors:

(i) Whether the permittee is properly implementing the conservation plan or agreement;

(ii) Whether the species for which critical habitat is being designated is a covered species in the conservation plan or agreement; and

(iii) Whether the conservation plan or agreement specifically addresses the habitat of the species for which critical habitat is being designated and meets the conservation needs of the species in the planning area. See Policy Regarding Implementation of Section 4(b)(2) of the Endangered Species Act: 81 FR 7226; February 11, 2016.

We have determined that The Kansas Aquatic Species Conservation Agreement: A Programmatic Safe Harbor Agreement and Candidate Conservation Agreement with Assurances for Fourteen Aquatic Species in Kansas (Agreement) fulfills the above criteria, and we are excluding non-Federal lands covered by this plan that provide for the conservation of peppered chub, as further explained below.

Proposed Units 3 and 4—The Kansas Aquatic Species Conservation Agreement: A Programmatic Safe Harbor Agreement and Candidate Conservation Agreement with Assurances for Fourteen Aquatic Species in Kansas

In 2021, the Secretary of the Kansas Department of Wildlife, Parks and Tourism signed The Kansas Aquatic Species Conservation Agreement: A Programmatic Safe Harbor Agreement and Candidate Conservation Agreement with Assurances for Fourteen

Aquatic Species in Kansas (hereafter, the "Agreement"). The Agreement was part of an application for an enhancement-of-survival permit under section 10(a)(1)(A) of the Federal Endangered Species Act. The Agreement facilitates the introduction, reintroduction, augmentation, and translocation of, and conserves the habitat of, imperiled native aquatic species in the State of Kansas. The Agreement, a programmatic SHA and a CCAA, is between the Kansas Department of Wildlife, Parks and Tourism (KDWPT) and the Service, collectively, "the Parties."

The Agreement covers all eligible, non-Federal lands in the State of Kansas, for all eligible non-Federal landowners who wish to participate in the Agreement (Cooperator). Non-Federal lands are those lands owned by non-Federal landowners which include, but are not limited to, State, Tribal, regional, or local governments; private or nonprofit organizations; or private citizens. By entering into this Agreement, the Parties are using the Service's SHA and CCAA programs to further the conservation of the Nation's fish and wildlife. Both components of this Agreement and their associated permits target non-Federal lands in Kansas, whose owners or land managers are willing to engage in habitat management actions to benefit the species covered by the Agreement (Covered Species).

For a Cooperator to obtain an enhancement-of-survival permit under the Agreement, the Service must determine that there is a reasonable expectation of a net conservation benefit to the Covered Species (50 CFR 17.32 (c)(2)(ii) and (e)(2)(ii)). The duration of the Agreement is 50 years from its effective date. Each participating landowner, or Cooperator, will enroll in the SHA, CCAA, or both, through a Landowner Management Agreement (Landowner Agreement). Once the Landowner Agreement is signed, KDWPT will issue the Cooperator a Certificate of Inclusion (COI). The duration of the Landowner Agreements entered into under the Agreement and the associated COI will be for the remaining duration of the permit unless another time period is agreed upon

by the Parties and the Cooperator.

The conservation goals of the Agreement are to increase the resiliency, redundancy, and representation of the Covered Species' populations through reintroductions and protect, enhance, and expand habitat availability (stream bed and banks). Under the Agreement, Cooperators will maintain habitat available to the Covered Species and will assist with habitat conservation for the remainder of the term of the Agreement. Cooperators will facilitate the ability to reintroduce and augment populations, and manage enrolled lands, as agreed to in their Landowner Agreement, in a manner that maintains existing habitat and improves and restores habitat for the Covered Species.

Expected outcomes of implementing the Agreement include the protection, enhancement, and restoration of instream habitat, improved water quality, reduced erosion and sedimentation, improved riparian habitat, and improved land use practices on enrolled lands during the term of the Agreement. The reintroduction activities included in the Agreement will increase probability that Covered Species will expand their range and survive and recruit new cohorts in reintroduced areas. Criteria for eligible landowners with land neighboring peppered chub habitat is: "Mainstem of waterbody where reintroduction occurs extending onto adjoining parcels, plus direct tributaries containing suitable habitat. Eligible property must support suitable habitat (i.e., permanently flowing channels with sandy substrates)" per the Agreement. The Agreement in its entirety can be found at: *https://www.fws.gov/mountain-prairie/ea/newsAndReleases.php*.

Benefits of Inclusion—State of Kansas (Proposed Units 3 and 4): The principal benefit of including an area in critical habitat designation is the requirement of Federal agencies to ensure that actions that they fund, authorize, or carry out are not likely to result in the destruction or adverse modification of any designated critical habitat, which

is the regulatory standard of section 7(a)(2) of the Act under which consultation is completed. In areas where a listed species occurs, Federal agencies must consult with the Service on actions that may affect a listed species, and refrain from actions that are likely to jeopardize the continued existence of such species. The analysis of effects to critical habitat is a separate and different analysis from that of the effects to the species. Therefore, the difference in outcomes of these two analyses represents the regulatory benefit of critical habitat. For some cases, the outcome of these analyses will be similar, because effects to habitat will often result in effects to the species. However, in this case, peppered chubs do not occur in the areas of proposed Units 3 and 4 (unoccupied units) considered for exclusion. Critical habitat designation may provide a regulatory benefit for the peppered chub on lands covered under the Agreement when there is a Federal nexus present for a project that might adversely modify critical habitat. However, the areas that were considered for exclusion do not contain a large amount of Federal land where such a nexus would exist.

Another possible benefit of including lands in critical habitat is public education regarding the potential conservation value of an area that may help focus conservation efforts on areas of high conservation value for certain species. We consider any information about the peppered chub and its habitat that reaches a wide audience, including parties engaged in conservation activities, to be valuable. Designation of critical habitat would provide educational benefits by informing Federal agencies and the public about the presence of listed species for all units.

In summary, we find that the benefits of inclusion of approximately 196 rmi (315 rkm) in proposed Units 3 and 4 of waterways within the State of Kansas are: (1) A regulatory benefit when there is a Federal nexus present for a project that might adversely modify critical habitat; and (2) educational benefits for the peppered chub and its habitat.

Benefits of Exclusion—State of Kansas (Proposed Units 3 and 4): The benefits of excluding 196 rmi (315 rkm) in Kansas waterways under the Agreement from the designation of critical habitat for the peppered chub are substantial and include: (1) Continuance and strengthening of our effective working relationship with private landowners to promote voluntary, proactive conservation of the peppered chub and its habitat as opposed to reactive regulation; (2) allowance for continued meaningful collaboration and cooperation in working toward species recovery, including conservation benefits that might not otherwise occur; (3) the State of Kansas reviewed the Agreement as a partner in development and has ensured required determinations are necessary and advisable; (4) the Agreement has a monitoring program to ensure conservation measures are effective; and (5) encouragement of developing additional conservation easements and other conservation and management plans in the future for other federally listed and sensitive species.

Many landowners perceive critical habitat as an unfair and unnecessary regulatory burden. According to some, the designation of critical habitat on (or adjacent to) private lands may reduce the likelihood that landowners will support and carry out conservation actions (Main et al. 1999, pp. 1,263–1265; Bean 2002, p. 412). The magnitude of this negative outcome is greatly amplified in situations where active management measures (such as reintroduction, fire management, and control of invasive species) are necessary for species conservation (Bean 2002, pp. 412–414). We find that the exclusion of this specific area of non-federally owned lands from the critical habitat designation for peppered chub can contribute to the species recovery and provide a superior level of conservation than critical habitat can provide alone. We find that, where consistent with the discretion provided by the Act, it is necessary to implement policies that provide positive incentives to private landowners to voluntarily conserve natural resources and that remove or reduce disincentives to conservation (Wilcove et al. 1996, pp. 1–15; Bean

2002, entire).

Additionally, partnerships with non-Federal landowners are vital to the conservation of listed species, especially on non-Federal lands; therefore, the Service is committed to supporting and encouraging such partnerships through the recognition of positive conservation contributions. In the case considered here, excluding these areas from critical habitat will help foster the partnerships the landowners and land managers in question have developed with Federal and State agencies and local conservation organizations; will encourage the continued implementation of voluntary conservation actions for the benefit of the peppered chub and its habitat on these lands; and may also serve as a model and aid in fostering future cooperative relationships with other parties here and in other locations for the benefit of other endangered or threatened species. Therefore, we consider the positive effect of excluding from critical habitat areas managed by active conservation partners to be a significant benefit of exclusion.

Benefits of Exclusion Outweigh the Benefits of Inclusion—State of Kansas, Proposed Units 3 and 4: We evaluated the exclusion of 196 rmi (315 rkm) of waterways adjacent to private land within the areas covered by the Agreement from our designation of critical habitat, and we determined the benefits of excluding these lands outweigh the benefits of including them as critical habitat for the peppered chub.

We conclude that the additional regulatory and educational benefits of including these lands as critical habitat are relatively small, because of the unlikelihood of a Federal nexus on these private lands. These benefits are further reduced by the existence of the Agreement. We anticipate that there would be little additional Federal regulatory benefit to the taxon on private land because there is a low likelihood that those parcels will be negatively affected to any significant degree by Federal activities requiring section 7 consultation, and ongoing management activities indicate there would be no additional requirements pursuant to a consultation that addresses critical habitat.

Furthermore, the potential educational and informational benefits of critical habitat designation on areas containing the PBFs essential to the conservation of the peppered chub would be minimal, because the landowners and land managers under consideration have demonstrated their knowledge of the species and its habitat needs in the process of developing their partnerships with the Service.

In contrast, the benefits derived from excluding the areas managed by these owners and enhancing our partnership with these landowners and land managers is significant. Because voluntary conservation efforts for the benefit of listed species on non-Federal lands are so valuable, the Service considers the maintenance and encouragement of conservation partnerships to be a significant benefit of exclusion. The development and maintenance of effective working partnerships with non-Federal landowners for the conservation of listed species is particularly important in areas such as Kansas, a State with relatively little Federal landownership, but many species of conservation concern. Excluding these areas from critical habitat will help foster the partnerships the landowners and land managers in question have developed with Federal and State agencies and local conservation organizations, and will encourage the continued implementation of voluntary conservation actions for the benefit of the peppered chub and its habitat on these lands. The current active conservation efforts on some of these areas contribute to our knowledge of the species through monitoring and scientific research. In addition, these partnerships not only provide a benefit for the conservation of these species, but may also serve as a model and aid in fostering future cooperative relationships with other parties in this area of Kansas and in other locations for the benefit of other endangered or threatened species.

We find that excluding areas from critical habitat that are receiving both long-term conservation and management for the purpose of protecting the habitat that supports the peppered chub will preserve our partnership with the private landowners in the State

of Kansas and will encourage future collaboration towards conservation and recovery of listed species. The partnership benefits are significant and outweigh the small potential regulatory, educational, and ancillary benefits of including the land in the final critical habitat designation for the peppered chub. Therefore, the Agreement provides greater protection of habitat for the peppered chub than could be gained through the project-by-project analysis of a critical habitat designation.

Exclusion Will Not Result in Extinction of the Species—State of Kansas; Proposed Units 3 and 4: We determined that the exclusion of 196 rmi (315 rkm) of waterways within the boundaries of the State of Kansas covered by the Agreement will not result in extinction of the taxon. Protections afforded to the species and its habitat by the Agreement provide assurances that the species will not go extinct as a result of excluding these lands from the critical habitat designation.

An important consideration as we evaluate these exclusions and their potential effect on the species in question is that critical habitat does not carry with it a regulatory requirement to restore or actively manage habitat for the benefit of listed species; the regulatory effect of critical habitat is only the avoidance of destruction or adverse modification of critical habitat should an action with a Federal nexus occur. It is, therefore, advantageous for the conservation of the species to support the proactive efforts of non-Federal landowners who are contributing to the enhancement of essential habitat features for listed species through exclusion. The jeopardy standard of section 7 of the Act will also provide protection in these occupied areas when there is a Federal nexus. Therefore, based on the above discussion, the Secretary is exercising her discretion to exclude approximately 196 rmi (315 rkm) of waterways from the designation of critical habitat for the peppered chub.

Required Determinations

Regulatory Planning and Review (Executive Orders 12866 and 13563)

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget will review all significant rules. OIRA has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

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

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C. 801 *et seq.*), 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 that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small

organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than $5 million in annual sales, general and heavy construction businesses with less than $27.5 million in annual business, special trade contractors doing less than $11.5 million in annual business, and agricultural businesses with annual sales less than $750,000. To determine whether potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

Under the RFA, as amended, and as understood in light of recent court decisions, Federal agencies are required to evaluate only 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. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, 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 requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies will be directly regulated by this designation. The RFA does not require evaluation of the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small

entities. Therefore, because no small entities will be directly regulated by this rulemaking, the Service certifies that this critical habitat designation will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

During the development of this final rule, we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of this critical habitat designation. Based on this information, we affirm our certification that this final critical habitat designation will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare statements of energy effects when undertaking certain actions. We do not find that this critical habitat designation will significantly affect energy supplies, distribution, or use, as the areas identified as critical habitat are along riparian corridors in mostly remote areas with little energy supply, distribution, or infrastructure in place. Therefore, this action is not a significant energy action, and no statement of energy effects is required.

Unfunded Mandates Reform Act (2 U.S.C. 1501)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are defined in 2 U.S.C. 658(5)–(7). "Federal intergovernmental mandate" includes a

regulation that "would impose an enforceable duty upon State, local, or Tribal governments" with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary Federal program," unless the regulation "relates to a then-existing Federal program under which $500,000,000 or more is provided annually to State, local, and Tribal governments under entitlement authority," if the provision would "increase the stringency of conditions of assistance" or "place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding," and the State, local, or Tribal governments "lack authority" to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. "Federal private sector mandate" includes a regulation that "would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program."

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would

critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments because the lands being designated for critical habitat are owned by the States of New Mexico, Texas, and Oklahoma and the Federal Government (National Park Service, Bureau of Land Management, Bureau of Reclamation, and Service). We have determined that this rule will not significantly or uniquely affect small governments because it will not produce a Federal mandate of $100 million or greater in any year; that is, it is not a "significant regulatory action" under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. Consequently, we have determined that this critical habitat designation will not significantly or uniquely affect small government entities. As such, a small government agency plan is not required.

Takings—Executive Order 12630

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for the peppered chub in a takings implications assessment. The Act does not authorize the Service to regulate private actions on private lands or confiscate private property as a result of critical habitat designation. Designation of critical habitat does not affect land ownership or establish any closures or restrictions on use of or access to the designated areas. Furthermore, the designation of critical habitat does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal

funding or permits to go forward. However, Federal agencies are prohibited from carrying out, funding, or authorizing actions that would destroy or adversely modify critical habitat. A takings implications assessment has been completed and concludes that this designation of critical habitat for the peppered chub does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with E.O. 13132 (Federalism), this rule does not have significant federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of the critical habitat designation with, the appropriate State resource agencies. From a federalism perspective, the designation of critical habitat directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the rule does not have substantial direct effects either on the State, or on the relationship between the Federal Government and the State, or on the distribution of powers and responsibilities among the various levels of government. The designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the PBFs of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist these State and local governments in long-range planning because these local governments no longer have to wait for case-by-case section 7 consultations to occur.

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) will be required. While non-Federal entities that receive Federal funding,

assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, this rule identifies the physical or biological features essential to the conservation of the species. The designated areas of critical habitat are presented on maps, and the rule provides several options for the interested public to obtain more detailed location information, if desired.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain information collection requirements, and a submission to the OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) is not required. We may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a currently valid OMB control number.

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

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

when the range of the species includes States within the Tenth Circuit, such as that of the peppered chub, under the Tenth Circuit ruling in *Catron County Board of Commissioners* v. *U.S. Fish and Wildlife Service*, 75 F.3d 1429 (10th Cir. 1996), we undertake a NEPA analysis for critical habitat designation.

We performed the NEPA analysis, and the draft environmental assessment was made available for public comment on April 21, 2021, on the Arlington Ecological Services Field Office website (below). We emailed notices to 39 individuals, agencies, organizations, and Tribes that were likely to be interested in and/or potentially affected by the proposed action. We accepted public comments through May 24, 2021, and received comments from the Kansas Farm Bureau, Oklahoma Farm Bureau, New Mexico Department of Game and Fish, New Mexico Interstate Stream Commission, the Petroleum Alliance of Oklahoma, and the Texas Commission on Environmental Quality. The final environmental assessment and finding of no significant impact have been completed and are available for review with the publication of this final rule. You may obtain a copy of the documents online at *https://www.regulations.gov*, by mail from the Arlington, Texas, Ecological Services Field Office (see **ADDRESSES**), or by visiting our website at *https://www.fws.gov/southwest/es/ArlingtonTexas/*.

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), Executive Order 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 recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial 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 a letter dated September 7, 2017, we informed the Tribal leadership of nine Tribal nations (Pueblo of Cochiti, Pueblo of Isleta, Pueblo of Jemez, Pueblo of Tesuque, Pueblo of Zuni, Hopi Tribe, Jicarilla Apache Nation, Mescalero Apache Tribe, and the Navajo Nation) near or within the range of the peppered chub in the State of New Mexico of our intent to conduct a status assessment for the peppered chub. In a letter sent October 18, 2017, we informed all Tribal entities in the State of Oklahoma of our intent to conduct a status assessment. In a letter dated November 6, 2018, we sought the input of the Sac and Fox Nation and the Cheyenne and Arapaho Tribes of Oklahoma for their input on the potential economic impact of designating critical habitat for the peppered chub. We received a response from the Sac and Fox Nation providing input for a potential critical habit designation and incorporated the information into our screening analysis.

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 Arlington, Texas, Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this final rule are the staff members of the Fish and Wildlife Service's Species Assessment Team and the Arlington, Texas, Ecological Services Field Office.

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, amend the table in paragraph (h) by adding an entry for "Chub, peppered" to the List of Endangered and Threatened Wildlife 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				
* * * * * * *				
Chub, peppered	*Macrhybopsis tetranema*	Wherever found	E	87 FR [INSERT *FEDERAL REGISTER* PAGE WHERE THE DOCUMENT BEGINS]; [INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]; 50 CFR 17.95(e).[CH]
* * * * * * *				

3. In § 17.95, amend paragraph (e) by adding an entry for "Peppered Chub (*Macrhybopsis tetranema*)" after the entry for "Owens Tui Chub (*Gila bicolor snyderi*)" to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(e) *Fishes*.

* * * * *

Peppered Chub (*Macrhybopsis tetranema*)

(1) Critical habitat units are depicted for Quay County, New Mexico; Hemphill, Moore, Oldham, and Potter Counties, Texas; and Blaine, Caddo, Canadian, Cleveland, Creek, Custer, Dewey, Ellis, Grady, Harper, Hughes, Kingfisher, Logan, Major, McClain, Payne, Pontotoc, Pottawatomie, Roger Mills, Seminole, Woods, and Woodward Counties, Oklahoma, on the maps in this entry. The critical habitat units include Units 1, 2, and 4 as Unit 3 was excluded during the rulemaking process.

(2) Within these areas, the physical or biological features essential to the conservation of peppered chub consist of the following components:

(i) Unobstructed river segments greater than 127 river miles (205 river kilometers) in length that are characterized by a complex braided channel and substrates of predominantly sand, with some patches of silt, gravel, and cobble.

(ii) Flowing water with adequate depths to support all life stages and episodes of elevated discharge to facilitate successful reproduction, channel and floodplain maintenance, and sediment transportation.

(iii) Water of sufficient quality to support survival and reproduction, which includes, but is not limited to, the following conditions:

(A) Water temperatures generally less than 98.2 °F (36.8 °C);

(B) Dissolved oxygen concentrations generally greater than 3.7 parts per million (ppm);

(C) Conductivity generally less than 16.2 millisiemens per centimeter (mS/cm);

(D) pH generally ranging from 5.6 to 9.0; and

(E) Sufficiently low petroleum and other pollutant concentrations such that reproduction and/or growth is not impaired.

(iv) Native riparian vegetation capable of maintaining river water quality, providing a terrestrial prey base, and maintaining a healthy riparian ecosystem.

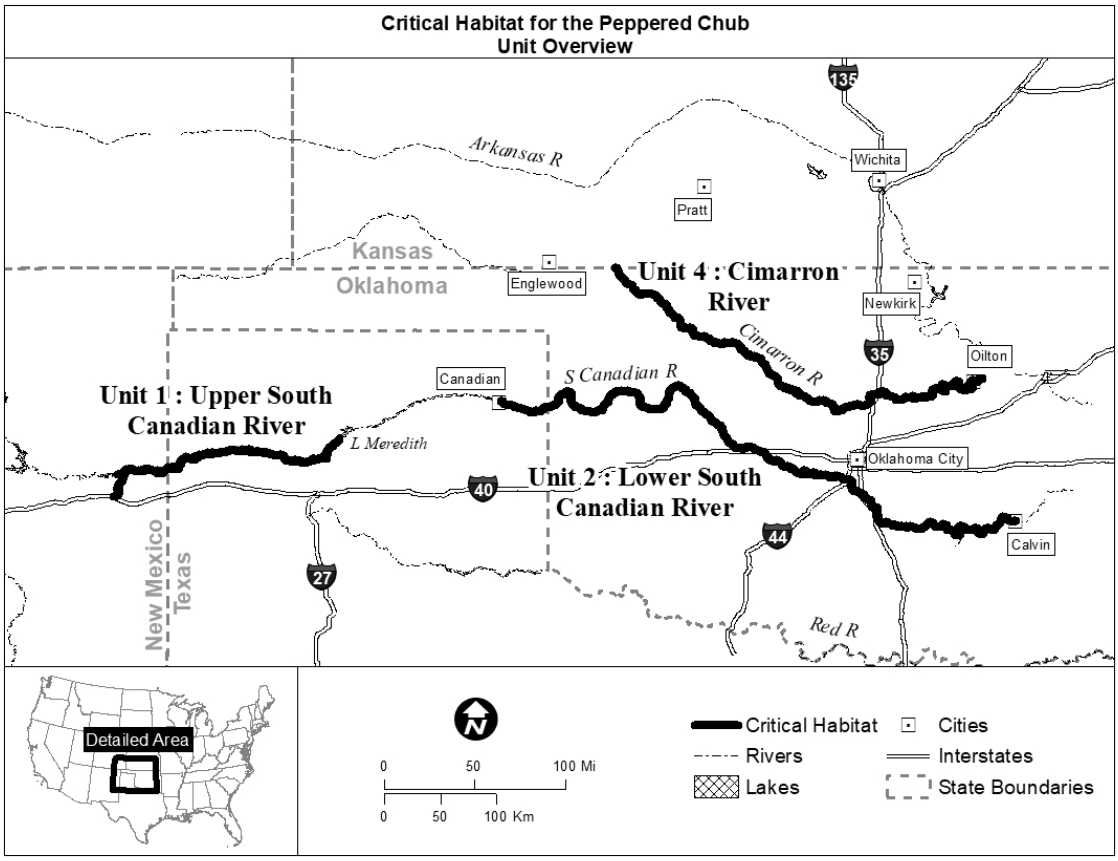
(v) A level of predatory or competitive, native or nonnative fish present such that any peppered chub population's resiliency is not affected.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(4) Data layers defining map units were created using fish distribution data provided by State agencies and sourced on the FishNet2 online database. Hydrologic data for stream reaches were sourced from the U.S. Geological Survey online database. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's internet site at *https://www.fws.gov/southwest/es/ArlingtonTexas/* and at *https://www.regulations.gov* under Docket No. FWS-R2-ES-2019-0019 and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Note: Index map follows:

Figure 1 to Peppered Chub (*Macrhybopsis tetranema*) paragraph (5)

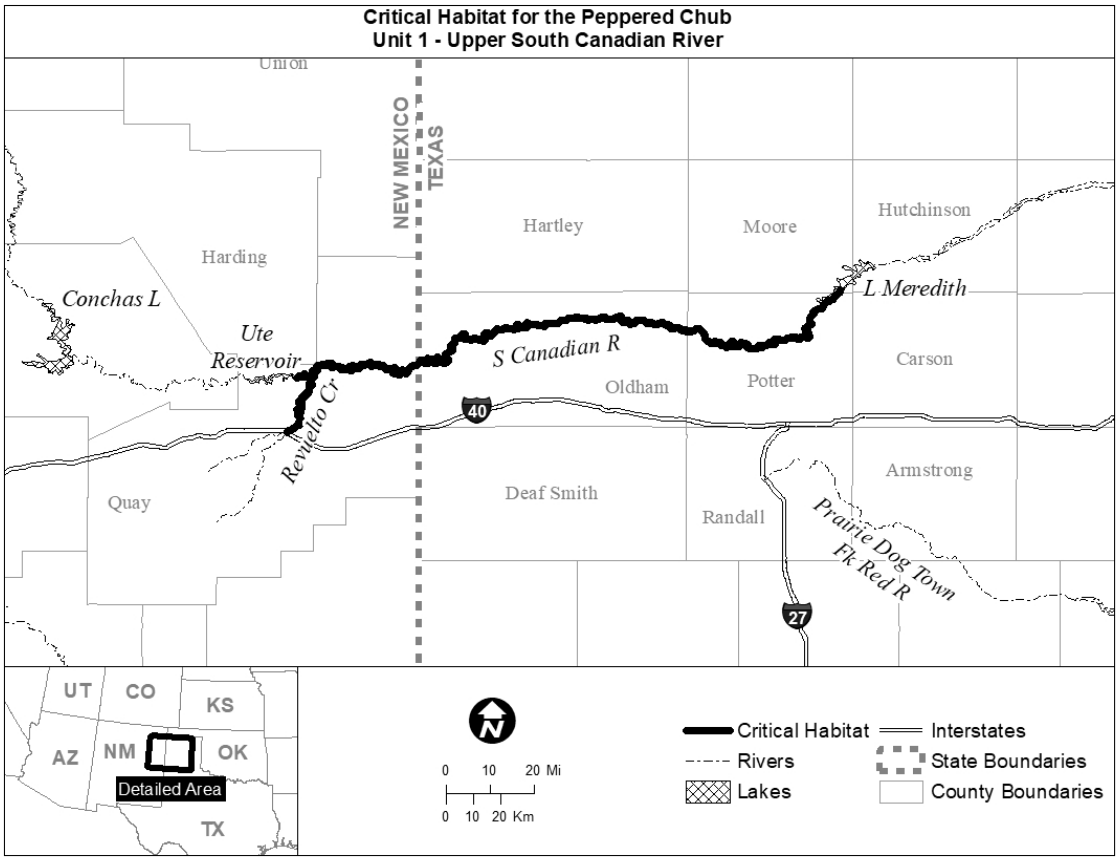


(6) Unit 1: Upper South Canadian River, New Mexico and Texas.

(i) This unit consists of approximately 197.2 river miles (317.3 river kilometers) of habitat in the South Canadian River from Revuelto Creek at Interstate 40 in New Mexico downstream to the inundated portion of Lake Meredith in Texas. Unit 1 includes river habitat up to bank full height.

(ii) Map of Unit 1 follows:

Figure 2 to Peppered Chub (*Macrhybopsis tetranema*) paragraph (6)(ii)

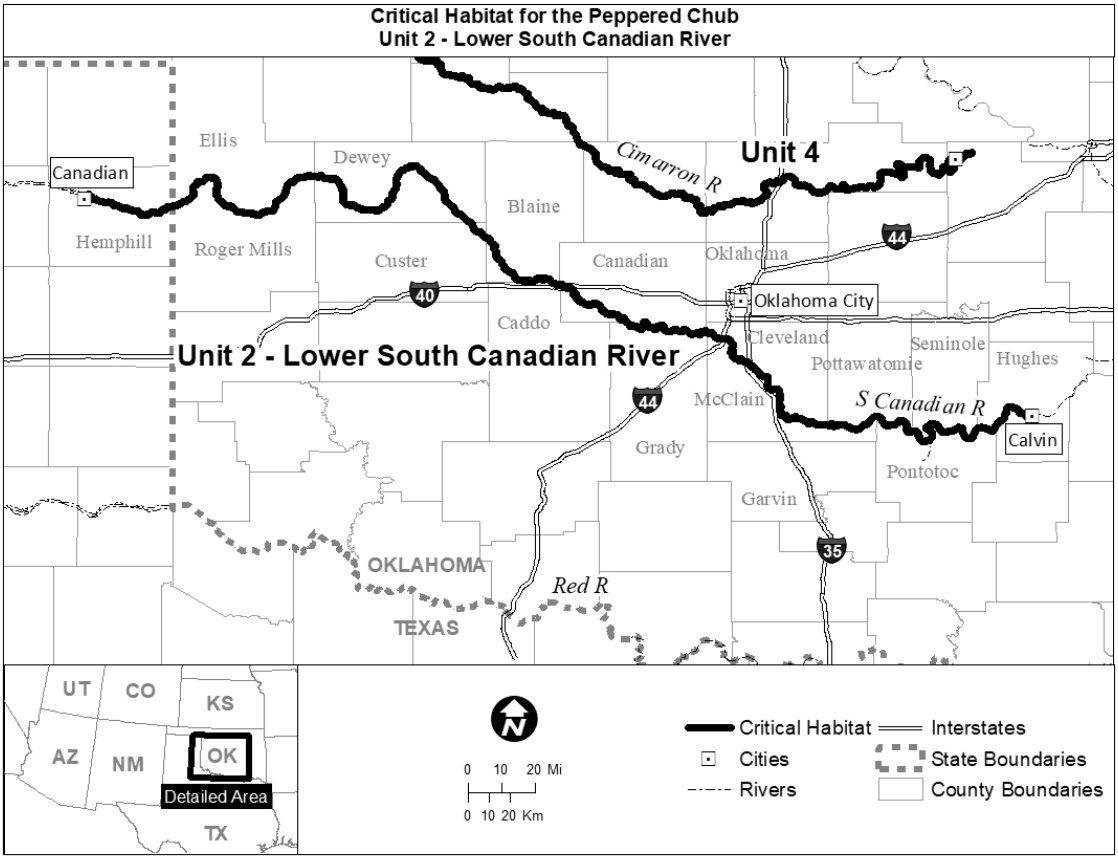

Critical Habitat for the Peppered Chub
Unit 1 - Upper South Canadian River
Union
NEW MEXICO
TEXAS
Harding
Hartley
Moore
Hutchinson
Conchas L
Ute
Reservoir
S Canadian R
L Meredith
Carson
Oldham
Potter
Revuelto Cr
40
Quay
Deaf Smith
Randall
Armstrong
Prairie Dog Town
Fk Red R
27
UT
CO
KS
AZ
NM
OK
Detailed Area
TX
N
0 10 20 Mi
0 10 20 Km
Critical Habitat
Rivers
Lakes
Interstates
State Boundaries
County Boundaries

(7) Unit 2: Lower South Canadian River, Texas and Oklahoma.

(i) This unit consists of approximately 399.9 river miles (643.6 river kilometers) of unoccupied habitat in the lower portion of the South Canadian River from the U.S. 83 bridge north of Canadian, Texas, downstream to the U.S. 75 bridge northwest of Calvin, Oklahoma. Unit 2 includes river habitat up to bank full height.

(ii) Map of Unit 2 follows:

Figure 3 to Peppered Chub (*Macrhybopsis tetranema*) paragraph (7)(ii)

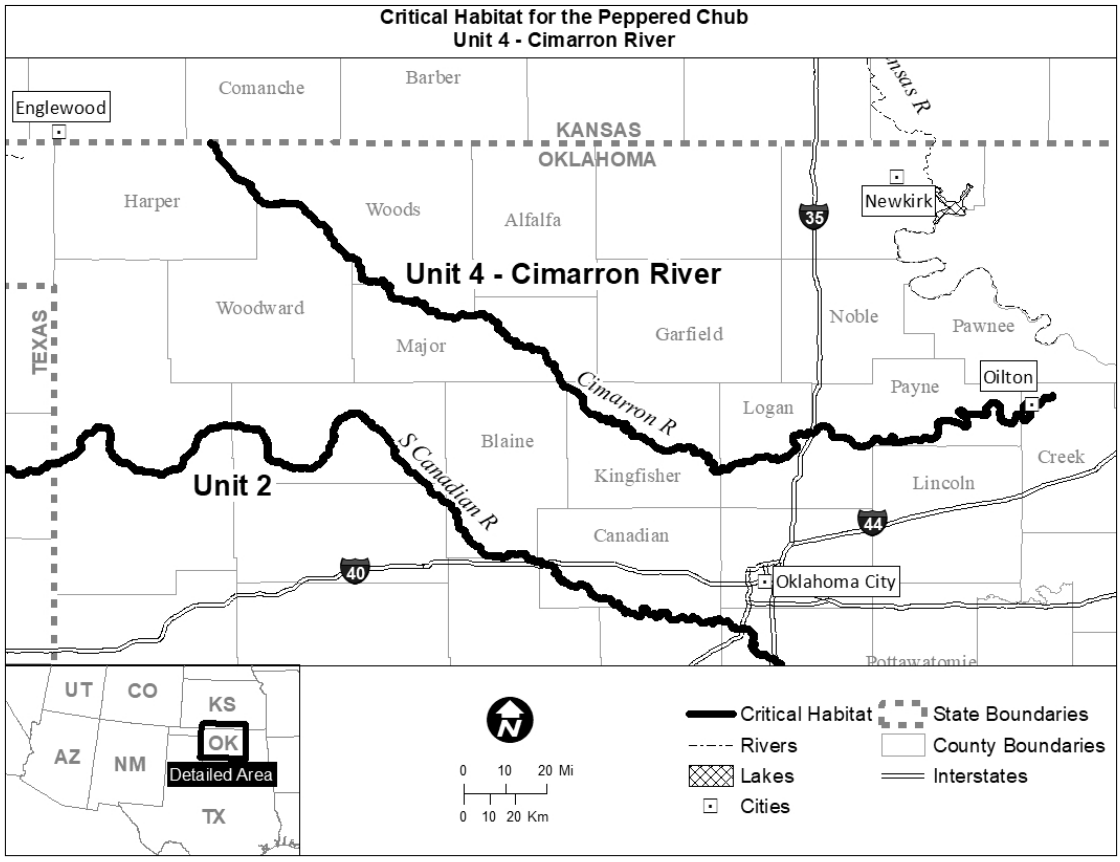


(8) Unit 4: Cimarron River, Oklahoma.

(i) Unit 4 consists of approximately 275.3 river miles (443.1 river kilometers) of unoccupied habitat in portions of the Ninnescah River and the Arkansas River, originating at the border of Kansas and Oklahoma, and extending downstream to OK 51 bridge northeast of Oilton, Oklahoma. Unit 4 includes river habitat up to bank full height.

(ii) Map of Unit 4 follows:

Figure 4 to Peppered Chub (*Macrhybopsis tetranema*) paragraph (8)(ii)



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Martha Williams,
Principal Deputy Director,
Exercising the Delegated Authority of the Director,
U.S. Fish and Wildlife Service.

[FR Doc. 2022-03703 Filed: 2/25/2022 8:45 am; Publication Date: 2/28/2022]