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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2024–0045; FXES1111090FEDR–267–FF09E21000]

RIN 1018–BH42

Endangered and Threatened Wildlife and Plants; Endangered Species Status for Peppered Shiner

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to list the peppered shiner (*Miniellus perpallidus*), a fish species from southeast Oklahoma and southern Arkansas, as an endangered species under the Endangered Species Act of 1973, as amended (Act). This determination also serves as our 12-month finding on a petition to list the peppered shiner. After a review of the best available scientific and commercial information, we find that listing the species is warranted. Accordingly, we propose to list the peppered shiner as an endangered species under the Act. If finalized as proposed, this rule would add this species to the List of Endangered and Threatened Wildlife and extend the Act's protections to the species.

DATES: We will accept comments received or postmarked on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**) must be received by 11:59 p.m. eastern time on the closing date. We must receive requests for a public hearing, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

To ensure your comment is received and considered, you must submit it using one of the methods identified in the **ADDRESSES** section of this document. Comments submitted through any method not authorized in this document, or sent to an address not listed here, will not be considered.

ADDRESSES: All submissions must include the docket number FWS–R4–ES–2024–0045 for this document. You must submit comments using one of the following methods:

(1) *Electronically*: Go to the Federal eRulemaking Portal: https://www.regulations.gov. In the Search box, enter FWS–R4–ES–2024–0045, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on "Comment."

(2) *By hard copy*: Submit by U.S. mail to: Public Comments Processing, Attn: FWS–R4–ES–2024–0045, U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

To ensure your comment is received and considered, you must submit it using one of the methods identified in the **ADDRESSES** section of this document. Comments submitted through any method not authorized in this document, or sent to an address not listed here, will not be considered. We will post all comments on https://www.regulations.gov. This generally means that we will post any personal information you provide us (see **Information Requested**, below, for more information).

Availability of supporting materials: Supporting materials, such as the species status assessment report, are available on the Service's website at https://www.fws.gov/office/arkansas-ecological-services, at https://www.regulations.gov at Docket No. FWS–R4–ES–2024–0045, or both.

FOR FURTHER INFORMATION CONTACT: Jason Hight, Field Supervisor, U.S. Fish and Wildlife Service, Arkansas Ecological Services Field Office, 110 South Amity Road, Suite 300, Conway, AR 72032; telephone 501–513–4473. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States. Please see Docket No. FWS–R4–ES–2024–0045 on https://www.regulations.gov for a document that summarizes this proposed rule.

SUPPLEMENTARY INFORMATION:

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available. Therefore, we request comments, or information, from other governmental agencies, Tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The species' biology, range, and population trends, including:

(a) Biological or ecological requirements of the species, including habitat requirements for feeding, breeding, and sheltering;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns and the locations of any additional populations of this species;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for the species, its habitat, or both.

(2) Threats and conservation actions affecting the species, including:

(a) Factors that may be affecting the continued existence of the species, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors.

(b) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species.

(c) Existing regulations or conservation actions that may be addressing threats to this species.

(3) Additional information concerning the historical and current status of this species.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, do not provide substantial information necessary to support a determination. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or a threatened species must be made solely on the basis of the best scientific and commercial data available.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via https://www.regulations.gov, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this

information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on https://www.regulations.gov.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on https://www.regulations.gov.

Our final determination may differ from this proposal because we will consider all comments we receive during the comment period as well as any information that may become available after this proposal. Based on the new information we receive (and, if relevant, any comments on that new information), we may conclude that the species is threatened instead of endangered, or we may conclude that the species does not warrant listing as either an endangered species or a threatened species. In our final rule, we will clearly explain our rationale and the basis for our final decision, including why we made changes, if any, that differ from this proposal.

Public Hearing

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received by the date specified in **DATES**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the *Federal Register* and local newspapers at least 15 days before the hearing. We may hold the public hearing in person or virtually via webinar. We will announce any public hearing on our website, in addition to the *Federal Register*. The use of virtual public hearings is consistent with our regulations at 50 CFR 424.16(c)(3).

Previous Federal Actions

On April 20, 2010, the Service was petitioned by the Center for Biological Diversity (CBD) to list 404 aquatic, riparian, and wetland species, including the peppered

shiner (then classified as *Notropis perpallidus*), as endangered species or threatened species under the Act (CBD 2010, pp. 417–418). In September 2011, the Service found the petition presented substantial scientific or commercial information indicating that listing the peppered shiner may be warranted (76 FR 59835, September 27, 2011).

Previously in the family Cyprinidae and the genus *Notropis*, the peppered shiner now belongs to the family Leuciscidae (Betancur et al. 2017, p. 16; Hirt et al. 2017, pp. 327, 329; Tan and Armbruster 2018, p. 18) and the genus *Miniellus* (Stout et al. 2022, p. 13). This taxonomy has been accepted by the American Fisheries Society (Page et al. 2023, pp. 73, 225). As such, we propose to list the peppered shiner with the scientific name *Miniellus perpallidus* (in Family Leuciscidae) and not *Notropis perpallidus* (in Family Cyprinidae).

Peer Review

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 and recovery actions under the Act (https://www.fws.gov/sites/default/files/documents/peer-review-policy-directors-memo-2016-08-22.pdf), we will seek the expert opinions from at least three appropriate specialists on the species status assessment (SSA) report and this proposed listing determination. The SSA report documents the results of our comprehensive biological review of the best available scientific and commercial data available regarding the viability of the species which is then used to support our decision of whether a species warrants listing under the Act. Any new information we receive through the peer review process will be incorporated into a final rule.

I. Proposed Listing Determination

Background

A thorough review of the taxonomy, life history, and ecology of the peppered

shiner is presented in the SSA report (version 1.1; Service 2025, pp. 3–11). The University of Central Arkansas recently completed additional sampling in the Antoine, Little Missouri, Upper Ouachita, and Saline Rivers in Arkansas (Calvert 2025, pers. comm.). While peppered shiners were not detected in the Antoine or Little Missouri Rivers, they were located in a new site in the Upper Saline River and rediscovered at five historical sites in the Lower Saline River, adding 26 occupied river miles (rmi; 42 river kilometers [rkm]) to the species' current distribution of 258 rmi (416 rkm). These updated findings will be incorporated into a revised SSA report prior to the final listing determination.

The peppered shiner is a small fish in the family Leuciscidae that inhabits clear pools bordered by American water willow (*Justicia americana*) in mid-sized, warm water streams. The historical range of the species includes the Saline, Caddo, Little Missouri, Antoine, Ouachita, and South Fork Ouachita Rivers and Terre Noire and Williams creeks in southern Arkansas and Kiamichi, Little, Mountain Fork, and Glover Rivers and Little Turkey, and Muddy Boggy creeks in southwest Oklahoma. The current range of peppered shiner is limited to the Saline River in southcentral Arkansas.

A small, slender minnow reaching up to 2 inches (50 millimeters) in length, the peppered shiner is characterized by large eyes and a pointed snout. The primary identifying characteristics of the peppered shiner are pigmentary with large dark pigmentations or melanophores scattered across the dorsum and dorsolateral regions of the fish (Robison and Buchanan 2020, p. 332). With characteristics of a carnivorous fish, including a short intestine and raptorial teeth, the peppered shiner likely forages throughout the water column on aquatic and terrestrial insects (Snelson and Jenkins 1973, p. 302).

Primarily occupying pool regions of warm, clear, moderately sized rivers, peppered shiner are most often found in waters that are 2–4 feet (ft) (0.6–1.2 meters [m])

deep (Robison and Buchanan 2020, p. 333). Typical for many minnows, the peppered shiner prefers to avoid currents and is found in, or near, American water willow beds on the peripheries of streams (Snelson and Jenkins 1973, p. 298; Wagner et al. 1987, p. 258; Miller 2022, p. 38). They have been collected over a variety of substrates, including silt, sand, boulder, cobble, and gravel, indicating that substrate composition is not a predictor of species' presence (Miller 2022, pp. 29–30). Most peppered shiner collections occurred in fifth-order streams or larger (stream order is a way of categorizing streams based on their size and complexity; a fifth-order stream is normally a small river) (Wagner 1984, pp. 15–16).

The peppered shiner has an estimated maximum lifespan of about 4 years (Snelson and Jenkins 1973, p. 301). While little is known about their specific reproductive biology, we do know that all true minnows (Family: Leuciscidae) are egg layers, and most do not guard their eggs (Robison and Buchanan 2020, p. 194). True minnows can be divided into two reproductive groups: those that prepare the substrate for receiving fertilized eggs and those that do not (Johnston and Page 1993, pp. 601–609). Species experts agree that the peppered shiner likely falls into the latter group, i.e., those that make no substrate preparations (Johnston and Page 1993, pp. 601–605; Robison and Buchanan 2020, p. 194). The peppered shiner reaches sexual maturity at around 1 year of age with the average spawning season running from late May to August (Adams et al. 2022, p. 4).

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations in title 50 of the Code of Federal Regulations set forth the procedures for determining whether a species is an endangered species or a threatened species, issuing protective regulations for threatened species, and designating critical habitat for endangered and threatened

species. Per Section 4(a)(3), the Service shall, to the maximum extent prudent and determinable, publish rules designating critical habitat concurrently with the final listing rule.

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

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

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

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

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

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

We use the term "threat" to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term "threat" includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or

required resources (stressors). The term "threat" may encompass—either together or separately—the source of the action or condition or the action or condition itself.

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

The Act does not define the term "foreseeable future," which appears in the statutory definition of "threatened species." Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis, which is further described in the 2009 Memorandum Opinion on the foreseeable future from the Department of the Interior, Office of the Solicitor (M–37021, January 16, 2009; "M-Opinion," available online at https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/M-37021.pdf). The foreseeable future extends as far into the future as the Service and can make reasonably reliable predictions about the threats to the species and the species' responses to those threats. We need not identify the foreseeable future in terms of a specific period of time. We will describe the foreseeable future on a case-by-case basis, using the best available data and taking into account considerations such as the species' life-history

characteristics, threat projection timeframes, and environmental variability. In other words, the foreseeable future is the period of time over which we can make reasonably reliable predictions. "Reliable" does not mean "certain"; it means sufficient to provide a reasonable degree of confidence in the prediction, in light of the conservation purposes of the Act.

Analytical Framework

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

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

During the SSA process for the peppered shiner, we evaluated the individual species' life-history needs. Then, we conducted 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. We used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time, which we then used to inform our regulatory decision.

The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket FWS–R4–ES–2024–0045 on https://www.regulations.gov and https://www.fws.gov/office/arkansas-ecological-services.

Summary of Biological Status and Threats

In this discussion, we review the biological condition of the peppered shiner, its resources, and the threats that influence the species' current 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 2025, entire).

Summary of Analysis

Species Needs

A full description of our analysis (analytical methods, threats, and current condition) for the peppered shiner can be found in the SSA report (Service 2025); below, we present a summary of the SSA results.

To evaluate the current viability of the peppered shiner, we assessed a range of conditions to allow us to assess the species' resiliency, redundancy, and representation.

For the peppered shiner to survive and reproduce, individuals need suitable habitat that supports essential life functions at all life stages. Individuals mainly require access to predator and flow refugia, appropriately deep pool habitat, adequate water quality, habitat connectivity, and habitat diversity.

For peppered shiner populations to be highly resilient, individual needs must be met on a larger spatial scale. Stream reaches with suitable habitat should be long enough to support robust populations capable of withstanding stochastic events such as drought, major storms and flooding, accidental pollutant discharges, or fluctuations in reproductive rates.

At the species level, the peppered shiner needs to have sufficient resources (food, space, refugia, etc.) to withstand normal demographic and environmental stochasticity (resiliency) and catastrophes (redundancy) and adapt to biological and physical changes in its environment (representation). Long-term viability will require multiple resilient populations to persist into the future; for the peppered shiner, this means clear well-oxygenated water with low levels of contaminants, natural river hydrology, and the presence of appropriate prey (resiliency) to support multiple populations in close enough proximity to allow for emigration/immigration (redundancy) with sufficient connectivity between populations (representation).

To assess the current resiliency of the peppered shiner, we used abundance (presence/absence records), reproduction, distribution, riparian forest cover percentage, urban land cover percentage and road density at an 8-digit U.S. Geological Survey Hydrologic Unit Code (HUC) watershed scale. A HUC is a hydrologic boundary that is determined from topography and represents a drainage divide between the various levels of units. The peppered shiner historically occupied a total of 12 resiliency units: Muddy Boggy, Kiamichi, Upper Little, Lower Little, Mountain Fork, Little Missouri, Ouachita Headwaters, Upper Ouachita, Lower Ouachita Smackover, Lower Ouachita Bayou de Loutre, Upper Saline, and Lower Saline. The species currently (post-2013) occupies 2 of the 12 historically occupied resiliency units: the Upper Saline and Lower Saline in Arkansas. Dams were not assessed in the current condition model given that the Upper

and Lower Saline resiliency units are the only remaining undammed portions of the species' historical range in Arkansas.

Redundancy reflects a species' ability to withstand catastrophic events. We evaluated current redundancy by gauging the probability that the species has a margin of safety to withstand or rebound from catastrophic events. We assessed the number and distribution of populations and the resiliency of populations to determine the species' current level of redundancy.

Representation reflects a species' adaptive capacity to changing environmental conditions over time and can be characterized by genetic and ecological diversity within and among populations. For the peppered shiner, we assessed representation by 6-digit HUC units and evaluated the number of occupied and extirpated units. The use of the 6-digit HUC units provides a geographic framework for evaluating representation by accounting for differences in ecological and hydrologic settings and the potential for genetic variation among drainage systems. This delineation is not meant to be a definition of separate biological populations, as there are currently no studies demonstrating genetically distinct populations in this context; rather, it represents a distinction made for purposes of our analysis. Accordingly, the 6-digit HUC units were used to assess the species' historical and current distribution and representation across different drainage systems, rather than as an indication of the number of genetically distinct populations. Historically, peppered shiner representation was likely greater as the species occurred in three representative units historically: Red-Little, Upper Ouachita, and the Saline River. Peppered shiners are currently (post-2013) found only in the Saline River, one of the three historically occupied 6-digit HUC units.

Threats (Stressors/Risk Factors/Etc.)

We evaluated the historical, current, and ongoing effects from dams (habitat fragmentation, degraded water quality, and altered water flows), roads (increased

sedimentation and altered water flow), urbanization (altered water flow, habitat fragmentation, and degraded water quality), and the changing temperature and precipitation patterns as factors influencing the viability of the peppered shiner. For complete descriptions of all threats and potential management benefits, please see the SSA report (Service 2025, pp. 11–20).

Dams

The construction and presence of dams affect the peppered shiner by fragmenting habitat, degrading water quality, and altering water flow. With at least 15 dams on fifth order streams or larger across the species' historical range, past dam and reservoir construction is considered a significant contributor to its decline (Miller 2022, pp. 8–9, 19). For example, following the filling of DeGray Reservoir, the peppered shiner disappeared from the Caddo River system, despite being documented at the dam site shortly before its completion (Robison 2006, p. 103; Snelson and Jenkins 1973, pp. 298–299; Miller 2022, p. 19). Currently, the Saline River is the only unimpounded historically occupied river where the species persists.

Habitat fragmentation caused by dams creates physical barriers that isolate upstream and downstream habitats. This prevents fish from migrating between suitable spawning and feeding areas (Liermann et al. 2012, p. 539) and impedes recolonization of suitable habitat patches (Gido et al. 2016, pp. 292–323). Over time, this loss of connectivity can contribute to range contraction, which is especially concerning for a species such as the peppered shiner with low abundance and a severely reduced distribution (Miller 2022, p. 44; Robison 2006, p. 105; Wagner et al. 1987, p. 259; Snelson and Jenkins 1973, p. 299). Fragmentation increases the risk of local extirpation for isolated populations with already low numbers (Angermeier 1995, p. 156; Liermann et al. 2012, pp. 539, 547; Miller 2022, p. 19).

Dams degrade water quality in several ways, particularly through hypolimnetic

releases, which occur when cold water is discharged from deep reservoir layers. Because water temperature at depth stays relatively stable throughout the year, downstream flows become unnaturally cold in summer and unusually warm in winter (Clarke et al. 2008, p. 26). These altered thermal regimes affect organisms at all trophic levels, including primary producers, macroinvertebrates, and fish (Clarke et al. 2008, pp. 28–30). Cold water releases have been documented to cause fish extirpations a few miles (mi; several kilometers [km]) downstream (Edwards 1978, entire). This mechanism likely contributed to the loss of the peppered shiner below Blakely Mountain Dam on the Ouachita River and Narrows Dam on the Little Missouri River (Miller 2022, p. 9).

Dams substantially alter natural water flow by modifying velocity, variability, and the erosion of streambeds and banks (Clarke et al. 2008, p. 47). Water released from dams typically has higher velocity and lower sediment load than natural flows, causing increased downstream erosion and changes to channel structure. These effects can elevate energetic demands on fishes occupying high velocity areas, increase loss of water willow through bank erosion, alter nutrient inputs, and disrupt predator–prey dynamics (Clarke et al. 2008, p. 42; Miller 2022, pp. 27–28). Flow alteration is a particular concern for peppered shiners because they associate strongly with the edges of water willow beds (Snelson and Jenkins 1973, p. 298). Water willow reduces flow velocity around bed margins (Miller 2022, p. 38), creating energetically favorable microhabitats where the species is frequently captured. Studies indicate peppered shiners prefer slow currents (Wagner et al. 1987, p. 258). When dam operations erode water willow or accelerate channel flows, these critical low velocity habitats diminish.

Roads

Roads can create problems for streams and the species that depend on them (Forman and Alexander 1998, entire; Trombulak and Frissell 2000, entire; Al Chokhachy et al. 2025, pp. 1–2). Road networks, particularly unpaved roads, contribute substantial

sediment inputs and alter water flow by increasing runoff, intercepting groundwater, and accelerating the delivery of water and sediment to channels (Luce and Wemple 2001, p. 112; Jones et al. 2000, p. 77; Soulis et al. 2015, p. 1772; Luce and Black 1999, entire; Megahan et al. 2001, pp. 159–160). Changes in water flow increase energetic demands on fish species in fast flowing areas, contribute to loss of water willow downstream through bank erosion, alter nutrient inputs, and disrupt predator–prey interactions (Clarke et al. 2008, p. 42; Miller 2022, pp. 27–28). The increased runoff and groundwater interception from roads often lead to large amounts of sediment entering streams (Luce and Black 1999, entire; Megahan et al. 2001, pp. 159–160), which can harm fish and overall stream health. Increased sediment runoff and altered streamflow can raise stream energy, erode banks, scour channels, and contribute to flooding (Coffin 2007, pp. 397–398). These water flow changes are often intensified in areas with higher road density, which is strongly linked to declines in water quality; increases of 11.6 m/hectare (ha) significantly reduce water quality scores (DeCatanzaro et al. 2009, p. 463).

Roads affect peppered shiner across its range, as road length totals 48,323 mi (77,768 km), resulting in a road density of 17 m/ha. This density is higher than levels at which hydrologic and water quality impacts are known to intensify. Even small increases in road density, on the order of 11.6 m/ha, have been shown to significantly reduce water quality scores (DeCatanzaro et al. 2009, p. 463). By comparison, the peppered shiner's occupied watersheds contain road densities higher than this sensitivity threshold, indicating potential for increased sediment runoff, degraded water quality, and associated habitat impacts.

Roads, particularly unpaved roads, are considered a primary contributor to sediment loads in Arkansas watersheds (Inlander et al. 2007, p. 157). Resulting sedimentation leads to sediment aggradation, filling streambeds with fine particles and reducing water depth over time. Sedimentation and associated changes in stream

morphology can lead to the gradual loss of species vulnerable to sedimentation (Burgad et al. 2019, pp. 467–468). Because water depth is one of the strongest predictors of peppered shiner presence and an essential habitat requirement, sediment-driven shallowing directly threatens the species' ability to survive (Miller 2022, p. 21). Reduced water depth is considered a significant factor in the presumed extirpation of the peppered shiner from the Ouachita Headwaters (Adams 2023, pers. comm.).

Urbanization

Urbanization affects the peppered shiner by causing water flow changes, habitat loss and degradation, and declines in water quality across portions of its range.

Urbanization increases impervious surfaces that speed up runoff and create water flow changes, leading to flashier high-peak flows and downstream channel erosion that diminishes biotic richness (Leopold 1968, pp. 7–11; Paul and Meyer 2001, entire). These rapid, high-velocity events increase energetic demands on the peppered shiner (Miller 2022, p. 28), erode water willow stands essential for habitat, and contribute to sedimentation and morphological shifts that drive habitat loss and degradation, while also influencing water quality.

Although the amount of urbanization is generally low across the peppered shiner's range, the Upper Saline River contains the highest proportion of urban cover (5.4 percent) due to growth near Benton and Hot Springs Village, Arkansas. Negative ecological effects on streams typically appear at about 10 percent urban cover and become severe at 25 percent (Paul and Meyer 2001, p. 351; Walsh et al. 2005, p. 712). Ongoing development in these areas has led to riparian clearing for construction, and recreation, which increases sediment inputs, nutrient loading, and physical channel alteration in the Saline River headwaters (Arkansas Game and Fish Commission 2023, p. 7; The Nature Conservancy 2006, p. 8). These pressures drive habitat loss and

degradation by contributing to sedimentation, excess nutrients, and stream-morphology changes, while also affecting water flow changes and water quality.

Urbanization further influences water quality through runoff and wastewater inputs. Most peppered shiners occur in a portion of the Saline River downstream of Benton where electrical conductivity (EC), used as a proxy for pollution input, is higher than in upstream areas (Miller 2022, p. 31), likely due to nutrient-rich urban runoff and wastewater (Brett et al. 2005, pp. 331–337; Singer and Battin 2007, p. 376). Increased nutrient loads can shift ecosystem processes by enhancing algal growth (Busse et al. 2006, p. 2629), boosting secondary consumer production (Singer and Battin 2007, pp. 380–381), and increasing primary consumer abundance (Johnson et al. 2013, pp. 850–851). While these changes may raise overall biological activity, they degrade habitat quality for sensitive species like the peppered shiner, which depends on clear, oxygen-rich water with low contaminant levels, natural hydrology that avoids unnatural water flow changes, and healthy habitat structure free from degradation (Miller 2022, p. 31; Burbank et al. 2021, pp. 485–486; Marchetti et al. 2006, p. 317; Walters et al. 2003, pp. 7–8).

Changing Temperature and Precipitation Patterns

The effects of increased temperatures and altered precipitation patterns are already influencing fish distributions and are expected to cause even greater shifts in range, phenology, and local persistence in the future (Ficke et al. 2007, pp. 598, 603–605). Some projections suggest that up to half of global freshwater fish species may face extinction, particularly small-bodied or range-restricted species in systems experiencing altered flow regimes (Manjarres-Hernandez et al. 2021, p. 16).

Increased temperatures are likely already impacting the peppered shiner and its habitat. Across Arkansas and Oklahoma, annual average temperatures have increased by 0.28–0.33 degrees Celsius (°C) (0.5–0.6 degrees Fahrenheit (°F)) since the early 1900s,

with Arkansas experiencing its warmest five-year period from 2015–2019 and historically unprecedented warming predicted later this century (National Oceanic and Atmospheric Administration National Centers for Environmental Information 2022a, 2022b, entire; Peters and Iverson 2019, p. 28). Although air–water temperature relationships vary across stream systems (Mohseni et al. 2003, p. 396), research consistently shows that stream temperatures generally rise as air temperatures increase, with typical responses of 0.6–0.8°C (1.1–1.4°F) of stream warming per 1°C (1.8°F) of air warming (Morrill et al. 2005, pp. 1–2, 15). Such warming can alter thermal regimes, reduce dissolved oxygen, and disrupt temperature dependent life history processes, ultimately contributing to habitat loss and declines in aquatic species abundance (Clarke et al. 2008, pp. 30–31; Morrill et al. 2005, p. 2).

These changes represent gradual increases in average temperatures over time, rather than documented abrupt, short-term changes in stream temperature. Although the magnitude and timing of temperature changes will vary among stream systems, long-term warming can alter stream thermal regimes, reduce dissolved oxygen, and affect temperature-dependent biological processes, potentially contributing to habitat degradation and changes in aquatic species abundance (McDonnell et al. 2021, pp. 1257–1258, 1265–1266; Morrill et al. 2005, p. 2). Projected changes in temperature may also influence the magnitude and frequency of daily and seasonal stream temperature fluctuations. Repeated exposure to temperatures outside a species' optimal thermal range may reduce overall physiological performance over time, even when average temperatures remain within otherwise suitable ranges (Morash et al. 2018, pp. 1524–1526). Although some fish species can acclimate to changing temperatures, this ability is limited and may not fully offset the effects of continued warming (McDonnell et al. 2021, pp. 1265–1266; Morash et al. 2018, pp. 1530–1531).

Although the specific preferred temperature range for peppered shiner is not known, increases in water temperature likely affect the species because many biological processes in freshwater fish, including growth, metabolism, food availability, migration, and reproduction, are strongly influenced by water temperature, a key factor governing survival and performance (Morrill et al. 2005, p. 2). Changes in temperature may therefore affect multiple aspects of peppered shiner biology and habitat suitability. Reproductive success is especially sensitive to thermal shifts, as spawning and egg development depend on narrow temperature ranges (Pankhurst and Van der Kraak 1997, pp. 166–169).

Variation in precipitation patterns has also intensified across the species' range, compounding these risks. Precipitation patterns in Oklahoma are highly variable because the state lies in a transitional zone between humid and semiarid climates, and recent observational data indicate that the variability of both precipitation and temperature continues to increase. The frequency of extreme rainfall events (≥ 2 inch or 5 centimeters) has increased since 1985, peaking in 2015, while rising temperatures have accelerated soil moisture loss and contributed to more severe droughts, heightening risks of flooding, erosion, and drought-driven water shortages (National Oceanic and Atmospheric Administration National Centers for Environmental Information 2022b, p. 3). In Arkansas, winter precipitation is projected to increase, and warming temperatures are expected to intensify naturally occurring droughts across the peppered shiner's range, contributing to greater regional hydrologic instability (National Oceanic and Atmospheric Administration National Centers for Environmental Information 2022a, 2022b, entire).

These changes in flood and drought patterns can disrupt fish communities by favoring invasive species, reducing reproductive success, and eliminating species that depend on stable, predictable flow conditions (Baltz and Moyle 1993, pp. 252–253;

Ramirez et al. 2018, pp. 6–10; Magoulick et al. 2021, pp. 10–12; Freeman et al. 2022, pp. 290–291). Hydrologic extremes such as floods and droughts can make it easier for non-native fish to become established by putting extra stress on native species that depend on steady flows, altering habitat structure, and creating repeated opportunities for hardy, fast-spreading invasive species to move in (Freeman et al. 2022, p. 9). Floods can also directly scour eggs and larvae, displace juveniles, and further reshape stream habitats (Baltz and Moyle 1993, pp. 252–253). Although species-specific data for the peppered shiner are limited, the species inhabits small, clear, stable-flow streams, conditions that are highly sensitive to hydrologic alteration. As droughts intensify, these streams are more likely to experience reduced flows, warmer temperatures, and habitat contraction. Research from the Kiamichi River in Oklahoma, within the species' historical range, demonstrates how severe droughts have already altered temperature regimes and caused major losses of aquatic biodiversity, conditions expected to worsen, illustrating the types of impacts increasingly likely to threaten the peppered shiner (Vaughn et al. 2015, pp. 1297–1301).

Conservation Efforts and Regulatory Mechanisms

The peppered shiner is listed as a species of greatest conservation need in both Arkansas and Oklahoma. Additionally, the State of Arkansas has designated the Lower Saline River (from near the Grant and Cleveland County Line), Ouachita River near Arkadelphia, Caddo River above DeGray Reservoir, and Ouachita River above Lake Ouachita as Ecologically Sensitive Waterbodies. This designation protects the waterbody through water quality controls, maintenance of natural flow regime, protection of instream habitat, and encouragement of land management practices to protect the watershed. Additionally, in 2015, the State of Arkansas established the Arkansas Unpaved Roads Grant Program with the goal of providing training to road maintenance professionals on the maintenance and construction of dirt and gravel roads; funding safe,

cost effective, and environmentally sound projects with known sediment concerns; and to demonstrate innovative maintenance and construction techniques to promote broader adoption of Best Management Practices.

Congress created the State and Tribal Wildlife Grants (SWG) program in 2000, recognizing the need to fund programs for the conservation of wildlife diversity. Congress mandated that each State and Territory develop a State Wildlife Action Plan (SWAP) that provided a comprehensive wildlife conservation strategy to continue receiving Federal funds through the SWG program. The SWAPs serve as the blueprints for conserving our Nation's fish and wildlife and preventing species from being listed as endangered or threatened. Arkansas updated its SWAP in 2015, and the 2025 revised plan is under review, to include the peppered shiner among the species of greatest conservation needs. Similarly, Oklahoma has a Wildlife Conservation Strategy that was updated in 2016 and includes the peppered shiner as a species of greatest conservation need. This is beneficial for peppered shiner as SWG funding, and the SWAP framework help direct resources toward monitoring, habitat protection, and targeted conservation actions that address threats to the species and support its long-term viability.

Federally, the Clean Water Act (CWA; 33 U.S.C. 1251 et seq.), Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA; 7 U.S.C. 136 et seq.), Rivers and Harbors Act (33 U.S.C. 401 et seq.), National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.), and Fish and Wildlife Coordination Act (FWCA; 16 U.S.C. 661 et seq.) may provide some benefits to the peppered shiner. Congress passed the Federal Water Pollution Control Act Amendments of 1972 and the CWA of 1977 to provide for the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's lakes, streams, and coastal waters. The FIFRA was passed in 1947 and authorizes the Environmental Protection Agency to regulate pesticide uses to prevent unreasonable adverse effects upon wildlife and vegetation. The Rivers and Harbors Act

prohibits the construction of any bridge, dam, dike, or causeway over or in navigable waters of the United States without congressional approval or authorization from State legislatures and the U.S. Army Corps of Engineers. The NEPA requires that all activities undertaken, authorized, or funded by Federal agencies be analyzed for potential impacts to the human environment. Finally, the FWCA requires that Federal agencies funding, sponsoring, or permitting activities to give consideration and coordination of fish and wildlife conservation with respect to water resources development programs. Together, these laws help conserve the peppered shiner by safeguarding water quality, reducing harmful pesticide exposure, limiting in-stream alterations that could degrade habitat, ensuring federal actions consider and minimize ecological impacts, and promoting coordination to protect aquatic species during water-resource development.

Approximately 83 percent of the adjacent riparian land within the historical range of the peppered shiner is in private ownership. In 2016, the Service entered into a programmatic safe harbor agreement and candidate conservation agreement with assurances (SHA/CCAA) with The Nature Conservancy, Natural Resources Conservation Service, and Arkansas Game and Fish Commission. This agreement targets non-Federal lands in the Upper Saline River, Caddo River, and Ouachita Headwaters for use in furthering the conservation of 25 aquatic species, including the peppered shiner. At this time, no lands have been enrolled that would provide a benefit to the peppered shiner. In 2025, the Saline River Conservation and Recreation Plan was finalized with the aim of protecting the rivers' unique habitats and rare species, such as the peppered shiner, while promoting sustainable recreational opportunities. We are not aware of any other conservation plans or management activities in place with private landowners that are specific to or would benefit the peppered shiner.

Cumulative Effects

We note that, by using the SSA framework to guide our analysis of the scientific

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

Current Condition

Demographic metrics were based on fish collection and peppered shiner survey data. Abundance was measured by the number of individuals collected from each watershed since 2013. Occurrences documented before 2013, and not observed since, were classified as "likely extirpated," while those recorded during or after 2013 were considered "current." The year 2013 was chosen because it marks a comprehensive survey of the Saline River, the only known occupied river, and the start of targeted search efforts by universities and State agencies. Prior to 2013, surveys were incidental rather than focused. Post-2013 surveys have been extensive across the species' historical range (table 1, below).

Table 1. Summary of sampling efforts to locate peppered shiner grouped by resiliency unit. All surveys since last observation reflect surveys where peppered shiner was not detected.

Representation Unit *Resiliency Unit*	**Last Observation**	**# Surveys Since Last Observation**	**Current Status of Peppered Shiner**
Red-Little			
Muddy Boggy	3/25/1975	65	Likely Extirpated
Kiamichi	7/5/1996	50	Likely Extirpated
Upper Little	7/12/1990	102	Likely Extirpated
Lower Little	5/6/1978	53	Likely Extirpated
Mountain Fork	6/18/1970	67	Likely Extirpated
Upper Ouachita			
Little Missouri	7/26/1984	19	Likely Extirpated
Ouachita Headwaters	7/29/2001	10	Likely Extirpated
Upper Ouachita	6/27/1981	68	Likely Extirpated
Saline River			
Lower Ouachita – Smackover	NA	19	Likely Extirpated

Lower Ouachita – Bayou de Loutre	NA	41	Likely Extirpated
Upper Saline	8/12/2025	NA	Extant
Lower Saline	8/11/2025	NA	Extant

The peppered shiner historically occupied a total of 12 resiliency units: Muddy Boggy, Kiamichi, Upper Little, Lower Little, Mountain Fork, Little Missouri, Ouachita Headwaters, Upper Ouachita, Lower Ouachita Smackover, Lower Ouachita Bayou de Loutre, Upper Saline, and Lower Saline. It is unlikely that these resiliency units will become repopulated due to lack of connectivity with existing occupied streams. The species currently (post-2013) occupies 2 of the 12 historically occupied resiliency units: the Upper Saline and Lower Saline in Arkansas. Despite numerous survey efforts throughout the range, there have been no detections of the species outside of the Saline River system since 2001.

To assess resiliency within the occupied units (Upper Saline and Lower Saline), we evaluated demographic metrics of abundance (presence/absence), reproduction, distribution, and habitat metrics of riparian forest cover, urban land cover, and road density (Service 2025, pp. 26–27).

Resiliency is often assessed at the population level; however, the peppered shiner resiliency units are not intended to represent biological populations as we currently do not have information regarding population delineation for this species. Instead, the delineation is based on the hydrologic boundary defined by topography, which represents the drainage divide at the 8-digit HUC watershed scale. As such, these resiliency units reflect the species' ability to withstand environmental and stochastic demographic events (arising from random factors).

The Upper Saline resiliency unit has relatively high peppered shiner abundance with 536 individuals collected since 2013. Distribution within this resiliency unit remains unchanged, with a distribution of 185 rmi (298 rkm) both historically and currently. Furthermore, peppered shiner reproduction is confirmed to occur in this resiliency unit.

Ninety-five (95) percent of riparian cover in this resiliency unit is forested. Urban cover comprises 5.4 percent of the total unit area with the Upper Saline resiliency unit, but there are rapid concentrated rates of urbanization around the towns of Benton and Hot Springs Village. Nevertheless, this amount of urbanization is considered moderate given that negative impacts on streams are typically detected at about 10 percent and are considered severe at 25 percent in a watershed (Paul and Meyer 2001, p. 351; Walsh et al. 2005, p. 712). Road density is 18 m/ha, higher than the level associated with measurable water quality decline (DeCatanzaro et al. 2009, p. 463) representing a high risk for a species sensitive to sedimentation and flow changes. No dams exist in the occupied reach of the Upper Saline resiliency unit.

The Lower Saline resiliency unit has a relatively low abundance, with 104 adults collected since 2013. Because no juveniles have been collected, reproduction within this unit has not been confirmed. Distribution within the unit has been reduced to 67 percent of what it was historically, from 109 rmi (175 rkm) historically to 73 rmi (118 rkm) currently. Riparian forest cover is 95 percent in this resiliency unit. Urban cover is relatively low at 3.0 percent of the unit with a road density of 11.4 m/ha equal to the level associated with measurable water quality decline (DeCatanzaro et al. 2009, p. 463). No dams exist in the occupied reach of the Lower Saline resiliency unit.

Although the levels of forested riparian areas, road densities, and urbanization appear comparable between the two units, the peppered shiner abundance in the Lower Saline resiliency unit is substantially lower than the Upper Saline resiliency unit, and we have no evidence of reproduction in the Lower Saline resiliency unit. Experts suggest that this some of this difference is due to habitat characteristics and detection challenges (Adams 2023, pers. comm.). As rivers progress to higher stream orders, they typically become wider and deeper (Ritter 2007, p. 18.2.), which often results in faster flow rates and steeper banks. Consequently, researchers sampling the Lower Saline resiliency unit

have encountered difficulties accessing and sampling this habitat (Miller 2022, pp. 25–26) as detection at lower sites is often limited due to greater depths and higher flow rates, which reduce sampling efficiency (Adams 2023, pers. comm.). In summary, the peppered shiner in the Upper Saline resiliency unit has relatively high resiliency while the peppered shiner in the Lower Saline resiliency unit has relatively low resiliency.

Redundancy is described as a species' ability to survive catastrophic events. Catastrophes are stochastic events that are severe enough to cause population collapse regardless of population health and for which adaptation is unlikely (Mangel and Tier 1993, p. 1083). Redundancy is measured by the number of populations and their spatial distribution; a higher number of populations spread over a larger area gives the species a better chance to withstand catastrophic events. For the peppered shiner, redundancy decreased as the species' range contracted from 12 historical resiliency units to 2 extant units. Both occupied units are also part of the same larger drainage system (Saline River). The peppered shiner occurs in one resiliency unit with relatively high resiliency and a second resiliency unit with relatively low resiliency. As a result, the species lacks sufficient redundancy to withstand catastrophic events, such as extreme floods, prolonged droughts, or chemical spills, all of which could impact remaining populations in both the Upper and Lower Saline units.

Representation describes the ability of a species to adapt to both near-term and long-term physical (environmental conditions, habitat conditions, habitat structure, etc.) and biological changes (pathogens, predators, competitors, etc.) in its environment. The ability to adapt to new environments, often termed adaptive capacity, is essential to viability as species must adapt to their continuously changing environments (Nicotra et al. 2015, p. 1269). Species may adapt to environmental change in one of two ways: (1) moving to new, suitable environments or (2) by altering their physiological or behavioral traits (phenotypes) through either plasticity or genetic change (Beever et al. 2016, p. 132;

Nicotra et al. 2015, p. 1270). As described above, we defined representation units at the 6-digit HUC watershed level. The peppered shiner historically occupied three 6-digit HUC units and currently occupies only one 6-digit HUC unit. With such a drastic reduction in range and overall abundance, we expect that the peppered shiner species level representation is reduced from historical levels. There are currently no data available on genetic variation in the peppered shiner; however, the substantial reduction in abundance and increased isolation of remaining populations are expected to have reduced genetic variation relative to historical levels. We expect that the peppered shiner's ability to shift in space or persist in place in the face of environmental change is limited due to the lack of connectivity from dams and the number of extirpated units across the species range. As such, we have determined the peppered shiner exhibits low current representation.

Determination of Peppered Shiner Status

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

Status Throughout All of Its Range

The peppered shiner historically occupied a broad range, including the Saline, Caddo, Little Missouri, Antoine, Ouachita, and South Fork Ouachita Rivers and Terre Noire and Williams creeks in southern Arkansas and the Kiamichi, Little, Mountain Fork, and Glover Rivers and Little Turkey and Muddy Boggy creeks in southeast Oklahoma. However, despite numerous survey efforts throughout the range, including recent survey efforts in 2025, there have been no detections of the species outside of the Saline River system since 2001. This decline is a result of historical dam and reservoir construction, which led to habitat degradation, and releases of cold hypolimnetic waters, combined with habitat loss from development over the past few decades. Dams create habitat fragmentation and inhibit dispersal, limiting the ability of the species to repopulate areas that have been lost due to degraded habitat and lack of connectivity.

Remaining occupied habitats in the Saline River are experiencing ongoing threats that are not abated by conservation efforts or regulatory mechanisms. Due to expansion of development in the Upper Saline resiliency unit, there is an imminent risk of sedimentation and hydrological alterations caused by urbanization and roads. These changes degrade the clear, stable, free-flowing stream habitats the peppered shiner depends on by increasing fine sediments, destabilizing channels, and creating more extreme flow conditions. As a result, spawning success, foraging efficiency, and overall population resilience are significantly reduced. This risk is expected to persist, compounded by anticipated future warmer temperatures and drier conditions that will further degrade habitat quality and availability.

After evaluating threats to the species and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, we find that the species' resiliency, representation, and redundancy are at low levels such that the species is at risk of extinction throughout its range. Decades of survey efforts have not found peppered shiner

in 10 of the 12 historically occupied resiliency units: Muddy Boggy, Kiamichi, Upper Little, Lower Little, Mountain Fork, Little Missouri, or the Ouachita Headwaters. Therefore, the species' range has likely been reduced to just two occupied resiliency units within a single stretch of the Saline River, approximately 258 rmi (416 rkm) in length. Of the two occupied resiliency units, one has relatively high resiliency and the other low resiliency. With the entire population of the peppered shiner confined to the northern portion of a single river, the redundancy of the peppered shiner is low. The species' representation is reduced from historical levels, and its adaptive capacity is currently low. Thus, after assessing the best available information, we determine that the peppered shiner is in danger of extinction throughout all of its range.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so within the foreseeable future throughout all or a significant portion of its range. We have determined that the peppered shiner 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 shiner warrants listing as endangered throughout all of its range, our determination does not conflict with the decision in *Center for Biological Diversity* v. *Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020) (*Everson*), because that decision related to significant portion of the range analyses for species that warrant listing as threatened, not endangered, throughout all of their range.

Determination of Status

Our review of the best available scientific and commercial information indicates that the peppered shiner meets the definition of an endangered species. Therefore, we propose to list the peppered shiner 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 as a listed species, planning and implementation of recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and conservation by Federal, State, Tribal, and local agencies, foreign governments, private organizations, and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies, including the Service, and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Under section 4(f)(1)(B)(ii), recovery plans must, to the maximum extent practicable, include objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of section 4 of the Act, that the species be removed from the List of Endangered and Threatened Wildlife.

Recovery plans provide a roadmap for us and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measurable criteria against which to evaluate progress towards recovery and assess the species' likely future condition. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of a species, or to delist a species, is ultimately based

on an analysis of the best scientific and commercial data available to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan.

The recovery planning process begins with development of a recovery outline made available to the public soon after a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions while a recovery plan is being developed. Recovery teams (composed of species and other experts, including those from Federal and State agencies, Tribes, the academic community, or nongovernmental organizations) may be established to develop and implement recovery plans. The recovery outline, draft recovery plan, final recovery plan, and any revisions will be available on our website as they are completed (https://www.fws.gov/program/endangered-species), or from our Arkansas 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.

If this species is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost-share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the States of Arkansas and Oklahoma would be eligible for Federal funds to implement management actions that promote the

protection or recovery of the peppered shiner. Information on our grant programs that are available to aid species recovery can be found at: https://www.fws.gov/service/financial-assistance.

Although the peppered shiner is only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for this species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

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

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

In contrast, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action which *is likely* to jeopardize the continued existence of any species

proposed to be listed under the Act or result in the destruction or adverse modification of critical habitat proposed to be designated for such species. Although the conference procedures are required only when an action is likely to result in jeopardy or adverse modification, action agencies may voluntarily confer with the Service on actions that may affect species proposed for listing or critical habitat proposed to be designated. In the event that the subject species is listed or the relevant critical habitat is designated, a conference opinion may be adopted as a biological opinion and serve as compliance with section 7(a)(2).

Examples of discretionary actions for the peppered shiner that may be subject to conference and consultation procedures under section 7 are land management or other landscape-altering activities on Federal lands administered by the Service and U.S. Forest Service as well as actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the CWA or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, Tribal, local, or private lands that are not federally funded, authorized, or carried out by a Federal agency—do not require section 7 consultation. Federal agencies should coordinate with the Arkansas Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**) with any specific questions on section 7 consultation and conference requirements.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The prohibitions of section 9(a)(1) of the Act, and the Service's implementing regulations codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to commit, to attempt

to commit, to solicit another to commit or to cause to be committed any of the following acts with regard to any endangered wildlife: (1) import into, or export from, the United States; (2) take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect) within the United States, within the territorial sea of the United States, or on the high seas; (3) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such wildlife that has been taken illegally; (4) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of commercial activity; or (5) sell or offer for sale in interstate or foreign commerce. Certain exceptions to these prohibitions apply to employees or agents of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies.

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

Required Determinations

Clarity of the Rule

We are required by E.O.s 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(1) Be logically organized;

(2) Use the active voice to address readers directly;

(3) Use clear language rather than jargon;

(4) Be divided into short sections and sentences; and

(5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

Regulatory Planning and Review (Executive Orders 12866, 13563, and 14192)

E.O. 12866 provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget will review significant regulatory actions. E.O. 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. E.O. 13653 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. We have developed this proposed rule in a manner consistent with these requirements. OIRA has determined that this rule is significant. This rule is an E.O. 14192 regulatory action.

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951, May 4, 1994), E.O. 13175 (Consultation and Coordination with Indian Tribal Governments), the President's memorandum of November 30, 2022 (Uniform Standards for Tribal Consultation; 87 FR 74479, December 5, 2022), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate

meaningfully with Federally recognized Tribes and Alaska Native Corporations on a government-to-government basis. In accordance with Secretaries' Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes.

In a letter dated January 6, 2024, to the Tribal leadership of each of the following 11 Tribal nations near or within the range of the peppered shiner in the State of Oklahoma (Absentee-Shawnee Tribe, Apache Tribe of Oklahoma, Caddo Nation of Oklahoma, Cherokee Nation, Cheyenne and Arapaho Tribes of Oklahoma, The Chickasaw Nation, Muscogee (Creek) Nation, Osage Nation, Quapaw Nation, Wichita and Affiliated Tribes), we sought input on the Species Status Assessment for the peppered shiner. The Choctaw Nation responded with confirmation that they reviewed the Species Status Assessment and did not have additional information or comments to provide.

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 Arkansas Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Fish and Wildlife Service's Species Assessment Team and the Arkansas 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.

Proposed Regulation Promulgation

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

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

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

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

2. In § 17.11, in paragraph (h), amend the List of Endangered and Threatened Wildlife by adding an entry for "Shiner, peppered" in alphabetical order under FISHES to read as follows:

§ 17.11 Endangered and threatened wildlife.

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(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * * * * * *				
FISHES				
* * * * * * *				
Shiner, peppered	*Miniellus perpallidus*	Wherever found	E	[*Federal Register* citation when published as a final rule]
* * * * * * *				

Brian Nesvik,
Director,
U.S. Fish and Wildlife Service.

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