ENDANGERED AND THREATENED WILDLIFE AND PLANTS; 12-MONTH FINDING FOR LAKE STURGEON

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notification of petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a 12-month finding on a petition to list the lake sturgeon (*Acipenser fulvescens*) as an endangered or threatened species under the Endangered Species Act of 1973, as amended (Act). After a thorough review of the best available scientific and commercial information, we find that listing the lake sturgeon as an endangered or threatened species is not warranted at this time. However, we ask the public to submit to us at any time any new information relevant to the status of the lake sturgeon or its habitat.

DATES: The finding in this document was made [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: A detailed description of the basis for this finding is available on the internet at https://www.regulations.gov under Docket No. FWS-R3-ES-2024-0022. Supporting information used to prepare this finding is available by contacting the person listed under FOR FURTHER INFORMATION CONTACT. Please submit any new information, materials, comments, or questions concerning this finding to the person listed under FOR FURTHER INFORMATION CONTACT.

FOR FURTHER INFORMATION CONTACT: Barbara Hosler, Regional Listing Coordinator, Midwest Regional Office, 517–351–6326, barbara_hosler@fws.gov. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial
711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

**SUPPLEMENTARY INFORMATION:**

**Background**

Under section 4(b)(3)(B) of the Act (16 U.S.C. 1531 et seq.), we are required to make a finding on whether or not a petitioned action is warranted within 12 months after receiving any petition that we have determined contains substantial scientific or commercial information indicating that the petitioned action may be warranted (“12-month finding”). We must make a finding that the petitioned action is: (1) Not warranted; (2) warranted; or (3) warranted, but precluded by other listing activity. We must publish a notification of the 12-month finding in the *Federal Register*.

**Summary of Information Pertaining to the Five Factors**

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations at part 424 of title 50 of the Code of Federal Regulations (50 CFR part 424) set forth procedures for adding species to, removing species from, or reclassifying species on the Lists of Endangered and Threatened Wildlife and Plants (Lists). The Act defines “species” as including any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature. The Act defines “endangered species” as any species that is in danger of extinction throughout all or a significant portion of its range (16 U.S.C. 1532(6)), and “threatened species” as any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (16 U.S.C. 1532(20)). Under section 4(a)(1) of the Act, a species may be determined to be an endangered species or a threatened species because of any of the following 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.

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 of the Interior determines whether the species meets the Act’s 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.

In conducting our evaluation of the five factors provided in section 4(a)(1) of the Act to determine whether lake sturgeon meets the Act’s definition of an “endangered species” or “threatened species,” we considered and thoroughly evaluated the best scientific and commercial information available regarding the past, present, and future stressors and threats. We reviewed the petition, information available in our files, and other available published and unpublished information for the species. Our evaluation may include information from recognized experts; Federal, State, and Tribal governments; academic institutions; foreign governments; private entities; and other members of the public.

The species assessment form for the lake sturgeon contains more detailed biological information, a thorough analysis of the listing factors, a list of literature cited, and an explanation of why we determined that the species does not meet the Act’s definition of an “endangered
species” or a “threatened species.” To inform our status reviews, we completed a species status assessment (SSA) report for the lake sturgeon. The SSA report contains a thorough review of the taxonomy, life history, ecology, current status, and projected future status for the lake sturgeon. This supporting information can be found on the internet at https://www.regulations.gov under the Docket No. FWS-R3-ES-2024-0022.

Our analysis for this decision applied our current regulations, portions of which were last revised in 2019. Given that we proposed further revisions to these regulations on June 22, 2023 (88 FR 40764), we have also analyzed whether the decision would be different if we were to apply those proposed revisions. We concluded that the decision would have been the same if we had applied the proposed 2023 regulations. The analyses under both the regulations currently in effect and the regulations after incorporating the June 22, 2023, proposed revisions are included in our decision file for this action.

**Previous Federal Actions**

On May 23, 2018, we received a petition from the Center for Biological Diversity requesting that the lake sturgeon (*Acipenser fulvescens*) be listed as an endangered or threatened species rangewide, or in nine petitioned distinct population segments, and critical habitat be designated for this species under the Act. On August 15, 2019, we published a 90-day finding (84 FR 41691) that the petition contained substantial information indicating listing may be warranted for the species. A complaint was filed on February 20, 2020, by the Center for Biological Diversity, Fishable Indiana Streams for Hoosiers, Hoosier Environmental Council, and Prairie Rivers Network alleging that we failed to make a 12-month finding on the May 23, 2018, petition to list the lake sturgeon. As a result of the litigation, we have a court-ordered date of June 30, 2024, to deliver a 12-month finding to the *Federal Register*. This document constitutes our 12-month finding on the May 23, 2018, petition to list the lake sturgeon under the Act.

The petition also included nine potential distinct population segments (DPSs): Lake
Superior, western Lake Michigan, Red River, Rainy Lake/Rainy River/Lake of the Woods, upper Mississippi River, Missouri River, Ohio River, Arkansas-White River, and the lower Mississippi River. After evaluating these populations under our 1996 Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act (DPS policy; 61 FR 4722, February 7, 1996), we found that each population is not discrete because it is not markedly separated from other populations of lake sturgeon, with evidence of migration and movement between each petitioned DPS and a population of lake sturgeon outside of the petitioned DPS. In addition, the Red River and Rainy Lake/Rainy River/Lake of the Woods petitioned DPSs are not discrete because they do not have significant differences in the control of exploitation, management of habitat, conservation status, or regulatory mechanisms from the connected lake sturgeon populations in Canada. For a more detailed discussion of our DPS analysis, please see the species assessment form.

Using the best available information, we determined that none of the petitioned DPSs meets the criteria for discreteness in our DPS policy. Because we did not find any of the petitioned DPSs to be discrete, we did not evaluate significance under the DPS policy. Therefore, we proceed with determining whether the lake sturgeon meets the Act’s definition of an endangered or threatened species throughout all or a significant portion of its range.

Summary of Finding

Historically, lake sturgeon were widely distributed across the eastern and central United States and Canada. In Canada, the species was found within the Hudson Bay and Great Lakes watersheds and in rivers and lakes in Alberta, Saskatchewan, Manitoba, Ontario, and Quebec. In U.S. waters, they were distributed throughout the Great Lakes and their tributaries, the Mississippi River basin, as well as an isolated population in the Mobile River Basin in Alabama and Georgia. Although lake sturgeon occupy a reduced area today, they remain distributed in the four major North American drainages they occupied historically, including the Mississippi River basin, the Great Lakes, Hudson Bay, and the Mobile River Basin.
Sturgeon have a prehistoric appearance because of their large size, shark-like tails, and bony plate-armed covering. Lake sturgeon possess a torpedo-shaped body that is protected by five lateral rows of scutes (bony, diamond-shaped scales). Lake sturgeon are a long-lived fish, living to 150 years of age, and are late maturing, with males taking 12–20 years to mature and females taking 15–30 years. Two key habitat needs for lake sturgeon are access to suitable spawning and nursery habitat, and connectivity between all habitat types (Service 2023, pp. 12-13). Lake sturgeon travel from lakes and large rivers (foraging habitat) to tributaries (spawning habitat) to spawn, then the resulting lake sturgeon larvae will drift downstream to the mouth of rivers (nursery habitat) until they are large enough to move to larger bodies of water. Spawning habitat generally consists of coarser substrate with interstitial spacing, water temperatures ranging from about 8–23.3 degrees Celsius (°C) (47–72 degrees Fahrenheit (°F)), and sufficient water flow in riverine habitat. Nursery habitat is similar, defined by riverine habitat with both fine sediment and coarser substrates, sufficient water flow, appropriate water temperatures, and food availability. To complete its life cycle, lake sturgeon need spawning, nursery, and adult foraging habitat to be connected and accessible. These habitat needs are also essential to supporting natural recruitment and adult abundance of life sturgeon. Generally, if spawning and nursery habitat are accessible, then natural recruitment will occur, which in turn will increase adult abundance.

For lake sturgeon populations to be resilient, they need a healthy demography (i.e., stable or positive growth rates), habitat that provides connectivity to allow for gene flow among subpopulations, and sufficient habitat quality and quantity to support healthy individuals. For a lake sturgeon population to be considered demographically healthy, it needs a minimum of 750 total spawning adults and successful spawning and recruitment that occurs in most years. Lake sturgeon need widespread, naturally recruiting, abundant populations for redundancy. Additionally, lake sturgeon need genetic, behavioral, and ecological diversity across their range to have sufficient representation to adapt to future environmental change.
We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to lake sturgeon, and we evaluated all relevant factors under the five listing factors, including any regulatory mechanisms and conservation measures addressing these threats. The primary threats affecting the lake sturgeon’s biological status are dams, barriers, and climate change (Service 2023, pp. 14-15, 17-22). Dams and barriers occur across the lake sturgeon’s range and can block access to spawning and nursery habitat, stopping lake sturgeon from completing their life cycle, thus making this the most significant threat to the species.

We focused on the potential effects that warming water temperatures, as a result of climate change, could have on the lake sturgeon (Service 2023, pp. 24-25, 121-125). Warming water temperatures could have negative effects on the species by changing the timing of spawning runs and decreasing available habitat if waters get too warm. Warming water temperatures could also have a positive effect by increasing growth rate and creating habitat out of areas that were previously too cold. Other threats we considered in our analysis, but did not find to rise to a major species-level impact, include water quality degradation and pollution, disease and predation, recreational fishing, illegal harvest, effects of lamprey control, invasive species, loss of genetic diversity, and genetic risks from stocking. For more information on our analysis of these threats, see the SSA report (Service 2023, pp. 13-44).

The primary conservation measure for the lake sturgeon is stocking of captive-reared lake sturgeon. Stocking efforts occur across much of the lake sturgeon’s range and have brought areas back from extirpation and bolstered the resiliency of existing populations (Service 2023, pp. 44-110). Other conservation measures we considered in our analysis include restoring connectivity of habitat through dam removal, creation of fish passages, habitat restoration, and invasive and non-native species eradication and control programs. Restoration of connectivity and habitat can have significant positive effects on lake sturgeon, but these benefits are more localized or benefit certain populations.
During the late 1800s and early 1900s, commercial harvest severely reduced the abundance of lake sturgeon while the construction of dams and channelization and dredging reduced the amount and accessibility of spawning and nursery habitat. By the late 1900s, lake sturgeon harvest was, and remains, heavily regulated and monitored by State agencies, effectively removing the threat of overharvest (Service 2023, pp. 30-42). While the threat dams pose to the species remains across the species’ range, reducing access to spawning and nursery habitat, there have been significant efforts to recover the lake sturgeon. Stocking programs have helped to reintroduce or supplement populations of the lake sturgeon across much of its range, including six of eight representation units in the United States and three of four designatable units in Canada, providing increased resiliency for populations that are stocked (Service 2023, pp. 44-110). Along with stocking, restoration of connectivity has improved the ability of populations to recover naturally, such as in the Red River of the North (Service 2023, pp. 79-84). Due to the significant ongoing conservation and management efforts across the range of the species, areas that are being managed are trending positively and have increased resiliency compared to past decades (Service 2023, pp. 44-110). In addition, although abundance has been drastically reduced, highly and moderately resilient populations are still widely distributed, providing sufficient redundancy for the species rangewide (Service 2023, pp. 110-113).

Overall, lake sturgeon representation has been reduced from historical levels, but the species still maintains a moderate to high level of representation in multiple ways (Service 2023, pp. 113-116). While genetic diversity has been lost in the southernmost part of the range due to extirpations, the species has generally maintained a high level of genetic diversity. In addition, lake sturgeon may have some inherent phenotypic plasticity to respond to stressors. Lake sturgeon may have the ability to adapt to warming climates and can thrive in many different ecological settings. The primary reason representation has been reduced from historical levels is because the widescale construction of dams has reduced the ability of lake sturgeon to move up tributaries to spawn. However, lake sturgeon have a high level of adaptability to local changes
and environmental conditions. Therefore, although dams have reduced representation from historical levels, the lake sturgeon currently has a sufficient level of representation to adapt to environmental changes (Service 2023, pp. 113-116).

In summary, the lake sturgeon has many highly and moderately resilient populations distributed throughout its range that provide sufficient redundancy for the species and the adaptive capacity to withstand near-term and long-term changes to the environment. Thus, after assessing the best available information, we conclude that the lake sturgeon is not in danger of extinction throughout all of its range.

Therefore, we proceed with determining whether the lake sturgeon is likely to become endangered within the foreseeable future throughout all of its range. We carried three major influences into our future condition analysis: dams, stocking, and climate change. We considered other influences and conservation efforts described in the SSA report, but we identified these three influences as having the highest likelihood of a potentially significant, species-wide impact into the future.

We do not anticipate the number of dams to change significantly across the range of the species in the future, meaning the effects of dams on the lake sturgeon at the species level will likely remain similar to the current level of effects (Service 2023, pp. 117-118). While we expect dams and barriers to continue to have a significant negative effect on the lake sturgeon, we expect the stocking programs occurring in six of eight representation units in the United States and three of four designatable units in Canada to continue until management objectives are met; see the species assessment form and SSA report for management objectives (Service 2023, pp. 121-122). These representation and designatable units are generally trending upwards, largely because of conservation efforts. Due to a strong, long-term commitment to reestablishment and supplementation efforts by States and Tribes, we expect these efforts to continue until such time that they are no longer necessary. Overall, we expect lake sturgeon populations that are currently trending upward to continue to trend upward in the future, improving resiliency and redundancy.
for the species. The species current condition and positive trends from ongoing conservation efforts support species’ viability in the face of environmental stochasticity and potential catastrophic events.

There is much uncertainty regarding how the lake sturgeon will respond to changes in habitat due to climate change. However, because of the species’ relatively wide thermal tolerance, ability to move, and ability to adjust spawning phenology, the lake sturgeon shows a high degree of adaptability to climate change, although that adaptability will likely be limited by its ability to access suitable habitats. Overall, we expect representation in the future to remain similar to the current condition and remain sufficient to adapt to environmental changes.

In summary, the lake sturgeon is projected to have: (1) increased resiliency in populations with ongoing conservation efforts, (2) highly and moderately resilient populations distributed throughout its range that provide sufficient redundancy for the species, and (3) the adaptive capacity to withstand near-term and long-term changes to the environment. After assessing the best available information, we conclude that the lake sturgeon is not likely to become endangered within the foreseeable future throughout all of its range.

We also evaluated whether the lake sturgeon is endangered or threatened in a significant portion of its range. We evaluated four portions (i.e., all analysis units that are currently functionally extirpated or have low overall resiliency and designatable units in a remnant status, the Hudson Bay drainage, the Atlantic drainage, and the Gulf of Mexico drainage) and did not find them to be significant because they are not large geographic areas relative to the range of the species as a whole and they do not constitute habitat of high quality or unique value relative to the remaining portions of the range of lake sturgeon. Because we did not find any portion to be significant, we did not evaluate whether any portion is in danger of extinction either now or within the foreseeable future. Therefore, we did not find any portions of the lake sturgeon’s range for which both (1) the portion is significant; and (2) the species is in danger of extinction in that portion, either now or within the foreseeable future. Thus, after assessing the best
available information, we conclude that the lake sturgeon is not in danger of extinction in a significant portion of its range now, or within the foreseeable future.

After assessing the best available information, we concluded that the lake sturgeon is not in danger of extinction or likely to become in danger of extinction within the foreseeable future throughout all of its range or in any significant portion of its range. Therefore, we find that listing the lake sturgeon as an endangered species or threatened species under the Act is not warranted. A detailed discussion of the basis for this finding can be found in the lake sturgeon species assessment form and other supporting documents on https://www.regulations.gov under Docket No. FWS-R3-ES-2024-0022 (see ADDRESSES, above).

Peer Review

In accordance with our July 1, 1994, peer review policy (59 FR 34270; July 1, 1994) and the Service’s August 22, 2016, Director’s Memo on the Peer Review Process, we solicited independent scientific reviews of the information contained in the lake sturgeon SSA report. The Service sent the SSA report to nine independent peer reviewers and received three responses. Results of this structured peer review process can be found at https://www.regulations.gov under Docket No. FWS-R3-ES-2024-0022. We incorporated the results of these reviews, as appropriate, into the SSA report, which is the foundation for this finding.

New Information

We request that you submit any new information concerning the taxonomy of, biology of, ecology of, status of, or stressors to the lake sturgeon to the person listed above under FOR FURTHER INFORMATION CONTACT, whenever it becomes available. New information will help us monitor this species and make appropriate decisions about its conservation and status. We encourage local agencies and stakeholders to continue cooperative monitoring and conservation efforts.

References Cited
A list of the references cited in this document is available on the internet at
https://www.regulations.gov under Docket No. FWS-R3-ES-2024-0022 in the species
assessment form, or upon request from the person listed above under FOR FURTHER
INFORMATION CONTACT.

Authors

The primary authors of this document are the staff members of the Species Assessment
Team, Ecological Services Program.

Signing Authority

Martha Williams, Director of the U.S. Fish and Wildlife Service, approved this action on
March 12, 2024, for publication. On April 16, 2024, Martha Williams authorized the undersigned
to sign the document electronically and submit it to the Office of the Federal Register for
publication as an official document of the U.S. Fish and Wildlife Service.

Authority

The authority for this action is section 4 of the Endangered Species Act of 1973, as
amended (16 U.S.C. 1531 et seq.).

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

[FR Doc. 2024-08567 Filed: 4/22/2024 8:45 am; Publication Date: 4/23/2024]