



## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

[Docket No. FWS–R4–ES–2017–0094; 4500030113]

RIN 1018–BC52

### Endangered and Threatened Wildlife and Plants; Endangered Species Status for Barrens

#### Topminnow

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), determine endangered species status under the Endangered Species Act of 1973, as amended (Act), for the Barrens topminnow (*Fundulus julisia*), a freshwater fish species from Cannon, Coffee, Dekalb, and Warren Counties, Tennessee. This rule adds this species to the Federal List of Endangered and Threatened Wildlife.

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

**ADDRESSES:** This final rule is available on the Internet at <http://www.regulations.gov> under Docket No. FWS–R4–ES–2017–0094 and at <https://www.fws.gov/southeast/>. Comments and materials we received, as well as supporting documentation we used in preparing this rule, are available for public inspection at <http://www.regulations.gov> under Docket No. FWS–R4–ES–2017–0094. Comments, materials, and documentation that we considered in this rulemaking will be available by appointment, during normal business hours at: U.S. Fish and Wildlife Service,

Tennessee Ecological Services Field Office; 446 Neal Street, Cookeville, TN; telephone 931-877-8339.

**FOR FURTHER INFORMATION CONTACT:** Lee Andrews, Field Supervisor, U.S. Fish and Wildlife Service, Tennessee Ecological Services Field Office, 446 Neal Street, Cookeville, TN; telephone 931-525-4973. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800-877-8339.

#### **SUPPLEMENTARY INFORMATION:**

##### **Supporting Documents**

We prepared a species status assessment (SSA) report for the Barrens topminnow. Written in consultation with species experts, the SSA report represents the best scientific and commercial data available concerning the status of the Barrens topminnow, including the impacts of past, present and future factors (both negative and beneficial) affecting the species. Scientific expertise informing the SSA report came primarily from the Barrens Topminnow Working Group, which is a team of biologists from the Service, Tennessee Wildlife Resources Agency, Tennessee universities, and nongovernment organizations that have been working on Barrens topminnow conservation since 2001. Scientists on the Barrens Topminnow Working Group provided expertise in fish biology, habitat management, and stressors (factors negatively affecting the species). One biologist outside the Barrens Topminnow Working Group conducted independent peer review of the SSA report. The SSA report; the January 4, 2018, proposed rule (83 FR 490); this final rule; and other materials relating to this rulemaking can be found on the Service's Southeast Region website at <https://www.fws.gov/southeast/> and at <http://www.regulations.gov> under Docket No. FWS-R4-ES-2017-0094.

##### **Previous Federal Actions**

Please refer to the proposed listing rule for the Barrens topminnow (83 FR 490; January 4, 2018) for a detailed description of previous Federal actions concerning this species.

## **Background**

The Barrens topminnow is a small fish with an average lifespan of 2 years that is endemic to springs and gently flowing portions of spring-fed streams in middle Tennessee. This species relies on aquatic vegetation for spawning substrate and cover. Owing primarily to invasive western mosquitofish (*Gambusia affinis*) that prey upon and harass Barrens topminnows, the species' range has been curtailed and its status rangewide is low, based upon the best available scientific and commercial data available.

Please refer to the January 4, 2018, proposed listing rule for the Barrens topminnow (83 FR 490) and the SSA report for a full summary of species information. Both are available on the Service's Southeast Region website at <https://www.fws.gov/southeast/> and at <http://www.regulations.gov> under Docket No. FWS-R4-ES-2017-0094.

## **Summary of Comments and Recommendations**

In the January 4, 2018, proposed rule (83 FR 490), we requested that all interested parties submit written comments on the proposal by March 5, 2018. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. We did not receive any requests for a public hearing.

### *Peer Reviewer Comments*

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review actions under the Act (16 U.S.C. 1531 *et seq.*), we solicited expert opinion from six knowledgeable individuals

with scientific expertise that included familiarity with the Barrens topminnow and its habitat, biological needs, and threats. We received a response from one peer reviewer.

We updated the SSA report based on the peer reviewer's comments. The changes consisted of clarifications and corrections to the SSA report, including typographical edits, incorporation of omitted references, and a clarification regarding the definition of a genetic term. The peer reviewer's comments did not change our determination that the Barrens topminnow meets the definition of an endangered species under the Act.

### *Public Comments*

We received 24 public comments on the proposed rule. Eleven of the comments were supportive of listing the Barrens topminnow as endangered but did not provide any new information on the species' status. None of the remaining 13 comments provided substantive comments concerning the proposed listing of the Barrens topminnow. Ten of those did not address or provide any information concerning the Barrens topminnow, and three focused on the need for transparency in regulations implemented under the Act. Regarding transparency for our listing decision for the Barrens topminnow, we note that we provide our SSA report, as well as several other reports and surveys that helped inform this listing decision, to the public on <http://www.regulations.gov> under Docket No. FWS-R4-ES-2017-0094. Thus, none of the public comments changed our determination that the Barrens topminnow meets the definition of an endangered species under the Act.

### **Summary of Changes from the Proposed Rule**

As discussed above, we made no changes to this final rule after consideration of the comments we received.

### **Summary of Biological Status and Threats**

Section 4 of the Act (16 U.S.C. 1533), and its implementing regulations in title 50 of the Code of Federal Regulations at 50 CFR part 424, set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(a)(1) of the Act, we may list a species based on (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. Our assessment evaluates the biological status of the species and possible threats to its continued existence based upon the best available scientific and commercial data.

Please refer to the SSA report for a more detailed discussion of the factors affecting the Barrens topminnow.

#### *Current Condition of the Barrens Topminnow*

To evaluate the current and future viability of the Barrens topminnow, we assessed a range of conditions to consider the species' resiliency, representation, and redundancy (the "3 Rs" described in detail in the SSA report). The historical range of the Barrens topminnow included springs and spring runs (first and second order streams with a spring source) on the Barrens Plateau, which is part of the Eastern Highland Rim physiographic province in middle Tennessee. Historical species records are from the Duck River, Elk River, and Caney Fork River drainages. The Duck River and Elk River drain to the Tennessee River, and the Caney Fork River drains to the Cumberland River. Captively held Elk River and wild Caney Fork River stock exist today and are considered "evolutionary significant units" (ESUs, historically isolated groups of populations that are on independent evolutionary trajectories). Historical Duck River

stock became extinct in the 1960s, before genetic material could be examined to assess whether the Duck River stock was a unique ESU or belonged to one of the two extant ESUs.

Once known to occupy 18 sites (and likely more sites that were not sampled prior to extirpation) within the three drainages, the Barrens topminnow currently occurs in the wild at 5 sites. The species occurs in the Duck River drainage in Short Spring and Marcum Spring, and in the Caney Fork drainage in Benedict Spring, McMahan Creek, and Greenbrook Pond. The Benedict Spring and McMahan Creek occurrences consist of native stock, while the remaining three, including the two Duck River occurrences, are populated with individuals introduced from Caney Fork drainage sites. An ark population of Barrens topminnows from Pond Spring in the Elk River drainage is held in captivity at three facilities, with the intention to reintroduce individuals from that population to the drainage where habitat conditions are, or can be made, suitable.

Of the five sites currently occupied by the species, the Greenbrook Pond and Marcum Spring populations are estimated to have medium resiliency, and the other three populations low resiliency. Rangelwide, the Barrens topminnow has low representation, owing to the species' reduced genetic diversity, loss of at least one ESU from the wild, and restriction to a single ecoregion and specific habitat type. Redundancy is also low, as the species is extant at only 5 of 18 known historical sites. Based on the 3 Rs, the species' overall current condition is low.

### *Threats*

The greatest threat to Barrens topminnow is predation from the western mosquitofish (Factor C), an invasive species native to portions of Tennessee west of the Barrens Plateau that preys upon young topminnows and harasses adults. Extirpation of Barrens topminnows has occurred consistently within 3 to 5 years of western mosquitofish invasion of a site, and the five

sites where Barrens topminnows remain extant are the only sites not occupied by western mosquitofish.

Predation upon Barrens topminnows by western mosquitofish (Factor C) is the primary driver of Barrens topminnow range curtailment and habitat modification (Factor A), as well as adverse demographic changes (Factor E). The presence of predatory western mosquitofish in most spring and stream systems of the Barrens Plateau has rendered otherwise suitable habitat for the Barrens topminnow uninhabitable. In addition to modification of habitat by a biological feature (invasive western mosquitofish), alteration of physical habitat features has occurred due to conversion of surrounding upland habitat to pasture, with concomitant removal of riparian vegetation and livestock accessing streams.

Livestock access increases bank erosion, sedimentation, and nutrient loading in streams. Removal of riparian vegetation can also increase sedimentation and may raise water temperatures above levels suitable for Barrens topminnows. While such physical habitat alteration (Factor A) has occurred and has been a factor in curtailing some of the species' range, its impact on the topminnow is much less substantial than predation by western mosquitofish.

Adverse demographic changes (Factor E) also are largely driven by invasive western mosquitofish (Factor C). The expansion of western mosquitofish into topminnow habitat has eliminated connectivity between sites that would allow gene flow and maintenance of genetic diversity. Each occupied site is vulnerable to extirpation due to prolonged drought or a flood that enables western mosquitofish invasion. Topminnows cannot move from these sites during droughts or floods because western mosquitofish are downstream. Further, the erosion of genetic variability due to site isolation reduces the capacity of the species to withstand stochastic events.

Climate change (Factor E) is a threat to the Barrens topminnow. Drought poses a threat to Barrens topminnows as evidenced by the Benedict Spring site drying up three times since 2006, although each time topminnows were rescued from the drying spring and held in captivity until they could be returned to the spring after the drought subsided. Climate models at the scale of the Barrens Plateau are lacking, but in the broader southeastern United States, variability in weather is expected to increase over the next century, resulting in more extreme dry and wet years.

We did not find that the Barrens topminnow is impacted by overutilization (Factor B). Regarding the adequacy of existing regulatory mechanisms (Factor D), such as regulations implemented under the Clean Water Act to protect water quality and instream habitat, we found that they do not address, nor do they contribute to, the threat of invasive mosquitofish, which is the primary driver of the Barrens topminnow's status.

### **Determination**

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to the Barrens topminnow. The Barrens topminnow is extirpated from 13 of 18 historically occupied sites, which is equivalent to a 72 percent loss in the species' range. Native Duck River populations have been lost, and the ESU from the Elk River drainage currently persists only in captivity. Due primarily to predation by the western mosquitofish, but secondarily to habitat alternation exacerbated by climate change, the overall condition of the species is low, based on population resiliency and rangewide representation and redundancy.

The Act defines an endangered species as any species that is "in danger of extinction throughout all or a significant portion of its range" and a 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.” As discussed above, the resiliency, representation, and redundancy of the species has been severely compromised by the operation of threats in the past, primarily due to predation by introduced and expanding populations of nonnative western mosquitofish. In addition, all of the remaining populations of Barrens topminnow are at imminent risk of further expansion of western mosquitofish, as well as drought events, with no reasonable prospect of natural reestablishment once a population is extirpated. Therefore, we conclude that the species is currently at risk of extinction throughout its range, thus meeting the definition of an endangered species. For the same reasons, we find that a threatened species status is not appropriate for the Barrens topminnow.

Under the Act and our implementing regulations, a species may warrant listing if it is endangered or threatened throughout all or a significant portion of its range. Because we have determined that the Barrens topminnow is in danger of extinction throughout its range, we find it unnecessary to proceed to an evaluation of potentially significant portions of the range. Where the best available information allows the Services to determine a status for the species rangewide, that determination should be given conclusive weight because a rangewide determination of status more accurately reflects the species’ degree of imperilment and better promotes the purposes of the statute. Under this reading, we should first consider whether listing is appropriate based on a rangewide analysis and proceed to conduct a “significant portion of its range” analysis if, and only if, a species does not qualify for listing as either endangered or threatened according to the “all” language. We note that the court in *Desert Survivors v. Department of the Interior*, No. 16-cv-01165-JCS, 2018 WL 4053447 (N.D. Cal. Aug. 24, 2018), did not address this issue, and our conclusion is therefore consistent with the opinion in that case.

Therefore, on the basis of the best available scientific and commercial information, we list the Barrens topminnow as an endangered species in accordance with sections 3(6) and 4(a)(1) of the Act.

### **Available Conservation Measures**

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

#### *Recovery Actions*

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. Subsection 4(f) of the Act requires the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and preparation of a draft and final recovery plan. The recovery outline guides the

immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan identifies site-specific management actions that set a trigger for review of the five factors that control whether a species remains endangered or may be downlisted or delisted, and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website (<http://www.fws.gov/endangered>) or from our Tennessee Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

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

Following publication of this final listing rule, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic community, and nongovernmental

organizations. In addition, pursuant to section 6 of the Act, the State of Tennessee will be eligible for Federal funds to implement management actions that promote the protection or recovery of the Barrens topminnow. Information on our grant programs that are available to aid species recovery can be found at: <http://www.fws.gov/grants>.

Please let us know if you are interested in participating in recovery efforts for the Barrens topminnow. 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**).

#### *Critical Habitat*

Section 4(a)(3) of the Act and implementing regulations (50 CFR 424.12) require that we designate critical habitat at the time a species is determined to be an endangered or threatened species, to the maximum extent prudent and determinable. In the proposed listing rule (83 FR 490; January 4, 2018), we determined that designation of critical habitat was prudent but not determinable because specific information needed to analyze the impacts of designation was lacking. We are still in the process of assessing this information. We plan to publish a proposed rule to designate critical habitat for the Barrens topminnow in the near future.

#### *Regulatory Provisions*

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

habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by the Service; technical assistance and projects funded through the U.S. Department of Agriculture Natural Resources Conservation Service; issuance of permits by the Tennessee Valley Authority for right-of-way stream crossings; issuance of section 404 Clean Water Act (33 U.S.C. 1251 *et seq.*) permits by the U.S. Army Corps of Engineers; and construction and maintenance of roads or highways by the Federal Highway Administration.

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

We may issue permits to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits for endangered wildlife are

codified at 50 CFR 17.22. A permit may be issued for the following purposes: for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities. There are also certain statutory exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

It is our policy, as published in the *Federal Register* on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a final listing on proposed and ongoing activities within the range of a listed species. Based on the best available information, the following actions are unlikely to result in a violation of section 9, if these activities are carried out in accordance with existing regulations and permit requirements; this list is not comprehensive:

(1) Normal agricultural practices, including herbicide and pesticide use, which are carried out in accordance with any existing regulations, permit and label requirements, and best management practices; and

(2) Normal residential landscaping activities.

Based on the best available information, the following activities may potentially result in a violation of section 9 the Act; this list is not comprehensive:

(1) Collection or handling of the Barrens topminnow;

(2) Introduction of nonnative species that compete with or prey upon the Barrens topminnow, including western mosquitofish and other species in the mosquitofish genus *Gambusia*;

(3) Removal or destruction of native aquatic vegetation in any body of water in which the Barrens topminnow is known to occur; and

(4) Discharge of chemicals or fill material into any waters in which the Barrens topminnow is known to occur.

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

### **Required Determinations**

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

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act, need not be prepared in connection with listing a species as an endangered or threatened species under the Endangered Species Act. We published a notice outlining our reasons for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244).

*Government-to-Government Relationship with Tribes*

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal

public lands, to remain sensitive to Indian culture, and to make information available to tribes. There are no tribal lands affected by this listing determination.

### **References Cited**

A complete list of references cited in the SSA report that informed this rulemaking is available on the Internet at <http://www.regulations.gov> under Docket No. FWS–R4–ES–2017–0094 and upon request from the Tennessee Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

### **Authors**

The primary authors of this final rule are the staff members of the Service’s Tennessee Ecological Services Field Office.

### **List of Subjects in 50 CFR Part 17**

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

### **Regulation Promulgation**

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

### **PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS**

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

**Authority:** 16 U.S.C. 1361-1407; 1531-1544; and 4201-4245, unless otherwise noted.



2. Amend §17.11(h) by adding an entry for “Topminnow, Barrens” to the List of Endangered and Threatened Wildlife in alphabetical order under FISHERIES 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
* * * * *				
FISHERIES				
* * * * *				
Topminnow, Barrens	<i>Fundulus julisia</i>	Wherever found	E	83 FR [insert <i>Federal Register</i> page where the document begins], [Insert date of publication in the <i>Federal Register</i> ].
* * * * *				

Dated: August 20, 2019.

**Margaret E. Everson**  
*Principal Deputy Director,  
 U.S. Fish and Wildlife Service,  
 Exercising the Authority of the Director,  
 U.S. Fish and Wildlife Service.*

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