



Questions and Answers:

Proposal to List Two Missouri Crayfishes as Threatened Under the Endangered Species Act

1. What action is the Service taking?

The U.S. Fish and Wildlife Service is announcing a proposal to list the Big Creek crayfish and St. Francis River crayfish as threatened under the Endangered Species Act (ESA). We are also announcing a proposed 4(d) rule and proposed critical habitat for these species. The proposal, which appears in the *Federal Register*, opens a 60-day public comment period that ends on November 16, 2020. The proposed rule and supporting documents are available online at <https://www.regulations.gov> under docket number FWS–R3–ES–2019–0020.

2. What are the Big Creek crayfish and St. Francis River crayfish, and where are they found?

The Big Creek crayfish and St. Francis crayfish are small lobster-like crustaceans that live in freshwater habitats. The Big Creek crayfish is olive-tan with blackish blotches and specks over its pincers, carapace and abdomen, while the St. Francis River crayfish is dark brown with blackish blotches and specks over its pincers, carapace and abdomen.

Both the Big Creek crayfish and the St. Francis River crayfish have localized distributions in the St. Francis River watershed upstream of Wappapello Dam in Iron, Madison, St. Francois, Washington, and Wayne counties in southeastern Missouri. The Big Creek crayfish is most abundant in Big Creek and other streams on the west side of the St. Francis River watershed. The St. Francis River crayfish mainly inhabits the upper St. Francis River tributaries on the upper end of the Upper St. Francis River watershed. Despite both occupying the St. Francis River watershed, these two species have been observed at the same location only seven times.

We presume that both species' feeding habits are similar to those of other crayfish species in the region, and their diets likely consist of plant detritus, periphyton, and invertebrates.

3. What is causing the decline of the Big Creek crayfish and St. Francis River crayfish in Missouri?

The primary threat to the species is the woodland crayfish, a non-native invertebrate that was discovered within the St. Francis River tributary in 1984. Since its introduction, the woodland crayfish has spread throughout a large portion of the upper St. Francis River and has caused the range of the Big Creek and St. Francis crayfishes to contract. Although neither crayfish has been completely displaced, their populations appear to be substantially reduced.

Water quality degradation is the other main threat to these crayfishes. Southeastern Missouri has been a primary producer of lead since the early 1700s. Although most mining has ceased, waste from mining operations is still present in the landscape, resulting in contamination of aquatic life and in some areas, public health advisories against human consumption of lead-contaminated fish.

Studies in southeastern Missouri and the tristate mining district found significantly higher metal concentrations in crayfish at sites downstream of mining activities than those at reference sites. Significantly lower crayfish densities were observed at sites downstream of mining activities than those at reference sites, indicating that metals associated with mining activities likely have negative impacts on crayfish populations in Ozark streams. Similar results were observed in other areas impacted by mining wastes (including sites in the Upper St. Francis River watershed), with sites downstream of mining activities having reduced densities of crayfish (from 80 to 100 percent) and significantly higher metal concentrations in crayfish.

4. Why is it important to protect and conserve these crayfishes?

Crayfish spend their entire lives in water; their presence or absence indicates the health of the stream and river systems where they live. Both main risk factors affecting these crayfishes (an invasive non-native and lead contamination) affect other plants and animals within their ecosystems. The fact that these crayfish are having a difficult time surviving indicates problems in their river and stream environments.

5. How does listing the crayfishes as threatened help their conservation?

The purpose of the Endangered Species Act (ESA) is to conserve endangered and threatened species and the ecosystems on which they depend. The Service uses the best available science to make ESA listing determinations. If the crayfishes were listed as threatened under the ESA, protective measures would apply. These measures include protection from adverse effects of federal activities, authority for the Service to develop and carry out recovery plans, and authority for the Service to conserve important habitat for the species. These efforts would contribute to the crayfishes' survival and would assist in achieving the ultimate goal: conserving both species for future generations.

6. What is a 4(d) special rule?

A 4(d) special rule is one of many tools found within the ESA for protecting species listed as threatened. This rule gets its name from section 4(d) of the ESA, which directs the Service to issue regulations deemed necessary and advisable to provide for the conservation of threatened species. Typically, the Service uses 4(d) rules to incentivize positive conservation actions and streamline the regulatory process for minor impacts to a species. As a part of those goals, the rule is often used to clarify or simplify what forms of take (killing, harming, harassing) of a threatened species are allowed and those that are prohibited.

The Service is proposing a 4(d) rule that would define prohibitions for take of both crayfishes. The rule would allow incidental (unintentional) take of the species under certain circumstances, including collection for use as bait, for educational purposes, or during conservation efforts. Additional exemptions to the prohibitions are included in the proposed 4(d) rule as published in the *Federal Register* proposed rule.

9. What is critical habitat?

Critical habitat is defined in the Endangered Species Act as "...an area that contains habitat features that are essential for the survival and recovery of a listed species, which may require special management considerations or protections."

Regulation of critical habitat is limited to the requirement under section 7 of the ESA that *federal agencies* consult with the Service on any actions that may affect critical habitat. The Service can then recommend ways to minimize adverse effects. A critical habitat designation imposes no requirements on state or private actions on state or private lands where no federal funding, permits or approvals are required.

For more information about critical habitat, see http://www.fws.gov/endangered/esa-library/pdf/critical_habitat.pdf

10. How much critical habitat is being proposed. and where is it located?

Proposed critical habitat was delineated by including all streams occupied by the Big Creek and St. Francis River crayfish. These streams include the Upper St. Francis River upstream of Wappapello Dam and tributaries in Iron, Madison, St. Francois, Washington, and Wayne counties, Missouri. The specific tributaries and portions of the St. Francis River are listed below.

The Big Creek crayfish critical habitat unit includes all of the streams (about 1,069 river miles) upstream of Wappapello Dam in the following 12-digit hydrologic subwatersheds:

Big Lake Creek-St. Francis River
Blankshire Branch-St. Francis River
Captain Creek-St. Francis River
Cedar Bottom Creek-St. Francis River
Clark Creek
Cedar Bottom Creek
Crane Pond Creek
Headwaters St. Francis River
Headwaters Twelvemile Creek
Leatherwood Creek-St. Francis River,
Lower Big Creek
Middle Big Creek
Saline Creek-Little St. Francis River
Turkey Creek-St. Francis River,
Twelvemile Creek
Upper Big Creek

Critical habitat for the Big Creek crayfish also includes the entire St. Francis River upstream of 37.091254N, 90.447212W.

The St. Francis River crayfish critical habitat unit includes all of the streams (about 1,043 river miles) upstream of Wappapello Dam in the following 12-digit hydrologic subwatersheds:

Blankshire Branch-St. Francis River
Captain Creek-St. Francis River
Cedar Bottom Creek-St. Francis River
Headwaters St. Francis River
Headwaters Stouts Creek
Hubble Creek-St. Francis River
Leatherwood Creek-St. Francis River
Little St. Francis River
Lost Creek
Marble Creek
Musco Creek-Little St. Francis River
O'Bannon Creek-St. Francis River
Saline Creek-Little St. Francis River
Stouts Creek
Turkey Creek-St. Francis River
Wachita Creek-St. Francis River

Critical habitat for the St. Francis River crayfish also includes the entire St. Francis River upstream of 36.982104N, 90.335400W.

For the Big Creek crayfish, a large portion of the riparian land adjacent to streams proposed as critical habitat are privately owned (68 percent), with 28 percent in federal ownership and 4 percent in state ownership. Similarly, 66 percent of riparian land adjacent to streams proposed as critical habitat for the St. Francis River crayfish is privately owned, with 32 percent in federal ownership and 2 percent in state ownership.

Proposed critical habitat includes stream habitat up to full bank height and does not include any areas of adjacent land. Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located within the legal boundaries of critical habitat if the proposed rule becomes final.

11. How would a critical habitat designation affect private land?

The consequences of a critical habitat designation are often misunderstood, in part because protection of critical habitat applies only to federal agencies. Under the ESA, the only regulatory effect of a critical habitat designation is that federal agencies must ensure their actions do not destroy or adversely modify critical habitat under section 7 of the act.

A critical habitat designation does not directly affect private actions on private property. However, actions that use federal money or require a federal permit would require consultation under section 7. The federal agency is responsible for meeting the section 7 requirements, but the result could indirectly affect private landowners. An example of such an action would be the U.S. Army Corps of Engineers issuing a Clean Water Act permit for an action within a stream designated as critical habitat. Through consultation, the Service would work with the federal agency and advise it on whether the action would adversely modify critical habitat as well as ways to avoid impacts.

12. Does a critical habitat designation mean an area is considered a wildlife refuge or sanctuary?

No, a critical habitat designation does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. A critical habitat designation identifies areas that are important to the conservation of federally listed threatened or endangered species. A critical habitat designation requires federal agencies to consult with the Service on any of their actions that may affect critical habitat. The Service can then recommend ways to minimize adverse effects. The critical habitat designation imposes no requirements on private or state actions on private or state lands where no federal funding, permits or approvals are required.

13. If these crayfish are listed, will the government have free access to my land?

No, the presence of a listed species or critical habitat does not give government employees or representatives any rights to access private property.

14. What is being done to protect and conserve the Big Creek and St. Francis River crayfish?

The Missouri Department of Conservation and other organizations monitor and conduct research on the Big Creek crayfish and St. Francis River crayfish. The U.S. Geological Survey has conducted multiple evaluations of effects from lead mining contamination on crayfish, including the St. Francis River crayfish. Monitoring benefits both crayfish species by providing information on population health and trends and on the magnitude and extent of threats.

To help curtail the spread of non-native crayfish in Missouri, the Missouri Department of Conservation amended the Missouri Wildlife Code in 2011–2012. With the exception of the virile crayfish, this amendment effectively bans the sale and purchase of live crayfish for bait, the import and sale of live crayfish in pet stores, and the purchase and import of live crayfish by schools for classroom study, all of

which are vectors for crayfish invasions. It is also illegal in Missouri to release any baitfish or crayfish into public waters, except as specifically permitted by the Missouri Department of Conservation.

About 41 percent of the Upper St. Francis River watershed is in public ownership, with the majority of land managed by the U.S. Forest Service as part of the Mark Twain National Forest. Management efforts benefit stream health by focusing on riparian protection and control and reduction of sediment entering streams. Other major public landowners in the watershed include the Missouri Department of Conservation, the U.S. Army Corps of Engineers, and the Missouri Department of Natural Resources. Additionally, 5.3 river miles of Big Creek is designated an “Outstanding State Resource Water.” Missouri Outstanding State Resource Waters are high-quality waters with significant aesthetic, recreational, or scientific value and receive special protection against degradation in quality. These protections help maintain water quality and minimize additional sedimentation; therefore, these protections may improve the quantity and quality of habitat of the Big Creek crayfish and St. Francis River crayfish.

The EPA has conducted, and plans to continue, extensive remediation in areas of southeastern Missouri impacted by lead mining, including the Upper St. Francis River watershed. In addition, the Service and Missouri Department of Natural Resources are working to restore natural resources injured by mining wastes released from historic mining operations.

15. What can I do to help native crayfish and their waterways?

It is illegal to dump bait into Missouri waters. Throw unused bait into the trash. Unwanted animals and plants can invade local water and damage habitat.

Help keep local rivers and streams clean and natural. Join a local stream team, a volunteer organization that brings people together to clean, care for, and monitor rivers.

If you canoe or fish, keep rivers and lakes clean by leaving no waste behind.

Keep pollutants out of watersheds by minimizing use of pesticides and properly disposing of household toxic waste. Avoid washing spills, dirt and debris down storm drains.

16. How do I learn more about the proposed rule and how do I comment on the proposal?

The proposed rule and supporting documents are online at <https://www.regulations.gov>. Enter the docket number FWS–R3–ES–2019–0020 in the Search panel and click on the Search button. A window with the proposed rule and links to supporting documents will open.

You may submit comments by one of the following methods:

1) Electronically:

Federal eRulemaking Portal: go to <https://www.regulations.gov>. In the Search box, enter FWS–R3–ES–2019–0020, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the Search 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 Now!”

(2) Submit hard copies by U.S. mail or hand-delivery to:

Public Comments Processing
Attn: FWS-R3-ES-2019-0020
U.S. Fish & Wildlife Headquarters, MS: BPHC
5275 Leesburg Pike
Falls Church, VA 22041-3803

The Service will accept and consider comments and information that is received or is postmarked on or before November 16, 2020. We accept comments submitted electronically using the federal eRulemaking Portal by 11:59 p.m. Eastern Time on the closing date.

Please send your comments **only** by the methods described above. Verbal comments left on phone voicemail or comments sent to other postal or email addresses will not be accepted. The Service will post all information received on <http://www.regulations.gov>. This generally means that the Service will post any personal information you provide.

17. Where can I learn more about the Big Creek crayfish and St. Francis River crayfish?

Information is available online at www.fws.gov/midwest/endangered/ and www.fws.gov/endangered or you may contact the U.S. Fish and Wildlife Service's Columbia, Missouri Field Office at:

Karen Herrington, Field Supervisor
Missouri Ecological Services Field Office,
101 Park DeVille Drive, Suite A
Columbia, Missouri 65203

Phone: 573-234-2132.

If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.