



Questions and Answers: 2012 Spikedace and Loach Minnow Critical Habitat and Uplisting Rules

Arizona Ecological Services Field Office

www.fws.gov/southwest/es/arizona/

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1. What are the spikedace and loach minnow?

The spikedace is a small, slim fish that is less than three inches long. It is characterized by very silvery sides and spines in the dorsal fin. The loach minnow is also less than three inches long and slender, small, olive-colored (males have a brilliant spawning coloration) with upward-directed eyes. Both were listed separately under the Endangered Species Act (ESA) as threatened in 1986. The Service has now reclassified both species as endangered.

2. Where are spikedace and loach minnow found?

Spikedace live in flowing water with moderate to fast velocities over sand, gravel, and cobble substrates. The loach minnow is a bottom-dwelling inhabitant of shallow, swift water over gravel, cobble, and rubble substrates. Both species require perennial streams with substrates free of excessive fine sedimentation, and with moderate to swift currents. Recurrent natural flooding is important in maintaining their habitat and also helps them maintain a competitive edge over invading nonnative aquatic species.

3. What rivers are the spikedace and loach minnow found in today?

The original range for both fish has diminished 85-90% due to habitat disturbance and loss, and the introduction and spread of nonnative aquatic species that prey on and compete with them. Current populations of both species are small and occupy habitat that has become severely fragmented, reducing the chances for natural recolonization.

The current known distribution for spikedace includes the upper Gila, East Fork Gila, Middle Fork Gila and West Fork Gila rivers and Mangas Creek (Grant, Catron, and Hidalgo counties, New Mexico), (Pinal County, Arizona), Aravaipa and Eagle creeks (and Pinal, Graham, and Greenlee counties, Arizona) and the Verde River (Yavapai County, Arizona). Spikedace is common only in Aravaipa Creek and some parts of the upper Gila River.

The current known distribution for loach minnow includes upper Gila, East Fork Gila, Middle Fork Gila and West Fork Gila rivers and Mangas and Bear creeks (Grant, Catron, and Hidalgo counties, New Mexico), the San Francisco and Tularosa rivers and its tributary Negrito Creek (Catron County, New Mexico and Greenlee County, Arizona), the Blue River and its tributaries Campbell Blue, Little Blue, Pace and Frieborn creeks (Greenlee County, Arizona, and Catron County, New Mexico), Aravaipa Creek and its tributaries Turkey and Deer creeks (Graham and Pinal counties, Arizona), Eagle Creek (Graham and Greenlee counties, Arizona), the mainstem White River, East Fork White River, and the North Fork East Fork Black River and its tributary Boneyard Creek (Apache and Greenlee counties, Arizona). Loach minnow is common only in Aravaipa Creek and the Blue River in Arizona, and limited portions of the San Francisco, upper Gila, and Tularosa rivers in New Mexico.

As part of our recovery efforts for the two species, spikedace and loach minnow have been released into Hot Springs and Redfield canyons and Fossil and Bonita creeks in Arizona. Spikedace have been reintroduced in the San Francisco River in New Mexico. These recovery efforts are in the early stages, and it is not yet possible to determine if they will ultimately be successful.

4. What was the historical range of the spikedace and loach minnow?

Both the spikedace and loach minnow were limited to the Gila River system of Arizona and New Mexico, USA, and Sonora, Mexico. Spikedace was widely distributed among moderate-sized, intermediate-elevation streams in the Gila River system. It was historically abundant in the San Pedro River, Arizona. Although spikedace was never collected in the San Pedro River in Sonora, Mexico, the species probably occurred there. Loach minnow was recorded in Mexico only in Rio San Pedro, in extreme northern Sonora. It is no longer believed to occur in Mexico, although the Gila River drainage in that country lacks extensive surveys.

CRITICAL HABITAT

5. What is critical habitat?

Critical habitat is a term in the ESA. It identifies geographic areas that contain features essential for the conservation of a threatened or endangered species and that may require special management considerations. Critical habitat designation is primarily a demarcation that informs Federal agencies of a heightened need to safeguard existing habitat for species recovery. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve or other conservation area. Critical habitat designation does not impose restrictions on private lands unless Federal funds, permits or activities are involved. Federal agencies that undertake, fund, or permit activities that may affect critical habitat are required to consult with the Service to ensure that such actions do not adversely modify or destroy designated critical habitat.

6. How will critical habitat designation affect my private land?

Requirements for consultation on critical habitat do not apply to entirely private actions on private lands. Critical habitat designations only apply to federal lands, or federally funded or permitted activities on non-federal lands. Activities on private or State lands that are funded, permitted or carried out by a Federal agency, such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act, will be subject to the section 7 consultation process with the Service if those actions may affect critical habitat or a listed species. Through this consultation, the Service will advise Federal agencies whether the permitted actions would likely jeopardize the continued existence of the species or adversely modify critical habitat. Federal actions not affecting critical habitat or not otherwise affecting spinedace and loach minnow or their habitat (e.g., suitable habitat outside of critical habitat), and actions on non-Federal lands that are not federally funded, permitted or carried out, will not require section 7 consultations.

7. What sort of actions would continue to be allowed within areas designated as critical habitat?

We believe, based on the best available information, that the following actions will not result in a violation of the ESA:

- Actions that may affect spinedace or loach minnow that are authorized, funded, or carried out by a Federal agency when the action is conducted in accordance with an *incidental take statement* issued under section 7 of the ESA, or for which such action will not result in take;
- Actions that may result in take of spinedace or loach minnow when the action is conducted in accordance with a permit under section 10 of the ESA (*Habitat Conservation Plan, Safe Harbor Agreement, etc.*);
- Recreational activities such as hiking, off-road vehicle use, camping, and hunting in the vicinity of occupied spinedace or loach minnow habitat that do not destroy or significantly degrade their habitats or involve the take of a listed species;
- Release, diversion, or withdrawal of water from or near spinedace or loach minnow habitat in a manner that does not result in a disruption of necessary habitat features, including perennial flows, and does not favor introduction of nonnative predators.

8. Will livestock grazing be affected by critical habitat designation?

Livestock grazing is not incompatible with maintaining critical habitat for spinedace and loach minnow, provided that habitat is maintained in good condition. Formal consultation under the ESA is required only when federally permitted grazing may adversely affect critical habitat. Federal land-management agencies are required to evaluate the effect grazing has on federally managed critical habitat areas.

9. What areas are now designated as critical habitat for the spinedace and loach minnow?

Approximately 710 miles of streams and rivers in central and eastern Arizona and western New Mexico are being designated as critical habitat designation. Areas designated as critical habitat for the spinedace and loach minnow are those essential to the conservation of the species and include streams and rivers typically less than three feet deep with perennial flows. Critical habitat is now designated in eight critical habitat units in Apache, Cochise, Gila, Graham, Greenlee, Pinal, and Yavapai counties in Arizona and Catron, Grant, and Hidalgo counties in New Mexico. The units occur on portions of the Verde, Salt, San Pedro, Gila, San Francisco and Blue rivers and/or their tributaries, including Aravaipa, Bonita and Eagle creeks.

The critical habitat designation includes the stream channels within the identified stream reaches and areas within these reaches potentially inundated during high flow events. Critical habitat includes the area of bankfull width plus 300 feet on either side.

10. Wasn't critical habitat previously designated for the spinedace and loach minnow?

Yes. Critical habitat for the fishes was designated in 1994 and was set aside by the 10th Circuit Federal Court for failure to comply with the National Environmental Policy Act (NEPA). Critical habitat was again designated in 2000 but was set aside by the U.S. District Court (NM) in 2004 due to an insufficient economic analysis. In 2007, approximately 522 river miles of critical habitat were designated. As a result of two May 2009 challenges to the 2007 critical habitat designation (on the grounds that the critical habitat was designated without adequate delineation or justification) and in order to reconsider the final rule in light of a recently issued Department of the Interior Solicitor's Opinion on how to conduct an economic analysis in critical habitat designations, we filed a motion for voluntary remand of the final rule. The Court granted our motion for voluntary remand and left the 2007 designation in place pending the current re-designation.

11. How and why is the new critical habitat designation different from previous versions?

There are differences but also many similarities in the areas included in this designation from those included in the critical habitat designations published in 1994, 2000, and 2007. We have gained new information on the species' distribution since the 1994 designation. We acknowledged the flaws in the 2007 designation through our voluntary vacatur of that rule. This designation is most similar to the 2000 designation. However, in contrast to the 2000 designation, we have not included every complex for spinedace and for loach minnow. Instead, we have considered occupancy data and habitat parameters specific to each species. While there is still considerable overlap in the designation, so that most areas are designated for both species, we have included some areas only for spinedace or only for loach minnow within this designation.

Some of the areas included in the current designation that were not included in the 2007 version include the Blue River and its tributaries (for spikedace), the San Francisco River (for spikedace) and Bonita, Fossil, Bear (loach minnow only) and Mangas creeks, and Redfield, Hotsprings and Bass canyons.

12. How did the Service determine what areas should be included in the present critical habitat designation for the spikedace and loach minnow?

Under the ESA, the Service is directed to consider for critical habitat: the specific areas within the geographical area occupied by a species at the time it is listed (in this case, 1986), on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and specific areas outside the geographical area occupied by a species at the time it is listed if such areas are essential for the conservation of the species. “Conservation” means the use of all methods and procedures that are necessary to bring an endangered or a threatened species to the point at which listing under the ESA is no longer necessary.

In determining areas that contain features essential to the conservation of spikedace and the loach minnow, we used the best scientific data available. Please see the [final rule](#) for more detail. We generally recognize those feature elements to be:

- Habitat to support all life stages of the two species, including:
 - perennial flowing water (generally less than one meter deep).
 - slow to swift flow velocities.
 - appropriate microhabitats (pools, runs, riffles and rapids over appropriate substrates).
 - and water temperatures between 8.0 and 28.0°C (46.4 to 82°F).
- Abundant aquatic insect food base.
- Streams with no or low levels of pollutants.
- Perennial flows and some interrupted stream courses that are periodically dewatered but that serve as connective corridors through which the species may move when the habitat is wetted.
- No or low levels of nonnative aquatic species.

The critical habitat designation differentiates some variations between spikedace and loach minnow “primary constituent elements” (habitat features/needs).

When determining critical habitat boundaries within this rule, we made every effort to avoid including structures such as bridges, diversion structures, or other structures which lack primary constituent elements for the spikedace and loach minnow.

13. Have areas that are presently unoccupied by the spikedace and loach minnow been designated as critical habitat?

Yes. We concluded that there are areas that are unoccupied but meet our definition of critical habitat in that they contain one or more features essential to the conservation of spinedace or loach minnow and require special management. We only included unoccupied areas if they:

- a) serve as an extension of habitat within an identified critical habitat unit; or
- b) expand the geographic distribution across the species' range.

Because of their reduced numbers and distribution, and the separation between populations, the ability of spinedace and loach minnow to repopulate areas where they are depleted or extirpated is vital to their recovery.

14. Are dry stream reaches designated as critical habitat?

Yes, some interrupted stream courses that are periodically dewatered but that serve as connective corridors through which the species may move when the habitat is wetted have been included. Again, because of their reduced distribution and numbers, the ability of spinedace and loach minnow to repopulate areas where they are depleted or extirpated, including through occasionally dry stream reaches, is vital to their recovery.

15. Can the Service exclude from critical habitat designation areas that meet the criteria for critical habitat?

Yes. Areas identified as essential to the conservation of the spinedace and loach minnow can be excluded from the final critical habitat designation if they are protected by approved Habitat Conservation Plans or other management plans, if they impact national security, or for economic reasons, if the exclusions would not result in the extinction of the species. However, those areas must be included in the critical habitat proposal and then be considered for exclusion after considering all public comments and an economic analysis, but prior to making a final determination. The Service has prepared an economic analysis of the critical habitat designation. (See questions 17 and 18.)

16. What proposed critical habitat areas were excluded in the final rule and why?

We excluded from the final designation approximately 119 stream-miles from the 830 miles that had been proposed for designation. These exclusions fall into three groups:

Tribal

Lands held by the Yavapai Apache Nation (totaling about one river-mile on the Verde River and Wet Beaver and Dry Beaver creeks), White Mountain Apache Tribe (totaling 29 river miles of White River and East Fork White River) and San Carlos Apache Tribe (approximately 17 miles of Eagle Creek) have been excluded. When excluding these tribal streams, we considered existing tribal management plans, tribal resolutions and tribal sovereignty and our working relationship with the tribes. Our evaluation concluded that excluding these areas would not result in extinction of the species.

National Security

Approximately 37 miles of the unoccupied, upper San Pedro River were excluded due to national security impacts associated with the missions of Fort Huachuca. While Fort Huachuca itself does not occur along the San Pedro River, there are geographic areas designated for Department of Defense (DOD) use including the Buffalo Soldier Electronic Test Range (BSETR), R-2303 restricted airspace, and groundwater resources in a regional aquifer of the Sierra Vista Subwatershed of the San Pedro River that are all located within the proposed critical habitat. The BSETR and R-2303 restricted airspace are vital resources to national security that are not duplicated elsewhere within the United States.

We found that excluding this stretch of the San Pedro River from final critical habitat will preserve Fort Huachuca's ability to continue with their missions critical to national security. This benefit of continuing critical national security missions is significant and outweighs the minimal additional regulatory and educational benefits of including these lands in final critical habitat for spikedace and loach minnow.

Additionally, because the San Pedro is unoccupied, represents approximately eight percent of the overall proposed critical habitat designation for either spikedace or loach minnow, does not represent the only critical habitat designated within this recovery unit, and will receive some protection through section 7 consultation for other listed species, we conclude that excluding the San Pedro River will not result in extinction of the species.

Existing management plans

Just over 35 stream-miles in the upper Gila River Basin (on Eagle Creek and the San Francisco River in Arizona and on the Gila River and Bear and Mangas creeks in New Mexico) that are privately held by Freeport McMoRan (FMC) have been excluded due to existing management plans and a commitment to fund their implantation. These include the construction of fish barriers to impede the movement of competitive and predatory nonnative fish into areas occupied by the spikedace and loach minnow.

Excluding FMC-owned lands from this final critical habitat will preserve our partnership and may foster future habitat management and species conservation plans with FMC and with other entities now and in the future. These partnership benefits are significant and outweigh the minimal additional regulatory benefits of including these lands in final critical habitat. The exclusions will not result in extinction of the species.

17. What economic consideration was given during the critical habitat rule-making?

We are required to take into consideration the economic impact, and any other relevant impact, of designating particular areas as critical habitat. We may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species. We prepared a draft economic analysis of the proposed critical habitat and fully considered it in our final designation. While we did exclude areas from the final critical habitat designation, none were excluded for economic reasons.

18. What are the potential economic impacts of this critical habitat designation?

Potential incremental impacts are estimated to be \$2.3 million to \$6.7 million over twenty years (\$261,000 to \$592,000 annually). The complete final economic analysis (including an executive summary) is available at www.fws.gov/southwest/es/arizona.

19. How wide are the critical habitat areas?

The “lateral extent” or width of the critical habitat stream reaches is “bankfull width” of the stream plus 300 feet on either side of the banks except where bounded by canyon walls. This width recognizes the naturally dynamic nature of river systems.

20. When will the final critical habitat determination go into effect?

This rule becomes effective 30 days after its publication in the *Federal Register*. Until that date, the 2007 critical habitat designation will remain in effect.

LISTING STATUS

21. Why did the Service change the listing status of the spikedace and loach minnow from threatened to endangered?

In recent years, some threats have been reduced due to improved Federal lands management and reintroduction efforts. However, prolonged drought, anticipated effects of climate change and increasing abundance and the expanding range of competitive and predatory nonnative fishes have increased the threat of extinction for both species. As a result, we have reclassified the spikedace and loach minnow from ‘threatened’ to ‘endangered’ status. (We initially determined that reclassification from threatened to endangered status was warranted in 1994, but precluded by other higher priority listing actions.)

22. What is the difference between ‘threatened’ and ‘endangered’ and are protections different?

An ‘endangered’ species is one that is in danger of extinction throughout all or a significant portion of its range. A ‘threatened’ species is one that is likely to become endangered in the foreseeable future.

The Service treats endangered animal species similarly to threatened species with regard to prohibitions on take and requirements for consultation by federal agencies. However, the ESA provides management flexibility for threatened species that is not allowed for endangered species. The Service sometimes makes exceptions to the take rule for threatened species (for example, to allow some traditional land-use activities to continue), and is able to issue take

permits to allow more activities that affect threatened species than would be permitted for endangered species.

GETTING MORE INFORMATION ON THESE RULES

23. How can I get more information regarding the spikedace and loach minnow and the critical habitat rule?

The original listing rules, recovery plans, previous and current critical habitat rules, final environmental assessment, final economic analysis, maps and other documents are available on the Internet at www.fws.gov/southwest/es/arizona or by contacting the Field Supervisor, U.S. Fish and Wildlife Service, 2321 W. Royal Palm Road, Suite 103, Phoenix, AZ 85021-4951, telephone: 602-242-0210.

24. How were comments considered in the final spikedace and loach minnow critical habitat rule?

Comments that were submitted on the proposal, draft environmental assessment and draft economic analysis can be viewed or downloaded from the Federal eRulemaking Portal at: <http://www.regulations.gov>, Docket Number FWS-R2-ES-2010-0072.

All comments submitted during the comment periods for this rule-making are addressed in the “Summary of Comments and Responses” section of the final *Federal Register* rule.