U.S. Fish and Wildlife Service

Questions and Answers: Spikedace and Loach Minnow Critical Habitat Final Rule

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 determined that reclassifying both species to endangered is warranted but precluded.

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 non-native 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 recolonization.

The current known distribution for spikedace includes the upper Gila, East Fork Gila, Middle Fork Gila and West Fork Gila rivers (Grant, Catron, and Hidalgo counties, New Mexico), middle Gila River (Pinal County, Arizona), lower San Pedro River (Pinal County, Arizona), Aravaipa Creek (Graham and Pinal 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 (Grant, Catron, and Hidalgo counties, New Mexico), the

San Francisco and Tularosa rivers and their tributaries Negrito and Whitewater creeks (Catron County, New Mexico and Greenlee County, Arizona), the Blue River and its tributaries Dry Blue, 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 East Fork White River, East Fork Black 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, and limited portions of the San Francisco, upper Gila, and Tularosa rivers.

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.

5. What is critical habitat?

Critical habitat is a term in the Endangered Species Act (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. 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 does critical habitat designation affect my private land?

Requirements for consultation on critical habitat do <u>not</u> 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 spikedace 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 will 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 spikedace 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 spikedace 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 spikedace or loach minnow habitat that do not destroy or significantly degrade their habitats and involve the take of a listed species;
- Release, diversion, or withdrawal of water from or near spikedace or loach minnow habitat in a manner that does not displace or result in desiccation or death of eggs, larvae, or adults, does not result in disruption of perennial flows, does not disrupt spawning activities, does not favor introduction of nonnative predators, and does not alter vegetation.

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

Livestock grazing is not necessarily incompatible with maintaining critical habitat for spikedace 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 has the Service designated as critical habitat for the spikedace and loach minnow?

The designation includes approximately 522 river miles of critical habitat including areas potentially inundated by high flow events in portions of the Gila, San Francisco, Blue, Black, upper Verde, and lower San Pedro rivers and some tributaries in Apache, Cochise, Gila, Graham, Greenlee, Pima, Pinal, and Yavapai counties, Arizona, and Catron, Grant, and Hidalgo counties, New Mexico. Specific critical habitat areas are identified and mapped in the March 21, 2007, *Federal Register* (72 FR 13356).

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 of the banks.

10. How did the Service determine what areas should be designated as critical habitat for the spikedace and loach minnow?

Under the Endangered Species Act, 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. We determined those feature elements to be:

- Permanent, flowing, unpolluted water including living areas for all life stages of the two species.
- Sand, gravel and cobble substrates with low or moderate fine sediments.
- Streams with low gradients; water temperature of 35 – 85° Fahrenheit; pool, riffle, run, and backwater components; and an abundant aquatic insect food base.
- Habitat devoid of nonnative aquatic species detrimental to spikedace, or habitat in which detrimental nonnative species are at levels that allow persistence of spikedace and loach minnow.
- Areas within perennial, interrupted stream courses that can link populations when flows are sufficient.

11. What is the land ownership of the areas designated as critical habitat?

The designated critical habitat includes river and streams reaches plus a 300-foot buffer extending from each bank. In New Mexico, 167.7 federal stream-miles, 1.3 state stream-mile and 82.5 private stream-miles land have been designated. In Arizona, 170.4 federal stream-miles, 8 state stream-miles and 90.2 private stream-miles have been designated.

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

Yes. The Service has concluded that there are areas that are unoccupied (i.e., do not meet our definition of occupied, as we do not have records to support occupancy within the last 10 years), but meet our definition of critical habitat in that they contain one or more features essential to the conservation of spikedace or loach minnow and require special management. We only included unoccupied areas if they have one or more of those elements and are connected to an occupied area. Because of their reduced distribution and numbers, the ability of spikedace and loach minnow to repopulate areas where they are depleted or extirpated is vital to their recovery.

13. Did the Service exclude areas from designation that met the criteria for designation as critical habitat? Why?

Yes. Some excluded areas are already being protected in other ways. In these instances, we believe a critical habitat designation would be redundant. Areas that were excluded are areas managed by the White Mountain Apache Tribe (East Fork White River), areas managed by the

San Carlos Apache Tribe (Eagle Creek), the middle Verde River below the Forest Service border north of Clarkdale, Arizona, and Phelps Dodge Corporation land holdings along Eagle Creek and the upper Gila River.

We believe that fish, wildlife, and other natural resources on Tribal lands are better managed under tribal authorities, policies, and programs than through Federal regulation wherever possible and practicable. The Tribes have completed and are implementing Fisheries Management Plans that include specific management actions for the spikedace and loach minnow.

Phelps Dodge Corporation developed a fish monitoring and conservation plan for their land holdings. The economic analysis of conservation costs in the areas proposed as critical habitat revealed that the Verde Valley communities would bear a disproportionate cost for the conservation of the spikedace (see question #14). As instructed in the Endangered Species Act, we weighed benefits of exclusion against the benefits of including the areas within critical habitat and determined that exclusion of these areas was warranted and would not result in extinction of the species. While these areas are excluded from critical habitat designation, the take of the species in these areas is still prohibited absent authorization from the Fish and Wildlife Service.

14. What economic consideration was given before critical habitat was designated?

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 and a draft environmental assessment of the proposed critical habitat designation.

The 10th Circuit Court of Appeals directed the Service that when deciding which areas to designate as critical habitat, the economic analysis should include "co-extensive" effects. Those include all economic effects resulting from conserving the species, the species' listing as threatened status, and the implementation of critical habitat.

The draft economic analysis estimated the impacts of spikedace and loach minnow conservation efforts in the proposed designated areas, not just those exclusively associated with this proposed critical habitat designation, to be between $1.4 to $6.7 million annually over 20 years.

The stream segment with the greatest projected impacts was the Verde River stream segment, estimated at $11.7 to $64.9 million over 20 years. Quantified costs on this stream reach primarily stems from potential impacts to agriculture, but also include impacts on development activities and recreation activities. As a result, the middle Verde River below the Forest Service border north of Clarkdale, Arizona, was excluded from critical habitat designation.

15. 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. This width recognizes the naturally dynamic nature of river systems.

16. Did the spikedace and loach minnow already have critical habitat?

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.

17. When will the critical habitat rule take effect?

The designation will be effective 30 days from publication in the Federal Register, [April 20, 2007].

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

The original listing rules, critical habitat rule, recovery plans, 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.