



**Questions and Answers:
Final Listing and Critical Habitat Determinations for
the Sharpnose shiner and Smalleye shiner**

Southwest Region (Arizona • New Mexico • Oklahoma • Texas)
www.fws.gov/southwest/

For Release: August 4, 2014

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Q: What action is the U.S. Fish and Wildlife Service taking?

A: The Service is listing the sharpnose shiner and smalleye shiner as endangered species under the Endangered Species Act (ESA). The sharpnose and smalleye shiners (two small fish) have been candidates for listing under the ESA since 2002.

The Service is designating approximately 623 miles of the upper Brazos River basin and the upland areas extending beyond the river channel by 98 feet on each side as critical habitat in the following Texas counties: Baylor, Crosby, Fisher, Garza, Haskell, Kent, King, Knox, Stonewall, Throckmorton and Young.

Q: Why is the Service listing the two shiner species as endangered?

A: The Service is listing the sharpnose shiner and the smalleye shiner as endangered because they are presently in danger of extinction throughout their entire ranges, based on the immediacy, severity and scope of the threats from the loss of habitat due to fragmentation and reduced water quantity and quality. The threats to the two species are occurring now or are imminent and their potential impacts to the species would be catastrophic given their very limited range, making the shiners at risk of extinction at the present time. The Service carefully considered the comments received from peer reviewers and the public on the shiner proposals and the listing and critical habitat determinations reflect the best available science.

Q: What are shiners?

A: The sharpnose shiner and smalleye shiner are small minnows native to arid prairie streams of Texas. The maximum lifespan of these species is approximately three years, although most individuals only live through one breeding season, which is from April through September. Both species feed on a wide variety of items including aquatic invertebrates, terrestrial insects, plant material and detritus.

The sharpnose and smalleye shiner require wide, shallow, flowing waters generally less than half a meter deep (1.6 ft) with sandy substrates. In order to successfully reproduce, it is estimated that shiners require approximately 171 miles (275 km) of unobstructed, flowing water during the

breeding season to support survival of the eggs and larva. This length of stream allows the eggs and larvae to remain suspended in the water column and survive until they mature sufficiently to swim on their own.

Q: Where are the two shiner species found?

A: The two shiners are currently restricted almost entirely to the contiguous river segments of the upper Brazos River basin in north-central Texas. Historically, sharpnose and smalleye shiners existed throughout the Brazos River and several of its major tributaries within the watershed. The sharpnose shiner also historically and naturally occurred in the Colorado River and the Wichita River in Texas. Both species need wide, shallow, unobstructed flowing waters to meet their life history requirements for survival, growth and reproduction.

Q: Why are the two shiner species in danger of extinction?

A: The two primary factors affecting the current and future conditions of these shiners are river fragmentation by impoundments and alterations of the natural streamflow regime (by impoundments, drought, groundwater withdrawal, and saltcedar encroachment) within their range. Other secondary factors, such as water quality degradation (by pollution and golden alga) and commercial harvesting for fish bait, are also likely impacting the shiners.

Q: What conservation efforts are currently being undertaken for the two shiners?

A: In the summer of 2011, fearing the shiners' possible extinction due to loss of river habitat as a result of the drought, Texas Parks and Wildlife Department (TPWD) biologists salvaged more than 1,000 sharpnose and smalleye shiners from the upper Brazos River, where record drought had confined them to shrinking, non-flowing, isolated pools. In May 2012, approximately 372 surviving individuals of each species were released into the lower Brazos River. The remaining fish were used to begin a captive propagation program at Texas Tech University (TTU).

Ichthyologists at TTU have been experimentally assessing techniques for the captive propagation of sharpnose and smalleye shiners. Due to the current restriction of both species to single populations within the upper Brazos River, it is likely captive propagation would be included as a recovery tool. These conservation efforts are in the very early stages of planning.

Service staff and staff from the U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS) have been discussing the potential benefits of saltcedar control and establishment of native vegetation along shiner-occupied river segments of the upper Brazos River basin and are coordinating their efforts to implement saltcedar control. These conservation efforts are also in the very early stages of planning.

Q: How will the two shiners benefit from an ESA listing?

A: Species listed as endangered or threatened under the ESA benefit from conservation measures that include recognition of threats to the species, implementation of recovery actions and federal protection from harmful practices.

Protection under the ESA results in public awareness and conservation by federal, state, tribal and local agencies; private organizations; and individuals. The ESA encourages cooperation with the states and other partners to conserve listed species.

The ESA also requires the Service to develop and implement recovery plans for the conservation of threatened and endangered species. Recovery plans outline actions that are needed to improve the species' status such that it no longer requires protection under the ESA. The Service develops and implements these plans in partnership with the species experts; other federal, state, and local agencies; tribes; nongovernmental organizations; academia; and other stakeholders. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Examples of typical recovery actions include habitat protection, habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction and outreach and education.

Under the ESA, federal agencies must ensure that actions they authorize, fund, or carry out do not jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. In addition, under the ESA, endangered animal species cannot be killed, hunted, collected, injured, or otherwise subjected to "harm." Endangered species cannot be purchased or sold in interstate or foreign commerce without a federal permit.

Q: What is critical habitat?

A: Critical habitat is a term in the ESA that identifies geographic areas essential for the conservation of a threatened or endangered species. The ESA defines "conservation" as the actions leading towards the eventual recovery of a species to the point where it is no longer threatened or endangered.

The designation of critical habitat 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 in designated areas. The Service can then recommend ways to minimize any adverse effects. It imposes no requirements on state or private actions on state or private lands where no federal funding, permits or approvals are required.

Critical habitat designation has several benefits including: (1) triggering consultation under section 7 of the ESA in new areas for actions in which there may be a federal nexus where it would not otherwise occur because, for example, it has become unoccupied or the occupancy is in question; (2) focusing conservation activities on the most essential features and areas; (3) providing educational benefits to state or county governments or private entities; and (4) preventing people from causing inadvertent harm to the species.

Q: How did the Service identify the areas designated as shiner critical habitat? Did the Service exclude any areas?

A: In accordance with the ESA, the Service first determined what specific areas, within the geographical area occupied by the species at the time they are listed, contain the physical or biological features that are essential to the conservation of the species and which may require special management considerations or protections. To determine occupancy the Service (1) used survey results from 2008 and 2012, and (2) considered tributaries previously occupied by either species and contiguous with currently occupied areas as occupied. Next, we considered whether designating any additional areas—outside those currently occupied at the time of listing—are necessary to ensure the conservation of the species. The final critical habitat designation does not include any areas outside the geographical area occupied by the species at the time of listing.

Q: What are the economic costs associated with the proposed critical habitat?

A: Under the Endangered Species Act, the Service is required to take into consideration the economic impact, and any other relevant impact, of designating particular areas as critical habitat. The Service prepared an economic analysis that estimated costs of the foreseeable economic impacts of the proposed critical habitat designation for the two shiners. The economic analysis quantified economic impacts of the two shiners conservation efforts associated with the following categories of activity: water management, including flood control and drought protection operation; instream projects; transportation activities including bridge construction; oil and natural gas exploration and development; and utilities projects, including water and sewer lines. All incremental costs identified were administrative in nature and result from the consideration of adverse modification in section 7 consultations. The total present value impacts anticipated from the designation of critical habitat for the smalleye and sharpnose shiners are expected to be less than \$84,000 per year.

Q: Do listed species in critical habitat areas receive more protection?

A: Listed species and their habitat are protected by the ESA whether or not they are in an area designated as critical habitat. To understand the additional protection that critical habitat provides to an area, it is first necessary to understand the protection afforded to any endangered or threatened species, even if critical habitat is not designated for it.

The ESA forbids anyone to import, export, or engage in interstate or foreign sale of endangered and threatened animals and plants without a special permit. It also makes “take” illegal prohibiting the killing, harming, harassing, pursuing or removing the species from the wild. The ESA requires that federal agencies conduct their activities in such a way as to conserve species. The ESA also requires federal agencies to consult with the Service to conserve listed species on their lands and ensure that any activity they fund, authorize or carry out will not jeopardize the survival of a threatened or endangered species.

In consultations for species with critical habitat, federal agencies are required to ensure that their activities do not destroy or adversely modify critical habitat to the point that it can no longer serve its conservation role in the species' recovery. The greatest benefit of critical habitat occurs in areas that are currently unoccupied by the species, but are needed for its recovery. With critical habitat designations, these unoccupied areas are protected by the prohibition against destruction and

adverse modification of critical habitat; however, no unoccupied areas are currently proposed for designation as critical habitat for either the sharpnose or smalleye shiner.

Q: Will water management in the Brazos River be affected by the listing or critical habitat designation?

A: Given the dry climatic conditions of the upper Brazos River basin it is likely some water management (reservoir release strategies, water conservation measures, avoidance of further habitat fragmentation, etc.) will be required to ensure long-term survival of these species.

Q: Will livestock grazing be affected by the listing or critical habitat?

A: The Service does not expect livestock grazing to be affected by the listing or designation of critical habitat.

Q: How would a critical habitat designation affect my private land?

A: 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 private 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, or a section 402 permit under the Clean Water Act from the Environmental Protection Agency, 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 would advise 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 otherwise affecting species 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 consultation.