



Questions and Answers: Texas Hornshell Final Listing Determination

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

A: The Service is listing the Texas hornshell, a freshwater mussel, as an endangered species under the Endangered Species Act (ESA). The species has been a candidate for listing since 2001. The proposed listing was published in the *Federal Register* on August 10, 2016, and public hearings were held in Laredo, Texas and Carlsbad, New Mexico. On August 10, 2017, we announced a six-month extension on the final listing determination to solicit additional scientific information on the status of the species in Mexico. Our decision to list the Texas hornshell is based on the best available science.

Candidate Conservation Agreements (CCA) and Candidate Conservation Agreement with Assurances (CCAA) covering the Texas hornshell and four other species in the northern portion of its range were signed in October 2017. Interested landowners and companies can continue to enroll in the CCA and CCAA until March 12, 2018.

Q: Why is the Service listing the Texas hornshell as endangered?

A: The Service is listing the Texas hornshell as endangered because it has declined across its historical range and faces the threat of extinction. Once found throughout the Rio Grande River Basin in New Mexico, Texas and Mexico, it is now found in only 15% of its historical range and is presently in danger of extinction throughout its entire range. Populations in the Gulf Coastal region of Mexico have been recently discovered to belong to another undescribed species of freshwater mussel. The remaining populations are presently being impacted by the loss of habitat as a result of habitat fragmentation and reduced water quality and quantity.

Q: What is the Texas hornshell?

A: The Texas Hornshell is a medium-sized freshwater mussel native to the Rio Grande Basin in Texas and New Mexico. Its outer shell surface appears olive green to dark brown. Texas hornshells may grow to be more than 4.5 inches long and live up to 20 years. Inside their shell is a muscular foot for movement, siphons for water exchange, gills and the viscera.

Texas hornshells have an interesting life history. Fertilized eggs develop into mollusk larvae (glochidia) and are released from the adults into water where they are consumed by fish and encyst on the host fish's gills, face, or fins. There they transform into the juvenile form and are released, hopefully into suitable rocky substrate in high quality water, where they can attach to complete their development to eventually become reproductive adult mussels.

Q: Where is the Texas hornshell found?

A: Historically, the Texas hornshell occurred in New Mexico, Texas and Mexico. However, the population has declined notably throughout its range and it currently occupies about 15% of its historical range. In New Mexico, it is now confirmed only in the Black River (a Pecos River tributary) of Eddy County, New Mexico. It is the last remaining native mussel in New Mexico; the other seven species have been extirpated. In the Rio Grande, the species is known to be present downstream of Big Bend National Park and near Laredo in Webb County, Texas, and the Devil's River in Val Verde County, Texas. Texas hornshells historically were widely distributed in Gulf Coast rivers in Mexico. The Texas hornshell's status in Mexico is becoming clearer; the Service funded population surveys and genetic work to gather more information, and preliminary genetic results show that mussel populations along Mexico's Gulf Coast are not Texas hornshell as previously thought.

Texas hornshell typically occur in narrow areas of rivers and streams with travertine bedrock and fine-grained sand, clay or gravel in the crevices. They prefer undercut banks, crevices and bases of big boulders where the current is slowed, allowing the mussels to get a safe foothold and not be washed away in times of high water flow.

Q: What are the threats to the Texas hornshell?

A: The primary factors affecting the current and future conditions of the Texas hornshell are river fragmentation due to habitat inundation by impoundments and alterations of the natural streamflow regime (by impoundments, drought, groundwater withdrawal and resultant mussel-smothering sediment accumulation) and degradation of water quality within its range.

Q: What conservation efforts are currently being undertaken for the Texas hornshell?

A: In New Mexico, the Service worked with landowners, the State, the Bureau of Land Management (BLM), the Center for Excellence (CEHMM) and industry on a Candidate Conservation Agreement (for federal lands) and Candidate Conservation Agreements with Assurances (for state and private lands) to provide the groundwork for conservation for the Black and Delaware Rivers in New Mexico and Texas. Participants in these agreements include the Carlsbad Irrigation District, BLM, New Mexico Interstate Stream Commission, the New Mexico State Land Office, oil and gas industry, private landowners, counties, water pumpers and others. Interested landowners or industry can enroll in the CCA or the CCAA until March 12, 2018. For additional information on the Texas hornshell CCA/A please contact Debra Hill, New Mexico Ecological Services Field Office, (505) 761-4719.

Candidate Conservation Agreements with Assurances are voluntary agreements that provide non-federal landowners and developers the opportunity to implement conservation practices that address specific threats. Cooperating non-federal landowners and developers receive assurances that, if the species is listed, they can continue to manage their land as outlined in their agreements with no additional requirements. Landowners, oil and gas companies, irrigation districts, and others enrolled in the CCAA will not be required to do more than they have agreed to do under the agreements.

In Texas, The Nature Conservancy and Texas Parks and Wildlife Department are managing their lands in the Devils River watershed to reduce sediment inputs and contaminants thereby benefitting the Texas hornshell and other aquatic species. Research focused on helping improve the understanding of the species is being funded by the Office of the Texas Comptroller.

Q: How would the Texas hornshell 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.

Recognition under the ESA results in public awareness and conservation by federal, state, tribal, and local agencies, as well as 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 recovery partners 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 stream flow), research, captive propagation and reintroduction and outreach and education.

Under the ESA, federal agencies must ensure that actions they approve, fund, or carry out do not jeopardize the continued existence of a listed species or destroy 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: Will water management, grazing or oil and gas activities in the rivers and streams where the hornshell is found be affected by the listing?

A: At this time the Service is not requiring any water management (reservoir release strategies, water conservation measures, avoidance of further habitat fragmentation, etc.) actions related to the listing of the species. The Service does not expect that livestock grazing or oil and gas

development would be impacted by the listing, especially in areas of the Black and Delaware rivers where a Candidate Conservation Agreement with Assurances is in place.

Q. Why are freshwater mussels important?

A: Mussels are monitors of aquatic health: the presence of diverse and reproducing populations of mussels indicates a healthy aquatic system which means good fishing, good water quality for waterfowl and other wildlife species, as well as assurance that our water is safe. When mussel populations are at risk, it indicates problems for other fish and wildlife species, and people too.

Mussels perform important ecological functions. They are natural filters, and by feeding on algae, plankton and silts, they help purify the aquatic system. Mussels are also an important food source for many species of wildlife including otters, raccoon, muskrat, herons, egrets and some fish.

Mussels depend on the same waterways that people value, whether as a water source, favorite fishing spot, recreation area, or for their scenic qualities. Maintaining a healthy environment for mussels helps ensure these areas are available to people as well.