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Texas Water Planning and the Endangered Species Act

by [Vanessa Puig-Williams](#) April 7, 2014

The U.S. Fish and Wildlife Service (the Service) — the federal agency charged with implementing the Endangered Species Act — is required by a court order to decide the regulatory fate of more than 700 species of plants and animals by the end of 2018. As part of a 2011 settlement agreement between the Service and environmental groups, the agency must decide whether to list certain species as “endangered” or “threatened,” and thereby invoke the suite of federal protections that apply to listed species. Approximately twenty of the species on the Service’s list ([the work plan](#)) occur in Texas; sixteen of them are aquatic species living in the rivers and springs of our State.^[1]

The Service has already made listing decisions for the majority of the aquatic species in Texas on the work plan. In October 2013, the Service revised the critical habitat designations for three endangered species living in Comal Springs, adding additional subsurface habitat to the designation.^[2] Last July, the Service listed a group of West Texas invertebrates as “endangered” and designated critical habitat for the species.^[3] Last August, the Service listed the Jollyville Plateau salamander as “threatened” and the Austin blind salamander as “endangered,” listing critical habitat for both these species as well.^[4] And finally, this past February, the Service listed the Salado salamander and the Georgetown salamander as “threatened” under the Act.^[5] The sharpnose and smalleye shiners – two species of minnows located in the upper Brazos River – and the Texas hornshell – a freshwater mussel found in the Rio Grande and the Devil’s River – are still awaiting their listing fate. (For an overview of the location of these workplan species in Texas, please reference this [map](#).) The Service must make a proposed listing determination for the Texas hornshell in fiscal year 2015 and a final listing determination for the shiners this year.^[6]

With the passage of Proposition 6 by voters, which allocates \$2 billion from Texas’ Rainy Day Fund for the Texas Water Development Board to use toward financing water projects, the state has significant new resources with which to push water projects forward to address projected future water demands. The listing of aquatic species that could be impacted by a proposed project would trigger the ESA’s requirement for federal approval, a process that can be cumbersome and lengthy.

The reality, however, is that the listing of these aquatic species by the Service would only impact a small number of water projects recommended in the [State Water Plan](#), mainly those projects planned in the upper Brazos River and one in the Rio Grande. This is because the bulk of the water projects recommended in the State Water Plan focus on surface water and the majority of the species either recently listed or that may be listed in the near future depend on groundwater for survival. The water management strategies recommended in the State Water Plan indicate a shift from reliance on groundwater to surface water in Texas.^[7] According to the State Water Plan, “[s]urface water strategies, excluding desalination and non-traditional strategies, compose about 51 percent of the recommended volume of new water, compared to 9 percent from groundwater strategies in the 2012 State Water Plan.”^[8] All but three of the sixteen aquatic species on the Service’s work plan rely primarily on groundwater sources for survival. The Pecos amphipod, Gonzales springsnail, diamond tryonia snail, amphipod diminutive, phantom springsnail, and phantom tryonia snail live in spring systems supported by aquifers in the Pecos River drainage basin in West Texas. The salamanders of Central Texas (Austin blind, Jollyville Plateau, Georgetown, and Salado), the Comal Springs beetles, and the Peck’s Cave amphipod all depend on Edwards Aquifer water for habitat. Only the sharpnose and smalleye shiners and the Texas hornshell rely exclusively on surface water. These are the three species for which the Service has not yet made a listing determination.

The primary threats to the shiners’ survival are river fragmentation and alterations of the natural stream flow caused by impoundments.^[9] The State Water Plan identifies several new reservoirs in the Brazos River as potentially feasible projects to increase water supply. Two of the proposed reservoirs – Post Reservoir and Jim Bertram Lake 7 – would impound tributaries in the upper Brazos River that are currently inhabited by sharpnose and smalleye shiner populations or support shiner populations downstream. If the Service lists the sharpnose and smalleye shiners as “endangered” or “threatened,” approval of these reservoir projects by the Army Corps of Engineers would trigger the [Section 7 consultation process](#) under the Act, and in its biological opinion, the Service would propose measures designed to minimize the take of the sharpnose and smalleye shiners. One method the Service has suggested to minimize impacts to shiners is reservoir management of dam releases to provide adequate environmental flows.^[10]

Impoundments also destroy and modify the habitat of mussel species, such as the Texas hornshell. The Service is particularly concerned about the impact a proposed low-water diversion dam near Laredo may have on the Texas hornshell. The Dos Laredos Low-Water Weir, described in Region M’s Regional Water Plan and recommended in the State Water Plan, would create higher water elevations for the Rio Grande River downstream of the impoundment and supply Nuevo Laredo and the City of Laredo’s future water treatment plants upstream of the weir. The plan recognizes, however, that construction of the impoundment is controversial, primarily because of the resulting environmental impacts.^[11]

While the State Water Plan indicates that water management strategies will focus on surface water in the future, reliance on groundwater supplies to support population growth and agriculture will continue and could threaten the habitat of newly listed species. Thus, the relationship between groundwater management and endangered species protection is significant and still developing. Additionally, as municipalities and the oil and gas industry increasingly look to brackish sources of groundwater to meet water demands, how will this additional pumping impact groundwater levels and habitat? In its proposal to list the smalleye and sharpnose shiners as endangered, the Service expresses concern with the Llano Estacado Regional Water Planning Group’s (Region O) recommendation to pump brackish groundwater from aquifers underlying the upper Brazos River basin and the possible reduction this may have on stream flow in the upper Brazos River where shiner populations exist.^[12]

In areas where the habitat of newly listed species and the boundaries of groundwater conservation districts overlap, groundwater conservation districts may be faced with the daunting task of developing and enforcing pumping restrictions that balance water use with the protection of groundwater levels necessary to support a species’ habitat. The Edwards Aquifer Authority (EAA) has been doing just this since it began operating in 1996, managing groundwater pumping in the Edwards Aquifer for the purpose of protecting endangered species in Comal Springs. The Service recently approved a habitat conservation plan formulated by stakeholders in the Edwards Aquifer Recovery Implementation Program (EARIP) and issued an [incidental take permit](#) to the EAA and SAWS, among other entities, authorizing harm to the Comal Springs beetles and the Peck’s Cave amphipod resulting from groundwater pumping.^[13] The purpose of a Habitat Conservation Plan (HCP) is to ensure that the effects of an authorized incidental take are mitigated and minimized.^[14] An HCP can be used by non-Federal entities, such as groundwater conservation districts, to find a balance between necessary groundwater pumping and the protection of listed species.

The Barton Springs/Edwards Aquifer Conservation District has adopted [“desired future conditions.”](#) for the Barton Springs segment of the Edwards aquifer, which aim to balance water use with the protection of groundwater levels necessary to support a species’ habitat by ensuring an adequate supply of freshwater for well users and adequate flow for endangered species.^[15] In areas such as the Pecos River drainage basin, however, where the connection between groundwater and species’ habitat is less understood, the challenge of defining, let alone recognizing, the relationship between groundwater management and endangered species protection will be significant. Furthermore, in areas where groundwater conservation districts do not exist, such as Williamson County where the Georgetown salamander is found or in Val Verde County in the Rio Grande Valley, over pumping of groundwater supplies may threaten habitat.

The Service will determine the fate of the remaining three species on the work plan – the smalleye and sharpnose shiners and the Texas hornshell – in the near future. If these species are listed as “endangered” or “threatened,” water projects proposed in or near habitat will be affected. Overall, however, there do not appear to be widespread impacts to surface water projects recommended in the State Water Plan as a result of the Service listing aquatic species on the work plan as “endangered” or “threatened.” The more likely collision moving forward, rather, will be between groundwater management (or the lack of it) and endangered species protection.

[1] See http://www.fws.gov/endangered/improving_esa/listing_workplan_FY13-18.html

[2] 78 Fed. Reg. 63,100 (October 23, 2013).

[3] 78 Fed. Reg. 41,228 (July 9, 2013).

[4] 78 Fed. Reg. 51,278 (August 20, 2013)

[5] 79 Fed. Reg. 10,236 (February 24, 2014).

[6] See http://www.fws.gov/endangered/improving_esa/listing_workplan_FY13-18.html

[7] Texas Water Development Board 2012 State Water Plan, Section 7 at 190 *available at*:

https://www.twdb.texas.gov/publications/state_water_plan/2012/07.pdf.

[8] *Id.*

[9] Draft Species Status Assessment Report for the Sharpnose Shiner and Smalleye Shiner 37 (U.S. Fish and Wildlife Service June 28, 2013) *available at*:

<http://www.regulations.gov/#documentDetail;D=FWS-R2-ES-2013-0083-0002> (hereinafter SSA).

[10] SSA at 94.

[11] Region M 2011 Regional Water Plan page 4-75 *available at*

http://www.twdb.texas.gov/waterplanning/rwp/plans/2011/M/Region_M_2011_RWP.pdf

[12] Llano Estacado Region-Region O 2011 Regional Water Plan, page 4-232.

[13] See <http://www.eahcp.org/index.php>

[14] See 16 U.S.C. §1539(a)(1)(B).

[15] For further information on “desired future conditions,” see

<http://www.texaswca.com/downloads/TWDB-DesiredFutureConditions.pdf>

[endangered species](#)

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