



## Texas Parks and Wildlife Department State ANS Key Updates

### Gulf and South Atlantic Regional Panel on Aquatic Nuisance Species

November 2020

#### Harmful or Potentially Harmful Fish, Shellfish, and Aquatic Plant Rule Revisions

The Texas Parks and Wildlife Commission voted on November 10, 2020 to adopt proposed exotic species rule changes that will go into effect on January 11 and will address changing needs of the regulated community as well as current, new, and potential threats. Proactively, four Lacey Act-listed injurious fishes were added to the controlled exotic species list—European perch (*Perca fluviatilis*), stone moroko (*Pseudorasbora parva*), Amur sleeper (*Perccottus glennii*), and Wels Catfish (*Silurus glanis*). These four species were selected from among those not already on Texas' prohibited list based on moderate-high climate match. Two shellfish were also added—golden mussel (*Limnoperna fortunei*) and mudsnails (Family Hydrobiidae). Two aquatic plants that have been introduced into Texas and become problematic were also added—crested floating heart (*Nymphoides cristata*) and yellow floating heart (*N. peltata*).

Currently, Mozambique tilapia (*Oreochromis mossambicus*) may be stocked in private ponds in Texas without a permit, many of which are creek impoundments where escape could occur unchecked. Under the new rules, landowners in a designated 'conservation zone' will be required to obtain approval from the department prior to stocking, which will enable the department to prevent stocking in ponds where escape is likely. This zone was identified through a spatial conservation assessment seeking to balance potential impacts of tilapia escapes on imperiled fishes with the economic importance of the pond stocking trade; this study was published in the American Fisheries Society book Multispecies and Watershed Scale Approaches to Freshwater Fish Conservation. Due to the inability to distinguish confidently among hybridized tilapias in aquaculture for enforcement purposes, and the burden of proof placed on aquaculturists by a stocking allowance for Mozambique tilapia only, the new rules will allow stocking of the four species currently in aquaculture.

The full text of the rule changes can be found at:

<https://tpwd.texas.gov/business/feedback/meetings/2021/1110/agenda/item.phtml?item=5>

#### Zebra Mussels

Since their initial introduction into the state in 2009, zebra mussels have invaded 30 lakes across five watersheds in Texas. Texas Parks and Wildlife Department and partners continue to monitor 43 lakes for early detection, 21 for population monitoring, and one post-treatment. After a very localized introduction was detected at Lake Waco in 2014, weighted black plastic sheeting was used to cover the substrate in the introduction area for four months in an attempt to eradicate the mussels. Although a few mussels were found live after the plastic was removed, subsequent sampling for five years has resulted in no evidence of an infestation (i.e., veliger larvae, adults, or environmental DNA). If there are no detections in Fall 2020 samples, the lake will be delisted from 'positive' to 'undetected/negative' status. To our knowledge, this would be the first successful case study of the use of this method for zebra mussel eradication.

Prepared by Monica McGarrity, Senior Scientist for Aquatic Invasive Species Management

[monica.mcgarritty@tpwd.texas.gov](mailto:monica.mcgarritty@tpwd.texas.gov)

Lake O.H. Ivie near San Angelo was upgraded to fully infested with zebra mussels in July 2020. Zebra mussels were first discovered in O.H. Ivie Lake in March 2019 when four adult zebra mussels were found by the Colorado River Municipal Water District (CRMWD) in an aboveground storage tank near San Angelo that is part of the lake's water transmission system. In November of that year a single zebra mussel larva was found in a sample from another area of the lake and the lake was designated 'positive.' This year, microscopic zebra mussel larvae were found in plankton samples collected in June from five locations in O.H. Ivie Lake. In July, TPWD Inland Fisheries staff from San Angelo and Abilene surveyed the lake for evidence of settled adults and numerous zebra mussels were found throughout the reservoir, indicating a growing population.

Lake Grapevine was also upgraded to fully infested with zebra mussels in July 2020. The United States Geological Survey (USGS), which helps monitor for zebra mussels in Texas lakes and rivers, has been monitoring Grapevine Lake since 2011. In May 2018, the USGS team found a zebra mussel larva in plankton samples collected on the southern end of Grapevine Lake. In June of that year, the USGS found a juvenile zebra mussel attached to a sampler. Additional sampling on Grapevine Lake in 2020 conducted by Jessica Treviño of the USGS detected another zebra mussel larva in April 2020 and an adult zebra mussel in July 2020. Follow up surveys conducted by TPWD biologists found two additional adult zebra mussels of different size classes attached to rocks in the same vicinity but not elsewhere in the reservoir. These findings indicate that zebra mussels are established, and a population is developing in the lake.

Richland Chambers Reservoir was upgraded to fully infested status in October 2020. Zebra mussels were discovered for the first time in 2017 when the Tarrant Regional Water District located several adults on multiple occasions in a single cove near the dam. This resulted in a zebra mussel 'positive' designation for Richland Chambers at the time. The Tarrant Regional Water District responded by conducting a localized treatment in the cove, using a novel low-dose copper compound, in an effort to eradicate the mussels. Sampling efforts did not detect any zebra mussels in 2018 or 2019 but in 2020 TRWD and TPWD staff found zebra mussels at two locations near the cove where they were found in 2017 and at the Kingswood boat ramp approximately two miles upstream. The discovery at the new boat ramp location provided evidence that the mussels have begun to spread in the lake. In addition, multiple size classes were found, which indicates a reproducing population in the reservoir.

### **Aquatic Plant Management**

Numerous aquatic invasive plants have become highly problematic in Texas including giant and common salvinias, water hyacinth, hydrilla, and crested and yellow floating hearts. Since state fiscal year 2016 (August 2015) when the Texas Legislature first allocated approximately \$3.2M annually to TPWD for aquatic invasive species management, aquatic plant control efforts have increased approximately five-fold. Currently, infestations are being managed on 54 water bodies around the state, primarily in East Texas. Efforts to rapidly respond to new infestations with containment and control strategies have also increased due to the increase in funding and staffing. As a result, water hyacinth was eradicated from Dickinson Bayou in 2017 and, more recently, giant salvinia was eradicated from lakes Fork and Athens in East Texas. However, giant salvinia reinvaded Lake Athens and was also newly detected on Lone Star Lake, Lake Gilmer, and Bringle Lake and common salvinia was found on Lake Fork.

### **Riparian Plant Management**

Riparian plant management continues to be a focus, prioritizing treatment of giant reed and saltcedar on over 300 private properties in key Native Fish Conservation Areas. Treatment efforts for giant reed were expanded this year to include the Llano River and are in the process of expanding to San Felipe Creek.

Prepared by Monica McGarrity, Senior Scientist for Aquatic Invasive Species Management  
[monica.mcgarrity@tpwd.texas.gov](mailto:monica.mcgarrity@tpwd.texas.gov)

## **Outreach and Prevention**

The TPWD aquatic invasive species outreach campaign continues to be a focus, with state and partner funding supporting these efforts. The campaign employs diverse delivery methods including billboards, gas station advertising, boat ramp signage, geofenced digital radio ads, pre-roll videos, other digital advertising, print ads and mailings, and in-house social media. In fiscal year 2020, the campaign made an estimated 121 million “impressions” at a cost of \$2.16 per thousand impressions.

## **Research**

Four research projects are currently being funded by TPWD and partners, focusing on effects of water chemistry on zebra mussel reproduction and early development, population dynamics and impacts of zebra mussels on native unionids, native plant competition methods for enhancing hydrilla control, and the bait fish pathway for introduction of Gulf Killifish and Sheepshead Minnows outside their native range within the state and hybridization impacts. Research projects have experienced some delays due to the coronavirus pandemic but all are on track to be completed by end of fiscal year 2021.