Texas State Report
Gulf and South Atlantic Regional Panel on AIS
Wilmington, NC - November 2023

Zebra/Quagga Mussels

Since the last GSARP meeting, zebra mussels have been detected in at least one new location, Hords Creek Lake in western Coleman County. Following initial detection of a single adult on dam infrastructure in April, shoreline surveys found multiple size classes and evidence of a reproducing population. Zebra mussels began spreading westward in Texas when lakes O.H. Ivie and Brownwood were infested in 2020 and 2021, respectively; these lakes are in close proximity to Hords Creek.

The quagga mussel situation at Lake Amistad on the Rio Grande continues to be monitored by the NPS in collaboration with TPWD. Quagga mussel larvae (and eDNA) were detected in very low numbers (e.g., 1/sample) at two sites across multiple sampling dates in spring/summer 2021 and spring/summer 2022 by an independent laboratory used by NPS. Subsequently, the TPWD Analytical Services Lab began analysis of some samples from the lake but has found only zebra mussel larvae and eDNA and the status of quagga mussels in the lake remains in question. To date, settled mussels have not been found on settlement samplers or in shoreline searches, including searches with detection canines. Monitoring is ongoing and will continue for at least five years from the last quagga mussel detection regardless of whether a zebra mussel population develops.

Invasive Carp

TPWD is continuing to work with Oklahoma Department of Wildlife Conservation, Arkansas Game and Fish Commission, Auburn University, and Texas Tech University to assess the population status of invasive bigheaded carp (bighead and silver) in the Lower Red River Basin across the tri-state area. To date, over 350 bigheaded carp have been found in the Red River upstream to Denison Dam below Lake Texoma and in all monitored tributaries. To date, only one bighead carp has been detected in the Sulphur River, a major Red River tributary in Texas and Arkansas. Thus far, successful reproduction has not been documented. Telemetry work is underway in the Red River, to provide movement data to augment population monitoring.

Aquatic Invasive Plants

Giant salvinia continues to be the most problematic aquatic invasive plant in Texas and is present in 26 reservoirs and 7 river systems. Targeted herbicide treatments in conjunction with floating booms used as part of the rapid response efforts have proven to be valuable tools at minimizing the impacts of new infestions of aquatic invasive vegetation. Giant salvinia at Lake Pinkston was extirpated in Spring 2022 and the reservoir is still giant salvinia free in Fall 2023. In 2022,

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another reoccurrence of giant salvinia was discovered at Lake Gilmer. Rapid response herbicide treatments have been confirmed to be successful as no plants have been observed in 2023. Biological control using giant salvinia weevils continues to show success and the weevils are being used as part of our IPM strategy on 15 water bodies with a total of 336,583 weevils released in fiscal year 2023. Self-sustaining weevil populations have been documented in all 15 water bodies, including Caddo Lake. However, the cold weather event in December 2022 killed much of the giant salvinia across Texas, thus severely decreasing weevil numbers as well. Herbicide treatments using a variety of herbicides were also used to control giant salvinia on 34 water bodies, with nearly 15,000 acres treated in fiscal year 2023.

Water hyacinth also continues to be problematic and is present in 58 reservoirs and all major rivers across the state. In fiscal year 2023, only approximately 800 acres of water hyacinth were treated with herbicides on 26 water bodies. This is about 22% of the amount of water hyacinth treated in 2022. The cold weather event in December 2022, subsequent cool spring, and summer drought contributed to a statewide reduction in water hyacinth in many water bodies.

Crested floating heart is currently found in 3 public water bodies and yellow floating heart in 2 water bodies, including the latter being present on the Louisiana side of Toledo Bend Reservoir on the state border. Treatment using ProcellaCOR continues to be highly effective, and infestations have been significantly reduced on most water bodies.

Hydrilla provides much needed fish habitat in many aging Texas reservoirs. Typically, these water bodies have minimal littoral zone habitats, so treatments of this species are limited to addressing access issues at designated public swimming areas, park campsites, public fishing piers, public boat ramps, and boat lanes when navigation becomes limited. Control strategies include herbicides and triploid grass carp. In fiscal year 2023, around 75 acres of hydrilla were treated across 7 water bodies.

Riparian Invasive Plants

Giant reed (*Arundo donax*) control is ongoing in Central Texas to reduce impacts and improve river and stream habitat across the Pedernales, Blanco, Guadalupe, Medina, Nueces, and Llano river watersheds and San Felipe Creek. Control is implemented on nearly 400 private and public properties across these basins in collaboration with the landowners.

Saltcedar control on the Upper Brazos River in critical habitat for smalleye and sharpnose shiners in collaboration with the USFWS continues to be a priority. To date, over 20,000 acres have been treated across approximately 150 primarily private properties. However, treatment did not occur in 2023 due to herbicide application contractor failure to deliver services before the biennial funding expiration date due to inevitable delays and scheduling prioritization.

Watershed-scale elephant ear control on the Llano River continues, with over 50 river miles in monitoring or active management status. At least one survey and treatment event is conducted each summer.

Aquatic Invasive Species Outreach

Outreach and prevention remains a high priority in Texas. The TPWD, with support from 13 partners, implements an annual 'Protect the Lakes You Love' clean, drain, dry campaign targeting watercraft owners/operators during peak boating season. The campaign includes billboards and gas station advertising as well as a variety of paid targeted digital media including social media platforms, apps, digital radio, and pre-roll video. The TPWD is also implementing the 'Never Dump Your Tank' outreach campaign using digital media strategies to encourage aquarium owners to seek alternatives to release of aquarium life.

Aquatic Invasive Species Research

Four research projects covering topics on automated zebra mussel early detection monitoring methods, zebra mussel population dynamics, suckermouth armored catfish population dynamics and habitat use, and remote sensing for Arundo to aid in prioritizing future management efforts. Reports on these projects have been posted or will be posted by around January; see past research webpage here.

Three new projects were selected for funding in the current biennium beginning in September 2023:

Developing spawning protocols and identifying the sex determining regions in suckermouth armored catfish to facilitate the production of neofemales and YY males for use in population control

Texas A&M University

This project seeks to develop genomic resources for invasive suckermouth armored catfish to facilitate production of YY males for use in genetic/biological population control. This project will also begin to test protocols for spawning these species and beginning the process of feminizing males. This work will contribute to furthering efforts to control these invasive species.

Assessing seasonal variation in thermal refugia use and drivers of angler participation in removal efforts of suckermouth armored catfish in San Felipe Creek, Val Verde County

University of Texas at San Antonio

This study will evaluate use of thermal refuges (e.g., springs) by suckermouth armored catfish during winter months to increase survival. Locating aggregations of this invasive species can aid in enhancing removal efforts. This study will also examine angler interest in participating in removal tournaments, including any seasonal differences in willingness to participate. This work will aid in enhancing ongoing removal efforts.

Distribution of the Australian redclaw crayfish in Texas

University of Texas at Tyler

Invasive Australian redclaw crayfish have become established in South Texas, but little is known of their distribution. This study will evaluate distribution of this species in Texas as well as abundance and life-history traits. This work is an important step toward better understanding this invasion as well as facilitating potential future assessments of impacts on native species.