

Brazos River Shiners

- Sharpnose shiner (*Notropis oxyrhynchus*)

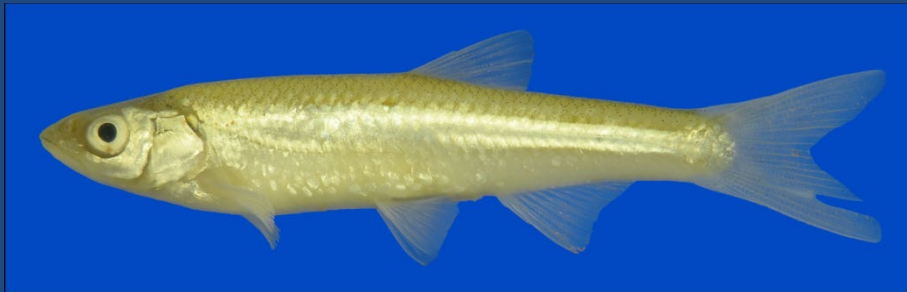


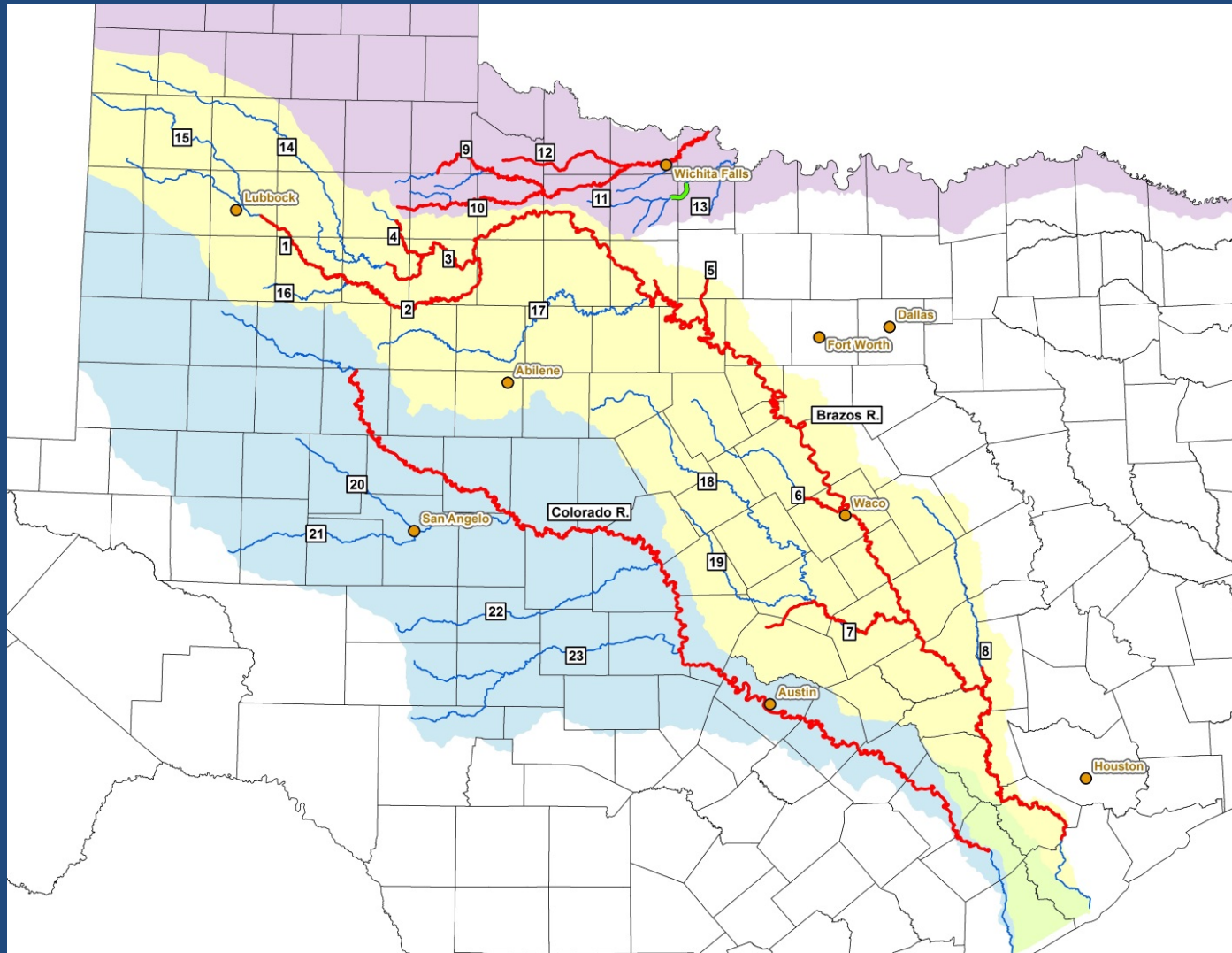
Photo by Chad Thomas, Texas State University-San Marcos.

- Smalleye shiner (*Notropis buccula*)

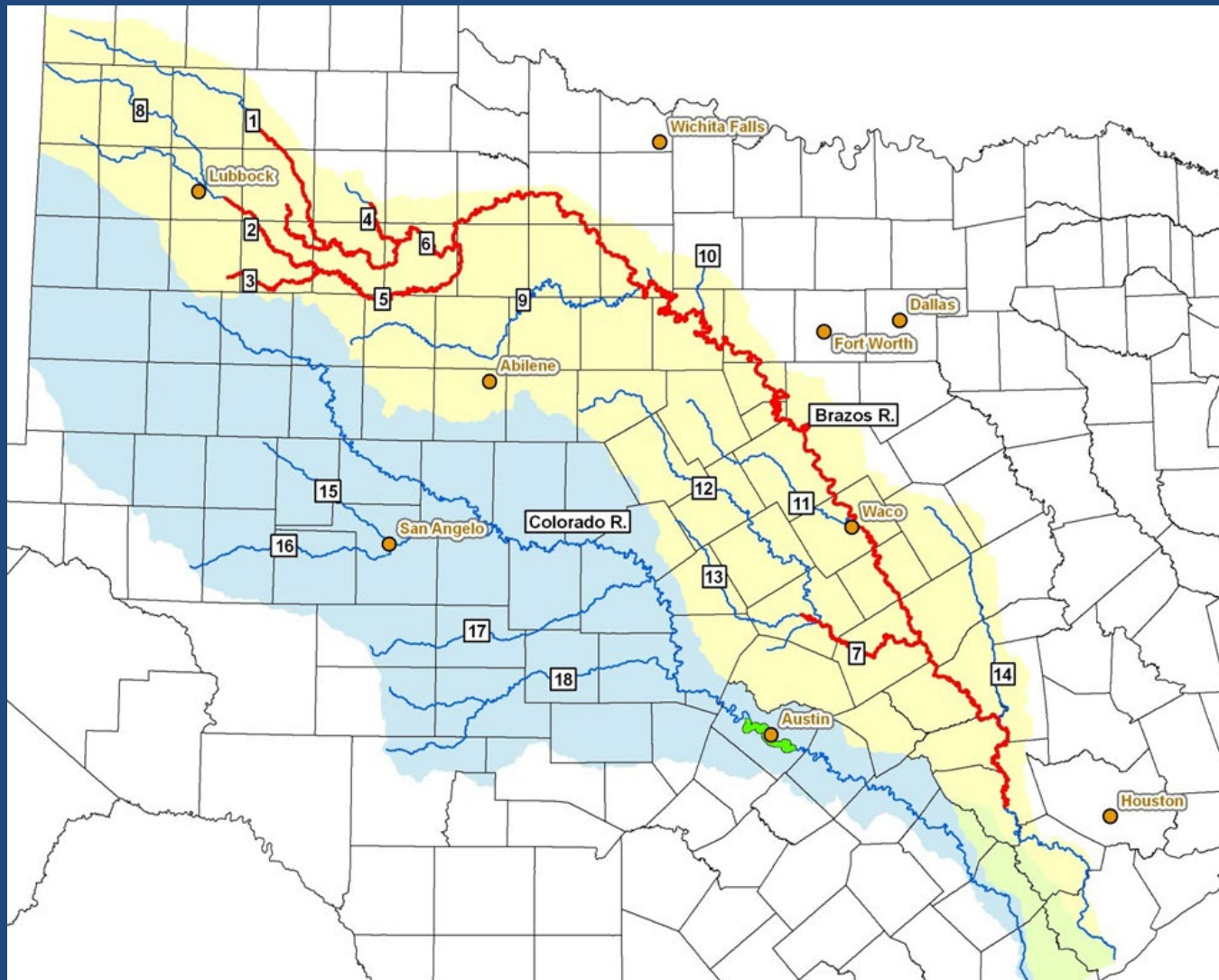


Photo by Chad Thomas, Texas State University-San Marcos.

Sharpnose Historical Range



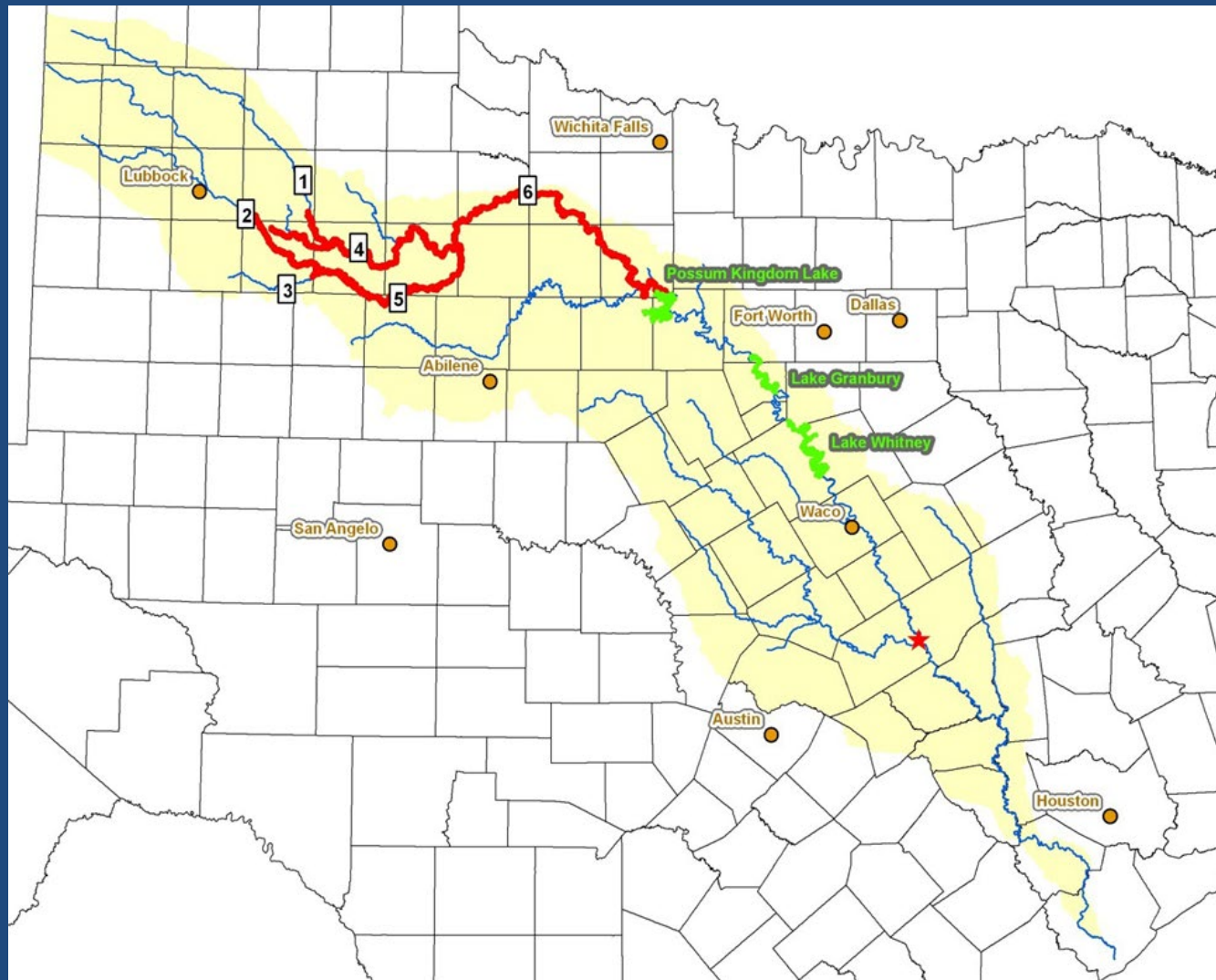
Smalleye Historical Range



Shiner Timeline

- 1991 – Sharpnose known to be decreasing in abundance; smalleye believed to be extinct
- 1993 Moss & Mayes Section 6 report – species limited to upper Brazos (a few sharpnose in lower)
- 2002 – Added to list of Candidate Species
- 2014 Listed as Endangered with Critical Habitat
- 2020 Draft Recovery Plan

Ranges of the sharpnose shiner (*Notropis oxyrhynchus*) and smalleye shiner (*N. buccula*)



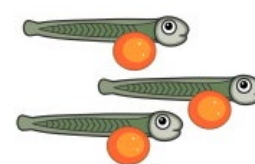
Shiner Life History

River System

Broad-cast spawners –
semi-buoyant eggs
float in current 1 to 2
days

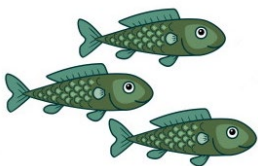


Larvae remain
suspended in flowing
water two to three
days as they develop
into free-swimming
juvenile fish



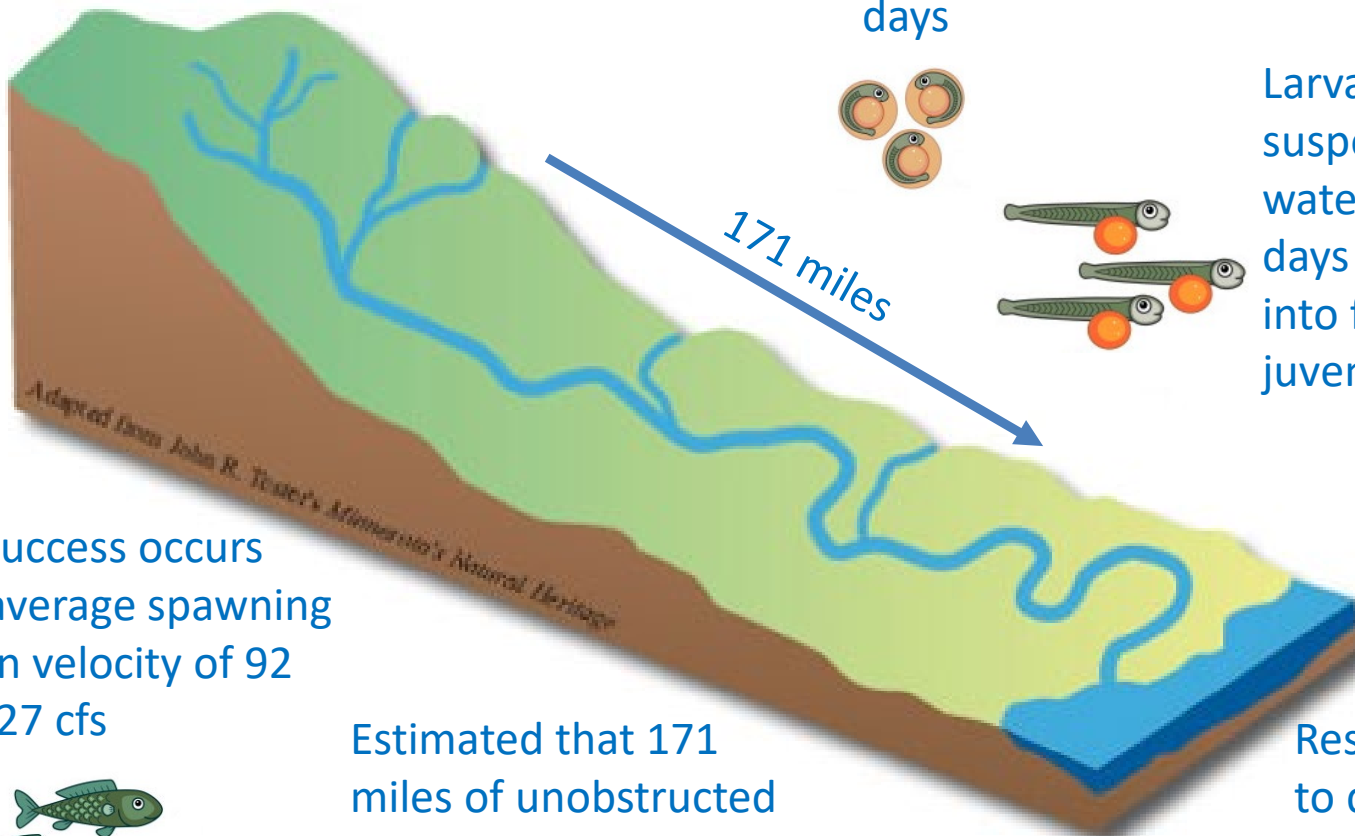
171 miles

Best success occurs
with average spawning
season velocity of 92
and 227 cfs



Estimated that 171
miles of unobstructed
stream is best suited
for life history

Reservoirs are barriers
to downstream
movement in all life
stages



Adapted from John R. Tester's Minnesota's Natural Heritage

Factors Affecting Current and Future Conditions of the shiners

- Primary:
 - River fragmentation by impoundments
 - Alteration of natural streamflow regime (impoundments, drought, groundwater withdrawal, and saltcedar (*Tamarix* spp.) encroachment)
- Secondary
 - Water quality
 - Instream mining and dredging
 - Golden alga

Draft Recovery Plan

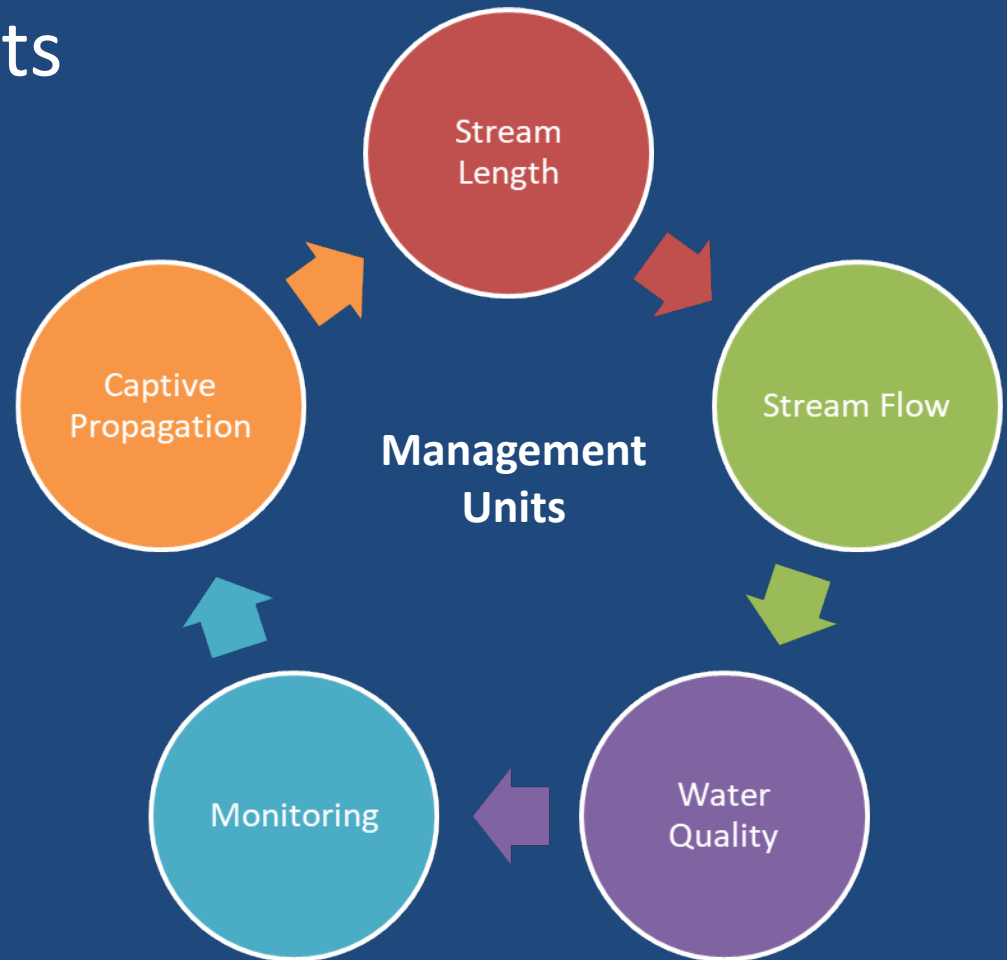
Vision:

Each species with more than one single resilient population across its range that represents the species' genetic diversity and diversity of habitats in which the species historically occurred.



Draft Recovery Plan

- Management Units
 - Salt Fork
 - Double Mtn Fork
 - Main Stem
 - Additional



Draft Recovery Plan

- Downlisting Objectives
 - Self-sustaining population
 - Captive population
 - Adequate stream flow
 - Adequate water quality
 - Restore natural stream morphology

Draft Recovery Plan

Delisting Objectives

- Meet downlisting objectives plus:
 - Additional self-sustaining population within historical range
 - Habitat sufficient to support both populations









Recovery Actions



Throckmorton County

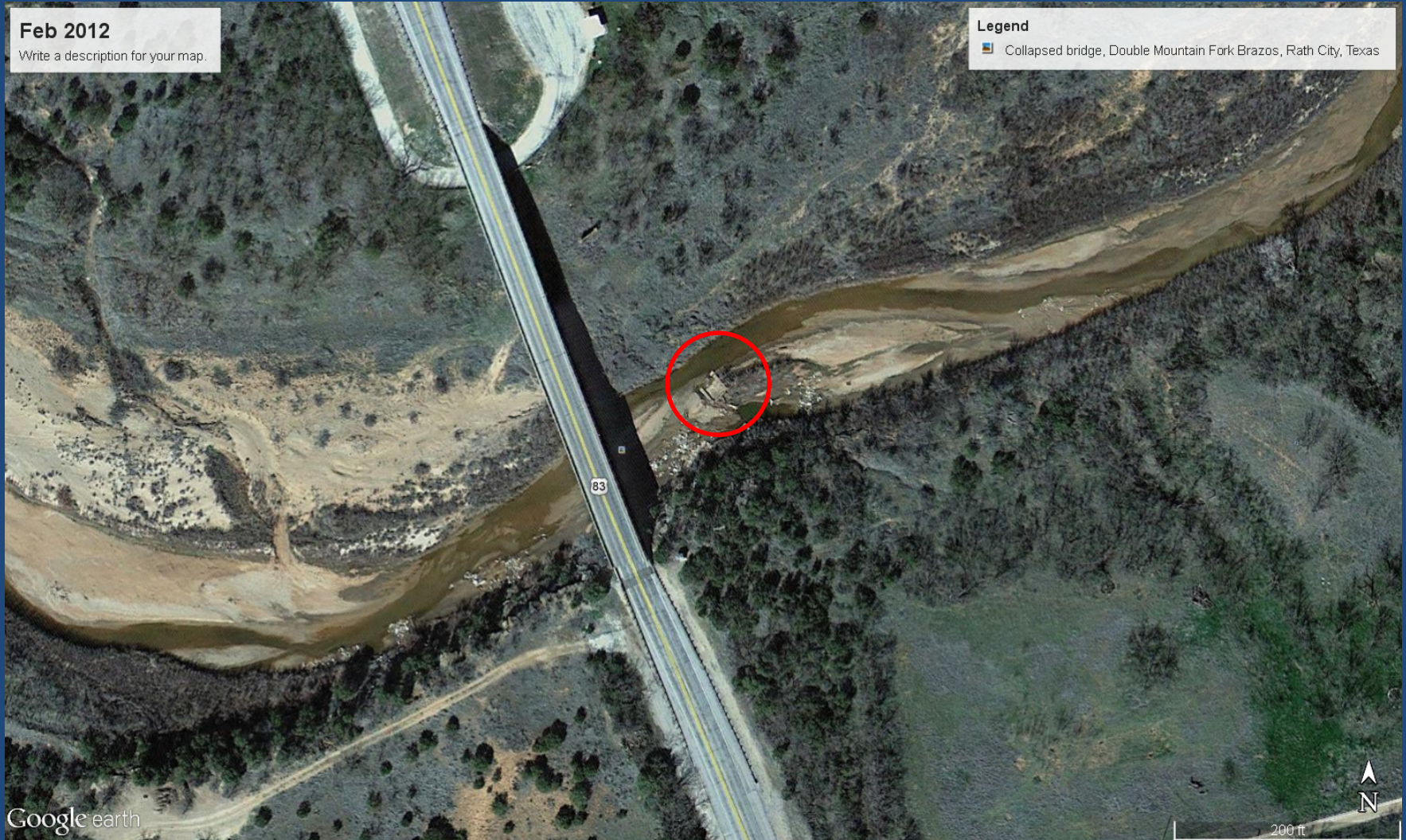


04/13/2010





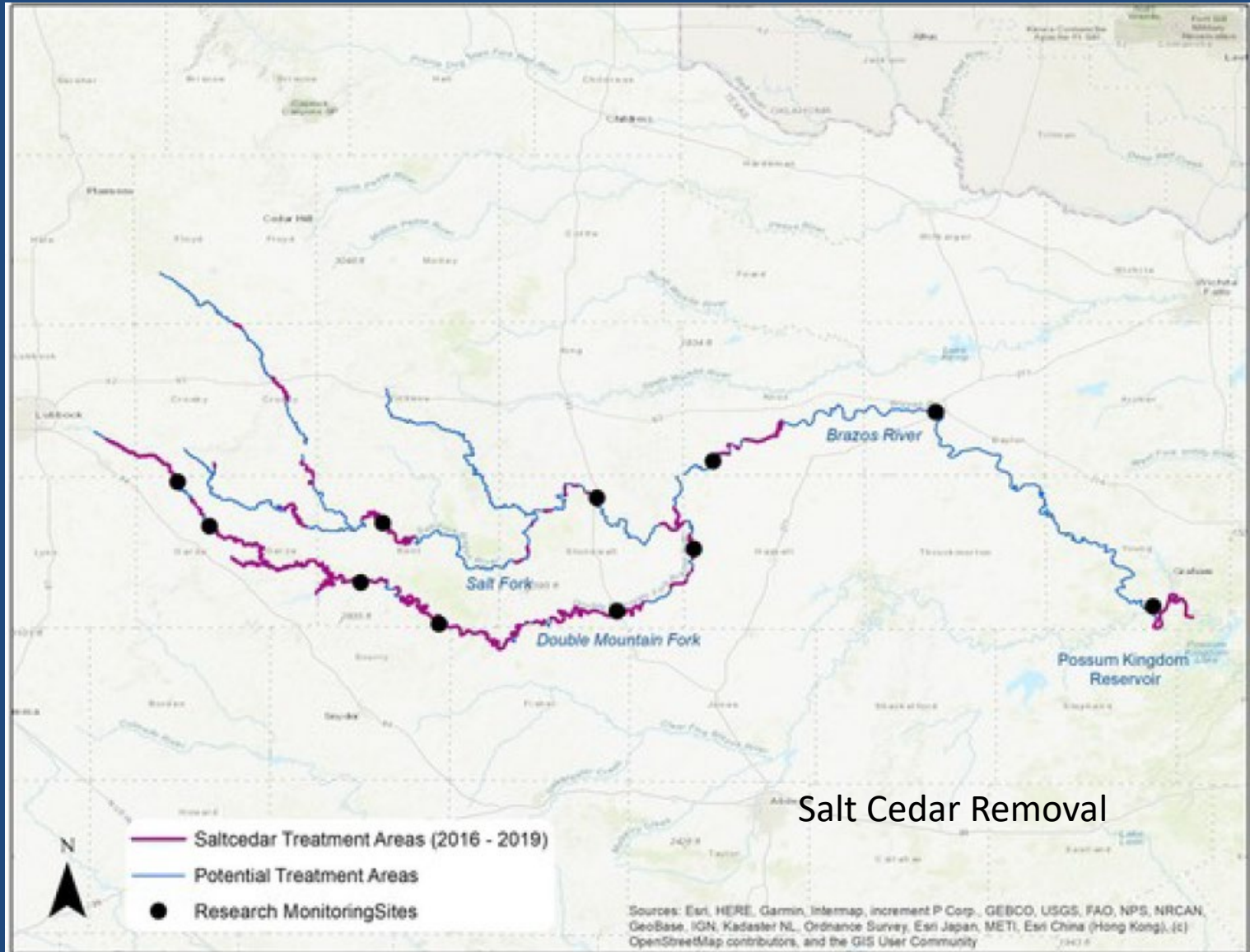
Recovery Actions



Stonewall County



Recovery Actions



Salt Cedar Removal

TPWD/USFWS

2016-2019 – treated almost 14,000 acres



Research

- Recent groundwater/surface water interaction in upper Brazos
- Altered water quality in upper Brazos
- Ongoing Prairie stream fishes
 - Ecological forecasting and conservation
 - Movement ecology

Research Needs

- Drought/climate modeling
 - Focus on recovery needs
 - Contribute Current/Future Conditions
 - Population Viability Analyses
- Captive propagation
- Water quality studies
 - Evaluate impact of municipal/industrial discharges
 - Ensure water quality is protective of shiners

Questions?

<https://www.fws.gov/southwest/es/arlingtontexas/>