



Brazos Water Snake Contract

***Presented by
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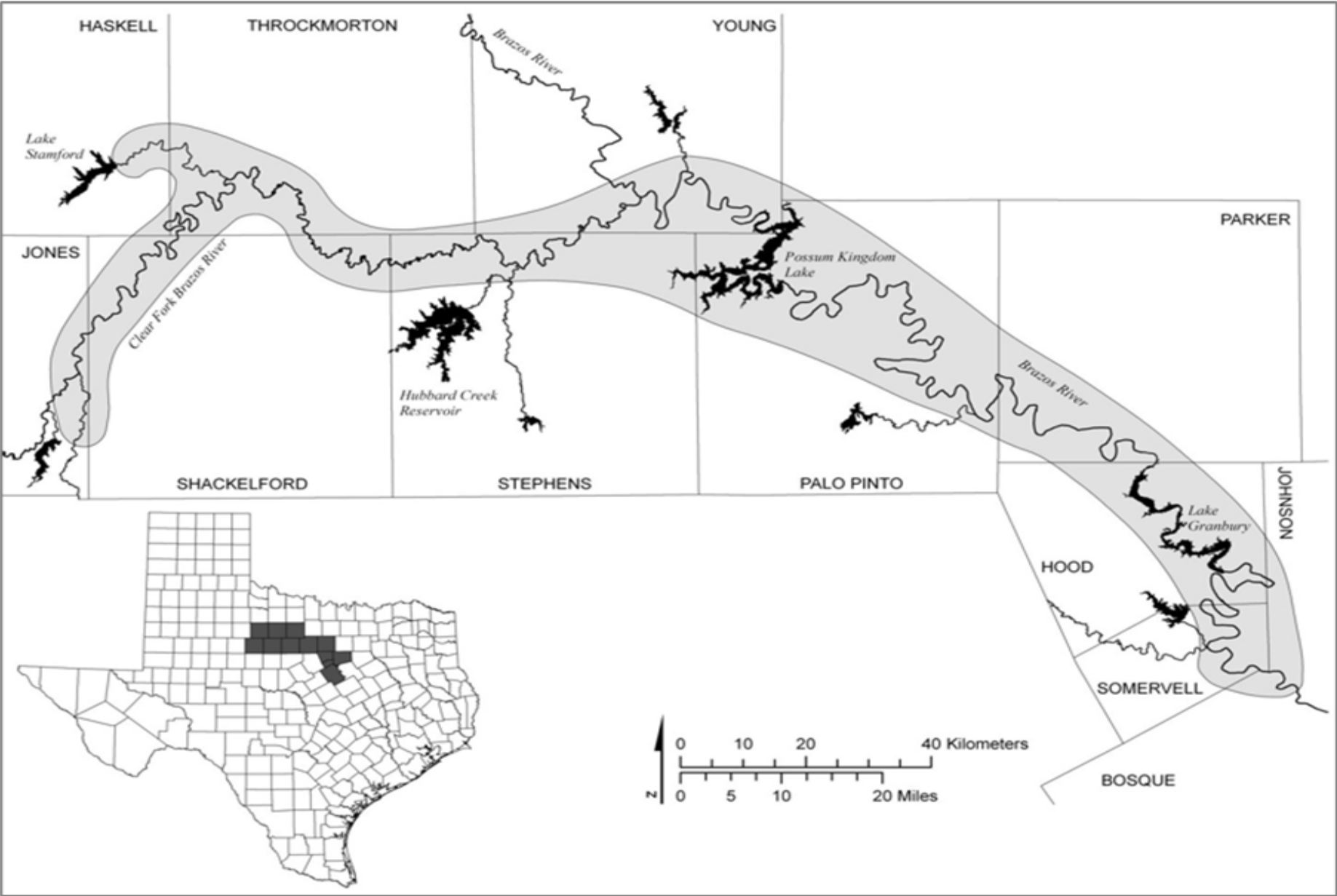


Brazos Water Snake (BWS)

- Endemic to Brazos River basin
- Texas threatened
- Lives in riffles and at the intersection of water and land in rocky habitat
- Feeds on fish and other aquatic organisms
- Little known about life history needs
- Non-venomous
- USFWS asking questions



Known Range





Why do we care?

- **Since 1973, the Endangered Species Act (ESA) has proven to be the nation's strongest conservation laws**
 - Has been widely upheld in the court system
 - Never substantially defeated
- **ESA can, and has, affected state-based water rights and regulations in other states**
 - Can limit the traditional exercise of established water rights
 - Restrict or modify new water projects
 - Any water use that results in the direct or incidental take or harm of listed species falls within the ESA's reach
- **ESA's ability to preempt state law derives from the U.S. Constitution's Supremacy Clause**



Examples of ESA Court Cases Impacting Water Resources

- **Cappaert v. United States – 1976 – Nevada**
 - Stopped ground water pumping by private landowners
- **TVA v. Hill – 1978 - Tennessee**
 - Halted construction of the Tellico Dam on the Little Tennessee River
 - Congress' intent in writing the ESA was to halt and reverse the trend towards species extinction, whatever the cost
- **Riverside Irrigation District v. Andrews – 1983 – Nebraska**
 - Dam never built
- **Carson-Truckee Water Conservancy District v. Clark – 1984 –California**
 - ESA needs trump municipal and industrial water use
 - Changed water releases and pumping from a reservoir
- **California State Water Project and Central Valley Project – 2008 - 2013 – California**
 - Too many suits to summarize briefly
 - Requires changes in pumping from rivers and deltas impacting municipalities, agriculture and industry

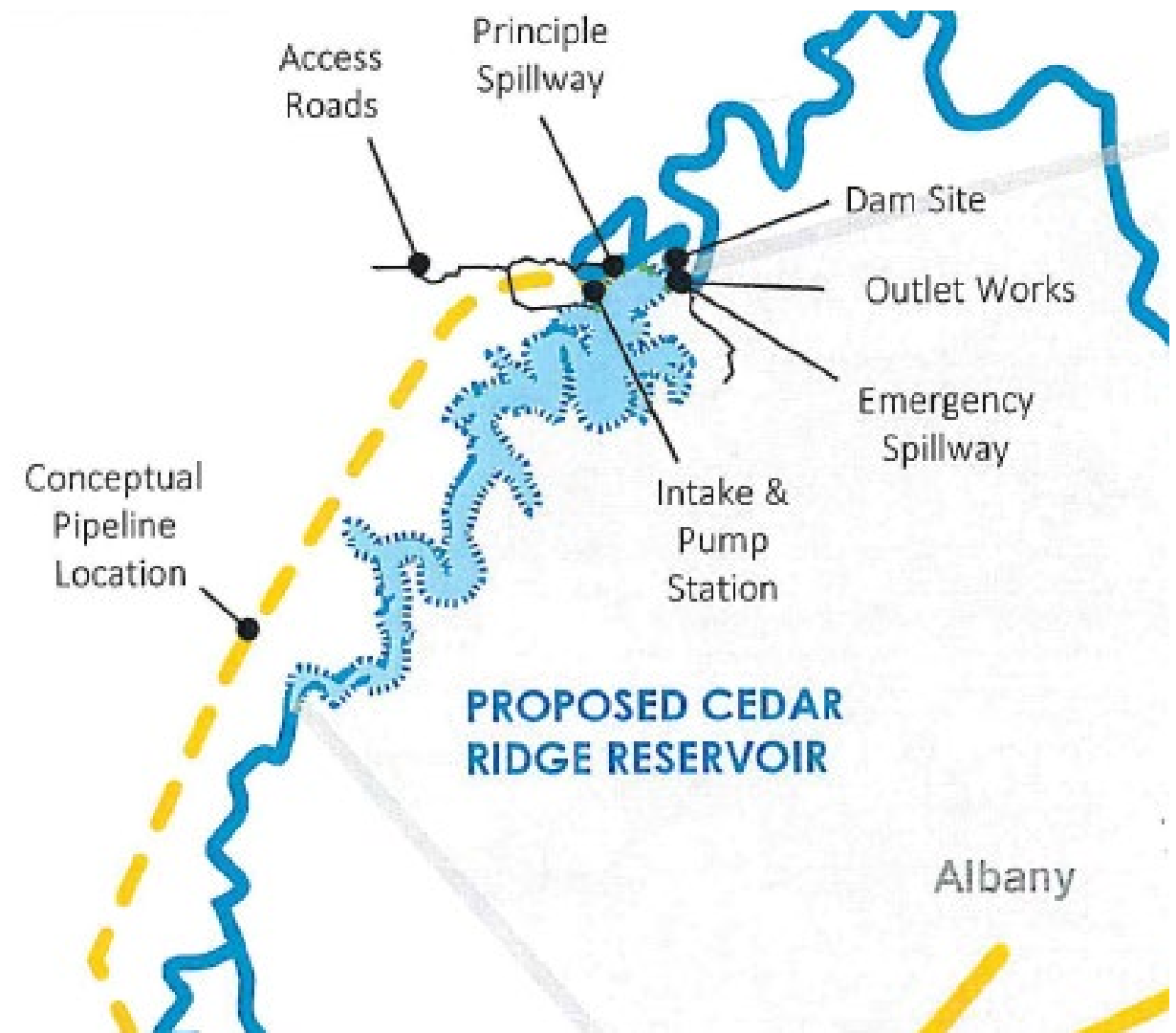


Examples of ESA Impacting Water Resources Outside of the Court System

- **Columbia Dam Project – Duck River, Tennessee**
 - \$83 million dam project 90% complete when two species of freshwater mussels declared endangered
 - Dam never completed and constructed portion removed in 1999
- **O.H. Ivie Reservoir – Colorado River, Texas**
 - Permitting conditions requires that the Colorado River Municipal Water District
 - Make low-flow releases from the reservoir to benefit the Concho Water Snake
 - Make low-flow releases at the already constructed E.V. Spence Reservoir
 - Allow discharges of sufficient volume to cause channel scouring to pass through the two reservoirs
 - After 2 decades and resource expenditures of \$5 million dollars, it was documented that the snake was:
 - Far more numerous than originally thought
 - Was adapting to new habitats
 - In 2011 a petition to remove Federal protections was successful

- ***Cedar Ridge Reservoir – Clear Fork of the Brazos River, Texas***

- **Permitting conditions required that the City of Abilene**
 - **Establish environmental flow regime for reservoir releases to provide habitat conditions to meet like history requirements of downstream aquatic species**
 - **Develop mitigation strategies to address the potential effects of hydrologic alteration, connectivity, habitat fragmentation, sediment transport and water quality on the BWS**
 - **Project tabled in 2018**





Examples of Lost Opportunity Costs due to ESA Requirements

- **California State Water Project and Central Valley Project**
 - Federal Courts imposed dedicated flow requirements to San Francisco Bay
 - Reduced water supply by 800,000 acre-feet, approximately 8% of total supply
 - Cost-estimate of replacement \$16 billion
 - At FY 2023 System Rate a loss of 8% of system water would result in an annual loss in revenue of \$4,840,000
- **Colorado Municipal Water District**
 - Low-flow release requirements for Concho Water Snake equates to 0.5% of total reservoir storage
 - At FY 2023 System Rate a loss of 0.5% of system water would result in an annual loss in revenue of \$475,640



TPWD Draft Conservation Action Plan

- **TPWD reached out to BRA in 2020**
- **Stakeholder meeting in 2021**
- **Draft 2022**
 - **Relies on best available data**
 - **Dams and water management/use identified has threat having highest impact on the species population**
 - **Dams also listed as a contributor to several other threat conditions**



Need for Additional Science

- **Understanding species life history needs is key to developing an effective conservation plan**
- **No comprehensive survey of the known range has been undertaken in the last two decades**
- **When surveys were conducted in Summer of 2020 to refine BRA project plan**
 - **Identified the snake in areas never previously reported**
 - **Identified the snake in habitats not previously reported**
 - **Identified a much higher rate of snake fungal disease than previously reported**



Why now?

- **Growing population resulting in increased attention on species issues in Texas**
- **Need a comprehensive understanding of the species distribution, abundance, and life history needs to develop effective conservation plans**
- **Need to understand if BRA operations are impacting**
- **Actively working to conserve the species at the state-level can prevent federal intervention**
- **Far more cost-effective to prevent federal intervention than it is to respond to federal regulations and law-suits**
- **Scientific standard for delisting decisions is significantly higher than for listing decisions**



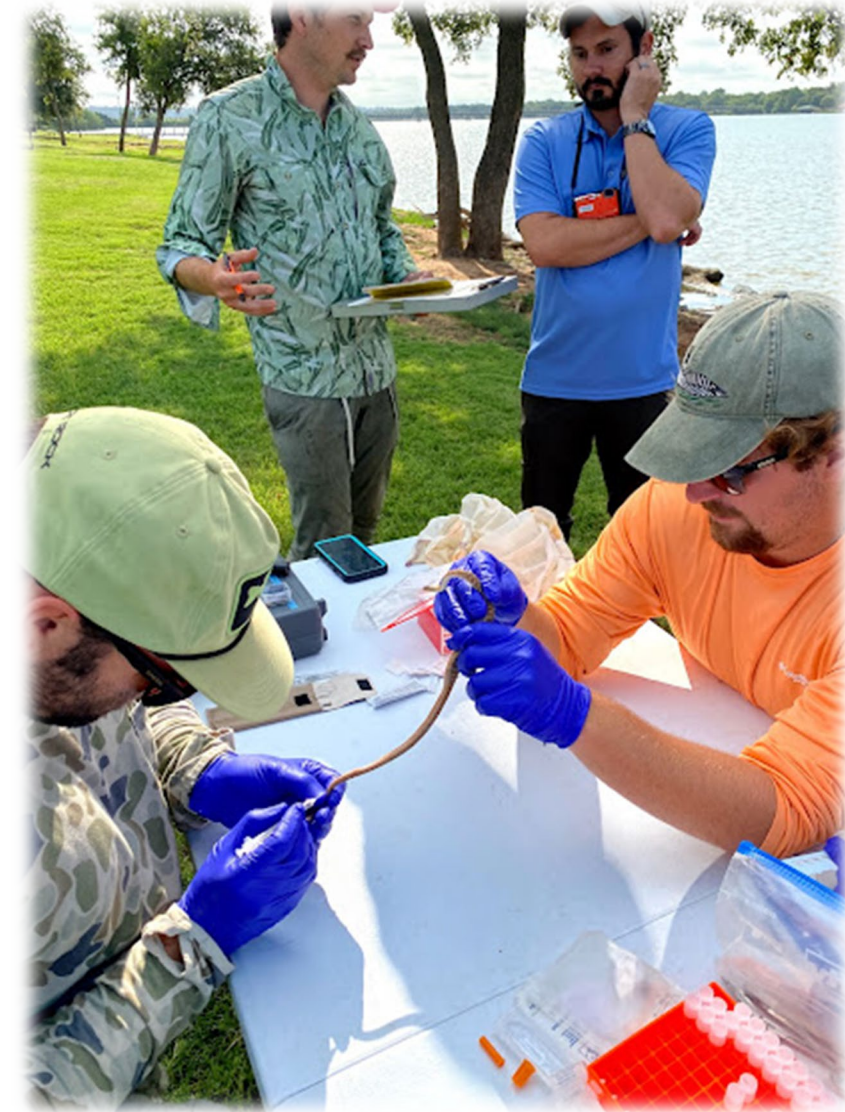
Texas Comptroller of Public Accounts (CPA)

Natural Resource Division

- Works with state and federal government, business interests and nonprofits to help find solutions to issues relating to endangered and threatened species that are sustainable ecologically, socially and economically.
- Reached out in April 2022
- Concerned that the BWS is vulnerable to federal interest/intervention
- Expressed interest in a three-agency effort to understand and address species needs
- Goal by proactively engaging on the species with the three relevant natural resource agencies can mitigate the need for USFWS intervention on the species behalf

Division of Effort on BWS Studies and Conservation Strategy Implementation

- **Three-year study term**
 - CPA will conduct studies on reservoirs
 - BRA will conduct studies on Brazos River between Lake Whitney and Possum Kingdom Reservoir
- **TPWD has begun implementing conservation strategies**



Habitat Improvement at Thorp Spring Park on Lake Granbury

- **TPWD**
 - purchased riprap to be placed along the shoreline
 - fish habitat structures will be placed nearby in lake
- **Lake Granbury staff placed riprap**
- **Providing more suitable habitat will increase range and numbers of Brazos Water Snakes**





Why is three-year study term recommended?

- **Track the range of movements of individuals**
- **Determine if habitat use varies at different life states**
- **Produce data eligible for publication in peer-reviewed scientific journals**
 - **Minimum term to gather statistically valid data**
 - **Reproducibility and replicability**





BRA Contract

- **Selected Firm – BioWest Inc.**
- **Total Not to Exceed = \$650,000**
 - Phase 1 = \$250,000
 - Phase 2 = \$225,000
 - Phase 3 = \$175,00
- **Contract requires written notice to proceed for phases 2 and 3**
- **Project requires annual BOD authorization through budget process**





Other BWS Contributions

- **CPS Reservoir studies**
 - FY 2023 – 2025 - \$500,000
 - Call for Proposals issued in June 2022
- **TPWD**
 - Implementation of conservation strategies
 - FY 2022 - \$135,000
 - FY 2023 and FY 2024 - \$200,000
 - Funding snake fungal disease sample analysis for BRA's effort
- **Texas State University**
 - Performing genetic analysis of swabs collected from snakes captured during BRA efforts





“BE IT RESOLVED that the Board of Directors of the Brazos River Authority hereby authorizes the General Manager/CEO to enter into a three-year phased contract with BioWest Inc. to conduct applied research on the Brazos Water Snake in the amount not to exceed \$650,000.”



Brazos

RIVER AUTHORITY