

TWCA Presentation 2023

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TEXAS COASTAL ECOLOGICAL SERVICES FIELD OFFICE



Fish and Wildlife Service Authority

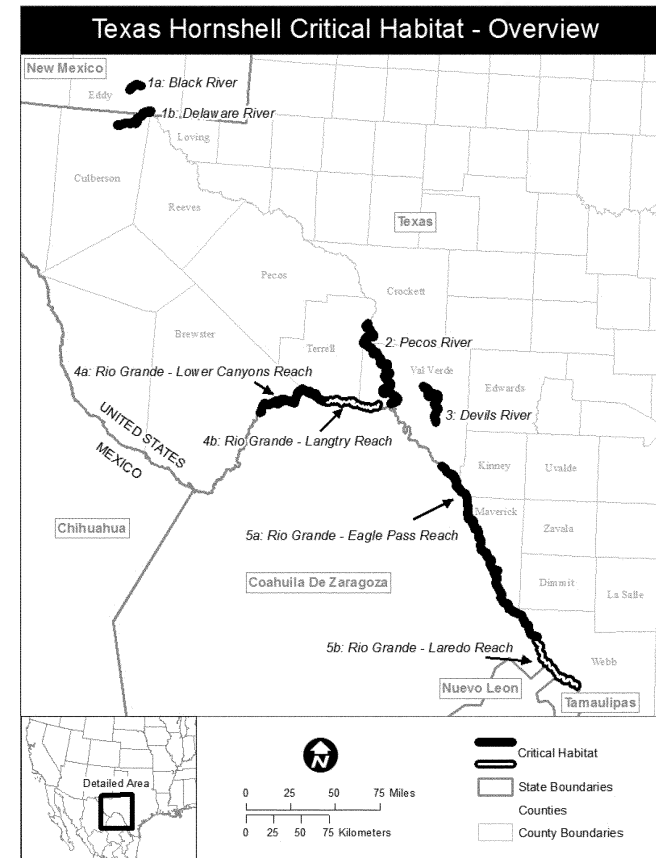
- Endangered Species Act (ESA) 1973
 - Purpose: to conserve endangered and threatened species and the ecosystems on which they depend
- Congress determined that threatened and endangered species have “esthetic, ecological, educational, historical, recreational, economic, and scientific value to the Nation and its people”.
- Threatened – likely to become endangered in the foreseeable future
- Endangered – in danger of extinction throughout all or a significant portion of its range



North America and Texas are rich in mussels

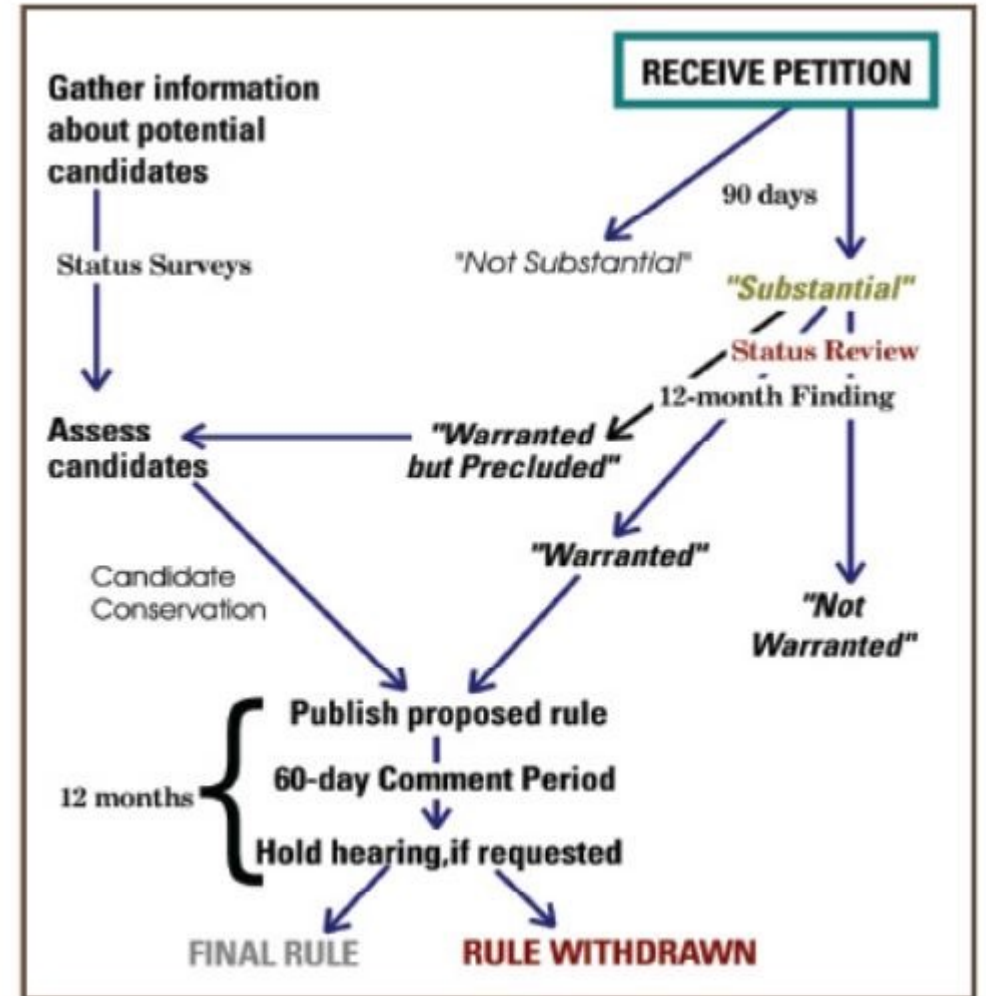


- Approximately, 297 species of freshwater mussels in the U.S.
 - The U.S. has highest diversity of Unionid mussels worldwide
- In the U.S., 21 species have gone extinct and 91 federally protected
- Texas has 52 species of freshwater mussels; most river basins in east Texas have over 25 species
- 11 mussels in Texas are currently under review or have been proposed for listing by the FWS
- The Texas hornshell was listed as endangered in 2018; CH proposed in 2021 within segments of Rio Grande



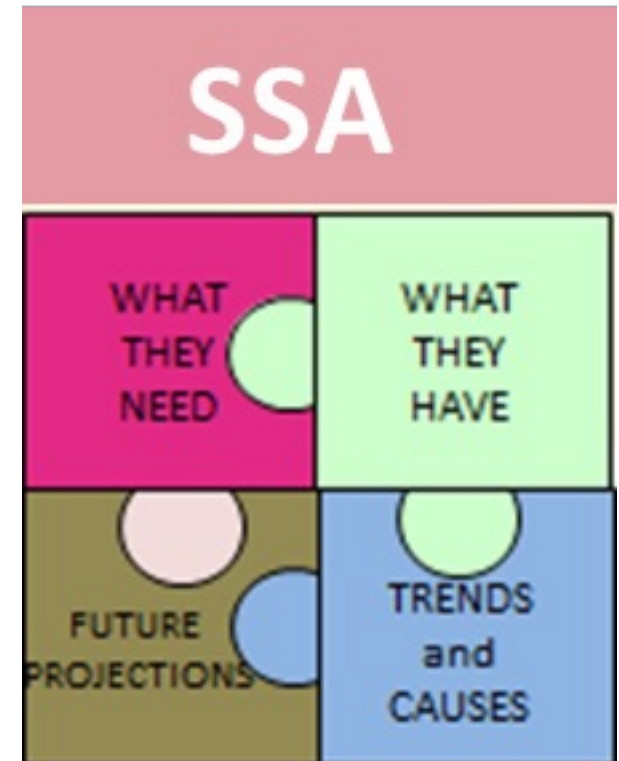
Listing Process

- Publish Notice of Review Or get Petitioned
 - Those species that are believed to meet threatened or endangered
- 90-day review
- Substantial information finding – indicating that petitioned action may be warranted
 - 12-month review to determine if listing is warranted
- In one year following:
 - Publish Proposed Rule
 - 60-day comment period
 - Public comment hearing
- Publish Final Rule, or Rule Withdrawn
- Available online at: <https://www.fws.gov/endangered/what-we-do/listing-workplan.html>



Species Status Assessment (SSA) Framework

- What is an SSA?
 - USFWS developed biological risk assessment to aid decision makers who must use the best available scientific information to make policy decisions under the ESA.
- Purpose of the SSA
 - Provides a single source for species' biological information needed for all ESA decisions
 - listing
 - consultations
 - grant allocations
 - permitting
 - habitat conservation plans
 - recovery planning
- Benefit of an SSA
 - Provides a stand-alone document on the science of the species that could support multiple actions, which allows other related documents to be shorter and more concise, increase efficiency.



Texas Mussel Status Review

- East Texas – 2 species (Louisiana pigtoe, Texas heelsplitter)
 - Final SSA (2022) and proposed rule (2023)
 - Public hearing (May 2, 2023); 60-day public comment period (ended May 19, 2023). Public comments now being reviewed by Service
 - CCAA's in progress with Sabine River Authority, Trinity River Authority
 - Final listing decision expected next year
- Central Texas – 7 species (Texas fawnsfoot, Texas pimpleback, Texas fatmucket, Guadalupe fatmucket, Guadalupe orb, Balcones spike, False spike)
 - Final SSA (2019) and proposed rule (2021)
 - Final listing decision expected Fall 2023
 - CCAA's in progress with Lower Colorado River Authority, Trinity River Authority
- Rio Grande – 2 species (Mexican fawnsfoot, Salina fatmucket)
 - Draft SSA (2023) Under review
 - Decision expected later this year

Louisiana pigtoe (*Pleurobema riddellii*)

- Petitioned to list in 2007, substantial 90-day finding published in 2009
- Proposed threatened
- Species needs:
 - Water quality and quantity sufficient to meet life history needs (mussels and host fish)
 - Prefer low to moderate stream flows (0.3-1.4 m/s)
 - Substrate: riffles of cobble and rock; sand, gravel, woody debris
 - Spawn in summer and brood through winter
 - Host fish: red shiner, blacktail shiner, bullhead minnow

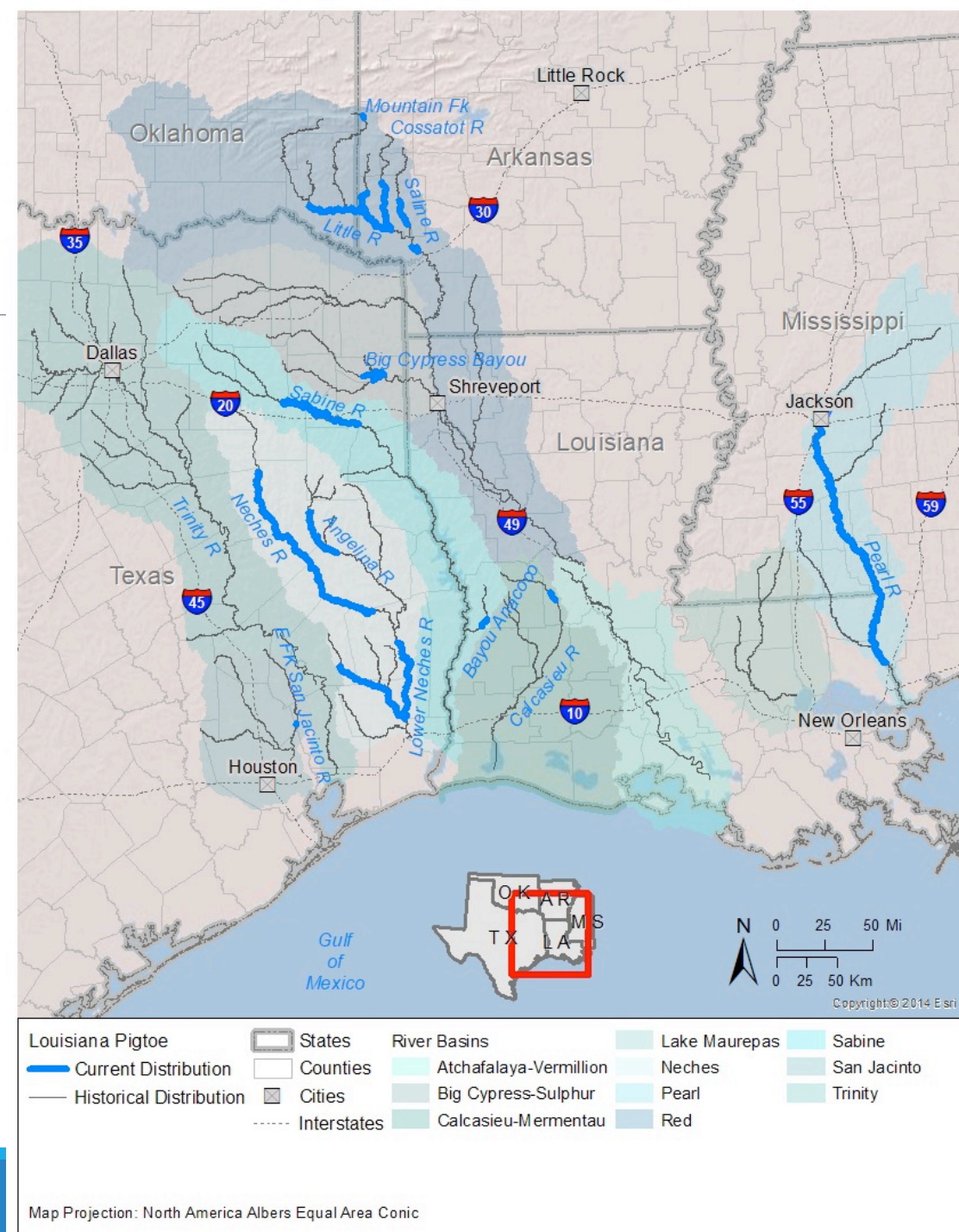


USFWS photo

Historical (black) and Current (blue) Distribution

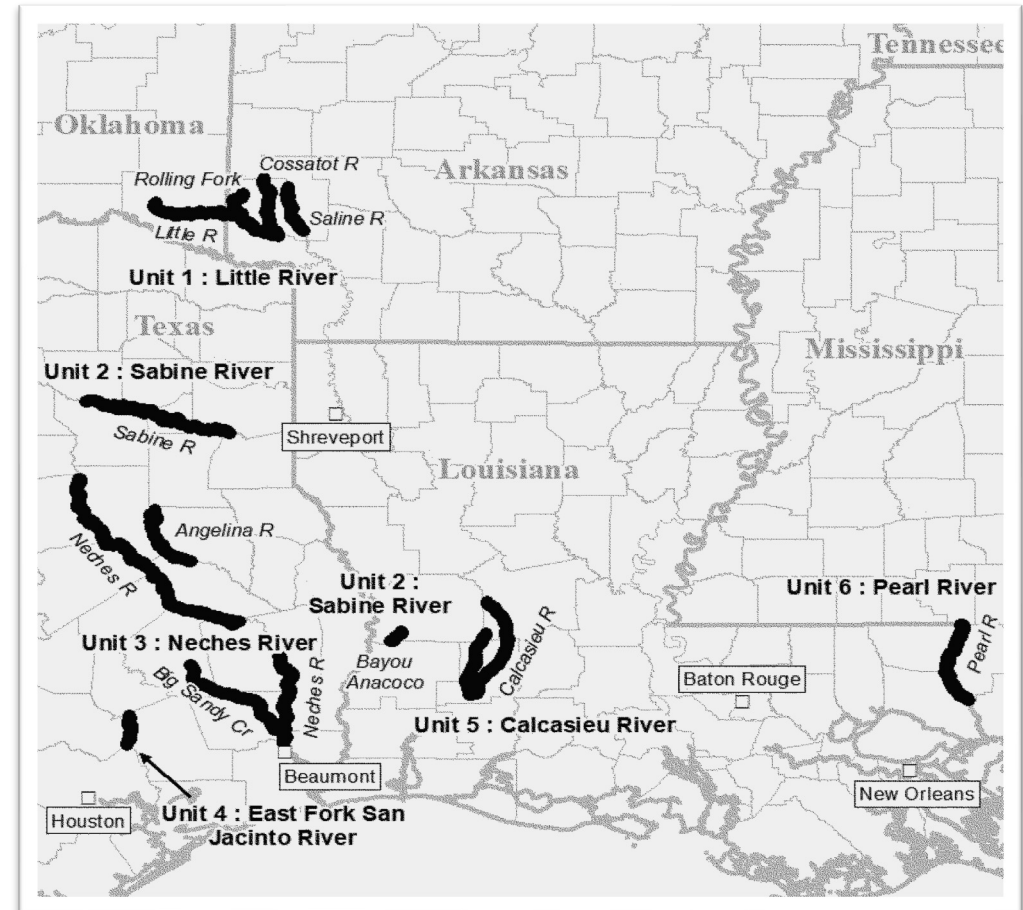
- Historically endemic to 10 river basins in AR, LA, OK, MS, TX. 14 populations (focal area) remain in 7 basins (based on live/recent dead observed since 2000)

Texas River Basins	State	Population	Length of Occupied Reach (miles)
Sabine	TX	Sabine River	86.8
Neches	TX	Angelina River	53.2
Neches	TX	Neches River	203.0
Neches	TX	Lower Neches River	160.4
San Jacinto	TX	East Fork San Jacinto	1.3



Louisiana pigtoe proposed critical habitat

- Approximately 1,028 river miles are proposed to be designated as CH
- CH units only include river segments currently occupied by the species
- Service is considering units with conservation agreements for exclusion from final CH
- CH does not affect land ownership, but Federal agencies are required to consult with the Service when they undertake, fund, or authorize any activity that may affect critical habitat.



Texas heelsplitter (*Potamilus amphichaenus*)

- Petitioned to list in 2008, substantial 90-day finding published in 2009
- Proposed endangered
- Species Needs:
 - Water quality and quantity sufficient to meet life history needs (mussels and host fish)
 - Inhabit streams with low to moderate flows, but can also utilize deeper pools and tolerate impoundments
 - Substrate: mud, sand, finer gravels, and mixtures of those; sometimes associated with fallen timber
 - Spawn in late summer/fall and brood through winter
 - Host Fish: freshwater drum

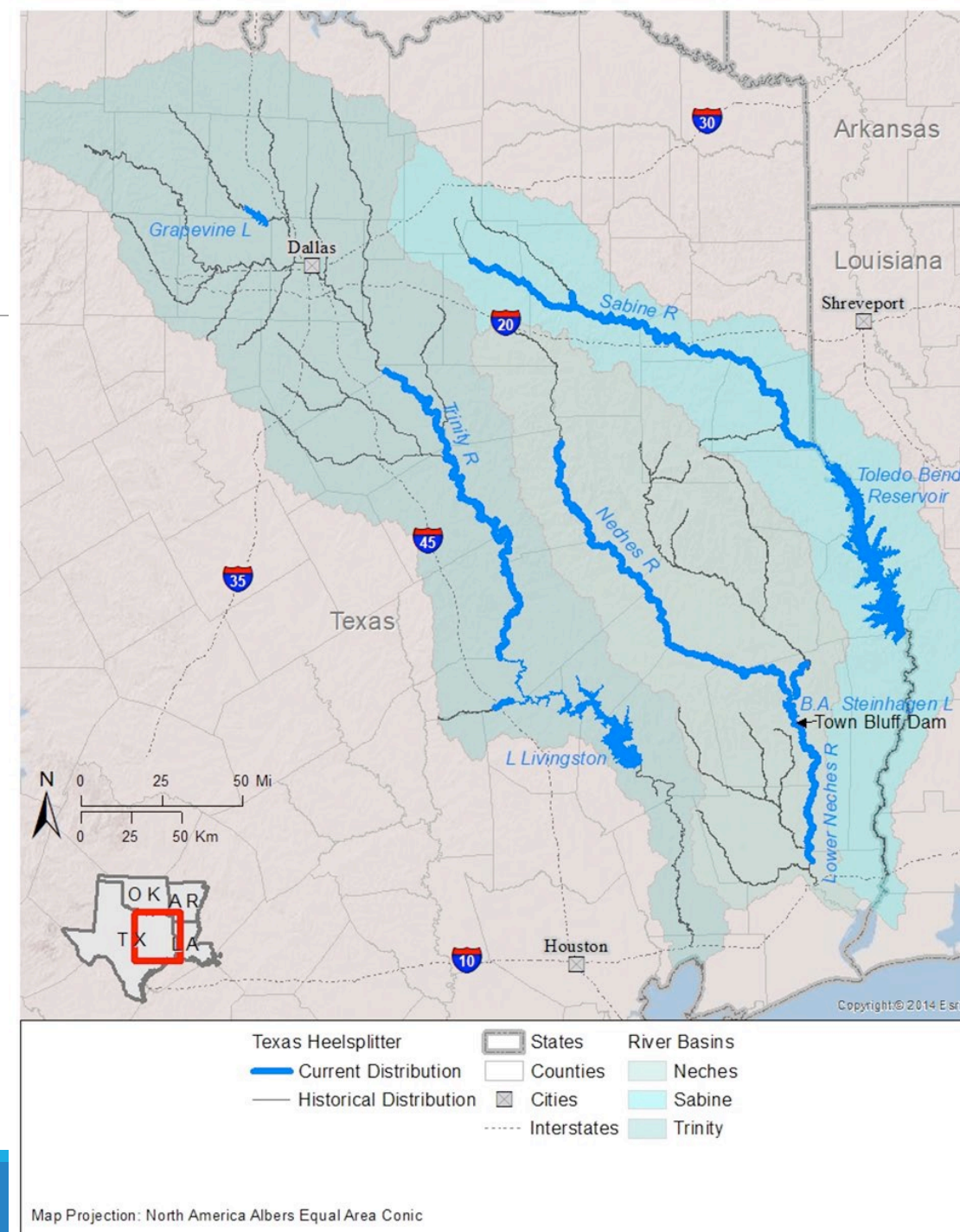


USFWS photo

Historical (black) and Current (blue) Distribution

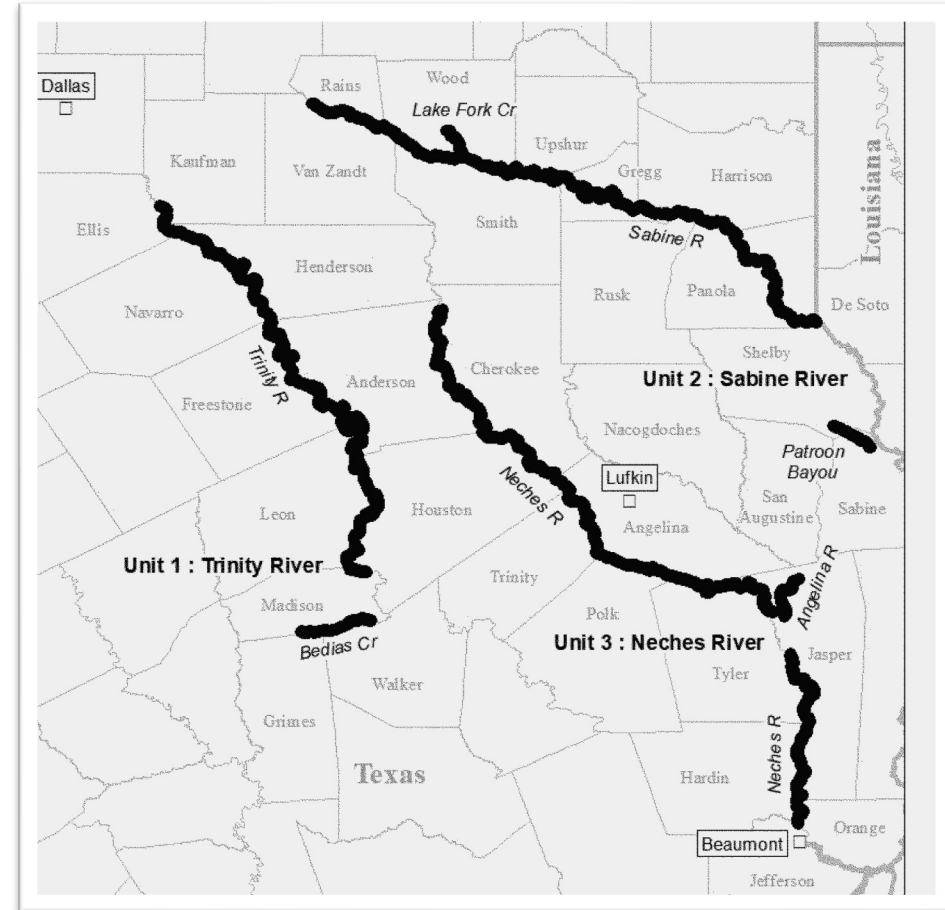
- Historically endemic to 3 River Basins in Texas and Louisiana. Currently 5 populations (focal areas; based on live/recent dead observed since 2000). 2019 surveyed five lakes, including Grapevine, only BA Steinhagen detected Texas heelsplitter.

River Basin	State	Population	Length of Occupied Reach (miles)
Sabine	TX/LA	Sabine River/ Toledo Bend	245.8
Neches	TX	Neches R/B.A. Steinhagen	240.9
Neches	TX	Lower Neches River	74.2
Trinity	TX	Grapevine Lake	Na (reservoir)
Trinity	TX	Trinity River/Lake Livingston	203.4



Texas heelsplitter proposed critical habitat

- Approximately 832 river miles are proposed to be designated as CH
- CH units only include river segments currently occupied by the species
- Service is considering units with conservation agreements for exclusion from final CH



Texas fawnsfoot (*Truncilla macrodon*)

- Petitioned to list in 2009, substantial 12 month finding published in 2011
- Proposed threatened
- Species Needs:
 - Water quality and quantity sufficient to meet life history needs (mussels and host fish)
 - Inhabit medium to large sized streams with flowing waters
 - Substrate: mud, sand, gravel, and bank habitats; sometimes associated with backwater, riffle, and point bar habitats
 - Spawn in late summer/fall and brood through winter
 - Host Fish: freshwater drum

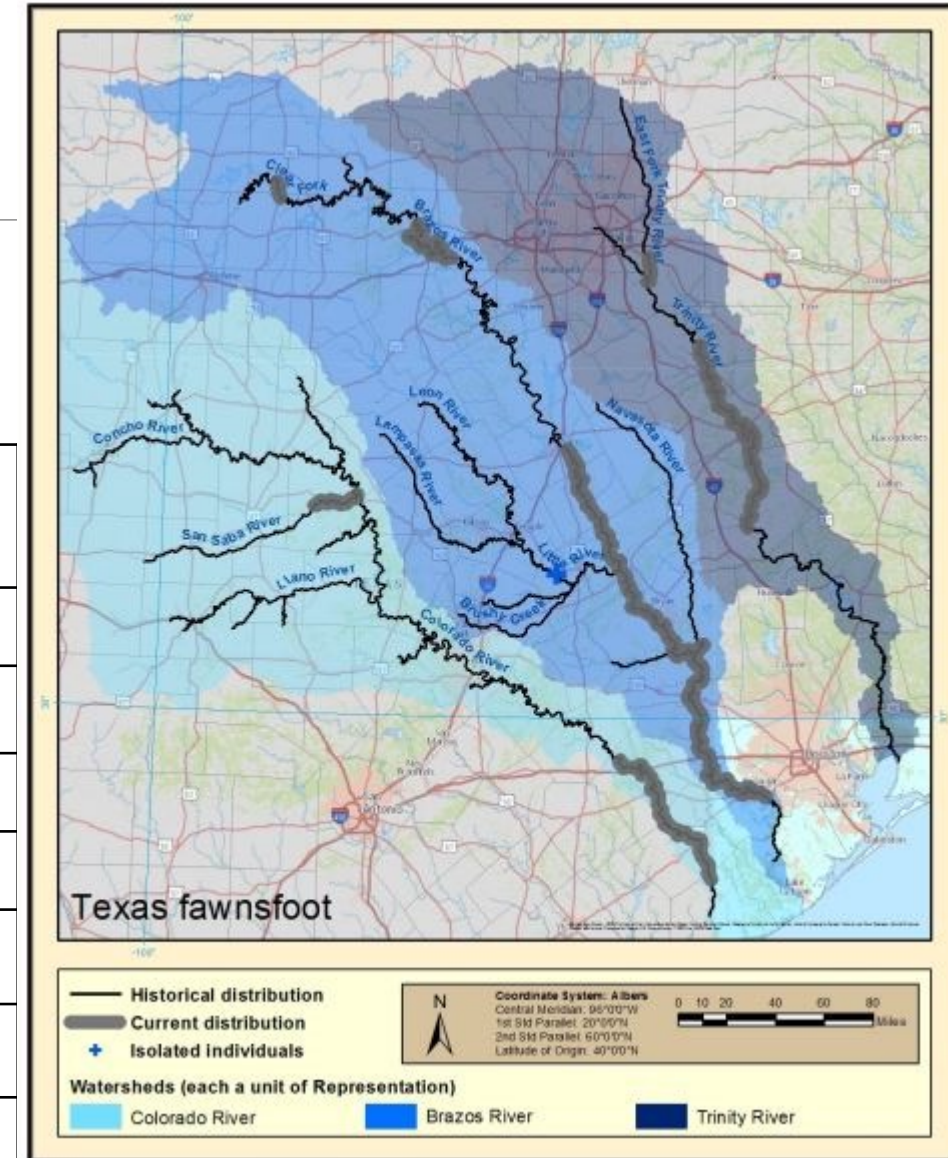


Photo Credit: Mark Fisher, USFWS

Historical (black) and Current (gray) Distribution

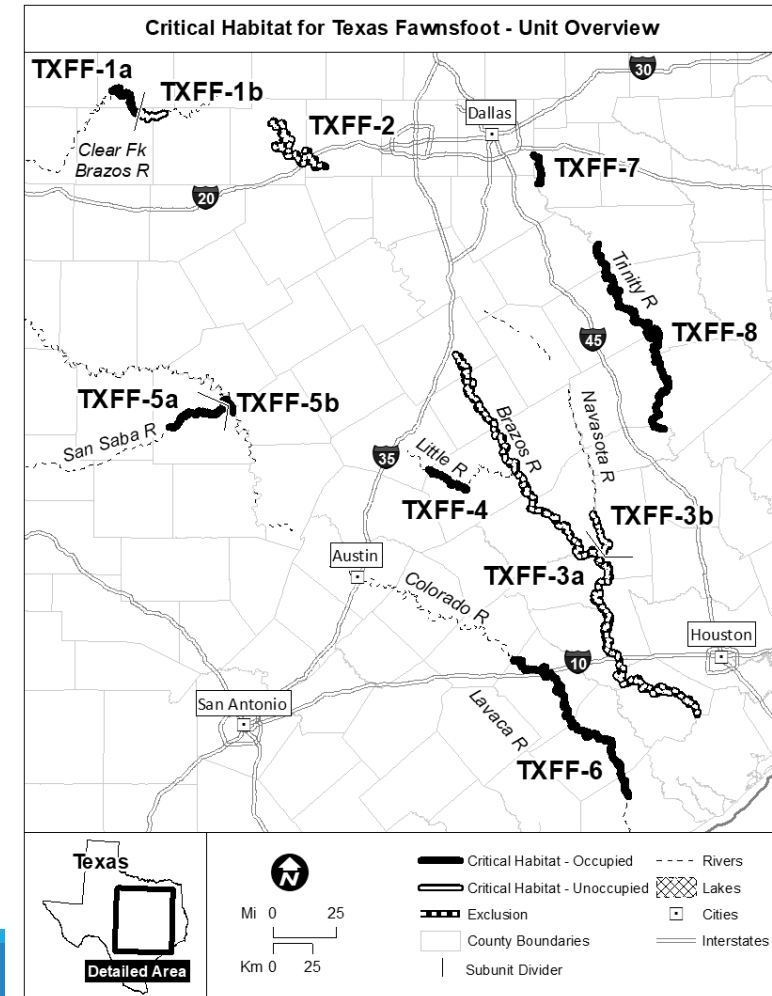
- Currently occurs in the Colorado, Brazos, and the Trinity River. Currently inhabits 659.7 stream miles (18.7% of its presumed historical distribution).

River Basin	State	Population	Length of Occupied Reach (miles)
Trinity	TX	Lower East Fork	11.8
Trinity	TX	Middle Trinity River	139.8
Brazos	TX	Lower Clear Fork	12.2
Brazos	TX	Upper Brazos River	62.2
Brazos	TX	Middle/Lower Brazos	692.8
Colorado	TX	Lower San Saba/Middle Colorado	43.0
Colorado	TX	Lower Colorado	108.6



Texas fawnsfoot proposed critical habitat

- Approximately 192.7 river miles are proposed to be designated as CH
- CH units include both occupied and unoccupied river segments
- Service is considering units with conservation agreements for exclusion from final CH



Current CCAA's

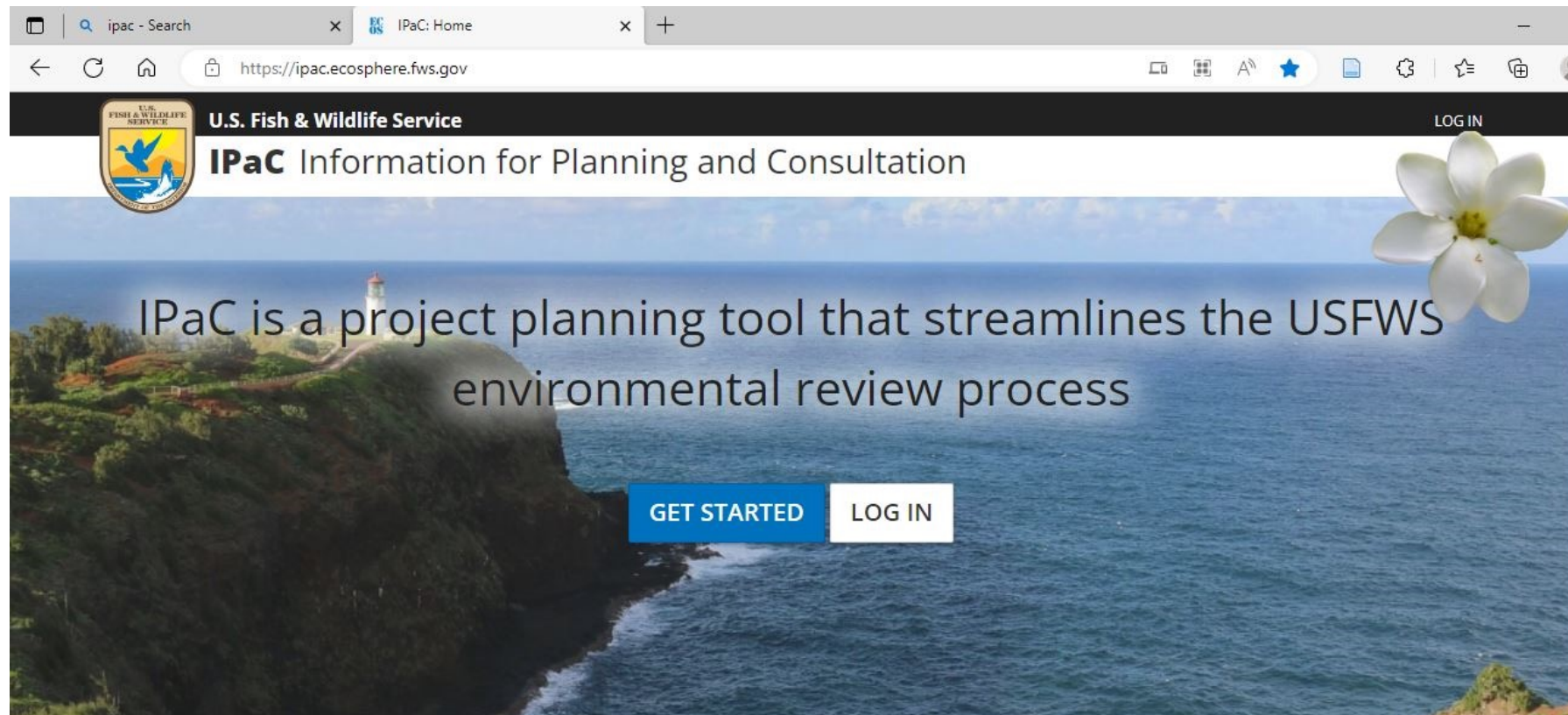
- Candidate Conservation Agreement with Assurances (CCAA)
- In 2021, Brazos River Authority entered into voluntary CCAA to provide benefits to native freshwater mussels while continuing to meet their obligation to provide water to the growing communities found in their basin.
 - Great example of cooperative efforts in Texas to promote freshwater mussel conservation
 - Served as a blueprint for similar agreements with other river authorities
- CCAA's in Progress
 - Lower Colorado River Authority (in works for Central TX mussels)
 - Trinity River Authority (in works for Central and East TX mussels; will cover total of 6 at-risk species)
 - Sabine River Authority (in works for East TX mussels; will cover total of 8 at-risk species)

Habitat Conservation Plan (HCP)

- What is an HCP?
 - A planning document designed to accommodate economic development to the extent possible by authorizing the limited and unintentional take of listed species when it occurs incidental to otherwise lawful activities.
 - HCPs describe the anticipated effects of the proposed taking, how those impacts will be minimized or mitigated, and how the conservation measures included in the plan will be funded.
 - Designed to help landowners and communities while providing long-term benefits to species and habitats.
- Current HCP in Progress
 - Service working with Guadalupe-Blanco River Authority developing HCP for the Guadalupe River Basin that includes conservation measures for Texas-endemic freshwater mussels, salamanders, Monarch butterflies, and whooping cranes, among others.
 - The Service anticipates the conservation benefit of this agreement will be substantial, especially as the state faces increased and competing demands for water.

Information for Planning And Consultation (IPAC)

Online resource to evaluate FWS resources located near your project (<https://ipac.ecosphere.fws.gov/>)



Questions?

Visit www.fws.gov or contact:

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East Texas Mussels

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