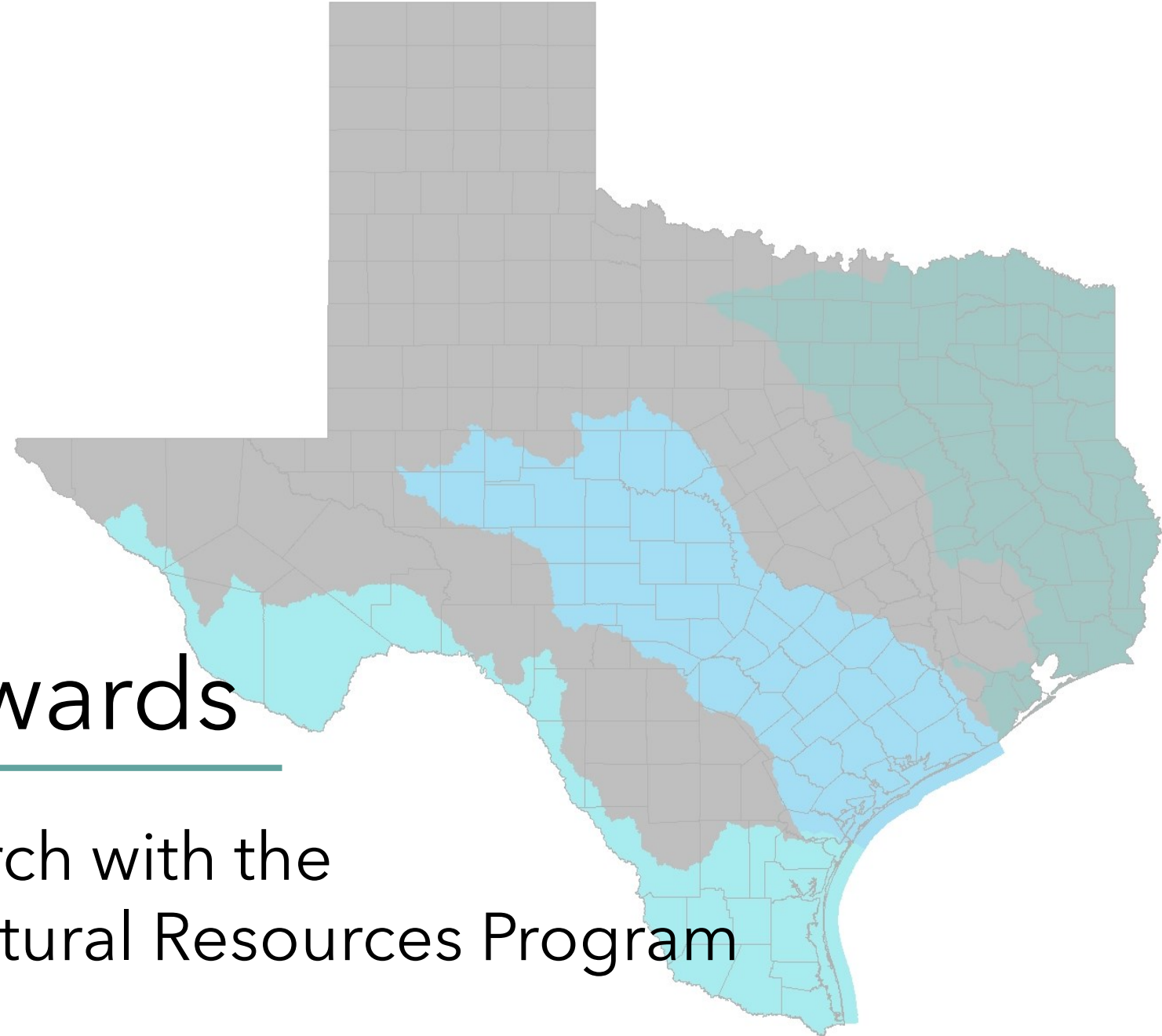




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Estuaries to Edwards

Aquatic Species Research with the
Texas Comptroller's Natural Resources Program

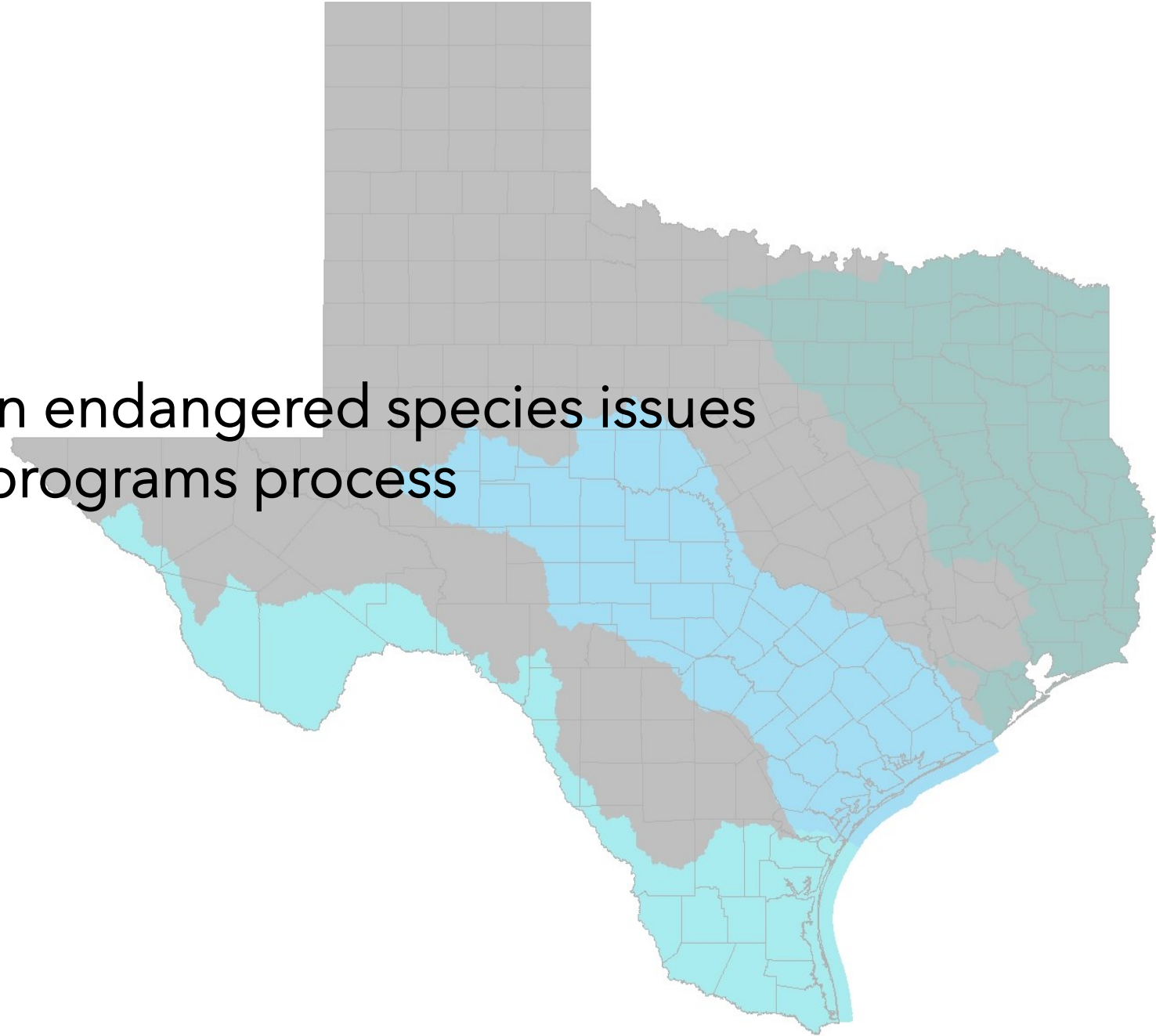


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Outline

1. The Comptroller's role in endangered species issues
2. The Natural Resources programs process
3. Ongoing projects





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Natural Resources Program

The program collaborates with communities & stakeholders to identify knowledge gaps and support ecological research to contribute to the ESA listing process and long-term conservation strategies.

[Natural Resources Homepage](#)





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Identify needs...





Endangered Species Act 101

The U.S. Fish and Wildlife Service implements the Endangered Species Act of 1975.

- Threatened and Endangered Species list
- Recovery planning
- Voluntary conservation agreements

Monitor the USFWS [federal register homepage](#) for listing decisions, recovery plans, and more.



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Poll Question #1

Which of the following Texas species is
NOT federally endangered?

- A. Texas Hornshell
- B. Alligator Snapping Turtle
- C. Comanche Springs Pupfish
- D. Texas Blind Salamander



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Endangered Species Act 101

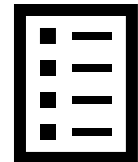
Petition



90-day
finding



Listing
decision



90 days

12 months

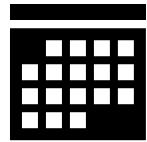


Endangered Species Act 101

Petition



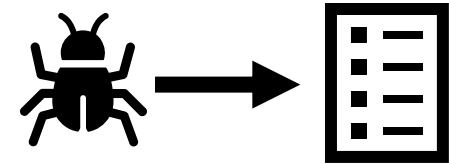
90-day
finding



SSA
process



Listing
decision



90 days

12 months



Species Status Assessment

- Presents representation, redundancy & resiliency to characterize the status and viability of the species

...in other words

What is it?

How many are there?

What is it's habitat?

Where is it?

What is a population?

Is it reproducing?

[USFWS SSA Website](#)



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Support academic research

- Scope of Work
- Proposal review
- Contract execution





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Natural Resources Program

- 24 research projects
- 12 species and habitats

Natural Resources Research Projects





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Share information:

- USFWS
- Program website
- Newsletters
- Project StoryMaps
- Work Group meetings

Natural Resources

Program Newsletter





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Rio Grande Cooter

- Scheduled listing decision in 2021
- Potential threats:
 - Dams
 - Poor water quality
 - Pet trade





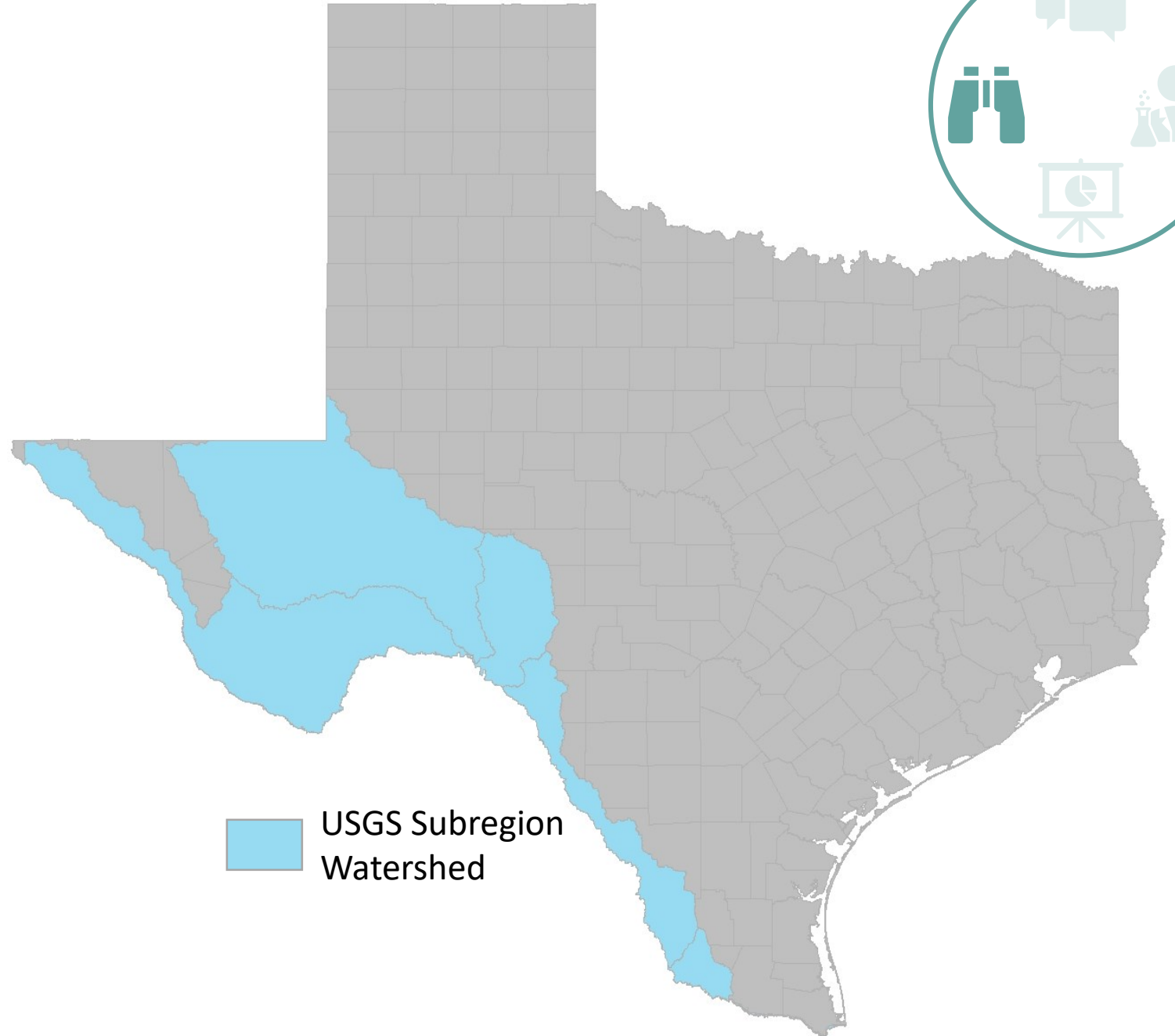
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Rio Grande Cooter

- Major information gaps across its range
 - Presence
 - Detection
 - Habitat
 - Life history





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University of Texas Rio Grande Valley

- Innovative survey techniques
 - eDNA
 - Drones
 - Binoculars
- +50 river miles





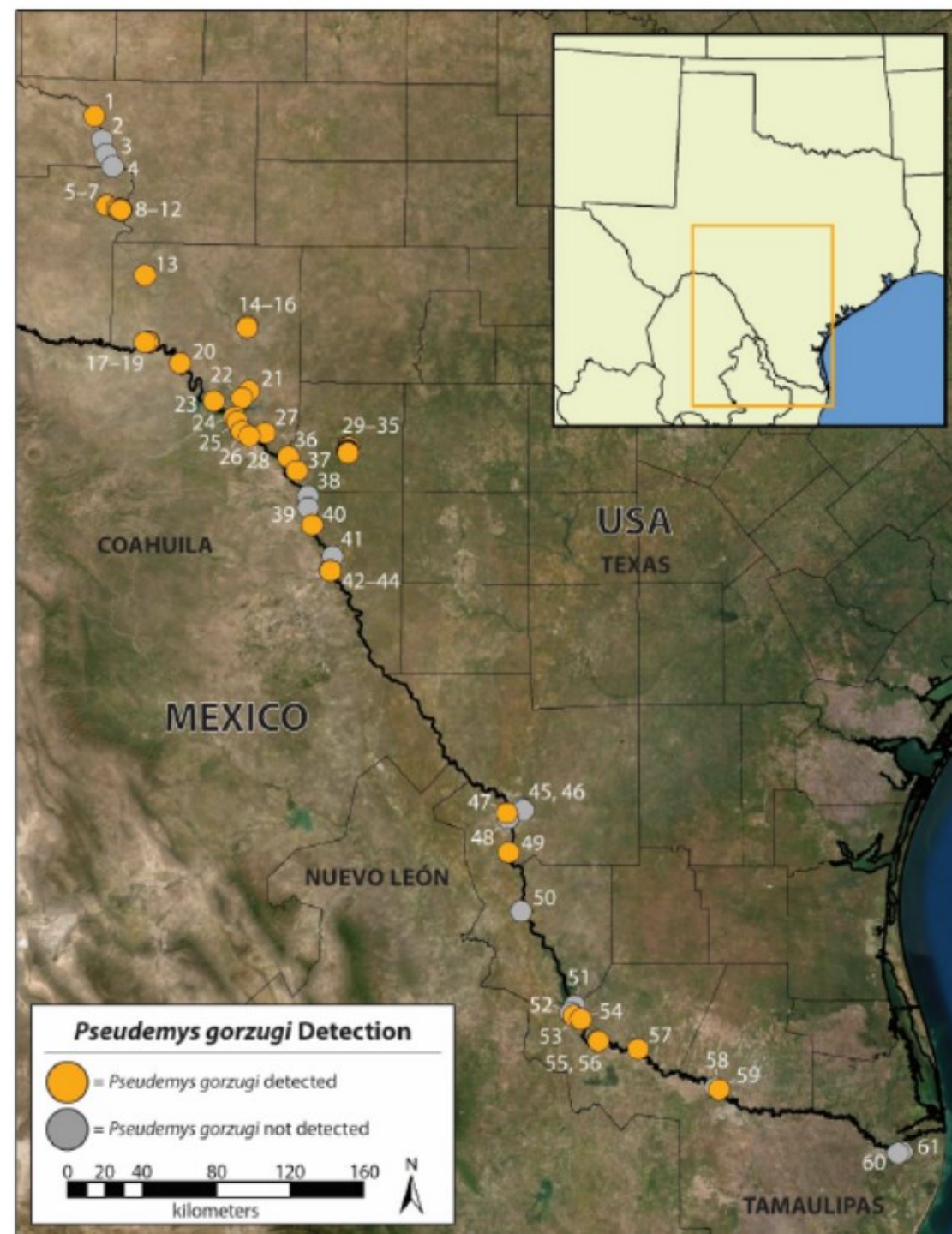
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Outcomes

- Turtles found in wide array of water quality conditions

Final report available online





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Poll Question #2

Do you have an iNaturalist account?

- A. Yes
- B. No



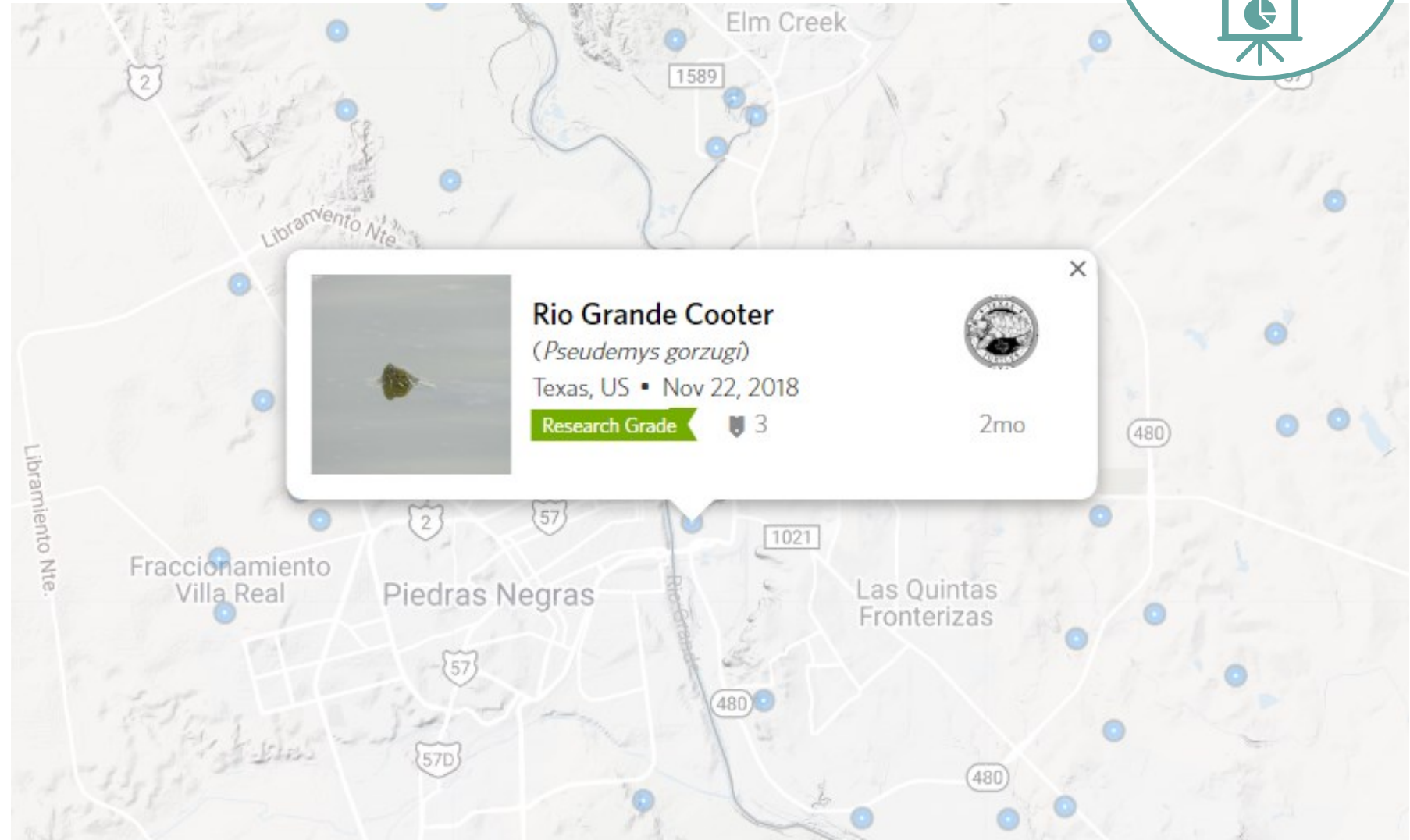
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Outcomes

- 90+ iNaturalist posts





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Outreach

- Local involvement
- Bi-national survey effort





Significance

- New sightings in a wide range of habitat conditions
- One of many Rio Grande species coming down the pipeline





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Poll Question #3

Which of the following flows into Matagorda Bay?

- A. Colorado River
- B. Brazos River
- C. San Antonio River
- D. Guadalupe River



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Matagorda Bay

- Suite of imperiled, threatened & endangered species
- Limited comprehensive studies
- Long-term change





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Matagorda Bay

- Suite of species of concern:
 - Kemp's ridley & other sea turtles
 - Piping plover
 - Red knot
 - Black rail
 - Black skimmer
 - America oystercatcher

[Matagorda Bay Ecosystem
Assessment Project Page](#)



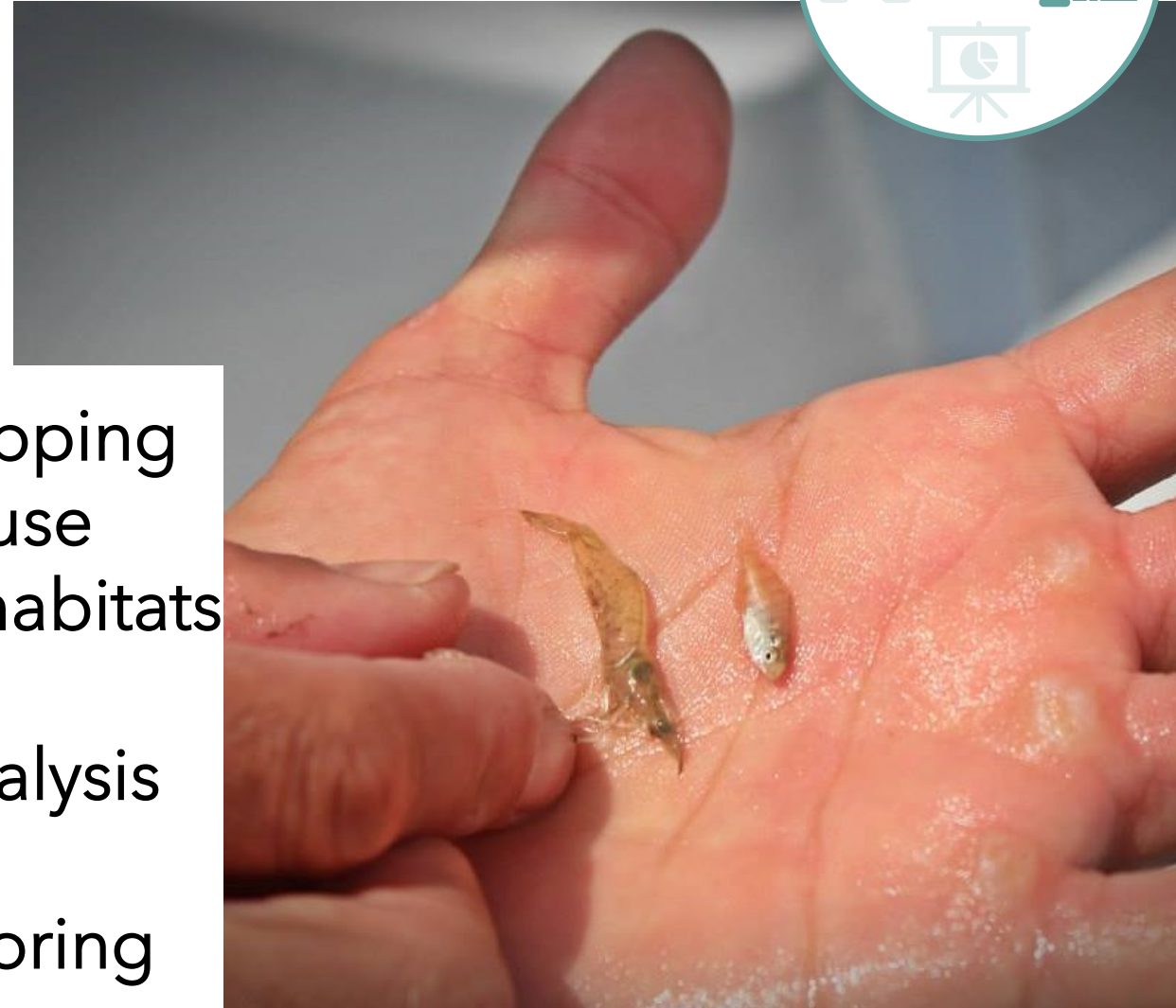
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Matagorda Bay Ecosystem Assessment

1. Upland and benthic habitat mapping
2. Sea turtle movement & habitat use
3. Biological sampling in aquatic habitats
4. Marsh sampling & bird surveys
5. Trophic ecology & food web analysis
6. Historic data compilation
7. Water quality & plankton monitoring









Matagorda Bay Ecosystem Assessment

- Monthly water quality and plankton sampling to evaluate:
 - Community composition
 - Biological productivity





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Outreach

- Citizen science
- StoryMaps
- Public meetings

Matagorda Bay StoryMap Chapter 1





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Poll Question #4

Would you like to participate in monthly water quality monitoring in Matagorda Bay?

- A. Yes
- B. No
- C. Maybe



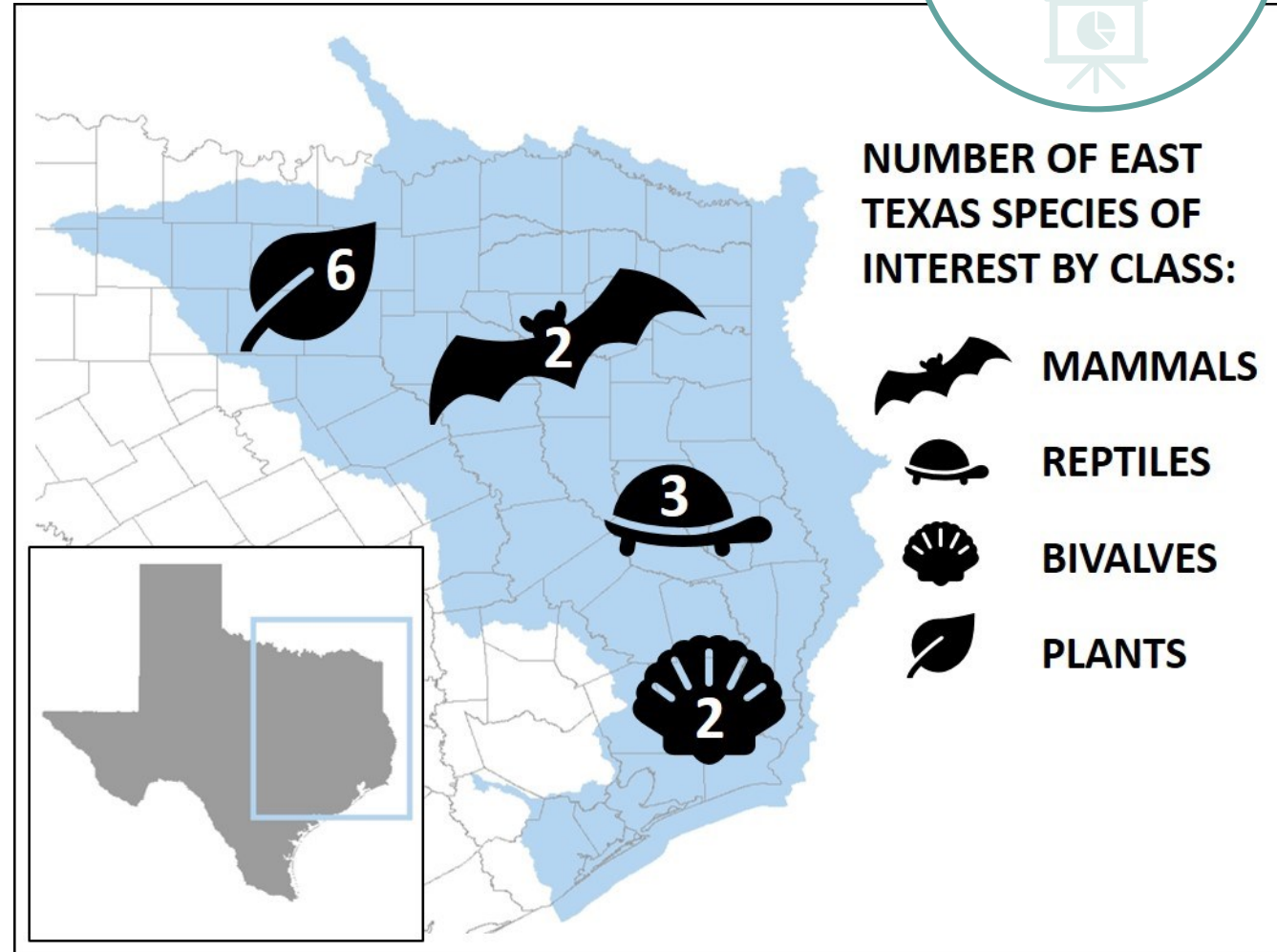
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East Texas Initiative

- Suite of species of concern
 - East Texas Mussels
 - Louisiana Pinesnake
 - Western Chicken Turtle
 - Alligator Snapping Turtle
 - Tri-colored Bat
 - Plains Spotted Skunk
 - And 6 plants





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East Texas Initiative

An ecosystem approach to multiple aquatic habitats with overlapping species & stakeholders

- Rivers
- Reservoirs
- Ephemeral wetlands





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Western Chicken Turtle

- Listing decision 2024
- University of Houston–Clear Lake/Environmental Institution of Houston
 - Range-wide sampling regime
 - Multi-institution collaboration



[Western Chicken Turtle Project Page](#)



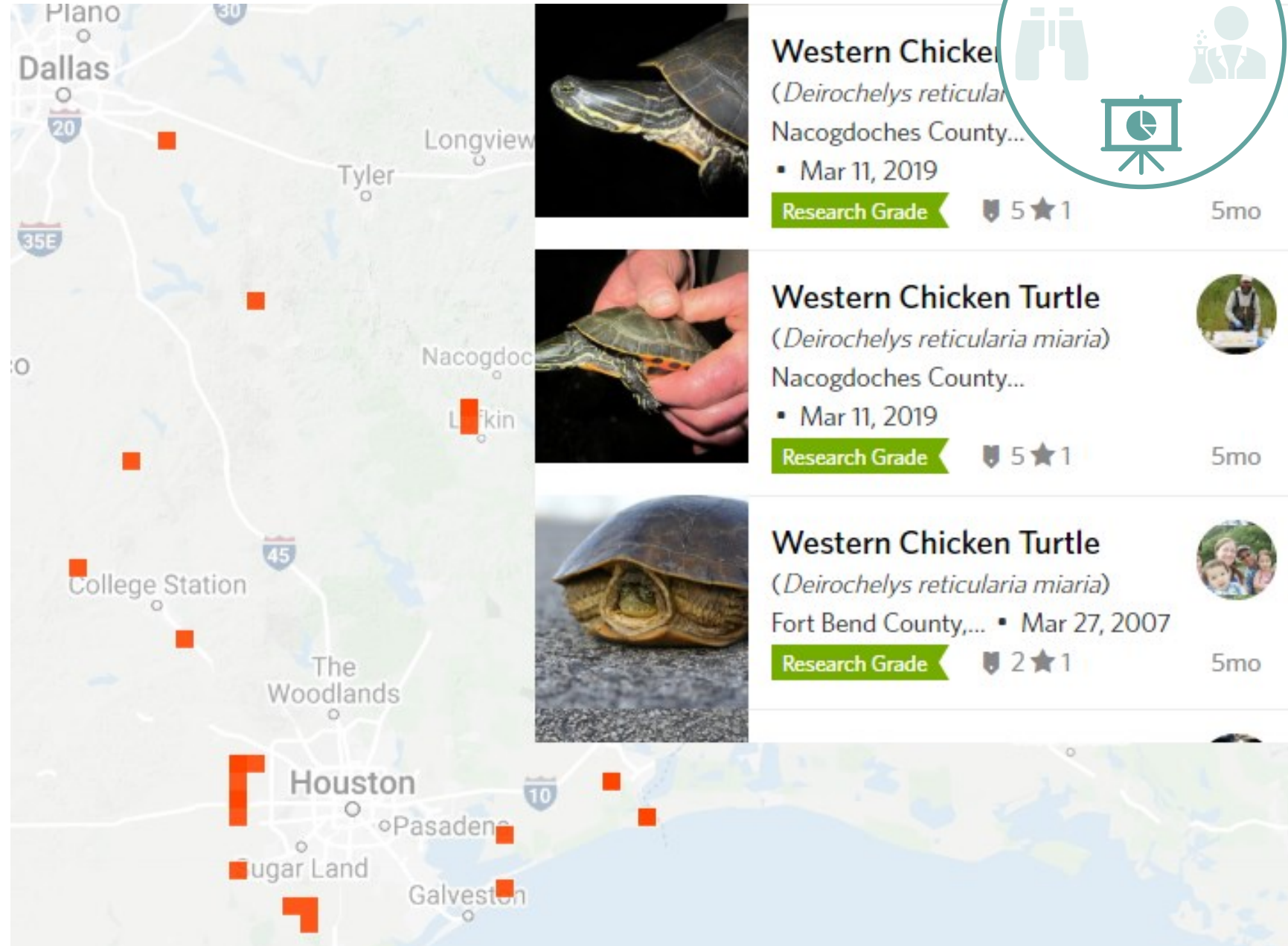
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Get Involved


- Public meetings
- StoryMaps
- iNaturalist

East Texas Initiative
Webinars






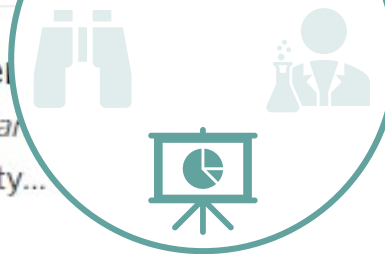
Western Chicken
(*Deirochelys reticularia*)
Nacogdoches County...
▪ Mar 11, 2019
Research Grade 5 ★ 1 5mo



Western Chicken Turtle
(*Deirochelys reticularia miaria*)
Nacogdoches County...
▪ Mar 11, 2019
Research Grade 5 ★ 1 5mo



Western Chicken Turtle
(*Deirochelys reticularia miaria*)
Fort Bend County,... ▪ Mar 27, 2007
Research Grade 2 ★ 1 5mo





Poll Question #5

How did the western chicken turtle get its name?

- A. They make a cluck-like sound during the breeding season.
- B. They have long necks.
- C. Because no one knows why they cross the road.
- D. They taste like chicken.



Edwards Aquifer

- Suite of imperiled, threatened & endangered species
- Limited comprehensive knowledge of habitat
- Long-term change

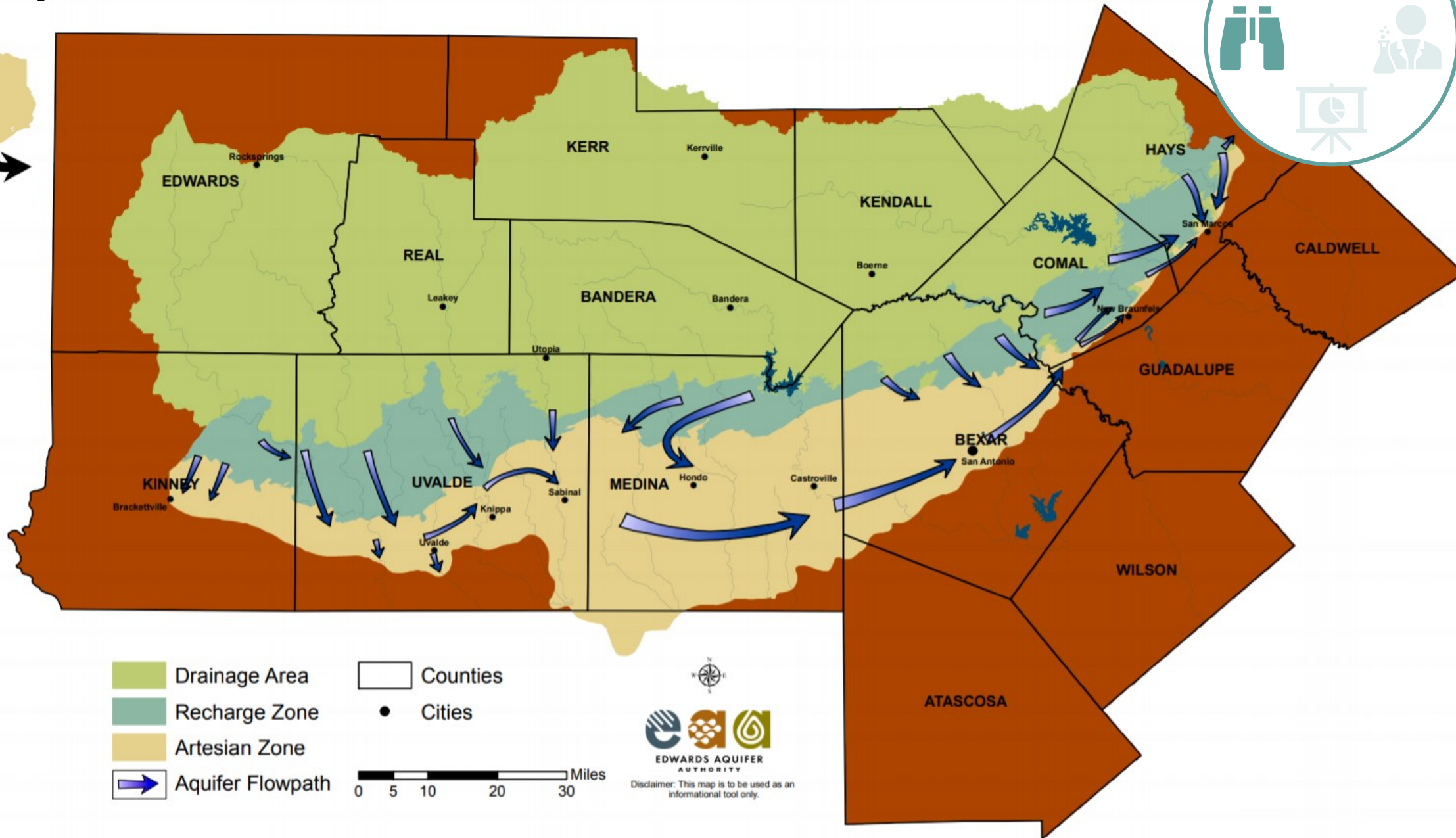
View the aquifer species the USFWS is working on now and in the near future:

[USFWS Listing Work Plan](#)



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Research Goals

- Evaluate feasibility of eDNA at large scales
- Create and maintain a publicly available eDNA library for Edwards fauna





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Questions?

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