SAN ANTONIO RIVER AUTHORITY

Seasonal Ecological Assessment in the Upper Guadalupe Estuary

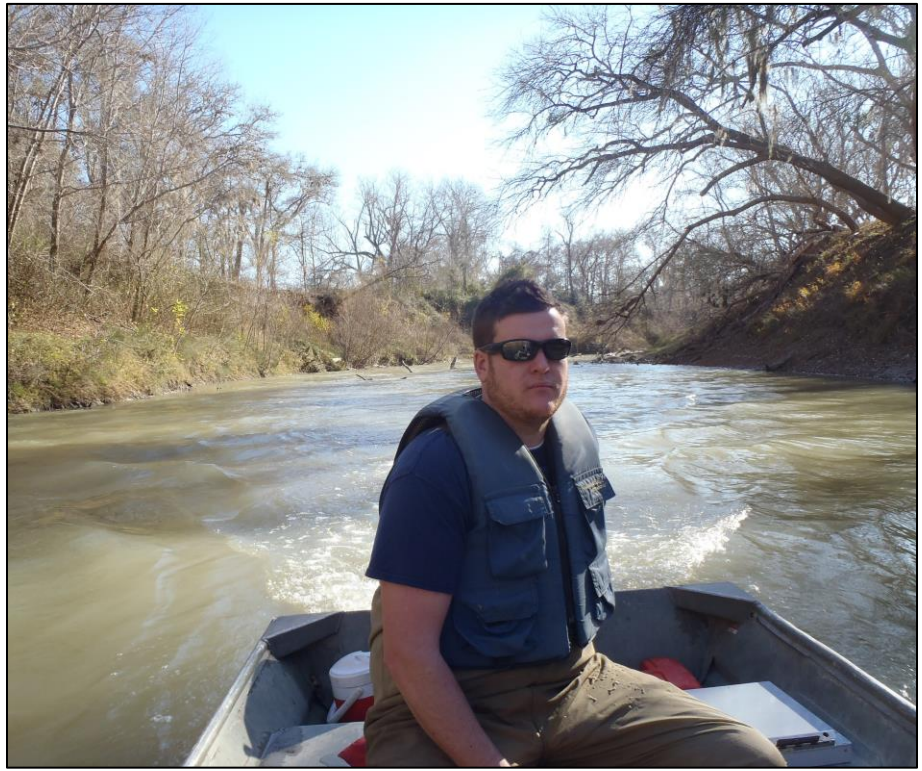
Friday, December 16, 2022


GBRA


Texas Water
Development Board


BIO-WEST

Background



- Texas Instream Flows Program (SB2 – 2001)
- Environmental Flows Process (SB3 – 2007)

Upper Guadalupe Estuary Studies

How do freshwater inflows influence marsh productivity in the upper Guadalupe Estuary?

Upper Guadalupe Estuary Studies

Vegetation

- Transects
- Spring (April) and fall (November) sampling
- Water quality

Avian Community

- Six (6) point counts/site
- Spring (April), summer (July) and fall (November) sampling
- Habitat associations

Aquatic Community

- Fish and shellfish
- Spring (April) and fall (November) sampling
- Water quality

Results – Vegetation

Site	Spring Salinity (ppt)	Fall Salinity (ppt)	Dominant Species
1	0.5	0.4	Alligatorweed and common reed
2	22.9	1.2	Saltmarsh bulrush and smooth cordgrass
3	28.8	2.6	Saltmarsh bulrush and common reed

Alligatorweed

Common Reed

Saltmarsh Bulrush

Results – Avian

Photos courtesy of All About Birds

Results – Avian

- Vegetation diversity drives avian abundance and distribution
- Overall importance of the delta
- Need for monitoring across all seasons

Results – Aquatic Community

Results – Aquatic Community

- Estuarine residents dominant
- Freshwater species only at site one
- Marsh edge habitats critical to community health
- Curious case of the Gulf Menhaden

Next Steps

- Phase III being funded by the Texas Water Development Board
  - Additional year of sampling (maybe 2?)
  - Avian and aquatic community in all four seasons
  - Include Hynes Bay
  - Include avian bio-acoustic monitoring


QUESTIONS?