SAN ANTONIO RIVER AUTHORITY

Mission Reach Intensive Nekton Survey (MRINS)

Environmental Advisory Committee (EAC) Meeting

December 15, 2023

Ecological Restoration

- The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed

Managing Rivers

The Upper San Antonio River

- Long history of overconsumption
- Exploited resources
- Flood control
- Degraded water quality

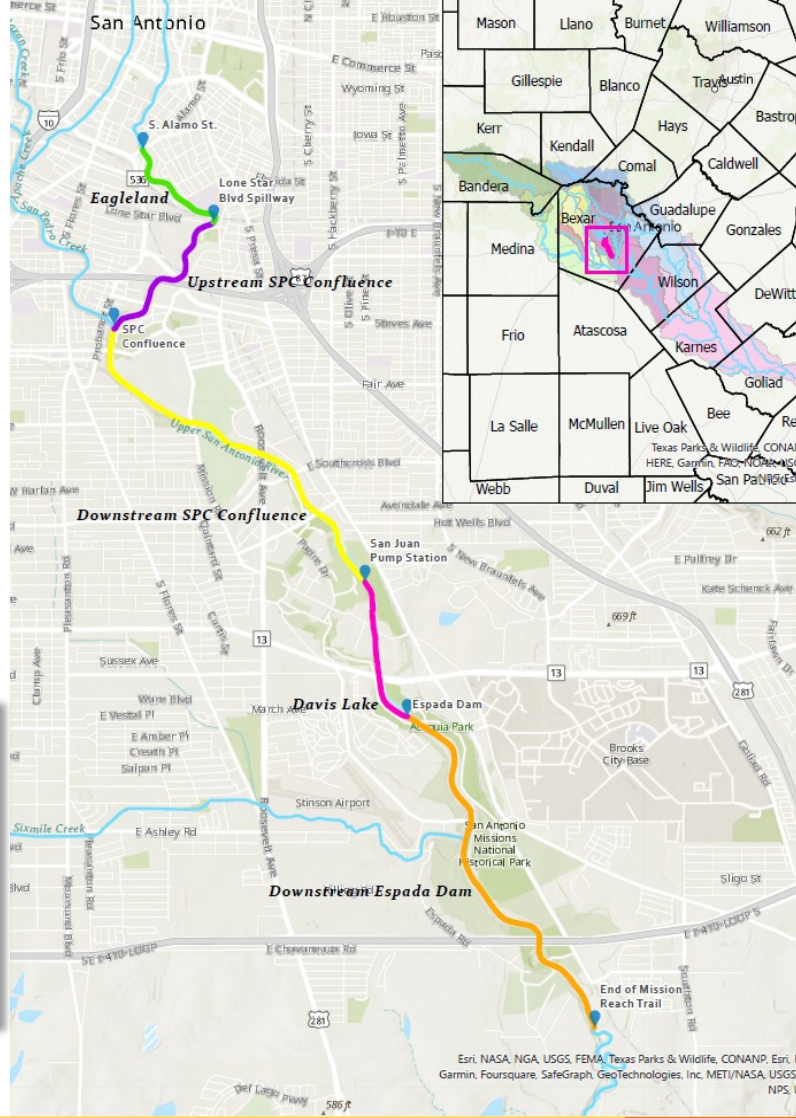
Mission Reach Restoration

- Ecosystem restoration of an 8-mile stretch
- Completed in 2013
- The marriage between flood conveyance and environmental functionality
- Added sequences of riffles, pools and runs
- Added instream habitat
- Restored the riparian zone

Mission Reach Intensive Nekton Survey (MRINS)

- Establish species diversity and abundance
- Mesohabitat specific sampling
- Analyze age/size structure
- Presence/absence of host fish

MRINS Segments

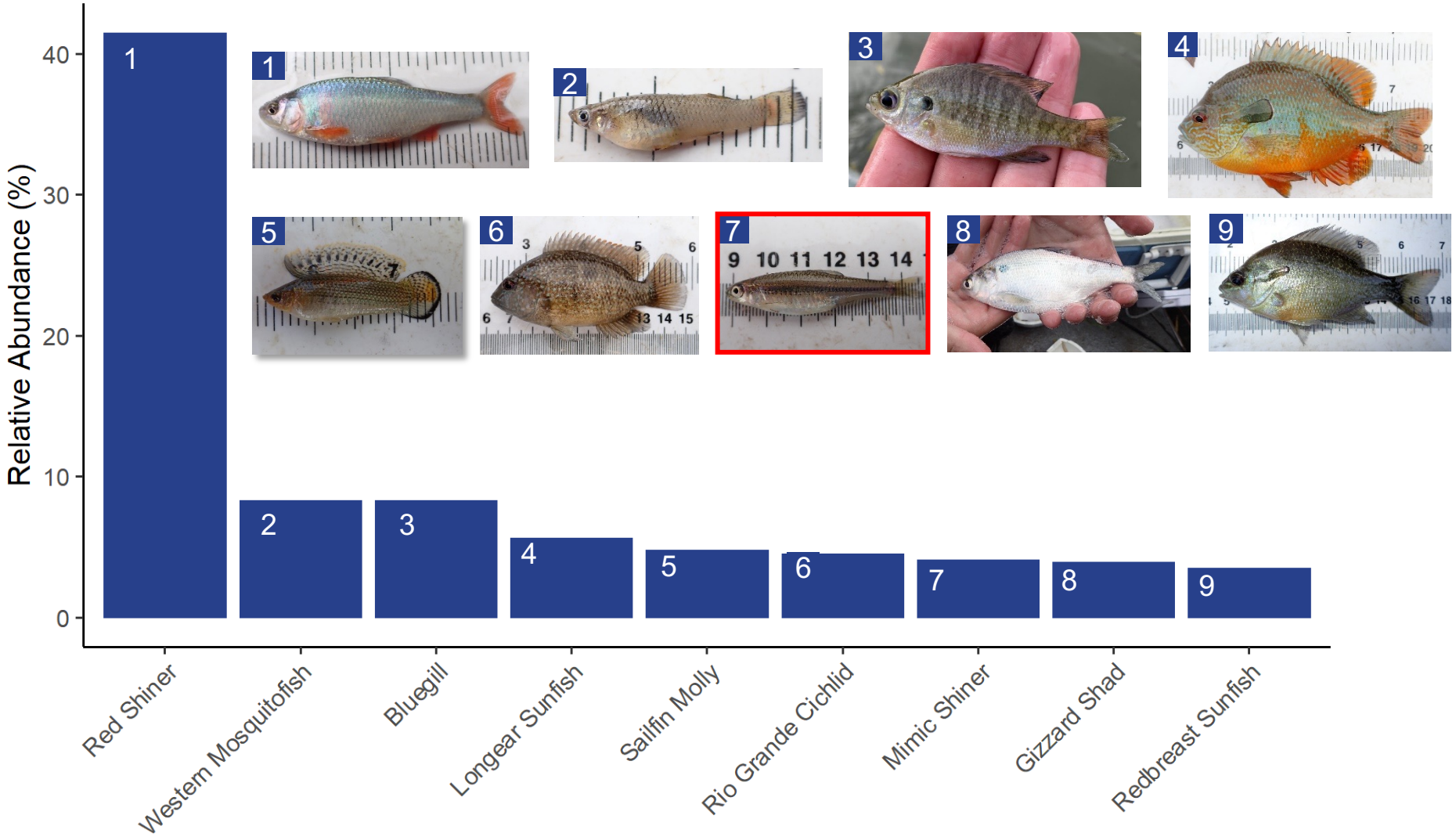


Fish Collection

Habitat

- Classification (riffle, run, pool, etc.)
- Substrate types
- Flow velocity
- Cover types
- Depth
- Water quality parameters

- We found:
  - 4,567 fishes
  - 9 families
  - 30 species


Relative Abundance (%)
40
30
20
10
0
1
2
3
4
5
6
7
8
9
Red Shiner
Western Mosquitofish
Bluegill
Longear Sunfish
Sailfin Molly
Rio Grande Cichlid
Mimic Shiner
Gizzard Shad
Redbreast Sunfish

Recolonizations


Grey Redhorse


Texas Logperch

Guadalupe Bass

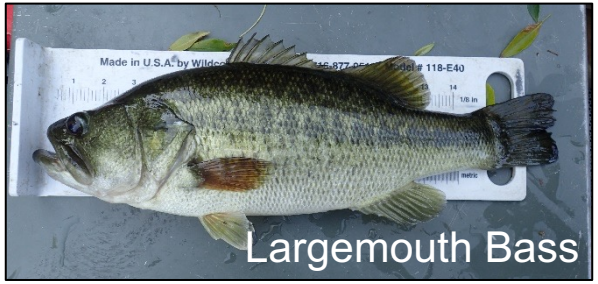
- State fish of Texas
- Reintroduced in 2015
- 54 individuals captured during study period
- Natural recruitment = success!

Recreational Fishing Opportunities

- Species of:
  - Bass – Largemouth bass up to 19 inches!
  - Catfish
  - Sunfish
- Annual economic value of Mission Reach Fishery estimated at $694,000 annually


Longnose Gar


Yellow Sandshell


Largemouth Bass


Threeridge


Pistolgrip


Flathead Catfish


Channel Catfish


Pimpleback


Bluegill

Management Implications

- Data inventory
- Holistic and continuous understanding of San Antonio's valuable ecological resources
- Adaptive management

Questions?