Aquatic Life Monitoring

Water Quality Advisory Committee Meeting

Nov. 13, 2024

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ALM Background

- **Texas Commission on Environmental Quality**
  - Surface Water Quality Monitoring Procedures
- **Aquatic Life Monitoring (ALM):**
  - A category of biological monitoring that is routine and conducted to provide baseline data on environmental conditions or to determine if criteria for aquatic-life use or dissolved oxygen are being attained

ALM Components

- Fish assemblage
- Stream’s physical habitat
- Benthic macroinvertebrate community
- Instantaneous field measurements
- Flow discharge
- 24-hour dissolved oxygen (DO)
- Water chemistry sample

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- **Fish assemblage**
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ALM Habitat Methods

- **Determine reach length**
  - Establish transects

ALM Habitat Methods

- **Stream physical characteristics**
  - Habitat type
  - Riparian vegetation
  - Instream cover
  - Erosion potential

Habitat Quality Index	
26 - 31	Exceptional
20 - 25	High
14 - 19	Intermediate
< 13	Limited

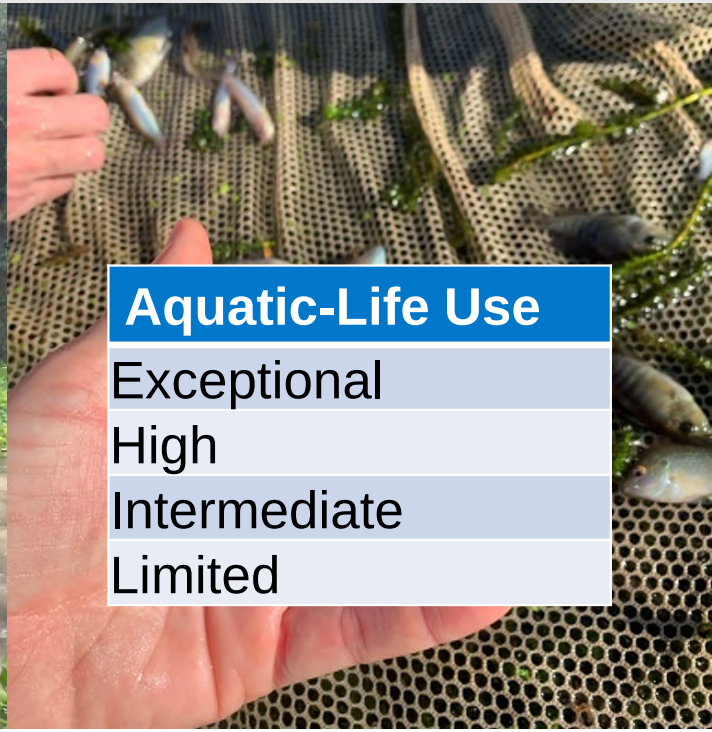


ALM Fish Collection Methods

- **Electrofishing**
  - Backpack, boat or barge

ALM Fish Collection Methods

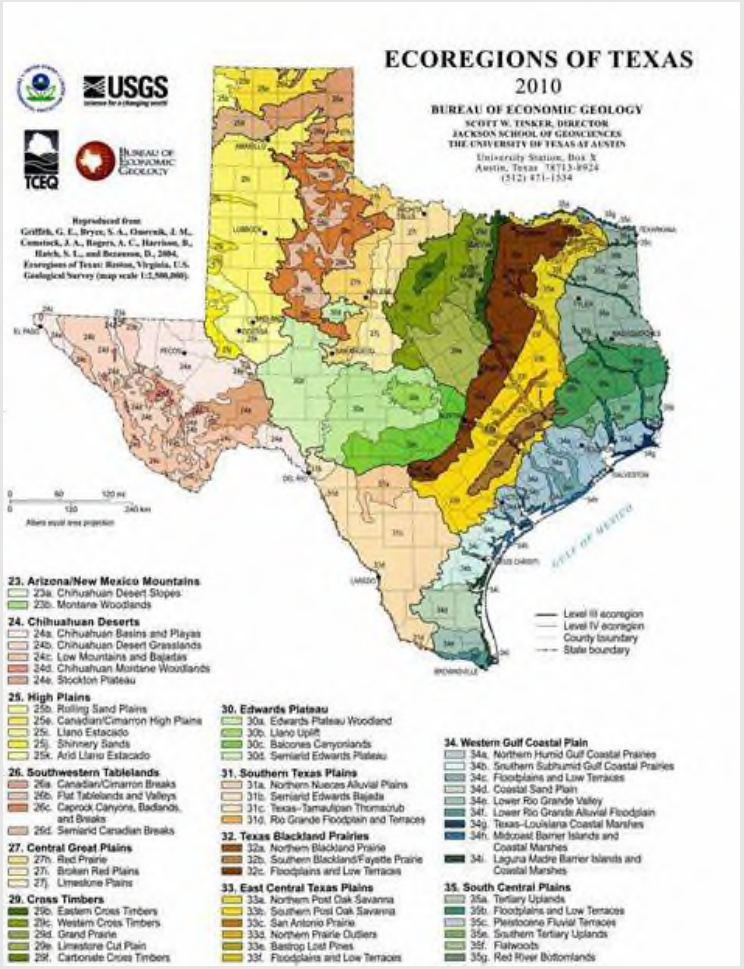
- **Seining**
  - 6 seine hauls totaling 60 meters



Aquatic-Life Use
Exceptional
High
Intermediate
Limited

Colorado River Basin and Ecoregions

Path: V:\WaterCo\Project\Water_Resource_Protection\BASIN_SUMMARY_REPORT\BASIN_SUMMARY_REPORT.aprx Figure 2. Partner Regions



2024 Aquatic Life Monitoring Stations

- **Upper Colorado River Authority**
  - Dove Creek
  - Concho River

- **Lower Colorado River Authority**
  - San Saba River
  - Colorado River at Colorado Bend SP
  - Cedar Creek
  - Colorado River at Austin’s Colony
  - Colorado River at Utley

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Colorado River at Utley

Concerns / Impairments

Screening Level Concern (CS) for total phosphorous and nitrate

Aquatic-Life Use Designation

Exceptional

Colorado River at Utley

Colorado River at Utley Results

Date	Index Period	Fish Score	Habitat Score
6/5/2024	Non-critical	Exceptional	Intermediate
7/17/2024	Critical	High	Intermediate

Cedar Creek

Concerns / Impairments 1413B_01

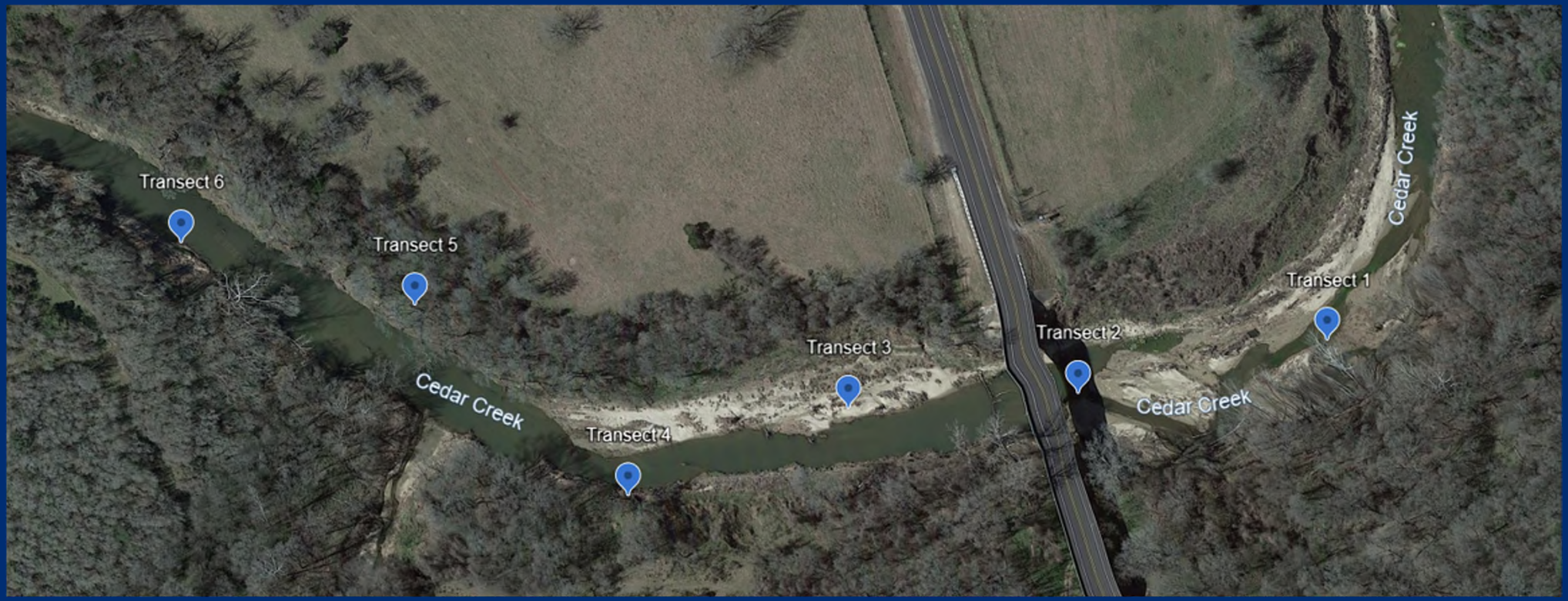
CS for dissolved oxygen grab

Use Concern (CN) for bacteria in water

Aquatic-Life Use Designation

High

Cedar Creek Transects



Cedar Creek Results

Date	Index Period	Fish Score	Habitat Score
N/A	Non-critical	N/A	N/A
7/3/2024	Critical	High	High

Colorado River at Austin's Colony

Concerns / Impairments

CS for total phosphorous

CS for nitrate

Downstream impaired fish and microbenthic communities

Aquatic-Life Use Designation

Exceptional

Austin’s Colony Transects

Austin's Colony Results

ate	Index Period	Fish Score	Habitat Score
/3/2024	Non-critical	Exceptional	Intermediate
/29/2024	Critical	High	High

2024 Aquatic Life Monitoring Scores

ALM Site	Index Period	Fish Score	Habitat Score
Dove Creek	non-critical	High	High
	critical	Intermediate	High
Concho River	non-critical	High	High
	critical	Intermediate	High
Colorado River at Utley	non-critical	Exceptional	Intermediate
	critical	High	Intermediate
Colorado River at Austin's Colony	non-critical	Exceptional	Intermediate
	critical	High	High
San Saba River	non-critical	High	Intermediate
	critical	High	Intermediate
Cedar Creek	critical	High	High
Colorado River at Bend State Park	critical	High	High

Conclusions

- **All sites met their Aquatic-Life Use score**
- **Habitat Quality Index scores at each site were consistent**
- **Highest fish diversity in the lower Colorado River**
- **Expanded gaps in fish species distribution**
  - 49 species documented

Future Aquatic-Life Monitoring Plans

- Upper Colorado basin sites TBD
- Llano River
- Colorado River at Austin’s Colony or Utley
- Gilleland Creek
- Skull Creek

Questions?

Zoe Nichols

Lower Colorado River Authority

Clean Rivers Program Project Manager

Zoe.Nichols@lcra.org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