



Friends of Lake Livingston

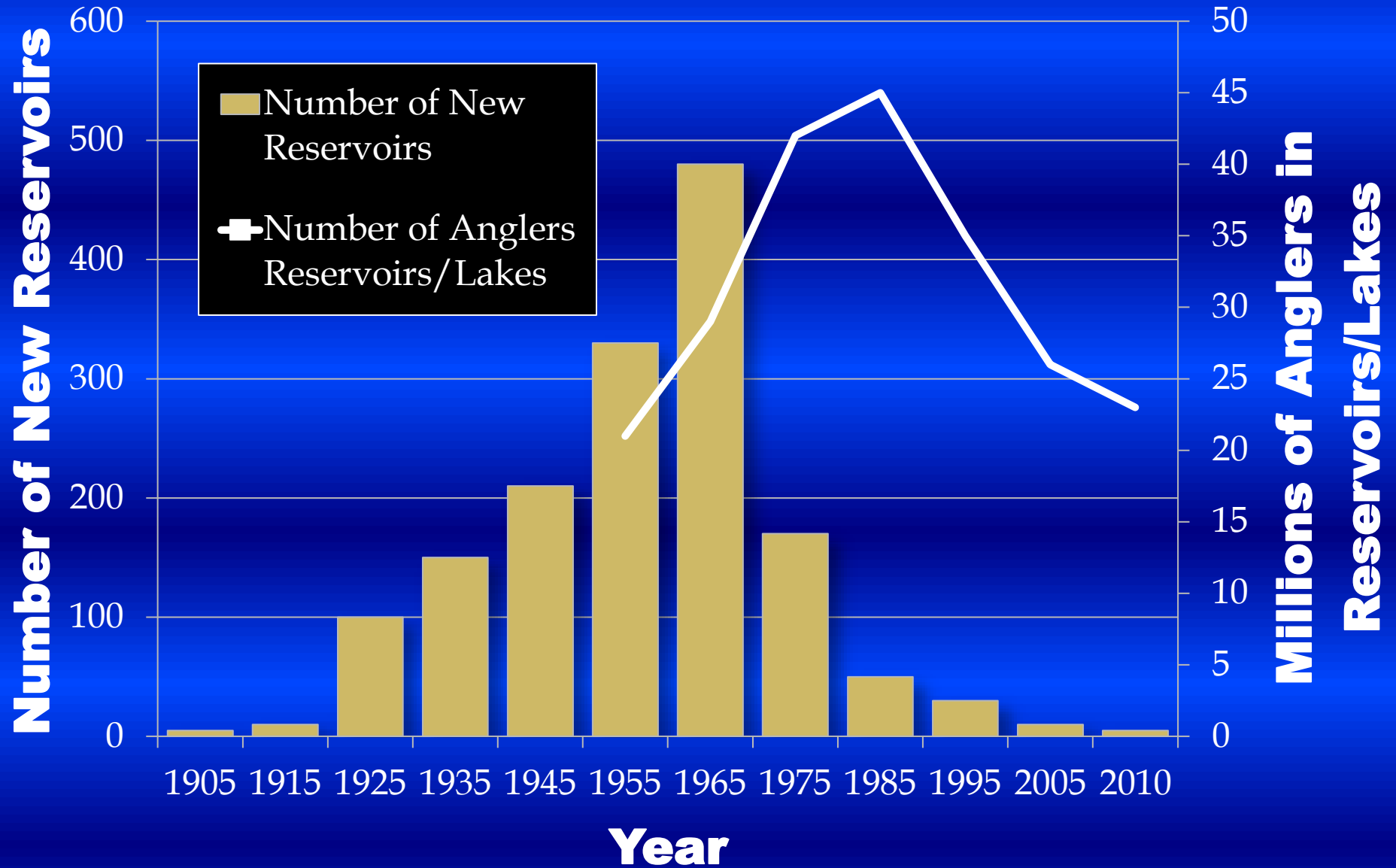
Encouraging Nature. Engaging Community.



Revitalizing Lake Livingston

TEXAS
PARKS &
WILDLIFE



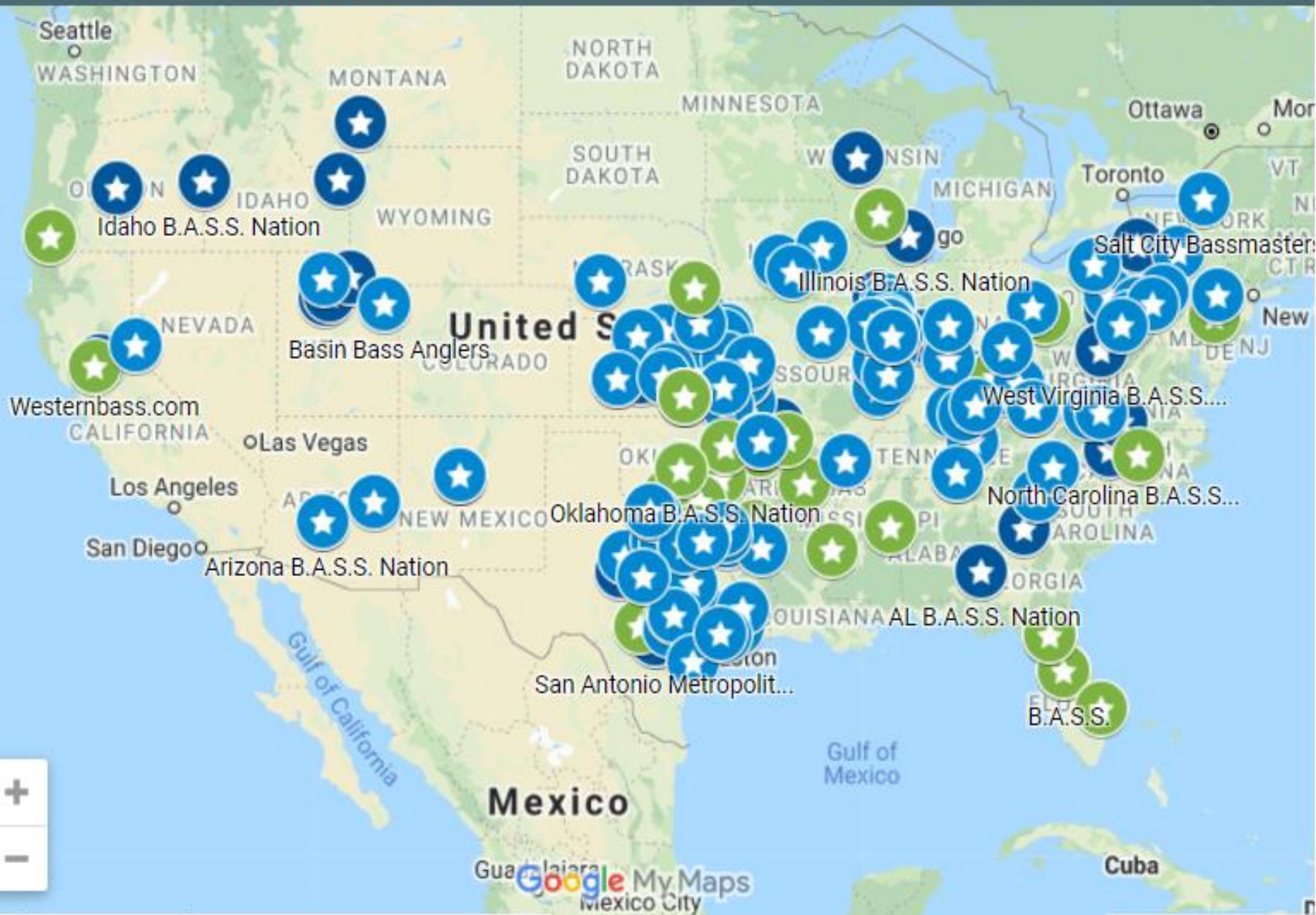






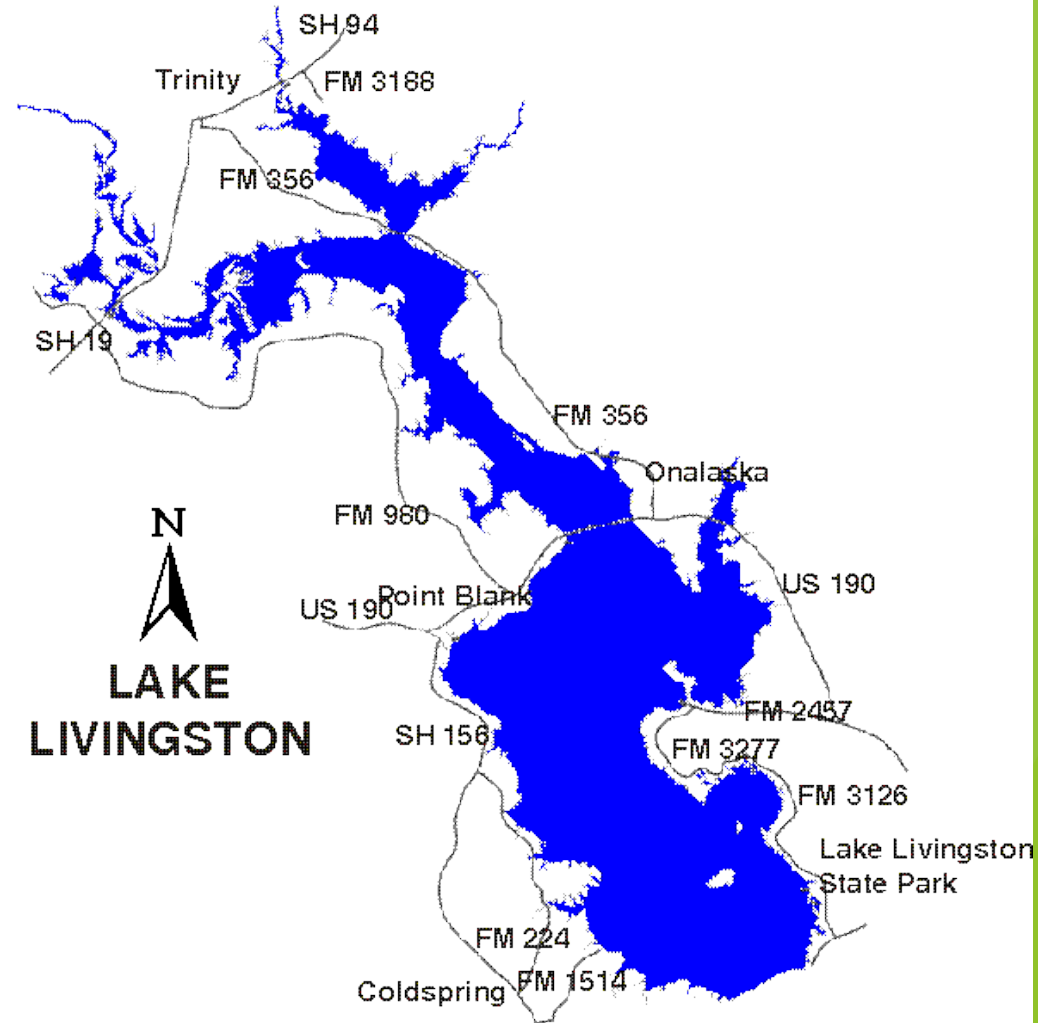
FOR Members

This map was made with Google My Maps. [Create your own.](#)



The Problem Today at Lake Livingston?

- ▶ 85,000-acre lake nearly devoid of native aquatic plant life
- ▶ Bulkheads line much of 450 mile shoreline
- ▶ Native habitat loss
- ▶ Flooded river-lake bordered by pasture and timberland not suited to water and flooding
- ▶ Siltation and Water Turbidity
- ▶ Poor Fish Habitat – yields poor fishing!



01

Restore habitat with American Water-willow on shorelines, islands, and shallow water flats

02

Reduce erosion, improve water filtration and quality, and provide habitat for juvenile fish, reptiles and birds

03

Reestablish Lake Livingston as a prime destination for anglers and outdoor recreationists

04

Enlist and engage local high schools and community members in growing, planting, and managing project areas

The Solution!

**Friends of Lake Livingston
(2013)**





Friends of Lake Livingston (2013)

► Introduce and Expand Aquatic Habitat



► Introduce Artificial Fish Habitats



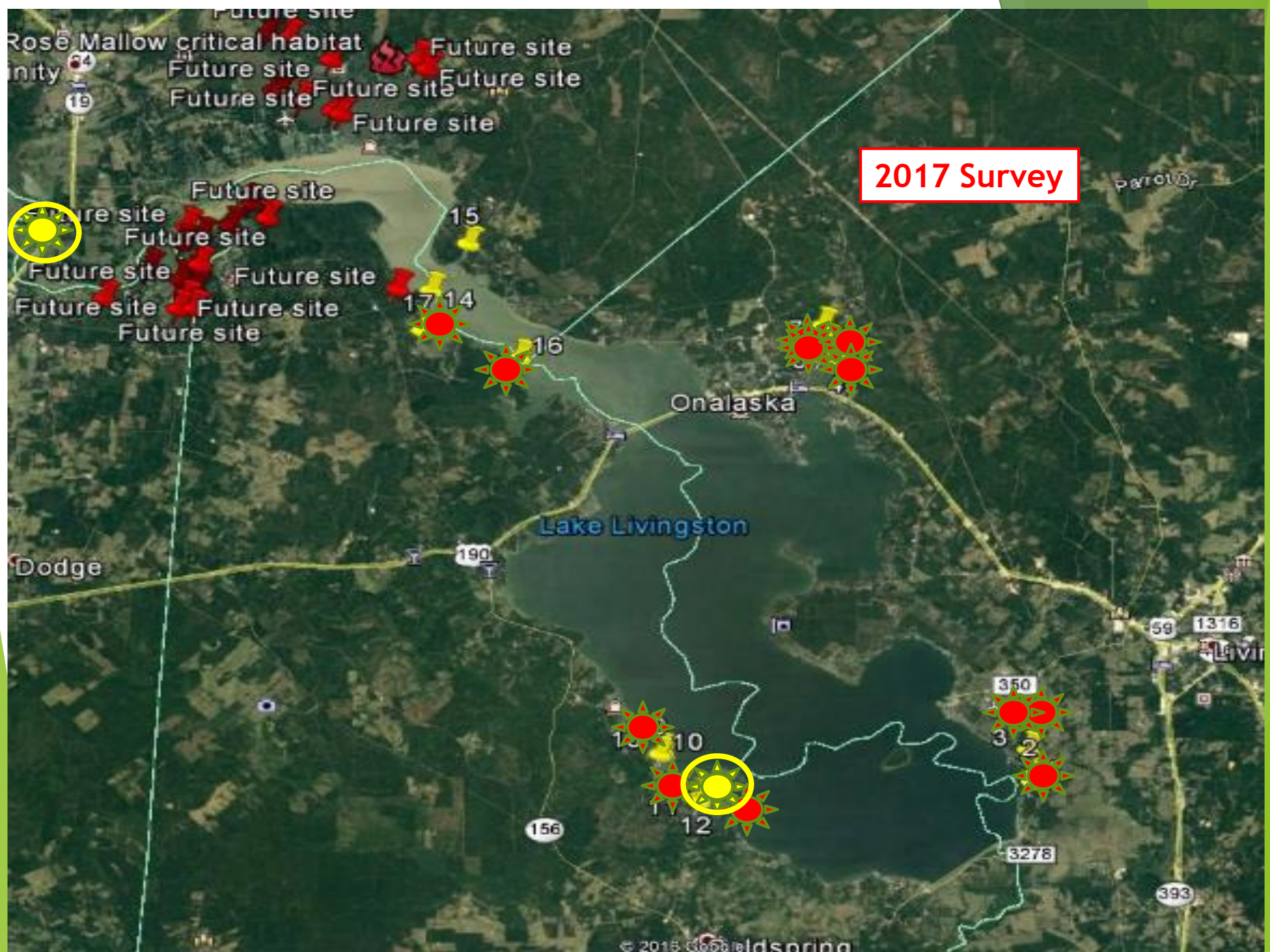
TEXAS
PARKS &
WILDLIFE

tra
Trinity River Authority of Texas

Why American Water-Willow?



Non-invasive	Rhizome	Fast Growing
Grass Carp Hate It	Hearty	Easy Colonization



2017 Survey



- 18 Sites
- Protected Creek Plantings Thrive
- Plants Prefer Shallow Water
- North End Offers Greatest Opportunity

2017 Survey Showed

$$4100/8900 = 46\%$$



Reservoir Fish Habitat Management



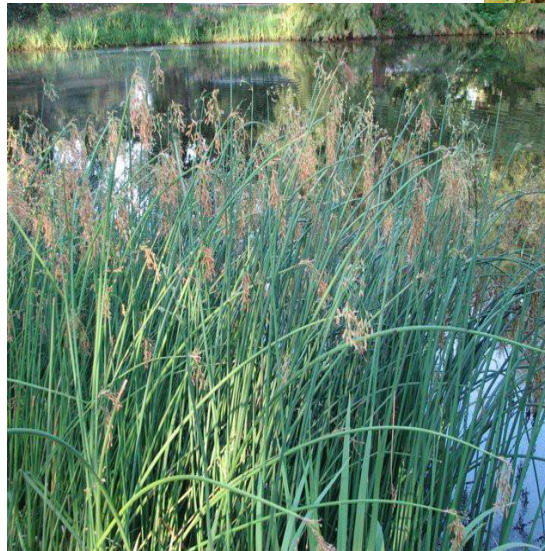
Science Strategy

- ▶ **Establish Founder Colonies**
- ▶ **New Plant Species Diversification and Propagation**
- ▶ **Focus on Specific Sites to Plant and Nurture**
- ▶ **Shoreline Enhancement Through Riparian Restoration**



Experimenting with Varieties of Aquatic Plants

- Water Willow
- Bulrush (Three Square)
- Wild Celery (Eel Grass)
- Bull Tongue
 - Delta Arrowhead
- Pickerelweed
- American Pondweed
 - American, Variable Leaf, Illinois



Softstem
Bulrush



American
Pondweed



Pickerel
Weed

Founder Colony Concepts





2,500 Planted
9/16



Estimate 30K
plants 4/18

Site Selection Is Critical!
(Wolf Creek Plantings)

An Impoundment Reservoir Is?

- a. A natural lake**
- b. A fast moving creek**
- c. A dammed up river or creek**
- d. An oxbow lake**

Getting Started by Building Infrastructure and Volunteers

- ▶ 2 Master Naturalist Chapters
 - ▶ Piney Woods Lake (Livingston) & Heartwood (Conroe)
- ▶ Fishing Clubs (TBBU & TABC)
- ▶ San Jacinto Master Gardeners
- ▶ 6 High School Ag Programs
- ▶ Lee College TDCJ Ellis Unit Horticulture Program
- ▶ Carolina Creek Christian Camp
- ▶ TPWD – Trinity River Authority – Friends of Reservoir

Making A Difference



- ▶ Big Sandy, Coldspring-Oakhurst, Corrigan-Camden, Goodrich, Livingston, Onalaska, Leggett, Shephard ISDs
- ▶ Propagating, growing, planting
- ▶ Ecology Improvement
- ▶ Site Monitoring
- ▶ 23 Propagation tanks



TDCJ Ellis Unit & Lee College

- ▶ Lead Research & Development
- ▶ Bigger, healthier plants
- ▶ Documenting fertilization and propagation processes
- ▶ Experimentation on plant alternatives
- ▶ Provides inmates certified skill development that could reduce recidivism



BearKat Camp

May 2018



Bearkat Camp

(Aug – 2018)



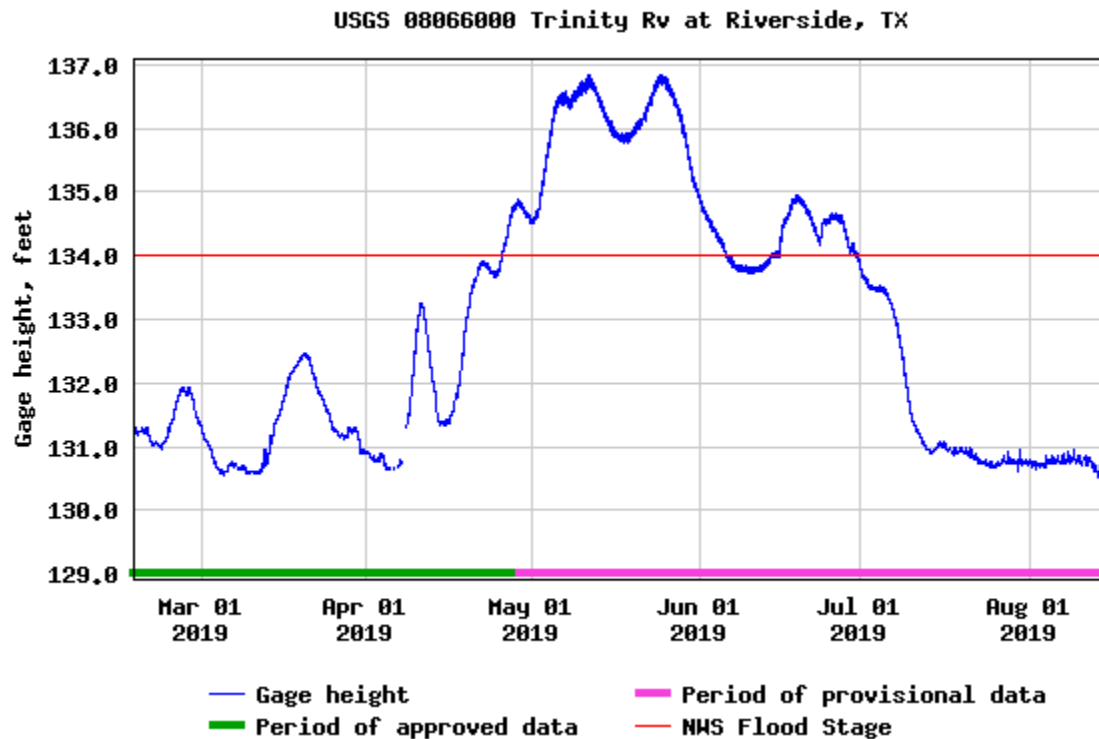
Bearkat Camp (Aug - 2018)

Founder Colonies



El Nino Summer 2019

3 months under 2' to 6' of turbid water





Signs of Life

July 2019 – SHSU Site



Carolina Creek - AUG 2019



Carolina Creek Site - June 2020



Carolina Creek 2021



A good plant to use for aquatic habitat restoration is?

a. Sunflower

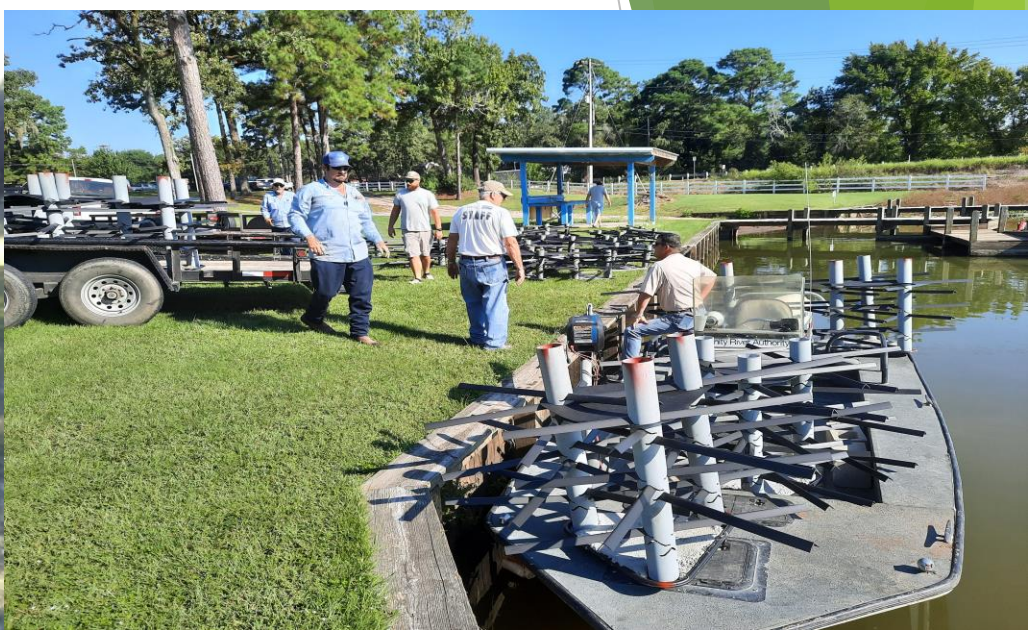
b. Hydrilla

c. American Water Willow

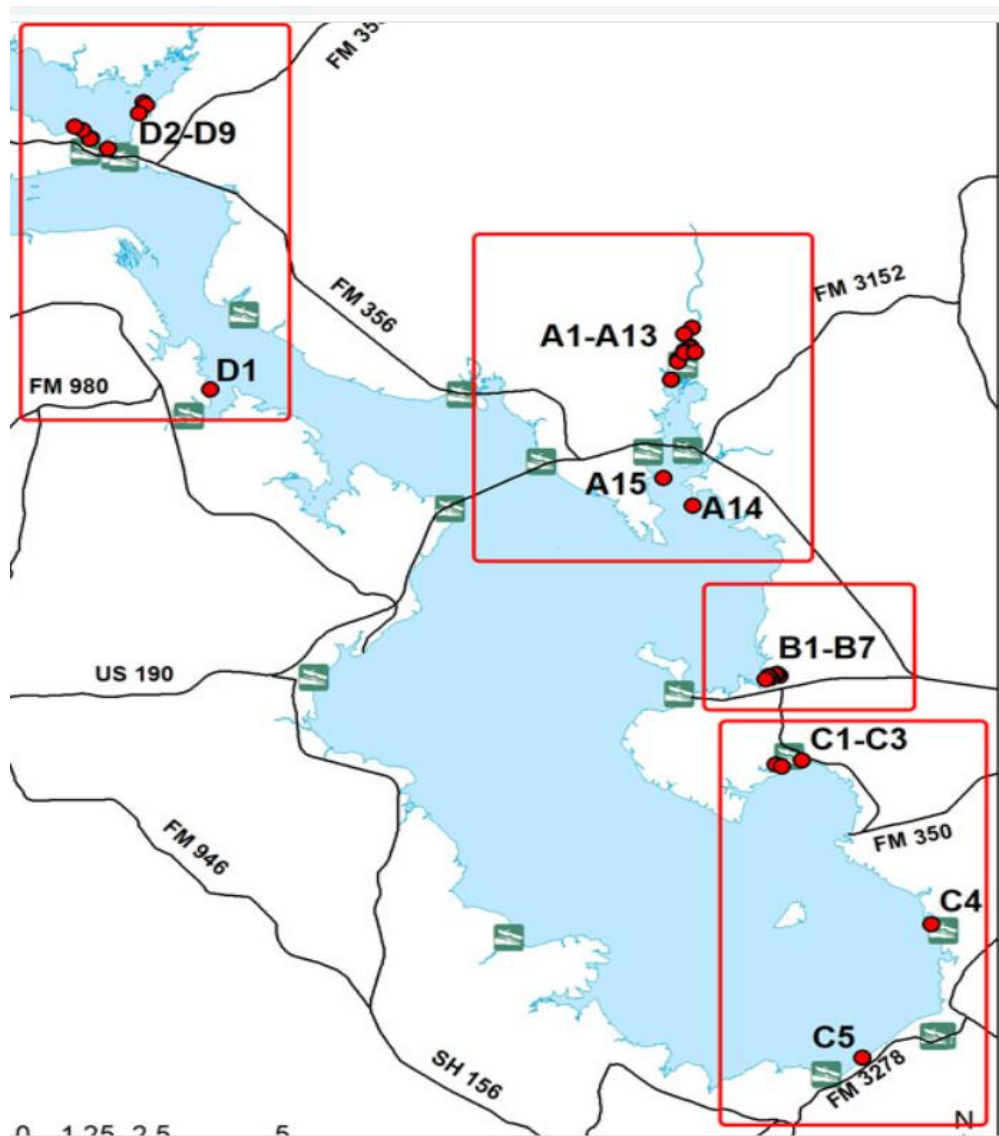
d. Giant Salvinia

SHSU Georgia Cubes – 2019

Mossback Reefs - 2021



FoLL Fish Habitats



July 2020 SHSU Site



The best volunteers for aquatic habitat restoration projects are?

- a. High school students**
- b. Master naturalists and master gardeners**
- c. Local fishing clubs**
- d. TDCJ offenders**
- e. All of the above**