

Biodiversity in Forests of Exceptional Conservation Value

Texas SFI Implementation Committee

Updated: May 12, 2026

What This Presentation Covers

Biodiversity In Forests with Exceptional Conservation Value (FECV) Assessment (2026)

Texas SFI State Implementation Committee of Texas has developed an assessment of Forests of Exceptional Conservation Value (FECVs). A list of Globally Critically Imperiled (G1) and Imperiled (G2) species and ecosystems from NatureServe was conglomerated and will be used for as a source for education, information, and mitigation to ensure their protection across the landscape.

Ecosystem Assessment (4)

- West Gulf Coast Longleaf Pine Ecosystems
- Floodplain Forest Ecosystems
- Oak Woodlands & Flatwoods Ponds
- Bottomland & Terrace Oak Forest

Species Assessment (18)

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|---------------------------|----------------------------|
| ➤ Blackbelted Crayfish | ➤ Karl's Yellow-eyed-grass |
| ➤ Neches Crayfish | ➤ Large-fruit Sand-verbena |
| ➤ Louisiana Pine Snake | ➤ Nodding Yucca |
| ➤ Texas Emerald | ➤ Small-headed Pipewort |
| ➤ Louisiana Pigtoe | ➤ Texas Golden Gladecress |
| ➤ Sandbank Pocketbook | ➤ Texas Screwstem |
| ➤ Texas Pigtoe | ➤ Texas Three-Birds Orchid |
| ➤ Boynton's Sand Post Oak | ➤ Texas Trailing Phlox |
| ➤ Geocarpus | ➤ White Fire-wheel |

PART 1

Ecosystem Assessment

Forest of Exceptional Conservation Value

West Gulf Coast Longleaf Pine Ecosystems — Texas & Louisiana



Community / Ecosystem Types & Distribution

- West Gulf Coastal Plain Fire-Infrequent Xeric Longleaf Pine Sandhill Woodland
- Western Upland Longleaf Pine Forest (Stream Terrace Sandy Woodland Type)
- West Gulf Coastal Plain Calcareous Clay Longleaf Pine Glade
- Texas Upper West Gulf Coastal Plain Longleaf Pine Woodland
- West Gulf Coastal Plain Xeric Longleaf Pine Sandhill · Xeric Longleaf Pine Woodland
- Dry-Mesic Loamy Longleaf Pine Woodland · Wet-Mesic Longleaf Pine Open Woodland
- West Gulf Coastal Plain Fire-Infrequent Mixed Longleaf Pine Woodland
- West Gulf Coastal Plain Subxeric Longleaf Pine Sandhill · Clayey Longleaf Pine Forest
- West Gulf Coastal Plain Clayey Longleaf Pine Woodland (Dry & Moist Types)
- West Gulf Coastal Plain Mesic & Dry-Mesic Upland Longleaf Pine Woodland
- Western Upland Longleaf Pine Forest (Messer Pimple Mound Type)
- Western Wet Longleaf Pine Savanna (Prairie Terraces Acidic Silt Loam Type)

Threats

- Lack of fire
- Conversion to other pine or land use types

Mitigation Recommendations

- Encourage prescribed fire
- Encourage replanting Longleaf Pine (*Pinus palustris*)

Floodplain Forest Ecosystems



Community / Ecosystem Types & Distribution

- Columbia Bottomlands Bald-cypress Floodplain Forest — Texas: Columbia Bottomlands
- West Gulf Coastal Plain Wet Flatwoods Pond Forest — Texas & Louisiana: West Gulf Coast Plain of SW Louisiana
- Edwards Plateau Bald-cypress – Sycamore Gallery Forest — Texas: Eastern portion of Edwards Plateau

Threats

- Logging degradation
- Habitat conversion
- Altered hydrology
- Silvicultural over spray

Mitigation Recommendations

- Best management practices
- Encourage natural regeneration
- Minimize soil disturbance

Oak Woodlands & Flatwoods Ponds



Community / Ecosystem Types & Distribution

- West Gulf Coastal Plain Upland Loblolly Pine – Post Oak Woodland — Western LA & Eastern TX
- West Gulf Coastal Plain Intermediate Flatwoods Pond — Western LA & Eastern TX
- West Gulf Coastal Plain Pine – Oak Nonriverine Flatwoods — Texas, Arkansas, & Louisiana
- West Gulf Coastal Plain Shortleaf Pine – Post Oak Woodland — West Gulf Coast Region
- West Gulf Coastal Plain Dry Post Oak Woodland — Western LA & Eastern TX
- West Gulf Coastal Plain Subcalcareous Loblolly Pine – Water Oak / Palmetto Riparian Forest — Eastern TX

Threats

- Habitat conversion
- Fire suppression
- Intensive forest management

Mitigation Recommendations

- Best management practices
- Prescribed burning
- Natural regeneration

Bottomland & Terrace Oak Forest



Community / Ecosystem Types & Distribution

- Red River Pimplemound Terrace Depression Oak Forest — Seasonally flooded second terraces of Red River (TX & LA)
- West Gulf Coastal Plain Rich Bottomland Forest — Texas: West Gulf Coast Plain
- West Gulf Coastal Plain Pine – Oak Forest & Woodland — Southern AR, northwestern LA, and east TX

Threats

- Logging degradation
- Habitat conversion

Mitigation Recommendations

- Natural regeneration
- Preservation of sensitive areas

PART 2

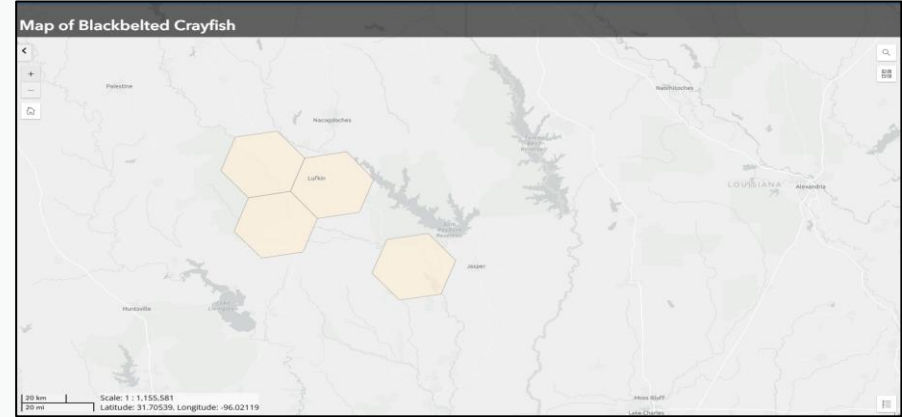
Species Assessment

Forest of Exceptional Conservation Value

Blackbelted Crayfish

G1 - Animal

Procambarus nigrocinctus



Habitat

- Neches River Basin
- Moderately flowing small creeks
- Found among rocks & accumulated woody debris

Threats

- Low water quality

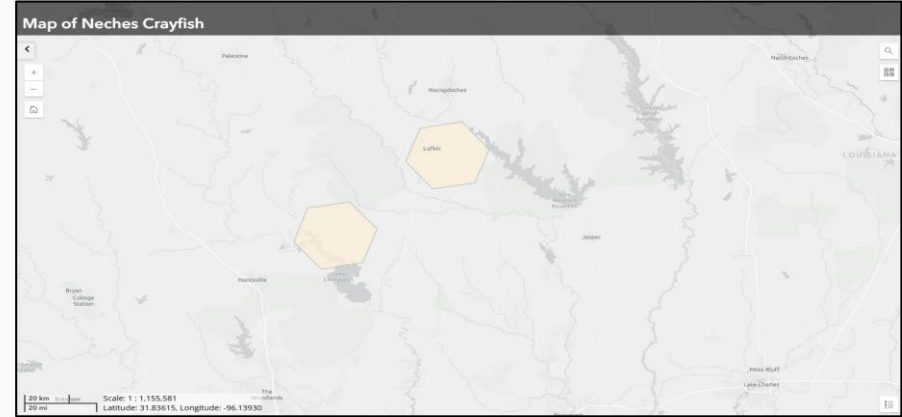
Mitigation

- Best Management Practices
- SMZ implementation
- Soil erosion provisions

Neches Crayfish

G2 - Animal

Procambarus nechesae



Habitat

- Neches River Basin
- Simple burrows in temporary or semi-permanent pools in roadside ditches

Threats

- Land use alteration
- Not well known or documented

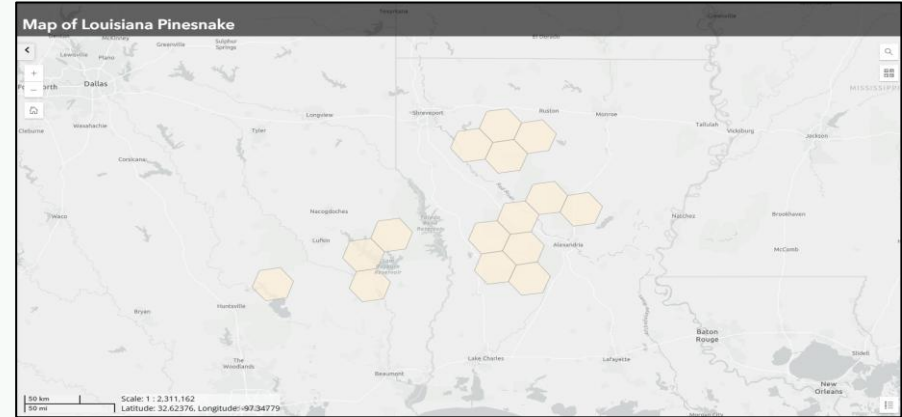
Mitigation

- More research is needed

Louisiana Pinesnake

G1 - Animal

Pituophis ruthveni



Habitat

- Longleaf pine-oak sandhills interspersed with moist bottomlands
- Frequent prescribed fire
- Sandy, well drained soils with substantial grass stocking
- Presence of pocket gophers necessary

Threats

- Intensive silviculture
- Reduction in fire frequency
- Reduction in microhabitat needed

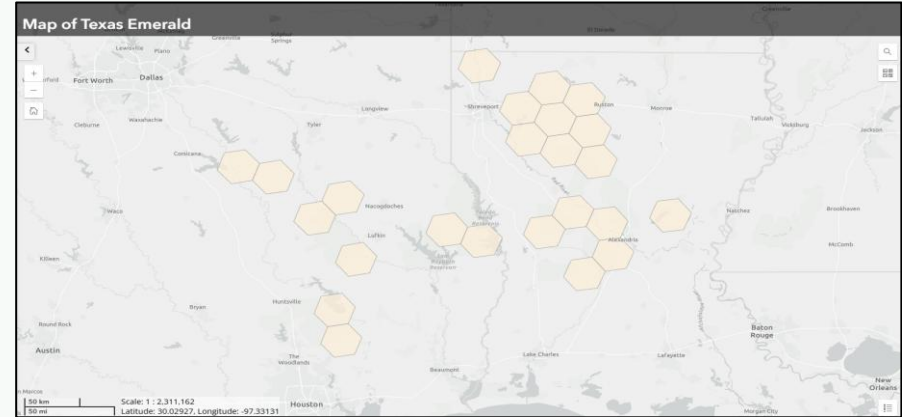
Mitigation

- Restore fire across landscape
- Thinning overstocked pine forests
- Promote growth of herbaceous understory

Texas Emerald

G2 - Animal

Somatochlora margarita



Habitat

- Semi-open loblolly and longleaf pine forests
- Pine forests with small, clear-watered streams

Threats

- Habitat degradation (poor streamside management)
- Fire suppression
- Lack of understory control
- Land-use fragmentation

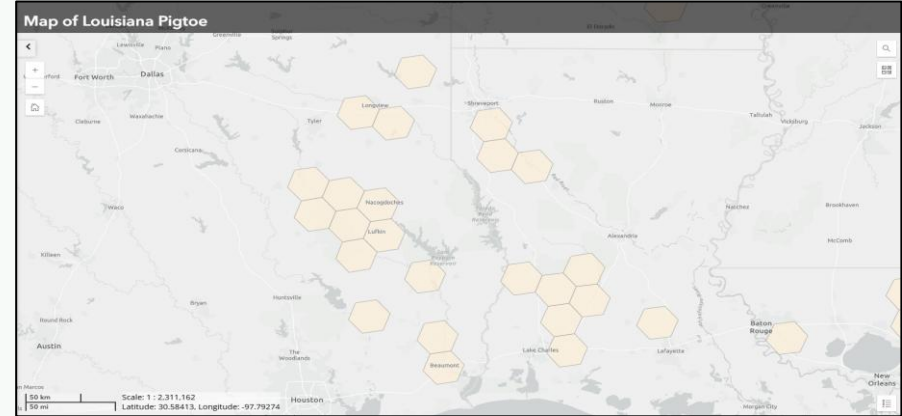
Mitigation

- BMP Compliance
- SMZ implementation
- Frequent controlled burning
- Encourage healthy stands of loblolly/longleaf pine

Louisiana Pigtoe

G1 - Animal

Pleurobema riddellii



Habitat

- Moderate-sized rivers
- Shallow, actively flowing water with sand/gravel substrate

Threats

- Poor water quality reducing habitat suitability
- Sand and gravel removal

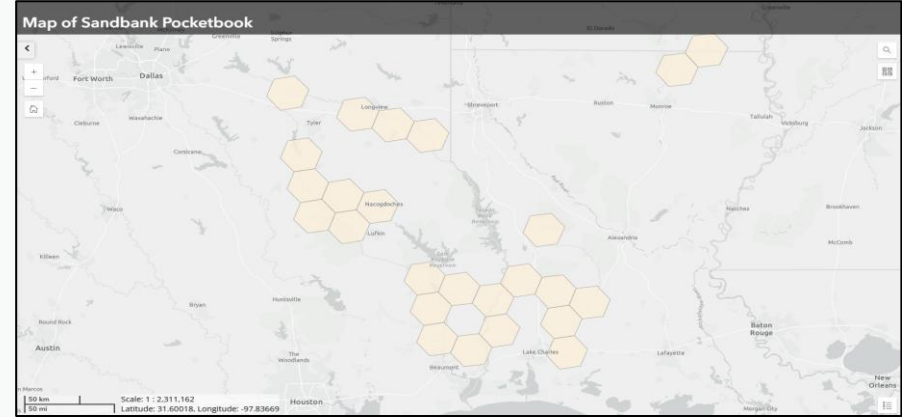
Mitigation

- BMP compliance
- Maintain SMZ
- Prevent soil erosion

Sandbank Pocketbook

G2 - Animal

Lampsilis satura



Habitat

- Small to large rivers with moderate flows
- Gravel, gravel-sand and sand substrates

Threats

- Poor water quality reducing habitat suitability
- Sand and gravel removal

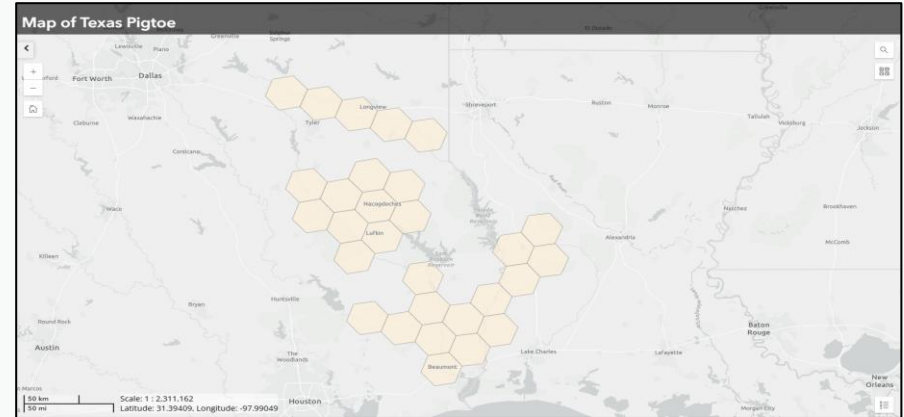
Mitigation

- BMP Compliance
- Maintain SMZ
- Prevent soil erosion

Texas Pigtoe

G2 - Animal

Fusconaia askewi



Habitat

- Rivers with mixed mud, sand, and fine gravel in protected areas
- Littoral areas with coarse woody debris, snags, gravel or sand

Threats

- Increased soil erosion
- Decreased water quality
- Land-use fragmentation

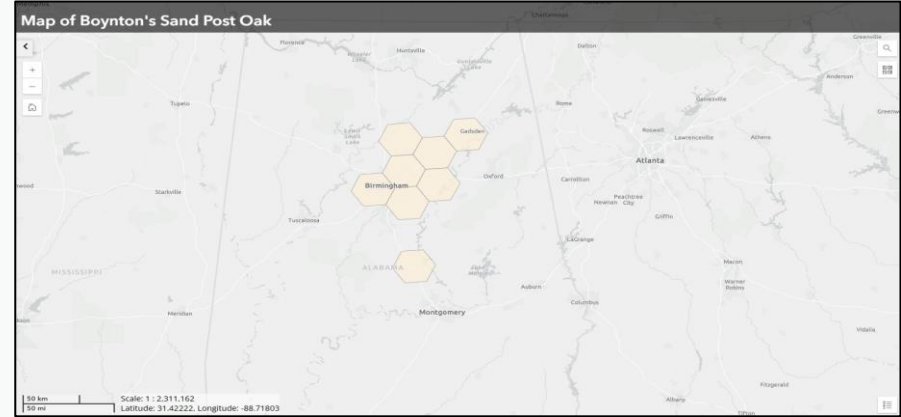
Mitigation

- BMP Compliance
- Maintain SMZ
- Prevent soil erosion

Boynton's Sand Post Oak

G1 - Plant

Quercus boyntonii



Habitat

- Sandstone outcrops in mixed forest
- Rocky riverbanks of closed canopy forest
- Extirpated from Texas

Threats

- Habitat conversion or loss
- SMZ degradation

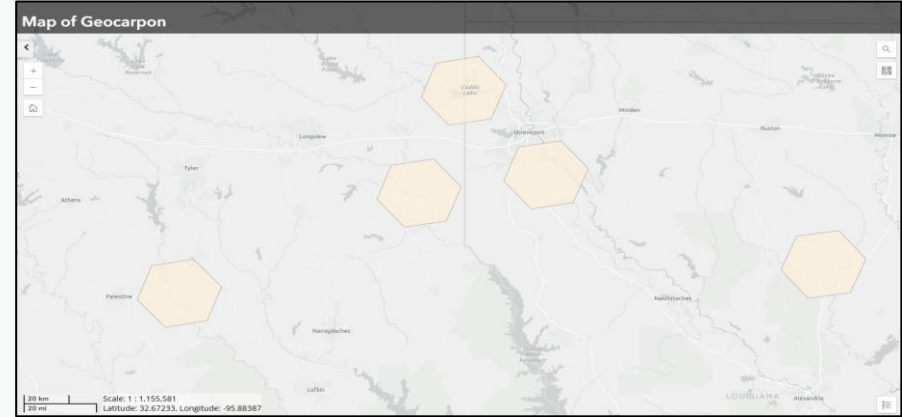
Mitigation

- Protection of critical habitat
- BMP Compliance

Geocarpon

G2 - Plant

Geocarpon minimum



Habitat

- Sandstone glades and saline prairies
- Little to no woody plants present
- Thinly vegetated, barren-like areas

Threats

- Changes in hydrology
- Heavy ORV use
- Salt mining
- Reservoir creation

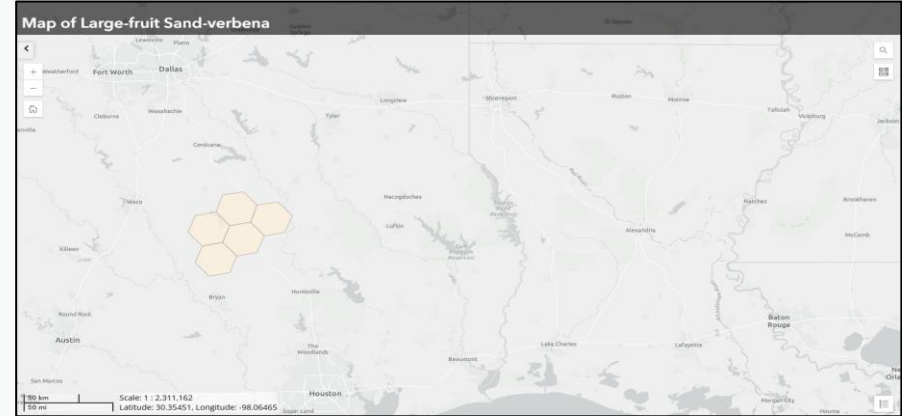
Mitigation

- BMP compliance
- Identify and protect known sites
- Research to identify habitat requirements

Large-fruit Sand-verbena

G2 - Plant

Abronia macrocarpa



Habitat

- Deep, well-drained sandy savannas
- Wind-derived sand dunes

Threats

- Fire suppression
- Habitat degradation or loss
- Invasive plants and herbivores
- ORV use

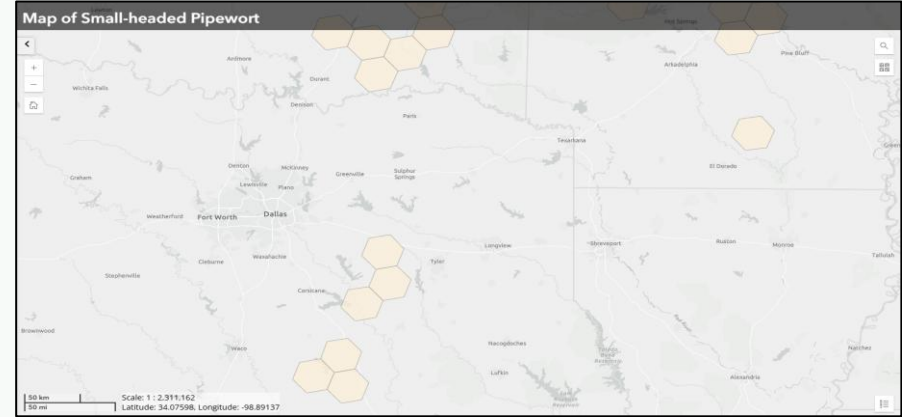
Mitigation

- Prescribed fire
- Limit disturbance from ORV use
- Control of invasive plants and herbivores

Small-headed Pipewort

G2 - Plant

Eriocaulon koernickianum



Habitat

- Permanently moist, sparsely vegetated bogs, seeps, or wet depressions
- Requires disturbance (prescribed fire) to reduce competition

Threats

- Habitat loss
- Wetland draining
- Development
- Fire suppression
- Soil compaction

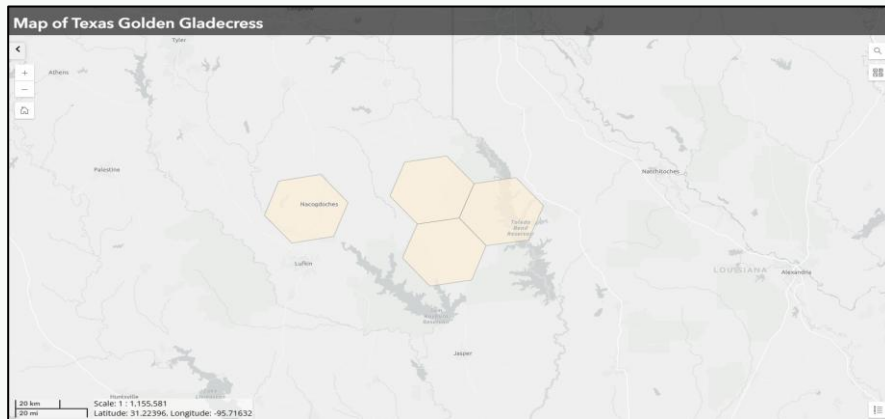
Mitigation

- Canopy reduction
- Frequent prescribed fire
- Soil disturbance without compaction
- BMP compliance

Texas Golden Gladecress

G1 - Plant

Leavenworthia texana



Habitat

- Vernal wet glades with shallow soils
- Weches Geologic Formation in San Augustine County

Threats

- Habitat conversion
- Herbicide application
- Oil and gas exploration
- Invasive species introduction
- Glauconite quarrying

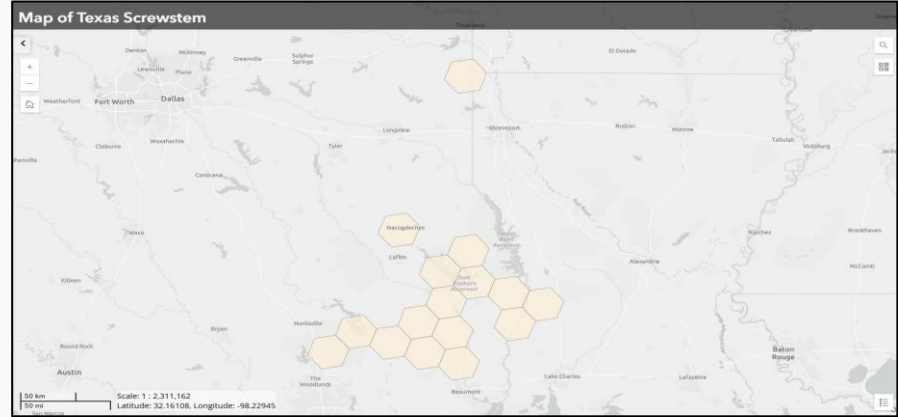
Mitigation

- Avoid glauconite rock outcroppings
- BMP Compliance
- Invasive species control

Texas Screwstem

G2 - Plant

Bartonia texana



Habitat

- Wooded streams, bogs, and creek bottoms
- Forested wetlands & baygall shrub thickets

Threats

- Changes to hydrology (poor streamside management)
- Logging & fire suppression

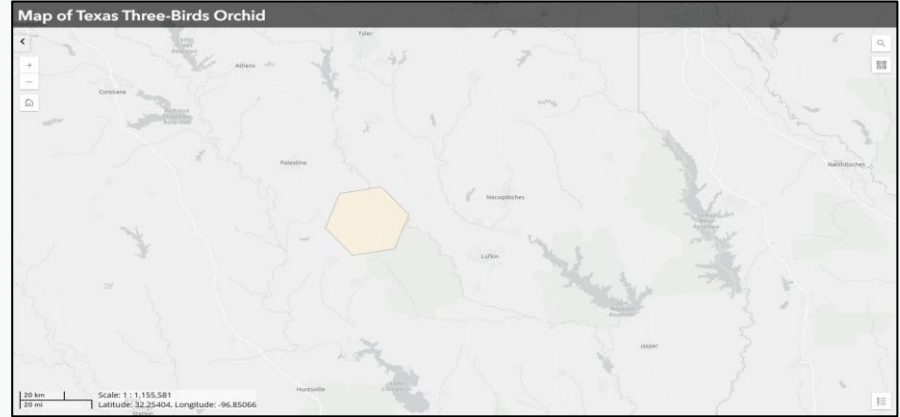
Mitigation

- Best Management Practices provisions
- SMZ implementation

Texas Three-Birds Orchid

T1 - Plant

Triphora trianthophora var. *texensis*



Habitat

- Dense, mixed hardwood forest with few scattered pines

Threats

- Not well known or documented

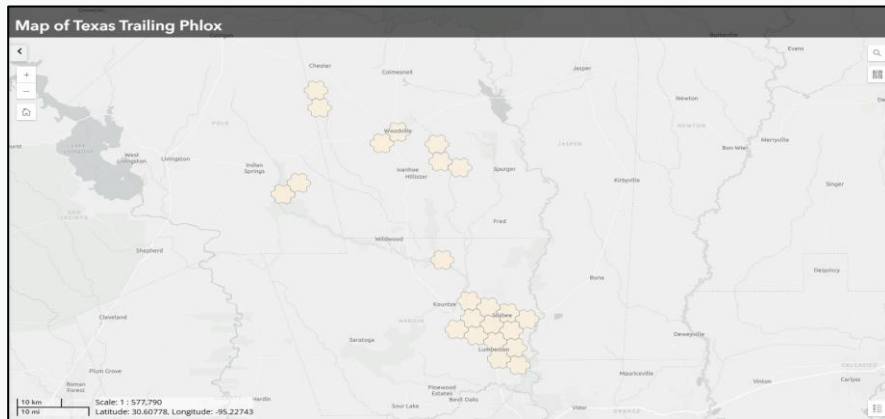
Mitigation

- More research is needed

Texas Trailing Phlox

T2 - Plant

Phlox nivalis ssp. *texensis*



Habitat

- Openings in upland pine or oak savannas with deep sandy soils

Threats

- Fire suppression
- Habitat loss due to canopy closure

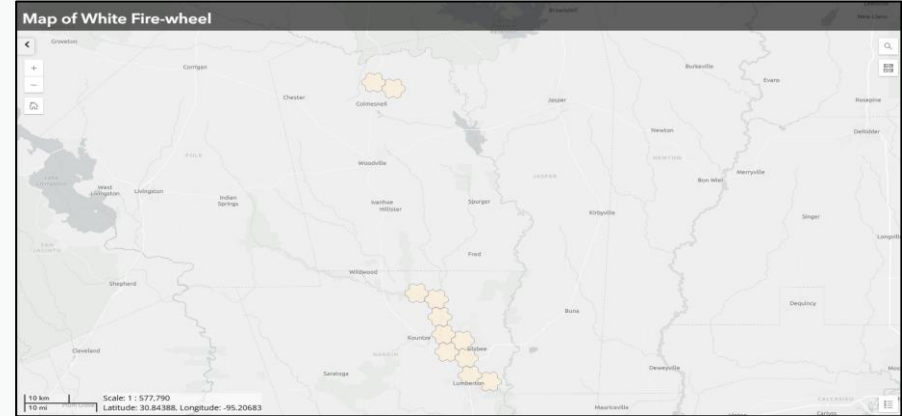
Mitigation

- Maintain with prescribed fire
- Promote open canopies
- Reduce hardwood encroachment

White Fire-wheel

T2 - Plant

Gaillardia aestivalis var. *winkleri*



Habitat

- Deep, loose sandy soils in openings, along margins, or in oak or pine-oak woodlands

Threats

- Extreme soil disturbance
- Fire suppression
- Habitat conversion
- Sand mining
- Off-road vehicle use

Mitigation

- Most known sites on The Nature Conservancy conservation easement
- Further monitoring needed to assess response to fire and soil disturbance

Additional Resources

NatureServe Explorer <https://explorer.natureserve.org/Search>

Texas Parks & Wildlife GIS <https://tpwd.texas.gov/gis/rtest/>

Texas Forestry Association (SIC) <https://www.texasforestry.org/programs/sustainable-forestry-initiative>