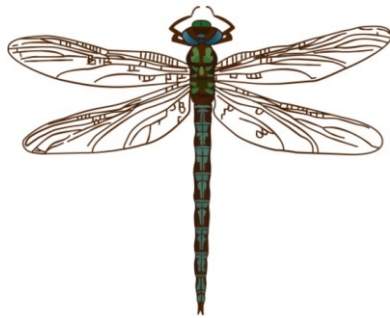


“Blucher Bunch” Erosion Control Efforts in a City Park

- Chapter: South Texas
- Presenters: Jon Brandt & Bibi Dalrymple

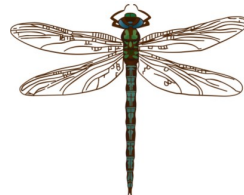


Our Experiences in Technical Persuasion

Working with City staff to mitigate several erosion problems at Blucher Park, in Corpus Christi

The land which became Blucher Park was bequeathed to the city in 1942 by the Blucher Family, its 3.65 acres deeded to remain as a nature park:

“The property shall be used to provide a wooded park of natural beauty for the conservation and collection of native shrubs, trees, and plants; to provide a bird sanctuary where birds may find refuge and thrive; and to provide a place where city dwellers may commune with nature in an atmosphere of quiet and relaxation.”

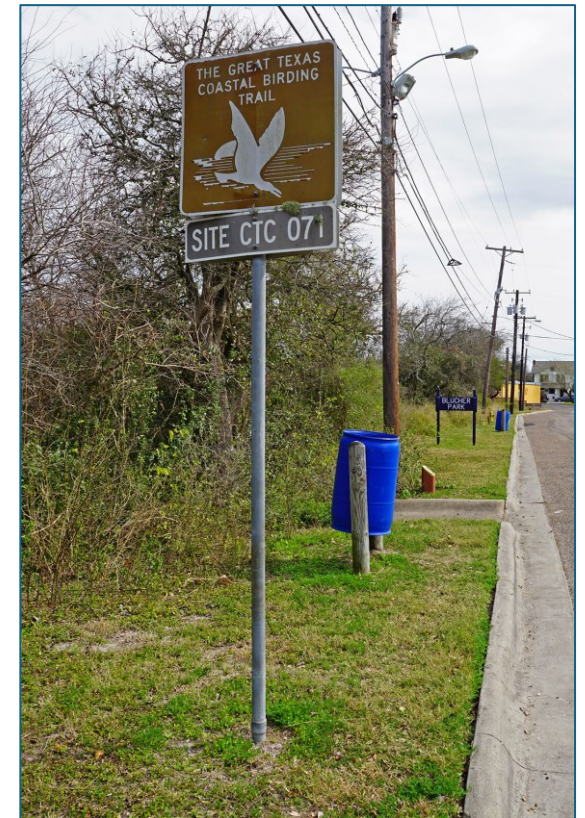


The Audubon Outdoor Club (AOC)* has been involved with the Park since 1962 – sponsoring guided bird walks every weekend in April and becoming a park steward in 1990. The park is a birding hotspot, with 294 species observed, and a significant migratory stopover.

Volunteers from the TMN South Texas Chapter probably began working in the park in the early 2000s.

Volunteers, nicknamed the *Blucher Bunch*, are essential to this small park – one of 187 parks managed by Parks & Recreation Department

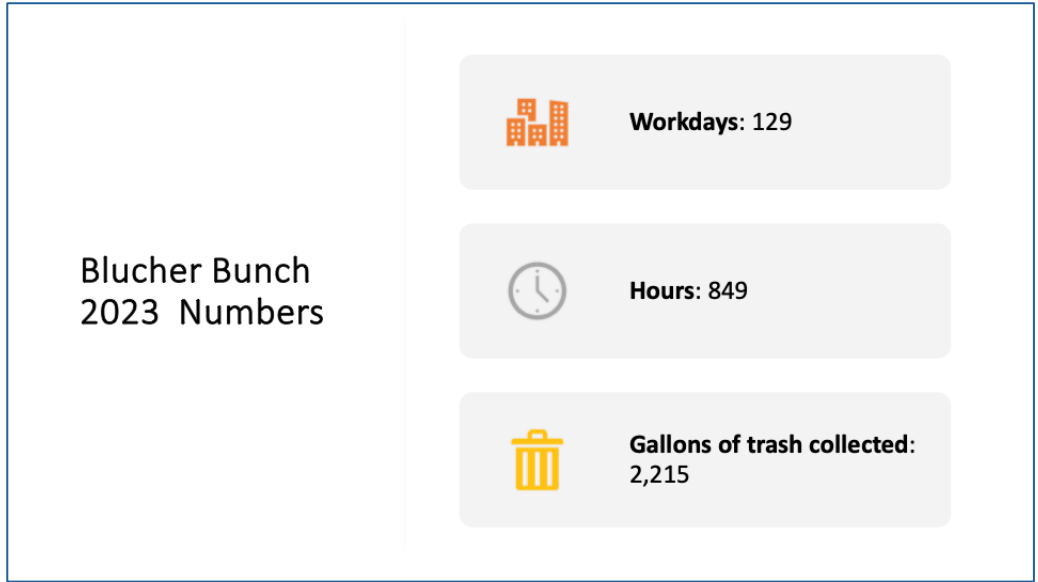
*AOC is a local non-profit organization, not affiliated with the Audubon Society



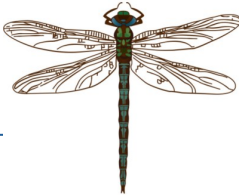
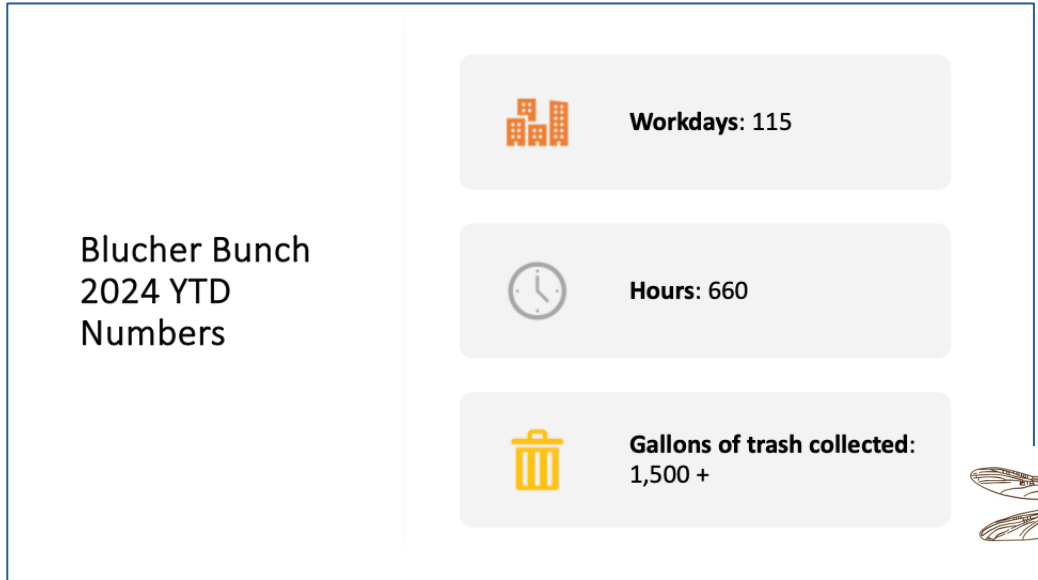
The park is a stop on the Great Texas Coastal Birding Trail - Central Texas Coast: CTC 071



Most TMN volunteer work is resource maintenance like removal of invasive species; path maintenance; tree pruning; removal of trash from the creek and surrounding park; and improvement of the birding experience.



AOC and TMN Volunteers (not including travel time)

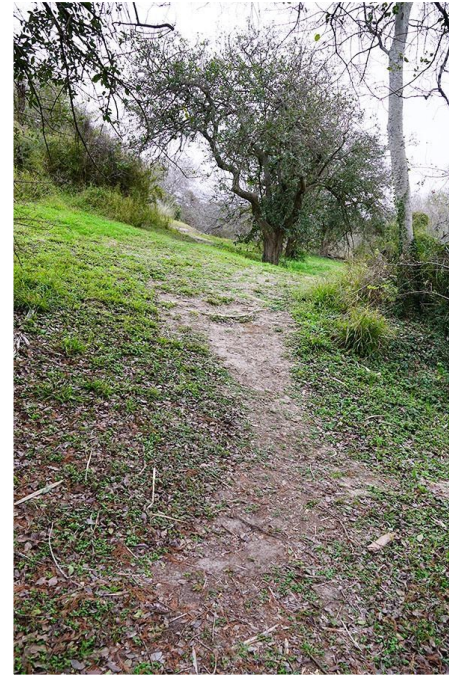


Soil Erosion Problems:

- Eroded slopes
- Gullies
- Streambank erosion
- Compacted, bare soils in high traffic areas
- Fall hazards along trail

Mostly
sandy loam soils

VERY erodible



Timeline

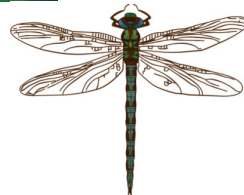
Bibi, working both as AOC Park Steward and TMN volunteer, contacted city staff in May 2021, and first met with the Mayor and Acting Director of the Parks & Recreation Department. Referred to Stormwater Department staff.

In November 2021 we began assembling data to document and evaluate the erosion problems.

The AOC funded rental of a high accuracy GPS unit to map trails and delineate erosion damage in February 2022, while tree canopies were still relatively open.



- March 2022 – began stabilizing eroded slope
- March 2023 to January 2024 – multiple meetings with City staff about large gully. Several staff changes slowed the process.
- June 2024 – repairs to large gully began by City











Compiled GIS data layers from several sources:

City of Corpus Christi GIS Services

Please use
[Public Records: General Requests | City of Corpus Christi \(cctexas.com\)](#)
to request a record or document from
the City of Corpus Christi that is not available online.
Download the form, complete and submit to
the City Secretary's Office.

Explore your data

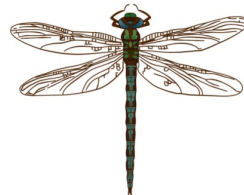
 Boundaries	 Utilities	 Gas Services	 Public Safety
 Parks	 Transportation	 Public Services	 Imagery



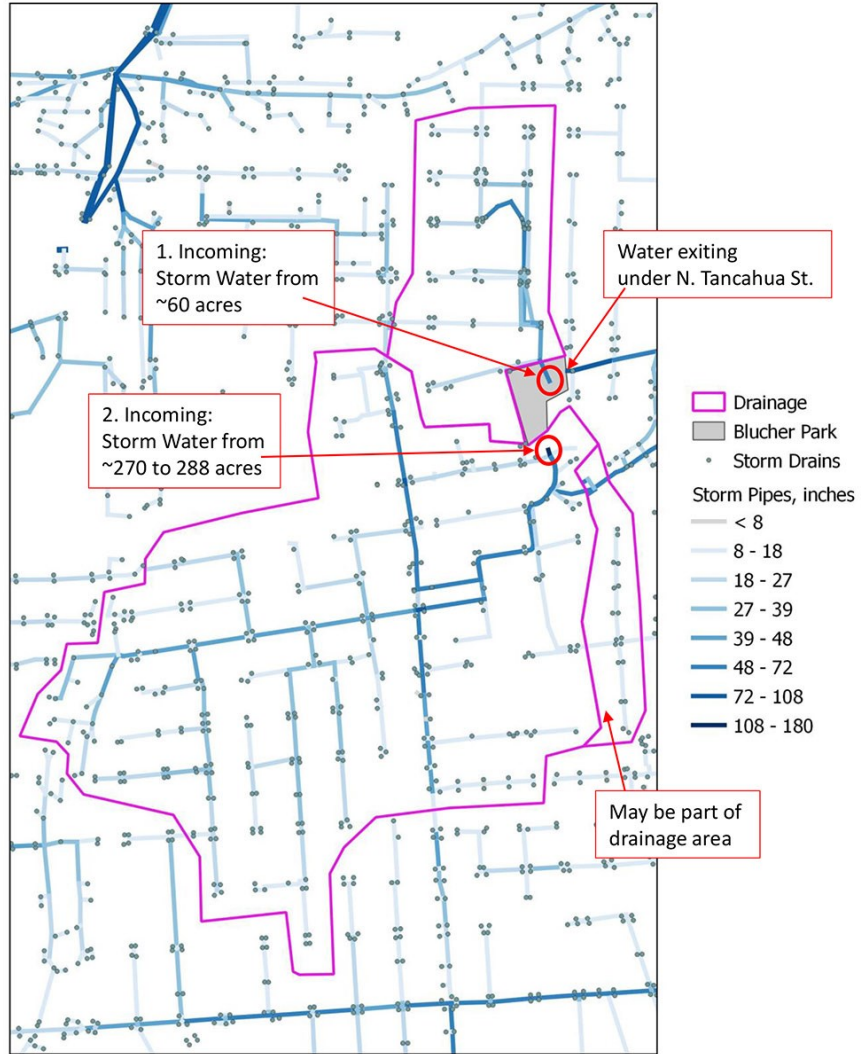
Created maps with GIS:

- Park's location within city's stormwater infrastructure; potential volumes of water going through Park
- Stormwater structures in Park
- Elevation contours
- Erosion problem areas
- City infrastructure within Park
- Established and informal trails
- Native tree locations

Texas Geographic Information Office
(formerly the Texas Natural Resources
Information Service / TNRIS)



Potential Extent of Area Drainage Sources of Storm Water Entering Blucher Park



Data from:
<https://gis-corporus.opendata.arcgis.com/>

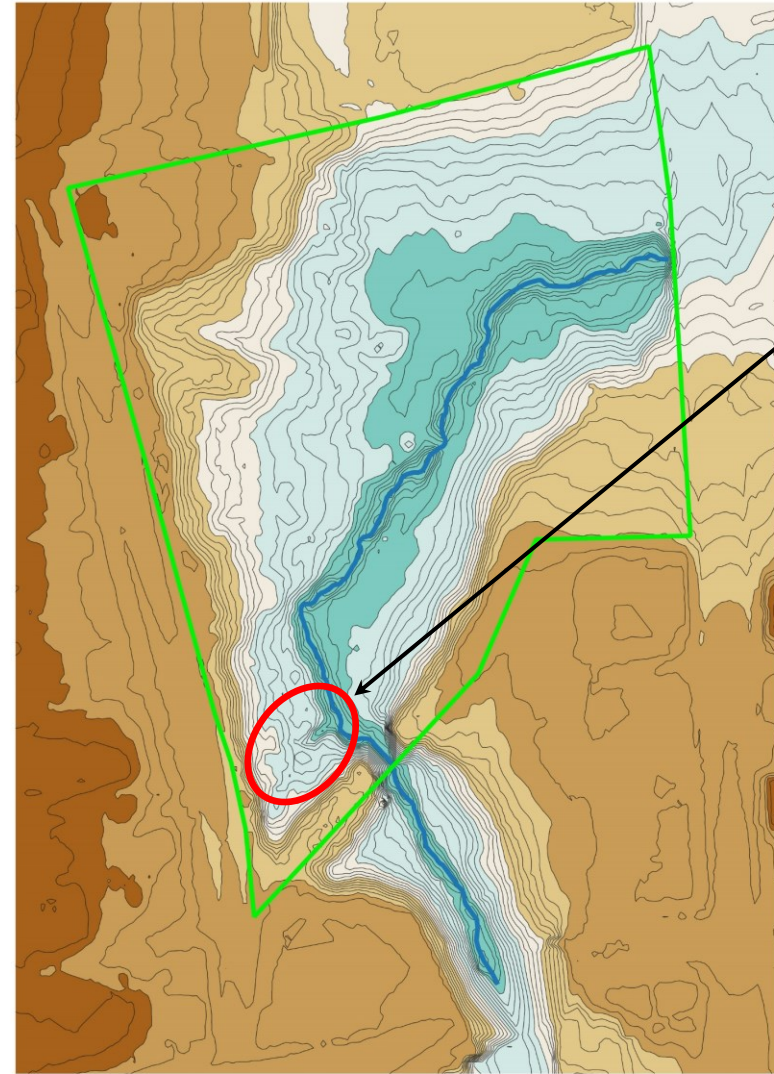
- Layers:
- Storm Inlet
 - Storm Pipe



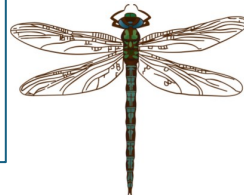
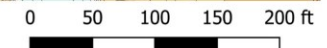
(Compiled by Jon Brandt, 24 Nov 2021)

Created using online 2018 Lidar data:

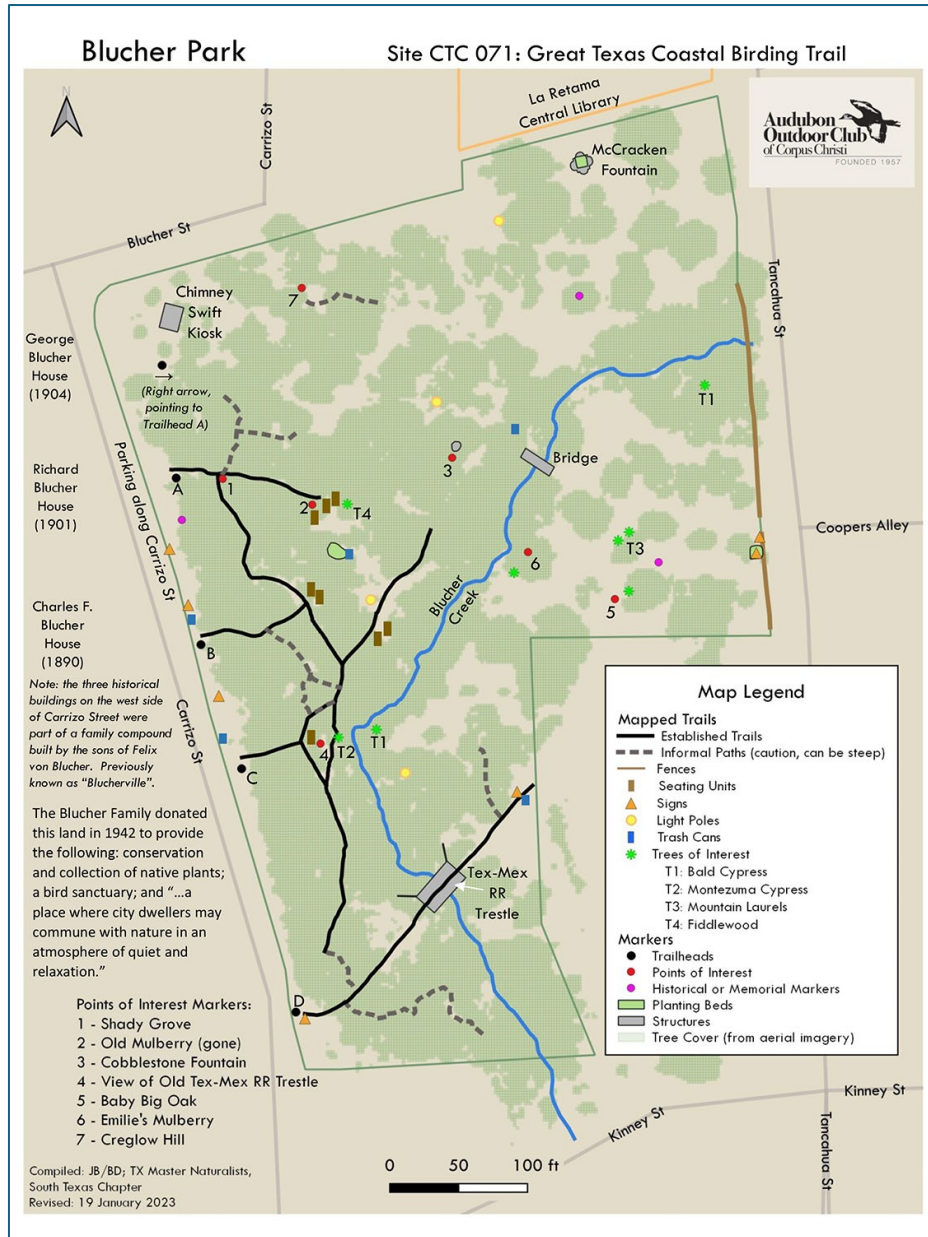
Blucher Park Topography



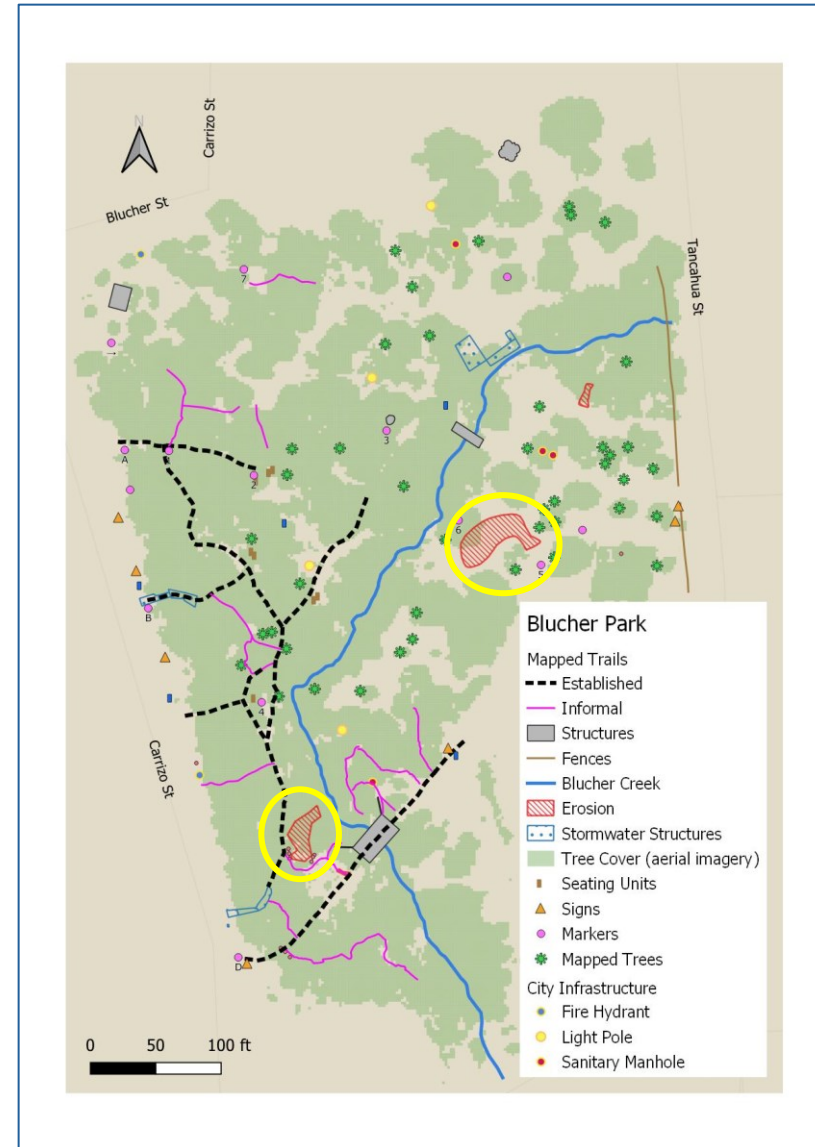
Based on USGS DEM data from 2018



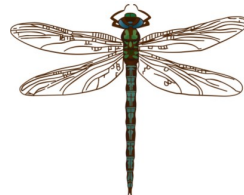
TMNs Updated the Park's Visitor Map:

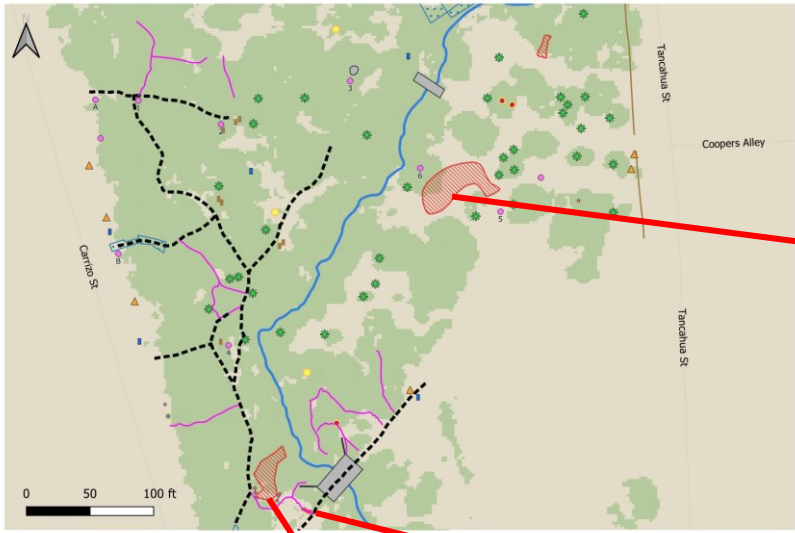


Data layers for maps to share with City staff:



Erosion Problems





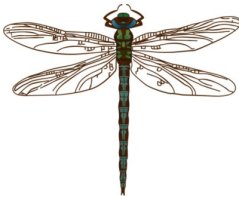
Eroded slope



Expanding Large Gully



Trestle Gully



Slope Stabilization



Cenizo Slope



March 2022

Unvegetated slope showed signs of erosion. Added over 100 native plants including shrubs, grasses, and forbs.



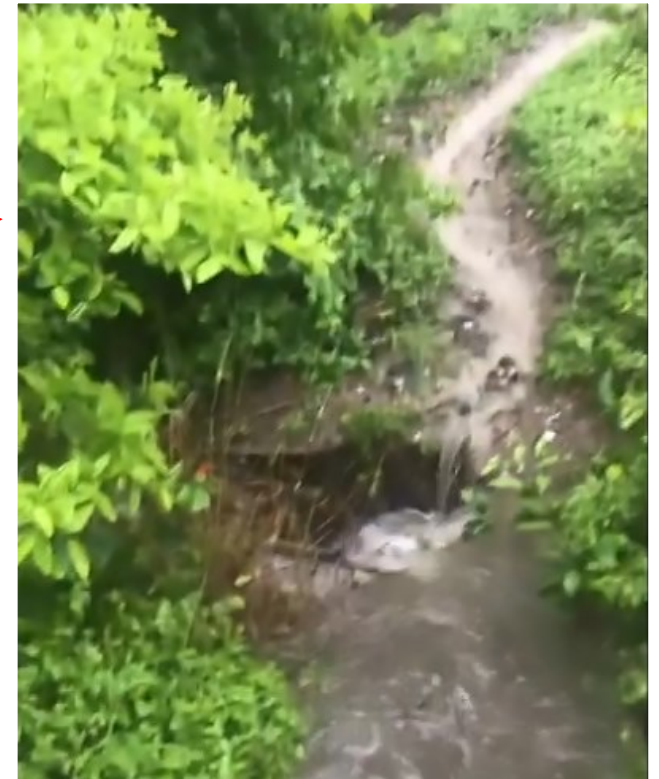
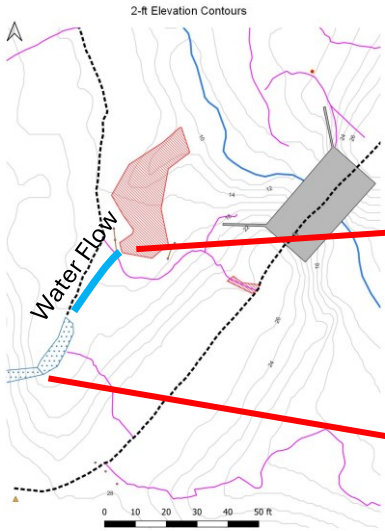
March 2023

Watered regularly summer of 2022; added wildflower seeds in fall of 2022.



Expanding Gully

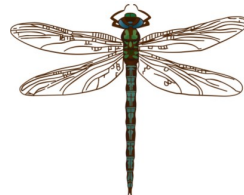
June 2020



Gully was expanding upslope. Appeared erosion has been accelerating.

Impacts:

- (1) Trail loss
- (2) Fall hazard
- (3) Degraded water quality
- (4) Can eventually jeopardize stormwater outlet



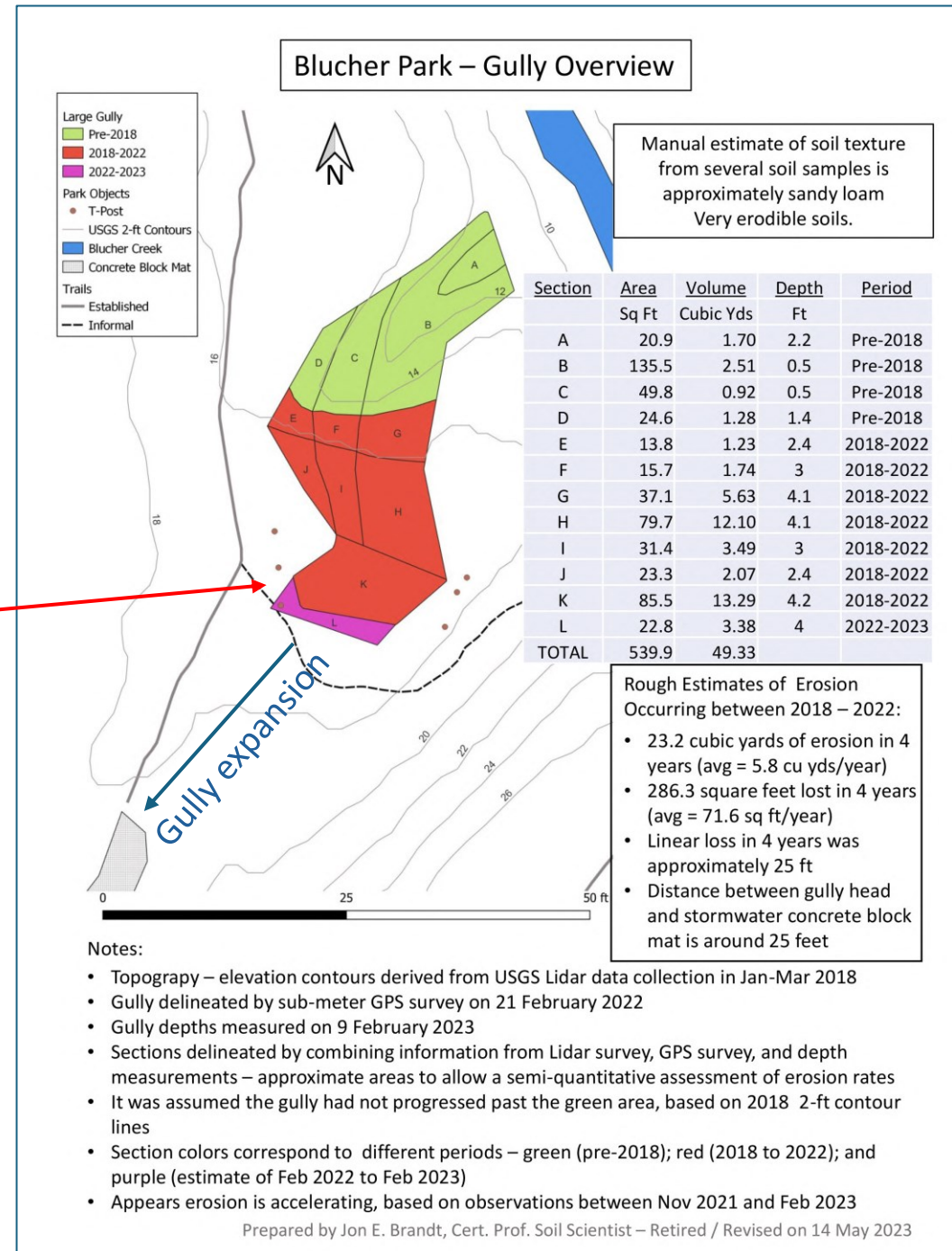
Majority of water coming from stormwater outlet. Water runs above ground and down a trail, until it reaches Blucher Creek.



Articulated Concrete Blocks collapsing on right side, being undercut



Hillshade rendering, showing landscape features, 2018 Lidar Data collected by USGS





2022



June 06, 2024



Corpus Christi Stormwater Department Construction



June 11, 2024



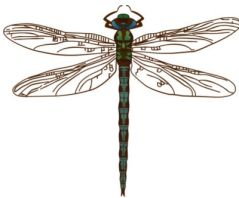
Buried 18-inch diameter
corrugated steel pipe,
draining catchment box,
leading to Blucher Creek



June 19, 2024



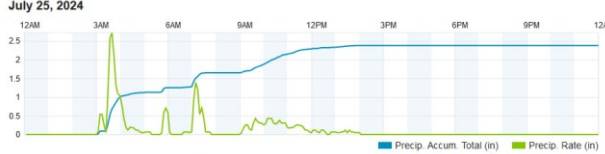
July 15, 2024



Much of the gully erosion has been mitigated; however, there is the remaining issue of handling large rainfall events (TS Alberto and late July).



July 12, 2024

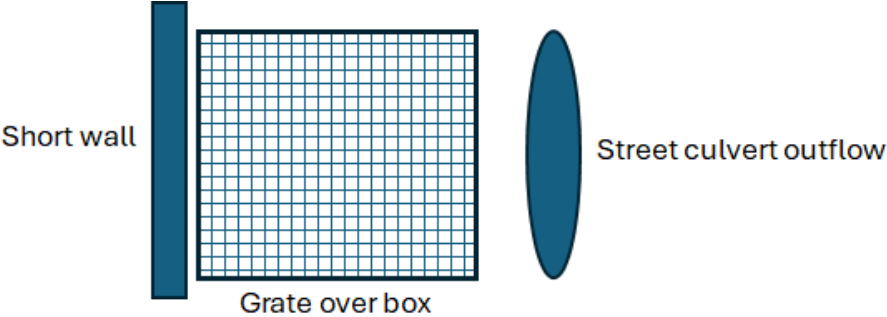


July 25, 2024

Ongoing and future work:

- planting/mulching bare ground
- Installing barrier so above normal water flows do not bypass the grate and pipe

Possible solution:





Fill material easily eroded, exposed pipe

Concentrated water flow



July 15, 2024

Overland flow, from water bypassing the grate,
caused erosion



Take aways:

- Patience, persistence, and diplomacy
- Find the right person to approach (hit or miss). Be prepared for change in City/Organization personnel, ensure you maintain contact.
- Do your homework – collect data and evaluate options, so you can offer a compelling justification
- Helpful equipment : sub-meter GPS unit for mapping
- Necessary software: GIS (QGIS / ArcGIS)
- Utilize resources that are available:
 - Government agency geospatial data layers
 - Aerial imagery
 - Institutional knowledge / fellow Master Naturalists
 - Other volunteer organizations

Project Contacts: Bibi Dalrymple bibidalrymple@gmail.com
Jon Brandt jebrandt99@gmail.com

