BCarbon Stakeholder Meeting

August 10th, 2023

Agenda

- James FitzGerald (BCarbon) – *the State of Biodiversity Crediting*
- Kelly Cain (NICC) – *Quantifying Biodiversity*
- Jeff Mundy – *South Texas Wilderness Conservation*
- Jim Blackburn (BCarbon) – *Whooping Cranes & Coastal Blue Carbon*

Upcoming Meetings

- DEI Subcommittee – Wednesday September 13, 1 PM CT
- ***Stakeholder Working Group*** – Thursday September 14, 9 AM CT

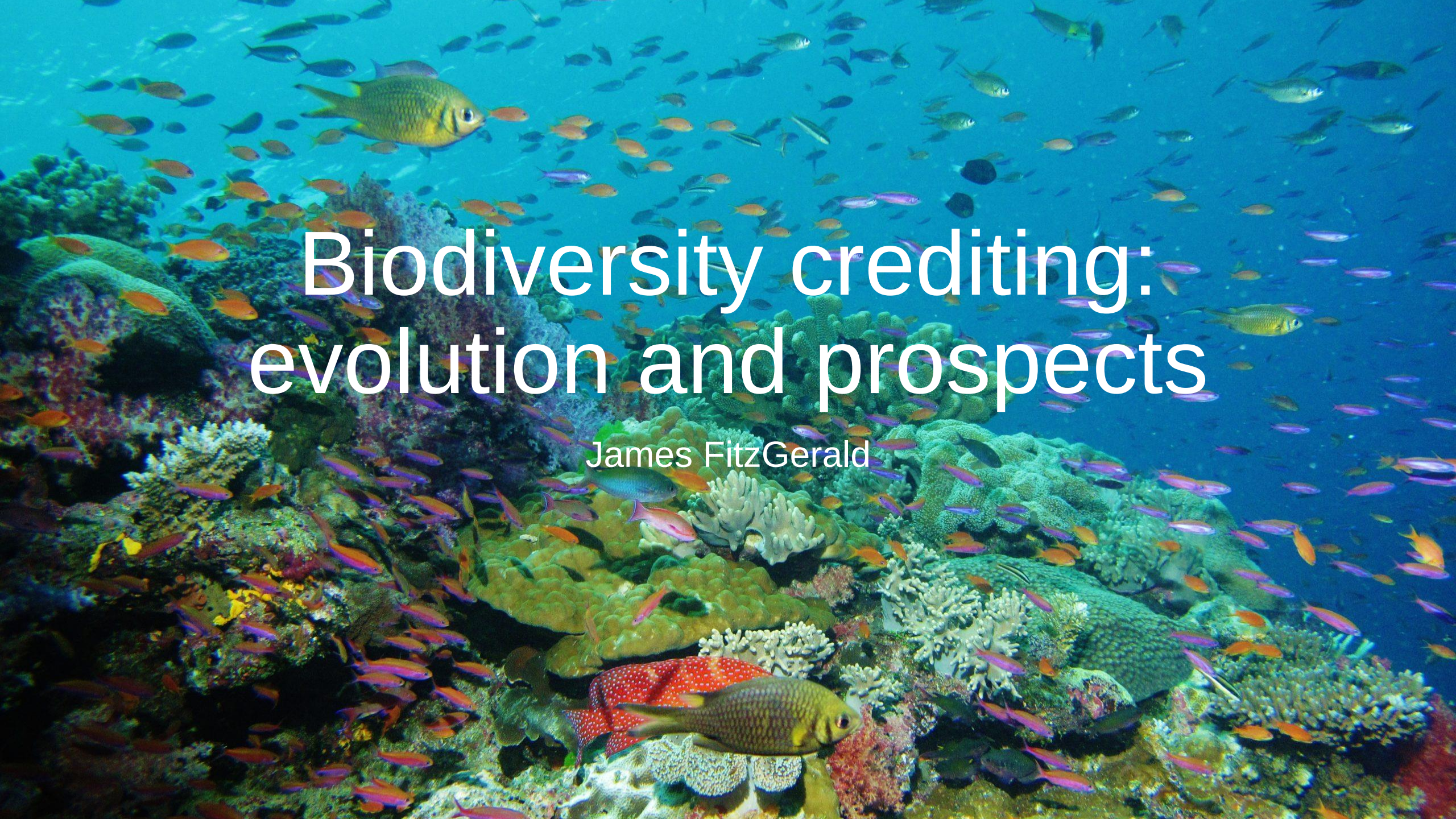
Starting in October, stakeholder meetings will resume on the first Thursday of the month.

All meetings held via Zoom.

To join any subcommittee, please email Sarah.Swackhamer@BCarbon.org

Ecological Principle for BCarbon

BCarbon's top priority is protecting and improving ecological integrity, which will always be more important than the financial incentives of transacting carbon credits.



Biodiversity crediting: evolution and prospects

James FitzGerald

Overview

- Since last December's COP15, biodiversity crediting has evolved at warp speed
- Two emerging approaches: biodiversity offsets and biocredits
- Project developers & registries are moving forward
- Mosaic of approaches struggling to reach consensus

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Two emerging categories

Offsets

- No net loss
- Like-for-like
- Mitigation hierarchy
- Compliance context

Credits

- Positive impact certificates
- Non-fungible
- Financing vehicle for biodiversity projects

COP15

- Major catalyst of recent progress
- Announcements of support from governments and financial institutions
- Biodiversity Credit Alliance seeks to provide “clarity and guidance” to the market

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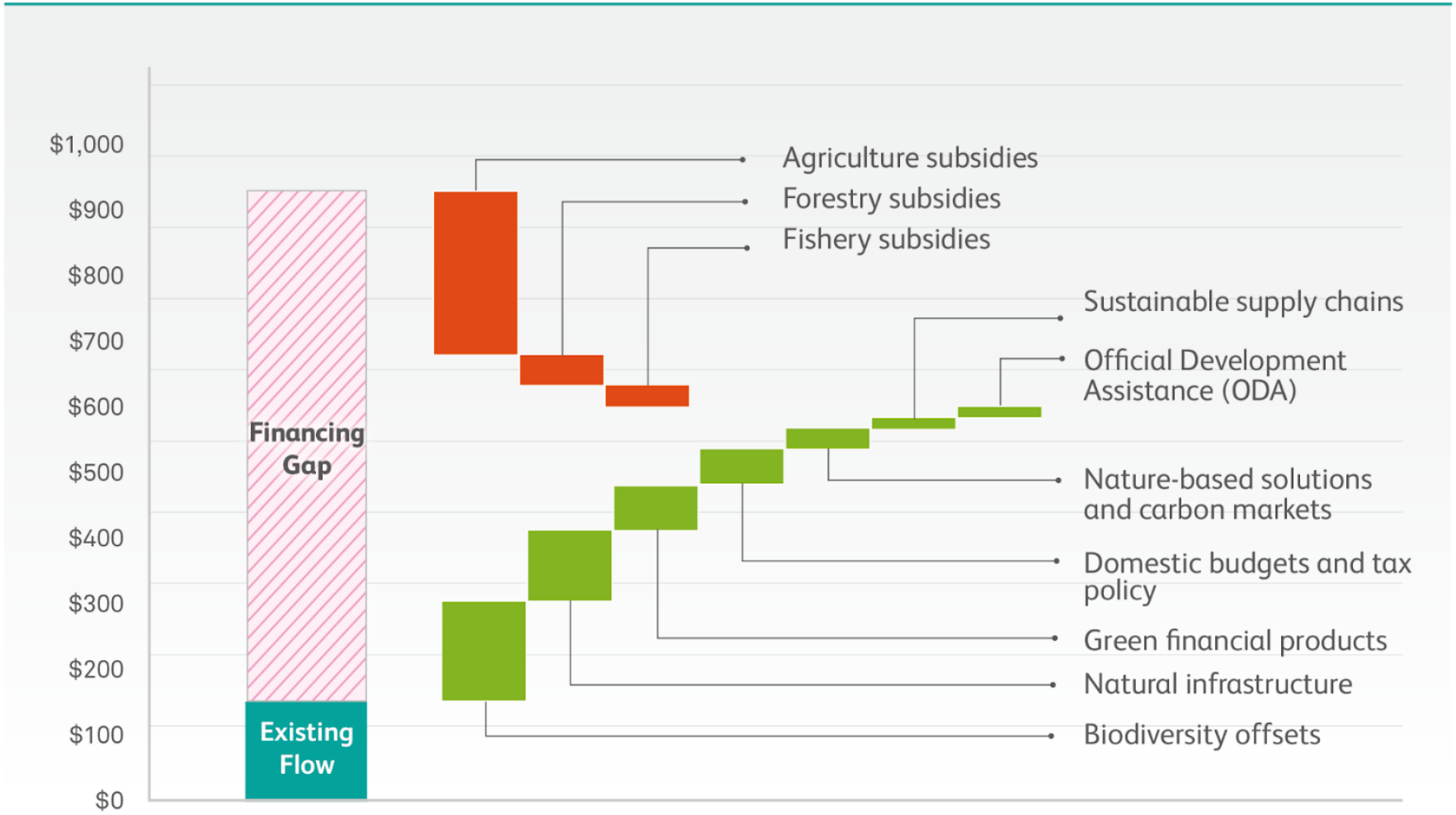
Financing gap



Estimate of growth in financing resulting from scaling up proposed mechanisms by 2030 (in 2019 US$ billion per year)

Paulson Institute

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Sample of Methodologies

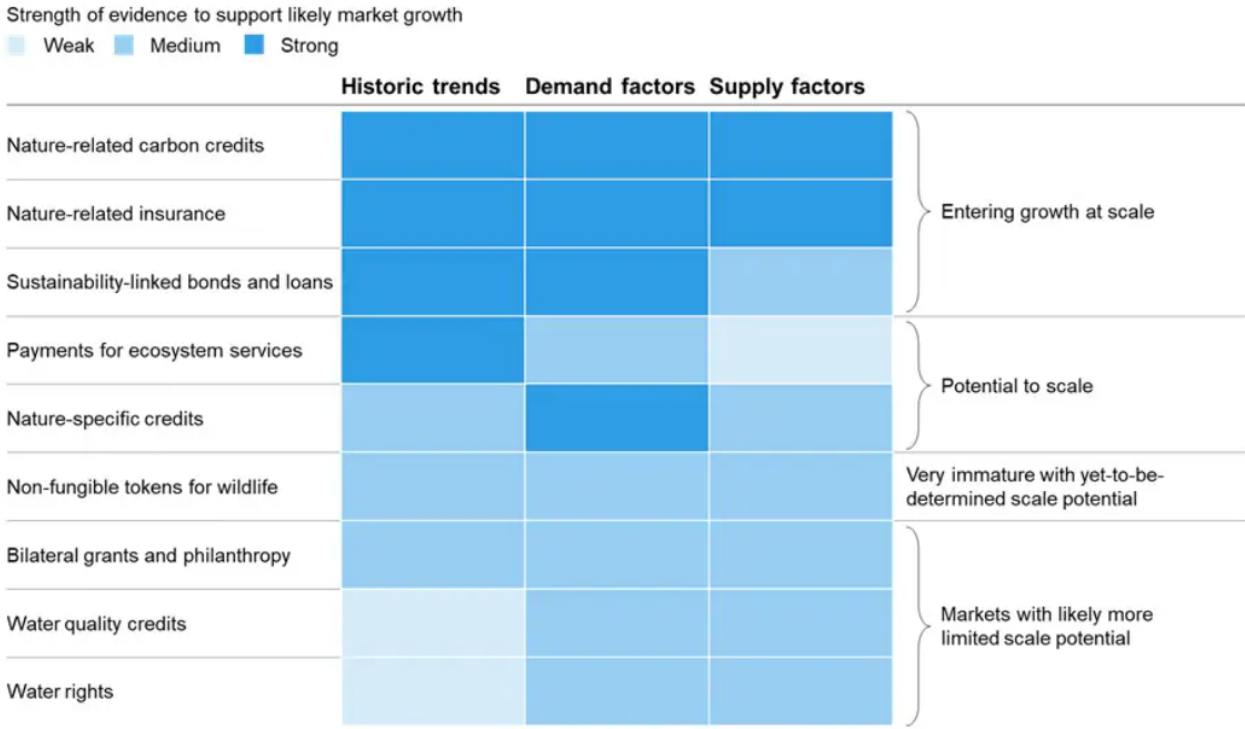
Nature Crediting Framework

Bird habitat quality models

Biocredit based on basket of metrics

Key questions for the market

- Convergence or continued diversity?
  - Basket approach
- Choice of metrics
  - Role of assessment tools and on-the-ground measurements
- Enhanced carbon credit or standalone asset?
  - Market (dis)advantages
- Natural Asset Companies



McKinsey

Conclusions

- Rapid evolution of market with more change to come
- Metrics more sophisticated but still splintered
- Biocredits prevailing over biodiversity offsets
- Possibility of 3 distinct markets
  - Carbon+ market
  - Niche biodiversity-only market
  - Expanded compliance markets (outside US)

National Indian Carbon Coalition

A Joint Project

National Indian Carbon Coalition is a joint project of Indian Land Tenure Foundation and Intertribal Agriculture Council.

Indian Land Tenure FOUNDATION.

Intertribal Agriculture Council

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National Indian Carbon Coalition
Program Director
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WWW.INDIANCARBON.ORG

National Indian Carbon Coalition

National Indian Carbon Coalition

Context, Purpose, & Structure of the National Indian Carbon Coalition

Tribal Co-Benefit Tool

- Bring Tribal / Indigenous National Leadership to the Table in the Voluntary Market
- Absence of Actionable Platform for Nature-Based Carbon & Associated Co-Benefit Solutions
- USDA Conservation Innovation Grant (CIG) of 2020 - $1M w 50% Match - Launched FEB / 2021
- Open-Source Web-Based Tool for Tribal Nations to Better Monetize Assets for Priority Investments
- Best Available Public Data Across All 574 Federally Recognized Tribes, Alaska Native Villages, & Native Hawaiian Communities for Ecosystem & Socio-Cultural-Economic Goods & Services (283 Metrics)

National Indian Carbon Coalition

The **Carbon Co-Benefits Tool** is designed to provide insight into the **diverse qualities and characteristics** of Tribal lands

Step 1 (Select Tribe)

Users begin by choosing the appropriate Tribal Nation.

Step 2 (Select Co-Benefit Category)

Users choose a *Co-Benefit* category to explore

[e.g. Infrastructure, Forests, Grasslands, Soils, Waters, Biodiversity, Community, General Information, and UN SDGs)

Step 3 (Select Metric)

After choosing a *Co-Benefit* category, users select a metric to visualize.

[For instance, Tribal decision makers interested in Grasslands are provided with geospatial datasets in a dropdown menu format on (1) Herbaceous Land Cover (2) Range Productivity and (3) Range Extent.]

Step 4 (Explore)

With a *Co-Benefit* category and metric chosen, the user is provided with visualized data, statistics, and associated SDGs. *

National Indian Carbon Coalition

How many
Co-Benefit Metrics
apply to each SDG?

Each metric provided in the *Co-Benefit Tool* connects directly to one or multiple SDGs.

When combined with:

(1) Traditional Ecological Knowledge (TEK); and

(2) The storied relationships unique to each Tribe and it original territorial lands….

These **metrics** can provide Tribal decisionmakers with **additional tools** to understand how **land stewardship** decisions may affect the **social, economic, and environmental health** of the Tribe

National Indian Carbon Coalition

Tribal Lands: Carbon and Co-Benefits

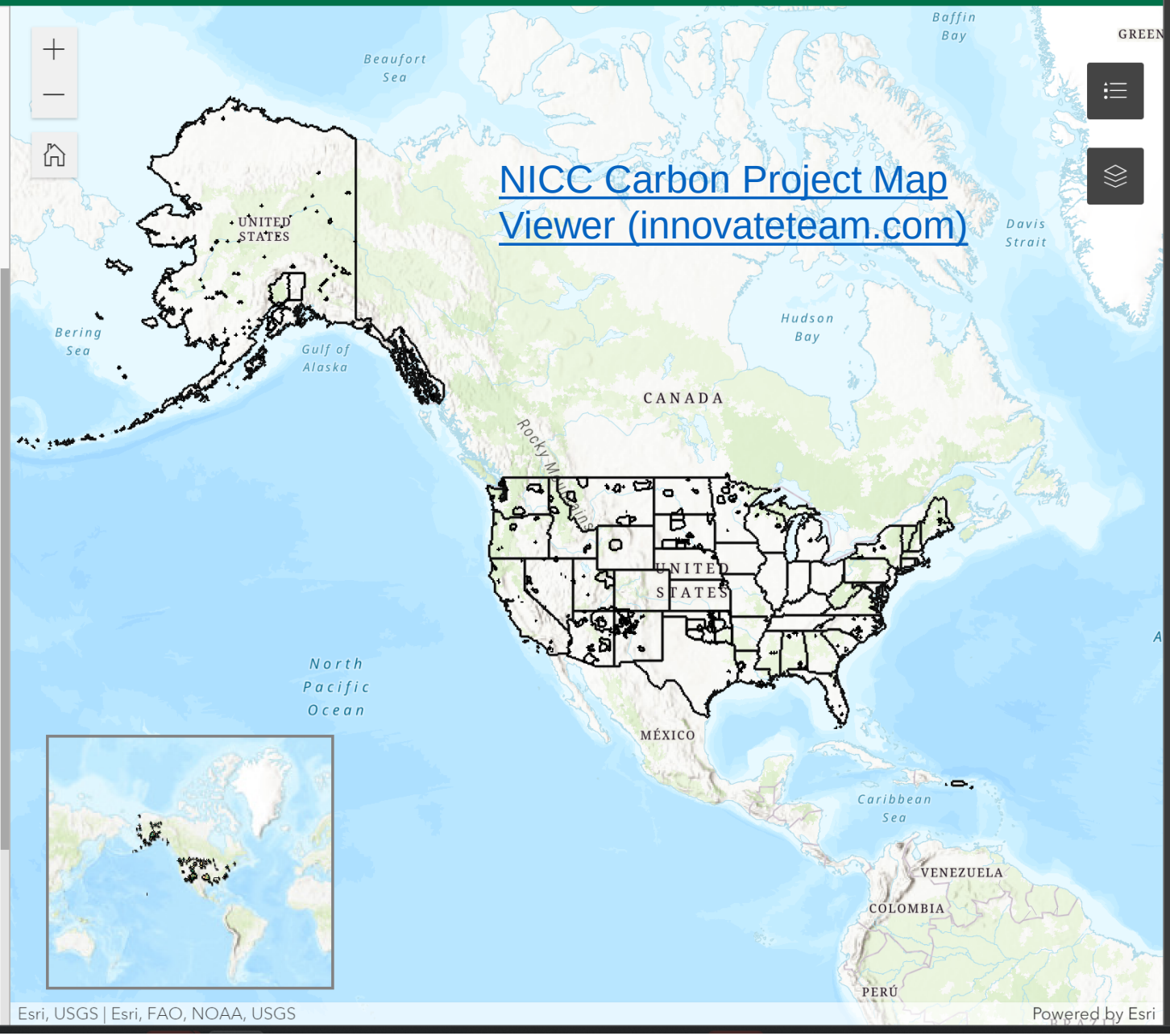
NICC Tier 1 Carbon and Co-Benefits App Data Overview

Select a tribal area to view carbon characteristics:

Search...

Data in the NICC Tier 1 Carbon and Co-Benefits app focuses on datasets that were already publicly available from organizations such as the American Community Survey, U.S. Forest Service, U.S.G.S., Soil Survey Geographic Database, and USDA. Since many of these datasets were at the national scale, we clipped them in ArcGIS Pro to the boundaries of the US Census Bureau American Indian, Alaska Native, and Native Hawaiian (AIANNH) layer. From there, summary statistics were calculated for each tribe and added to maps in the form of supporting tables. Together, the spatial datasets and tables were published to the Indian Land Tenure Foundation AGOL site as hosted feature services for each category that now feeds into a custom developed Experience Builder application. Forests Tier 1, Biodiversity Tier 1, and Carbon Tier 1, as examples.

Once the app is launched to the public, many of these feature services will also be made available. Each of these layers contains detailed summary information of the data's source and processing steps. Data and processing for the polygons in the Carbon Tier 1 layer, for example, can be viewed here. As we seek additional funding for expansion of the app, we hope to provide enhancements that improve access to source data/processes, allow users to query and export statistics of interest, and improve the user interface experience. Tier 2 will enable a secondary level of analysis that securely pulls in detailed data specific to individual tribes into an informed decision-making dashboard, helping tribal nations and individual Indian landowners develop carbon credits and enter environmental commodities markets through



The Mundy Firm PLLC

VBCarbon

South Texas Wilderness Area
Large Blocks of Undisturbed Habitat
At Risk of Loss

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Lubbock
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Plano
Denton
Lewisville
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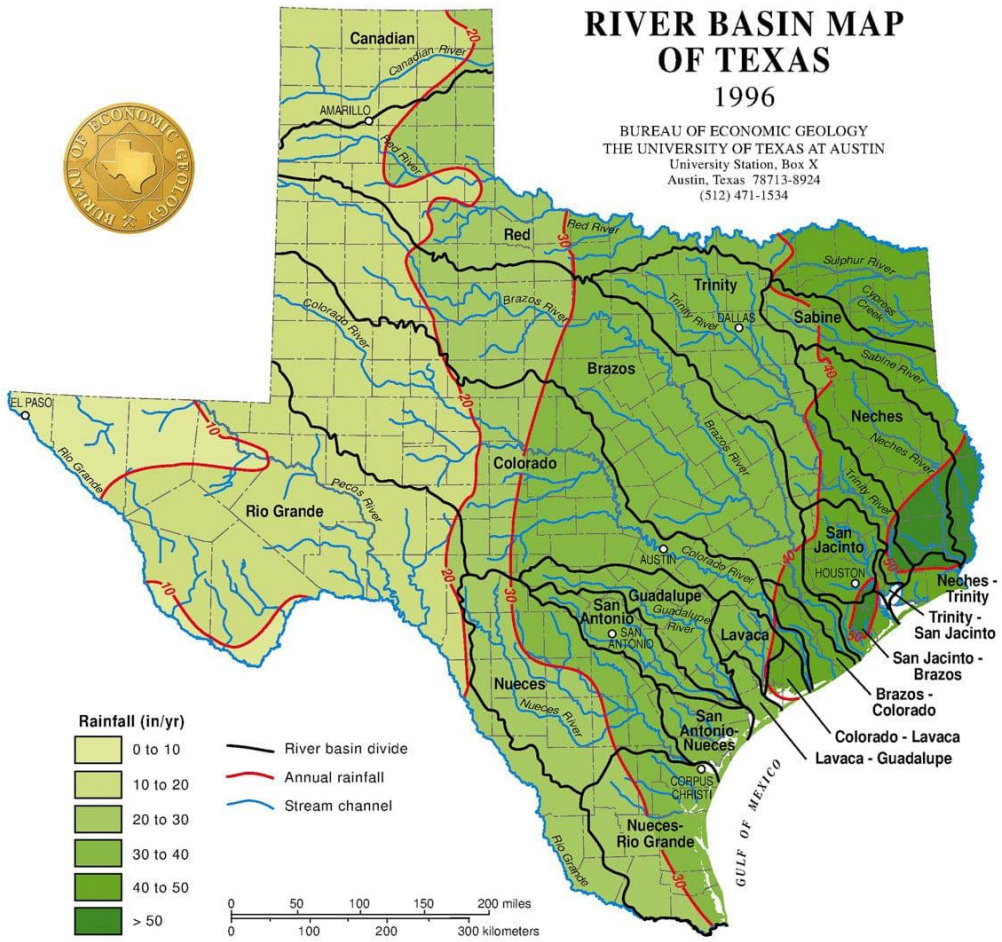
Irving
Longview
Tyler
Midland
Odessa
El Paso
San Angelo
Waco
Killeen
Temple
Bryan
College Station
Austin
Round Rock
Houston
Pasadena
Sugar Land
Beaumont
Port Arthur
Galveston
San Antonio
Corpus Christi
Victoria
Laredo
McAllen
Harlingen
Brownsville
Texas

RIVER BASIN MAP OF TEXAS

1996

BUREAU OF ECONOMIC GEOLOGY
THE UNIVERSITY OF TEXAS AT AUSTIN
University Station, Box X
Austin, Texas 78713-8924
(512) 471-1534

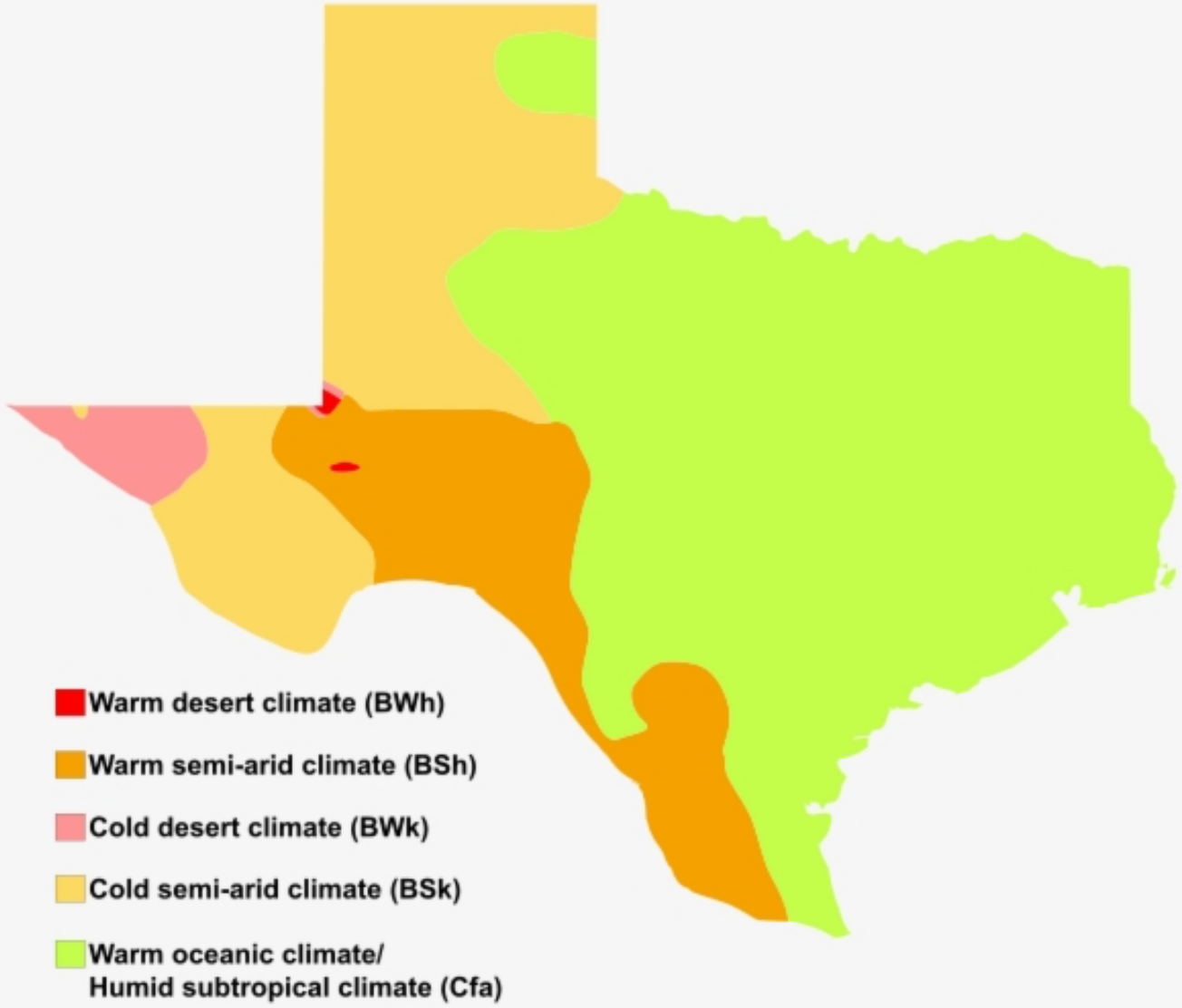


River basins	Texas length (miles)	Texas area (sq mi)	Number of major reservoirs*	Conservation storage (acre ft)*	Storage (acre ft/sq mi)
Brazos	840	42,800	19	3,322,880	75
Canadian	200	12,700	2	560,900	44
Colorado	600	39,893	11	3,803,900	95
Guadalupe	250	6,070	2	420,000	70
Lavaca	74	2,309	1	157,900	68
Neches	416	10,011	4	3,455,500	345
Nueces	315	16,950	2	931,640	60
Red	680	30,823	7	4,593,460	149
Rio Grande	1,250	48,259	3	3,772,000	78
Sabine	360	7,426	2	6,041,300	814
San Jacinto	70	5,600	2	570,400	102
Trinity	550	17,696	14	6,969,710	388

*Data from Texas Water Development Board.

Historic Pictoric®

Texas map of Köppen climate classification







Transition Zone – Up Slope

The Upside Down Forest Roots Down to 40+ feet

- Averaged over the entire sample depth, Irrigated trees doubled root length density of small (< 2 mm diam.) roots compared to Control trees (232 vs 105 m m-3). Below 90 cm depth, root length density of large (2 to 10 mm diameter) roots was five times greater in Rainout (water excluded group) (36 m m-3) than Control trees (7 m m-3). Over all depths, root biomass was greatest in Rainout trees and root:shoot (biomass) ratio was three times greater in Rainout than Control or Irrigated trees…Mesquite adapted to chronic wet or drought cycles through increased root growth but patterns of distribution differed as Irrigated trees emphasized growth of small roots throughout the profile and Rainout trees grew large roots into deeper soil layers.
- Ainsley, et al, Mesquite Root Distribution and Water Use Efficiency in Response to Long-term Soil Moisture Manipulations (USDA 2007)

Mesquite Response to Drought

- However, mesquite not only survived 4 years of nearly continuous drought, but exhibited an aggressive strategy of increased root growth and continued canopy growth. Canopy growth was maintained levels similar to other less stressed treatments possibly because Rainout mesquite found new sources of soil moisture through increased root growth.

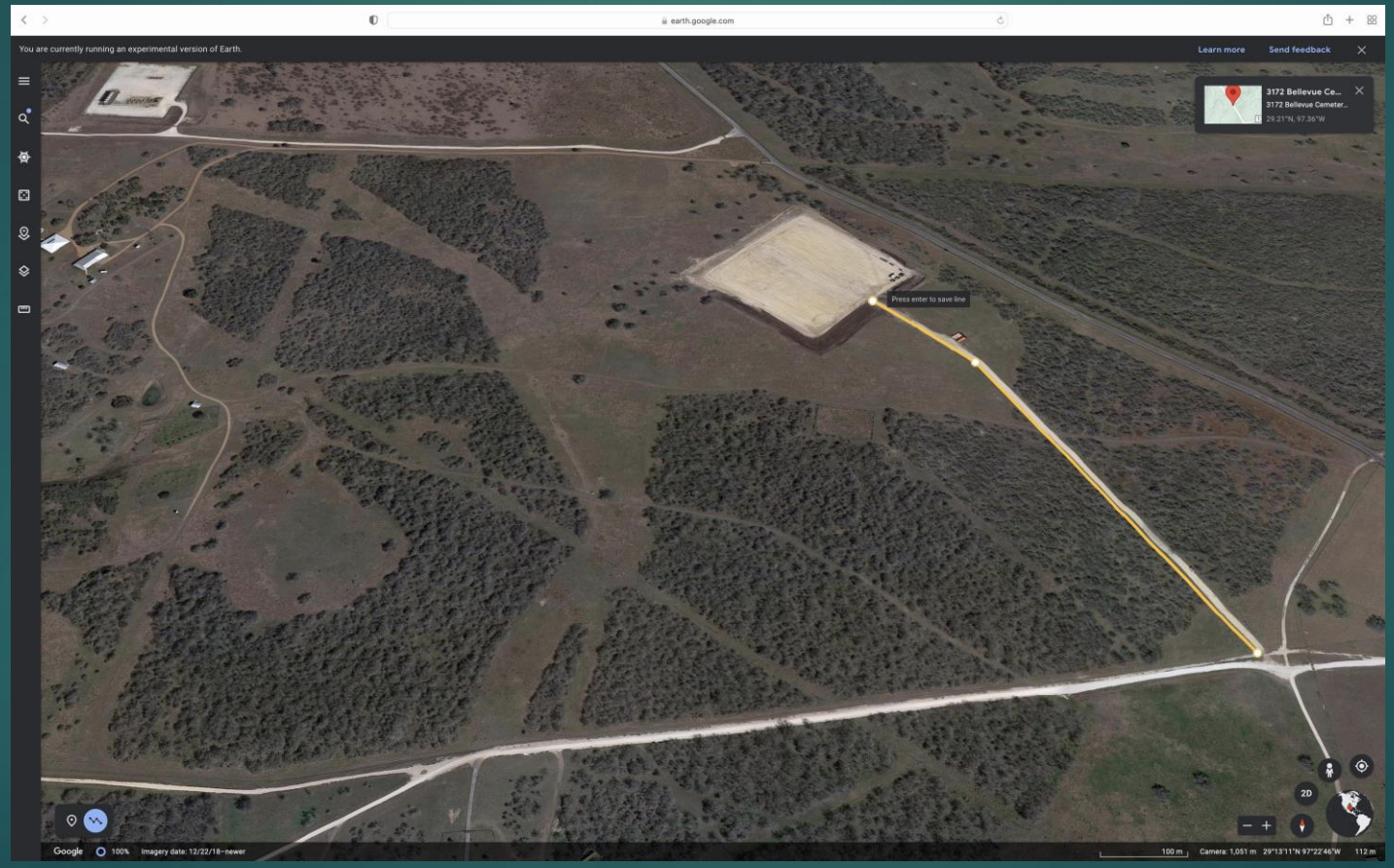
- Ainsley, et al, Mesquite Root Distribution and Water Use Efficiency in Response to Long-term Soil Moisture Manipulations (USDA 2007)

SURFACE HABITAT LOSS
Utility Lines 46,500 MILES

Surface Loss - Roads/Highways in Texas - 200,059 miles TxDOT 2021

LaSalle County – Brush Destruction

Oil Field Fragmentation – Cuero, TX



Location Matters

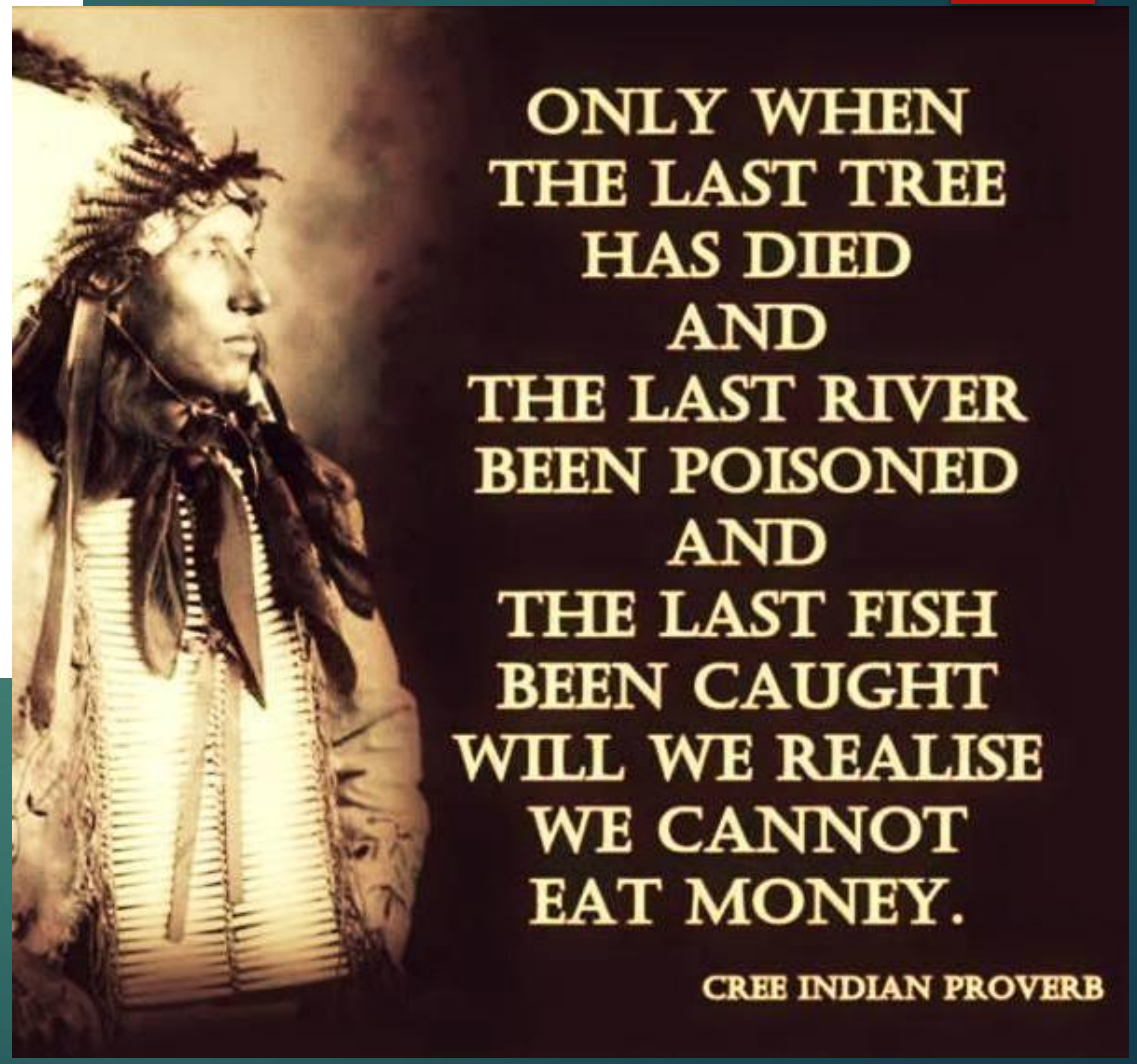
PIPELINE LOSS - 488,564 MILES TxRRC

DOING

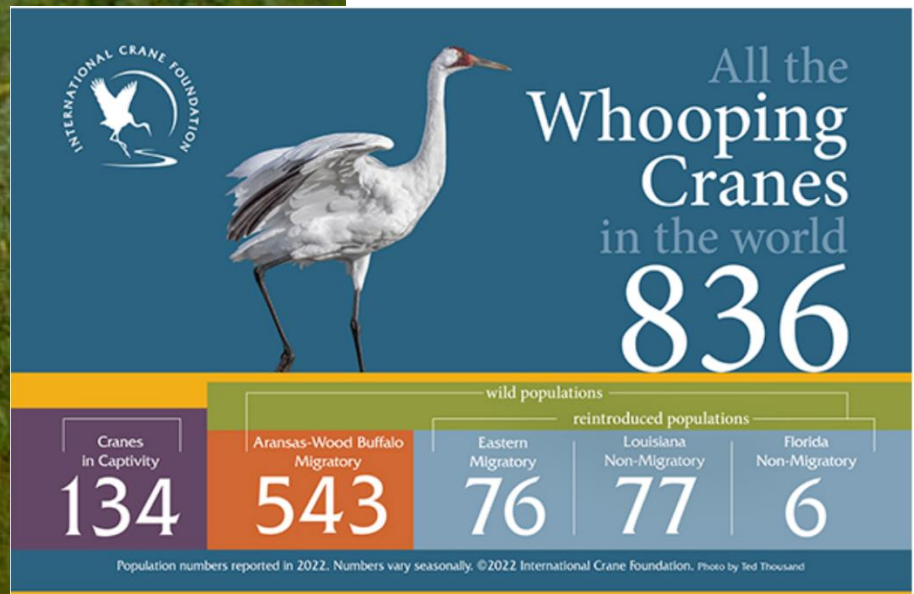
NOTHING

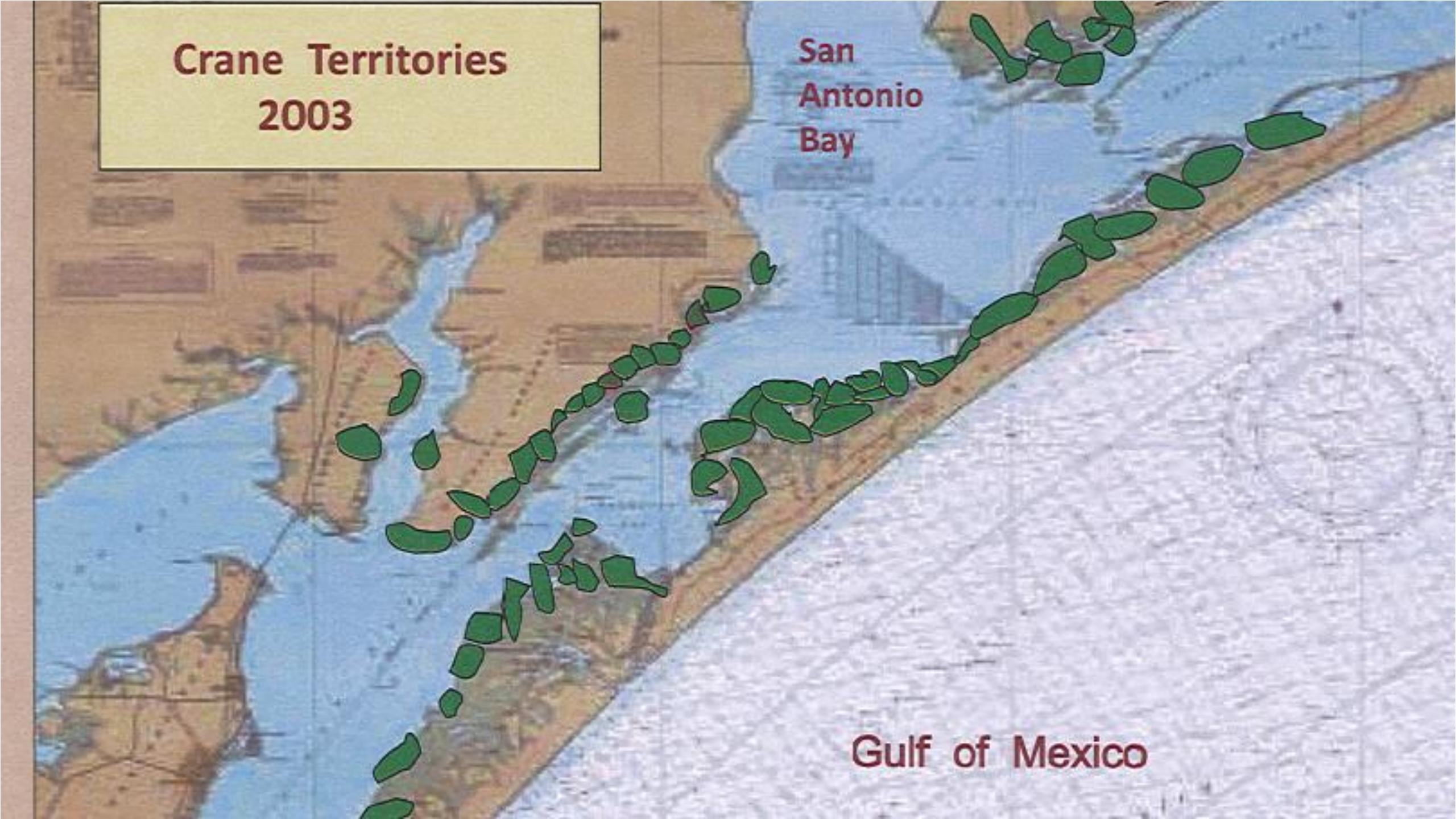
IS DOING

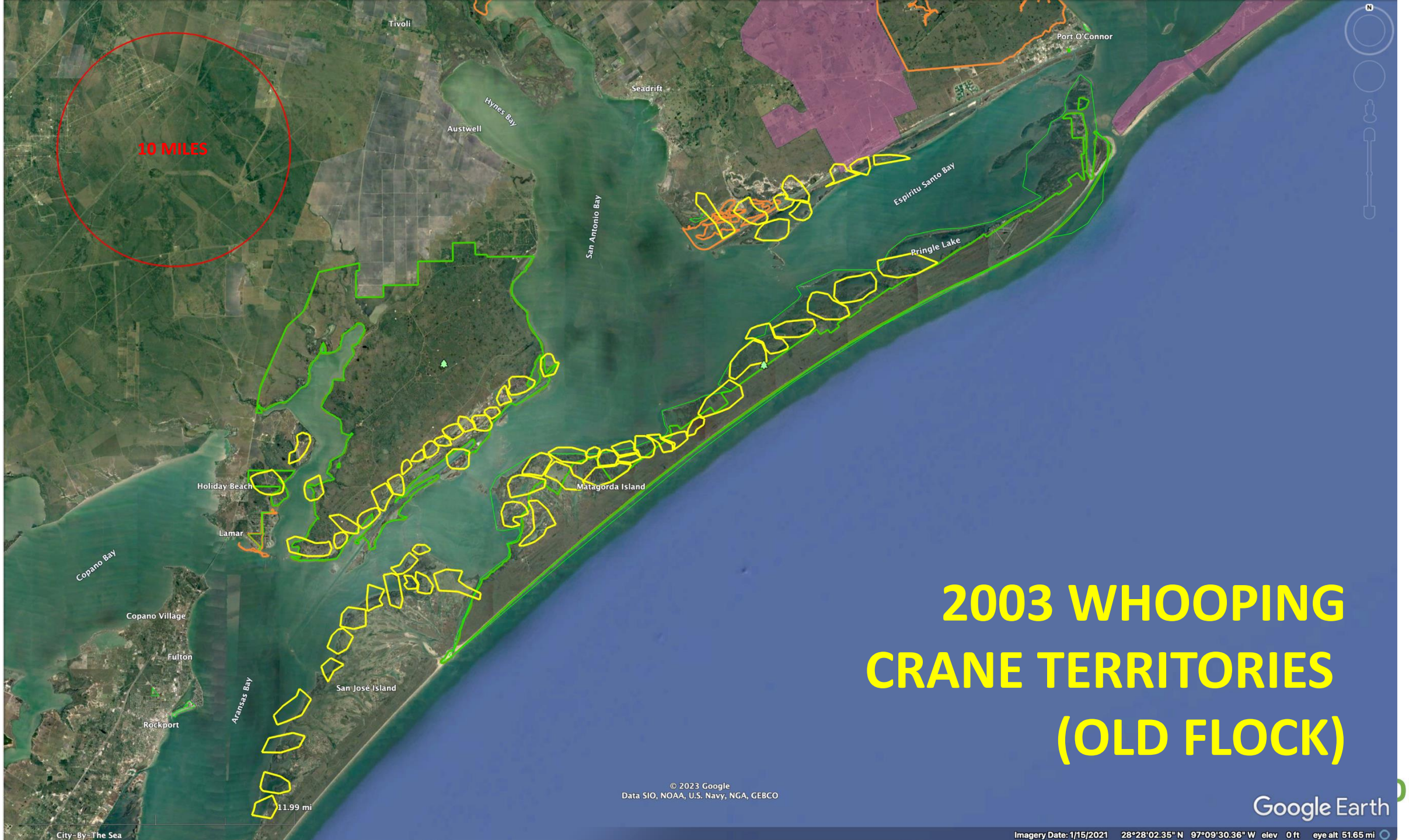
EVERYTHING WRONG



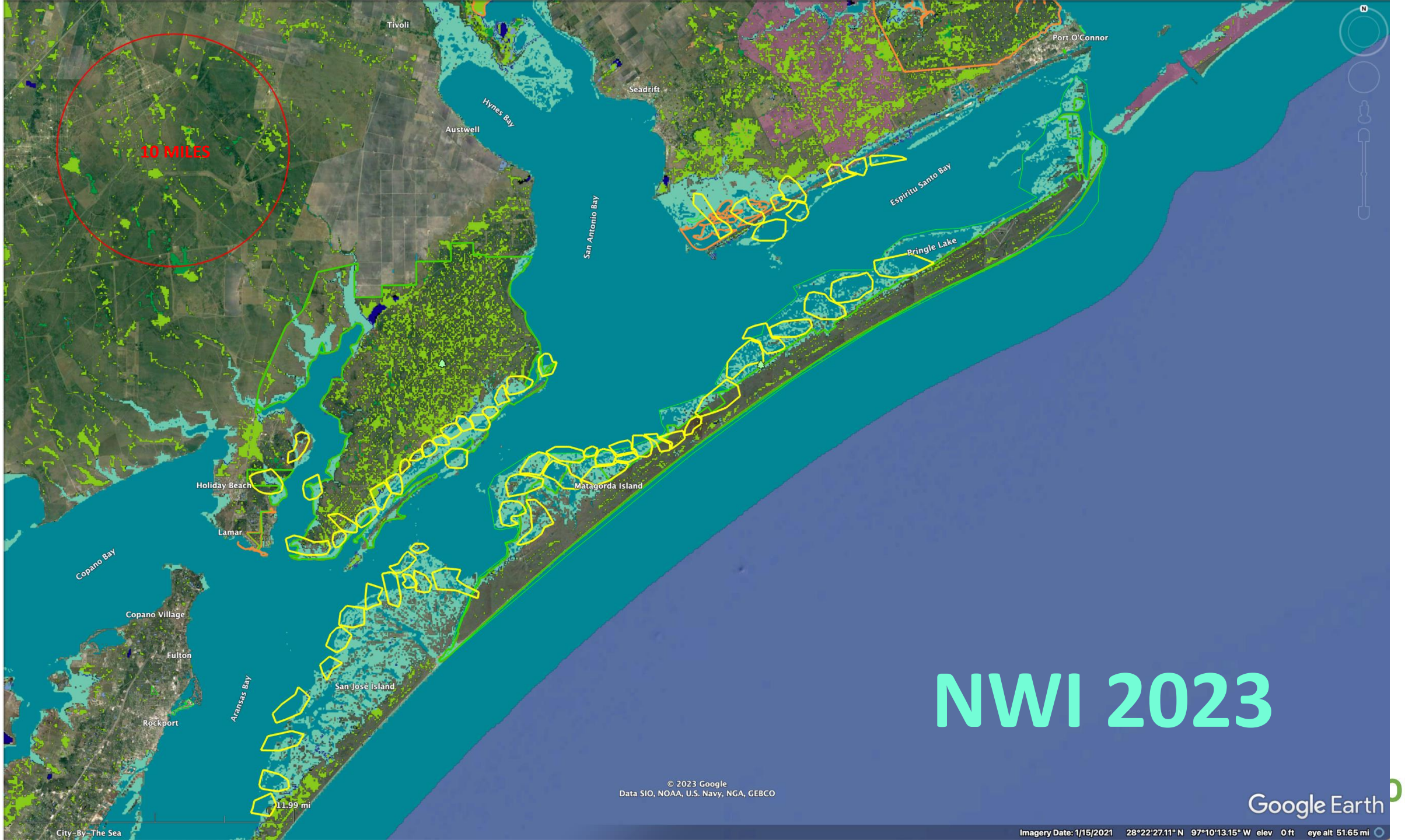
BCARBON / BIODIVERSITY




Crane Territories
2003
San
Antonio
Bay
Gulf of Mexico



2003 WHOOPING CRANE TERRITORIES (OLD FLOCK)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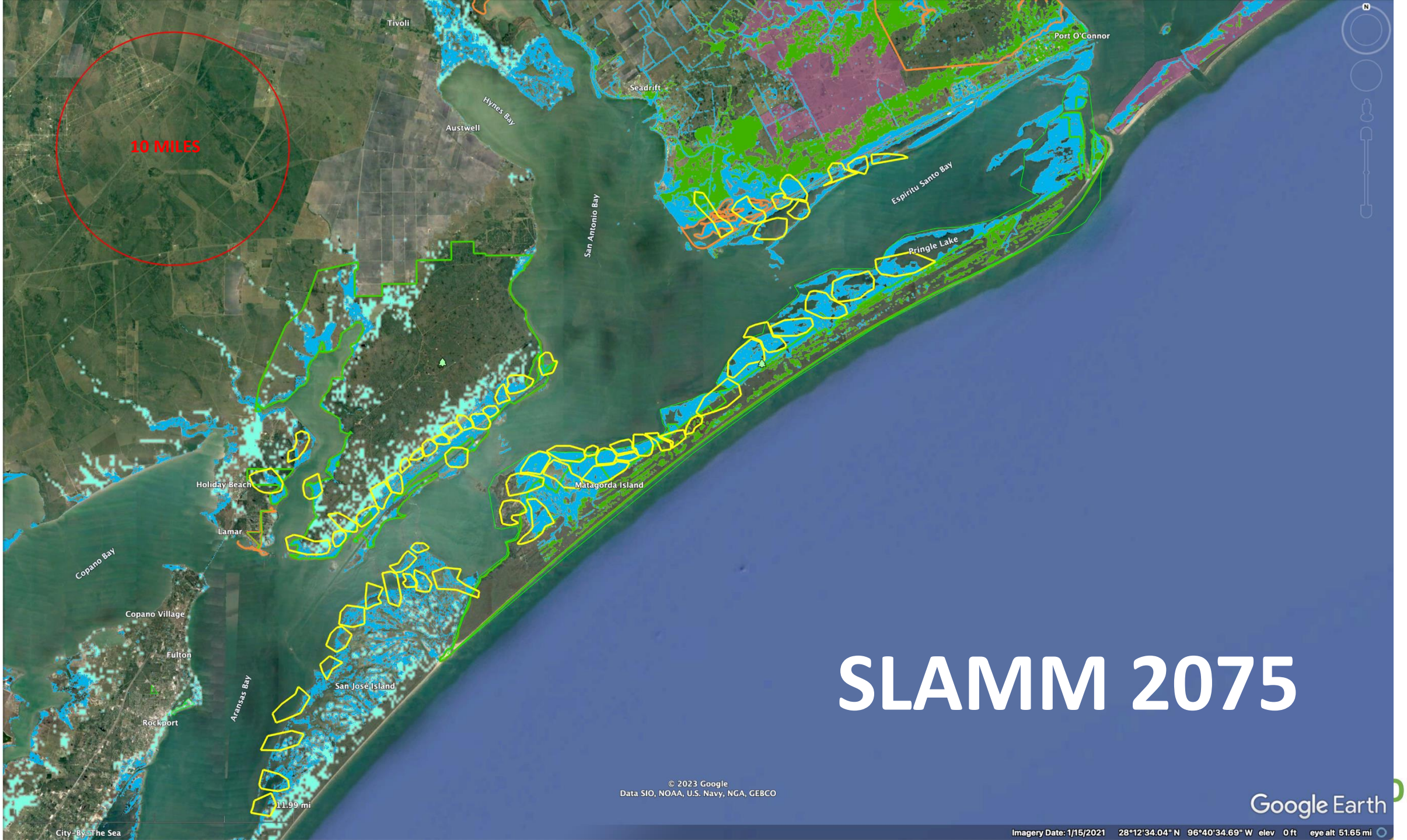
Tivoli
Austwell
Hynes Bay
Seadrift
Port O'Connor
San Antonio Bay
Espiritu Santo Bay
Pringle Lake
Holiday Beach
Matagorda Island
Lamar
Copano Bay
Copano Village
Fulton
Rockport
Aransas Bay
San José Island
11.99 mi
City-By-The Sea
© 2023 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Google Earth
Imagery Date: 1/15/2021 28°22'27.11" N 97°10'13.15" W elev 0 ft eye alt 51.65 mi
NWI 2023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Copano Village
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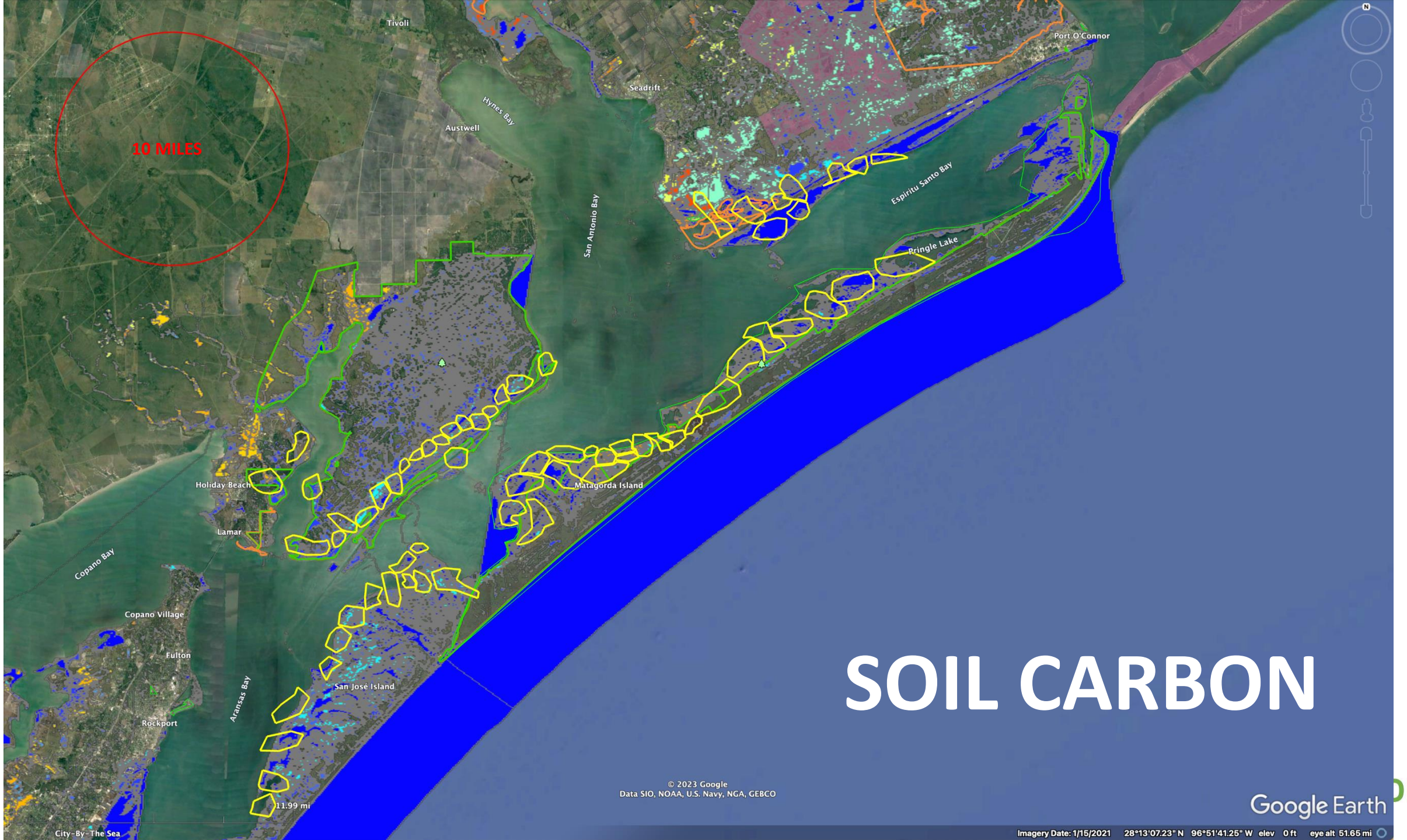
SLAMM 2075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San Antonio Bay
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Ringle Lake
Holiday Beach
Matagorda Island
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Copano Bay
Copano Village
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SOIL CARBON


10 MILES
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Port O'Connor
Seadrift
Hynes Bay
Austwell
San Antonio Bay
Espiritu Santo Bay
Pringle Lake
Holiday Beach
Matagorda Island
Lamar
Copano Bay
Copano Village
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MATAGORDA ISLAND
POTENTIAL PROJECT AREA
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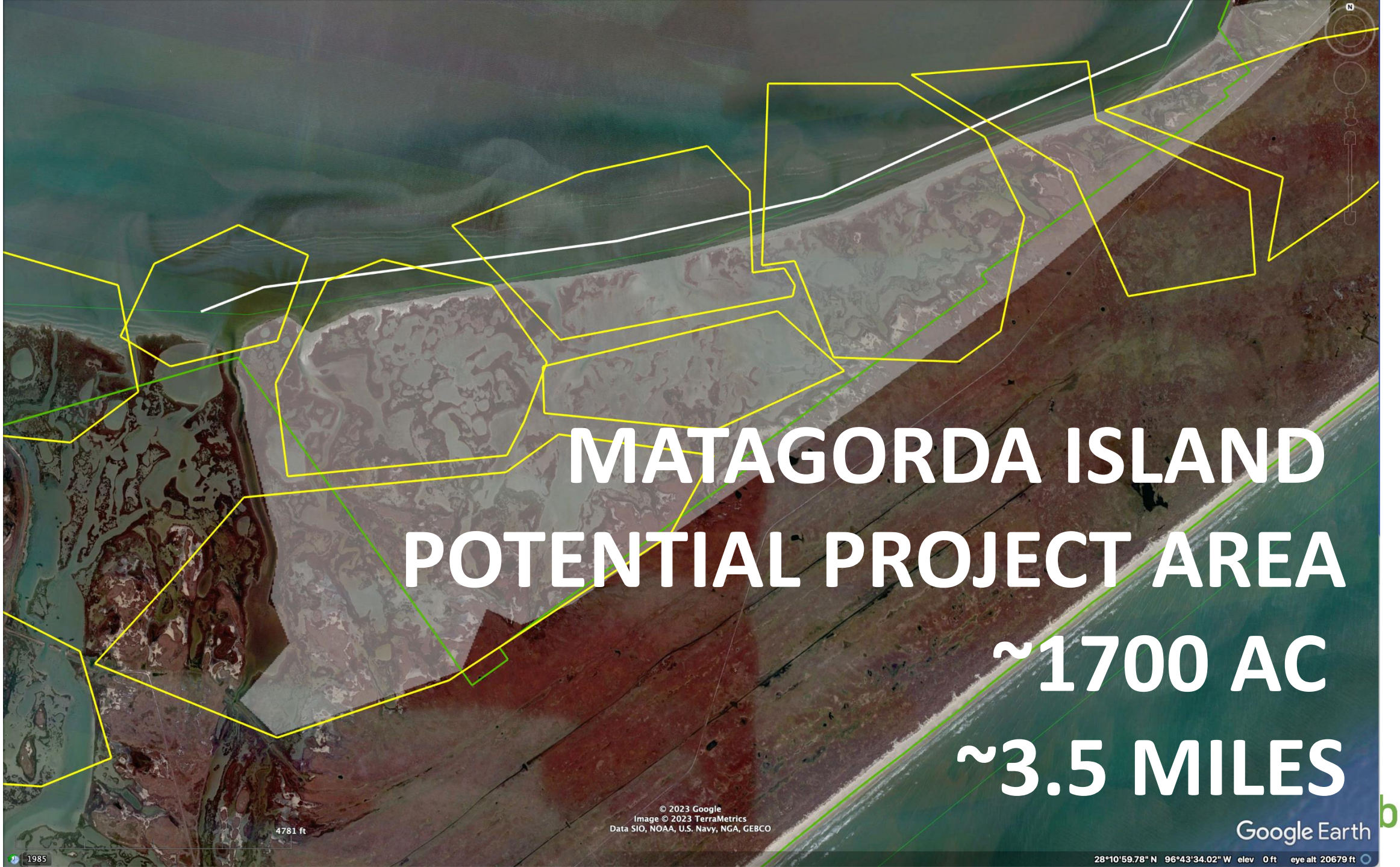
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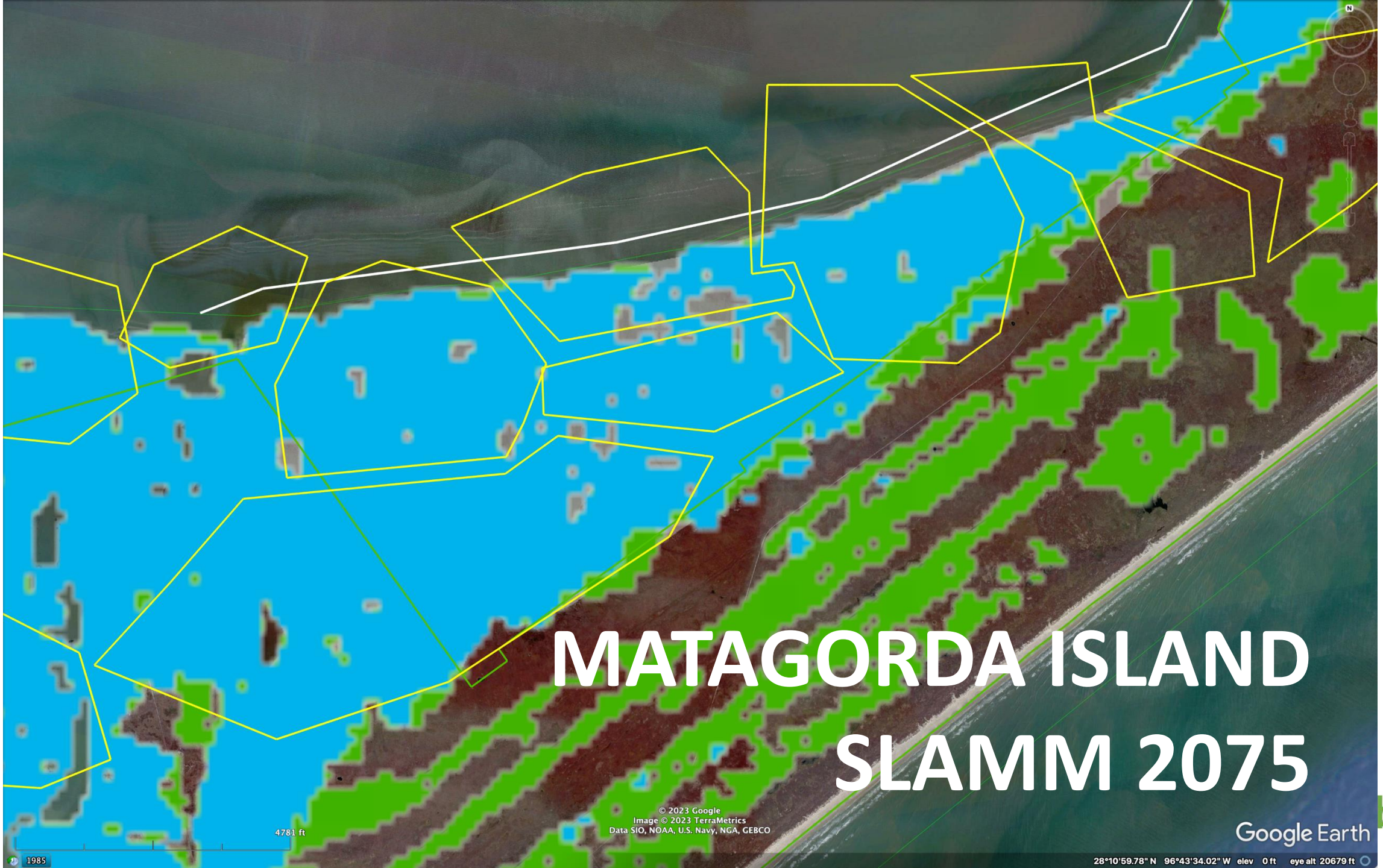
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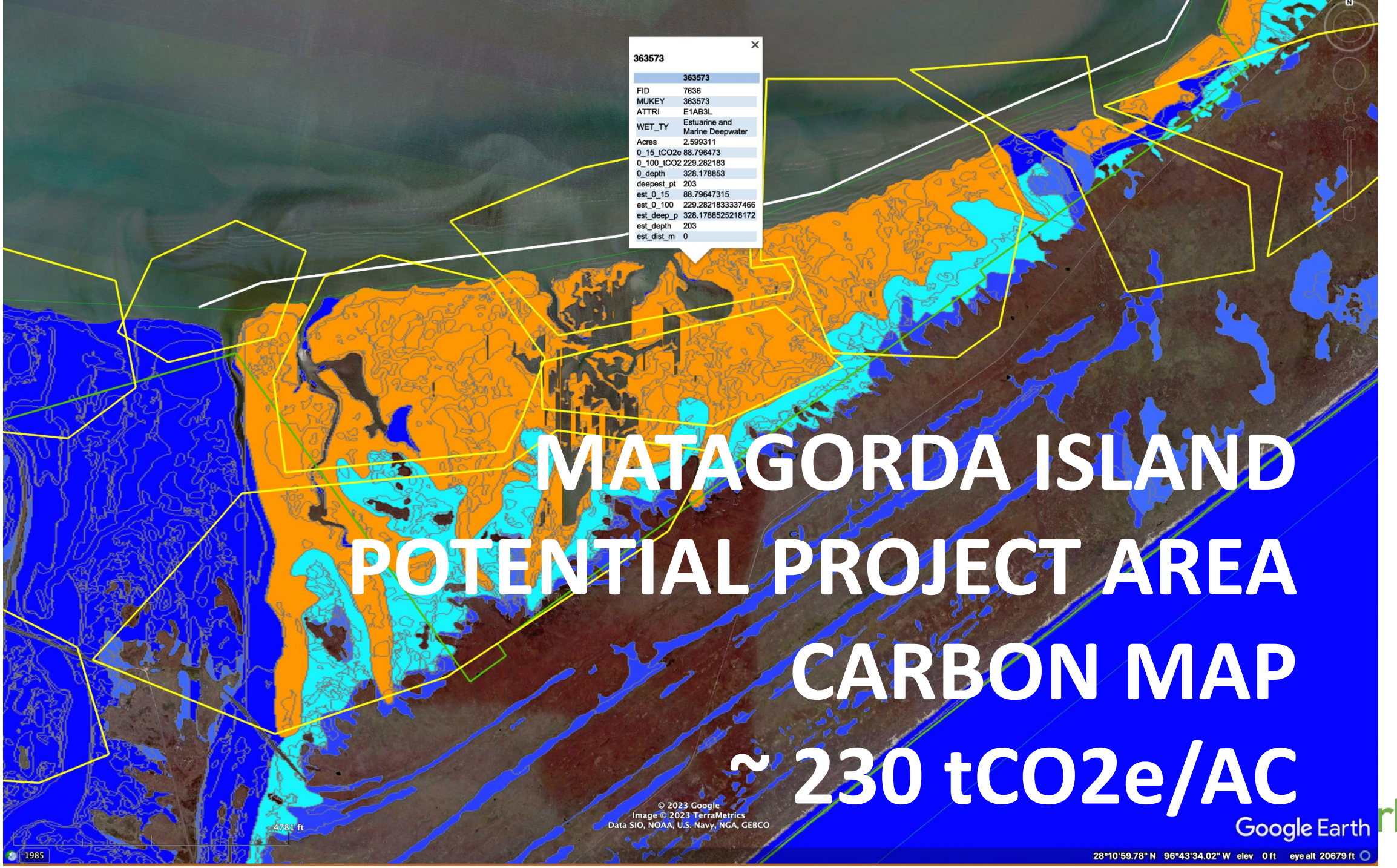
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WET_TY Estuarine and Marine Deepwater
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0_100_tCO2 229.282183
0_depth 328.178853
deepest_pt 203
est_0_15 88.79647315
est_0_100 229.2821833337466
est_deep_p 328.1788525218172
est_depth 203
est_dist_m 0
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POTENTIAL PROJECT AREA
CARBON MAP
~ 230 tCO2e/AC
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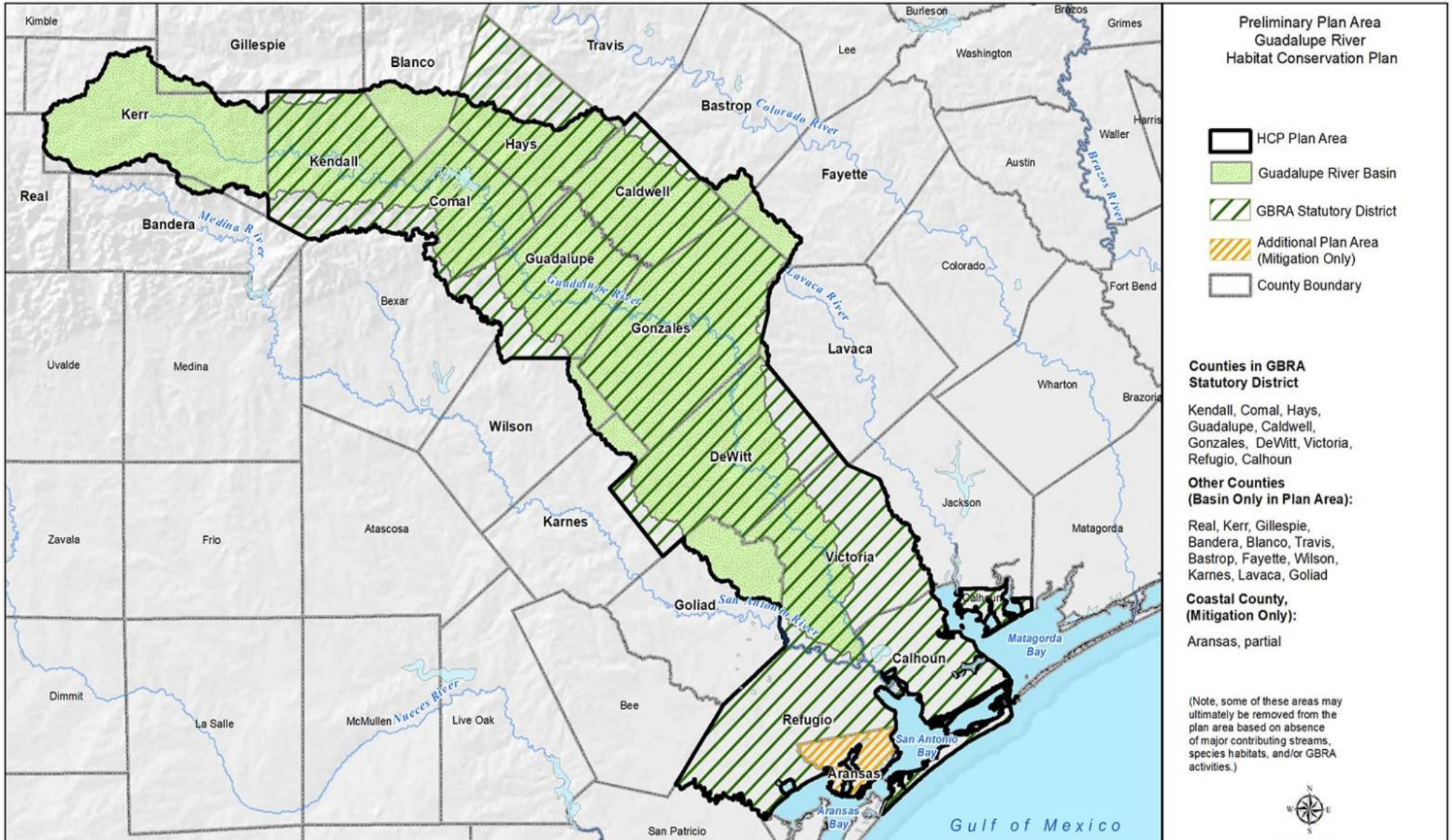

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