Preliminary Inventory of Conservation, Restoration, and Protection sites: San Antonio Bay System

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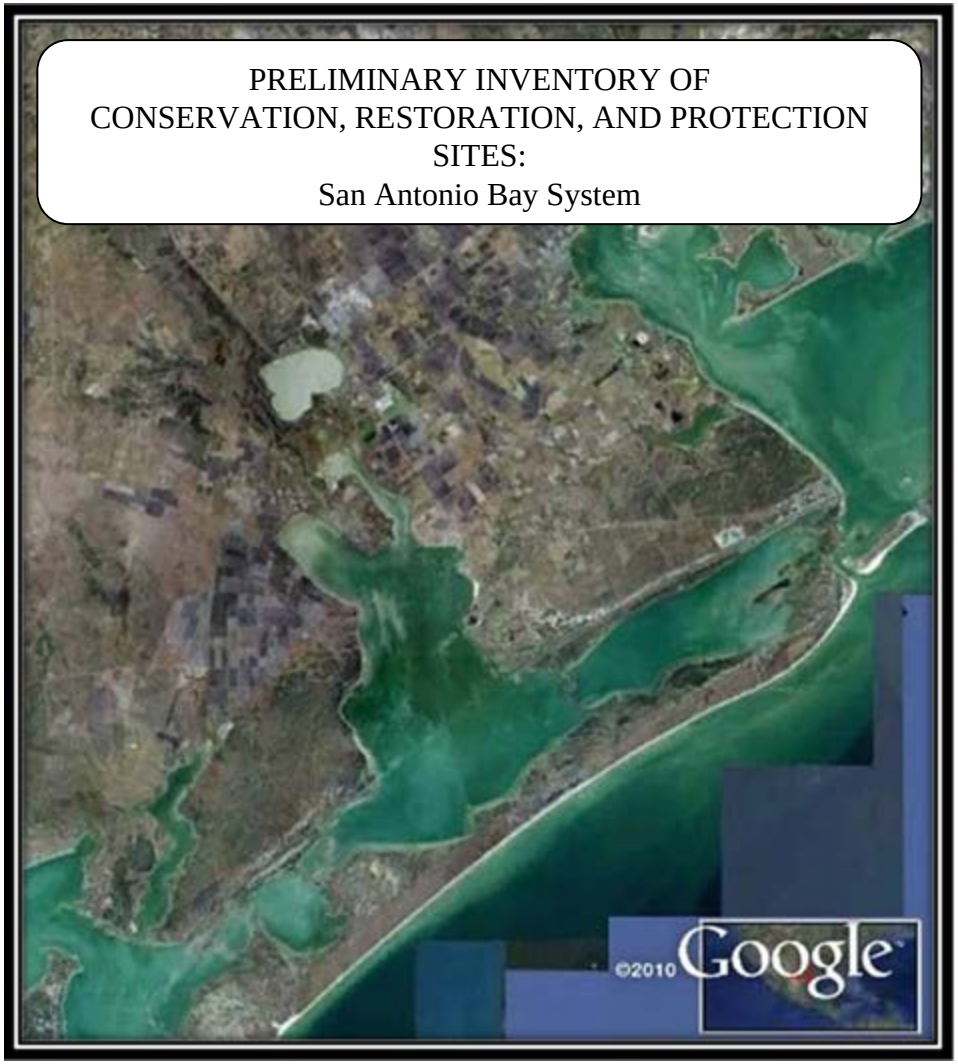
01 September 2011

PRELIMINARY INVENTORY OF CONSERVATION, RESTORATION, AND PROTECTION SITES:
San Antonio Bay System



Prepared by
The Center for Coastal Studies at Texas A&M University-Corpus Christi, in conjunction with the San Antonio Bay Partnership, under a contract with the Coastal Bend Bays and Estuaries Program

31 August 2011

Funding Provided by: Coastal Bend Bays & Estuaries Program, Inc.

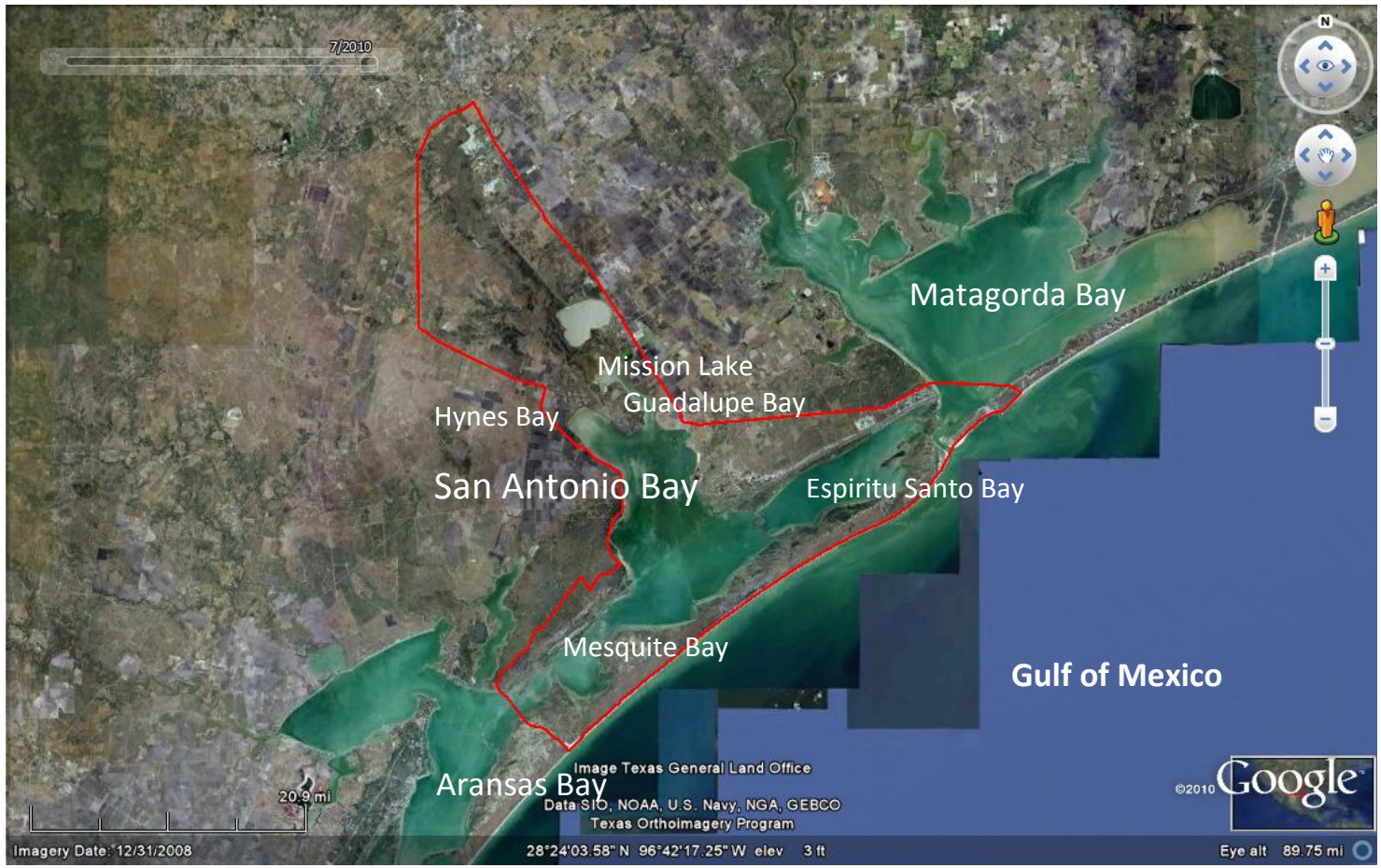
Process facilitated by:
San Antonio Bay Partnership

Project Timeline

- Contract Amount: $15,000
- Project Began 1 April 2011
- Draft Report 31 July 2011
- Final Report 31 August 2011

Staff: Nikki Davis @50% April-August
Project Management: Liz Smith & James Dodson
CBBEP Project Management: Rosario Martinez

Project Area



San Antonio Bay System

- Large estuarine complex, 531 km2
- Ecosystem supports endangered Whooping Crane (*Grus americana*), nesting colonial waterbirds, migratory waterfowl, shorebirds, and important fisheries (oysters, shrimp)

San Antonio Bay System

- Predicted 67% or greater increase in low inflow
  - Increase in freshwater inflow presently, but predicted to have less in near future
- Major hydraulic modifications
- Multiple changes in habitat types
  - From 1950-1992, ~10% emergent coastal wetlands in Texas estuaries were lost

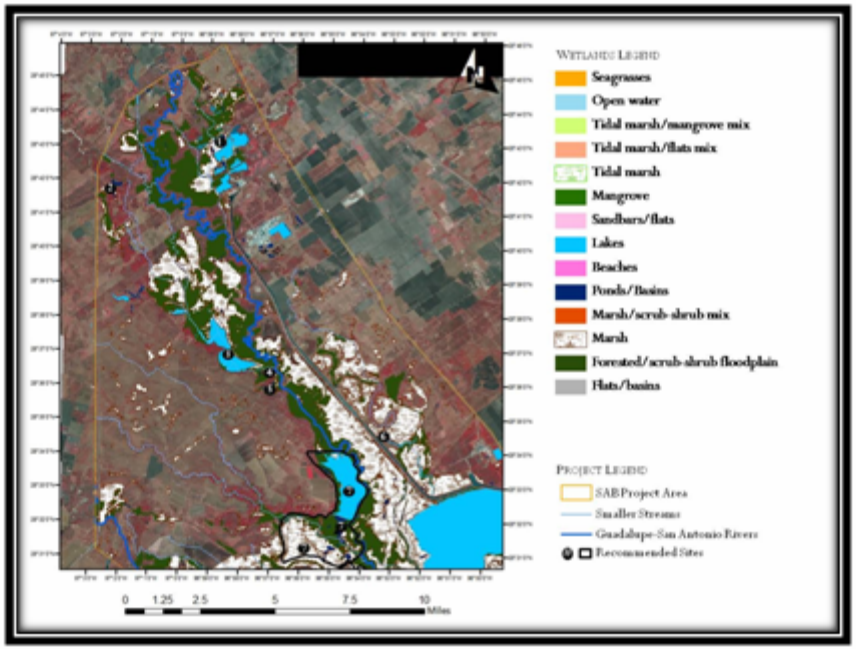
Project Background

- Site Inventory Approach
  - Proven helpful in Coastal Bend Bays & Estuaries Program area
  - Essential first step in building stakeholder support and involvement
  - Provides helpful information for next tasks, such as:
    - Compilation of scientific and technical information
    - Identifying priority issues
    - Producing a management plan

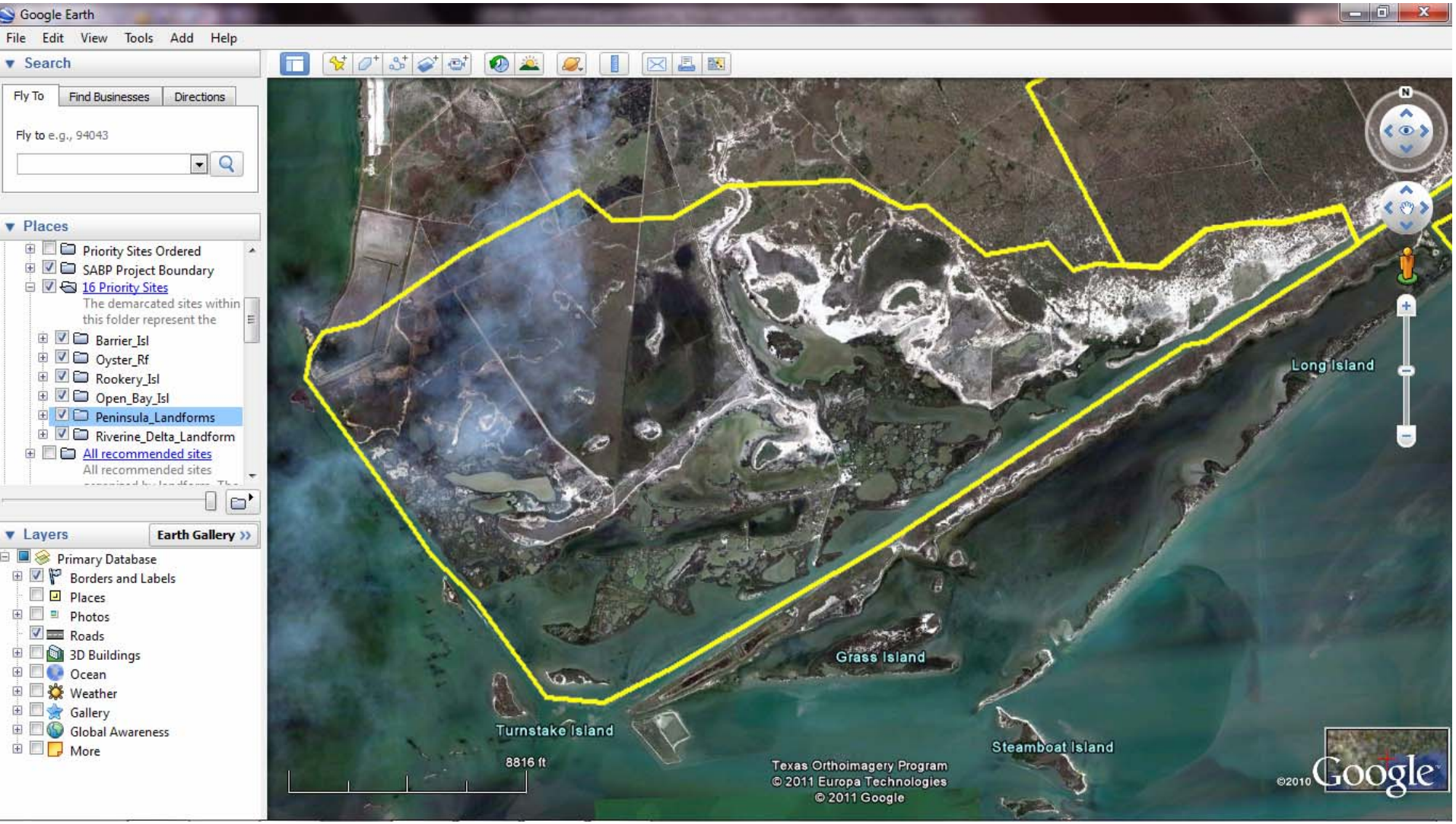
Project Tasks

- Create Inventory List
  - Characterize extent, type a functional quality of estuarine wetlands
  - Identify wetlands areas in need of "intervention"
  - Classify and quantify wetland areas by nature and extent of problem

GUADALUPE DELTA-RIVERINE SITES



Site Number	Site Name	Land Ownership	Conservation Strategy	Potential Partners	Species
1	I Sand Pit	Private	Restore habitat from disturbance		Colonial waterbirds including Least Tern nesting
2	Marthijohnni Swamp	Private	Restoration and management plan to keep rookery wet during nesting season	Landowner; USFWS; TPWD	Up to 8,000 nesting pairs of Herons, Egrets, Ibis, and other waterbird nesting colonies
3	Linn Lake	Private (multiple landowners)	Maintain overflow basin from siltation and local industry modification	Landowner; local industry; USFWS;	Colonial waterbirds and waterfowl nest, and Bald Eagle nests nearby


Google Earth
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Places
Priority Sites Ordered
SABP Project Boundary
16 Priority Sites
The demarcated sites within this folder represent the
Barrier_Isl
Oyster_Rf
Rookery_Isl
Open_Bay_Isl
Peninsula_Landforms
Riverine_Delta_Landform
All recommended sites
All recommended sites
Layers
Earth Gallery
Primary Database
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Long Island
Grass Island
Turnstake Island
Steamboat Island
8816 ft
Texas Orthoimagery Program
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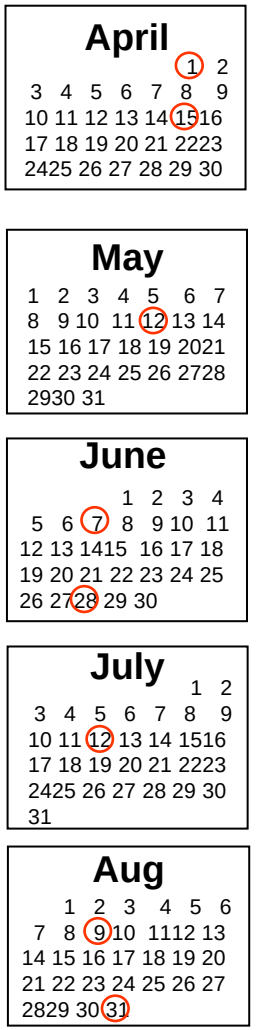
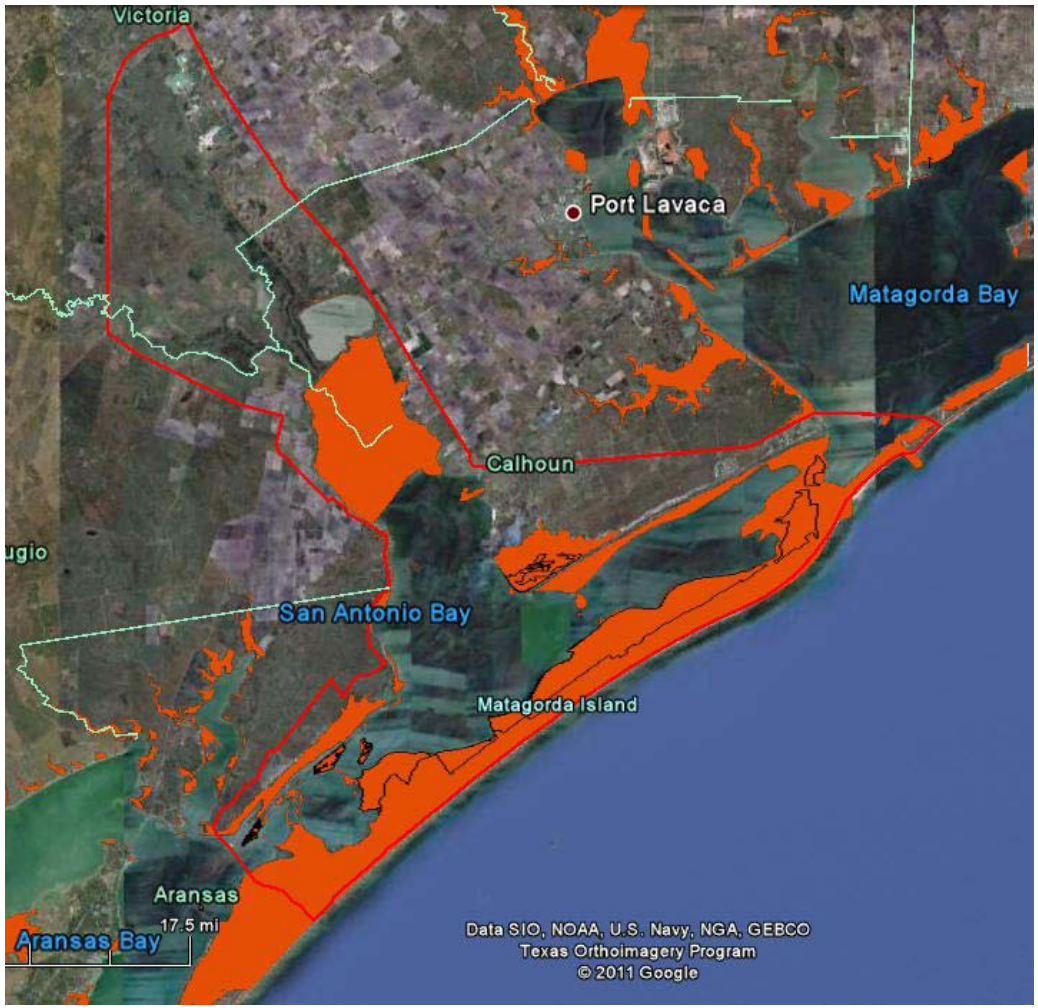
Stakeholder Input

- SABP Advisory Group
  - Review project – April 1
  - Provide guidance on stakeholder development – April 15
- Stakeholder Meetings
  - Site Identification – May 12
  - Site Identification and Prioritization process – June 7
  - Review of Site Map, Info, and Prioritization – July 12
  - Report Presentation – August 9



Digital Imagery

- NWI
- NHD Flowline
- StratMap
- SLAMM
- USFWS critical habitat
- TOP imagery
- TGLO data
- TPWD data

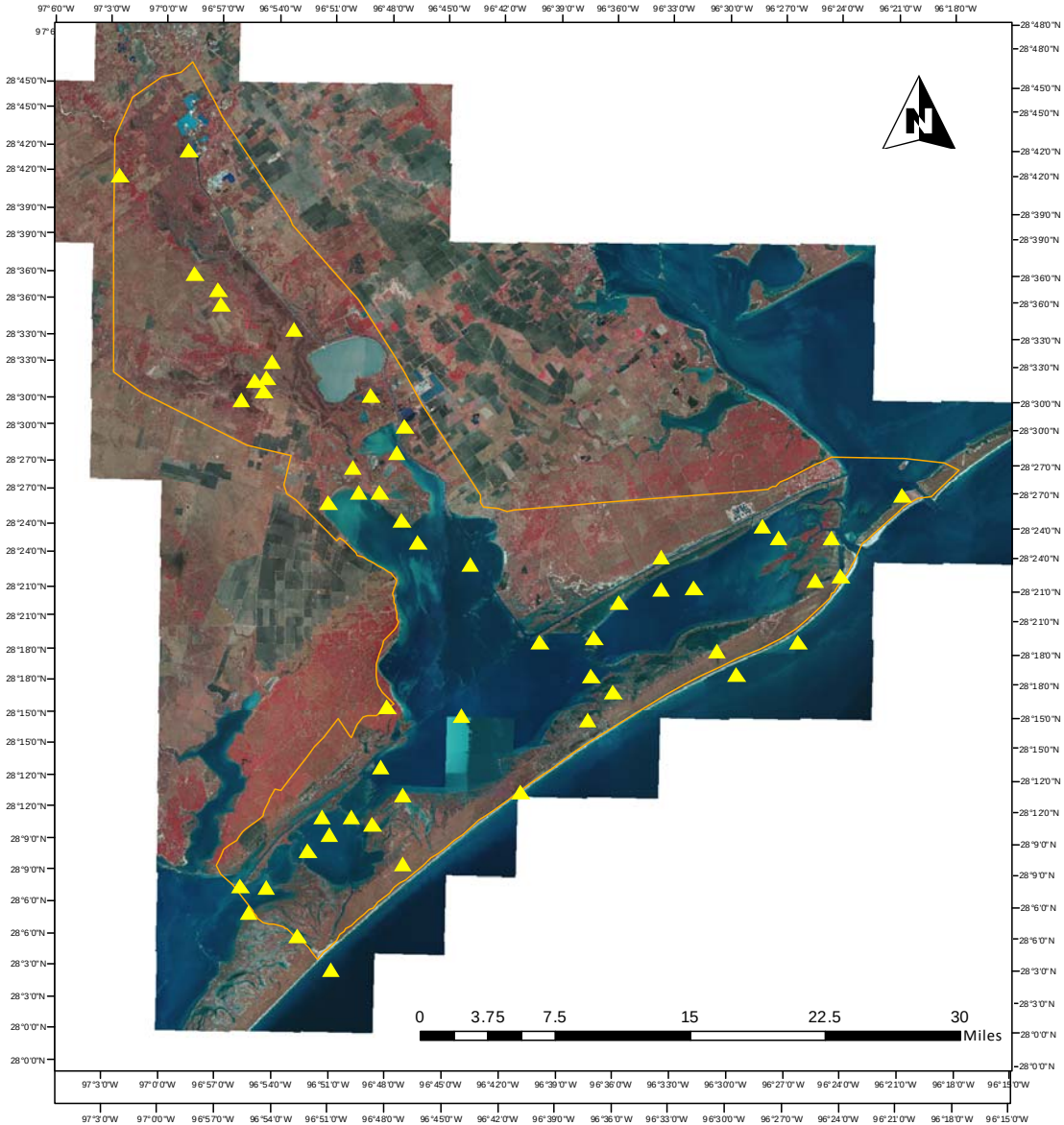


Results

- Landforms
  - Riverine/delta
  - Peninsula
  - Open bay
  - Barrier island

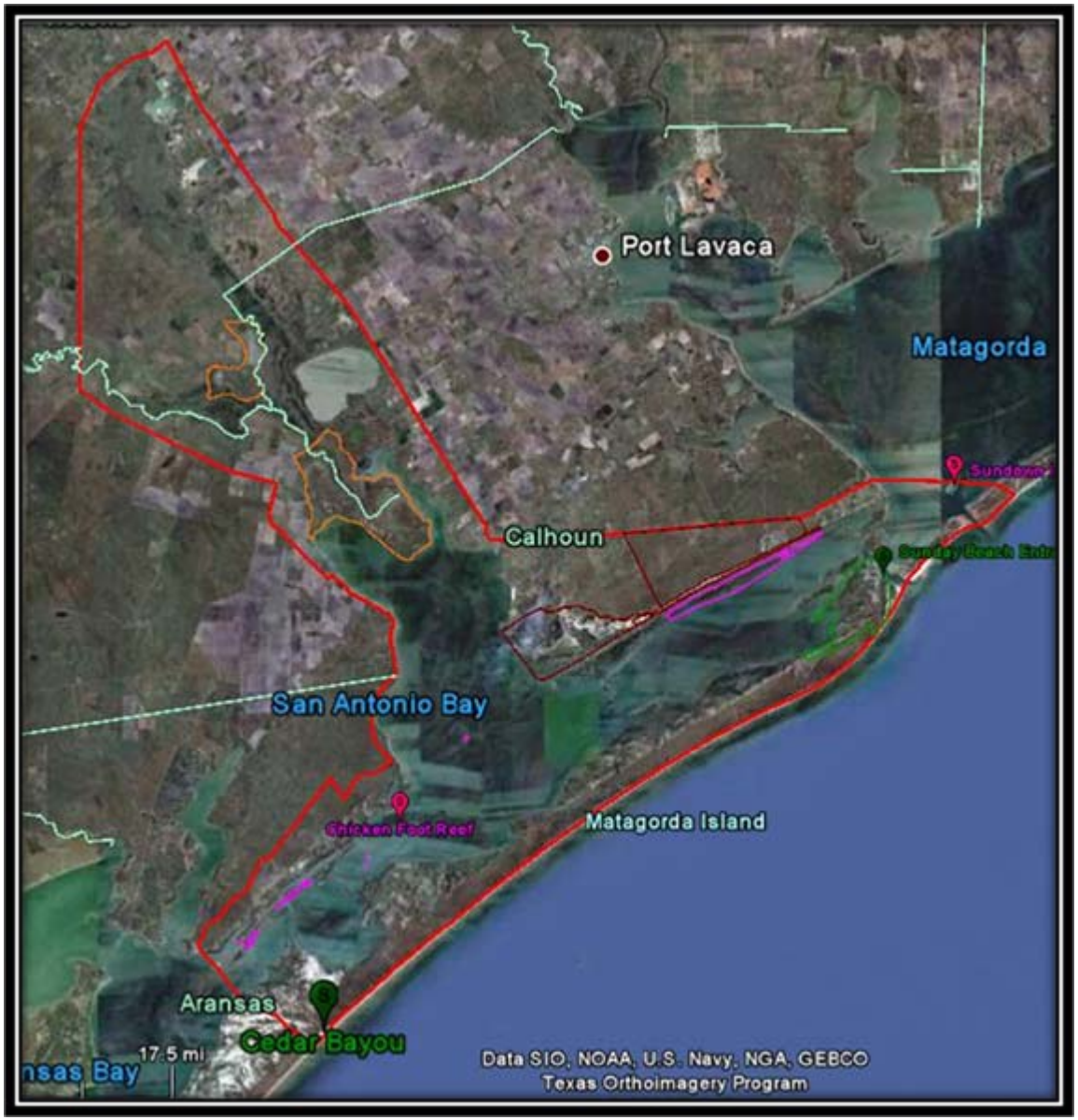
Results

- 51 total sites
  - Tidal marsh
  - Sandbars
  - Marsh
  - Forested floodplain
  - Seagrasses
  - Oyster reefs
  - Rookeries



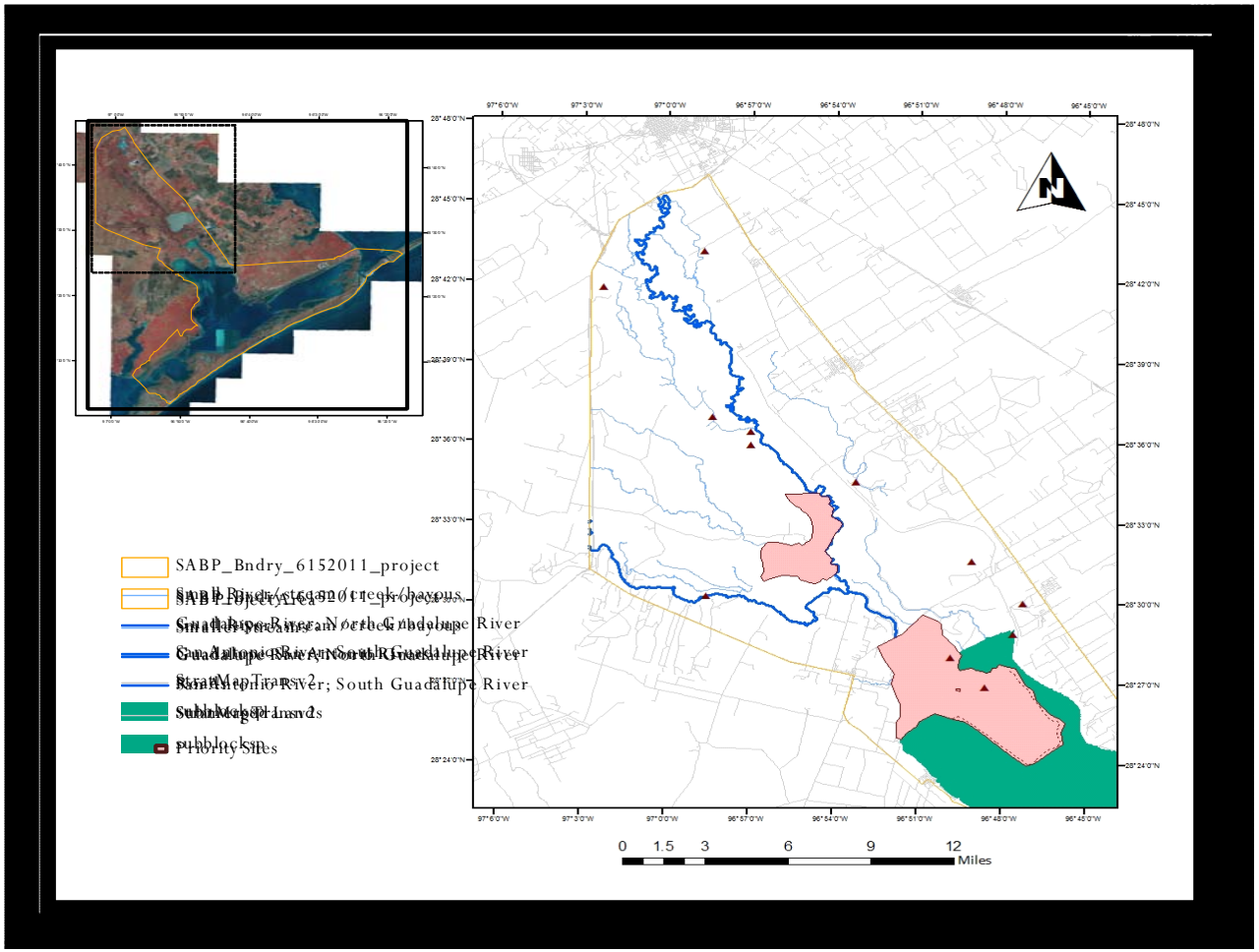
Results

- 16 Priority Sites
  - Guadalupe Fields
  - Guadalupe Delta
  - Log Jams
  - Welder Flats
  - Seadrift-POC x2
  - Bludworth Island
  - Grass Island
  - Cedar Bayou
  - Sunday Beach
  - Chicken Foot Reef
  - 2nd Chain Islands
  - Big Bird Island
  - Sundown Island
  - J-Hook Marsh



Format Example

Riverine/Delta Sites

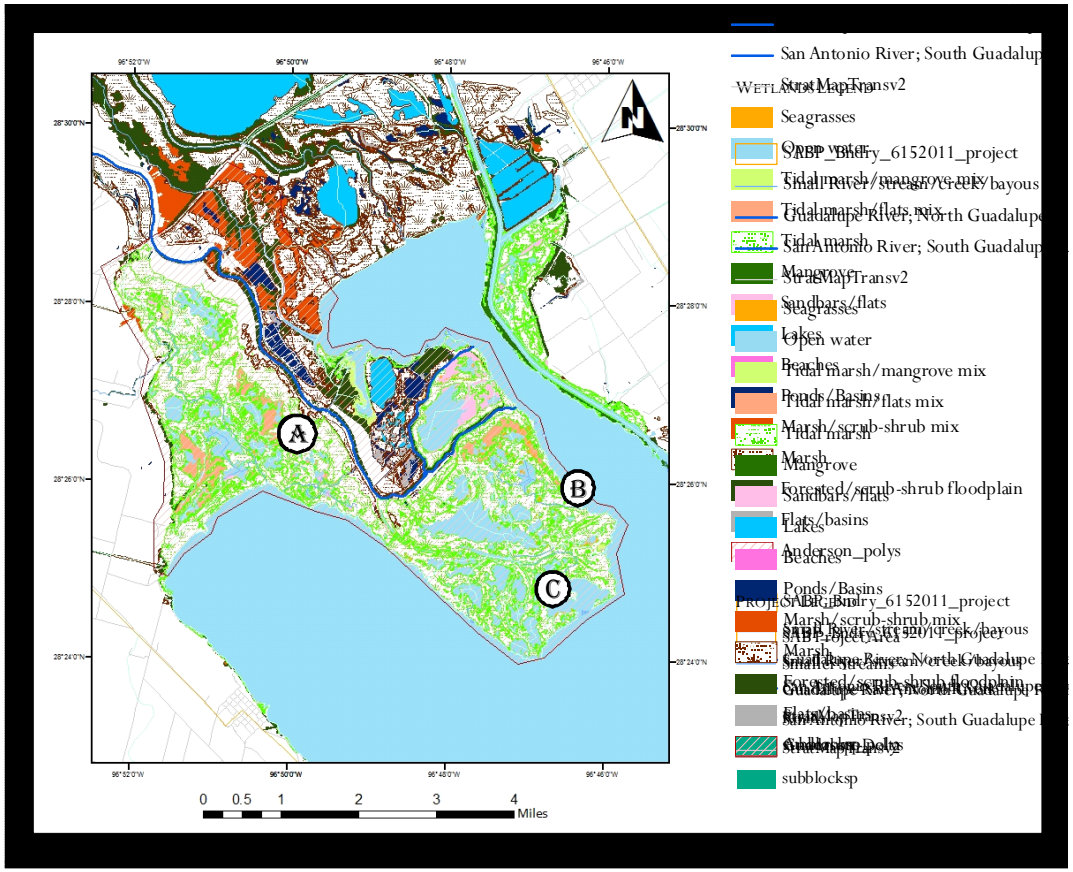


Format Example

Priority 1- Guadalupe Delta

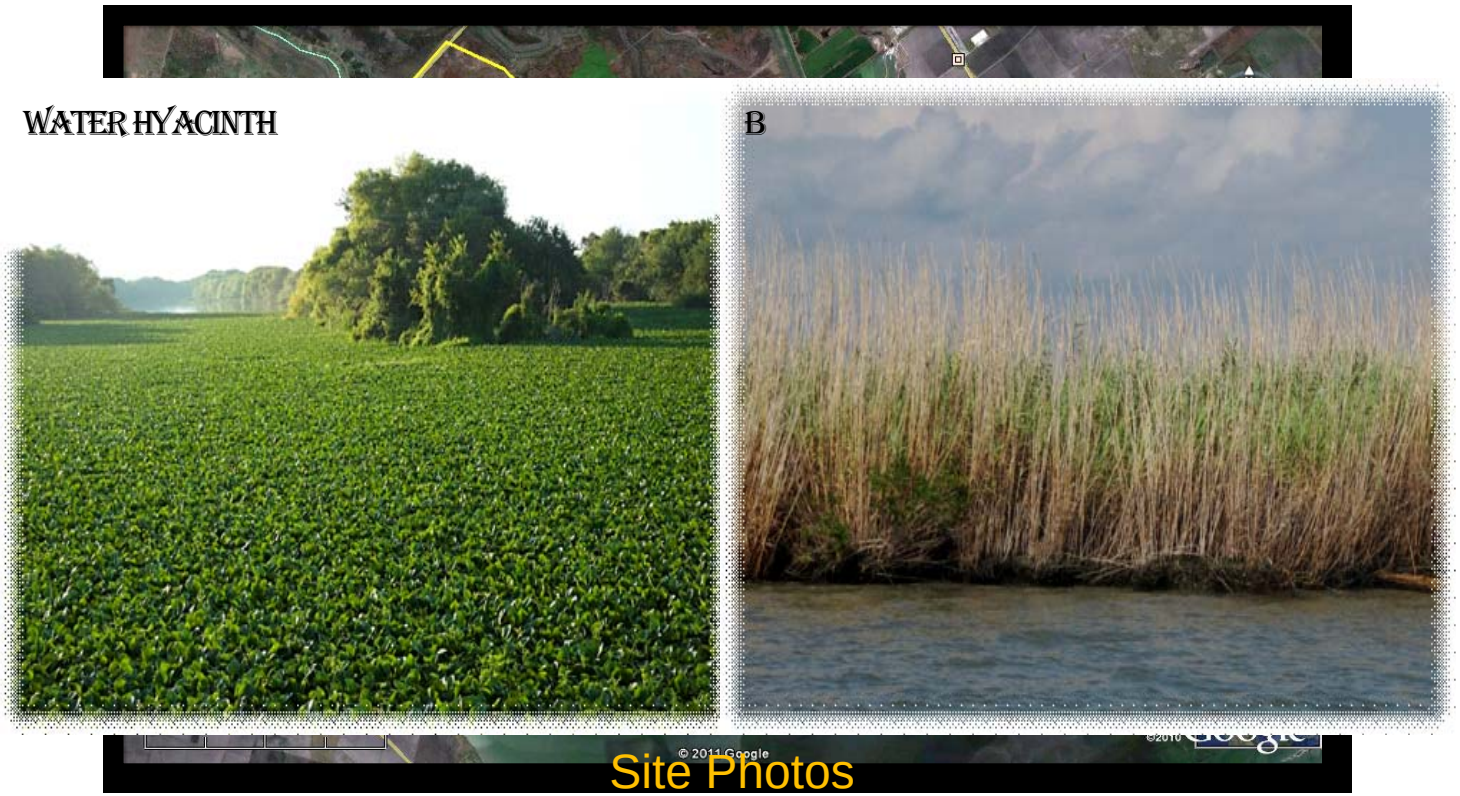
Traylor's Cut: located on the lower Guadalupe River; diverts silt and water from the delta causing the delta marsh to deteriorate and erode;
Guadalupe Delta Shoreline: eroding shoreline due to Traylor's Cut and wave energy
Swan Point Ranch: potential land acquisition or conservation easement to protect wildlife habitat;
Potential Partners: USFWS, TNC, NRCS, TPWD
Potential Funding: $500K-$3M

Conservation Status: The Guadalupe Delta encompasses habitat that supports colonial waterbirds, waterfowl, herons, egrets, and avocets. Additionally, the Delta has potential endangered Whooping Crane habitat; restoration and wetland habitat enhancement is needed to prevent marsh subsidence and erosion from the lack of siltation due to Traylor's Cut. Lastly, invasive plant removal is needed throughout the lower portion of the Guadalupe River ; i.e. elephant ears, water hyacinth, giant cane, and Chinese tallow.



Owner: Public and Private
Size: ~12,830 acres

Guadalupe Delta

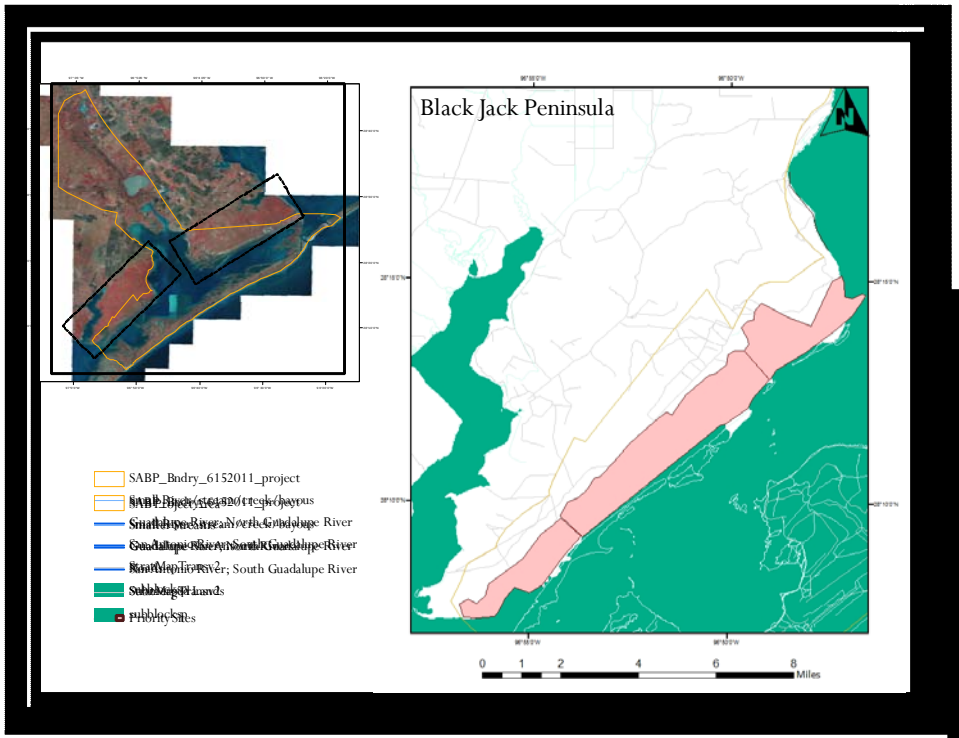


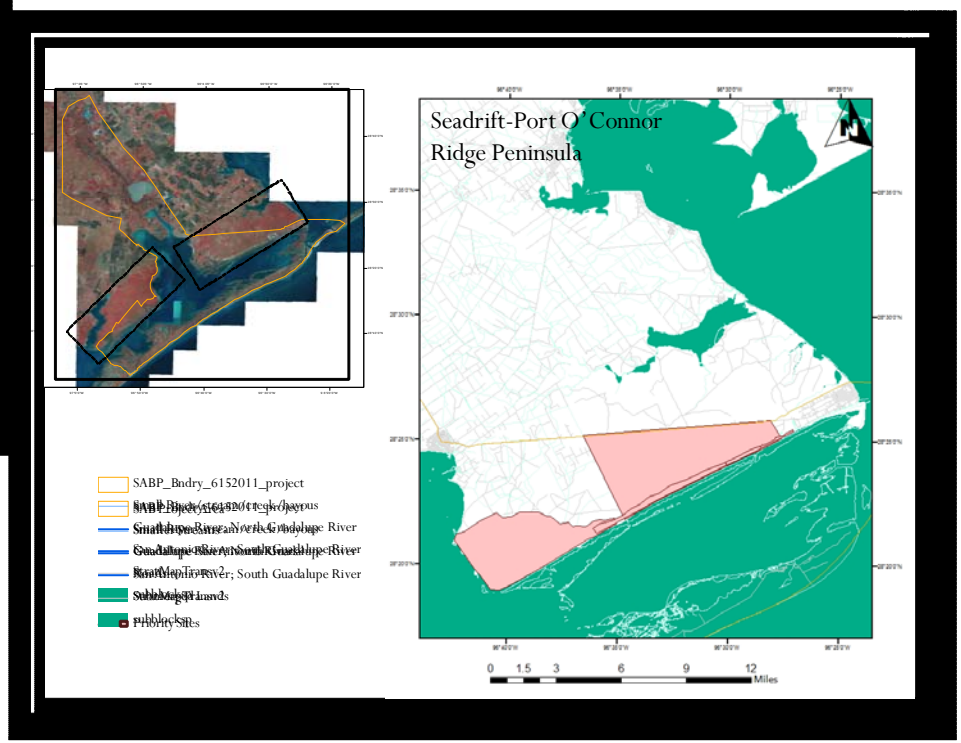
Site Photos

Google Earth Imagery

Format Example

Peninsula Sites





Format Example

Priority 2- Welder Flats

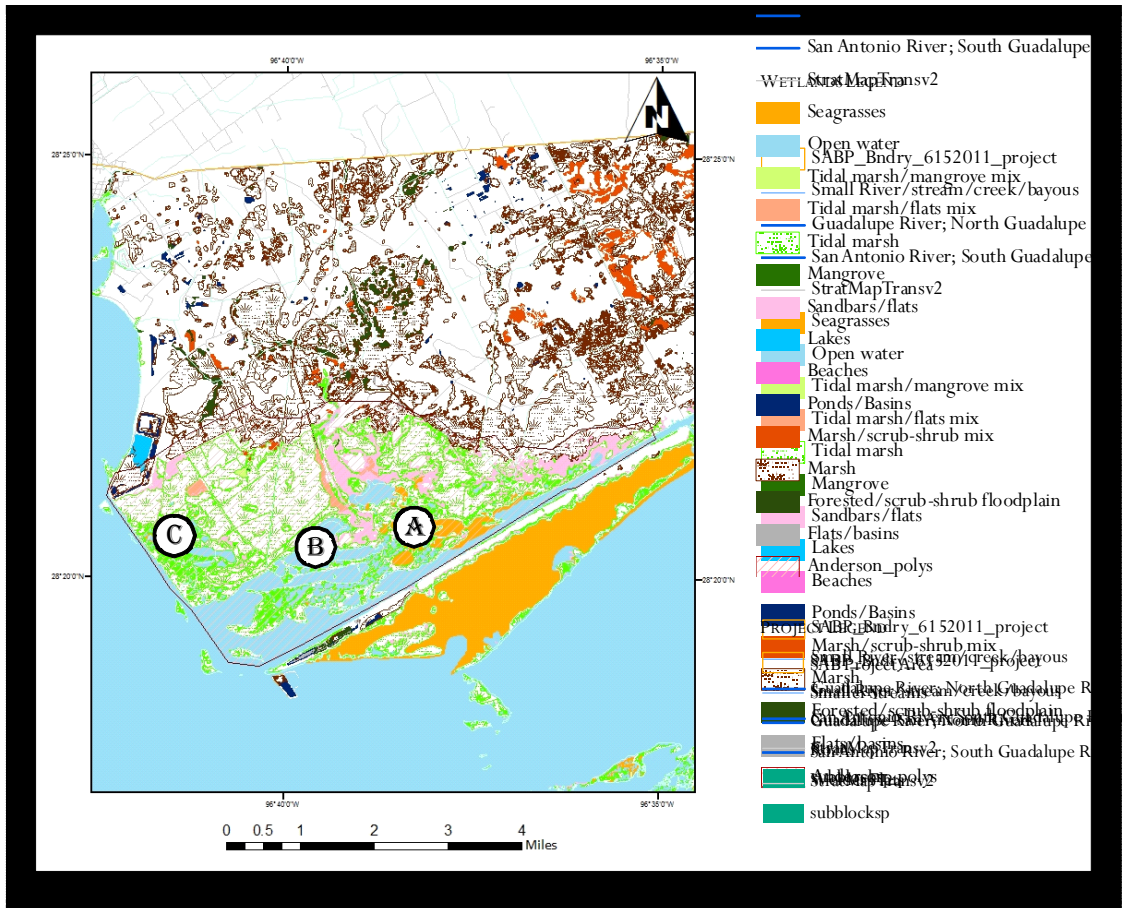
Description- Welder Flats wetlands; documented endangered Whooping Crane territories are present within all three wetland areas (Stehn and Prieto 2010)

- Welder Flats: Whooping Crane territories;
- Welder Flats: Whooping Crane territories;
- Welder Flats: Whooping Crane territories;

Potential Partners: USFWS, TNC, NRCS, TPWD, ICF, GBRA, GBRT, SABF

Potential Funding: $100K-$1.5M

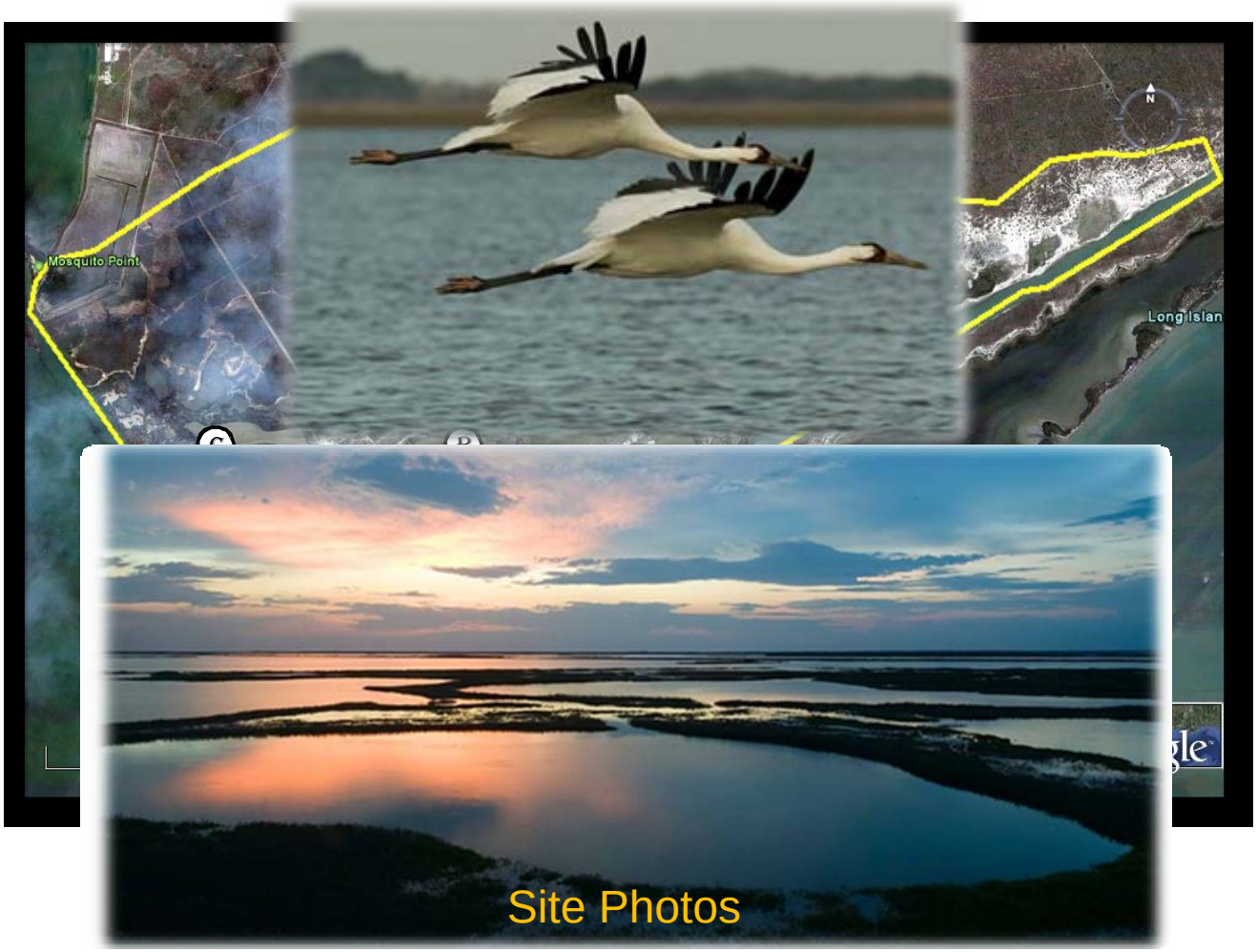
Conservation Status: Certain sections of Welder Flats are either in a conservation easement or a conservation strategy is being developed. The Welder Flats sites encompass essential habitat for the present and future endangered Whooping Cranes population, especially in the event of relative sea-level rise. Additionally, hydrologic restoration needs to be conducted to restore natural sheetflow from roads where it has been altered by the construction of drainage ditches, shoreline protection needs to be developed for GIWW wave erosion, and mangrove establishment needs to be managed.



Owner: Private

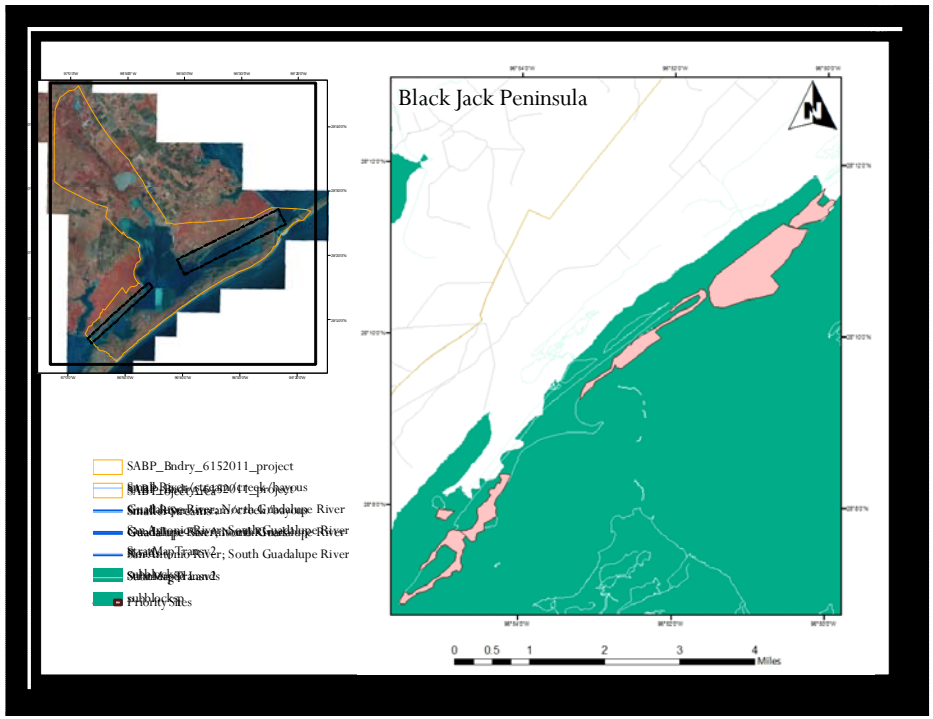
Size: ~8,991 acres

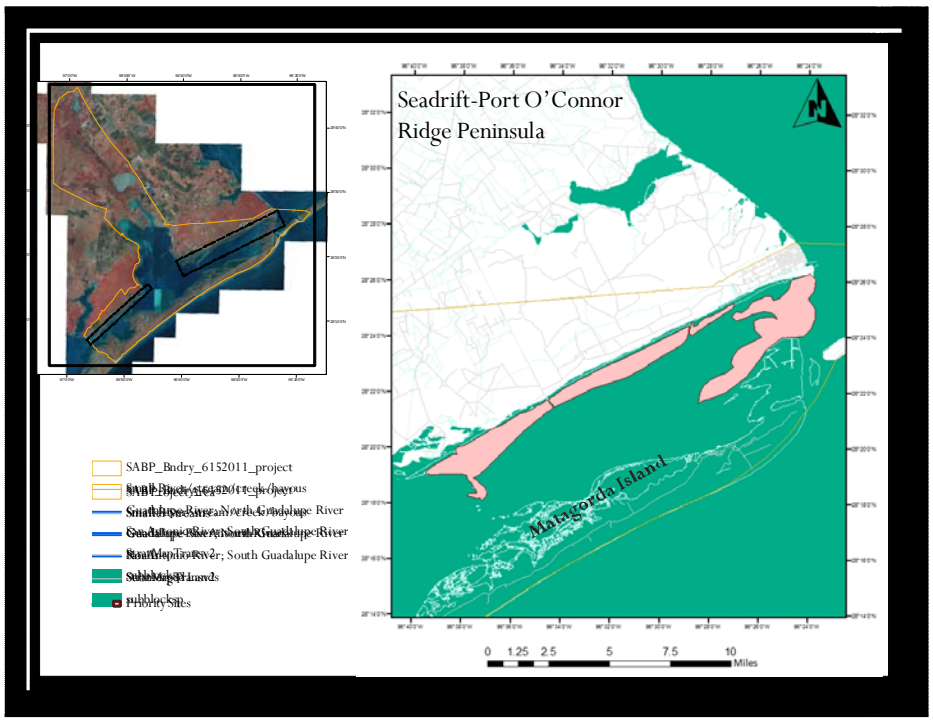
Welder Flats



Format Example

Open Bay Sites-Rookery Islands

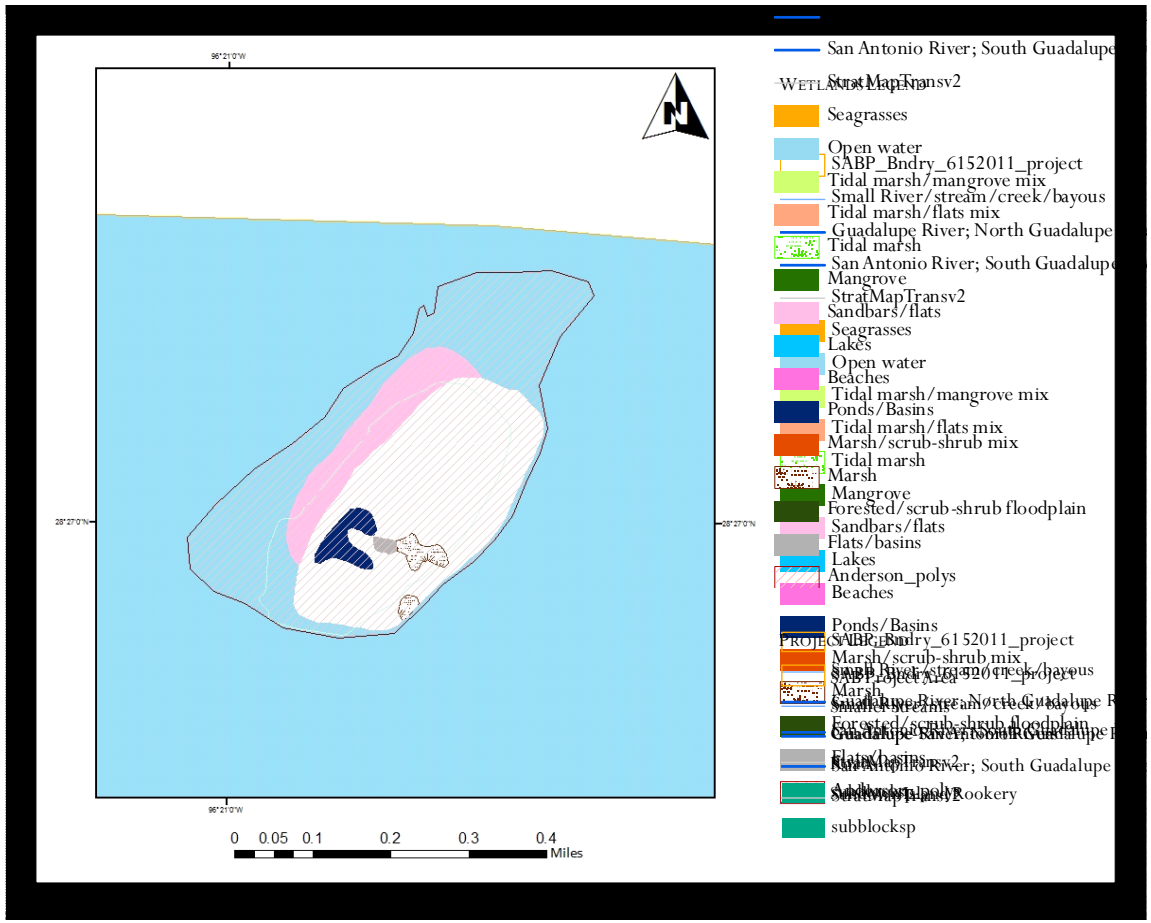




Format Example

Priority 1- Sundown Island

Description-Sundown (Bird) Island Rookery- largest colonial waterbird site in the San Antonio Bay system;
Potential Partners: USFWS, TNC, NRCS, TPWD, GBRA, GBRT, SABF
Potential Funding: $50K-$1.5M
Conservation Status: Restoration is needed to replace land lost from erosion and a management plan needs to be implemented to maintain the island for future colonial waterbird nesting.



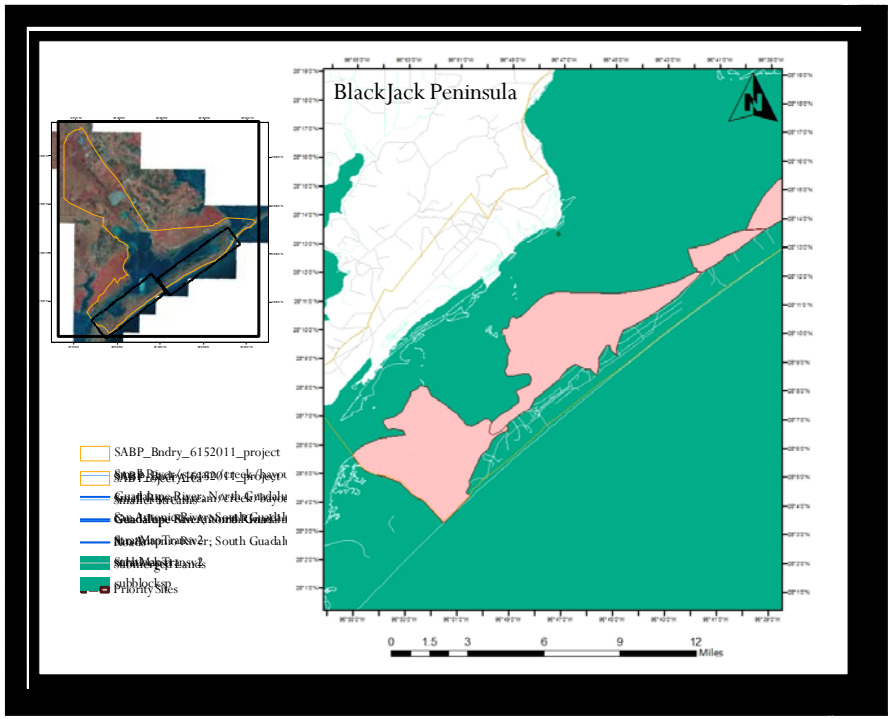
Owner: TGLO leased to Audubon Society
Size: ~84 acres

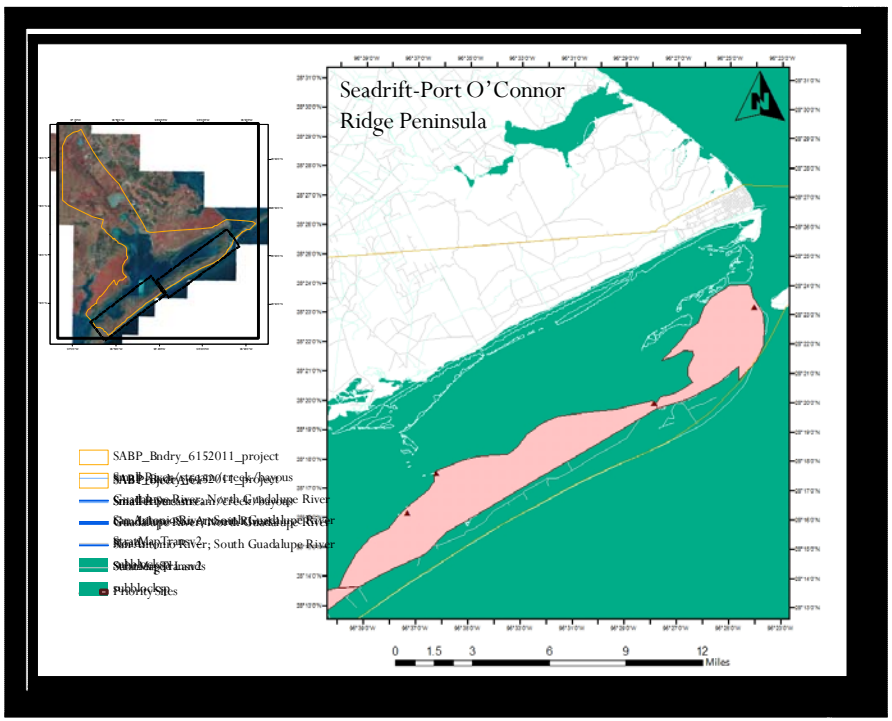
Sundown Island

Site Photos

Format Example

Barrier Island Sites



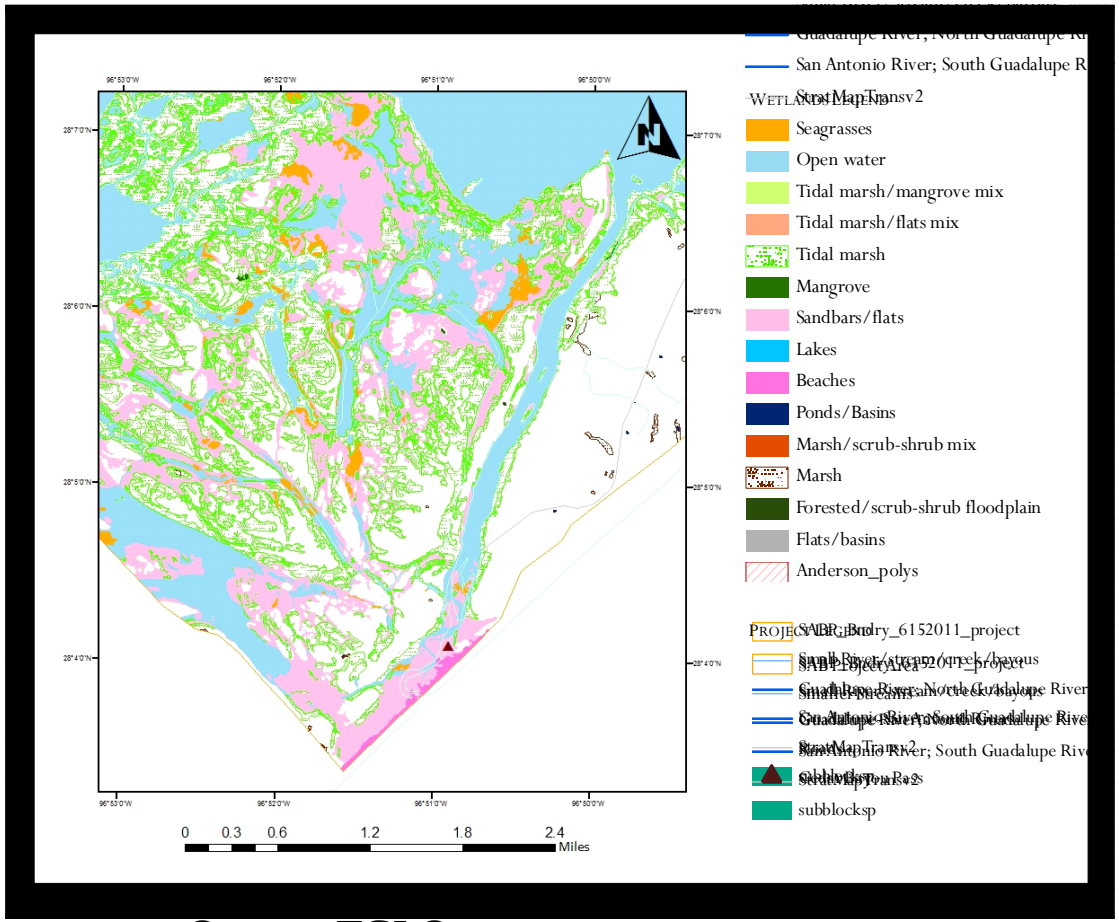


Format Example

Priority 2- Cedar Bayou Pass

Description-Cedar Bayou Pass-pass was regularly open to the Gulf of Mexico;
Potential Partners: TGLO, USFWS
Potential Funding: $2M-$4M

Conservation Status: Hydrologic restoration and enhancement is needed to allow water exchange between the Gulf of Mexico and the San Antonio Bay system.



Owner: TGLO
Size: To be determined based on project scope

Cedar Bayou Pass

Google Earth Imagery

PRELIMINARY INVENTORY OF CONSERVATION, RESTORATION, AND PROTECTION SITES: SAN ANTONIO BAY SYSTEM

We are hopeful that the accomplishments produced within this report will provide the impetus for the San Antonio Bay Partnership and its' volunteer stakeholders to continue promoting conservation and stewardship activities in the important coastal ecosystem.