SAN ANTONIO RIVER AUTHORITY

Collaboration between the San Antonio River Authority and the San Antonio Bay Partnership

January 22, 2020

SARA Goals and Objectives

2013 – Implement strategies that improve and protect environmental flows.

2018 – Generate recognized and sustainable improvements to the health and safety of our creeks, rivers, estuaries and bays.

Creation of SABP

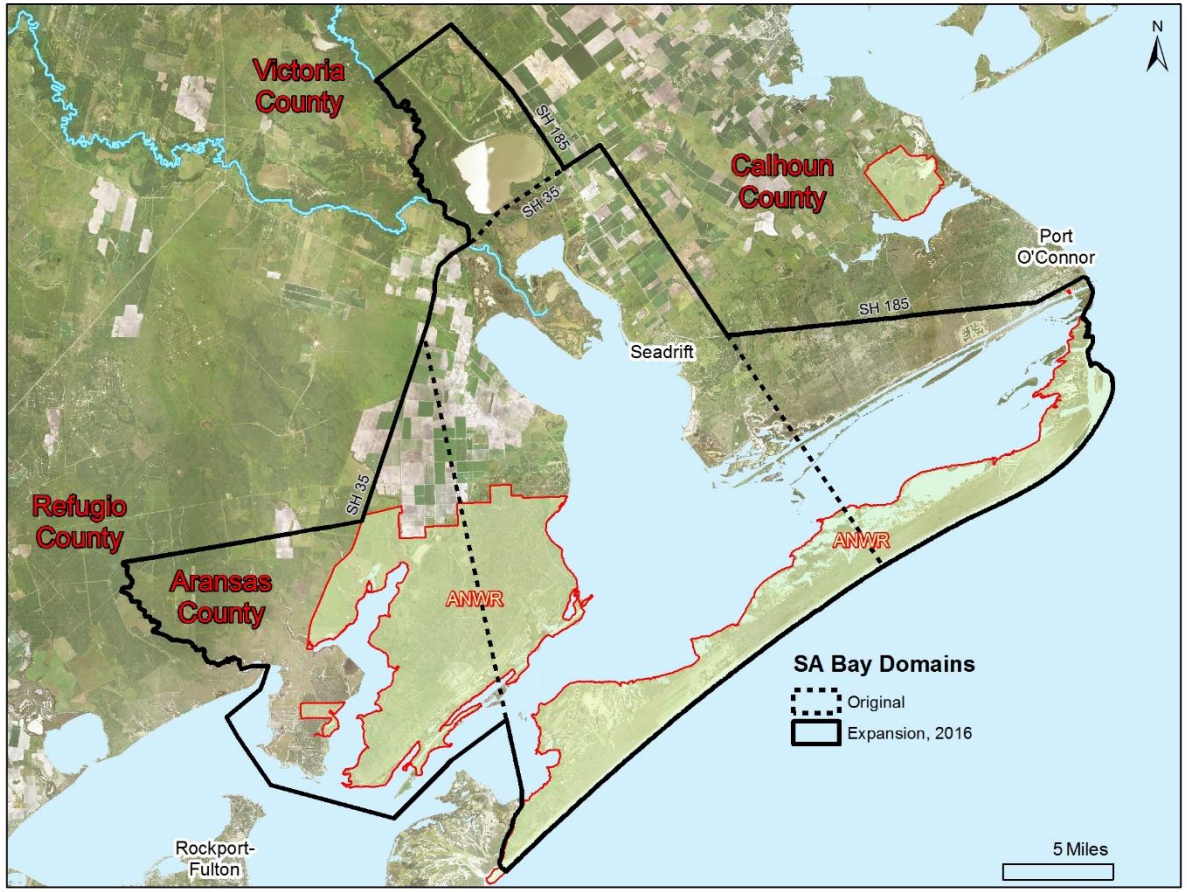
- SARA provided staff support to assist in the creation of the SABP
- Provided $4,000 in startup funds for 501(c)(3) application fee and other professional services
- Provided $25,000 local match to a Coastal Management Program Grant to develop a Habitat Conservation and Coastal Public Access Plan for the San Antonio Bay System

Ongoing SARA Support

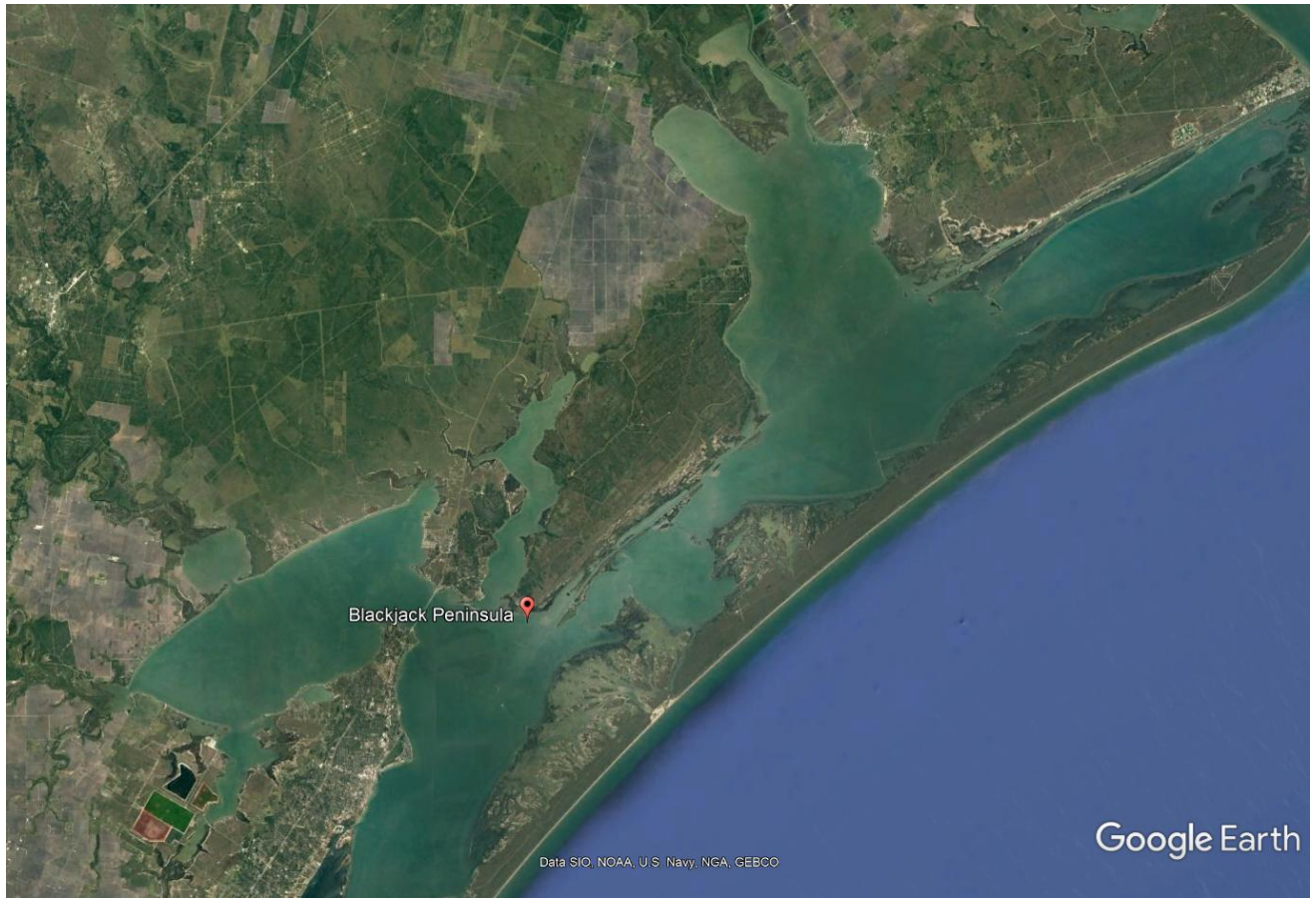
- Sponsor for San Antonio Bay Day since 2012
- Provided a $25,000 annual Challenge Grant since 2012 to match other fundraising efforts by the SABP
- Funded facilitation services for SABP strategic planning process
- Collaborate on educational activities regarding bay and estuary issues to the San Antonio River watershed
- Total financial support for SABP is $242,160

EDYS San Antonio Bay Model

- Initiated March 2011
- Ecological Dynamic Simulation (EDYS)
- Integrate hydrological and ecological responses to aid in decision making



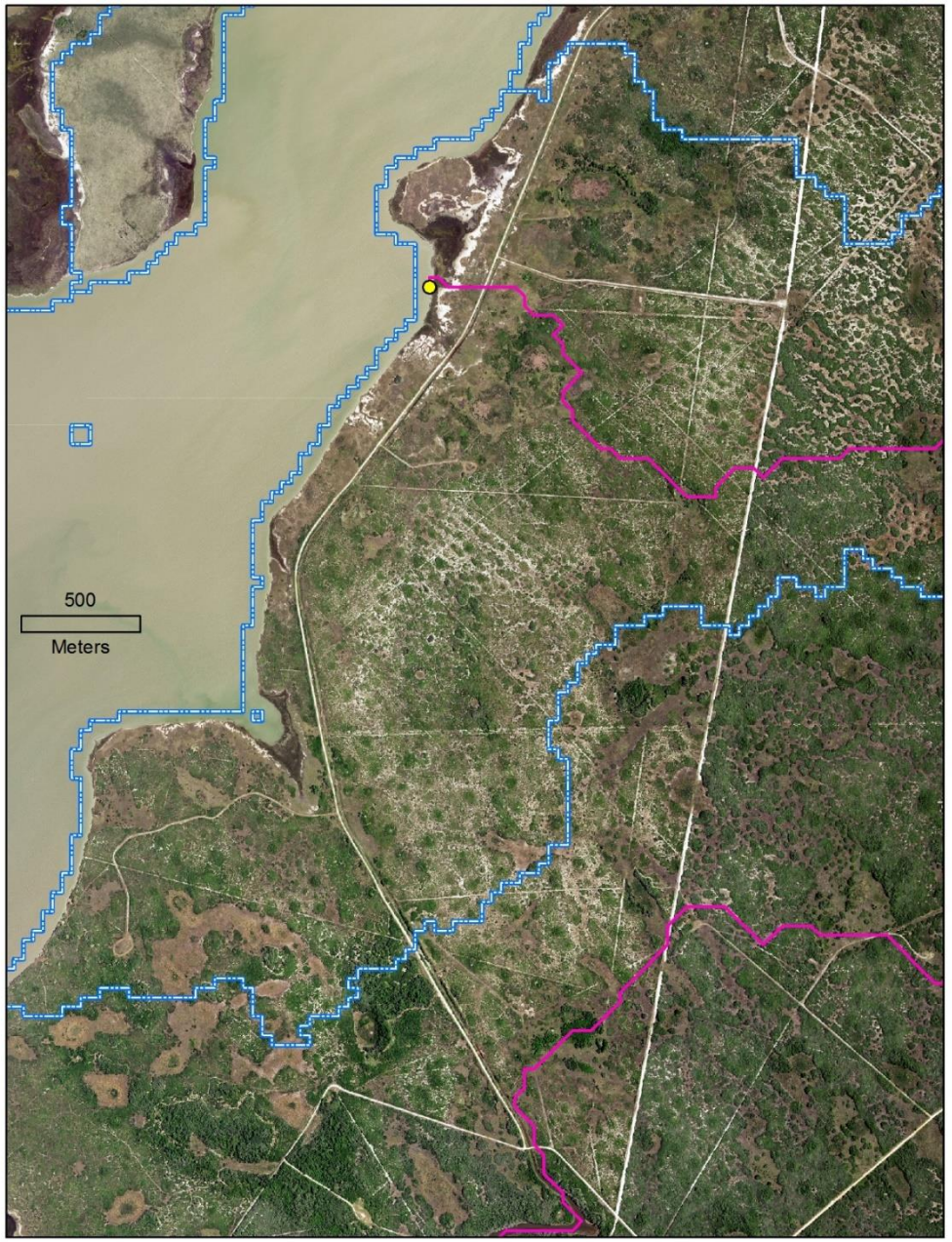
St. Charles Bay Marsh Restoration Study



- Four-mile stretch along NW edge of Blackjack Peninsula.
- Restoration of marsh between road and St. Charles Bay.
- Evaluate various designs relative to:
  - Road location
  - Flow of surface freshwater
  - Vegetation plantings

St. Charles Bay Marsh Restoration Study

- Three main watersheds
- Road impacts northern watershed
- Concentrates upland drainage to marshes
- Limits tidal inundation

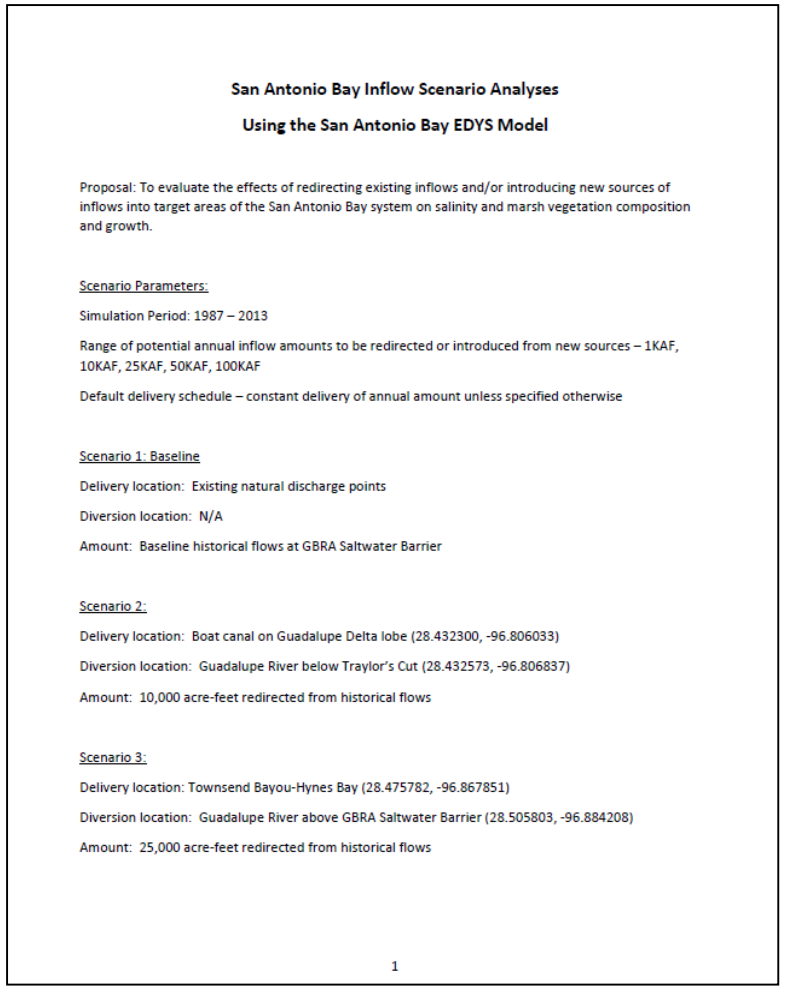


SA Bay Inflow Scenarios Analysis

- Sensitivity Analysis of additional Inflow to Bay
- 8-10 Inflow Scenarios
- Simulate effects on marsh vegetation productivity and species composition
- Input from GBRA, SA Bay Partnership, Meadows Center-TX State, National Wildlife Federation, International Crane Foundation and Harte Research Institute

SA Bay Inflow Scenarios Analysis

- Baseline Inflow 1987-2013
- Initial Scenario - 25,000 AF/yr additional inflow
- Increase or decrease additional inflow based on initial results
- Vary locations of inflow for potential refugia



San Antonio Bay Inflow Scenario Analyses

Using the San Antonio Bay EDYS Model

Proposal: To evaluate the effects of redirecting existing inflows and/or introducing new sources of inflows into target areas of the San Antonio Bay system on salinity and marsh vegetation composition and growth.

Scenario Parameters:

Simulation Period: 1987 – 2013

Range of potential annual inflow amounts to be redirected or introduced from new sources – 1KAF, 10KAF, 25KAF, 50KAF, 100KAF

Default delivery schedule – constant delivery of annual amount unless specified otherwise

Scenario 1: Baseline

Delivery location: Existing natural discharge points

Diversion location: N/A

Amount: Baseline historical flows at GBRA Saltwater Barrier

Scenario 2:

Delivery location: Boat canal on Guadalupe Delta lobe (28.432300, -96.806033)

Diversion location: Guadalupe River below Traylor's Cut (28.432573, -96.806837)

Amount: 10,000 acre-feet redirected from historical flows

Scenario 3:

Delivery location: Townsend Bayou-Hynes Bay (28.475782, -96.867851)

Diversion location: Guadalupe River above GBRA Saltwater Barrier (28.505803, -96.884208)

Amount: 25,000 acre-feet redirected from historical flows

1

Questions?

Photo Courtesy of Martin Reid