National Fish and Wildlife Foundation
Gulf Environmental Benefit Fund
Panama City Workshop Summary Report

Easygrants ID:	49540
Project Title:	Florida Gulf Environmental Benefit Fund Restoration Strategy - Submerged Habitat Assessment (FL)
Organization:	Florida Fish and Wildlife Conservation Commission
Project Term:	59-3105845
Workshop Date:	February 12, 2016

Introduction: *The overall goals/purpose of the workshops.*

The workshop in Panama City was designed to assemble seagrass experts from Saint Andrew and Choctawhatchee Bay with the hope of locating published and unpublished datasets related to seagrass loss and recovery. Locating modern and historical fine-scale aerial imagery that could be used to map seagrass loss and provide a timeline of loss and information on the status and trends of seagrass beds were additional objectives of the workshop. Finally, the workshop was devised to facilitate communication among project partners and other organizations collecting data within our target estuaries.

This summary report consists of an outline of the workshop schedule, maps presented at the workshop, and a Task-by-Task narrative of the presentation material and information gathered from attendees. Prior to attending the workshop, experts were assigned “pre-workshop homework.” The homework asked attendees to provide a bibliography of data pertaining to each estuary and to use their expert opinions to devise a timeline of seagrass loss and denote areas of recovery.

Overall the workshop was highly successful and met the objectives described in Task 6. We obtained historical data regarding seagrass loss in and obstacles to recovery in Saint Andrew and Choctawhatchee bays. With the information received from the attendees, we created a seagrass bibliography outlining potential sediment, water quality, and aerial imagery sources.

St. Andrew and Choctawhatchee Bay Workshop — February 12, 2016

Advanced Technology Center building room 125, GCSC Campus

Meeting called by: Paul Carlson and Linda Fitzhugh

Please bring: Seagrass Homework – an inventory of data and reports about the bays

8:15 ..... Sign-in, Introductions, Overview of the Project

8:15 | Sign-in and Coffee
8:30 | Introductions
8:40 | Paul Carlson – Project Overview

9:00 ..... Seagrass Cover, Water Quality, and Historical changes in St. Andrew Bay

9:00 | Linda Fitzhugh – Hydrology and Seagrass Cover in SAB
9:20 | Sheila Scolaro – Modern and Historical Seagrass Imagery
9:40 | Mike Poniatowski – Scallop Monitoring
10:00 | Jim Barkuloo and John Foster – Historical Changes in SAB
10:15 | Everyone – SAB wrap-up

10:45 ..... Seagrass Cover, Water Quality and Historical changes in Choctawhatchee Bay

10:45-11:05 | Allison McDowell
11:05-11:30 | Everyone – CB wrap-up

1:00 ..... Discussion of Roadblocks to Seagrass Recovery in SAB and CB

Light Stress
Salinity Fluctuations
Stratification and anoxia
Wind, wave and tidal action
Sediment toxicity
Animal disturbance
Prop scarring

3:30 ..... Discussion of similarities and differences between SAB and CB

Task-by-Task Summary
The focus of these workshops was to assess the existing information on Saint Andrew Bay and Choctawhatchee Bay. Tasks 1, 2 & 3 were the primary focus of our discussions, and thus comprise the bulk of this report.

Task 1: *Determine estuary and site-specific roadblocks to SAV recovery for Perdido Bay, Pensacola Bay, Choctawhatchee Bay, St. Andrew Bay, and the Econfina and Suwannee regions of the Big Bend.*

Stressors leading to the initial and continued demise of seagrass beds in both Saint Andrew Bay and Choctawhatchee Bay were discussed extensively at the workshop. One major stressor impeding seagrass recovery is light availability. Staff from the Gulf Coast State College (GCSC) have been collecting data for the past decade and discovered that a 26% light attenuation level is needed for maintenance of healthy grass beds in Saint Andrew Bay. A similar level is likely needed in Choctawhatchee Bay as well. Stressed and recovering seagrass beds require even more light to support growth of new tissue. Particles, originating from unpaved roads and mosquito ditches flow into Choctawhatchee Bay from the Choctawhatchee River. Once in the bay, the sediment plume moves through the Intracoastal Waterway (ICW), originally cut in 1929. The particles hinder light from penetrating through the water column, thus stressing the grass below.

Physical disturbance from wind, wave, and tidal action is believed to be the most important stressor associated with seagrass loss and recovery in both bays. Energy from winds, waves, and tidal action moves around massive amounts of sediment. Deep ripples in sediment on the broad littoral shelf of both bays result from this movement. The ridges are large enough to be seen in aerial photographs. GCSC planted seagrass on mats in Saint Andrew Bay, however, a year later they were covered by over a twelve inches of sediment. The high sediment transport is what lead to West Bay in Saint Andrew Bay being referred to as the “West Bay Bowl.” Shoreline hardening and other construction along the on edge of the bay is leading to further increases in the physical disturbance by reflecting wave energy back to the bay instead of absorbing it. Constant dredging of East Pass is required to remove sediment filling the pass. This is also the case with the ICW connecting Choctawhatchee to Saint Andrew Bay. Katie Konchar, from the Fish and Wildlife Conservation Commission (FWCC), has created several oyster reef habitats. These have reduced wave attenuation and provided protected area for seagrass to recover. Her main concern was that the reefs would be buried when she checks on them this spring.

Sediment toxicity was also discussed as a potential stressor limiting seagrass recolonization. Saint Andrew Bay experiences phosphorus outflows from a paper mill, which fails to meet state water quality standards. Bay County is experiencing heavy upland development, but municipalities do not require that homes and condos connect to a central waste system. Also, there are no fees associated with continuing septic tank use and no incentives for residents to switch to the central waste system.

Some stressors, including salinity pulses, stratification, animal disturbance, and propeller scarring within both bays were only briefly discussed since they are not considered to be major inhibitors of seagrass recovery. However, it was noted that large rain events can cause the flow of the Choctawhatchee River to increase sharply. Heavy flow causes stratification of the bay due to excess freshwater inputs. Overall, meeting attendees agreed that physical disturbance and light availability were the most influential stressors in causing seagrass loss and inhibiting seagrass recovery in both Saint Andrew Bay and Choctawhatchee Bay.

Task 2*: Perform SAV assessment and evaluate fine-scale aerial imagery for funded restoration projects.*

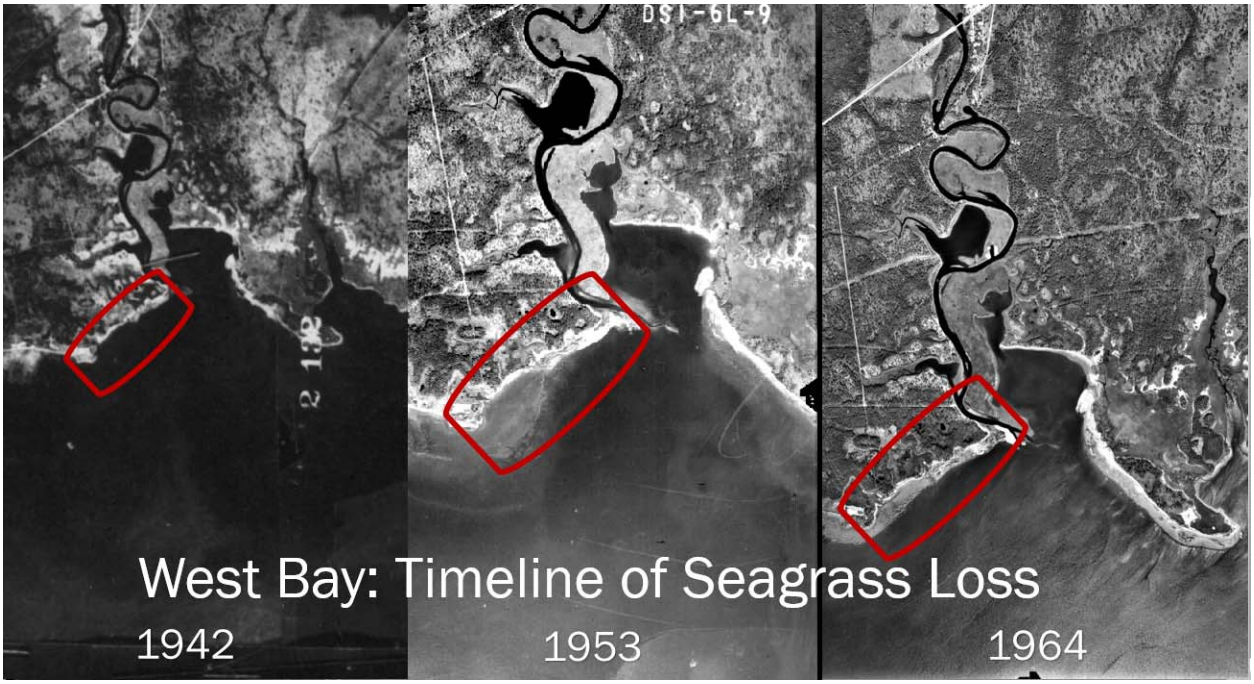
Below are two posters created from imagery collected by the U.S. Department of Agriculture (USDA) National Agricultural Imagery Program (NAIP) in 2015. These were presented at the workshop in Panama City.

Saint Andrew Bay (2015) Imagery Source: USDA National Agriculture Imagery Program

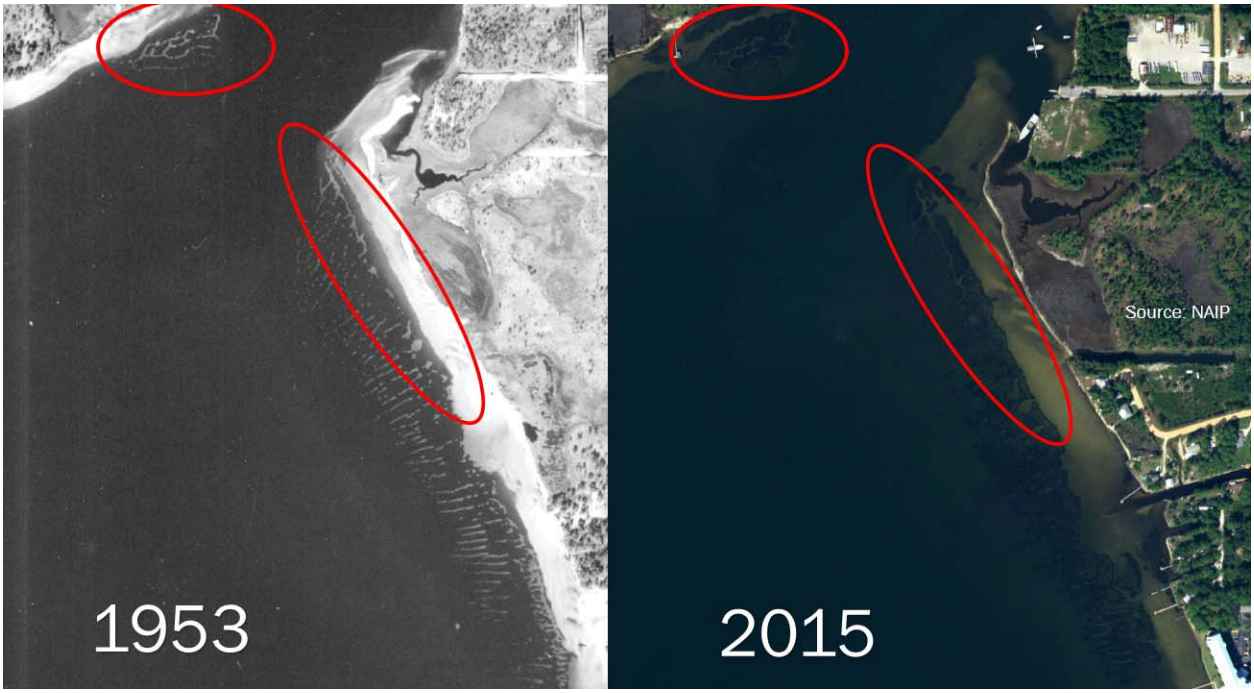
Choctawhatchee Bay (2015) Imagery Source: USDA National Agriculture Imagery Program

***Task 3**: Assemble and create, where necessary, current and past status and trends maps for SAV throughout the project area and identify and prioritize restorable SAV habitat throughout the project area.*

Assessing historical aerial imagery is a large component in creating SAV status and trend maps. One of our field team members spoke about the various catalogues FWRI is employing for historical imagery extraction. Below are a few of the slides which incorporate historical aerial photographs. The first slide displays the gradual trend of seagrass loss in West Bay in Saint Andrew Bay from 1942 to 1964. The second slide highlights an area in North Bay in Saint Andrew Bay where seagrass bed configuration has remained constant since 1953. All historical imagery was obtained from the University of Florida's Digital Collection, and all of the modern imagery was obtained from USDA NAIP 2015. Linda Fitzhugh, with Gulf Coast State College, also provided a seagrass trend map outlining historical seagrass beds in Saint Andrew Bay. We are currently investigating the location of the shapefiles used to create her maps.



West Bay Saint Andrew Bay (1942, 1953, 1964). Imagery Source: University of Florida Digital Collection



North Bay Saint Andrew Bay (1953, 2015). Imagery Source: University of Florida Digital Collection (left); USDA National Agriculture Imagery Program (right).

Task 4: *Using available data supplemented by field sampling, build estuary and site-specific time series of optical water quality data for the period 2002-2015.*

Patrice Couch, from the University of Florida Lakewatch Program, obtains monthly nutrient, turbidity, and dissolved oxygen samples from 67 sites throughout Saint Andrew Bay. Allison McDowell, a project partner from Choctawhatchee Bay, also obtains monthly nutrient and color samples from Choctawhatchee Bay. Jonathan Brucker, from the St. Andrew Aquatic Preserve, is creating a program for sampling sites in Big Lagoon, Saint Andrew Bay, and Choctawhatchee Bay. All have agreed to collect samples specifically for FWRI use throughout the summer of 2016 and to send data previously collected.

Task 5: *Build a user-friendly website for retrieval of current and historical water clarity data throughout the project area, relying heavily on the 13-year MODIS satellite water clarity time series.*

This task was not discussed any further than the introduction because our project partner at USF is currently working on integrating the Panhandle estuaries into the MODIS website.

Task 6: *Conduct joint workshops and incorporate up-to-date SAV information produced in Tasks 5 and 7 with historical information, for restoration planning in the Big Bend region and Panhandle estuaries, respectively.*

The Panama City workshop was one of the three workshops fulfilling this task. We discussed a past restoration project involving shoalgrass and turtlegrass planting in Saint Andrew Bay. This restoration effort failed due to fine sediments covering site. We also were given an overview of Katie Konchar's oyster reef restoration project. Success of her project is still to be determined

Task 7*: Based on elements 1-6 above, build an online, distributable, and spatial SAV recovery potential (SRP) model, showing roadblocks and recommended restoration strategies in all estuaries to inform restoration project planning and selection. Distribute all project data online as shapefiles and Google Earth kml files. Develop specific project recommendations for SAV recovery in each estuary.*

This task was briefly covered while introducing the overall project to the group. Building of the model is underway. The location to place all the future shapefiles and Google Earth kml files for public access was discussed.