

National Fish and Wildlife Foundation

Gulf Environmental Benefit Fund

Tallahassee 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: March 7, 2016

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

The workshop in Tallahassee was designed to bring together seagrass experts from Apalachee Bay and the Big Bend with the hope of locating published and unpublished datasets related to seagrass loss and recovery.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, communication and collaboration among project partners and other organizations collecting data within our target estuaries were established.

As outlined in the agenda shown below, the workshop was broken into two parts. In the morning, experts presented information regarding seagrass losses and trends, water quality, and roadblocks to seagrass recovery. In the afternoon, attendees participated in a discussion about potential stressors outlined in the project proposal.

Overall the workshop was highly successful and met the objectives described in Task 6 below. We learned about historical data regarding seagrass loss and obstacles to recovery in Apalachee Bay (St. Marks east to Aucilla River mouth) and the Big Bend (Econfina River mouth to Suwannee River mouth). We learned about ongoing and new projects addressing seagrass loss and river inputs of nutrients.

Agenda- Subject Matter Expert Workshop for Roadblocks to Seagrass Recovery.

Where: Florida Department of Environmental Protection, 2600 Blair Stone Road, Room 609

When: March 7, 2016, 9:00 AM to 3:30 PM

Purpose: This workshop is the third and final subject matter expert workshop for the SAV portion of a larger Florida Restoration Strategy funded by the National Fish and Wildlife Foundation, Gulf Environmental Benefit Fund and led by Kelly Samek, Florida Fish and Wildlife Conservation Commission's Gulf Restoration Coordinator. Previous workshops have focused on Perdido, Pensacola, Choctawhatchee, St. Andrew, and St. Joseph Bays. This workshop will focus on Apalachee Bay and the Suwannee Estuary. The primary goals of these workshops are to explain our project and to elicit expert opinion on less-well-known sources of data, reports, peer-reviewed papers, and historical seagrass imagery for each system.

9:00 AM- Welcome and Introductions, Wayne Magley, Ph.D., FDEP

9:20 AM- Explanation of GEBF Florida Restoration Strategy project and its components, Amy Raker, FWC

9:40 AM- SWIM Plan updates for the Northwest Florida Water Management District, Karen Kebart, NFWFMD.

10:00 AM- SWIM Plan updates for the Suwannee River Water Management District and streamflow in Apalachee Bay, Glenn Horvath and Leslie Ames, SRWMD

10:20 AM- Coffee Break

10:40 AM- Explanation of Roadblocks to Seagrass Recovery Project, Paul Carlson, FWC/FWRI

11:10 AM- Seagrass Monitoring the Big Bend Seagrass Aquatic Preserve, Tim Jones, FDEP Aquatic Preserve Manager.

11:30 AM- SIMM- the Seagrass Integrated Mapping and Monitoring program and FWC seagrass monitoring, Laura Yarbrow, FWC.

11:50 PM - 1:10 PM- Lunch in cafeteria and nearby restaurants

1:10 PM- El Nino and Climate Change Impacts on rainfall and runoff in North Florida- Dr. David Zierden, FSU Climate Center

1:30 PM- The Big Bend Circulation Model for the northeastern Gulf of Mexico, Wayne Magley, FDEP.

1:50 PM- Data access through the FDEP Map Direct Interface, Kim Jackson, FDEP

2:10 PM- 3:30 General discussion of Roadblocks project, site specific obstacles to seagrass recovery, and data management.

3:30 PM- Workshop ends.

Task-by-Task Summary

The focus of these workshops was to assess existing information in Apalachee Bay and the Big Bend. 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 Econfinia and Suwannee regions of the Big Bend.

One major stressor that led to seagrass loss and now inhibits recovery is light stress. A healthy seagrass bed needs at least 22% of surface light. However, stressed or recovering seagrass beds need more light

to support growth of new tissue. Tim Jones from the Big Bend Seagrasses Aquatic Preserve presented information showing the effects of poor water clarity and high sea urchin populations on seagrasses near the mouth of the Steinhatchee River in northern Big Bend. Laura Yarbrow of the Fish and Wildlife Research Institute (FWRI) showed that Big Bend has lost seagrasses since 2012 and that water clarity has been poor between July 2012 and the fall of 2015. Poor water clarity in 2013 and 2014 resulted from excessive rainfall over the watersheds of the local rivers as well as heavy regional rainfall over the Suwannee River watershed. High river runoff of darkly colored water resulted, and nutrients in the runoff also stimulated phytoplankton growth in coastal waters.

Karen Kebert of the Northwest Florida Water Management District and Glenn Horvath of the Suwannee River Water Management District presented information on GEBF-funded projects to update Surface Water Improvement and Management (SWIM) plans for watersheds adjacent to Apalachee Bay and the Big Bend. Both efforts will address increasing populations and development on concentrations of nutrients and sediments in rivers and inputs to coastal waters.

David Zierden of the Florida State University Climate Center provided an overview of the effects of El Niño and climate change on rainfall and runoff in north Florida. He provided data on the rainfall events in 2013 and 2014, and discussed changing patterns in the jet stream and the effects of stalled low pressure areas on rainfall events in the Panhandle.

Wayne Magley, from the Florida Department of Environmental Protection, presented information on the development of the Big Bend circulation model that will quantify nutrients brought into the Big Bend from river runoff, determine how these nutrient inputs are distributed in coastal waters, and predict resulting nutrient levels in the Big Bend. This model was developed as part of the process to develop numeric nutrient criteria for rivers discharging into the Big Bend region.

It was generally agreed that light stress is likely the primary factor limiting seagrass recovery in Apalachee Bay and the Big Bend, but other stressors may be present as well. Sporadic population spikes in sea urchins can cause significant seagrass losses in some locations, as illustrated by Tim Jones in the Steinhatchee area. Sudden changes in salinity over seagrass beds, due to pulses of runoff, might stress seagrass beyond the point of survival. Continuous water quality monitoring using *in situ* sondes by the Big Bend Seagrasses Aquatic Preserve has provided information at several sites in the Big Bend; these will provide information to examine salinity changes. Propeller scarring, particularly near river mouths and in popular scalloping areas, might also affect seagrass bed health.

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

The map below was created from aerial imagery acquired in December 2015 by the Florida Department of Transportation (FDOT). This imagery covers the area from the mouth of the St. Marks River to the Cedar Keys and will be photo-interpreted to map the location of seagrass beds and to determine acreage of seagrasses in this region. Previous maps of seagrass in the region are from imagery collected in 2006.

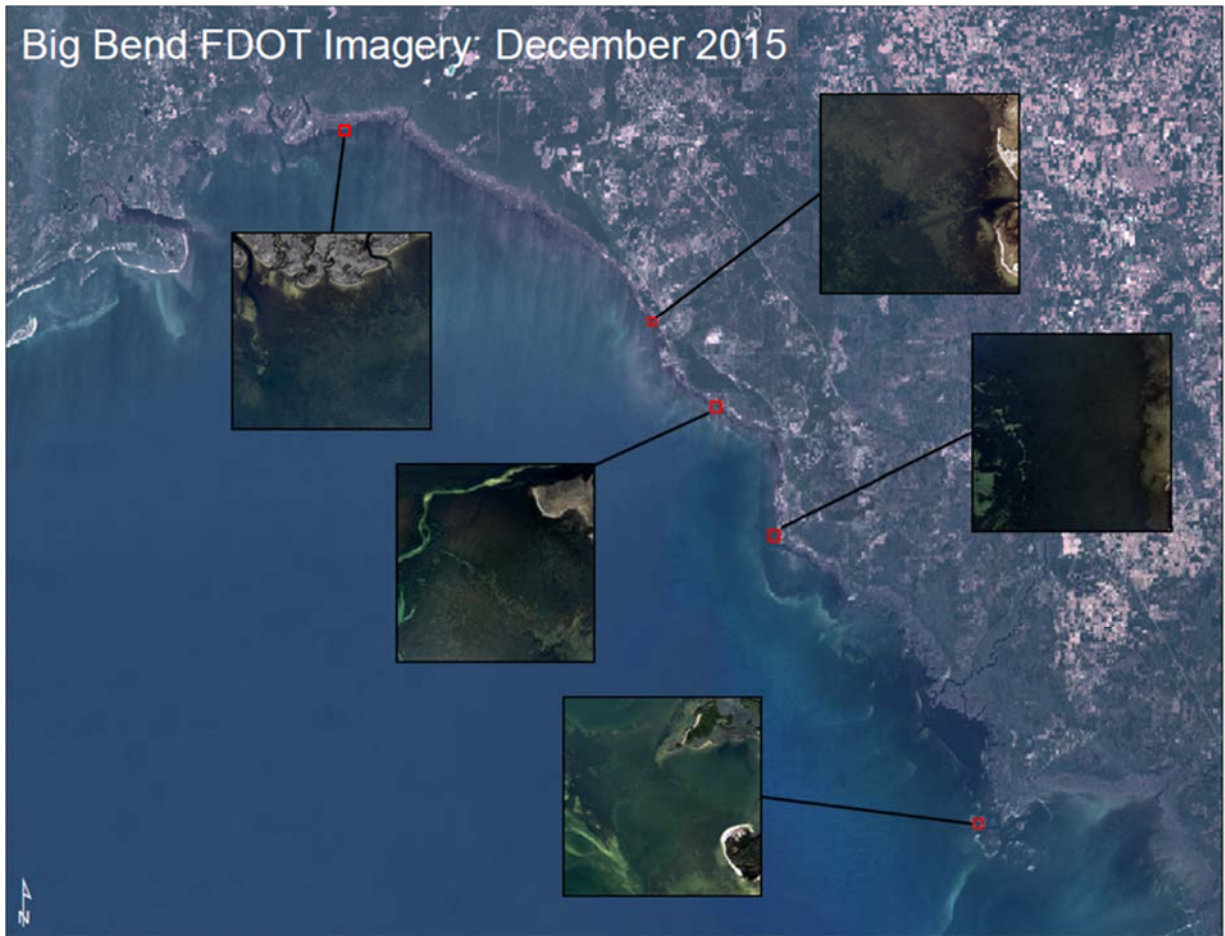


Figure 1 Examples of imagery collected in the Big Bend by the Florida Department of Transportation, December 2015

The FWRI and the Big Bend Seagrasses Aquatic Preserves have long-standing field monitoring programs for seagrasses in the region, and these programs will continue. Data from these efforts show regional declines in seagrass coverage and species richness. Interpretation of the newly acquired imagery will provide new acreage values.

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.

Historical imagery is on file, and imagery from 1984 and 1992 has been interpreted. The most recent maps are from imagery collected in 2006. Our priority has been to obtain high-resolution imagery, and the Florida Department of Transportation obtained the imagery in December 2015. Photo-interpretation is underway.

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.*

A time series of optical water quality data, using interpretation of MODIS satellite imagery, is available as virtual buoys for the Big Bend region from the Optical Oceanography Laboratory at the University of South Florida (<http://optics.marine.usf.edu/>). We will continue field measurements of optical water quality parameters in the Big Bend, and we will expand the area covered by the virtual buoys by sampling in Apalachee Bay. Additional data products will be available in late spring 2016.

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.*

Field sampling in Big Bend and Apalachee Bay are underway, and scientists at the Optical Oceanography Laboratory at the University of South Florida are refining existing virtual buoys in Big Bend and creating new ones in Apalachee Bay.

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

The Tallahassee workshop was one of the three workshops fulfilling this task. We obtained good information about data that will contribute to building our model of seagrass recovery potential.

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 outlined while introducing the overall project to the group; building of the model is underway.