

**SARP/NOAA Restoration Center
Subaward Progress Report - Final**

Project Title: Improving Management of Seagrass Resources through Restoration and Assessment

Award Number: 509

Award Period: Amended Project Period: October 1, 2009 - December 31, 2012

Grantee Organization: Environmental Protection Commission of Hillsborough County

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Reporting period: September 1, 2009 - December 31, 2012

Progress Report Narrative:

I. Results/Progress to Date

Initial transect set-up and monitoring occurred in October 2009. Side-scan sonar capabilities were tested during the initial monitoring site visits. Monitoring for the spring event was scheduled. The on the ground restoration was scheduled to occur around May of 2011, unless there was a hold-up with permitting. Initial test results of the side-scan sonar as an aspect of this project were impressive, so EPC requested and received funding to continue utilizing the staff and expertise of the USF Florida Center for Community Design and Research.

A second monitoring event occurred in April 2010. We found early on that the scars were healing in a matter of months, so we spent an additional one day a month monitoring the main three transects around the proposed pole and troll area looking for new scars and evaluating healing time. The results led us to believe, as we had originally hypothesized, that the utilization of sand tubes would be unnecessary.

Another observation from the early monitoring led us to realize that identifying scars that would be usable for the restoration portion of the project would be difficult due to the quick recovery and low visibility. We discussed the possibility of hiring a helicopter to survey the location for potential scars prior to the restoration.

Analyzing the scar data from the September 2010 transect monitoring verified our early observation that the seagrass, consisting mostly of *Halodule wrightii*, in the area of project focus around the proposed pole and troll area in Little Cockroach Bay, recovered within just a few months. Visibility in this area was also extremely limited. It was for those two reasons that the project restoration plans were re-evaluated, and it was decided that restoration efforts would be better offsite. Several options were discussed and it was ultimately decided that a larger scale restoration would take place at MacDill Air Force Base where *Syringodium filiforme* had previously been successfully transplanted.

EPC conducted an investigation to verify that the fast recovery times observed were accurate by looking at seagrass beds that were still close by but in clearer water. With the

investigative research we focused on *Thalassia testudinum*, which has been documented as a slower growing seagrass species.

In April 2011 we recommended that future actions be focused on getting at least part-time enforcement of the current slow speed zones that were continually being ignored. We surmised that implementing a pole and troll zone in an area where there were already abused restrictions in place would be futile without the support of law enforcement.

In July 2011 the Cockroach Bay Aquatic Preserve was closed and all staff positions were eliminated. The pole and troll area was already going to be challenging at best to implement, but with the loss of state management to represent the preserve, implementing a restriction zone was not a realistic option. EPC continued to conduct the investigation of the recovery time and dynamics of individual scars in that area until July of 2011, however transect monitoring had ended in April.

A report was given to the Seagrass Working Group on October 6, 2011 by both EPC and Tampa Bay Watch staff on the results of the monitoring and the plans for restoration. A copy of that presentation was emailed to SARP staff.

The Florida Department of Environmental Protection (FDEP) permit was received in June 2012, and seagrass transplanting with Tampa Bay Watch and volunteers began immediately and continued through early September. Tampa Bay Watch, in partnership with Tampa Bay Environmental Fund and the Frank E. Duckwall Foundation, in addition to SARP and EPC, designed, permitted, and constructed a series of six 10m x 20m plots of *Syringodium filiforme* along the southern shoreline of the MacDill Peninsula as part of Permit # 29-0256820-008. The harvesting and planting of the seagrass plugs was completed by Tampa Bay Watch, Inc. in twelve work days with the help of 88 community volunteers and totaled 440 volunteer hours. The total transplanted area was 11,791 square feet equaling .270 acres. The Time Zero Report for FDEP is included in section VI.

The final recommendation for this area is that future resource management actions be focused on, at least, part-time enforcement of the current slow speed zones that are continually being ignored, leading boaters to run aground and create prop-scars in the first place. It is likely that implementing a pole and troll zone in an area where there are already ineffective restrictions in place would be ineffective without the support of law enforcement.

II. Restoration Targets and Progress

Habitat Type:	Acres/miles/metric tons accomplished in this reporting period:	Acres/miles/metric tons accomplished to-date (cumulative):	Acres/miles/metric tons projected to be completed at end of award:
Seagrass	.270 acres	.270 acres	.2 + acres

III. Permit Status

Tampa Bay Watch began filling out permits (to FDEP, ACOE, and EPC) in April of 2011, including creating the project design; however, several delays in the process occurred.

Tampa Bay Watch had several site inspections with FDEP permitters, the first occurring the last week of August 2011. After seeing the site of a nearby proposed wave-break project off of MacDill AFB, there was some concern that seagrass had moved into the transplant area. Afterwards, several other site visits and alterations to the design plan were made.

The FDEP permit was issued in June 2012.

IV. Species Benefitting

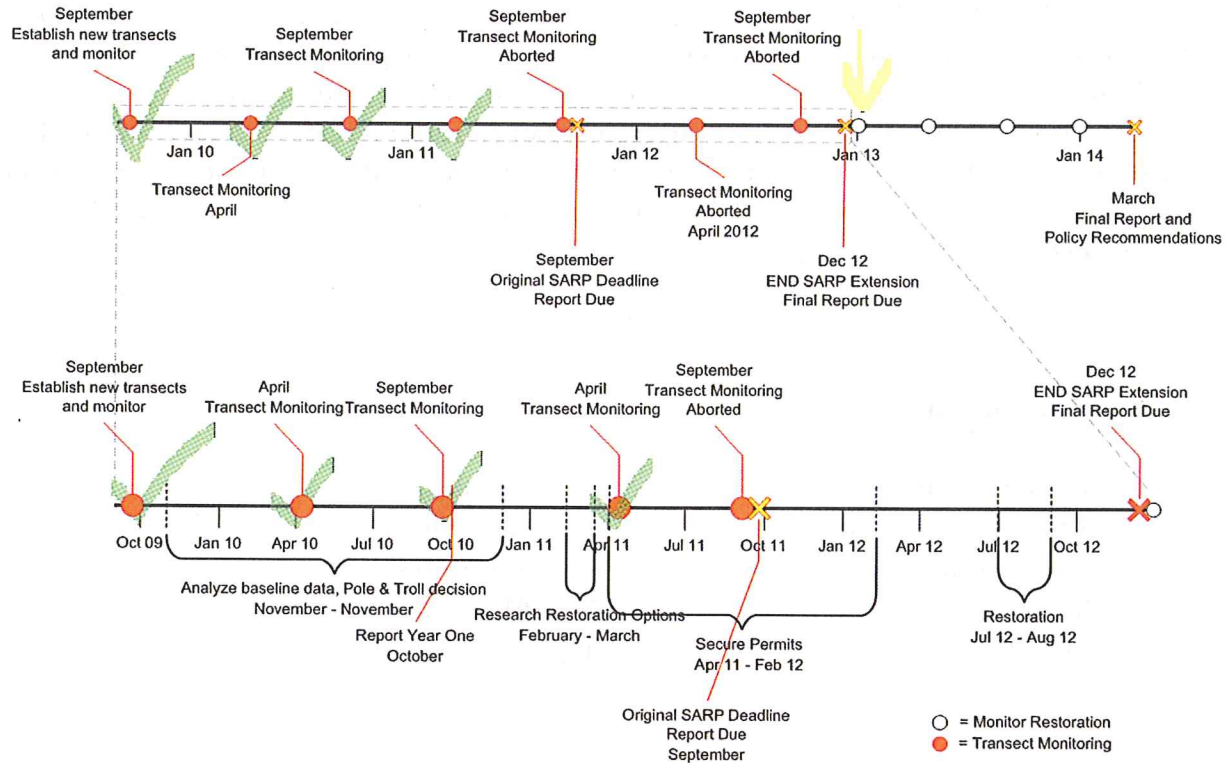
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|--------------------------|----------------|
| 1. Halodule wrightii | 6. Red drum |
| 2. Thalassia testudinum | 7. Gulf shrimp |
| 3. Syringodium filiforme | 8. Bay scallop |
| 4. Snook | 9. Blue crab |
| 5. Manatees | 10. Sea trout |

V. Project Partners

Tampa Bay Watch

USF Florida Center for Community Design and Research

VI. Project Timeline



VII. Monitoring and Maintenance Activities

Monitoring of the three newly established transects for this project started in October of 2009. This initial venture was the first attempt to qualify the scars into categories. At the end of April 2010 the three created transects, and five existing transects that are part of the Tampa Bay Annual Seagrass Study, were monitored and sampled as outlined in the monitoring plan of the proposal.

In the transect monitoring method, transects were first walked with the kayak equipped with side-scan sonar along a transect line while following the line with the Trimble hand-held GPS. Sonar images were taken at each point where a scar crossed the transect. Short shoot and blade length counts were taken at about 25 meter intervals along the transect. Water samples for chlorophyll, turbidity, and color were collected at the center of each transect.

After sonar images and locations of speculated prop scars were recorded, the field staff walked the transect to perform a visual search for scars. Prop scars identified by field staff were recorded with the Trimble and the following parameters were recorded: depth at center of scar, width, estimated classification (new with sand pile, new without sand pile, ditched no recruitment, ditched with recruitment, no ditch with recruitment, and no ditch without recruitment - see supporting materials, section X), surrounding species, and recruiting species if any. Space for comments was allowed.

Monitoring of the three transects established for this project continued in the original method in September 2010. The results from this transect monitoring led to a more specific investigation of the recovery rates of scars in Little Cockroach Bay by type and location. An investigative monitoring began using in-kind staff time and funds starting in May 2010. In January 2011 the focus was shifted to look specifically for scars that were created in *Thalassia* beds and continued monthly throughout the spring and summer.

Monitoring of the three transects established for this project occurred in April 2011. The results were similar to the past monitoring efforts.

By October 2011, both the transect monitoring and the investigative monitoring were completed; see Figure 4 in section X for the graphic showing the recovery trends of the prop scars. The focus then turned to securing permits for the transplant/restoration at MacDill AFB.

Transplanting from the donor site to the transplant site started in July 2012 and was completed by early September. At 36 locations monitoring data was collected as specified in the FDEP permit. At the transplant site GPS data points were recorded for all six plots using a Trimble. The planting boundaries as well as the actual planted areas were recorded.

VIII. Community Involvement

Volunteer efforts began in July 2012 and continued through the beginning of September 2012.

	This reporting period:	To-date (cumulative):	Projected for completed award:
Volunteer Numbers:	88	88	~70
Volunteer Hours:	440	440	~350

IX. Outreach Activities

The Seagrass/Pole and Troll Task Force met in the early months of the project. After the Fall 2009 meeting the guides were interested in meeting again with FWC and USFWS staff about revisiting options that would allow historical use of the area while still protecting seagrass and manatees. The EPC project manager and the field biologist from USF gave a presentation at the annual meeting of the Seagrass Working Group in Sarasota on April 28, 2010; the project was well received.

The USF biologist gave an updated presentation to the Seagrass Working Group in Sarasota on January 18, 2011. It included some results and a discussion of the updated method.

Analysis of the September 2010 transect data verified early observations that the seagrass, which consists mostly of *Halodule wrightii*, in and around the proposed pole and troll area in Little Cockroach Bay, recovered within just a few months. Visibility in this area is also extremely limited. It is for those two reasons that the project restoration plans were

re-evaluated and it was decided that restoration efforts would be better spent offsite. Several options were discussed amongst the partners and SARP staff and it was ultimately decided that a larger scale restoration would take place at MacDill Air Force Base where *Syringodium filiforme* has previously been successfully transplanted.

The harvesting and planting of the seagrass plugs was completed by Tampa Bay Watch, Inc. in twelve days with the help of 88 community volunteers and a total of 440 volunteer hours. The total transplanted area was 11,791 square feet (.270 acres).

The side-scan monitoring results from the spring and fall transects were added to the Water Atlas webpage where they are accessible to the public and resource managers. This information can be viewed at the following web address:

<http://maps.wateratlas.usf.edu/hillsborough/index.asp?themenam=SeagrassScars>.

X. Supporting Materials

The USF Final report titled "Seagrass Scar Imaging Project Report_Final"
Poster Presented at Restore America's Estuaries conference in October 2012
FDEP Time Zero Report- submitted by Tampa Bay Watch
Prop scar data collection
Tampa Bay Annual Seagrass Study Cockroach Bay transect data 2009-2012

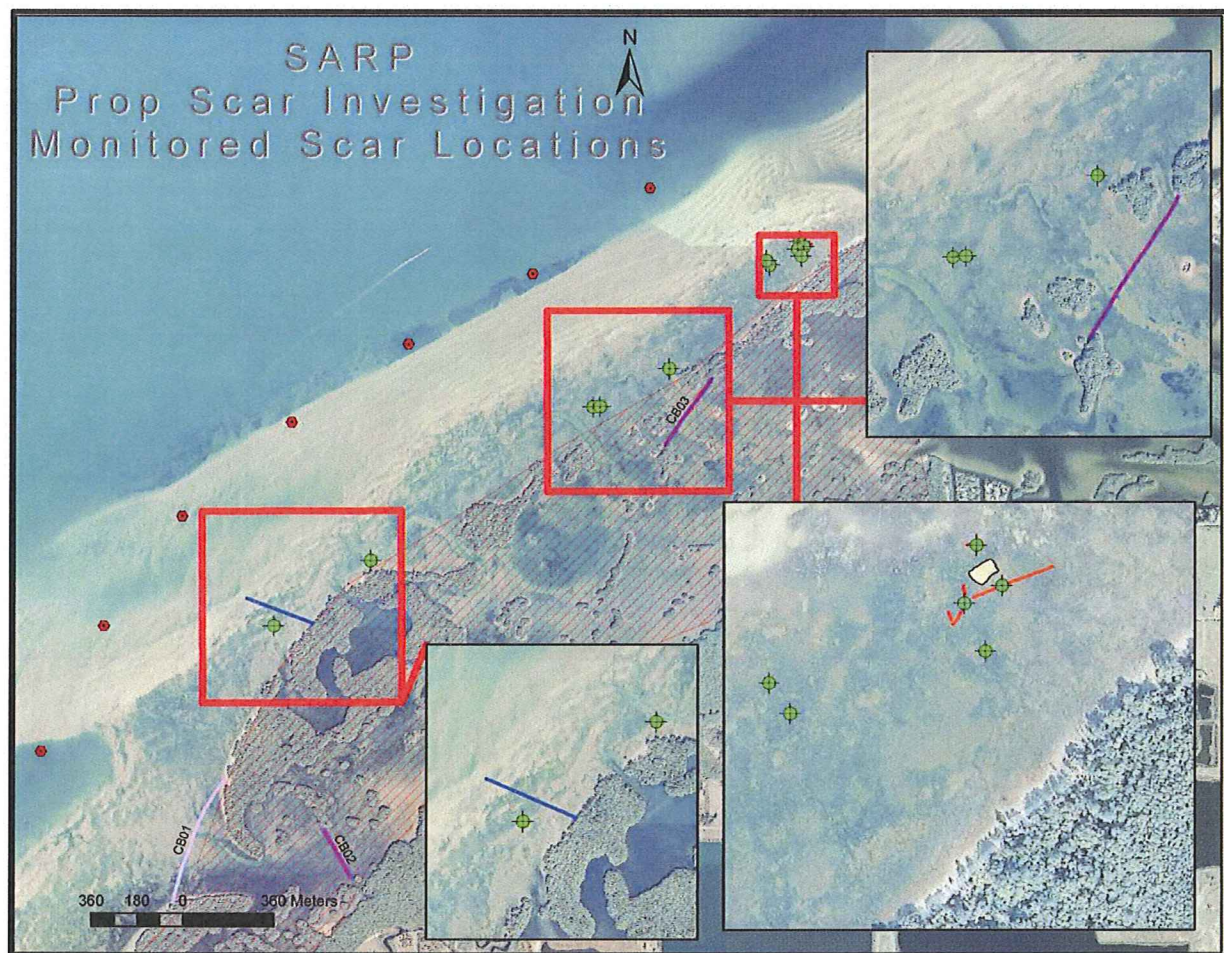


Figure 1. Map showing locations of scars in *Thalassia* beds that were examined monthly

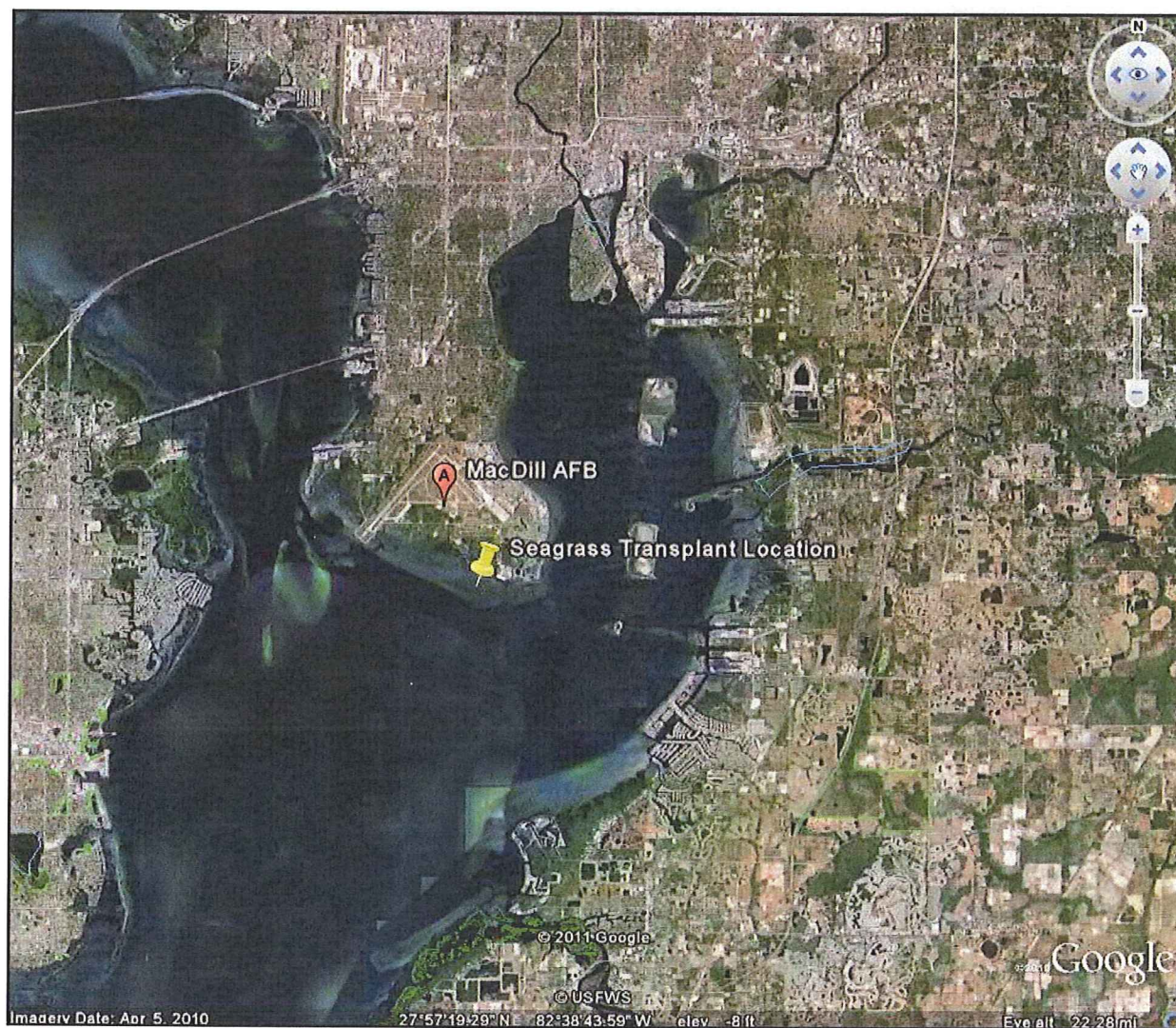
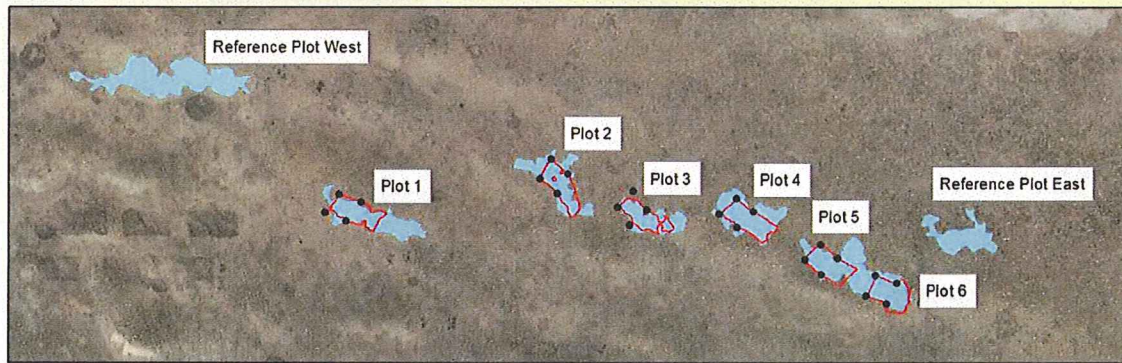


Figure 2. Approximate location for seagrass transplanting



MacDill Seagrass Summer 2012



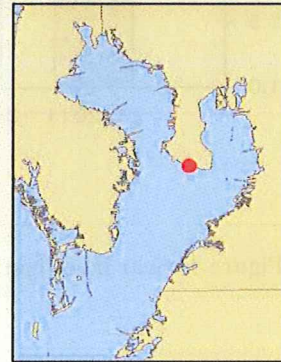
0 125 250 375 500 Feet

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-  Plots
-  Reference Markers
-  Planted Seagrass Perimeter



Study Area:
Tampa Bay, FL



Imagery Source: LABINS 2011

Figure 3. Map of transplant site plots

Cockroach Bay Prop Scar Recovery Trends

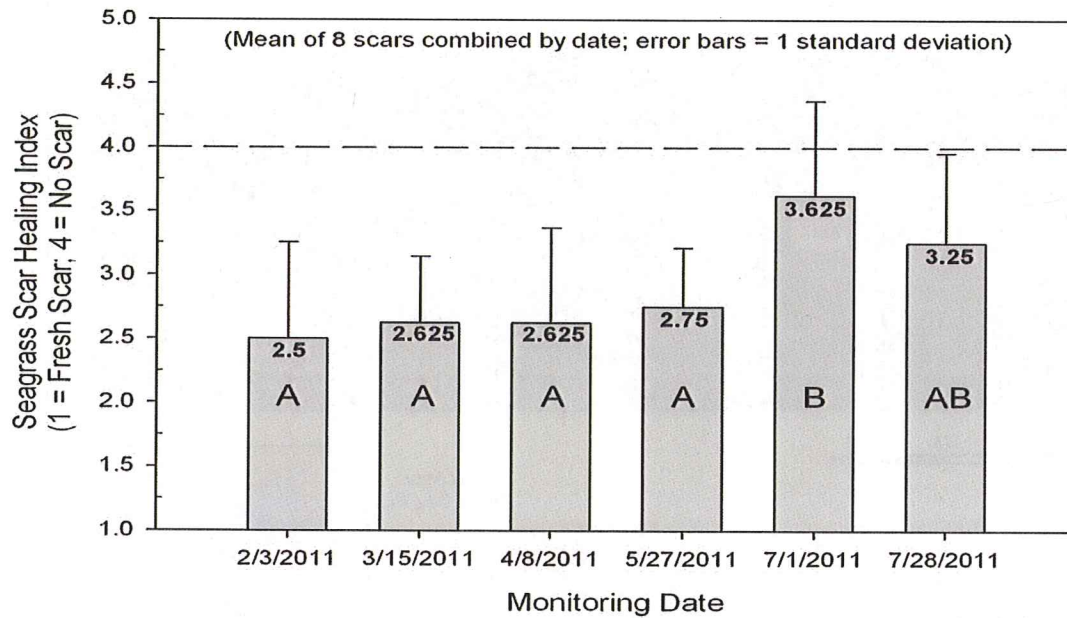


Figure 4. Scar investigation results

XI. Project Budget and Expenditures

	Budget Categories	Total Budgeted Grant Fund Expenditures	Total Budgeted Match Expenditures	Grant Funds Expended this Report	Grant Funds Expended Cumulative	Match Funds Expended this Report	Match Funds Expended Cumulative	Match Fund Source
a	Personnel	5,500.00	18,243.00		5500.00		18,243.00	EPC
b	Fringe							
c	Travel		5,850.00				5,850.00	EPC
d	Equipment							
e	Supplies							
f	Contractual	26,407.00	7,814.00	20,500.00	26,407.00	2,187.00	7,814.00	USF/Tampa Bay Watch
g	Other							
h	Total Direct Costs							
i	Indirect Costs							
j	Totals	31,907.00	31,907.00	20,500.00	31,907.00	2,187.00	31,907.00	

Deviations from the Approved Budget:

In April 2010 EPC invoiced for 16 hours of GIS work. To date EPC has provided in-kind monitoring services and USF has provided use of sonar equipment and staff time as well as in-kind services. USF invoiced EPC for completion of all side-scan tasks in April 2011.

EPC has monitored the individual scars to record the characteristics of their recovery using staff time as in-kind. Additional in-kind was added for vessel usage. Billing is for GIS work and monitoring of transects.

The April 2011 invoice included costs incurred for the final monitoring events in October as well as some GIS. In-kind was added for vessel/vehicle usage as well as some staff and intern time.

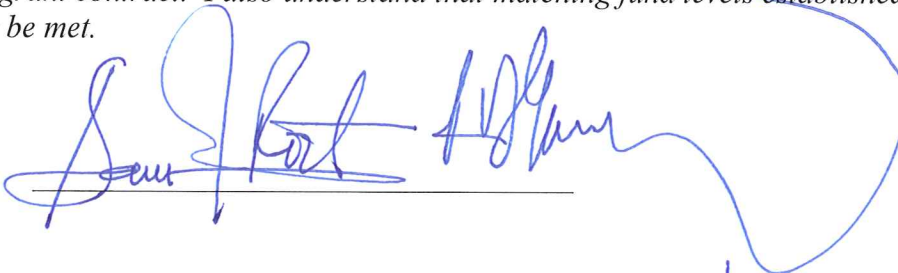
The final invoice included the bulk of the funds that were reimbursed to Tampa Bay Watch for restoration. In-kind was finalized using 108 hours of the 440 volunteer hours, and staff time for the annual seagrass monitoring for the Tampa Bay Annual Seagrass Study that is used to assess the health of Tampa Bay, as well as make management decisions in and around Tampa Bay.

Total Project Cost:

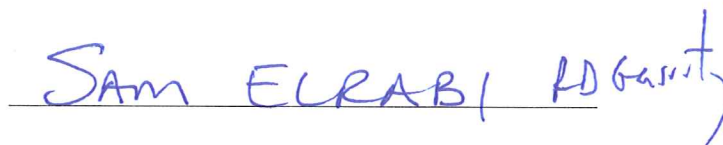
The total project cost was derived based on an estimate of the number of hours that would be spent monitoring, performing GIS, permitting and restoration activities, and management and coordination of volunteers. Additional funds were awarded for side-scan sonar work to test the use of the method on prop scars. USF completed all of the hours they allocated to this project, including in-kind match.

The undersigned verifies that the descriptions of activities and expenditures in this progress report are accurate to the best of my knowledge; and that the activities were conducted in agreement with the grant contract. I also understand that matching fund levels established in the grant contract must be met.

Grantee Signature:

A handwritten signature in blue ink, appearing to read "Sam Elrabai", written over a horizontal line.

Grantee Name:

The name "SAM ELRABAI" written in blue capital letters, followed by "AD Grants" in a smaller, cursive script, all written over a horizontal line.

