

TURKEY POINT – SCOUT LAGOON

Monitoring Report #2
for the June 2005 Monitoring Event

Submitted July 2005

ACOE permit # SAJ-2004-813
Conditions of Certification PA 03-45

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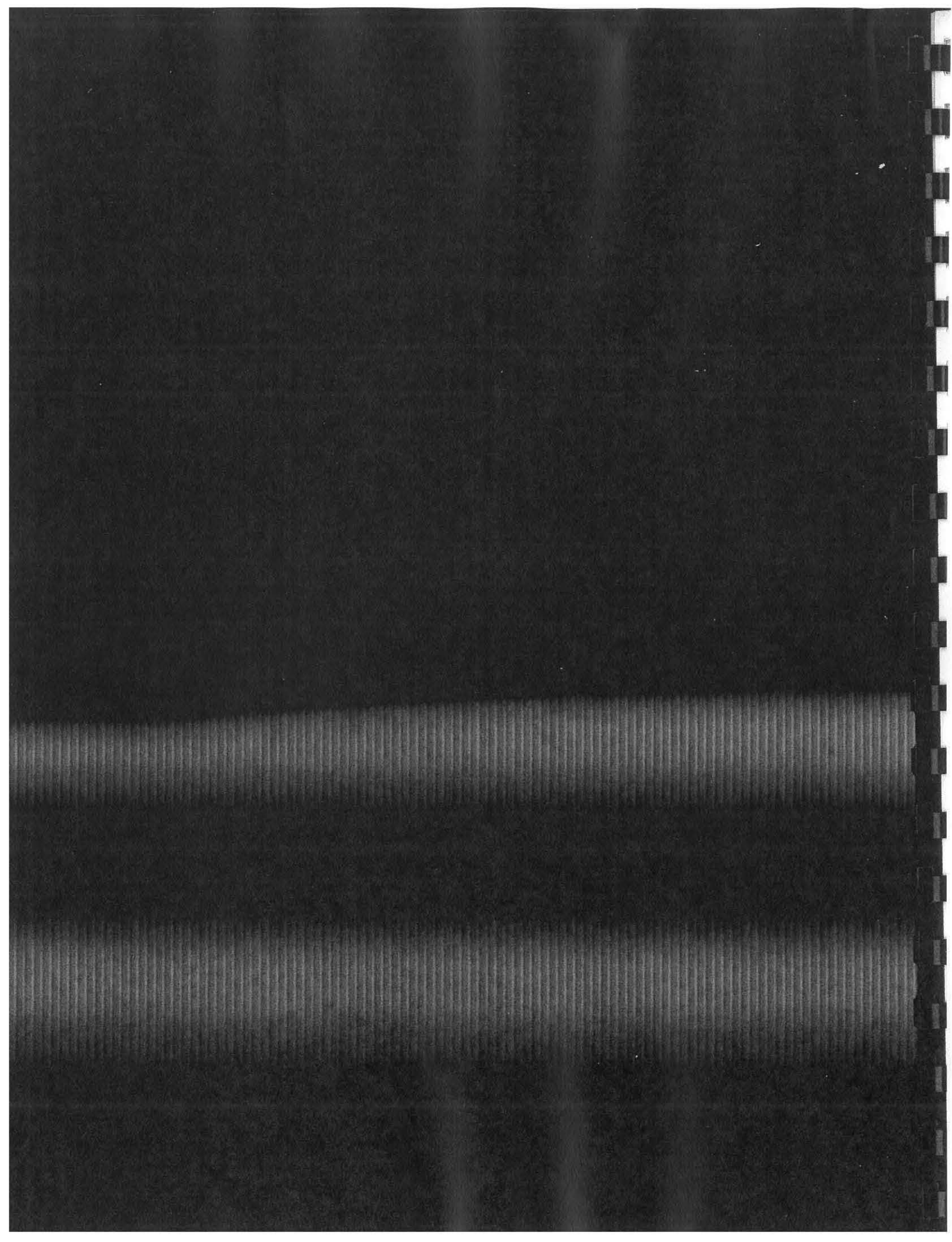


TABLE OF CONTENTS

INTRODUCTION	1
PROJECT LOCATION	1
LICENSE/PERMIT INFORMATION	1
SUCCESS CRITERIA	1
VEGETATIVE ANALYSIS	2
OBSERVED WILDLIFE UTILIZATION	4
W.A.T.E.R. SCORES	4
NEXT MONITORING REPORT	4
SUMMARY	5
DISCUSSION OF MONITORING RESULTS OVER TIME	5
APPENDIX	6
LOCATION MAP	7
SITE MAP - with photostations	8
PHOTOPAGES	9
VEGETATIVE COVERAGE TABLES AND W.A.T.E.R. TABLE	17
CIRCULATION LIST	33
MONITORING REPORT SCHEDULE	34

INTRODUCTION

The following document addresses one aspect of the Project's mitigation plan: The creation of a marine lagoon (Scout Lagoon) and seagrass habitat. Due to the requirements of the expansion project, Gardner Lagoon (a man-made lagoon) would be filled. Mitigation for the loss of seagrass within Gardner Lagoon consisted of transplanting seagrass to the newly created Scout Lagoon. Scout Lagoon was excavated to create approximately 1.3 acres for new seagrass habitat.

Upon excavation of Scout Lagoon, a 75/25 mix of sand/muck was graded into the lagoon to create optimal growing substrate for the transplanted sea grasses. The muck was acquired from Gardner Lagoon in order to closely mimic the seagrass donor site conditions. Approximately 120 cubic yards of native material was excavated from Gardner Lagoon and mixed with sand before placement into Scout Lagoon. After the planting site was graded, the lagoon was allowed to settle for approximately 72 hours before planting. Approximately 8,000 *Halodule wrightii* were transplanted to the lagoon between February 28 and March 9, 2005. The surrounding shore line was planted with 260 red mangroves (*Rhizophora mangle*) were planted in two rows every five feet along the shoreline of the lagoon. This report was written to document the conditions in the month of June 2005. The data collection for this report was completed on June 22, 2005.

PROJECT LOCATION

The project is located adjacent to Biscayne Bay immediately north of the existing Turkey Point Power Plant in Section 27 and 28, Township 57s, Range 40E in Florida City, Dade County, Florida. Latitude - 25°26'09" North. Longitude - 80°19'52" West.

LICENSE/PERMIT INFORMATION

The Army Corps of Engineers has issued permit SAJ-2004-813 for activities associated with construction at the Turkey Point Expansion Project and associated mitigation activities including transplanting of seagrass. The Turkey Point Expansion Project and mitigation activities are also authorized under the Power Plant Siting Act, Conditions of Certification PA 03-45.

SUCCESS CRITERIA

- A) Mitigation areas shall be monitored per mitigation plan dated January 27, 2005. Annual monitoring reports shall include W.A.T.E.R. scores to demonstrate an upward trend towards the required functional value. Monitoring months are as follows:
 - a. Year 1: April, June, August, and October (Following permit issuance, ACOE agreed that the first monitoring event would take place in May instead of April).
 - b. Year 2: April, August, and October
 - c. Year 3-5: April and August
- B) Scout Lagoon shall meet the projected W.A.T.E.R. score of 0.80 in a time period of 5 years from the time of creation. W.A.T.E.R. scores are to be submitted at least annually.



VEGETATIVE ANALYSIS

The field sampling protocol was designed to evaluate the existing percent coverage of seagrass within the newly planted Scout Lagoon. A total of eight non-overlapping transects, each 10 meters in length, were randomly selected to effectively represent seagrass coverage within the planted site. GPS coordinates were acquired for the start and end points of each transect.

Percent coverage of seagrass was measured within the planting site using a modified belt transect method. A 1.0 m² quadrat was used to quantify seagrasses and other benthic cover along each 10 meter transect. Quadrats were divided into 100 10x10cm squares. Seagrass presence within a single square represented one percent of each quadrat. Percent cover of each quadrat was recorded along the 10 meter transect and percent cover is shown for each transect in Table 1 (see Appendix). In addition, a modified Braun-Blanquet scale was used to provide a baseline for determining transplantation success in Table 2 (see Appendix). Additionally, a permanent 1.0 m² quadrat was established for future monitoring of a fixed plot.

Photos of the area were taken from fixed photo stations, allowing for comparison with later reports.

Seagrass and Macroalgal Results

Species noted in the site included the following:

Scientific Name	Common Name	Mean (% cover)
<i>Halodule wrightii</i>	shoal grass	8.7
<i>Ruppia maritima</i>	Widgeon grass	1.0
<i>Acetabularia calyculus</i>	mermaid wine glass	0.4
<i>Caulerpa sertularioides</i>	Caulerpa	0
<i>Ceramium sp.</i>	red algae	0
<i>Caulerpa sp.</i>	pipe cleaner algae	2.8
TOTAL		12.9

Overall average percent cover for the area was 12.9%. *Halodule wrightii* and *Ruppia maritima* were both noted within transects. *Ruppia sp.* occurred mainly around the shallow edges of the lagoon. Macroalgal species were observed in all transects within the site, although species composition has shifted from the previous monitoring event (May 2005). No red algal species were noted during this event. The average Braun-Blanquet score was 2.9.

Excluding Macroalgal coverage, the average percent cover for seagrass is 9.7% and the average Braun-Blanquet score is 2.3. The permanent one meter quadrat contained 10.0% cover with a Braun-Blanquet score of 2.1. *Halodule wrightii* and *Caulerpa sp.* were noted within this quadrat. Percent coverages of the seagrass bed with and without Macroalgal species is listed below.



Aquatic Coverage – Seagrass and Macroalgal species		
Transect	Average Percent Cover	Average Braun-Blanquet Score
1	8	2.1
2	7.2	2.0
3	15.9	3.5
4	6.6	1.9
5	25	4.4
6	11.6	2.8
7	13.6	3.2
8	15.4	3.4
AVERAGE	12.9	2.9

Aquatic Coverage – Seagrass species only		
Transect	Average Percent Cover	Average Braun-Blanquet Score
1	7.3	1.9
2	6.8	1.9
3	13.0	2.8
4	4.6	1.4
5	11.9	2.8
6	10.3	2.5
7	11.7	2.7
8	12.1	2.6
AVERAGE	9.7	2.3

Mangroves

Red mangroves (*Rhizophora mangle*) were planted at 0.0 NGVD around the perimeter of the lagoon. The range in height of these mangroves was from 22-28 inches at the time of planting. The range in the current heights of the mangroves is 23-29 inches. The mangroves appear to be in good health. Seven were noted to be dead at the time of this report, one was snapped and will eventually die. Mangrove seedlings were noted among the planted mangroves. Survivorship of the planted mangroves is at 97%. Photographic stations were established to monitor the progress of the planted mangroves (see Site Map in appendix).

Mangrove Survivorship			
Scientific Name	Common Name	Initial Count	Count at MR #2
<i>Rhizophora mangle</i>	Red Mangrove	260	253
% Survivorship			97.30%

MR #2 = Monitoring Report #2

OBSERVED WILDLIFE UTILIZATION

The following faunal species were observed directly during this or previous monitoring report.

Legend: †=Deceased * =Species listed as endangered, threatened, or species of special concern by Florida Fish and Wildlife Conservation Commission or United States Fish and Wildlife Service.

Wildlife Group	Common Name	Scientific Name
Aquatic	Nudibranch	<i>Aplysia dactylomela</i>
	Minnows	
	Tunicate	<i>Clavelina sp.</i>
	Blue land crab	<i>Cardisoma guanhumi</i>
	Needlefish	<i>Strongylura timucu</i>
Birds	Brown Pelican	<i>Pelecanus occidentalis</i>
	American Crow	<i>Gallina chloropus</i>
	Blue Jay	<i>Cyanocitta cristata</i>
	Mourning Dove	<i>Zenaida macroura</i>
	Killdeer	<i>Aradrius vociferous</i>
	Common Yellowthroat	<i>Geothlypis trichas</i>
	Palm Warbler	<i>Dendroica palmarum</i>
	Northern Mockingbird	<i>Mimus polyglottos</i>
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>
	Turkey Vulture	<i>Cathartes aura</i>
Reptiles & Amphibians	Great Egret	<i>Ardea alba</i>
	Brown Anole	<i>Anolis sagrei</i>
Invertebrates	Bees/Wasps sp.	(Order Hymenoptera)
	Butterflies & Moths	(Order Lepidoptera)
	Damselflies	(Order Odonata)
	Dragonflies	(Order Odonata)

W.A.T.E.R. SCORES

W.A.T.E.R. scores for the site were evaluated in two polygons. The lagoon area consisted of one polygon. This area received a W.A.T.E.R. score of 0.63. The mangrove area consisted of another polygon. This area received a W.A.T.E.R. score of 0.57. The evaluation matrix is attached in the appendix.

NEXT MONITORING REPORT

The third monitoring report (MR#3) for the Turkey Point, Scout Lagoon Seagrass Beds will be prepared during the month of August 2005, and submitted by early September. This will document the growth during the next two months.



SUMMARY

The overall health of the site appears to be good. The average percent cover of seagrass and macroalgae in June 2005 was 12.9% with a Braun-Blanquet score of 2.9. Overall coverage for *Halodule wrightii* and *Ruppia maritima* was 9.7% with a Braun-Blanquet score of 2.3. There is greater coverage of *Ruppia maritima* toward the edges of the lagoon than in the middle. Macroalgal coverage is also greater near the edges of the lagoon.

Minnows, crabs, and needlefish were noted within the lagoon.

Silt fence has been installed along the eastern edge of the lagoon to prevent sediment runoff into the lagoon. A turbidity sample was collected in Scout Lagoon in the afternoon of Thursday, June 23, 2005. The result was 7.3 Nephelometric Turbidity Units (NTU).

The mangroves are growing well around the lagoon. Seven were noted to be dead; however, the survivorship of the red mangroves is at 97%. Seedlings were noted in the planted area.

The W.A.T.E.R. score for the lagoon area was calculated to be 0.63. The W.A.T.E.R. score for the mangrove area was calculated to be 0.57.

DISCUSSION OF MONITORING RESULTS OVER TIME

This section discusses the June 2005 monitoring results in relation to previous monitoring results. These results indicate satisfactory progress toward achieving the success criteria.

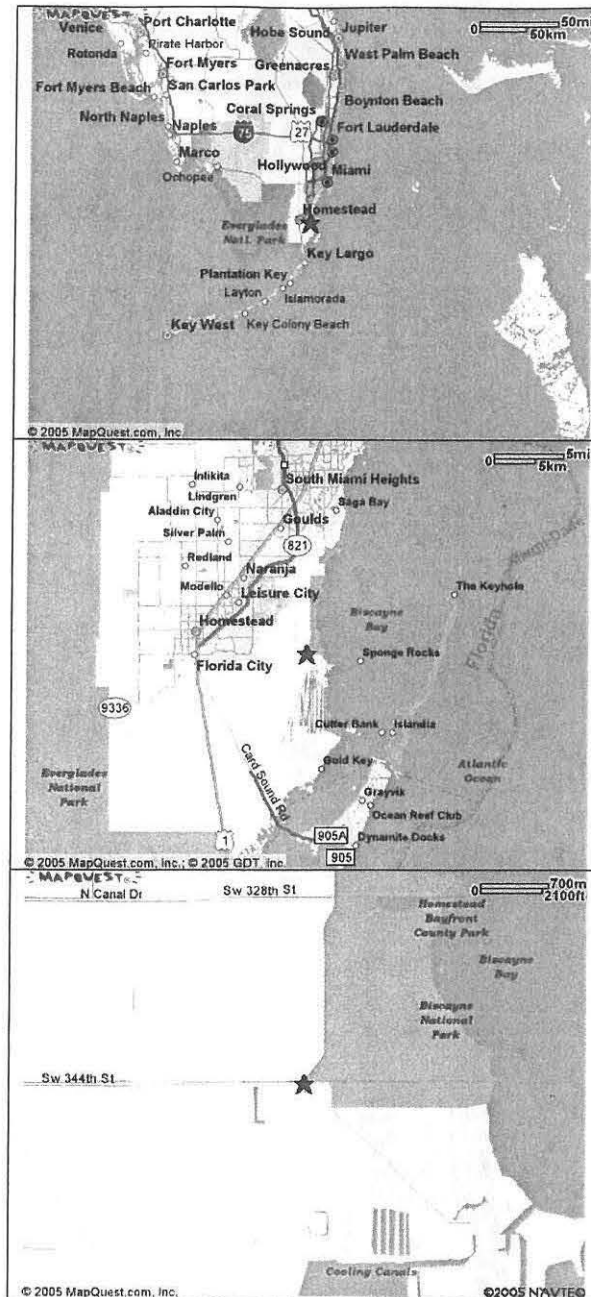
Seagrass cover, total herbaceous cover (seagrass and macroalgal species), and Braun-Blanquet scores within the lagoon have increased during the past month (see Table 3 in appendix). No exotic species have been observed within the lagoon since project inception.

Mangrove survivorship is excellent, planted individuals have grown about 1 inch, and seedlings have become established in the planted area since March 2005.

June 2005 was the first month for which the W.A.T.E.R. scores were calculated. The current score for the lagoon is 78% of the success criteria score of 0.80. The current score for the mangroves is 72% of the success criteria score of 0.80. Subsequent monitoring reports will discuss changes in W.A.T.E.R. scores between monitoring periods.

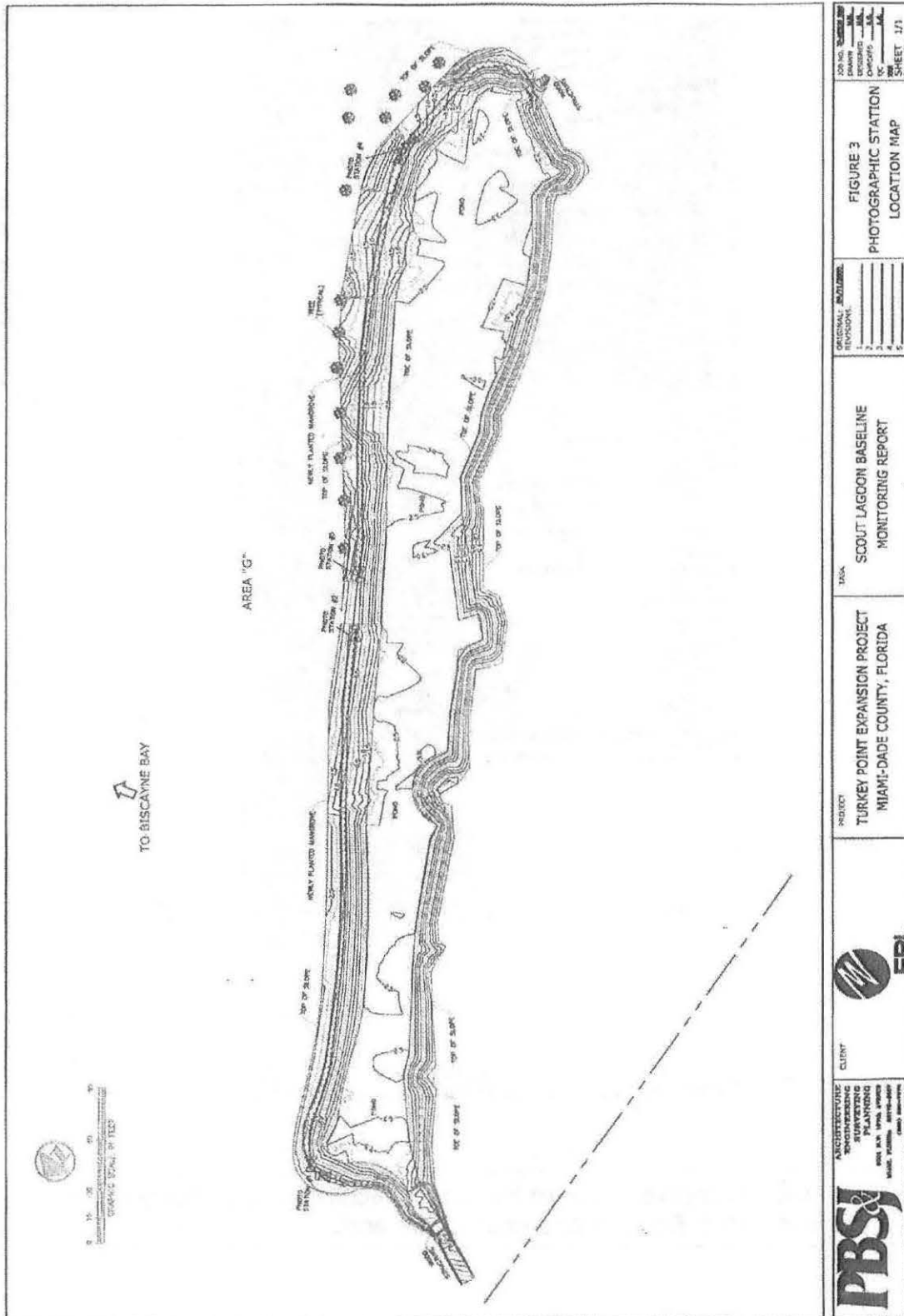
APPENDIX

LOCATION MAP



Take the Florida Turnpike south to the end, reaching US1 in Homestead. Take a left onto Palm Drive. Head east to the end.

SITE MAP- with photostations





PHOTOPAGES



Native Technologies, Inc.™ FPL TURKEY POINT, SCOUT LAGOON MR#2 June 2005

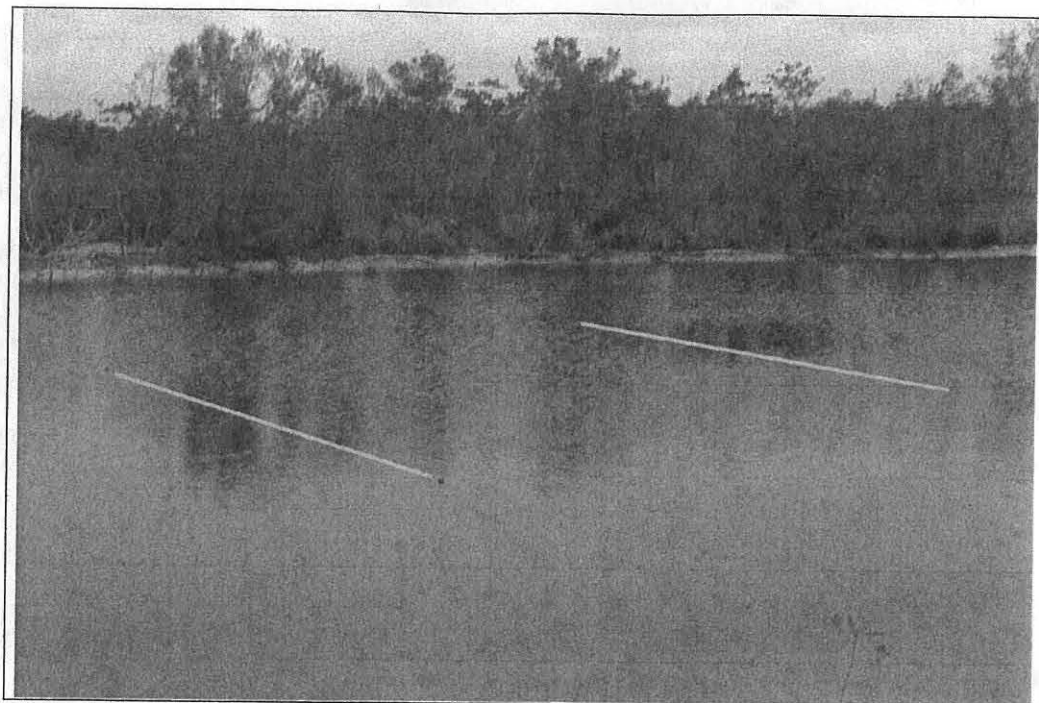


Photo 1: Transect 1 and 2 location buoys.

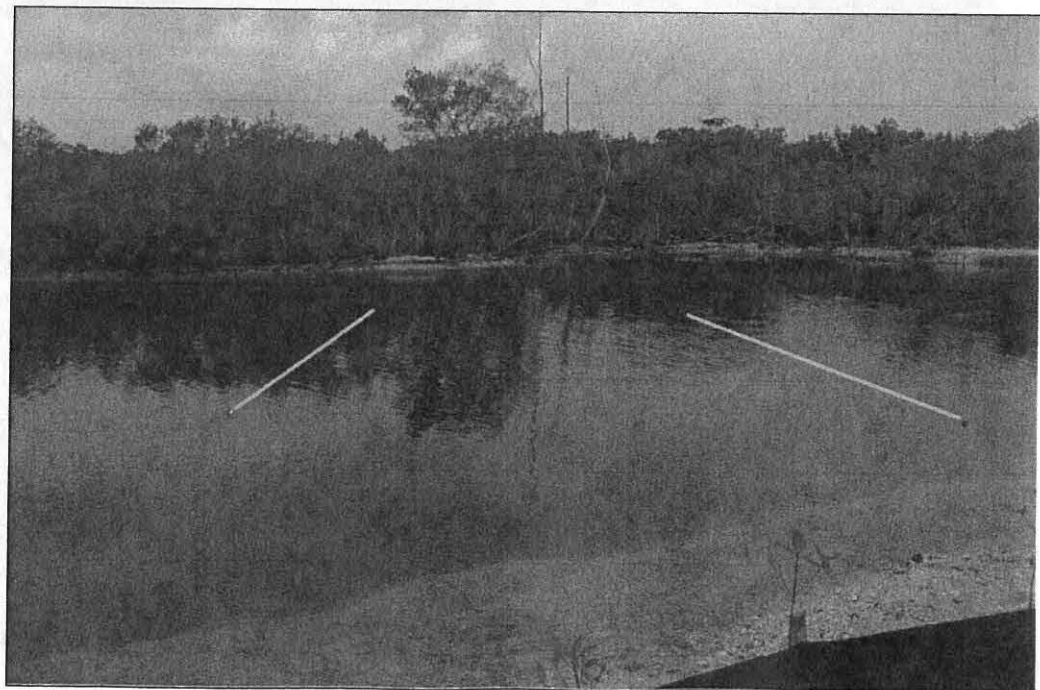


Photo 2: Transect 3 and 4 location buoys.

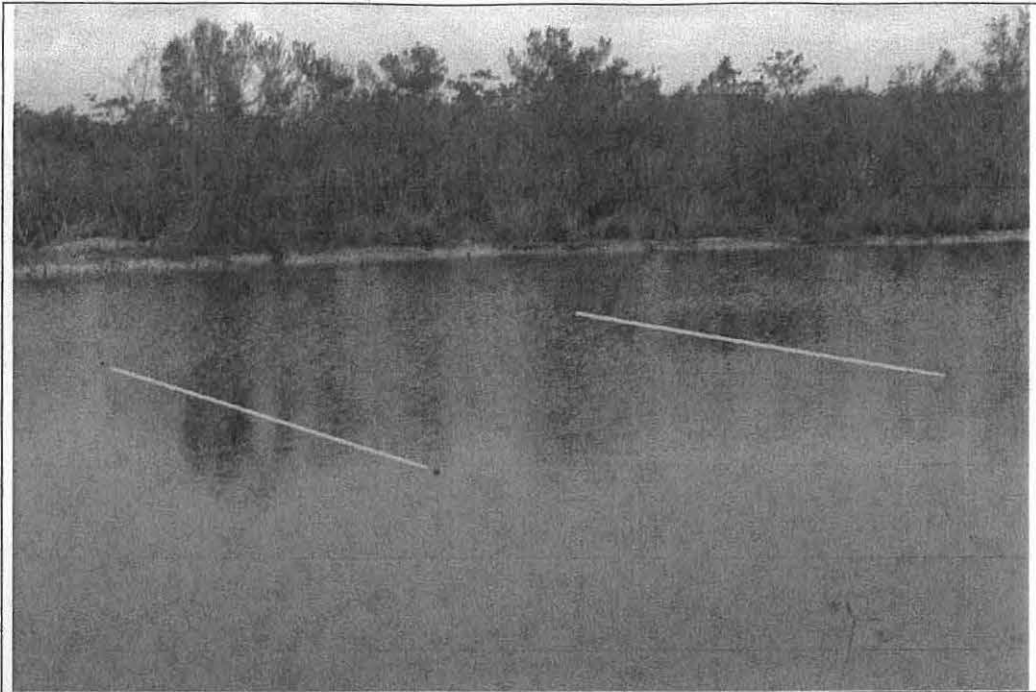


Photo 1: Transect 1 and 2 location buoys.

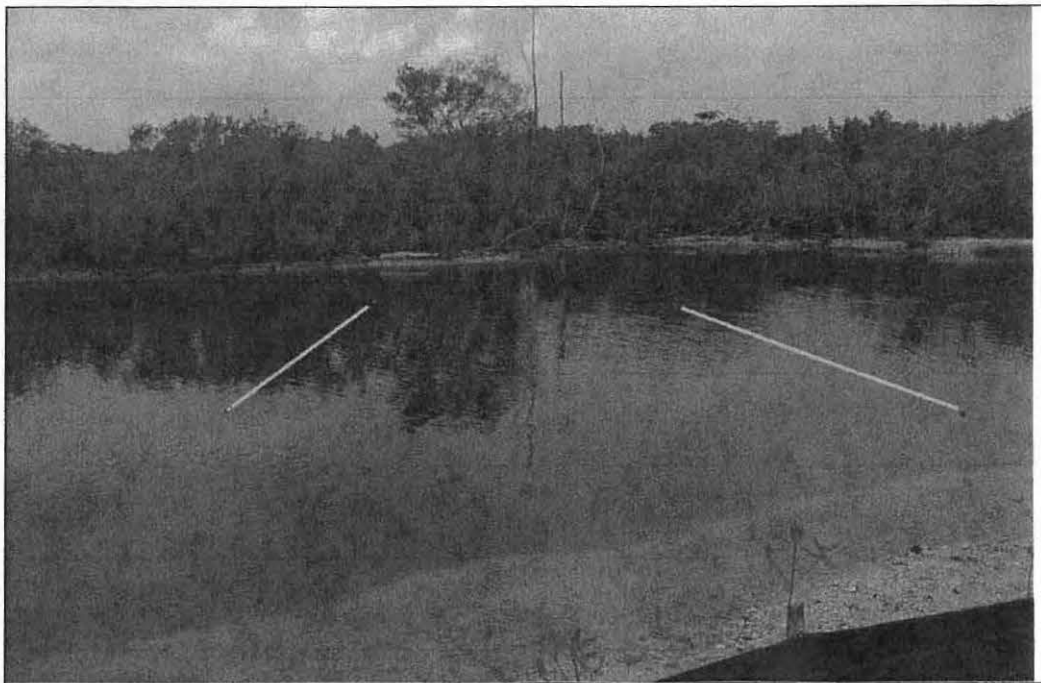


Photo 2: Transect 3 and 4 location buoys.

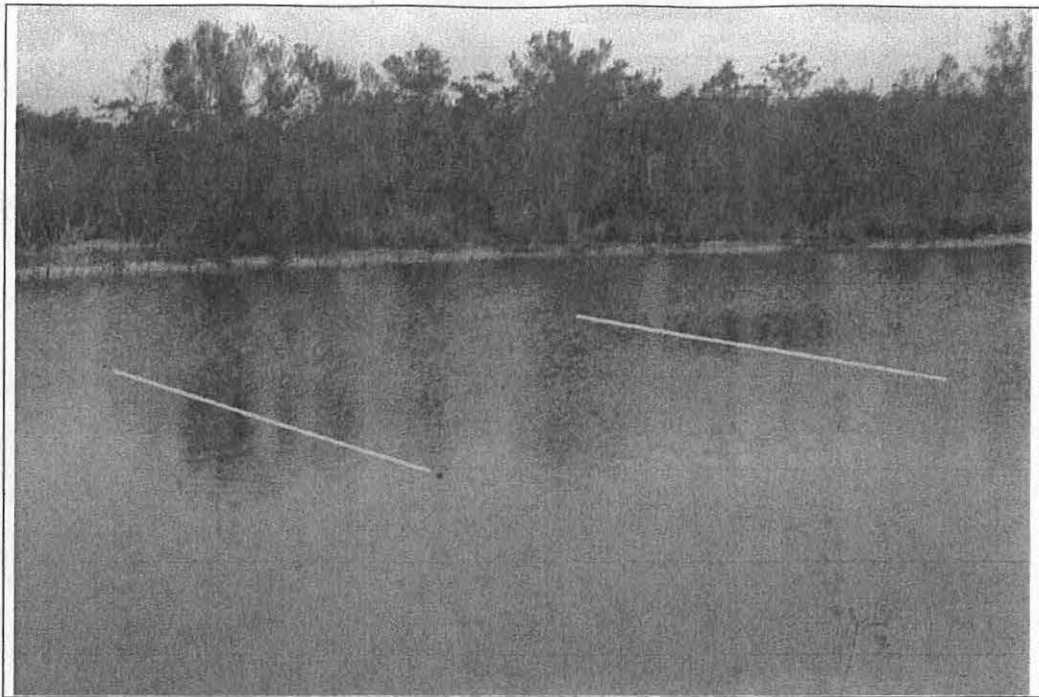


Photo 1: Transect 1 and 2 location buoys.

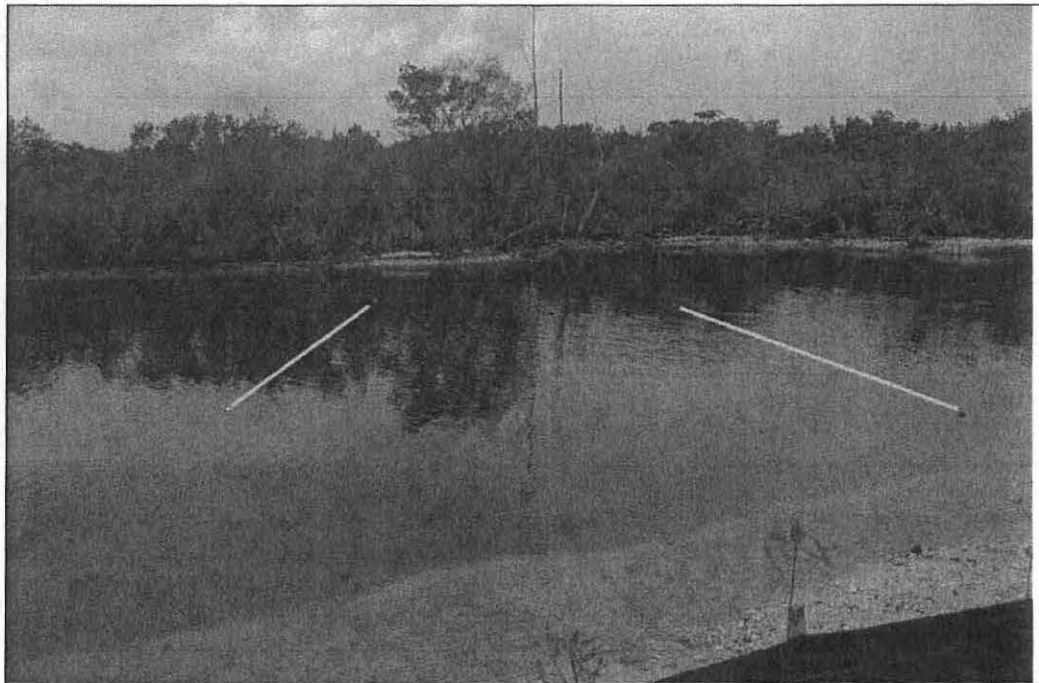


Photo 2: Transect 3 and 4 location buoys.

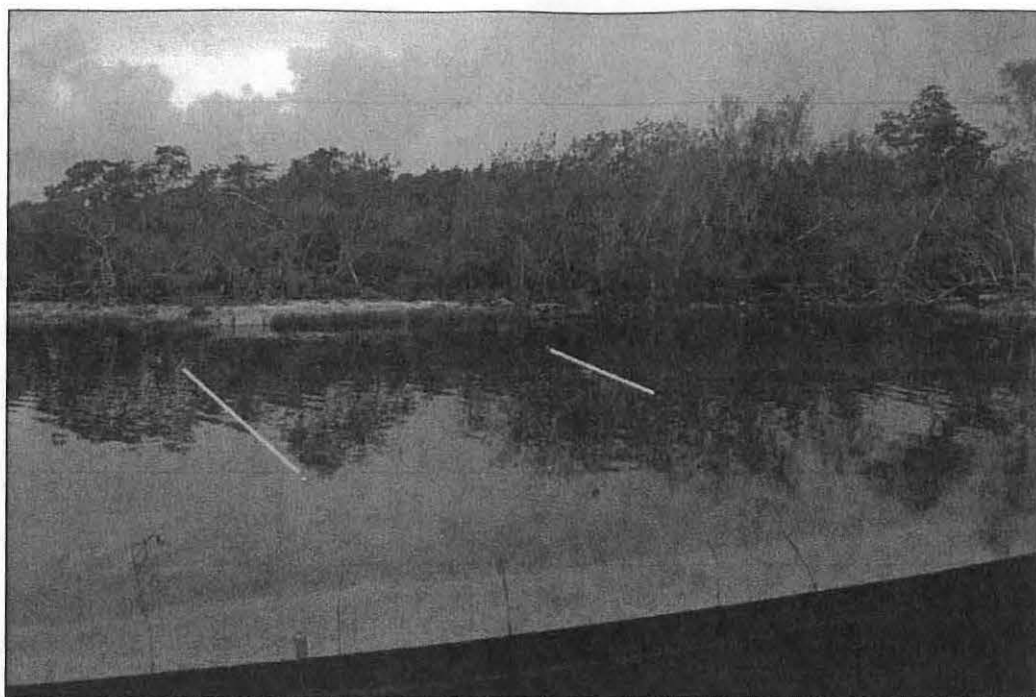


Photo 3: Transect 5 and 6 location buoys.

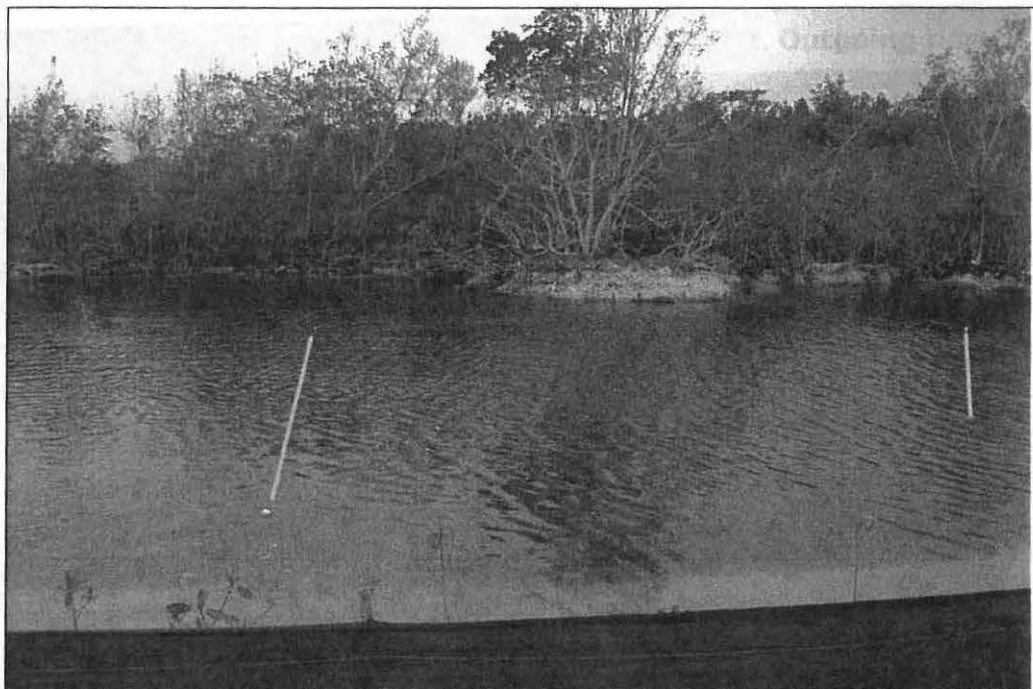


Photo 4: Transect 7 and 8 location buoys.

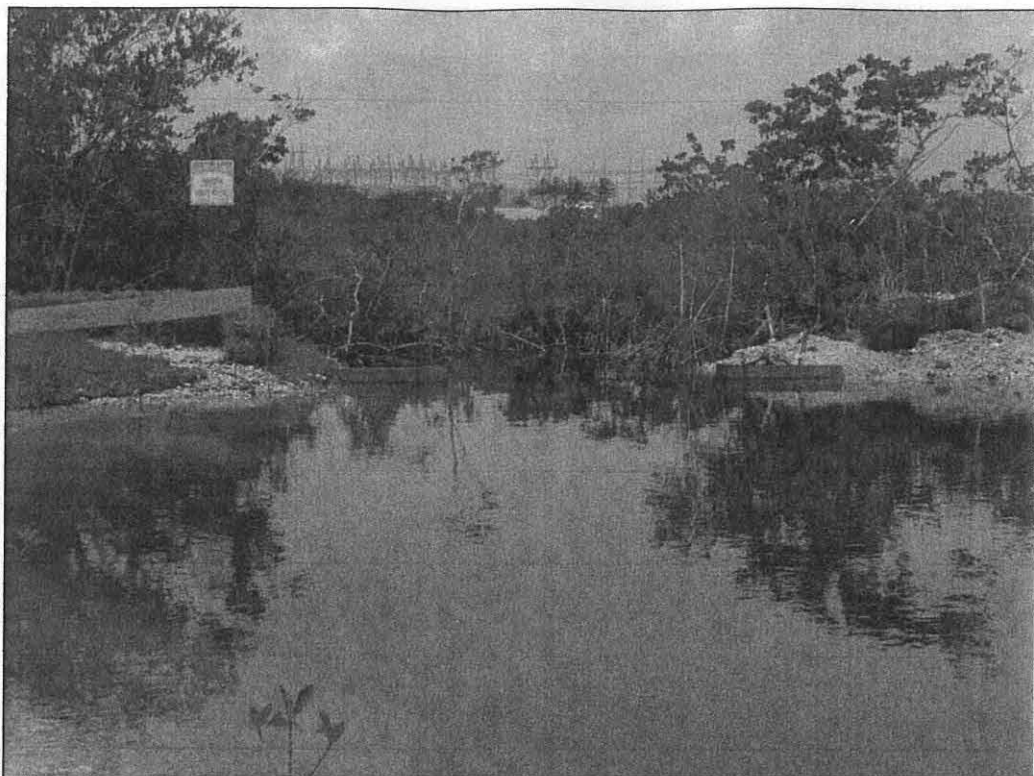


Photo 5: Adjustable weir at the south connection point. Outgoing tide.



Photo 6: Reinforced adjustable weir at the north connection point. Outgoing tide.



Photo 7: school of fish

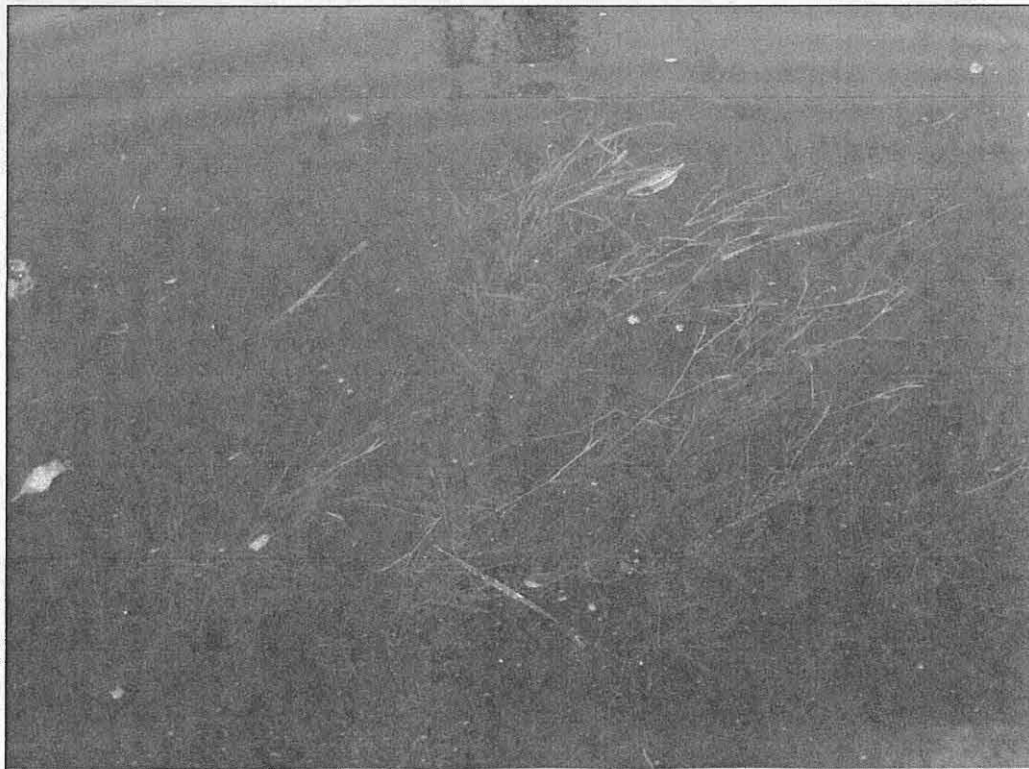


Photo 8: *Ruppia maritima*.

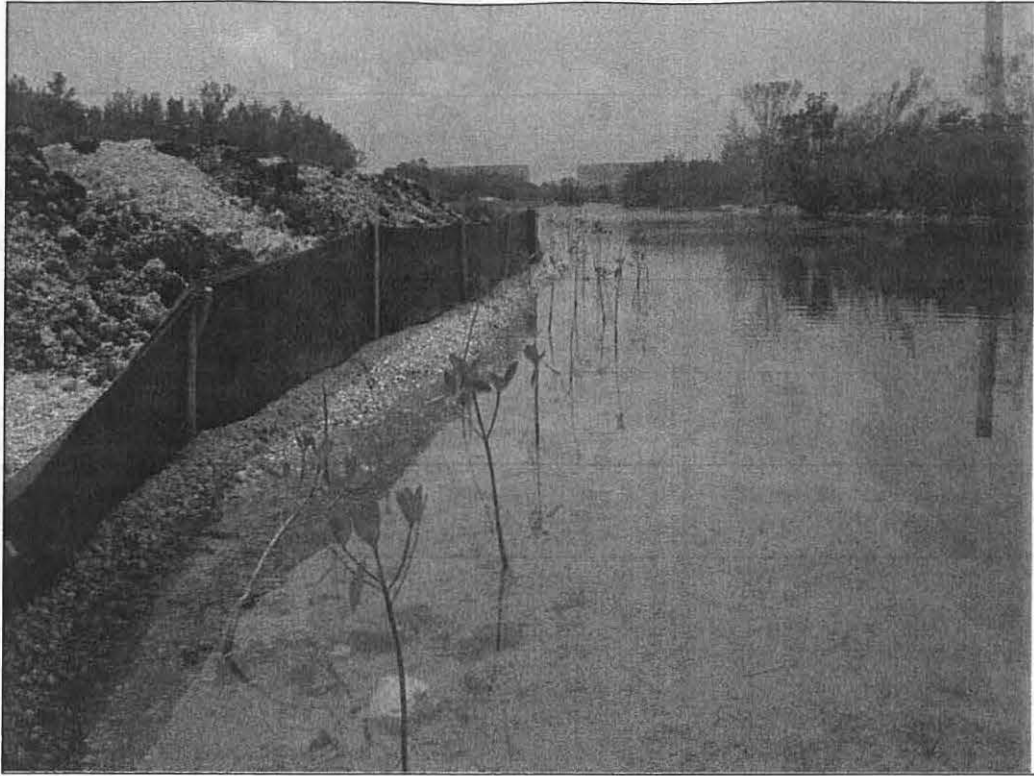


Photo 9: Mangrove Photostation 1. View to the south.

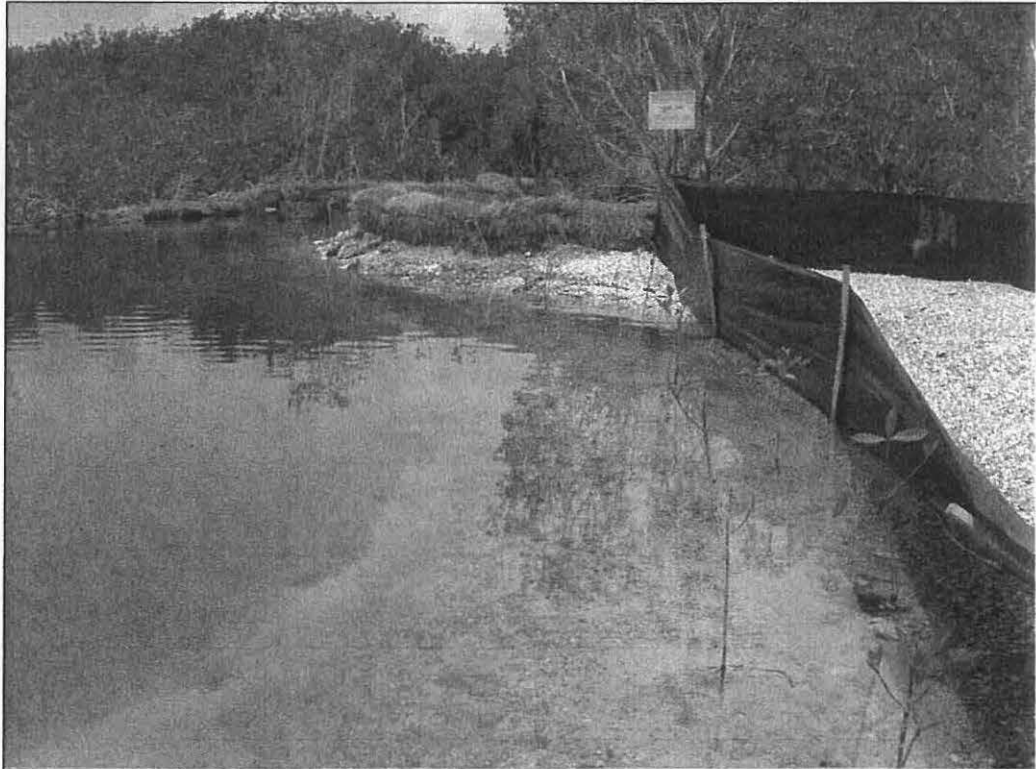


Photo 10: Mangrove Photostation 1. View to the west.

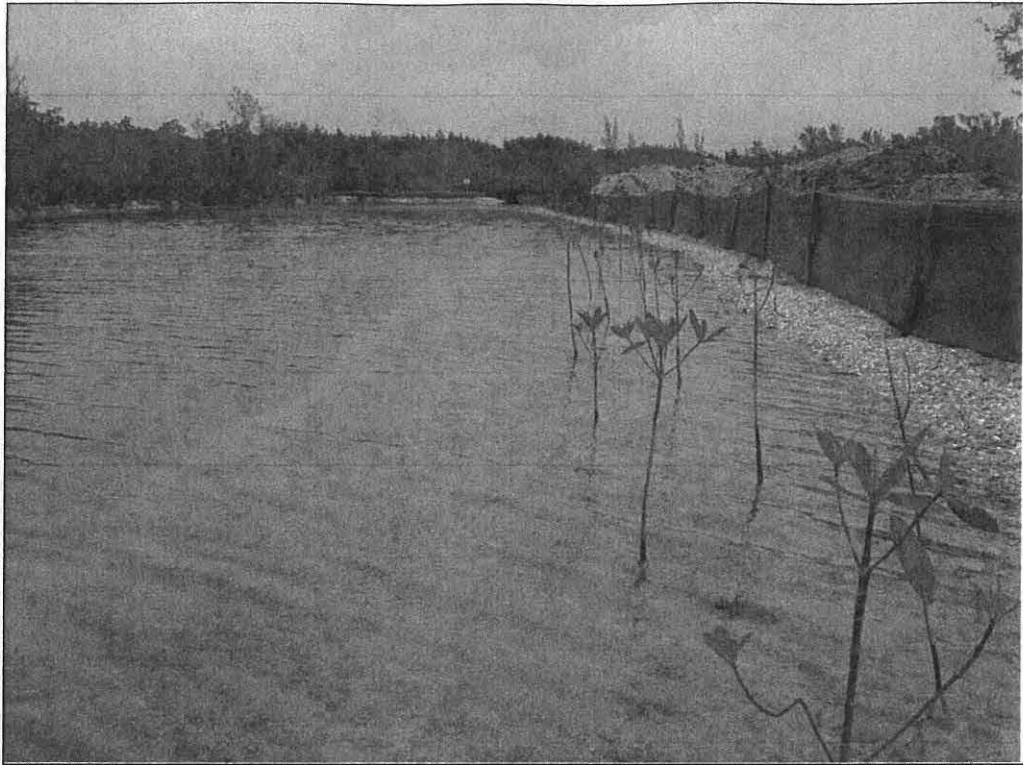


Photo 11: Mangrove Photostation 2. View to the north.

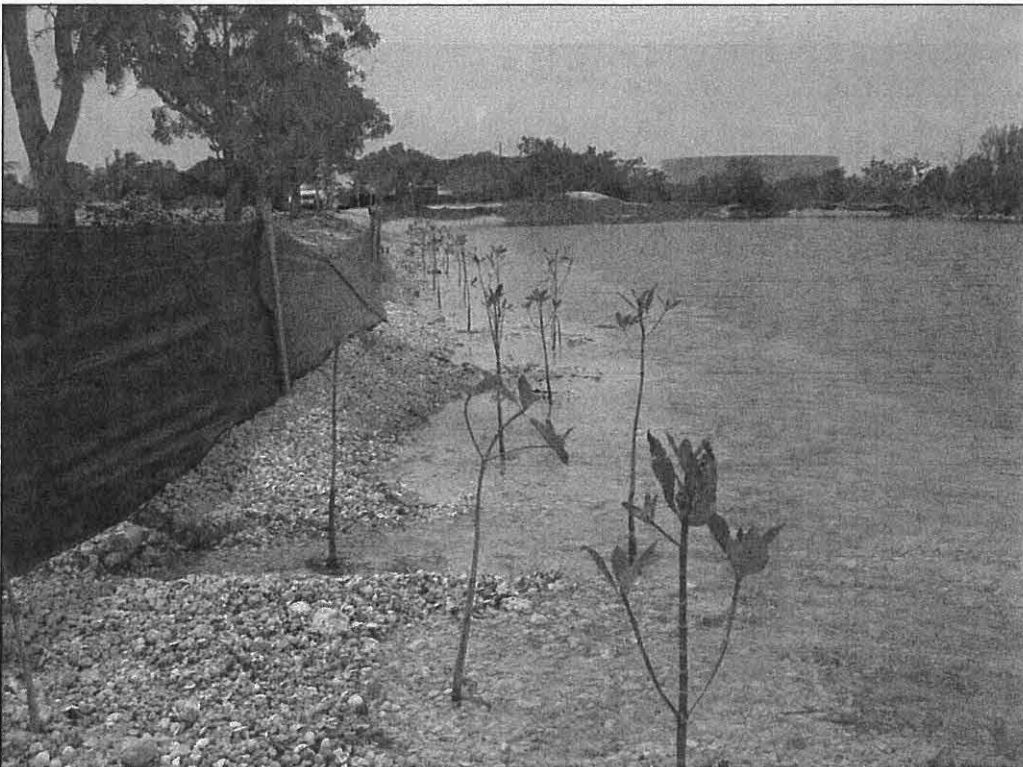


Photo 12: Mangrove Photostation 3. View to the south.

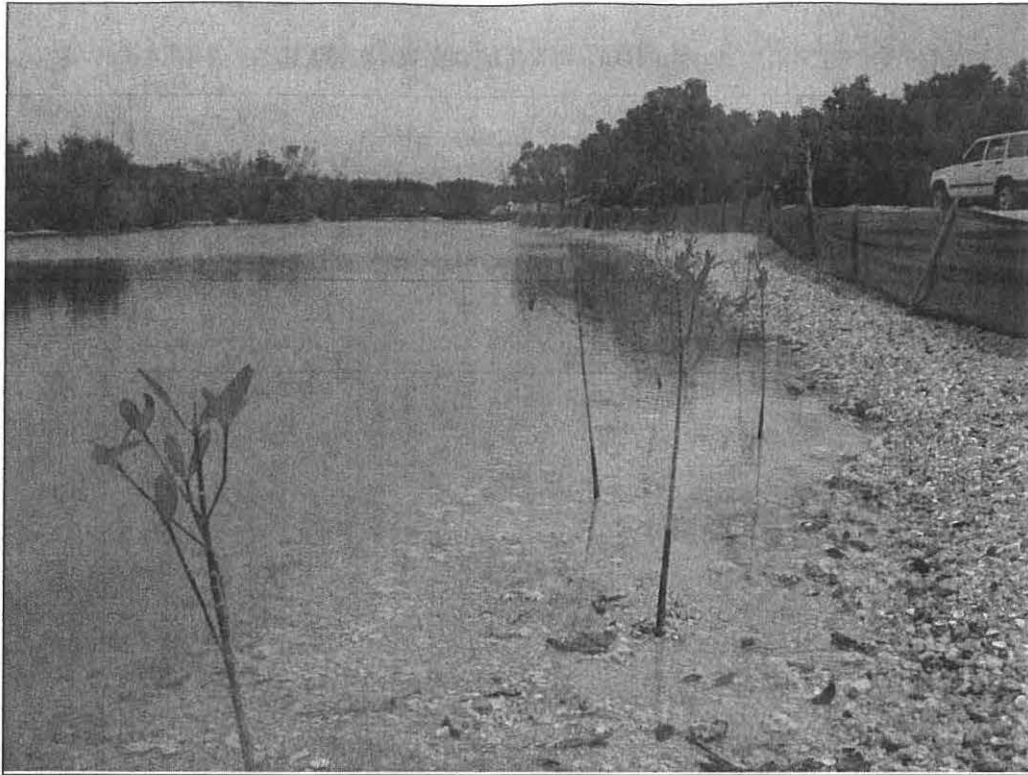


Photo 13: Mangrove Photostation 4. View to the north.

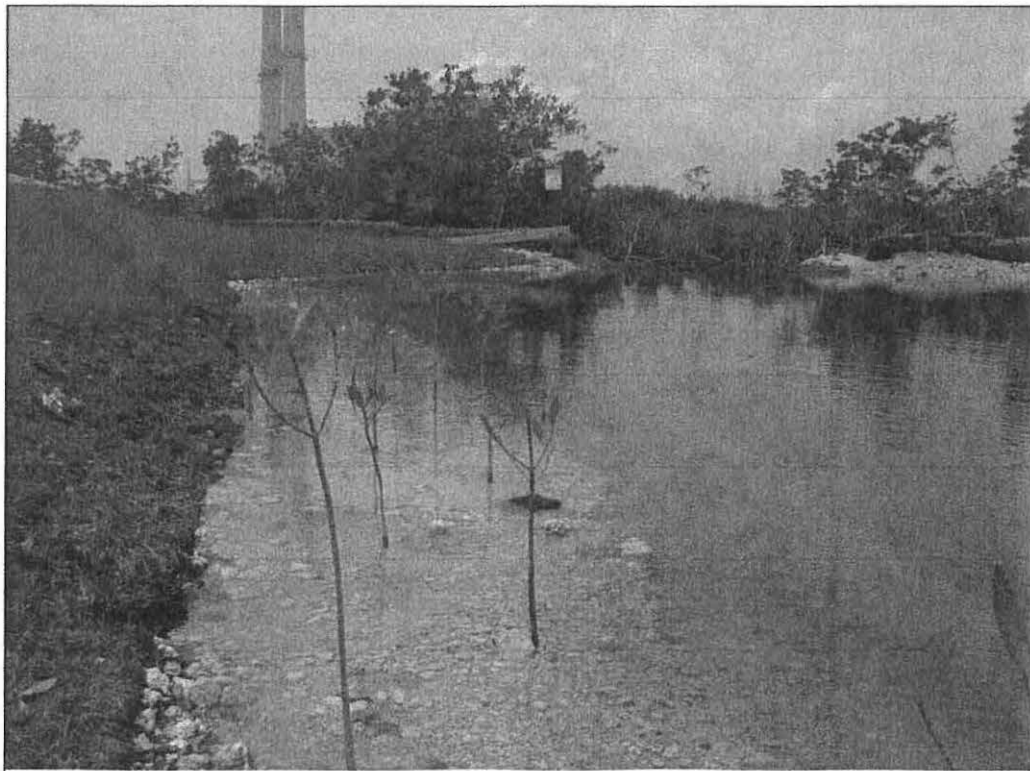


Photo 14: Mangrove Photostation 4. View to the west.

VEGETATIVE COVERAGE TABLES AND W.A.T.E.R. TABLE



FP&L - Turkey Point. Scout Lagoon Seagrass Monitoring
 Table 1 - Herbaceous quadrat data and mean percent coverages.
 Quarterly Monitoring Report # 2. June 2005

OBSERVED SPECIES		TRANSECT T-1 Areal Coverage											TRANSECT T-2 Areal Coverage										
SEAGRASS SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
<i>Halodule wrightii</i>	shoal grass	6	8	2	6	10	7	4	10	8	12	7.3	3	7	9	11	9	6	7	2	6	8	6.8
<i>Ruppia maritima</i>	Widgeon grass											0.0											0.0
<i>Acetabularia calyculus</i>	mermaid wine glass											0.0											0.0
<i>Caulerpa sertularioides</i>	caulerpa											0.0											0.0
<i>Ceramium sp.</i>	red algae											0.0											0.0
<i>Caulerpa sp.</i>	pipe cleaner algae				2		1		4			0.7			2				1	1			0.4
% Total per quadrat		6.0	8.0	2.0	8.0	10.0	8.0	4.0	14.0	8.0	12.0	8.0	3.0	7.0	11.0	11.0	9.0	6.0	8.0	3.0	6.0	8.0	7.2
EXOTIC/NUISANCE SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
None	None											0.0											0.0
None	None											0.0											0.0
None	None											0.0											0.0
% Total per quadrat		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL HERBACEOUS % COVER	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
Areal Quadrat Herbaceous Coverage		6	8	2	8	10	8	4	14	8	12	8.0	3	7	11	11	9	6	8	3	6	8	7.2
Areal Open Water/Detritous/Bare ground		94	92	98	92	90	92	96	86	92	88	92	97	93	89	89	91	94	92	97	94	92	93
TOTAL AREAL COVERAGE		100	100	100	100	100	100	100	100	100	100	100.0	100	100	100	100	100	100	100	100	100	100	100.0



FP&L - Turkey Point. Scout Lagoon Seagrass Monitoring
 Table 1 - Herbaceous quadrat data and mean percent coverages.
 Quarterly Monitoring Report # 2. June 2005

OBSERVED SPECIES		TRANSECT T-3 Areal Coverage											TRANSECT T-4 Areal Coverage										
SEAGRASS SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
<i>Halodule wrightii</i>	shoal grass	15	12	13	4	10	14	10	13	16	14	12.1	7	3	4	1	2	9	3	4	7	6	4.6
<i>Ruppia maritima</i>	Widgeon grass									2	7	0.9											0.0
<i>Acetabularia calyculus</i>	mermaid wine glass									3	3	0.6											0.0
<i>Caulerpa sertularioides</i>	caulerpa											0.0											0.0
<i>Ceramium sp.</i>	red algae											0.0											0.0
<i>Caulerpa sp.</i>	pipe cleaner algae		1			2				6	14	2.3		6		8			4	2			2.0
% Total per quadrat		15.0	13.0	13.0	4.0	12.0	14.0	10.0	13.0	27.0	38.0	15.9	7.0	9.0	4.0	9.0	2.0	9.0	7.0	6.0	7.0	6.0	6.6
EXOTIC/NUISANCE SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
None	None											0.0											0.0
None	None											0.0											0.0
None	None											0.0											0.0
% Total per quadrat		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL HERBACEOUS % COVER	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
Areal Quadrat Herbaceous Coverage		15	13	13	4	12	14	10	13	27	38	15.9	7	9	4	9	2	9	7	6	7	6	6.6
Areal Open Water/Detritous/Bare ground		85	87	87	96	88	86	90	87	73	62	84	93	91	96	91	98	91	93	94	93	94	93
TOTAL AREAL COVERAGE		100	100	100	100	100	100	100	100	100	100	100.0	100	100	100	100	100	100	100	100	100	100	100.0



FP&L - Turkey Point. Scout Lagoon Seagrass Monitoring
 Table 1 - Herbaceous quadrat data and mean percent coverages.
 Quarterly Monitoring Report # 2. June 2005

OBSERVED SPECIES		TRANSECT T-5											TRANSECT T-6											
		Areal Coverage											Areal Coverage											
SEAGRASS SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean	
<i>Halodule wrightii</i>	shoal grass	5	10	14	15	7	4	12	7	3	6	8.3	7	13	14	10	9	12	8	5	13	12	10.3	
<i>Ruppia maritima</i>	Widgeon grass	16	17	3								3.6											0.0	
<i>Acetabularia calyculus</i>	mermaid wine glass	17	7									2.4											0.0	
<i>Caulerpa sertularioides</i>	caulerpa											0.0											0.0	
<i>Ceramium sp.</i>	red algae											0.0											0.0	
<i>Caulerpa sp.</i>	pipe cleaner algae	80	13			10			3		1	10.7		4		4			3	2			1.3	
% Total per quadrat		118.0	47.0	17.0	15.0	17.0	4.0	12.0	10.0	3.0	7.0	25.0	7.0	17.0	14.0	14.0	9.0	12.0	11.0	7.0	13.0	12.0	11.6	
EXOTIC/NUISANCE SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean	
<i>None</i>	None											0.0											0.0	
<i>None</i>	None											0.0											0.0	
<i>None</i>	None											0.0											0.0	
% Total per quadrat		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TOTAL HERBACEOUS % COVER	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean	
Areal Quadrat Herbaceous Coverage		118	47	17	15	17	4	12	10	3	7	25.0	7	17	14	14	9	12	11	7	13	12	11.6	
Areal Open Water/Detritous/Bare ground		-18	53	83	85	83	96	88	90	97	93	75	93	83	86	86	91	88	89	93	87	88	88	
TOTAL AREAL COVERAGE		100	100	100	100	100	100	100	100	100	100	100.0	100	100	100	100	100	100	100	100	100	100	100.0	



FP&L - Turkey Point. Scout Lagoon Seagrass Monitoring

Table 1 - Herbaceous quadrat data and mean percent coverages.

Quarterly Monitoring Report # 2. June 2005

OBSERVED SPECIES		TRANSECT T-7 Areal Coverage												TRANSECT T-8 Areal Coverage												Mean for All Tran- sects
SEAGRASS SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean			
<i>Halodule wrightii</i>	shoal grass	10	6	14	10	9	12	8	5	17	12	10.3	19	11	9	10	11	6	9	10	14	3	10.2	8.7		
<i>Ruppia maritima</i>	Widgeon grass	14										1.4										19	1.9	1.0		
<i>Acetabularia calyculus</i>	mermaid wine glass	4										0.4										1	0.1	0.4		
<i>Caulerpa sertularioides</i>	caulerpa											0.0											0.0	0.0		
<i>Ceramium sp.</i>	red algae											0.0											0.0	0.0		
<i>Caulerpa sp.</i>	pipe cleaner algae		4			4	5	2				1.5			7		2				6	17	3.2	2.8		
% Total per quadrat		28.0	10.0	14.0	10.0	13.0	17.0	10.0	5.0	17.0	12.0	13.6	19.0	11.0	16.0	10.0	13.0	6.0	9.0	10.0	20.0	40.0	15.4	12.9		
EXOTIC/NUISANCE SPECIES		Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean		
<i>None</i>	None												0.0											0.0	0.0	
<i>None</i>	None												0.0											0.0	0.0	
<i>None</i>	None												0.0											0.0	0.0	
% Total per quadrat		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TOTAL HERBACEOUS % COVER	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean	12.9		
Areal Quadrat Herbaceous Coverage		28	10	14	10	13	17	10	5	17	12	13.6	19	11	16	10	13	6	9	10	20	40	15.4			
Areal Open Water/Detritious/Bare ground		72	90	86	90	87	83	90	95	83	88	86	81	89	84	90	87	94	91	90	80	60	85			
TOTAL AREAL COVERAGE		100	100	100	100	100	100	100	100	100	100	100.0	100	100	100	100	100	100	100	100	100	100	100.0			



FP&L - Turkey Point. Scout Lagoon Seagrass Monitoring

Table 2 - Braun-Blanquet Scores.

Quarterly Monitoring Report # 2. June 2005

OBSERVED SPECIES		TRANSECT T-1 Braun-Blanquet											TRANSECT T-2 Braun-Blanquet										
SEAGRASS SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
<i>Halodule wrightii</i>	shoal grass	2	2	0.5	2	2	2	1	2	2	3	1.9	1	2	2	3	2	2	2	0.5	2	2	1.9
<i>Ruppia maritima</i>	Widgeon grass											0.0											0.0
<i>Acetabularia calyculus</i>	mermaid wine glass											0.0											0.0
<i>Caulerpa sertularioides</i>	caulerpa											0.0											0.0
<i>Ceramium sp.</i>	red algae											0.0											0.0
<i>Caulerpa sp.</i>	pipe cleaner algae				0.5		0.5		1			0.2			1				0.5	0.1			0.2
Subtotals		2.0	2.0	0.5	2.5	2.0	2.5	1.0	3.0	2.0	3.0	2.1	1.0	2.0	3.0	3.0	2.0	2.0	2.5	0.6	2.0	2.0	2.0
EXOTIC/NUISANCE SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
None	None											0.0											0.0
None	None											0.0											0.0
None	None											0.0											0.0
Subtotals		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BRAUN-BLANQUET COVER		2.0	2.0	0.5	2.5	2.0	2.5	1.0	3.0	2.0	3.0	2.1	1.0	2.0	3.0	3.0	2.0	2.0	2.5	0.6	2.0	2.0	2.0



FP&L - Turkey Point. Scout Lagoon Seagrass Monitoring

Table 2 - Braun-Blanquet Scores.

Quarterly Monitoring Report # 2. June 2005

OBSERVED SPECIES		TRANSECT T-3 Braun-Blanquet											TRANSECT T-4 Braun-Blanquet										
SEAGRASS SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
<i>Halodule wrightii</i>	shoal grass	3	3	3	1	2	3	2	3	3	3	2.6	2	1	1	0.5	1	2	1	1	2	2	1.4
<i>Ruppia maritima</i>	Widgeon grass										2	0.2											0.0
<i>Acetabularia calyculus</i>	mermaid wine glass										1	0.1											0.0
<i>Caulerpa sertularioides</i>	caulerpa											0.0											0.0
<i>Ceramium sp.</i>	red algae											0.0											0.0
<i>Caulerpa sp.</i>	pipe cleaner algae		0.1			0.5				2	3	0.6		2		2			1	0.5			0.6
Subtotals		3.0	3.1	3.0	1.0	2.5	3.0	2.0	3.0	5.0	9.0	3.5	2.0	3.0	1.0	2.5	1.0	2.0	2.0	1.5	2.0	2.0	1.9
EXOTIC/NUISANCE SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
None	None											0.0											0.0
None	None											0.0											0.0
None	None											0.0											0.0
Subtotals		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BRAUN-BLANQUET COVER		3.0	3.1	3.0	1.0	2.5	3.0	2.0	3.0	5.0	9.0	3.5	2.0	3.0	1.0	2.5	1.0	2.0	2.0	1.5	2.0	2.0	1.9



FP&L - Turkey Point. Scout Lagoon Seagrass Monitoring

Table 2 - Braun-Blanquet Scores.

Quarterly Monitoring Report # 2. June 2005

OBSERVED SPECIES		TRANSECT T-5 Braun-Blanquet											TRANSECT T-6 Braun-Blanquet										
SEAGRASS SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
<i>Halodule wrightii</i>	shoal grass	2	2	3	3	2	1	3	2	1	2	2.1	2	3	3	2	2	3	2	2	3	3	2.5
<i>Ruppia maritima</i>	Widgeon grass	3	3	1								0.7											0.0
<i>Acetabularia calyculus</i>	mermaid wine glass	3	2									0.5											0.0
<i>Caulerpa sertularioides</i>	caulerpa											0.0											0.0
<i>Ceramium sp.</i>	red algae											0.0											0.0
<i>Caulerpa sp.</i>	pipe cleaner algae	5	3			2			1		0.1	1.1		1		1			0.5	0.5			0.3
Subtotals		13.0	10.0	4.0	3.0	4.0	1.0	3.0	3.0	1.0	2.1	4.4	2.0	4.0	3.0	3.0	2.0	3.0	2.5	2.5	3.0	3.0	2.8
EXOTIC/NUISANCE SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean
None	None											0.0											0.0
None	None											0.0											0.0
None	None											0.0											0.0
Subtotals		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BRAUN-BLANQUET COVER		13.0	10.0	4.0	3.0	4.0	1.0	3.0	3.0	1.0	2.1	4.4	2.0	4.0	3.0	3.0	2.0	3.0	2.5	2.5	3.0	3.0	2.8



FP&L - Turkey Point. Scout Lagoon Seagrass Monitoring
 Table 2 - Braun-Blanquet Scores.
 Quarterly Monitoring Report # 2. June 2005

OBSERVED SPECIES		TRANSECT T-7 Braun-Blanquet											TRANSECT T-8 Braun-Blanquet											Mean for All Tran- sects
SEAGRASS SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean	
<i>Halodule wrightii</i>	shoal grass	2	2	3	2	2	3	2	2	3	3	2.4	3	3	2	2	3	2	2	2	3	1	2.3	2.1
<i>Ruppia maritima</i>	Widgeon grass	3										0.3										3	0.3	0.2
<i>Acetabularia calyculus</i>	mermaid wine glass	1										0.1										0.5	0.1	0.1
<i>Caulerpa sertularioides</i>	caulerpa											0.0											0.0	0.0
<i>Ceramium sp.</i>	red algae											0.0											0.0	0.0
<i>Caulerpa sp.</i>	pipe cleaner algae		1		1	1	0.5					0.4			2		0.5				2	3	0.8	0.5
Subtotals		6.0	3.0	3.0	3.0	3.0	3.5	2.0	2.0	3.0	3.0	3.2	3.0	3.0	4.0	2.0	3.5	2.0	2.0	2.0	5.0	7.5	3.4	2.9
EXOTIC/NUISANCE SPECIES	Quadrat (sq m):	1	2	3	4	5	6	7	8	9	10	Mean	1	2	3	4	5	6	7	8	9	10	Mean	
None	None											0.0											0.0	0.0
None	None											0.0											0.0	0.0
None	None											0.0											0.0	0.0
Subtotals		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BRAUN-BLANQUET COVER		6.0	3.0	3.0	3.0	3.0	3.5	2.0	2.0	3.0	3.0	3.2	3.0	3.0	4.0	2.0	3.5	2.0	2.0	2.0	5.0	7.5	3.4	2.9

Table 3 - Comparison of Monitoring Results Over Time

Monitoring Report # 2. June 2005

TABLE 3

[illegible][illegible][illegible]

NC = not calculated.

[illegible]

Project: FPL Scout Lagoon

Reviewer: Melody White

Date: 15-Jun-05

Parameter/ Function	Scoring Criteria	Ratings	Polygon	Polygon	Polygon	Polygon	Polygon	Polygon
			MANGROVE	LAGOON				
1. Fish & Wildlife Functions Apply to freshwater, saltwater, brackish and mitigation systems								
a. Waterfowl, wading birds, wetland dependent, or aquatic birds of prey. (Mit. Bank - High specie count w/ low pop. #'s score 1)	7 or more species commonly observed	3	1	1				
	3-6 species commonly observed	2						
	1-2 species commonly observed	1						
	0 species commonly observed	0						
b. Fish (Mit. Bank - High specie count w/ low pop. #'s score 1 Restoration that causes 12% pop. Increases-higher score)	7 or more species commonly observed	3	1	2				
	3-6 species commonly observed	2						
	1-2 species commonly observed	1						
	0 species commonly observed	0						
c. Mammals (Mit. Bank - High specie count w/ low pop. #'s score 1 Restoration that causes 12% pop. Increases-higher score)	Top predator (carnivore) &/or large mammals	3	0	0				
	Medium sized mammals , (adult weight > 6 lbs.)	2						
	Small animals (rodents, etc.) , (adult weight < 6 lbs.)	1						
	0 species present	0						
d. Aquatic macroinvertebrates, amphibians (Mit. Bank - High specie count w/ low pop. #'s score 1 Restoration that causes 12% pop. Increases-higher score)	7 or more species commonly observed	3	0	1				
	3-6 species commonly observed	2						
	1-2 species commonly observed	1						
	0 species commonly observed	0						
e. Aquatic reptiles (Mit. Bank - High specie count w/ low pop. #'s score 1 Restoration that causes 12% pop. Increases-higher score)	Large species observed	3	0	0				
	Aquatic turtles	2						
	Snakes & lizards	1						
	No evidence of species present	0						

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews
Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advice from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County

Reviewer: Melody White
Date: 15-Jun-05

[illegible]

EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County

Date: 15-Jun-05

[illegible]

Mitigation Bank Wetland Function Evaluation Matrix

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews
Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advice from
EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County

Project: FPL Scout Lagoon

Reviewer: Melody White

Date: 15-Jun-05

Parameter/ Function	Scoring Criteria	Ratings	Polygon	Polygon	Polygon	Polygon	Polygon	Polygon
			MANGROVE	LAGOON				
3. Hydrologic Functions continued								
c. Hydropattern (fresh system)	>1 ft. water depth for at least 2.5 months and <6 in. for >1 month (measure water mark/ lichen line), or water depth ideal for specific wetland system.	3						
	>6 in. to 1 ft. for at least 2.5 months (measure water mark/ lichen line), or water depth borderline over or under for specific wetland system	2						
	<6 in. for at least 2.5 months (measure water mark/ lichen line) or water depth incorrect for specific wetland system	1						
	<6 in. in association with either canals, ditches, swales, culverts, pumps, and/or wellfields, or these factors cause water depth to be too deep for specific system.	0						
c-1 Alternate to c. for Saltwater, brackish (tidal) systems	>1 ft. water depth <2 ft. on 90% high tides	3	1	3				
	> 6 in. water depth <1 ft. on >50% high tides	2						
	< 6 in. water depth , but > than saturated	1						
	Saturated by saline water table only	0						
c-2 Alternate to c. for High Marsh (Juncus-Distichlis)	>10 in. water depth <2 ft. on regular basis during growing season	3						
	>6 in. to 10 in. water depth on regular basis during growing season	2						
	>1 in. to 5 in. water depth on regular basis during growing season	1						
	>0.0 in. to 1 in. water depth sporadically during growing season	0						
c-3 Alternate to c. for Riverine systems	>2 ft. water depth (main channel) <6 ft. for 8 months	3						
	>2 ft. water depth (main channel) <4 ft. for 6 months	2						
	>1 ft. water depth (main channel) <2.5 ft. for 4 months	1						
	<1 ft. water depth, but dry for >4 weeks (dry season)	0						

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews
Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advice from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County

Reviewer: Melody White
Date: 15-Jun-05

Parameter/ Function	Scoring Criteria	Ratings	Polygon	Polygon	Polygon	Polygon	Polygon	Polygon
			MANGROVE	LAGOON				
3. Hydrologic Functions continued								
d. Water Quality	No indication of poor water quality (lab testing required, all values within acceptable range)	3	2	2				
	No visual indicators of poor water quality observed (1 value just over or under acceptable range)	2						
	Visual indicators of poor water quality questionable (2 values over or under acceptable range)	1						
	Visual indicators of poor water quality observed or lab verified (values are out of acceptable range)	0						
e. Intactness of historic topography (soil disturbance)	Unaltered	3	3	3				
	Slightly altered soil disturbance, < 10% of assessment area	2						
	Moderately altered soil disturbance, < 25% of assessment area	1						
	Extremely altered soil disturbance, may exceed 50% of assessment area	0						
f. Soils, organic (fresh systems)	Organic soil classified hydric soil >12 in. or any thickness over bedrock/caprock with perched water table and either condition covering >90% of surface area	3						
	Organic soil classified hydric soil >6 in. but <12 in. and covering >90% of surface area	2						
	Organic soil classified hydric soil >1 in. but <6 in. and covering >50% but <90% of surface area	1						
	Organic soil classified non-hydric soil <1 in. for >50% of surface area	0						
f-1 Alternate to f. for Freshwater, saltwater systems	Sandy soil classified hydric soil with distinct mottling and concretions present in greater than 40% of horizon	3						
	Sandy soil classified hydric soil with mottling and concretions present in >20% but <40% of horizon	2						
	Sandy soil classified hydric soil with light or sparse mottling and concretions <2 mm diameter or <20% of horizon	1						
	Sandy soil exhibits strong evidence of disturbance or mechanical manipulations or is fill material	0						
f-2 Alternate to f. for Freshwater, saltwater, brackish (tidal) systems	Calcareous loam >12 in. and >90 % of surface area	3	2	0				
	Calcareous loam >6 in. to <12 in. and >90% of surface area	2						
	Calcareous loam >1 in. to <6 in. and covering >50% but <90% of surface area	1						
	Calcareous loam <1 in. for >50% of surface area	0						

Mitigation Bank Wetland Function Evaluation Matrix

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews
Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advice from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County

Project: FPL Scout Lagoon

Reviewer: Melody White
Date: 15-Jun-05

Parameter/ Function	Scoring Criteria	Ratings	Polygon	Polygon	Polygon	Polygon	Polygon	Polygon
			MANGROVE	LAGOON				
4. Salinity Parameters Apply to freshwater, saltwater, brackish, hypersaline and mitigation systems - Choose 1								
a. Optimum salinity for fresh systems during growing season based on mean high salinity for a normal year. Apply to freshwater systems within 5 miles of the coast	<2 parts per thousand (ppt)	3						
	2 to 3 parts per thousand (ppt)	2						
	4 to 5 parts per thousand (ppt)	1						
	>5 parts per thousand (ppt)	0						
a-1. Alternate to a- Optimum salinity for brackish systems during growing season based on mean high salinity for a normal year. Apply to brackish (tidal) systems only	6 to 8 parts per thousand (ppt)	3						
	9 to 13 parts per thousand (ppt)	2						
	14 to 16 parts per thousand (ppt)	1						
	>16 parts per thousand (ppt)	0						
a-2. Alternate to a. Optimum salinity for saline systems during growing season based on mean high salinity for a normal year. Apply to saline marsh (tidal) systems only	17 to 19 parts per thousand (ppt)	3	3	3				
	20 to 22 parts per thousand (ppt)	2						
	23 to 25 parts per thousand (ppt)	1						
	>25 parts per thousand (ppt)	0						
a-3. Alternate to a- Optimum salinity for hypersaline systems during growing season based on mean high salinity for a normal year. Apply to hypersaline (tidal) systems only	26 to 41 parts per thousand (ppt)	3						
	42 to 46 parts per thousand (ppt)	2						
	47 to 51 parts per thousand (ppt)	1						
	>51 parts per thousand (ppt)	0						
a-4 Alternate to a- Optimum salinity for riverine/tidal creek system during growing season based on mean high salinity for a normal year. Apply to riverine systems only	bottom (lower) third between 12 to 25 ppt	3						
	middle third between 6 to 11 ppt							
	upper (top) third between 0 to 4 ppt							
	bottom (lower) third between 26 to 32 ppt	2						
	middle third between 6 to 24 ppt							
	upper (top) third between 0 to 5 ppt							
	bottom (lower) third between 30 to 40 ppt	1						
	middle third between 8 to 29 ppt							
	upper (top) third between 0 to 7 ppt							
	bottom (lower) third between 35 to 50 ppt	0						
	middle third between 10 to 34 ppt							
	upper (top) third between 0 to 9 ppt							

Cottier Hearing, Inc.
W.A.T.E.R. created by: Bill L. Maus

11/1/1998

Cumulative Score (SC)	31	32
Maximum Possible Score (MPS)	54	51
W.A.T.E.R. = Cumulative Score/Maximum Possible Score	0.57	0.63
Success Criteria	0.8	0.8
Percent of Success Criteria Score	71.8%	78.4%

CIRCULATION LIST

- U.S. Army Corps of Engineers
Palm Beach Regulatory Office
Attn: Tori White
4400 PGA Boulevard, Suite 500
Palm Beach Gardens, Florida 33410
Re: Project No: SAJ-2004-813 (IP-TKW)
- U.S. Army Corps of Engineers
Enforcement Section (CESAJ-RD-PE)
Attn: Lisa Abernathy
P.O. Box 4970
Jacksonville, Florida 32232-0019
Re: Project No: SAJ-2004-813 (IP-TKW)
- Don Keirn
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Tallahassee, Florida 32312
- X Robert Miller, Senior Vice President
Native Technologies, Inc.
814 South Military Trail
Deerfield Beach, Florida 33442

MONITORING REPORT SCHEDULE

REPORT	AGENCY	SUBMITTAL DATE
1	Wilson Miller/USACOE/FPL	May 27, 2005
2	Wilson Miller/USACOE/FPL	July 8, 2005
3	Wilson Miller/USACOE/FPL	
4	Wilson Miller/USACOE/FPL	
5	Wilson Miller/USACOE/FPL	
6	Wilson Miller/USACOE/FPL	
7	Wilson Miller/USACOE/FPL	
8	Wilson Miller/USACOE/FPL	
9	Wilson Miller/USACOE/FPL	
10	Wilson Miller/USACOE/FPL	
11	Wilson Miller/USACOE/FPL	
12	Wilson Miller/USACOE/FPL	
13	Wilson Miller/USACOE/FPL	

