

TURKEY POINT PENINSULA SEAGRASS SURVEY



For

*Florida Power & Light Company
700 Universe Blvd.
Juno Beach, Florida 33408*

by

*Ecological Associates, Inc.
Post Office Box 405
Jensen Beach, Florida 34958*

August 2009

TURKEY POINT PENINSULA SEAGRASS SURVEY

August 2009

Introduction

Ecological Associates, Inc. (EAI) was contracted by Florida Power & Light Company (FPL) to implement a seagrass mapping study in support of permitting Turkey Point Units 6 & 7. The purpose of the study was to document current seagrass observations in an area potentially affected by the installation and operation of radial collector wells (RCWs) proposed to provide backup cooling water for Units 6 & 7. In addition to documenting existing conditions, these observations are intended to serve as one means of identifying changes in seagrass distribution and abundance that may result from the construction and/or operation of the RCWs or unrelated causes.

Methods

Seagrasses within an approximately 49-hectare area of interest were mapped by in-water observations along 26 line transects surrounding the Turkey Point peninsula. Each transect was approximately 300 meters in length, and they were spaced approximately 50 meters apart.

One of two divers recorded seagrass conditions (species and percent cover) at the shoreward and seaward ends of each transect and at 50-meter intervals in between for a total of seven (7) observation locations per transect. These locations were mapped in advance and a GPS device used to establish their position in the field. At each location, a 0.25-m² PVC quadrat was randomly placed on the bottom three times. All seagrass species present within each quadrat replicate were identified, and their percent cover was visually estimated. All in-water observations were conducted by biologists with considerable practicable experience working in the seagrass communities of south Florida.

The Braun-Blanquet method was used to assign a code to each species based on its contribution to bottom coverage, as follows: 0, species not present; 1 = <5% coverage; 2 = 5-10% coverage; 3 = 10-25% coverage; 4 = 25-50% coverage; 5 = 50-90% coverage; and 6 = >90% coverage. For each sampling station, an average estimate of percent cover for each species was calculated for the three quadrats combined using the formula:

$$C_a = \sum S_{ab}/3$$

where C_a = coverage of taxon a , b = quadrat number from 1 to 3, S_{ab} = the Braun-Blanquet score for taxon a in quadrat b .

The average Braun-Blanquet score was used to plot seagrass coverage for each species at each of the 182 sampling locations. An ordinary Kriging algorithm (ArcGIS, ver. 1, Spatial Analyst) was then used to interpolate between the point data to produce the gross-scale seagrass coverage maps.

Results and Discussion

The seagrass survey was conducted by EAI on August 11 and 12, 2009. Weather conditions at the time of the survey were favorable with sparse cloud cover, northeast winds at 5-7 mph, and water visibility generally exceeding two meters. Water depths within the survey area ranged from approximately one-half meter to two meters, with the deepest areas occurring east of the Turkey Point peninsula. Sediments were found to be mostly sandy and rocky nearshore, while thick mud and shell material predominated farther from shore.

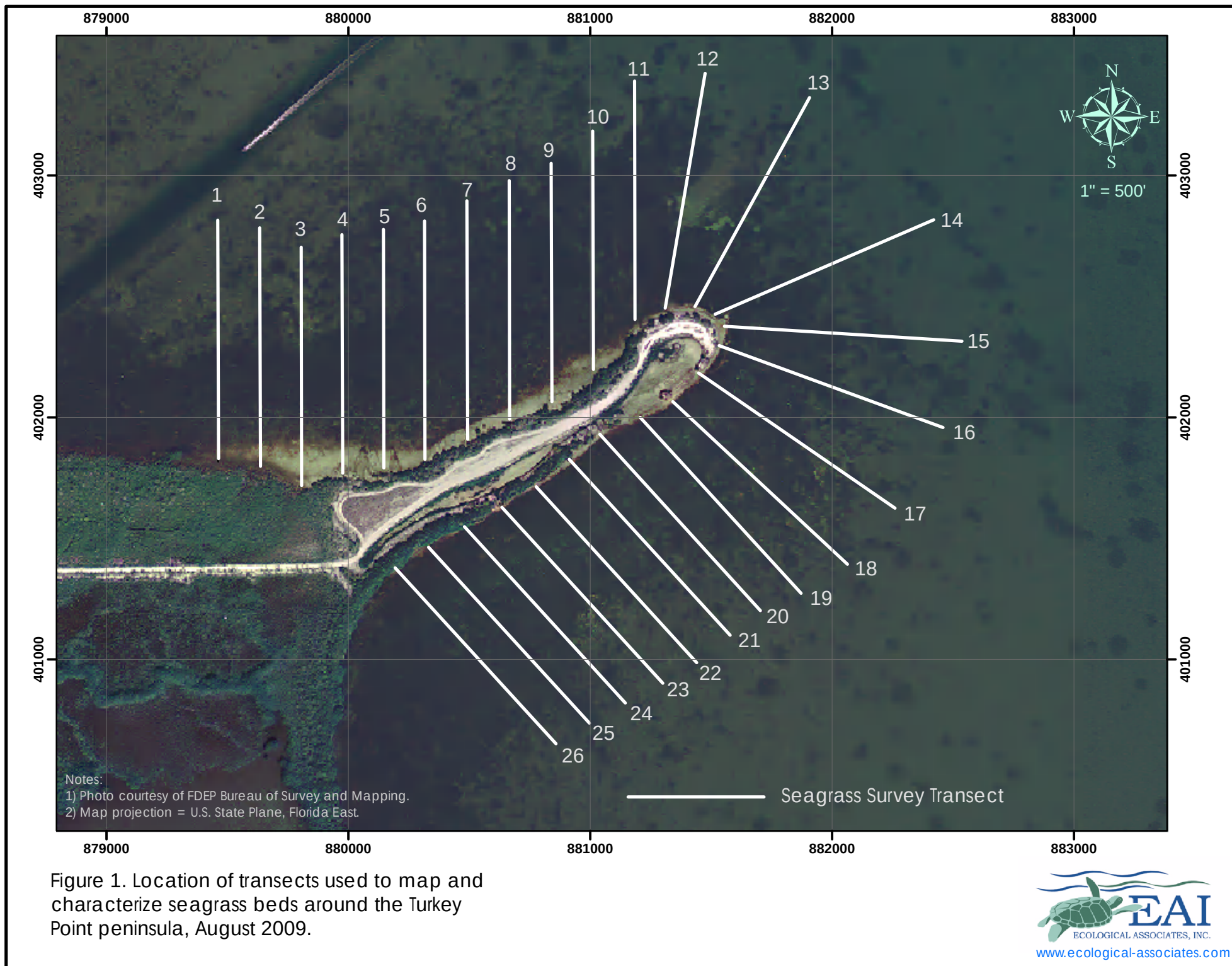
Tabulated survey results for each observation location are presented in Appendix A. Representative photographs depicting seagrass conditions within the survey area are presented in Appendix B.

Two species of seagrass were documented within the survey area: turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*). Turtle grass was by far the more abundant of the two species, occurring at varying levels of coverage along all transects (Figure 2). Coverage of this species was generally highest in areas immediately surrounding the peninsula and typically decreased with increasing distance from shore. Though widespread, turtle grass coverage was extremely variable over relatively small spatial scales. The average Braun-Blanquet coverage class for turtle grass, all replicates combined, was 4 (25-50% coverage).

Shoal grass was much more restricted in its distribution, occurring most often in shallow waters along or near the peninsula shoreline (Figure 3). Coverage of shoal grass was usually sparse, and it was often present in mixed beds with turtle grass. Bottom coverage of this species did not exceed 50% at any of the sampling locations. The average Braun-Blanquet coverage class for shoal grass, all replicates combined, was 1 (<5% coverage), although it was completely absent at most sampling locations.

At the gross-scale level, essentially the entire survey area was found to contain seagrass. This is notwithstanding scattered areas either devoid of any submerged vegetation or vegetated only with algae. However, these areas were too small to be captured with the resolution used for this gross-scale mapping study.

Various species of macroalgae were also observed within the survey area. *Batophora* spp. was particularly abundant in the shallower areas along the periphery of the peninsula, and at times approached 100% coverage over small spatial scales. Other algae commonly observed throughout the survey area included various species of *Halimeda*, *Penicillus*, *Udotea*, and *Laurencia*.



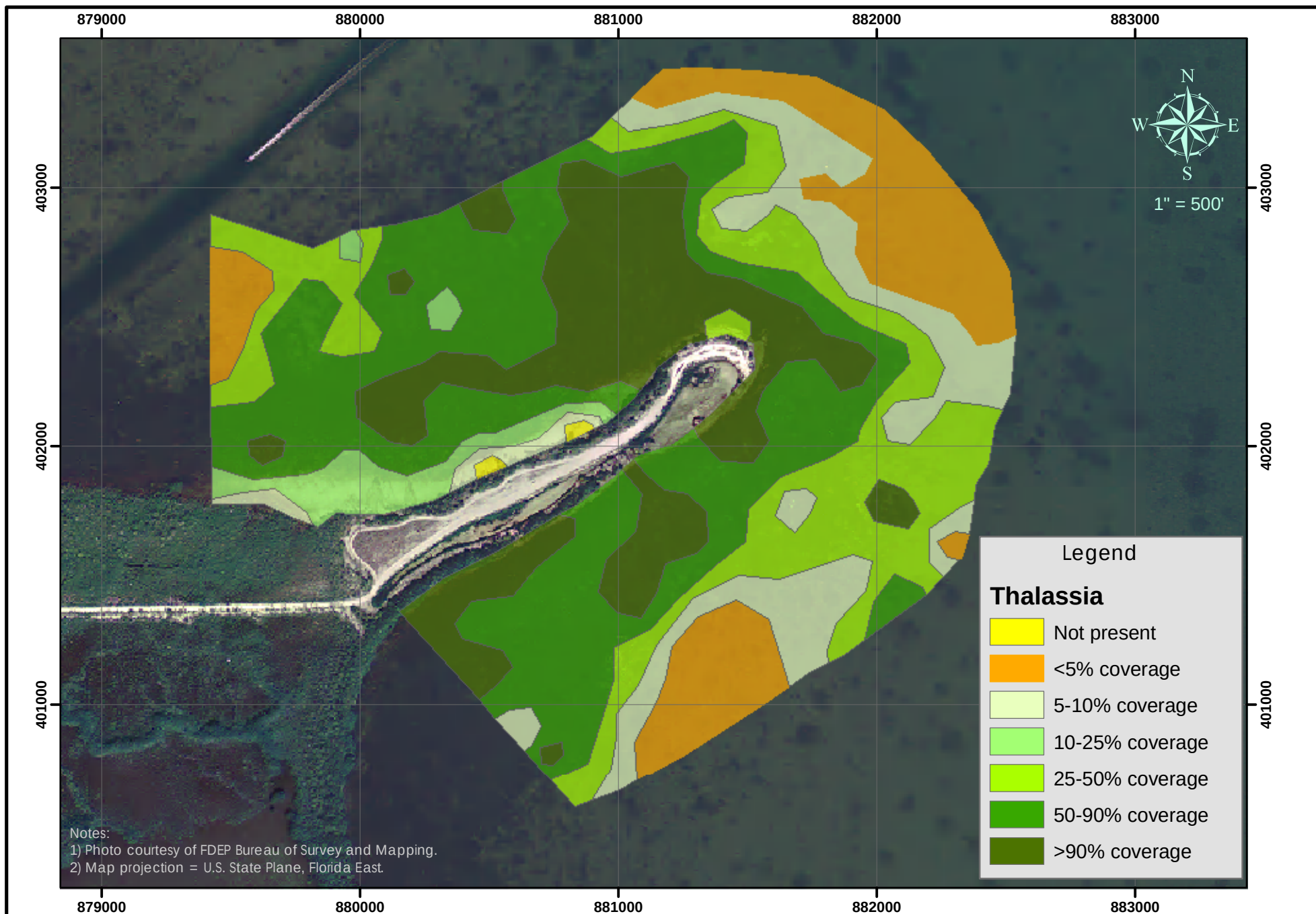


Figure 2. Gross distribution of *Thalassia testudinum* around the Turkey Point peninsula, August 2009.

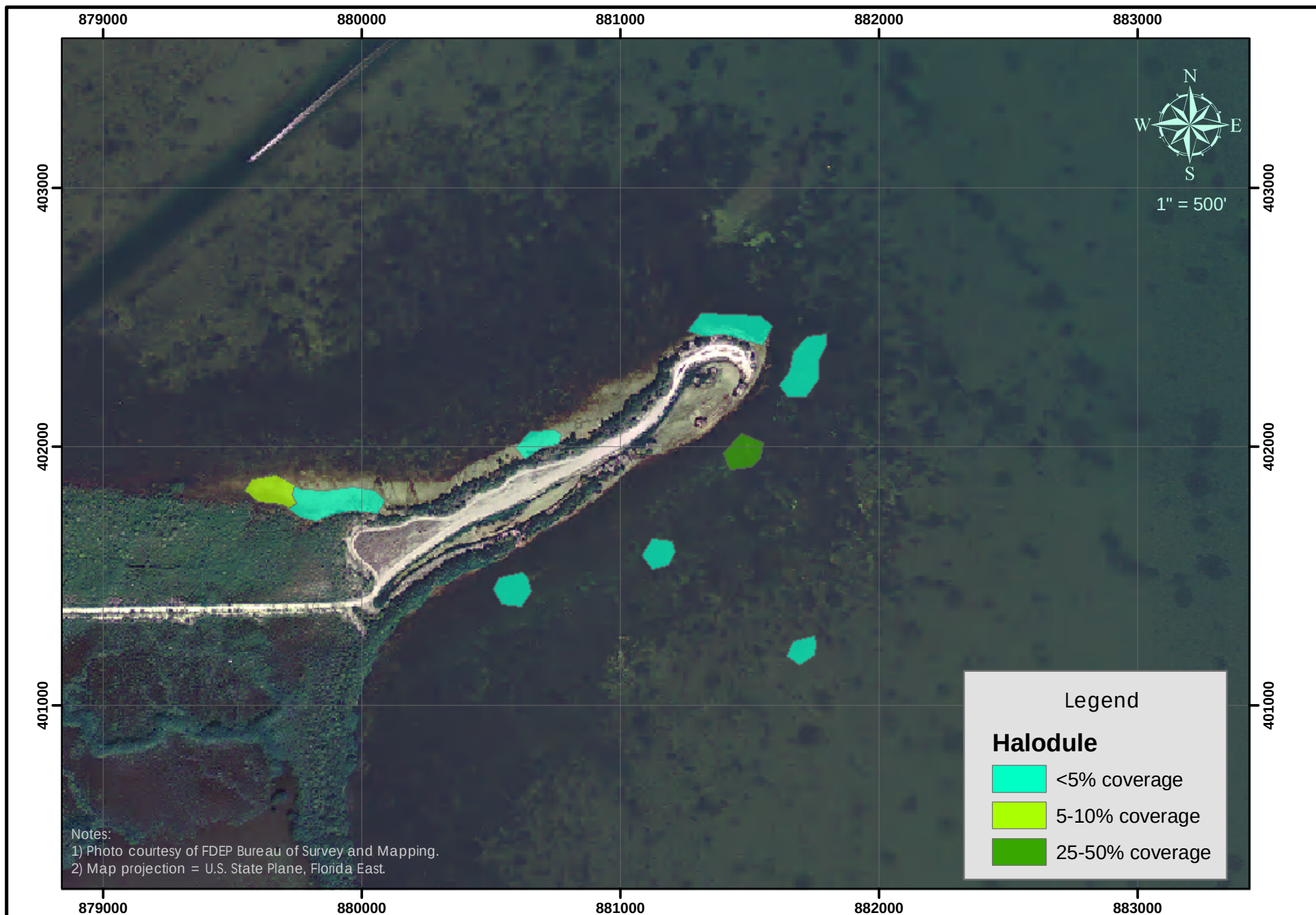


Figure 3. Gross distribution of *Halodule wrightii* around the Turkey Point peninsula, August 2009.

APPENDIX A
TABULATED SURVEY RESULTS

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
1	0	401826	879462	A	15%	0%		
				B	20%	0%		
				C	15%	0%		
				Average	17%	0%	3	0
	50	401992	879462	A	90%	0%		
				B	100%	0%		
				C	75%	0%		
				Average	88%	0%	5	0
	100	402162	879461	A	30%	0%		
				B	85%	0%		
				C	30%	0%		
				Average	48%	0%	4	0
	150	402330	879461	A	5%	0%		
				B	1%	0%		
				C	10%	0%		
				Average	5%	0%	2	0
	200	402492	879461	A	1%	0%		
				B	1%	0%		
				C	1%	0%		
				Average	1%	0%	1	0
	250	402654	879460	A	0%	0%		
				B	1%	0%		
				C	0%	0%		
				Average	0%	0%	1	0
	300	402812	879461	A	15%	0%		
				B	40%	0%		
				C	85%	0%		
				Average	47%	0%	4	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
2	0	401802	879638	A	15%	0%		
				B	1%	10%		
				C	5%	5%		
				Average	7%	5%	2	2
	50	401966	879635	A	75%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	92%	0%	6	0
	100	402131	879635	A	25%	0%		
				B	40%	0%		
				C	30%	0%		
				Average	32%	0%	4	0
	150	402297	879634	A	30%	0%		
				B	25%	0%		
				C	25%	0%		
				Average	27%	0%	4	0
	200	402456	879635	A	25%	0%		
				B	50%	0%		
				C	80%	0%		
				Average	52%	0%	5	0
	250	402626	879637	A	10%	0%		
				B	1%	0%		
				C	5%	0%		
				Average	5%	0%	2	0
	300	402783	879633	A	15%	0%		
				B	25%	0%		
				C	90%	0%		
				Average	43%	0%	4	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
3	0	401727	879802	A	0%	10%		
				B	10%	0%		
				C	20%	0%		
				Average	10%	3%	3	1
	50	401893	879805	A	25%	0%		
				B	25%	0%		
				C	25%	0%		
				Average	25%	0%	4	0
	100	402051	879802	A	80%	0%		
				B	100%	0%		
				C	80%	0%		
				Average	87%	0%	5	0
	150	402226	879807	A	25%	0%		
				B	25%	0%		
				C	25%	0%		
				Average	25%	0%	4	0
	200	402393	879807	A	5%	0%		
				B	15%	0%		
				C	60%	0%		
				Average	27%	0%	4	0
	250	402560	879805	A	75%	0%		
				B	75%	0%		
				C	100%	0%		
				Average	83%	0%	5	0
	300	402705	879805	A	1%	0%		
				B	10%	0%		
				C	80%	0%		
				Average	30%	0%	4	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
4	0	401774	879977	A	50%	0%		
				B	25%	10%		
				C	0%	0%		
				Average	25%	3%	4	1
	50	401930	879977	A	25%	0%		
				B	25%	0%		
				C	15%	0%		
				Average	22%	0%	3	0
	100	402098	879976	A	50%	0%		
				B	80%	0%		
				C	90%	0%		
				Average	73%	0%	5	0
	150	402257	879973	A	60%	0%		
				B	80%	0%		
				C	40%	0%		
				Average	60%	0%	5	0
	200	402428	879972	A	40%	0%		
				B	10%	0%		
				C	10%	0%		
				Average	20%	0%	3	0
	250	402590	879973	A	50%	0%		
				B	20%	0%		
				C	50%	0%		
				Average	40%	0%	4	0
	300	402750	879974	A	5%	0%		
				B	5%	0%		
				C	10%	0%		
				Average	7%	0%	2	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
5	0	401793	880147	A	10%	0%		
				B	15%	0%		
				C	15%	0%		
				Average	13%	0%	3	0
	50	401960	880146	A	100%	0%		
				B	50%	0%		
				C	90%	0%		
				Average	80%	0%	5	0
	100	402120	880146	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	150	402289	880146	A	60%	0%		
				B	25%	0%		
				C	75%	0%		
				Average	53%	0%	5	0
	200	402456	880144	A	30%	0%		
				B	20%	0%		
				C	25%	0%		
				Average	25%	0%	4	0
	250	402623	880144	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	300	402779	880143	A	90%	0%		
				B	25%	0%		
				C	75%	0%		
				Average	63%	0%	5	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
6	0	401834	880319	A	25%	0%		
				B	25%	0%		
				C	20%	0%		
				Average	23%	0%	3	0
	50	401998	880319	A	50%	0%		
				B	75%	0%		
				C	85%	0%		
				Average	70%	0%	5	0
	100	402164	880316	A	50%	0%		
				B	15%	0%		
				C	50%	0%		
				Average	38%	0%	4	0
	150	402334	880313	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	200	402492	880316	A	20%	0%		
				B	10%	0%		
				C	35%	0%		
				Average	22%	0%	3	0
	250	402655	880313	A	40%	0%		
				B	15%	0%		
				C	30%	0%		
				Average	28%	0%	4	0
	300	402813	880317	A	60%	0%		
				B	40%	0%		
				C	30%	0%		
				Average	43%	0%	4	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
7	0	401915	880492	A	0%	0%		
				B	0%	0%		
				C	0%	0%		
				Average	0%	0%	0	0
	50	402074	880491	A	75%	0%		
				B	75%	0%		
				C	75%	0%		
				Average	75%	0%	5	0
	100	402238	880488	A	85%	0%		
				B	85%	0%		
				C	85%	0%		
				Average	85%	0%	5	0
	150	402400	880492	A	50%	0%		
				B	30%	0%		
				C	75%	0%		
				Average	52%	0%	5	0
	200	402565	880491	A	25%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	75%	0%	5	0
	250	402726	880489	A	50%	0%		
				B	25%	0%		
				C	50%	0%		
				Average	42%	0%	4	0
	300	402896	880491	A	100%	0%		
				B	100%	0%		
				C	85%	0%		
				Average	95%	0%	6	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
8	0	402003	880665	A	15%	1%		
				B	5%	1%		
				C	20%	0%		
				Average	13%	1%	3	1
	50	402164	880666	A	60%	0%		
				B	75%	0%		
				C	90%	0%		
				Average	75%	0%	5	0
	100	402333	880666	A	50%	0%		
				B	100%	0%		
				C	85%	0%		
				Average	78%	0%	5	0
	150	402497	880663	A	50%	0%		
				B	50%	0%		
				C	40%	0%		
				Average	47%	0%	4	0
	200	402655	880665	A	75%	0%		
				B	50%	0%		
				C	90%	0%		
				Average	72%	0%	5	0
	250	402813	880662	A	60%	0%		
				B	60%	0%		
				C	75%	0%		
				Average	65%	0%	5	0
	300	402976	880666	A	60%	0%		
				B	5%	0%		
				C	25%	0%		
				Average	30%	0%	4	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
9	0	402069	880841	A	0%	0%		
				B	0%	0%		
				C	0%	0%		
				Average	0%	0%	0	0
	50	402334	880841	A	90%	0%		
				B	90%	0%		
				C	90%	0%		
				Average	90%	0%	6	0
	100	402400	880837	A	50%	0%		
				B	75%	0%		
				C	75%	0%		
				Average	67%	0%	5	0
	150	402566	880841	A	100%	0%		
				B	100%	0%		
				C	75%	0%		
				Average	92%	0%	6	0
	200	402733	880840	A	50%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	83%	0%	5	0
	250	402890	880840	A	40%	0%		
				B	50%	0%		
				C	100%	0%		
				Average	63%	0%	5	0
	300	403052	880837	A	90%	0%		
				B	90%	0%		
				C	100%	0%		
				Average	93%	0%	6	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
10	0	402206	881013	A	80%	0%		
				B	75%	0%		
				C	60%	0%		
				Average	72%	0%	5	0
	50	402374	881013	A	80%	0%		
				B	80%	0%		
				C	80%	0%		
				Average	80%	0%	5	0
	100	402537	881011	A	85%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	95%	0%	6	0
	150	402709	881011	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	200	402874	881011	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	250	403037	881008	A	80%	0%		
				B	90%	0%		
				C	90%	0%		
				Average	87%	0%	5	0
	300	403183	881013	A	10%	0%		
				B	15%	0%		
				C	40%	0%		
				Average	22%	0%	3	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
11	0	402407	881188	A	90%	0%		
				B	100%	0%		
				C	80%	0%		
				Average	90%	0%	6	0
	50	402574	881185	A	75%	0%		
				B	75%	0%		
				C	100%	0%		
				Average	83%	0%	5	0
	100	402739	881185	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	150	402897	881188	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	200	403058	881184	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	250	403224	881182	A	15%	0%		
				B	5%	0%		
				C	30%	0%		
				Average	17%	0%	3	0
	300	403385	881182	A	1%	0%		
				B	1%	0%		
				C	5%	0%		
				Average	2%	0%	1	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
12	0	402463	881313	A	100%	0%		
				B	50%	10%		
				C	10%	10%		
				Average	53%	7%	5	2
	50	402617	881338	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	100	402778	881362	A	10%	0%		
				B	10%	0%		
				C	10%	0%		
				Average	10%	0%	3	0
	150	402930	881392	A	10%	1%		
				B	10%	0%		
				C	5%	5%		
				Average	8%	2%	2	1
	200	403084	881415	A	75%	0%		
				B	75%	0%		
				C	100%	0%		
				Average	83%	0%	5	0
	250	403237	881415	A	80%	0%		
				B	100%	0%		
				C	75%	0%		
				Average	85%	0%	5	0
	300	403386	881472	A	0%	0%		
				B	1%	0%		
				C	0%	0%		
				Average	0%	0%	1	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
13	0	402472	881439	A	25%	0%		
				B	25%	0%		
				C	40%	0%		
				Average	30%	0%	4	0
	50	402596	881510	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	100	402739	881585	A	15%	0%		
				B	5%	0%		
				C	15%	0%		
				Average	12%	0%	3	0
	150	402871	881660	A	50%	0%		
				B	20%	0%		
				C	25%	0%		
				Average	32%	0%	4	0
	200	403011	881734	A	1%	0%		
				B	5%	0%		
				C	5%	0%		
				Average	4%	0%	1	0
	250	403144	881808	A	15%	0%		
				B	15%	0%		
				C	10%	0%		
				Average	13%	0%	3	0
	300	403311	881901	A	1%	0%		
				B	5%	0%		
				C	5%	0%		
				Average	4%	0%	1	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
14	0	402430	881525	A	50%	5%		
				B	50%	0%		
				C	100%	0%		
				Average	67%	2%	5	1
	50	402486	881660	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	100	402550	881800	A	50%	0%		
				B	40%	30%		
				C	15%	0%		
				Average	35%	10%	4	3
	150	402611	881945	A	10%	0%		
				B	5%	0%		
				C	5%	0%		
				Average	7%	0%	2	0
	200	402678	882098	A	1%	0%		
				B	1%	0%		
				C	1%	0%		
				Average	1%	0%	1	0
	250	402746	882244	A	5%	0%		
				B	0%	0%		
				C	0%	0%		
				Average	2%	0%	1	0
	300	402805	882385	A	1%	0%		
				B	1%	0%		
				C	1%	0%		
				Average	1%	0%	1	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
15	0	402378	881582	A	100%	0%		
				B	90%	0%		
				C	90%	0%		
				Average	93%	0%	6	0
	50	402369	881723	A	80%	0%		
				B	80%	0%		
				C	80%	5%		
				Average	80%	2%	5	1
	100	402361	881862	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	150	402347	882028	A	60%	0%		
				B	75%	0%		
				C	50%	0%		
				Average	62%	0%	5	0
	200	402340	882184	A	20%	0%		
				B	20%	0%		
				C	40%	0%		
				Average	27%	0%	4	0
	250	402328	882326	A	10%	0%		
				B	5%	0%		
				C	5%	0%		
				Average	7%	0%	2	0
	300	402317	882478	A	1%	0%		
				B	10%	0%		
				C	5%	0%		
				Average	5%	0%	2	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
16	0	402289	881553	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	50	402242	881681	A	15%	0%		
				B	5%	1%		
				C	15%	0%		
				Average	12%	0%	3	1
	100	402198	881806	A	80%	0%		
				B	80%	0%		
				C	70%	0%		
				Average	77%	0%	5	0
	150	402146	881943	A	60%	0%		
				B	80%	0%		
				C	100%	0%		
				Average	80%	0%	5	0
	200	402094	882089	A	1%	0%		
				B	5%	0%		
				C	5%	0%		
				Average	4%	0%	1	0
	250	402046	882229	A	30%	0%		
				B	10%	0%		
				C	100%	0%		
				Average	47%	0%	4	0
	300	401992	882368	A	50%	0%		
				B	1%	0%		
				C	50%	0%		
				Average	34%	0%	4	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
17	0	402167	881472	A	40%	0%		
				B	75%	0%		
				C	90%	0%		
				Average	68%	0%	5	0
	50	402083	881594	A	70%	0%		
				B	70%	0%		
				C	50%	0%		
				Average	63%	0%	5	0
	100	401988	881726	A	90%	0%		
				B	90%	0%		
				C	30%	0%		
				Average	70%	0%	5	0
	150	401904	881859	A	15%	0%		
				B	20%	0%		
				C	15%	0%		
				Average	17%	0%	3	0
	200	401809	881994	A	75%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	92%	0%	6	0
	250	401720	882116	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	300	401627	882260	A	5%	0%		
				B	1%	0%		
				C	0%	0%		
				Average	2%	0%	1	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
18	0	402055	881348	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	50	401960	881454	A	100%	50%		
				B	80%	30%		
				C	80%	0%		
				Average	87%	27%	5	4
	100	401860	881562	A	100%	0%		
				B	15%	0%		
				C	100%	0%		
				Average	72%	0%	5	0
	150	401755	881675	A	5%	0%		
				B	1%	0%		
				C	5%	0%		
				Average	4%	0%	1	0
	200	401640	881797	A	100%	0%		
				B	100%	0%		
				C	50%	0%		
				Average	83%	0%	5	0
	250	401526	881922	A	1%	0%		
				B	1%	0%		
				C	10%	0%		
				Average	4%	0%	1	0
	300	401395	882056	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
19	0	401987	881215	A	10%	0%		
				B	10%	0%		
				C	10%	0%		
				Average	10%	0%	3	0
	50	401878	881313	A	30%	0%		
				B	50%	0%		
				C	80%	0%		
				Average	53%	0%	5	0
	100	401777	881410	A	50%	0%		
				B	0%	0%		
				C	90%	0%		
				Average	47%	0%	4	0
	150	401657	881520	A	20%	0%		
				B	40%	0%		
				C	75%	0%		
				Average	45%	0%	4	0
	200	401542	881621	A	40%	0%		
				B	40%	0%		
				C	40%	0%		
				Average	40%	0%	4	0
	250	401434	881722	A	5%	0%		
				B	10%	0%		
				C	5%	0%		
				Average	7%	0%	2	0
	300	401295	881851	A	30%	0%		
				B	5%	0%		
				C	30%	0%		
				Average	22%	0%	3	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
20	0	401916	881050	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	50	401811	881150	A	20%	0%		
				B	60%	0%		
				C	100%	0%		
				Average	60%	0%	5	0
	100	401702	881243	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	150	401579	881355	A	85%	0%		
				B	50%	0%		
				C	75%	0%		
				Average	70%	0%	5	0
	200	401455	881474	A	5%	1%		
				B	5%	0%		
				C	10%	0%		
				Average	7%	0%	2	1
	250	401341	881574	A	5%	0%		
				B	5%	0%		
				C	10%	0%		
				Average	7%	0%	2	0
	300	401213	881693	A	1%	5%		
				B	5%	0%		
				C	30%	0%		
				Average	12%	2%	3	1

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
21	0	401811	880929	A	10%	0%		
				B	10%	0%		
				C	50%	0%		
				Average	23%	0%	3	0
	50	401692	881039	A	50%	0%		
				B	50%	0%		
				C	100%	0%		
				Average	67%	0%	5	0
	100	401576	881145	A	50%	10%		
				B	30%	0%		
				C	100%	0%		
				Average	60%	3%	5	1
	150	401452	881254	A	20%	0%		
				B	25%	0%		
				C	40%	0%		
				Average	28%	0%	4	0
	200	401335	881362	A	1%	0%		
				B	0%	0%		
				C	5%	0%		
				Average	2%	0%	1	0
	250	401216	881471	A	5%	0%		
				B	1%	0%		
				C	5%	0%		
				Average	4%	0%	1	0
	300	401100	881581	A	1%	0%		
				B	1%	0%		
				C	10%	0%		
				Average	4%	0%	1	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
22	0	401704	880782	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	50	401602	880877	A	20%	0%		
				B	40%	0%		
				C	60%	0%		
				Average	40%	0%	4	0
	100	401498	880974	A	100%	0%		
				B	90%	0%		
				C	90%	0%		
				Average	93%	0%	6	0
	150	401380	881079	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	200	401255	881195	A	5%	0%		
				B	5%	0%		
				C	5%	0%		
				Average	5%	0%	2	0
	250	401135	881305	A	1%	0%		
				B	0%	0%		
				C	0%	0%		
				Average	0%	0%	1	0
	300	401004	881426	A	5%	0%		
				B	5%	0%		
				C	5%	0%		
				Average	5%	0%	2	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
23	0	401618	880642	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	50	401493	880755	A	20%	0%		
				B	20%	0%		
				C	80%	0%		
				Average	40%	0%	4	0
	100	401385	880581	A	60%	0%		
				B	40%	0%		
				C	40%	0%		
				Average	47%	0%	4	0
	150	401255	880975	A	25%	0%		
				B	30%	0%		
				C	20%	0%		
				Average	25%	0%	4	0
	200	401126	881094	A	10%	0%		
				B	10%	0%		
				C	15%	0%		
				Average	12%	0%	3	0
	250	401020	881198	A	1%	0%		
				B	10%	0%		
				C	5%	0%		
				Average	5%	0%	2	0
	300	400909	881293	A	0%	0%		
				B	0%	0%		
				C	1%	0%		
				Average	0%	0%	1	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
24	0	401537	880488	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	50	401438	880577	A	80%	0%		
				B	80%	0%		
				C	70%	5%		
				Average	77%	2%	5	1
	100	401313	880696	A	30%	0%		
				B	60%	0%		
				C	60%	0%		
				Average	50%	0%	5	0
	150	401188	880803	A	40%	0%		
				B	40%	0%		
				C	25%	0%		
				Average	35%	0%	4	0
	200	401061	880921	A	60%	0%		
				B	60%	0%		
				C	50%	0%		
				Average	57%	0%	5	0
	250	400944	881028	A	10%	0%		
				B	10%	0%		
				C	5%	0%		
				Average	8%	0%	2	0
	300	400826	881144	A	5%	0%		
				B	1%	0%		
				C	5%	0%		
				Average	4%	0%	1	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
25	0	401459	880338	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	50	401337	880451	A	20%	0%		
				B	60%	0%		
				C	60%	0%		
				Average	47%	0%	4	0
	100	401212	880564	A	30%	0%		
				B	75%	0%		
				C	75%	0%		
				Average	60%	0%	5	0
	150	401105	880660	A	30%	0%		
				B	90%	0%		
				C	75%	0%		
				Average	65%	0%	5	0
	200	400980	880778	A	60%	0%		
				B	80%	0%		
				C	80%	0%		
				Average	73%	0%	5	0
	250	400870	880877	A	75%	0%		
				B	50%	0%		
				C	50%	0%		
				Average	58%	0%	5	0
	300	400743	880986	A	20%	0%		
				B	20%	0%		
				C	10%	0%		
				Average	17%	0%	3	0

Turkey Point Peninsula Seagrass Survey

Transect	Distance from Shore (m)	Northing	Easting	Replicate	Percent Cover		Braun-Blanquet Score	
					<i>Thalassia</i>	<i>Halodule</i>	<i>Thalassia</i>	<i>Halodule</i>
26	0	401362	880211	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	50	401263	880300	A	50%	0%		
				B	40%	0%		
				C	60%	0%		
				Average	50%	0%	5	0
	100	401158	880401	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	150	401033	880511	A	100%	0%		
				B	75%	0%		
				C	75%	0%		
				Average	83%	0%	5	0
	200	400915	880619	A	5%	0%		
				B	5%	0%		
				C	10%	0%		
				Average	7%	0%	2	0
	250	400804	880722	A	100%	0%		
				B	100%	0%		
				C	100%	0%		
				Average	100%	0%	6	0
	300	400677	880838	A	1%	0%		
				B	20%	0%		
				C	40%	0%		
				Average	20%	0%	3	0

APPENDIX B

**REPRESENTATIVE PHOTOGRAPHS DEPICTING SEAGRASS
CONDITIONS AROUND THE TURKEY POINT PENINSULA**



Photo 1. Dense *Thalassia* bed on Transect 10.



Photo 2. Mixed *Thalassia* and *Halodule* bed on Transect 14.

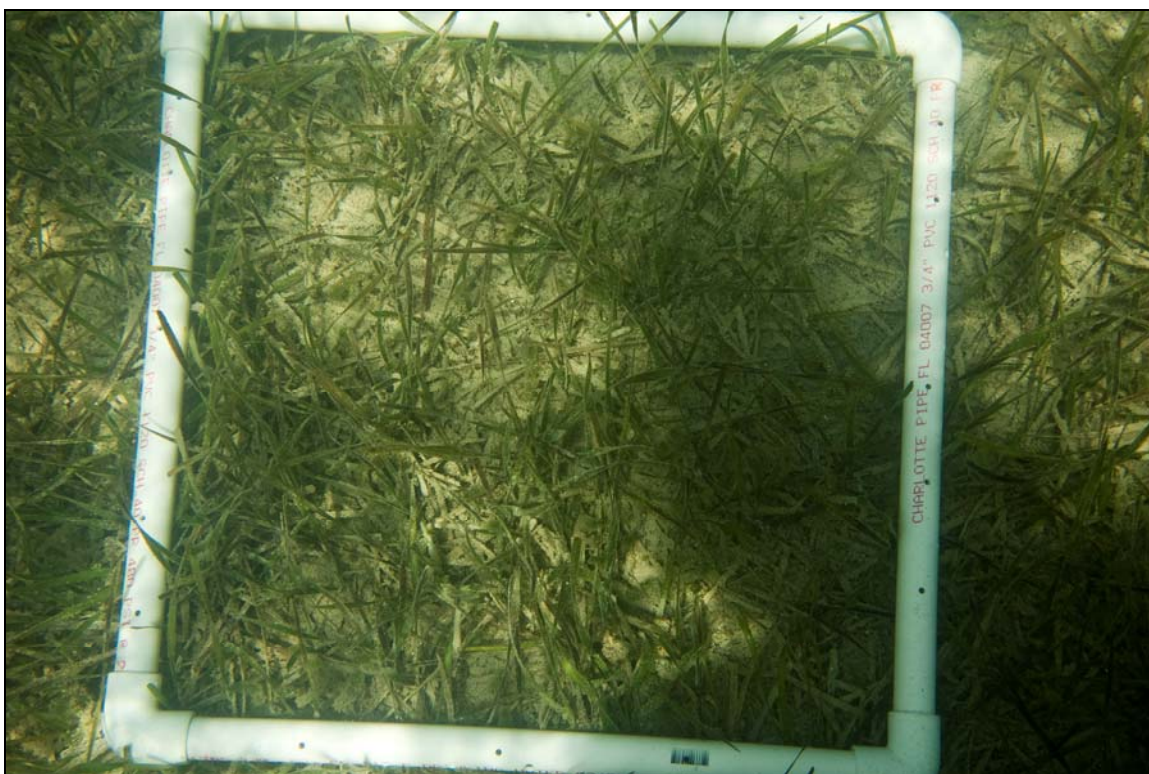


Photo 3. Moderate coverage of *Thalassia* on Transect 18.



Photo 4. Moderate coverage of *Thalassia* and *Halodule* with mangrove leaf litter on Transect 2.



Photo 5. Dense *Thalassia* on Transect 22.



Photo 6. Sparse *Halodule* intermixed with calcareous algae on Transect 8.



Photo 7. Dense coverage of *Batophora* algae near shore.



Photo 8. *Sphyraena barracuda* over a bare rocky bottom near shore.



Photo 9. Dense *Thalassia* bed as seen from the surface along the north side of the Turkey Point Peninsula.