Transect 3

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN TRANSECT
Halodule wrightii	28	36
Halophila engelmannii	16	

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	DENSITY
Halodule wrightii	3.20
Halophila engelmannii	0.92
Total Density	4.12

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	4.11
Halophila engelmannii	0.92

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	FREQUENCY
Halodule wrightii	0.78
Halophila engelmannii	0.44

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN TRANSECT

Overall Frequency	0.78

Transect 4

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN TRANSECT
Halodule wrightii	29	36
Halophila engelmannii	10	

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	DENSITY
Halodule wrightii	3.31
Halophila engelmannii	0.21
Total Density	3.52

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	4.10
Halophila engelmannii	0.76

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	FREQUENCY
Halodule wrightii	0.81
Halophila engelmannii	0.28

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN TRANSECT

Overall Frequency	0.83

Transect 5

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN TRANSECT
Halodule wrightii	28	36
Halophila engelmannii	7	

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	DENSITY
Halodule wrightii	3.64
Halophila engelmannii	0.07
Total Density	3.71

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	4.68
Halophila engelmannii	0.37

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	FREQUENCY
Halodule wrightii	0.78
Halophila engelmannii	0.19

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN TRANSECT

Overall Frequency	0.78

Transect 6

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN TRANSECT
Halodule wrightii	30	38
Halophila engelmannii	1	

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	DENSITY
Halodule wrightii	3.36
Halophila engelmannii	0.003
Total Density	3.36

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	4.25
Halophila engelmannii	0.10

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	FREQUENCY
Halodule wrightii	0.79
Halophila engelmannii	0.03

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN TRANSECT

Overall Frequency	0.79

Transect 7

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN TRANSECT
Halodule wrightii	33	41

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	DENSITY
Halodule wrightii	3.08
Total Density	3.08

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	3.82

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	FREQUENCY
Halodule wrightii	0.80

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN TRANSECT

Overall Frequency	0.80

Transect 8

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN TRANSECT
Halodule wrightii	30	40

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	DENSITY
Halodule wrightii	3.10
Total Density	3.10

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	4.13

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	FREQUENCY
Halodule wrightii	0.75

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN TRANSECT

Overall Frequency	0.75

Transect 9

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN TRANSECT
Halodule wrightii	23	35
Halophila engelmannii	2	

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	DENSITY
Halodule wrightii	2.60
Halophila engelmannii	0.006
Total Density	2.61

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	3.96
Halophila engelmannii	0.10

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	FREQUENCY
Halodule wrightii	0.66
Halophila engelmannii	0.06

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN TRANSECT

Overall Frequency	0.66

Transect 12

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN TRANSECT
Halodule wrightii	34	39
Halophila engelmannii	1	

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	DENSITY
Halodule wrightii	2.77
Halophila engelmannii	0.003
Total Density	2.77

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	3.18
Halophila engelmannii	0.10

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	FREQUENCY
Halodule wrightii	0.87
Halophila engelmannii	0.03

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN TRANSECT

Overall Frequency	0.87

Table 1: Transects 1-9, 12-13
CE PA 62 Seagrass Survey Statistics
February 15, 2012

Transect 13

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN TRANSECT
Halodule wrightii	44	50
Halophila engelmannii	2	

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	DENSITY
Halodule wrightii	2.56
Halophila engelmannii	0.004
Total Density	2.57

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	2.91
Halophila engelmannii	0.10

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN TRANSECT

SPECIES	FREQUENCY
Halodule wrightii	0.88
Halophila engelmannii	0.04

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN TRANSECT

Overall Frequency	0.88

Combined Data Analysis, Transects 1-9, 12-13

SPECIES	# OF QUADS PRESENT IN	TOTAL # OF QUADS IN ALL TRANSECTS
Halodule wrightii	310	417
Halophila engelmannii	53	

DENSITY = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/TOTAL NUMBER OF QUADS IN ALL TRANSECTS

SPECIES	DENSITY
Halodule wrightii	2.81
Halophila engelmannii	0.12
Total Density	2.93

ABUNDANCE = SUM(B-B ABUNDANCE SCORES OF SPECIES IN EACH QUAD)/NUMBER OF QUADS SPECIES IS PRESENT IN

SPECIES	ABUNDANCE
Halodule wrightii	3.78
Halophila engelmannii	0.96

INDIVIDUAL SEAGRASS SPECIES FREQUENCY = NUMBER OF QUADS SPECIES IS PRESENT IN/TOTAL NUMBER OF QUADS IN ALL TRANSECTS

SPECIES	FREQUENCY
Halodule wrightii	0.74
Halophila engelmannii	0.13

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF QUADS WITH SEAGRASS PRESENT/TOTAL NUMBER OF QUADS IN ALL TRANSECTS

Overall Frequency	0.75

Table 2: Transects 10-11
CE PA 62 Seagrass Post-hole Survey Results
February 15, 2012

Transects 10 & 11

Transect 10	
# OF POST-HOLE SAMPLES W/ SEAGRASS ROOT PRESENCE	TOTAL # OF POST-HOLE SAMPLES IN TRANSECT
72	132

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF POST-HOLE SAMPLES WITH SEAGRASS ROOT PRESENCE/TOTAL NUMBER OF POST-HOLE SAMPLES IN TRANSECT	
Overall Frequency	0.55

Transect 11	
# OF POST-HOLE SAMPLES W/ SEAGRASS ROOT PRESENCE	TOTAL # OF POST-HOLE SAMPLES IN TRANSECT
93	135

OVERALL SEAGRASS FREQUENCY = THE NUMBER OF POST-HOLE SAMPLES WITH SEAGRASS ROOT PRESENCE/TOTAL NUMBER OF POST-HOLE SAMPLES IN TRANSECT	
Overall Frequency	0.69

Dredged Material Portions of Transects 10 & 11

Transect 10			
TOTAL # OF POST-HOLE SAMPLES IN TRANSECT	# OF POST-HOLE SAMPLES IN DREDGE MATERIAL	# OF DREDGE MATERIAL POST-HOLE SAMPLES W/ SEAGRASS ROOT PRESENCE	AVERAGE DREDGE MATERIAL DEPTH (FT)
132	96	72	0.41
	% OF DREDGE MATERIAL POST-HOLE SAMPLES W/ SEAGRASS ROOT PRESENCE	0.75	
	% OF DREDGE MATERIAL POST-HOLE SAMPLES W/OUT SEAGRASS ROOT PRESENCE	0.25	

Transect 11			
TOTAL # OF POST-HOLE SAMPLES IN TRANSECT	# OF POST-HOLE SAMPLES IN DREDGE MATERIAL	# OF DREDGE MATERIAL POST-HOLE SAMPLES W/ SEAGRASS ROOT PRESENCE	AVERAGE DREDGE MATERIAL DEPTH (FT)
135	126	93	0.95
	% OF DREDGE MATERIAL POST-HOLE SAMPLES W/ SEAGRASS ROOT PRESENCE	0.74	
	% OF DREDGE MATERIAL POST-HOLE SAMPLES W/OUT SEAGRASS ROOT PRESENCE	0.26	

Transects 10 & 11 Combined Statistics			
TOTAL # OF POST-HOLE SAMPLES IN TRANSECTS	# OF POST-HOLE SAMPLES IN DREDGE MATERIAL	# OF DREDGE MATERIAL POST-HOLE SAMPLES W/ SEAGRASS ROOT PRESENCE	AVERAGE DREDGE MATERIAL DEPTH (FT)
267	222	165	0.75
	% OF DREDGE MATERIAL POST-HOLE SAMPLES W/ SEAGRASS ROOT PRESENCE	0.74	
	% OF DREDGE MATERIAL POST-HOLE SAMPLES W/OUT SEAGRASS ROOT PRESENCE	0.26	

Note: See Appendix A, figure 4. "P" indicates all three samples had seagrass roots and "A" indicates none of the three samples contained seagrass roots.

Appendix D

Soil Test Report