



# Florida Department of Environmental Protection

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Charlie Crist  
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Lt. Governor

Michael W. Sole  
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April 30, 2007

To: Hal Herbst, Senior Environmental Analyst  
South Florida Water Management District

Project Description: Tarpon Bay Hydrologic Restoration Project  
Standard General Permit No. 11-02063-P  
Project Location: Collier County  
Project: Mangrove replanting and monitoring

Dear Mr. Herbst:

This is the third and final report as required by SFWMD for permit no. 11-02063-P, (Tarpon Bay Hydrologic Restoration Project) for monitoring mangrove recruitment and plantings at the culvert constructed between Tarpon and Johnson Bays located in Isles of Capri, Florida.

As required in the above named permit, Rookery Bay National Estuarine Research Reserve has maintained and monitored the mangroves at the culvert site for three consecutive years.

Please find the attached monitoring report with photo points. All height measurements within the text of the photo points are approximations.

Sincerely,

Cheryl J. Metzger  
Resource Management Specialist, Tarpon Bay Project Manager  
Rookery Bay National Estuarine Research Reserve

cc: Keith Laakkonen, Resource Management Coordinator, Rookery Bay NERR

Tarpon Bay Hydrologic Restoration Project  
Mangrove monitoring  
Standard General Permit No. 11-02063-P

Four photo points are located at each corner of the culvert and labeled “NW”, “SW”, “SE” and “NE” to identify the referenced corner. Each photo point is directed looking from the edge of the culvert out toward each bay. In the photo point description, the number of mangroves is indicated in parenthesis. For example; “*The planted red mangroves (19) and the naturally recruiting red mangroves (86) can be seen in the riprap*” indicates that there are 19-planted red mangrove and 86 naturally recruited red mangrove in the riprap.

As of 4/30/07, the total mangroves on site are as follows; 27 surviving planted red mangroves (*Rhizophora mangle*), 450 red mangroves that have naturally recruited, 21 surviving planted white mangroves (*Laguncularia racemosa*), and 85 white mangroves that have naturally recruited (figure 1).

Overall, the total number of planted red mangrove, naturally recruited red mangrove, planted white mangrove and naturally recruited white mangrove has decreased. Although the numbers are sufficient within the permit parameters and for bank stabilization at this site, it is unclear why some mangroves that were previously at the site are no longer there. Speculatively it could be due to pedestrian traffic or natural die-off (many mangroves were growing in very close proximity possibly causing smaller mangroves to die-off). This site will continue to be monitored and additional mangrove plantings may be considered in the future if the total numbers continue to decrease.

Additional vegetation located on the culvert banks include sea purslane (*Sesuvium portulacastrum*), seashore saltgrass (*Distichlis spicata*), spartina (*Spartina bakeri*) and railroad vine (*Ipomoea pes-caprae*). Exotic vegetation is not present on the culvert banks.

	2004	2005	2006	2007
<b>NW photo point</b>				
Planted red mangrove	36	19	13	13
Naturally recruited red mangrove	0	86	167	171
Planted white mangrove	0	29	7	7
Naturally recruited white mangrove	0	55	30	26
<b>SW photo point</b>				
Planted red mangrove	34	15	6	6
Naturally recruited red mangrove	0	160	185	137
Planted white mangrove	0	25	8	7
Naturally recruited white mangrove	0	116	50	31
<b>SE photo point</b>				
Planted red mangrove	25	15	6	6
Naturally recruited red mangrove	0	147	149	92
Planted white mangrove	0	3	3	3
Naturally recruited white mangrove	0	64	94	22
<b>NE photo point</b>				
Planted red mangrove	24	8	2	2
Naturally recruited red mangrove	0	110	47	50
Planted white mangrove	0	5	4	4
Naturally recruited white mangrove	0	18	12	6

**Figure 1**

**Photo point NW**

Taken from the northwest corner of the  
culvert looking toward Johnson Bay  
April 2007



The surviving planted red mangroves (13) now measure 2' – 2'5" and the naturally recruiting red mangroves (171) measure 7" – 2'5". All red mangrove are located in the riprap. The planted white mangroves (7) now measure 2'4" – 5'2" and are located in the sandy area between the riprap edge and the grass. Naturally recruited white mangroves (26) are found along the grass edge, into the rip rap's high edge and measure 10" – 1'8". Planted spartina is spreading, purslane and seashore salt grass is starting to fill in the sandy areas.

**Close-up photo of NW photo point site**  
April 2007



**Photo point SW**

Taken from the southwest corner of the  
culvert looking toward Johnson Bay  
April 2007



The surviving planted red mangroves (6) now measure 1'10" – 2'10" and the naturally recruiting red mangroves (137) measure 7" – 2'10" and are located in the riprap. The planted white mangroves (7) now measure 1'2" – 2'10" and are located in the sandy area between the riprap edge and the grass. Naturally recruiting white mangroves (31) are found along the grass edge and riprap edge and measure 5" – 2'10". Planted spartina continues to spread and purslane, seashore saltgrass and railroad vine are filling in the sandy area.

**Close-up photo of SW photo point site**  
April 2007



**Photo point SE**

Taken from the southeast corner of the  
culvert looking toward Tarpon Bay  
April 2007



The surviving planted red mangroves (6) now measure 2'6" – 3' and the naturally recruiting red mangroves (92) measure 8" – 3'. The red mangroves are located in the riprap, primarily close to the culvert wall. The planted white mangroves (3) now measure 1' - 2'10" and are located in the sandy area between the riprap and the grass. Naturally recruiting white mangroves (22) are found along the riprap and grass edge and measure 4" – 2'10".

**Close-up photo of SE photo point site**  
April 2007



**Photo point NE**

Taken from the northeast corner of the  
culvert looking toward Tarpon Bay  
April 2007



The surviving planted red mangroves (2) now measure 2' – 2'6", the naturally recruiting red mangroves (47) can be seen in the riprap and measure 7" – 1'5". The planted white mangroves (4) now measure 1'5" – 5' and can be seen in the sandy area between the riprap edge and the grass. Naturally recruiting white mangroves (12) are found along the grass edge and riprap edge and measure 6" – 2'. Planted spartina is spreading.

**Close-up photo of NE photo point site**  
April 2007

