

## Maritime Forest Habitat Restoration and Enhancement

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by  
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**Project Description:** The concept of establishing maritime forest on a created marsh ridge is being undertaken by the USDA, Natural Resources Conservation Service (NRCS), Barataria-Terrebonne National Estuary Program (BTNEP), and The Greater Lafourche Port Commission (GLPC). Natural ridges that supported maritime forest habitat once bordered Bayou Moreau and Bayou Cochon near Port Fourchon. Only small remnants of the original natural ridges exist today. The GLPC and BTNEP has taken action on the concept and embarked on an initiative to recreate a ridge in the vicinity of the original natural ridge along Bayou Cochon. The GLPC completed a 2,000 linear foot section of the planned ridge in May, 2005. A contractual agreement has been developed with the NRCS to begin vegetating the ridge as soon as site and soil conditions allow. The following tasks addressing this project was specified:

Task 1 – Conduct literature review to identify potential annual and perennial seeded species that can be used for early cover.

Task 2 – Comprehensive soil testing to a depth of 6-inches would begin immediately after final shaping of 2,000 feet of ridge. Soil samples would be collected at 5 fixed locations across the profile of each 1000 ft section of ridge. Soil characteristics of texture, pH, and salinity would be determined.

Task 3 – NRCS will work with BTNEP to use as much as practical volunteer labor to install vegetative plant materials.

## **Summary of Work**

### Task 1

A literature search to identify potential seeded herbaceous species for early cover was conducted in January, 2005. As a result two warm season herbaceous species typically established from seeds was selected for testing. Sordan 79 and German R Strain Millet have been reported to tolerate moderate to high levels of soil salinity. Two cool season herbaceous seeded crops have also been identified. These include ‘Jose’ tall wheatgrass and winter ryegrass.

### Task 2

Thirty-six soil samples were collected at 0-6 inch, 6-12, and 12-18 inch depths on May 26, 2005 (Table 1). The ridge top, and marsh apron was sampled across the 2,000 foot length of the ridge.

**Table 1. Soil test results from 0-6, 6-12 and 12-18 inches on May 26, 2005**

<b>North Apron</b>					<b>Ridge Top</b>				
Sample ID #	Depth (inch)	Sodium (ppm)	ph	Total Salts (ppm)	Sample ID #	Depth (inch)	Sodium (ppm)	ph	Total Salts (ppm)
1	0-6	5,372.14	8.28	18,150.40	13	0-6	5,269.43	8.27	18,483.20
4	0-6	5,843.65	8.19	20,531.20	16	0-6	4,604.04	8.24	15,091.20
7	0-6	4,655.07	8.3	17,433.60	19	0-6	6,853.85	8.31	23,488.00
10	0-6	4,366.49	8.26	15,270.40	22	0-6	4,275.00	8.28	14,758.40
<b>Ave 5,059.34 8.26 17,846.40</b>					<b>Ave 5,250.58 8.28 17,955.20</b>				
2	6-12	2,763.18	8.28	8,716.80	14	6-12	3,579.70	8.23	10,304.00
5	6-12	3,764.95	8.16	13,094.40	17	6-12	4,233.33	8.36	12,582.40
8	6-12	2,960.38	8.23	9,625.60	20	6-12	4,231.02	8.27	12,505.60
11	6-12	3,040.20	8.41	9,216.00	23	6-12	4,459.11	8.44	13,312.00
<b>Ave 3,132.18 8.27 10,163.20</b>					<b>Ave 4,125.79 8.33 12,176.00</b>				
3	12-18	3,074.49	8.36	10,713.60	15	12-18	3,872.00	8.26	12,569.60
6	12-18	3,757.36	8.04	12,198.40	18	12-18	5,070.59	8.21	16,230.40
9	12-18	3,238.24	8.38	10,521.60	21	12-18	4,542.70	8.28	12,582.40
12	12-18	3,103.52	8.38	9,318.40	24	12-18	3,275.86	8.29	10,777.60
<b>Ave 3,293.40 8.29 10,688.00</b>					<b>Ave 4,190.29 8.26 13,040.00</b>				
<b>South Apron</b>									
Sample ID #	Depth (inch)	Sodium (ppm)	ph	Total Salts (ppm)					
25	0-6	6,061.17	8.37	22,540.80					
28	0-6	5,713.27	8.36	21,235.20					
31	0-6	3,091.92	8.27	9,523.20					
34	0-6	2,908.54	8.42	9,036.80					
<b>Ave 4,443.73 8.36 15,584.00</b>									
26	6-12	2,976.47	8.32	11,916.80					
29	6-12	3,278.97	8.24	11,673.60					
32	6-12	2,882.35	8.34	9,011.20					
35	6-12	5,038.50	8.26	18,099.20					
<b>Ave 3,544.07 8.29 12,675.20</b>									
27	12-18	3,055.07	8.37	10,560.00					
30	12-18	3,504.12	8.49	11,353.60					
33	12-18	5,063.21	8.24	17,292.80					
36	12-18	495	8.49	9,062.40					
<b>Ave 3,029.35 8.40 12,067.20</b>									

### Task 3

Joni Blanchard, BTNEP, organized volunteer planting days on May 26, 27 and June 21, 2005. The May plantings resulted in over 100 volunteers assisting the NRCS to plant 7,000 plugs of *Spartina alterniflora* 'Vermilion' (smooth cordgrass, or oystergrass) over marsh platforms on each side of the constructed ridge. In addition 3,000 vegetative plugs of *Spartina patens* 'Gulf Coast' (marshhay cordgrass, or wiregrass) was planted on both ridge side slopes.

Joni assisted with another volunteer planting effort on June 21. This planting effort resulted in 50 volunteers assisting in the establishment of 600 trade gallon containers of *Lycium carolinianum* (Christmas-berry or Carolina wolfberry). A third volunteer planting was accomplished on June 27, 2005 with 20 volunteers planting *L. carolinianum*, and five trade-gallon containers each of *Morus rubra* (red mulberry), *Celtis laevigata* (hackberry), *Quercus virginiana* (live oak), *Callicarpa americana* (French mulberry or American beautyberry), and *Ilex vomitoria* (yaupon).

Sordan 79 (Sorghum-Sudangrass hybrid) was broadcast seeded at a rate of 50 bulk pounds per acre and German R strain millet at a rate of 18 bulk pounds per acre on June 21, 2005. Seeding was followed applying 9.75 pounds actual N-P-K and then lightly disking.

Dr. Terry Clason, NRCS State Forester taking soil samples.



*Spartina alterniflora* 'Vermilion' planted on the marsh platform.



Volunteers planting *S. alterniflora*



Planting *Spartina patens* on the ridge side slopes.



Shell Oil Company Intern Volunteers.



Broadcast seeding of warm season annual grass species.



Covering seed by lightly disking.

