

Mr. Philip Smith, Director of Habitat Restoration
Galveston Bay Foundation
1725 N Hwy 146, Kemah, TX 77565

February 14, 2023

Re: Monitoring Report for Dollar Bay Wetland Restoration Project

Dear Mr. Smith,

This letter constitutes the first monitoring report for the Dollar Bay restoration project located in Texas City, TX. In brief, the project appears to be on track, although the marsh vegetation is still developing and not yet meeting full performance standards. The detailed report follows. Please do not hesitate to contact us directly if we can provide any additional information or address any concerns.

Sincerely,

Emily Blumentritt, B.S.
Jim Dobberstine, M.S., M.Sc.
Kristy Smith, A.S., A.S.
Myrah Urquidez, A.A., A.S.

Lee College
200 Lee Dr., Baytown, TX 77520
(281) 425-6354

Project Overview

1. The Dollar Bay restoration project is a terraced wetland constructed to restore wetland habitat previously lost to subsidence (Fig. 4), built in Spring 2021. Initial plantings of adult *Spartina alterniflora* (aka *Sporobolus alterniflorus*) were completed between 2021-2022 (exact planting dates vary by site). Monitoring will be conducted during the first two years, using the plot transect method to obtain data on plant density, aerial coverage, *Spartina a.* chlorophyll production, and *Spartina a.* biomass.
2. Monitoring conducted by Emily Blumentritt, B.S.; Jim Dobberstine, M.S., M.Sc; Kristy Smith, A.S., A.S.; Myrah Urquidez, A.A., A.S.; on October 19th, 2022 (Site 1) and October 26th, 2022 (Site 2).
3. Project purpose: Create approximately 11-15 acres of low marsh habitat to restore aquatic habitat previously lost to ground subsidence and erosion.
4. Location: Two sites of terraced wetlands constructed in Moses Lake - Dollar Bay, located in Texas City, Texas, 77590 (Fig. 3, 5). Site 1 Lat: 29.41870365751326 Long: -94.95106302089012; Site 2 Lat: 29.419394918108072 Long: -94.91280646057884. 15 terraces (6 in Site 1, 9 in Site 2) were randomly selected for sampling.
5. Findings: The constructed wetlands are not yet meeting the target performance standards for average *S. alterniflora* coverage, but are currently meeting the target for *S. alterniflora* stem density. Based on our data, the wetland vegetation is still developing and is on track to meet standards within 5 years. The terrace containing transect DB10 appeared to be sustaining some erosion and/or edge sloughing from wave energy, but other terraces studied were intact.
6. No corrective action has taken place.
7. No corrective action is necessary at this time.

Requirements

Monitoring requirements

Monitoring will be conducted for the first two years starting in October 2022. The site will be monitored by plot transect method, using 15-meter transects laid at an approximate 45-degree angle across the width of the terrace, generally arranged from south (origin) to north (terminus) to measure community metrics on both sides and at the crown of each terrace. Transect locations will be selected randomly throughout the constructed sites using an aerial map of the complex overlain with a numbered grid pattern; specific transect locations will be selected using a random number generator to select squares within the grid. The terminus of each transect will be marked with a PVC stake, and the GPS coordinates and calculated elevation recorded with a Trimble R2 GNSS receiver. Three 1m² plots (Figures 1 and 2) will be located along each transect; one at each end and one at the midpoint. 15 transects (45 plots) will be sited across the entire project (inclusive of site 1 and 2). Each plot will be assessed for relative aerial coverage according to standards laid out under the National Fish and Wildlife (NFWF) National Coastal Resilience Fund, including each plant species, live oyster, live mussels, and wrack. *Spartina alterniflora* (aka *Sporobolus alterniflorus*) density, chlorophyll production, and biomass will also be assessed where applicable to assess plant productivity.

Performance standards

The performance standards per the Galveston Bay Foundation Dollar Bay - Moses Lake Monitoring Plan (previously submitted to the National Fish and Wildlife Federation) suggest a target density for *S. alterniflora* of at least 100 stems per square meter (m²), with an aerial coverage of 70% or more. The Monitoring Plan suggests that these standards should be met within five years of planting.

Status at time of report

The monitoring study conducted included 15 sites. The average aerial coverage of *S. alterniflora* across all 15 transects/45 plots was 19.5%, and the average density was 92 stems. Based on this data, the site is on track, but still developing and not yet meeting the target performance standards.

However, data includes measurements from the crown of the terrace in addition to the edges. The terrace crown was typically composed of only bare ground with no plants, because plantings were only done along the terrace edges. Excluding the crown data, average *S. alterniflora* density was 129 stems, and the *S. alterniflora* average aerial coverage was 26.2%, indicating plants at the marsh edge are meeting performance expectations for stem density. The lower coverage numbers indicate that the marsh vegetation is still undergoing growth and development (ecological succession). The low vegetation coverage at Site DB10 may also indicate impacts by erosion or edge sloughing hindering plant growth. If the observed growth rate continues, we expect the *S. alterniflora* vegetation to meet the coverage target within five years.

4 sites (DB3, DB5, DB6, and DB10) had measurable levels of *S. alterniflora* on the terrace crown. Additionally, other plant species detected (*Borrchia frutescens*, *Heliotropian curassavicum*, *Distichlis spicata*) were found only on terrace crowns (at sites DB3, DB5, and DB6). This suggests that the terraces were successfully constructed with provision for resiliency toward future settling of the terraces and/or relative sea-level rise. The higher elevation of the crown provides area for fringing marsh plants to retreat under those conditions, allowing for greater longevity of these sites against future stressors of this nature. Further, considering that

the terraces were less than three years post-construction, and less than two years post-planting, the condition of the fringing marsh and overall diversity of the plant community among the sites is very good and suggests success may be achieved prior to the five year target.

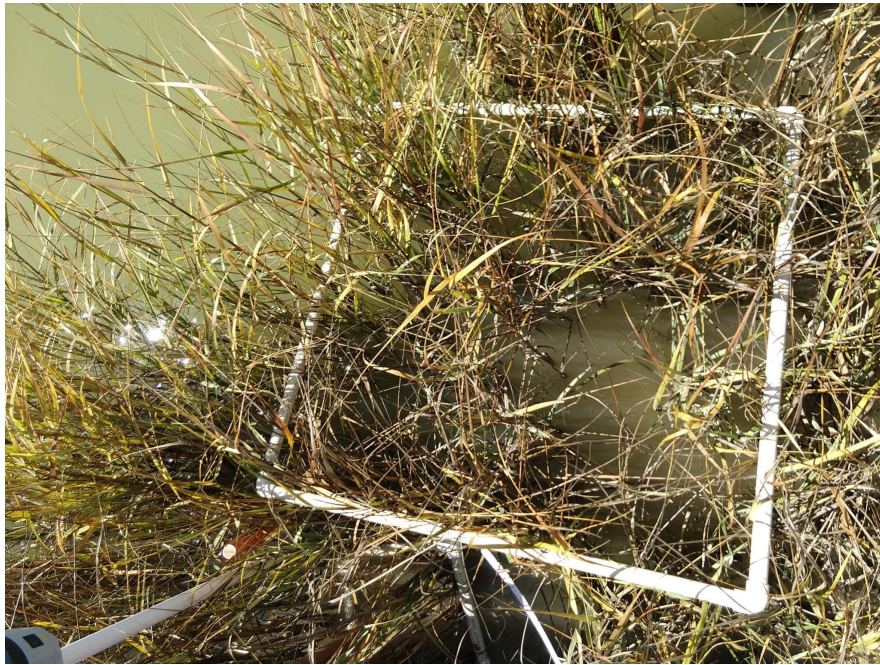


Figure 1: Example of a quadrat at the origin point of transect DB3 with *Spartina alterniflora*, PVC marker stake, and Trimble R2 GNSS.



Figure 2: Example of a quadrat at the midpoint of a transect with bare ground.



Figure 3: Satellite image of Dollar Bay and Moses Lake, showing site 1 and site 2 of the terrace wetland restoration project. Source: Google Earth, Landsat / Copernicus. (Image date: July 2022)

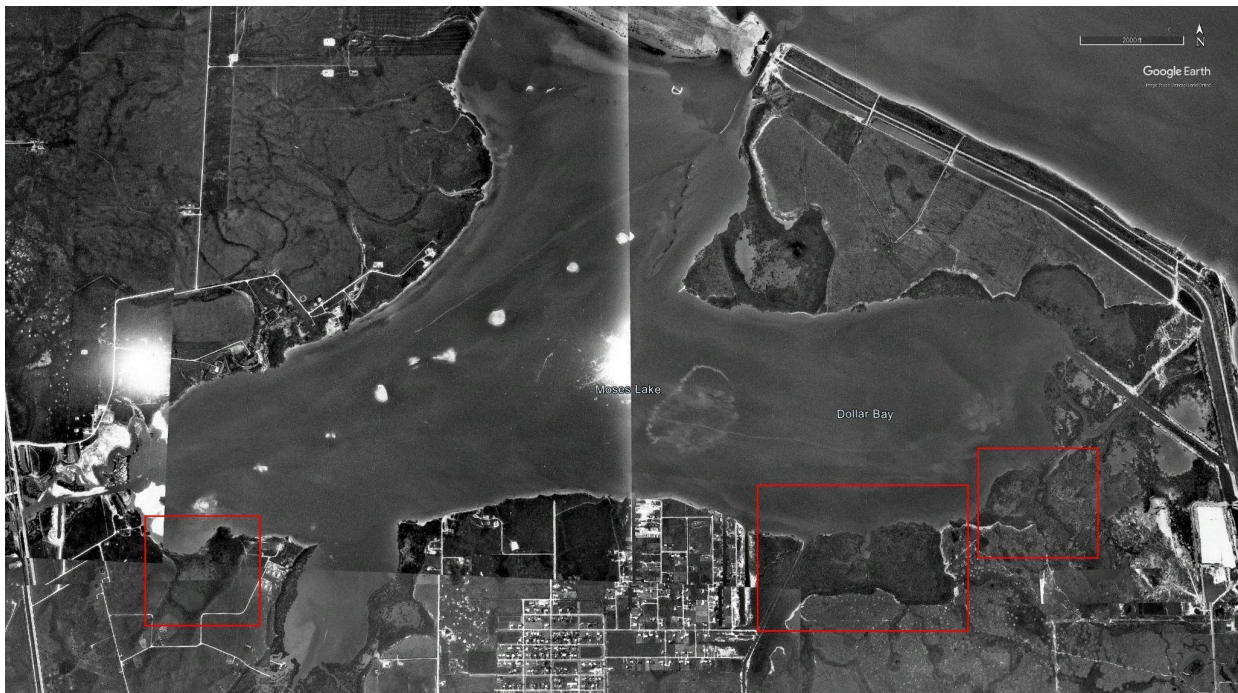


Figure 4: Historical image of Dollar Bay from 1969. Red boxes indicate wetland areas that were lost due to subsidence. The Dollar Bay restoration project aims to restore the lost habitat. Source: Google Earth, Texas General Land Office.

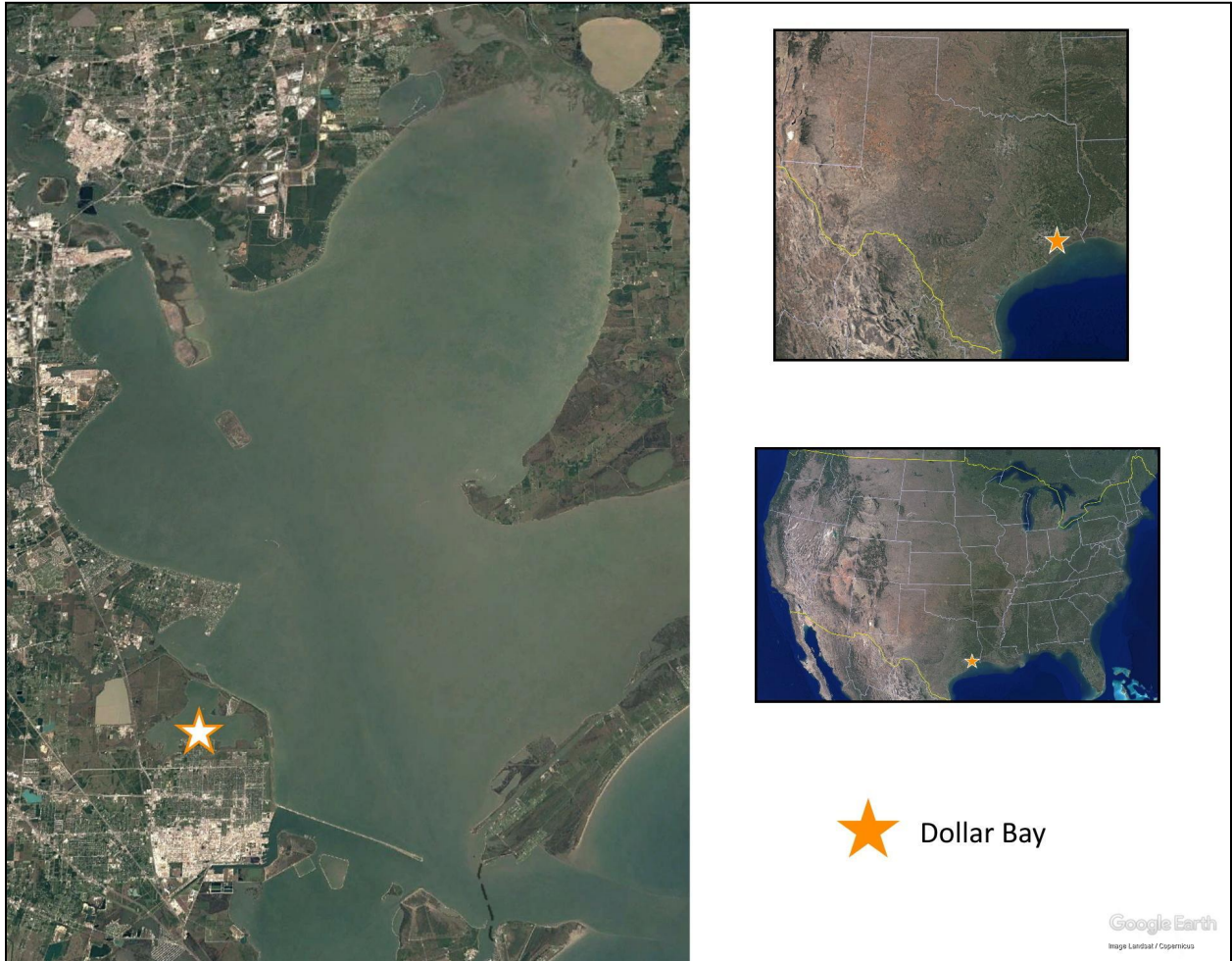


Figure 5: Satellite images showing the location of Dollar Bay relative to Galveston Bay, SE Texas, USA. Source: Google Earth, Landsat / Copernicus.

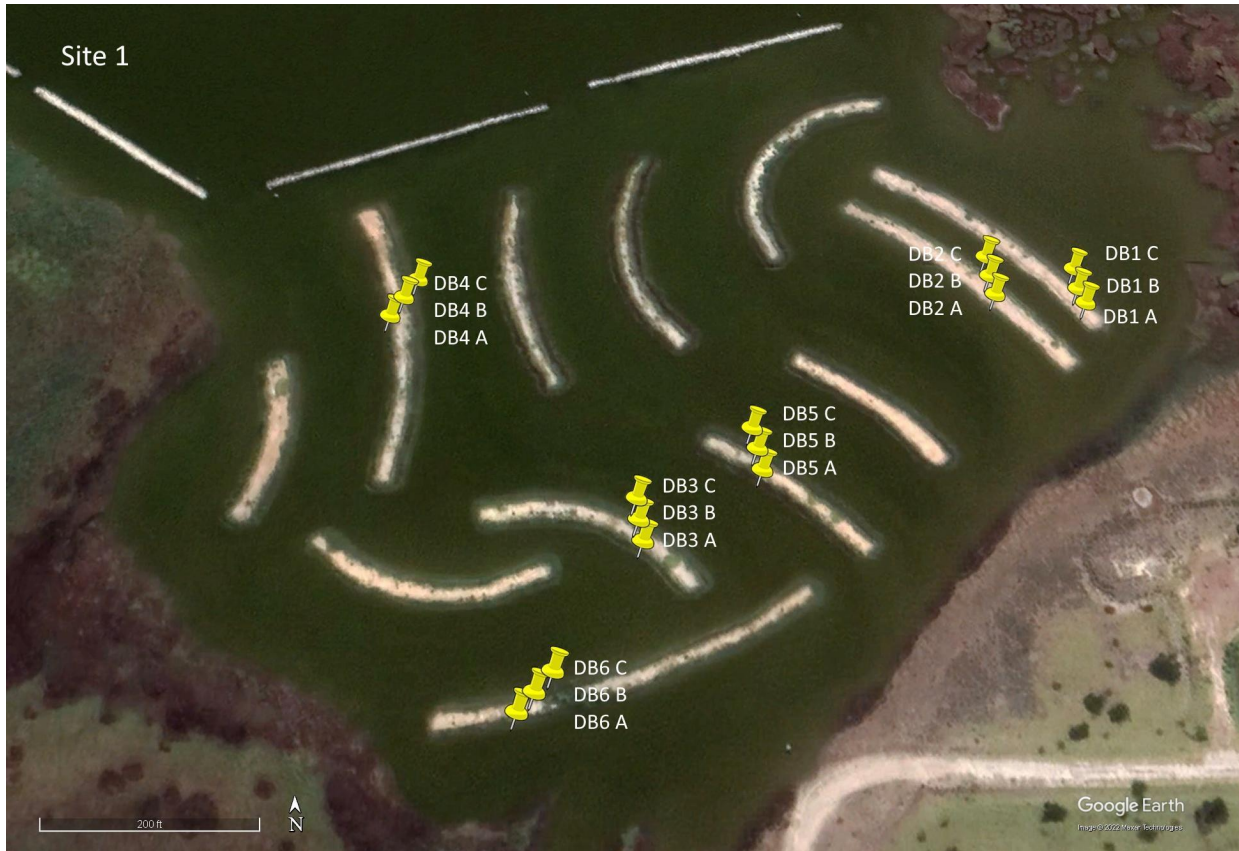


Figure 6: Satellite map showing where each study transect and quadrat is located in site 1 of the Dollar Bay restoration project. Source: Google Earth, Maxar Technologies



Figure 7: Satellite map showing where each study transect and quadrat is located in site 2 of the Dollar Bay restoration project. Source: Google Earth, Maxar Technologies (Image date July 2022)

Summary Data

Data was collected by plot transect method, using 15-meter transects laid at an approximate 45-degree angle across the width of the terrace, generally arranged from south (origin) to north (terminus) to measure community metrics on both sides and at the crown of each terrace (Figure 6, Figure 7). The location of the origin of each transect was located with a Trimble R2 GNSS receiver for latitude, longitude, and calculated elevation (AMSL), and marked with a PVC stake. Three 1m² plots were placed along the north edge of each transect, one at each end and one at the midpoint, for a total of 45 plots and 15 transects.

At each plot, the following data was assessed:

- Plant species present
- Density (stem counts) of all plants present
- Aerial coverage including each plant species, dead material, wrack, live oyster and mussels, and bare ground
- *Spartina alterniflora* productivity (where present), using:
 - Root and shoot biomass, sampled with a 1/16m² plot taken from adjacent to each plot (so as not to remove plants within the 1m² coverage plot) on the opposite side of the transect line, dried at 90° C within 72 hours of collection and measured by dry weight
 - Leaf chlorophyll content using an atLEAF CHM STD chlorophyll meter

Results for each sample location follows. Results in each table are averages for each transect by site; replicate data is included as an appendix electronically. Results include both full transect data (terrace edges and crown), and crown-excluded data (terrace edges only). GPS points and elevation as Average Mean Sea Level (AMSL) provided are at the origin for each transect. Please note that as a result of the Fall time frame during which this monitoring was conducted, some values (e.g., chlorophyll) may be lower than typical values taken during the summer growing season.

Site DB1:

Date Sampled: 10/19/22

Terrace No.: 201

Transect Origin: Lat: 29.41893176 Long: -94.94966763 AMSL Elevation: 1.098m

Date(s) Planted: 10/5/2021, 10/21/2021, and 5/17/2022

Table 1: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	56.7	35.0	72	108	24.6	36.9	59.9	89.9	74.5	111.8
Dead vegetation	3.3	5.0								
Shell	0	0								
<i>Spartina alterniflora</i>	40.0	60.0								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB2:

Date Sampled: 10/19/2022

Terrace No.: 202

Transect Origin: Lat: 29.4182668 Long: -94.949964 AMSL Elevation: 1.099m

Date(s) Planted: 10/5/2021 and 5/17/2022

Table 2: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	78.3	67.5	70	105	23.9	35.9	35.7	53.6	31.1	46.6
Dead vegetation	3.3	5.0								
Shell	0	0								
<i>Spartina alterniflora</i>	18.3	27.5								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB3:

Date Sampled: 10/19/2022

Terrace No.: 209

Transect Origin: Lat: 29.41820043 Long: -94.95110452 AMSL Elevation: 1.098m

Date(s) Planted: 6/18/2021

Table 3: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	76.7	72.5	60	73	45.0	46.4	45.4	68.2	30.1	45.2
Dead vegetation	9.8	13.8								
Shell	0	0								
<i>Spartina alterniflora</i>	11.8	13.8								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	1.7	0								
<i>Distichlis spicata</i>	0	0								

Site DB4:

Date Sampled: 10/19/2022

Terrace No.: 206

Transect Origin: Lat: 29.41892590 Long: -94.95197055 AMSL Elevation: 0.1m

Date(s) Planted: 5/13/2021

Table 4: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	83.3	75.0	13	20	31.2	46.9	24.4	36.7	28.2	42.4
Dead vegetation	14.7	22.0								
Shell	0	0								
<i>Spartina alterniflora</i>	2.0	3.0								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB5:

Date Sampled: 10/19/2022

Terrace No.: 210

Transect Origin: Lat: 29.41840962 Long: -94.95073805 AMSL Elevation: 1.098m

Date(s) Planted: 4/20/2021

Table 5: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	45.0	45.0	55	25	35.6	34.0	40.6	41.0	41.9	53.7
Dead vegetation	34.3	50.0								
Shell	0	0								
<i>Spartina alterniflora</i>	20.0	5.0								
<i>Borrchia frutescens</i>	0.7	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB6:

Date Sampled: 10/19/2022

Terrace No.: 212

Transect Origin: Lat: 29.41773063 Long: -94.95145402 AMSL Elevation: 0.098m

Date(s) Planted: 6/9/2021

Table 6: Averages of *Spartina a.* stem count, chlorophyll, biomass of shoots and roots

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	66.3	62.5	56	84	30.1	45.1	40.4	60.7	53.9	80.8
Dead vegetation	1.7	2.5								
Shell	0	0								
<i>Spartina alterniflora</i>	23.7	35.0								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	8.3	0								

Site DB7:

Date Sampled: 10/26/2022

Terrace No.: 129

Transect Origin: Lat: 29.41834635 Long: -94.91306993 AMSL Elevation: 1.077m

Date(s) Planted: 5/8/2022

Table 7: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	120	69.5	120	180	32.7	49.0	2.1	3.2	2.1	3.1
Dead vegetation	1.0	0								
Shell	1.0	1								
<i>Spartina alterniflora</i>	79.3	29.5								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB8:

Date Sampled: 10/26/2022

Terrace No.: 131

Transect Origin: Lat: 29.41847561 Long: -94.91620883 AMSL Elevation: 1.079m

Date(s) Planted: 5/5/2022

Table 8: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	71.0	57.0	86	130	37.7	56.5	45.4	68.1	18.9	28.3
Dead vegetation	0	0								
Shell	0.7	0.5								
<i>Spartina alterniflora</i>	28.3	42.5								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB9:

Date sampled: 10/26/2022

Terrace No.: 116

Transect Origin: Lat: 29.41879219 Long: -94.91267962 AMSL Elevation: 1.078m

Date(s) Planted: 5/8/2022

Table 9: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	82.3	74.0	185	277	33.0	49.6	7.6	11.4	3.7	5.5
Dead vegetation	0	0								
Shell	1.0	1.0								
<i>Spartina alterniflora</i>	16.7	25.0								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB10:

Date Sampled: 10/26/2022

Terrace No.: 124

Transect Origin: Lat: 29.41945520 Long: -94.91568935 AMSL Elevation: 1.08m

Date(s) Planted: 12/16/2021 and 5/14/2022

Table 10: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		S. alterniflora Density (Stem Count)		S. alterniflora Chlorophyll (CHL STD)		S. alterniflora Biomass Shoots (grams)		S. alterniflora Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	51.7	60.0	116	105	46.2	47.9	9.6	12.2	7.8	8.4
Dead vegetation	0	0								
Shell	15.0	5.0								
<i>Spartina alterniflora</i>	33.3	35.0								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB11:

Date Sampled: 10/26/2022

Terrace No.: 101

Transect Origin: Lat: 29.41867109 Long: -94.90945009 AMSL Elevation: 0.076m

Date(s) Planted: 5/14/2022

Table 11: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	94.7	92.0	89	134	34.8	52.2	12.2	18.3	30.5	45.7
Dead vegetation	0	0								
Shell	0.3	0.5								
<i>Spartina alterniflora</i>	5.0	7.5								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB12:

Date Sampled: 10/26/2022

Terrace No.: 110

Transect Origin: Lat: 29.42021655 Long: -94.91096430 AMSL Elevation: 0.079m

Date(s) Planted: 12/16/2022

Table 12: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	71	64.5	148	222	28.5	42.7	99.4	149.1	61.7	92.5
Dead vegetation	0.3	0								
Shell	5.3	0.5								
<i>Spartina alterniflora</i>	13.3	20.0								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB13:

Date Sampled: 10/26/2022

Terrace No.: 127

Transect Origin: Lat: 29.41844305 Long: -94.91494298 AMSL Elevation: 1.078m

Date(s) Planted: 5/7/2022

Table 13: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	81.0	79.0	80	121	32.7	49.0	7.2	10.8	6.0	9.0
Dead vegetation	0	0								
Shell	5.7	1.0								
<i>Spartina alterniflora</i>	23.3	35.0								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB14:

Date Sampled: 10/26/2022

Terrace No.: 105

Transect Origin: Lat: 29.418511 Long: -94.909936 AMSL Elevation: 0.076m

Date(s) Planted: 5/14/2022

Table 14: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	78.3	67.5	133	200	30.2	45.4	61.0	91.5	28.6	43.0
Dead vegetation	0	0								
Shell	0	0								
<i>Spartina alterniflora</i>	21.7	32.5								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Site DB15:

Date Sampled: 10/26/2022

Terrace No.: 121

Transect Origin: Lat: 29.41968619 Long: -94.91328463 AMSL Elevation: 0.079m

Date(s) Planted: 4/10/2022 and 5/14/2022

Table 15: Averages for stem count, chlorophyll, biomass, and coverage

Coverage Type	Coverage (%)		<i>S. alterniflora</i> Density (Stem Count)		<i>S. alterniflora</i> Chlorophyll (CHL STD)		<i>S. alterniflora</i> Biomass Shoots (grams)		<i>S. alterniflora</i> Biomass Roots (grams)	
	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded	Full transect	Crown data excluded
Bare ground / open water	84.3	77.5	99	149	27.1	40.6	124.0	186.0	58.9	88.3
Dead vegetation	0.3	0								
Shell	0.7	0.5								
<i>Spartina alterniflora</i>	14.7	22								
<i>Borrchia frutescens</i>	0	0								
<i>Heliotropium curassavicum</i>	0	0								
<i>Distichlis spicata</i>	0	0								

Conclusions

In our best professional judgment, the target standards have not yet been met, but the plantings are healthy and on track to meet the targets within the aforementioned monitoring period.

Appendices (provided separately as electronic documents)

1. Field work photos
2. Field data sheet scans (PDF)
3. Data summary workbooks
4. *S. alterniflora* biomass datasheets
5. Dollar Bay sample points KMZ file