

“Tape Grass, *Vallisneria americana* Restoration and Seed Stock Enhancement in the C-43 (Caloosahatchee River) with Exclosure Cages and Plantings

Task 3.2 Deliverable Summary Planting Report

Prepared For:

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Introduction:

The following report will serve as documentation that the deployment of exclosure cages and planting of tape grass, *V. americana* was completed during the week of June 22nd - 26th, 2015. The project was conducted upstream of the Franklin Lock (S-79) structure in the Caloosahatchee River (Fig. 1 attached General Location Map). This initial phase of the project was completed with the logistical assistance of Sea and Shoreline LLC, Ruskin, Florida who constructed the exclosures and provided a deployment vessel. Johnson Engineering also provided a boat for transporting materials and *V. americana* plants from the aquaculture facility operated by Florida Gulf Coast University's Inland Ecology Research Group.

Summary:

A total of 52 exclosure cages were transported to the permitted planting sites where a total of ten (10) cages were deployed and planted at each of four (4) sites (Fig. 2 attached). In addition, three (3) cages were also deployed at each site but not planted to serve as controls for both plant recruitment and fish and macroinvertebrate surveys to be conducted later. Each exclosure was planted with ten (10) individual planting units of *V. americana*. Hand trowels were used to create a trench and plant roots were installed in the trench and then the trowel was removed and plants were hand packed to secure them into sediment. This planting method has proven to be very successful in the past. Planting sites will hereafter be referred to as Sites A, B, C, and D moving from downstream (A) to upstream (D). Sites A and C are located on the northern shoreline while Sites B and D are located on the southern shoreline (Fig. 2). Exclosure cages and planting areas were then marked with several PVC pipes with reflective tape to make them clearly visible to boaters and an educational sign was laminated and attached to one of the PVC markers. Water depths varied slightly at each location but ranged between 0.4 and 0.8 meters. Sediments were determined to be suitable for *V. americana* growth and survival based on previous studies. The planting sites were in shallow water along the shoreline at locations previously used for planting *V. americana* using a different cage design and no boater conflicts were observed or reported over a two-year period of 2011 to 2012.

Table 1. GPS coordinates for Sites A, B, C, and D in the Caloosahatchee River upstream of S-79.

Site ID	lat_dms	long_dms
Site A	26° 43' 8.853" N	81° 39' 59.446" W
Site B	26° 43' 7.923" N	81° 39' 15.127" W
Site C	26° 43' 12.753" N	81° 38' 57.626" W
Site D	26° 43' 9.381" N	81° 38' 51.583" W

Following the deployment and planting the monitoring program was initiated in order to determine if plantings stayed rooted and to install additional PVC markers and reflective tape so that each site is clearly visible to boaters day and night. Three monitoring events were conducted since the planting was

completed to ensure plants and cages were secure. On the first monitoring event on June 26, only four plants of the 400+ total plants were dislodged and found floating inside different cages. These plants were replanted inside each cage. On July 1 a total of six plants were found dislodged and replanted. The heavy wave action created by large boats is considered to the cause of dislodged plants. Only July 8 no plants were found floating and it appears that they are beginning to become established. Additional PVC markers with reflective tape were installed at each of the four planting sites on July 8, 2015.

Public Outreach:

At the direction of Mr. Phil Flood, Manager of the South Florida Water Management District's Fort Myers Service Center a News Release was made on June 22, 2015. The Fort Myers News Press and the local affiliate of NBC Television (NBC-2) requested an interview and site visit with the project manager and Mr. Flood. On June 25, 2015 Johnson Engineering provided separate boat tours for the News Press and for NBC-2. Interviews were conducted and presented on the evening news and in the Ft. Myers News Press on the following day. Mr. Jim Anderson founder of Sea and Shoreline, LLC was also interviewed by the TV reporter.



Sea and Shoreline staff and vessel transporting 26 of 52 enclosure cages to planting sites A and B on June 22, 2015. All 52 cages were deployed (13/site) with 40 cages planted (10/site) with 10 plants in each.

Photographs of Exclosure Deployment Sites



Site A in the Caloosahatchee River upstream of Franklin Lock (S-79) after planting was completed on June 22, 2015. Ten exclosures were planted with ten *Vallisneria americana* plants and three exclosures were installed as controls with no plants. Note: This location has endemic *V. americana* in the vicinity but they are very sparse and small. Samples of endemic and donor *V. americana* were collected for genetic analyses and identification.



Site A on July 8, 2015 with additional PVC markers with reflective tape and educational signage for boaters. All cages were intact and plantings remained rooted. The invasive non-native apple snail was found at this location and approximately 20 egg masses were removed from cattails during the previous two weeks following planting.



Educational signage laminated and attached to PVC markers at each of four planting sites on 6/22/2015.



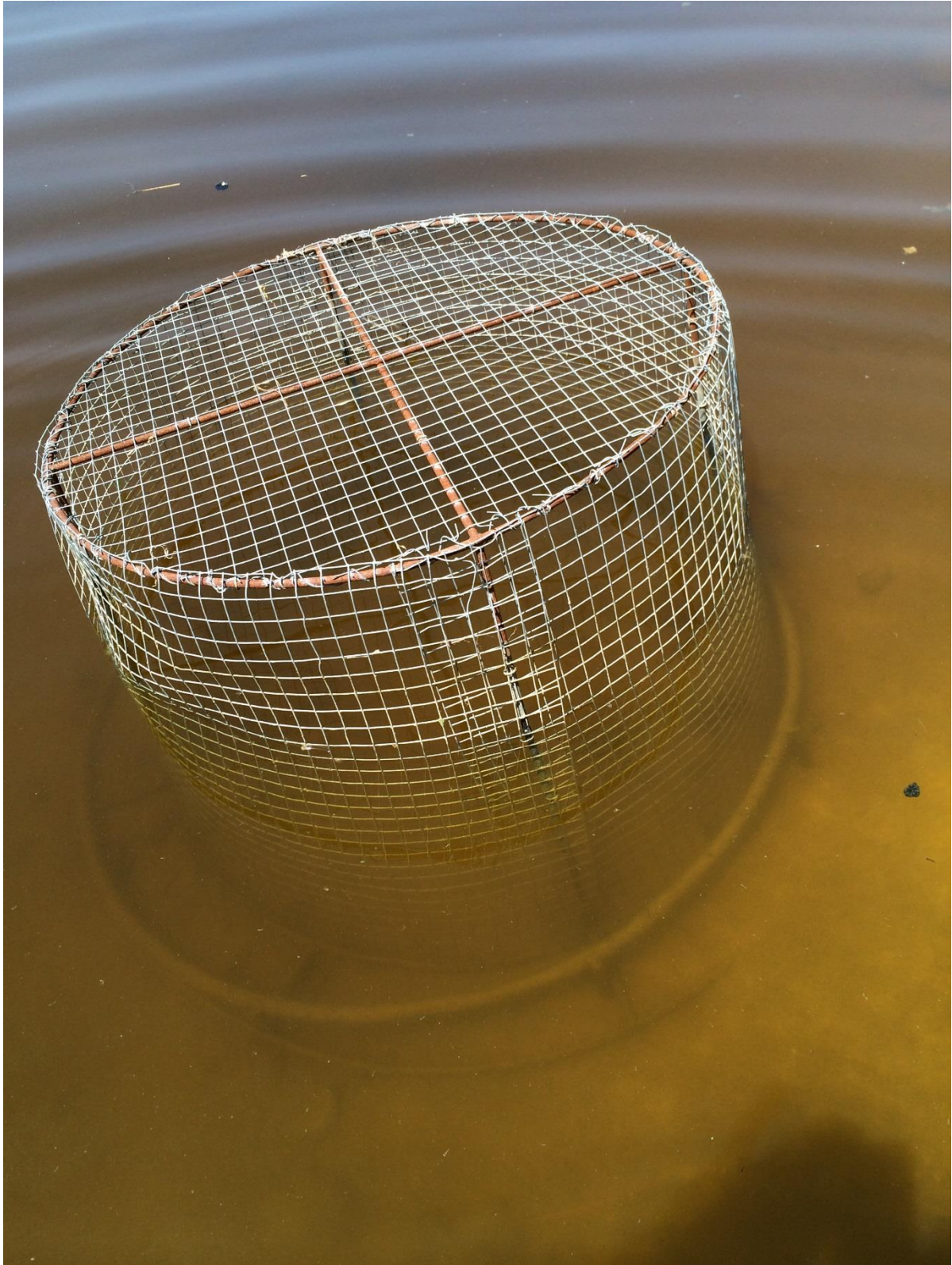
Site B on South Side of Caloosahatchee River where littoral zone allowed for deeper planting.



Site B with additional PVC markers with reflective tape installed on July 8, 2015.



Site C Planting location was move along the Lee County Caloosahatchee Regional Park shoreline due to the ongoing rip-rap construction project and alterations to the shoreline and littoral zone. GPS coordinates were recorded and illustrated on map (Figure 2).



One of ten planted exclosure cages at Site C along Caloosahatchee Regional Park shoreline on North side of Caloosahatchee River. Photo taken June 26, 2015.



Site D planting area located on the south side of the Caloosahatchee River across from the Lee County Caloosahatchee Regional Park.



Typical *V. americana* planting unit inside exclosure cage at Site D on June 22, 2015.



Local affiliate of NBC Television (NBC-2) and reporter Theresa Hornstein covering the tape grass restoration project on June 25, 2015.