



**State of Louisiana**

**Coastal Protection and Restoration Authority  
of Louisiana (CPRA)**

## **2015 Short Summary Report**

for

## **Highway 384 Hydrologic Restoration (CS-21)**

State Project Number CS-21  
Priority Project List 2

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Cameron Parish

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## **Preface**

The Highway 384 Hydrologic Restoration Project (CS-21) 2015 short summary report includes herbaceous vegetative and submerged aquatic vegetation monitoring data collected from January 2014 to December 2015.

This report is intended to update NRCS on the status of vegetation and SAV in the project area. For more detailed analyses, see the previous four comprehensive OM&M Reports (2004, 2005, 2007, and 2010 online at <http://lacoast.gov/new/Projects/Info.aspx?num=CS-21>). A final comprehensive OM&M report is planned for 2019.

## **Monitoring Activity**

In order to provide an end of project life assessment for the project, emergent vegetation and SAV sampling was performed in August 2015 at project and reference sites (Figure 1).

### **a. Monitoring Goals**

The objective of the La. Highway 384 Hydrologic Restoration Project is to protect and maintain 935 ac (378 ha) of intermediate and brackish wetlands by reducing water level variability, thereby increasing the abundance of emergent vegetation.

The following goals will contribute to the evaluation of the above objective:

1. Decrease the rate of marsh loss in the project area.
2. Reduce water level variability within the project area.
3. Maintain salinity levels within CTU 1 at  $\leq 10$  ppt for brackish marsh vegetation.
4. Maintain salinity levels in CTU 2 and CTU 3 within the 0-5 ppt target range (1997 – 2004) using project specific sondes and 0-7 ppt (2005 – present) using telemetry sondes, for intermediate marsh vegetation.
5. Increase the coverage of emergent wetland vegetation and submersed aquatic vegetation (SAV) in shallow open water areas within the project area.

Only goal 5 above will be assessed in this report.

### **b. Preliminary Monitoring Results and Discussion**

#### **Submerged Aquatic Vegetation**

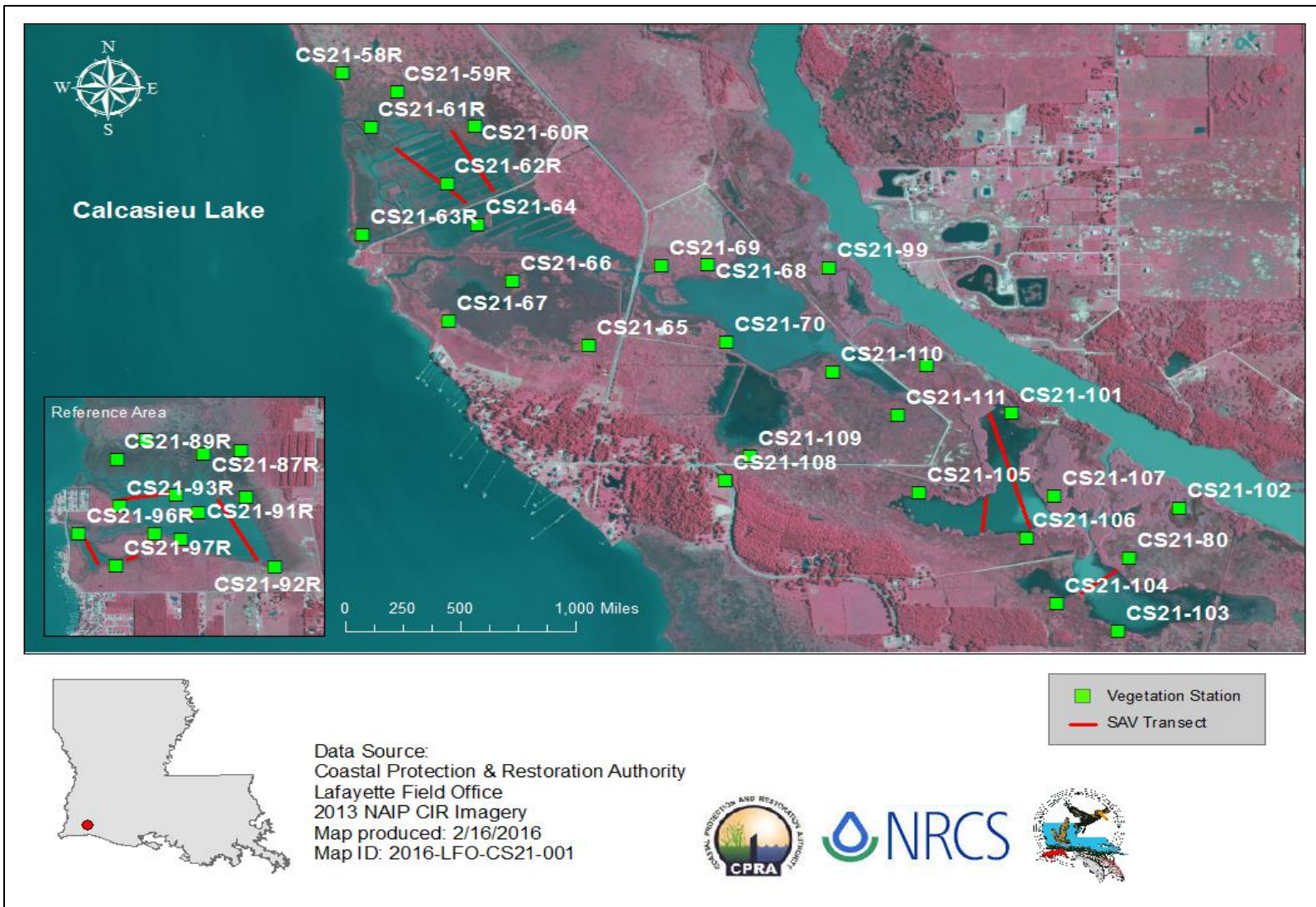
The project goal for SAV was to increase cover or frequency of occurrence. SAV was measured pre-construction in 1996 and 1997 and post-construction in 2002 and 2015 (Figure 2). SAV cover increased every year measured in the project area while it was rarely present in the reference area (Figure 3).

In 1996, 1997, and 2002 the project area was dominated by *Ruppia maritima* with some *Najas guadalupensis*, *Myriophyllum spicatum*, and a few other SAV species (Figure 2). In the reference area a very small amount of *R. maritima* was found in 1996 and 1997, some in 2002.

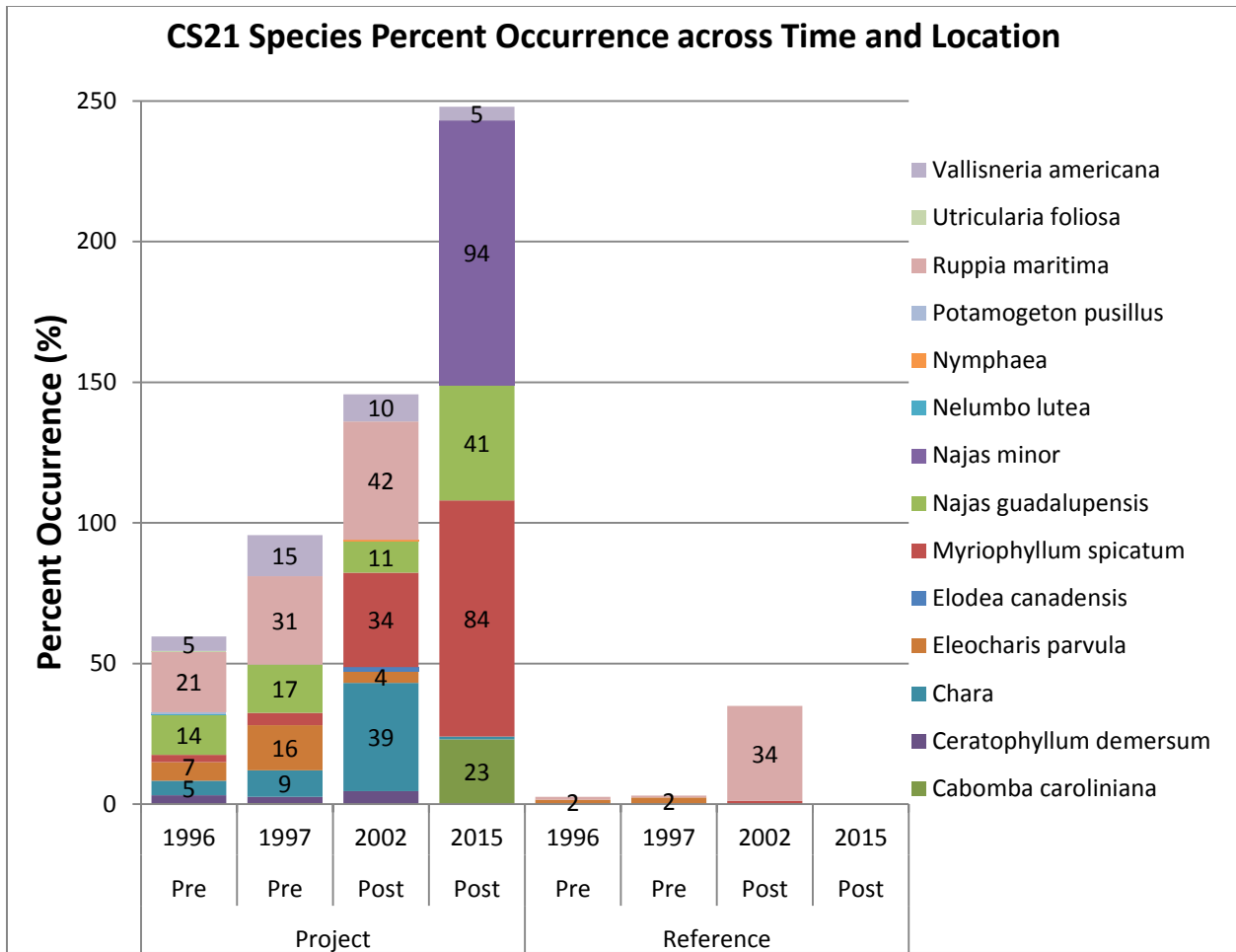
In 2015, the project area was still covered in SAV, but the dominant species had shifted from the more salt tolerant *R. maritima* to fresher species like *M. spicatum* and *Najas minor*. No SAV was found in the reference area in 2015. Salinities during sampling in 2015 were <1 ppt in the project area and over 16 ppt in the reference area. Water levels were so low that several ponds in the project area were dry in 2015.

### **Emergent Vegetation**

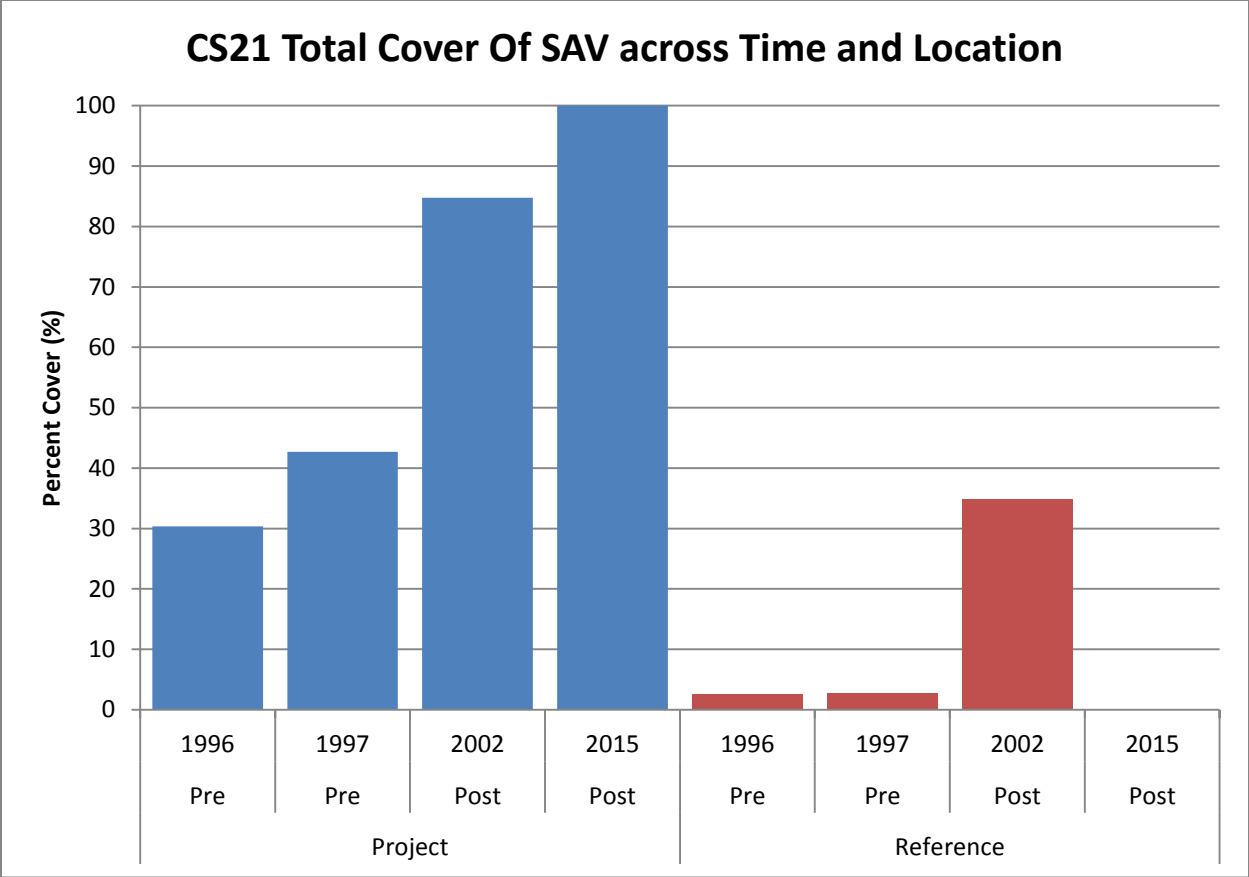
The project goal for emergent vegetation was to increase cover in the project area. Vegetation recovered from Hurricane Rita from 2006 to 2008 but had decreased overall by 2015, most likely due to very dry conditions (Figure 4). Vegetation in the project area has shifted from Saline species to Intermediate species over time and is now dominated by *Spartina patens* and *Paspalum vaginatum* along with several other species including *Phragmites australis*, *Distichlis spicata*, *Juncus roemerianus* and *Pluchea camphorata*. Cover of saline vegetation in the reference area has remained high throughout the project.



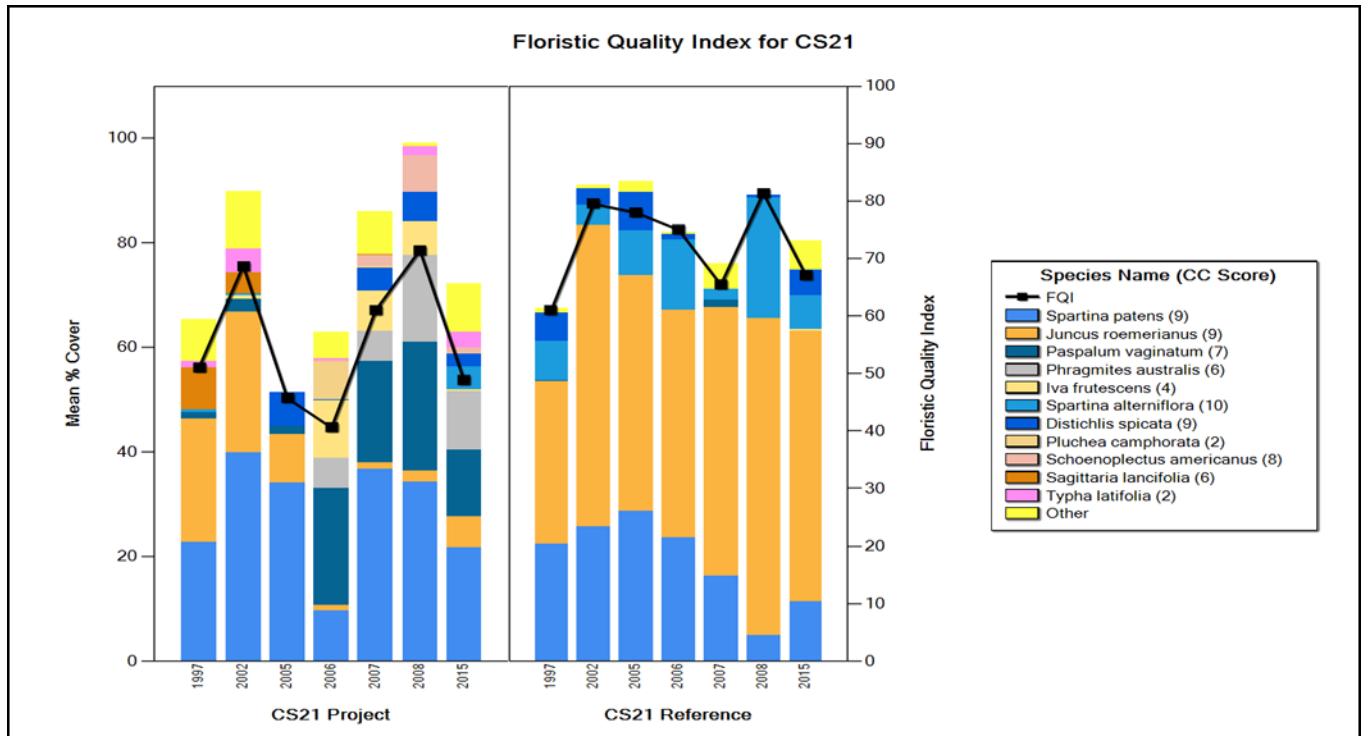
**Figure 1.** Location of herbaceous vegetation stations and SAV transects within the La. Highway 384 Hydrologic Restoration (CS-21) project.



**Figure 2.** Percent occurrence of SAV species within the project and reference area pre-and post-construction.



**Figure 3.** Total percent cover of SAV within the project and reference area for pre-construction in 1996 and 1997 and post-construction in 2002 and 2015.



**Figure 4.** Floristic Quality Index (FQI) and mean % cover of emergent vegetation species within the project and the reference area from 1997 to 2015.

## V. Conclusions

### a. Project Effectiveness

The project has effectively protected intermediate vegetation and encouraged the growth of SAV.