CS-24

Perry Ridge Shore Protection
Summary Data and Graphics

May 2001
Updated 12/30/02

CS-24 Perry Ridge

Project Objectives

1. Protect the existing emergent wetlands along the north bank of the GIWW and prevent their further deterioration from shoreline erosion and tidal scour.

2. Prevent the widening of the GIWW into the project area wetlands.

3. Reduce the occurrence of salinity spikes within the project area.

Specific Goal

The following goal will contribute to the evaluation of the above objectives:

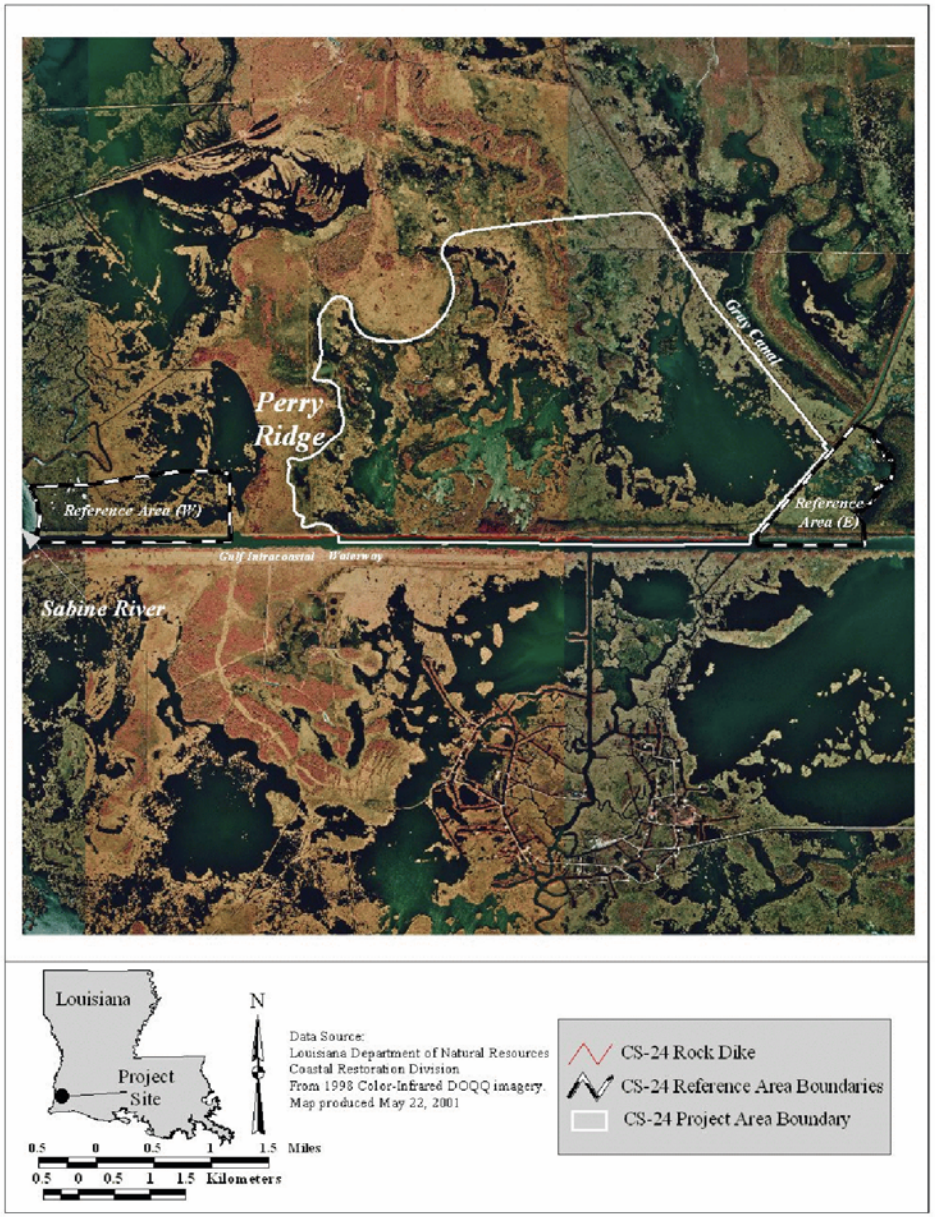
1. Decrease the rate of shoreline erosion along the north bank of the GIWW using a rock dike.

TV-04 Cote Blanche

Monitoring Elements

Aerial Photography: To document shoreline position, and land and water areas along the GIWW in both the project and reference areas, near-vertical, color-infrared aerial photography (1:12,000 scale, with ground controls) will be obtained once prior to construction in 1997, and in post-construction years 2001, 2010, and 2016. The photography will be georectified by National Wetlands Research Center (NWRC) personnel using standard operating procedures described in Steyer et al. (1995). Detailed photointerpretation, mapping, and Geographical Information System (GIS) interpretations are not currently planned on the CS-24 aerial photography.

Shoreline Change: To document changes in shoreline position along the GIWW, shoreline markers will be placed at 12 points along the vegetated marsh edge adjacent to the rock breakwater. Twelve transects will be surveyed and differentiated by shoreline type in the project and reference areas (minimum of 3 but not to exceed 1 per 1,000 ft [305 m]). On each survey transect, a PVC pole will be installed to mark the vegetated edge of the bank (VEB), and a post will be installed at the end point in the marsh or on the spoil bank to establish a hub for use in relocating each transect. Shoreline position relative to the shoreline markers along the survey transects will be documented at the same time of the year, once as-built in 1999, and in post-construction years 2001, 2004, 2007, 2010, 2013, and 2016. Additionally, continuous differential GPS will be used according to Steyer et al. (1995) to document shoreline movement. Shoreline positions will be compared to historical data sets available in digitized format for 1956, 1978, 1988, and for any subsequent years that become available during the life of the project.



Perry Ridge Shore Protection (CS-24) project boundary, reference area, and rock dike location.

CS-24 Aerial Photography

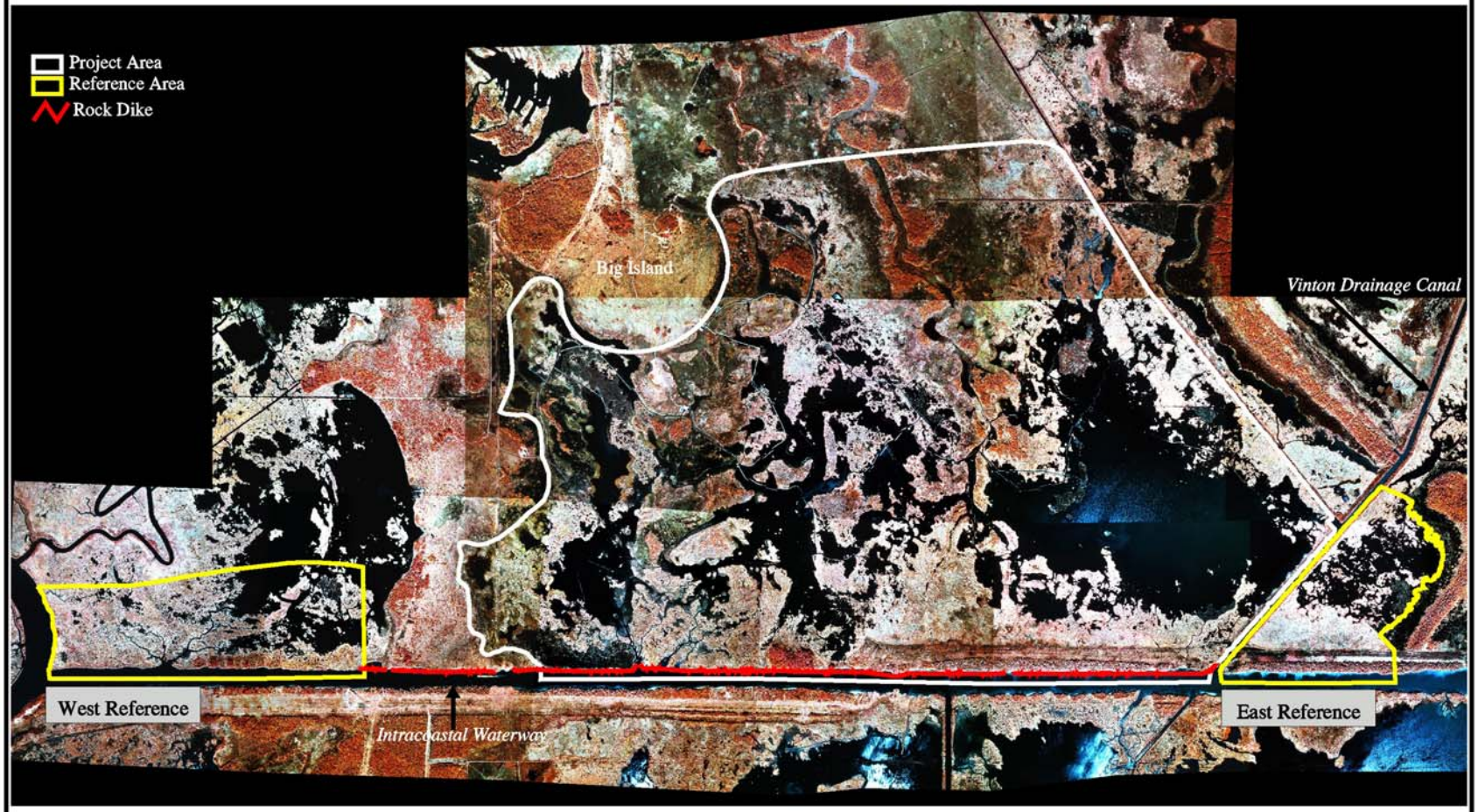
Aerial photography collected in Nov 1997, and Nov 2001. Data will also be collected in 2010 and 2016.

- 1997 Photomosaic (11/23/97)
- 1997 Land:Water (11/23/97)

Perry Ridge Shoreline Protection (CS-24)

Coastal Wetlands Planning, Protection and Restoration Act

1997 Photomosaic



Prepared by:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Lafayette, LA
and
Louisiana Department of Natural Resources
Coastal Restoration Division
Abbeville Field Office

Source:
The 1:12,000 color infrared aerial photography was acquired on November 23, 1997.

Scale 1:50,000

1000 0 1000 2000 3000 4000 Feet

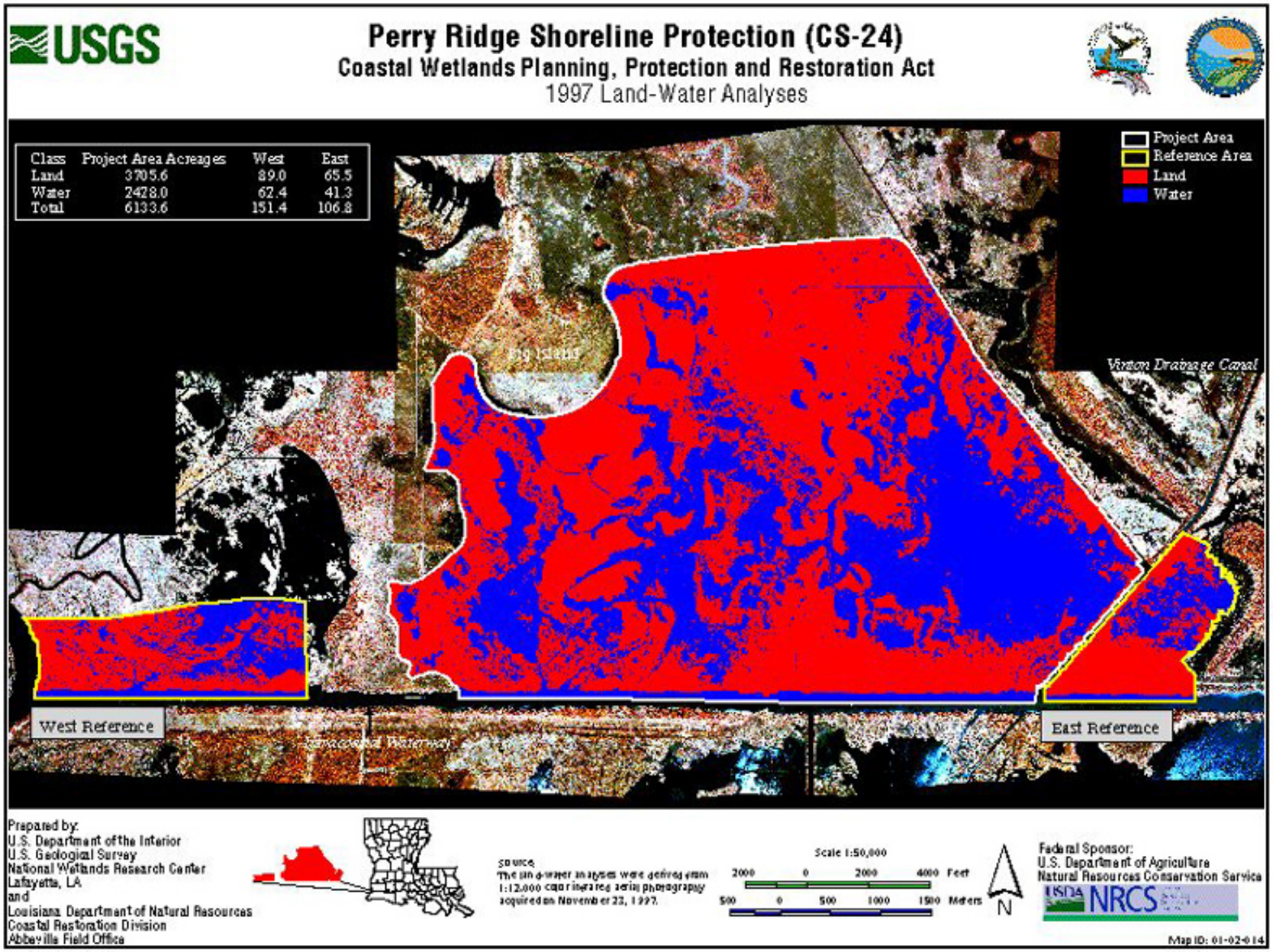
300 0 300 600 900 1200 Meters

N

Federal Sponsor:
U.S. Department of Agriculture
Natural Resources Conservation Service

USDA NRCS

Map ID: 01-02-013


USGS
Perry Ridge Shoreline Protection (CS-24)
Coastal Wetlands Planning, Protection and Restoration Act
1997 Land-Water Analyses
Class Project Area Acreages West East
Land 3705.6 89.0 65.5
Water 2428.0 62.4 41.3
Total 6133.6 151.4 106.8
Project Area
Reference Area
Land
Water
Big Island
Vinton Drainage Canal
West Reference
East Reference
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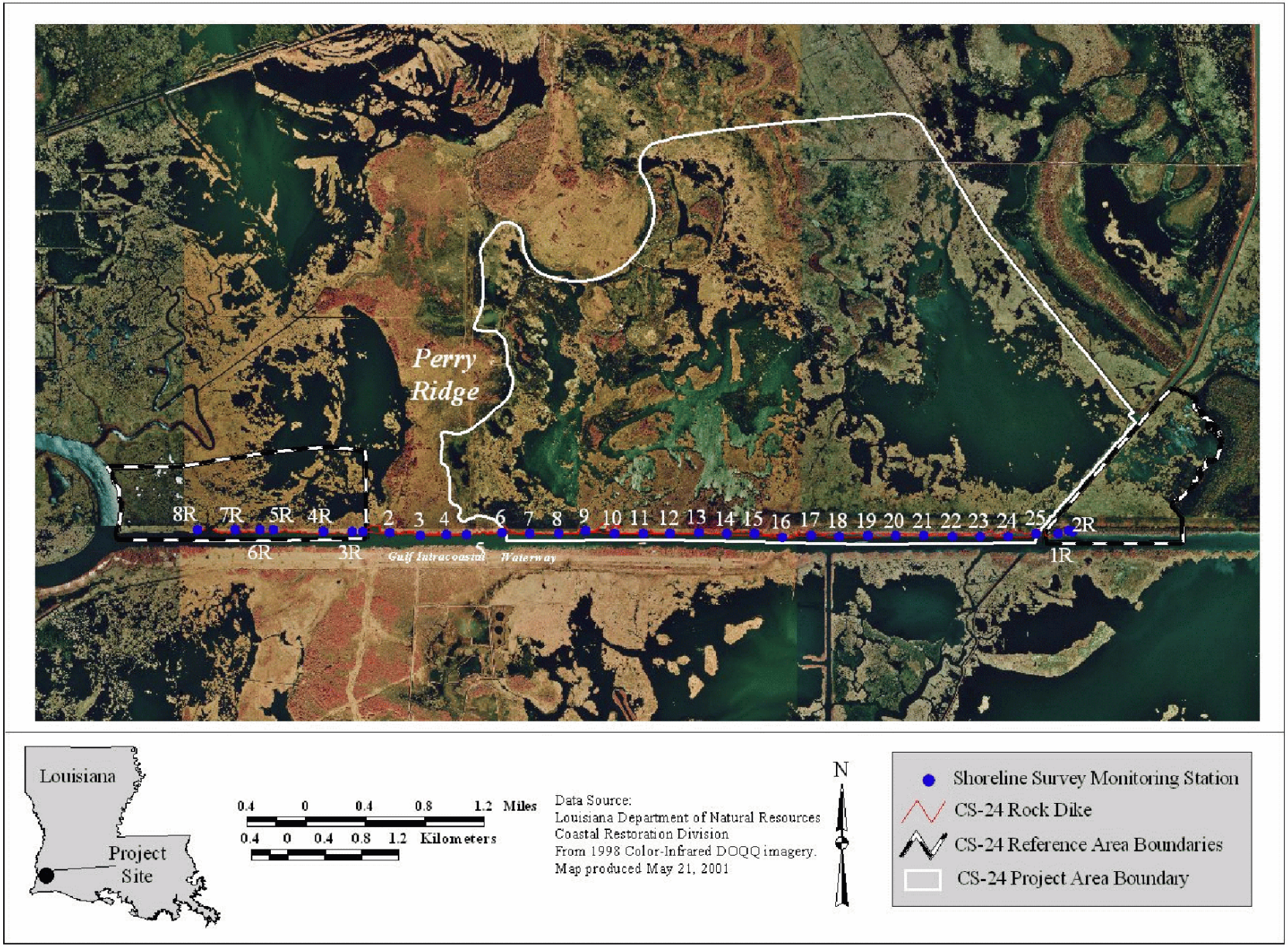
Coastal Restoration Division
Abbeville Field Office
Source:
Scale 1:50,000
2000 0 2000 4000 Feet
500 0 500 1000 1500 Meters
N
Federal Sponsor:
U.S. Department of Agriculture
Natural Resources Conservation Service
USDA NRCS
Map ID: 01-02-014

CS-24 Shoreline Change Data

Shoreline Change data were collected in 1999 and in 2001. Data will also be collected in 2004, 2007, 2010, 2013, and 2016. Data from 2001 and the associated shoreline change analysis will be presented in the first Comprehensive Report, currently in review.

- Project map showing location of shoreline marker stations.
- March 1999 measurements from the edge of the shoreline markers to the vegetated edge within the Project Area.
- March 1999 measurements from the edge of the shoreline markers to the vegetated edge within the Reference Area.
- Photographs illustrating the high cut-bank along this stretch of GIWW, and the settlement plates within the rock dike marking shoreline survey transect points.



Perry Ridge Shore Protection (CS-24) shoreline marker station locations.

Table 1. CS-24 project area shoreline survey locations, distances from survey hubs to the edge of shoreline vegetation, and site characteristics, established in March 1999. Distances are reported from tape measurements and from DGPS survey. VE = Vegetation Edge (Shoreline).

CS-24 Monitoring Station Number (from E to W)	Compass Heading	Distance From Hub to VE/Shoreline ft (m)	Configur-ation	Site Conditions
CS24-25 (Opposite CS-24 Settlement Plate No 25)	310	From tape: 38.70 (11.80) DGPS: 66.92 (20.40)	Sloping	Point, *P. australis* on bank
CS24-24 (Opposite CS-24 Settlement Plate No. 24)	360	From tape: 120.20 (36.60) DGPS: 142.72 (43.50)	Cut-bank (1ft)	Point, *Eleocharis* sp. on bank, clean, herbivory
CS24-23 (Opposite CS-24 Settlement Plate No. 23)	360 towards NRCS hub	From tape: 63.85 (19.50) DGPS: 67.26 (20.50)	Cut-bank (3 ft)	Uniform shoreline, *Sapium sebiferum* on bank, clean, herbivory
CS24-22 (Opposite CS-24 Settlement Plate No. 22)	360	From tape: 89.95 (27.40) DGPS: 95.14 (29.00)	Cut-bank (5 ft)	Uniform shoreline, *Celtis* sp. on bank, clean, herbivory
CS24-21 (Opposite CS-24 Settlement Plate No. 21)	360	From tape: 66.20 (20.20) DGPS: 63.16 (19.25)	Cut-bank (7 ft)	Cove, *Celtis* sp. on shoreline, clean, grazed
CS24-20 (Opposite CS-24 Settlement Plate No 20)	300	From tape: 80.15 (24.20) DGPS: 87.81 (26.76)	Cut-bank (9ft)	Uniform shoreline, Celtis sp. on bank, clean, grazed
CS24-19 (Opposite CS-24 Settlement Plate No 19)	350	From tape: 70.65 (21.50) DGPS: 91.61 (27.62)	Cut-bank (4ft)	Cove, *Celtis* sp. on bank
CS24-18 (Opposite CS-24 Settlement Plate No. 18)	360	From tape: 82.90 (25.30) DGPS: 109.09 (33.25)	Cut-bank (4ft)	Uniform shoreline, *Celtis* sp. on bank
CS24-17 (Opposite CS-24 Settlement Plate No. 17)	360 towards NRCS hub	From tape: 139.40 (42.50) DGPS: 143.54 (43.75)	Cut-bank (15ft)	Uniform shoreline, *Celtis* sp. on bank, clean, herbivory

(Continued)

Table 1. (continued)

CS-24 Monitoring Station Number (from E to W)	Compass Heading	Distance From Hub to VE/Shoreline ft (m)	Configur-ation	Site Conditions
CS24-16 (Opposite CS-24 Settlement Plate No. 16)	30	From tape: 113.50 (34.60) DGPS: 109.93 (33.51)	Cut-bank (9ft)	Uniform shoreline, *Celtis* sp. on bank, clean, herbivory, pipelines in area
CS24-15 (Opposite CS-24 Settlement Plate No. 15)	360	From tape: 98.45 (30.00) DGPS: 100.07 (30.50)	Sloping	Uniform shoreline, *J. roemerianus* on shoreline
CS24-14 (Opposite CS-24 Settlement Plate No 14)	360	From tape: 26.30 (8.00) DGPS: 22.15 (6.75)	Sloping	Uniform shoreline, *J. roemerianus* and *Scirpus californicus* on bank, in between pine ridges
CS24-13 (Opposite CS-24 Settlement Plate No 13)	360	From tape: 29.30 (8.95) DGPS: 18.86 (5.75)	Sloping	Uniform shoreline, *Scirpus robustus* on bank, grazed
CS24-12 (Opposite CS-24 Settlement Plate No. 12)	350	From tape: 10.80 (3.30) DGPS: 13.35 (4.07)	Sloping	Uniform shoreline, *S. patens* / *P. australis*/*Scirpus californicus* on bank, vegetation touching rocks
CS24-11 (Opposite CS-24 Settlement Plate No. 11)	352 towards NRCS hub	From tape: 13.00 (4.00) DGPS: 21.68 (6.61)	Sloping	Uniform shoreline, *Scirpus californicus*/*P. australis* on bank
CS24-10 (Opposite CS-24 Settlement Plate No. 10)	5	From tape: 101.30 (30.90) DGPS: 259.26 (79.02)	Sloping	Uniform shoreline, *P. australis*/*Typha* sp./ *Saggitaria latifolia* on bank, deep, bank runs at a 45 degree angle at measuring point
CS24-09 (Opposite CS-24 Settlement Plate No. 09)	20	From tape: 34.50 (10.50) DGPS: 42.31 (12.90)	Sloping	Uniform shoreline, *P. australis*/*Scirpus robustus* on shoreline
CS24-08 (Opposite CS-24 Settlement Plate No 08)	300	From tape: 58.50 (17.85) DGPS: 54.99 (16.76)	Sloping	Uniform shoreline, *P. australis*/*Myrica* sp. on bank

(Continued)

Table 1. (continued)

CS-24 Monitoring Station Number (from E to W)	Compass Heading	Distance From Hub to VE/Shoreline ft (m)	Configur-ation	Site Conditions
CS24-07 (Opposite CS-24 Settlement Plate No 07)	360	From tape: 16.00 (4.90) DGPS: 19.69 (6.00)	Sloping	Uniform shoreline, *P. australis*/ *Scirpus robustus* on bank
CS24-06 (Opposite CS-24 Settlement Plate No. 06)	300	From tape: 51.30 (15.65) DGPS: 59.35 (18.09)	Sloping	Point, *Scirpus americanus*/ *S. patens* on bank
CS24-05 (Opposite CS-24 Settlement Plate No. 05)	360 towards NRCS hub	From tape: 49.45 (15.10) DGPS: 43.63 (13.30)	Cut-bank (1ft)	Small cove, *Myrica* sp./ *Cynodon dactylon* on bank, clean, herbivory
CS24-04 (Opposite CS-24 Settlement Plate No. 04)	360	From tape: 16.10 (4.90) DGPS: 13.94 (4.25)	Cut-bank (3.5ft)	Uniform shoreline, *S. patens* on bank
CS24-03 (Opposite CS-24 Settlement Plate No. 03)	360	From tape: 24.95 (7.60) DGPS: 54.95 (16.75)	Cut-bank (2.5ft)	Uniform shoreline, *S. patens* and *Sapium sebiferum* on shoreline, clean, grazed, deep water
CS24-02 (Opposite CS-24 Settlement Plate No 02)	330	From tape: 28.55 (8.70) DGPS: 25.65 (7.82)	Cut-bank (2ft)	Uniform shoreline, *C. dactylon* on bank, clean, grazed
CS24-01 (Opposite CS-24 Settlement Plate No 01)	360	From tape: 15.10 (4.60) DGPS: 14.76 (4.5)	Sloping	Uniform shoreline, *C. dactylon* on bank, clean, grazed

Table 2. CS-24 reference area shoreline survey locations, distances from survey hubs to the edge of shoreline vegetation, and site characteristics, established in March 1999. Distances are reported from tape measurements and from DGPS survey. VE = Vegetation Edge (Shoreline).

CS-24 Monitoring Station Number (from E to W)	Compass Heading	Distance From Hub to VE/Shoreline ft (m)	Configur-ation	Site Conditions
CS24-09R East of project area Location: 30.0595 N 93.5907 W	360	From tape: 50.00 (15.20) DGPS: 40.19 (12.25)	Cut-bank, (4.5ft)	Uniform shoreline, *Celtis* sp. on bank, DNR hub (metal pipe) on bank
CS24-01R East of project area Location: 30.0596 N 93.5911 W	360	From tape: 50.00 (15.20) DGPS: 40.19 (12.25)	Cut-bank (12ft)	Cove, *Crataegus* sp./ *Myrica* sp. on bank, clean, herbivory, DNR hub
CS24-02R East of project area Location: 30.0593 N 93.5923 W	360	From tape: 50.00 (15.20) DGPS: 39.37 (12.00)	Cut-bank (8ft)	Small point on uniform shoreline, *Crataegus* sp. on bank about to fall off, clean, herbivory, DNR hub
CS24-03R West of project area (marsh) Location: 30.0591 N 93.6717 W	360	From tape: 50.00 (15.20) DGPS: 50.03 (15.25)	Sloping	Uniform shoreline, *P. australis* / *S. patens*/*Scirpus californicus* (15ft out in water) on bank, DNR hub
CS24-04R West of project area (marsh) Location: 30.0591 N 93.6749 W	360	From tape: 50.00 (15.20) DGPS: 41.83 (12.75)	Sloping	Cove, P. australis on shoreline, DNR hub
CS24-05R Pine Ridge Location: 30.0592 N 93.6806 W	360	From tape: 50.00 (15.20) DGPS: 38.55 (11.75)	Sloping	Uniform shoreline, Pinus sp./P. australis on bank, DNR hub
CS24-06R Pine Ridge Location: 30.0592 N 93.6821 W	360	From tape: 50.00 (15.20) DGPS: 50.85 (15.50)	Sloping	Uniform shoreline, *Pinus* sp./*P. australis* on bank, -3.04 from DNR hub to large pine tree heading to water
CS24-07R Pine Ridge Location: 30.0592 N 93.6849 W	360	From tape: 50.00 (15.20) DGPS: 41.01 (12.50)	Sloping	Uniform shoreline, *Pinus* sp./*Scirpus californicus* on bank, DNR hub
CS24-08R West of project area (marsh) Location: 30.0592 N 93.6891 W	360	From tape: 50.00 (15.20) DGPS: 37.73 (11.50)	Sloping	Uniform shoreline, *S. patens*/*Scirpus californicus* on shoreline, past west cut into marsh just inside end of reference area, DNR hub

Photograph illustrating the high cut-bank along the northern shore of the GIWW within the Perry Ridge Shore Protection (CS-24) project area.

Photograph illustrating the settlement plate in the rock dike marking the shoreline survey stations within the Perry Ridge Shore Protection (CS-24) project area. Also note the fragile shoreline being protected by the rock dike. Shorelines such as this and cutbanks illustrated in the previous photo are both common within the CS-24 project area.

CS-24 Perry Ridge Shore Protection

Preliminary findings

Aerial Photography:

- Pre-construction (11/23/97) land:water classification indicated 60.6% land and 39.4% water within the project area.
- 2001 aerial photography was collected on 11/17/2001 and is currently being processed by NWRC.

Shoreline Position:

- Data were collected in March 1999 (as-built) and in 2001, however only the baseline date were presented. The 2001 shoreline data are currently being processed and will be presented in the next update and in the first Comprehensive Report, currently in review.

- Field observations indicate that the rock dike appears to have halted shoreline erosion within the project area. Quantitative results will be reported in the next update.