

BAPTISTE COLLETT BAYOU DREDGED MATERIAL DISPOSAL HISTORY

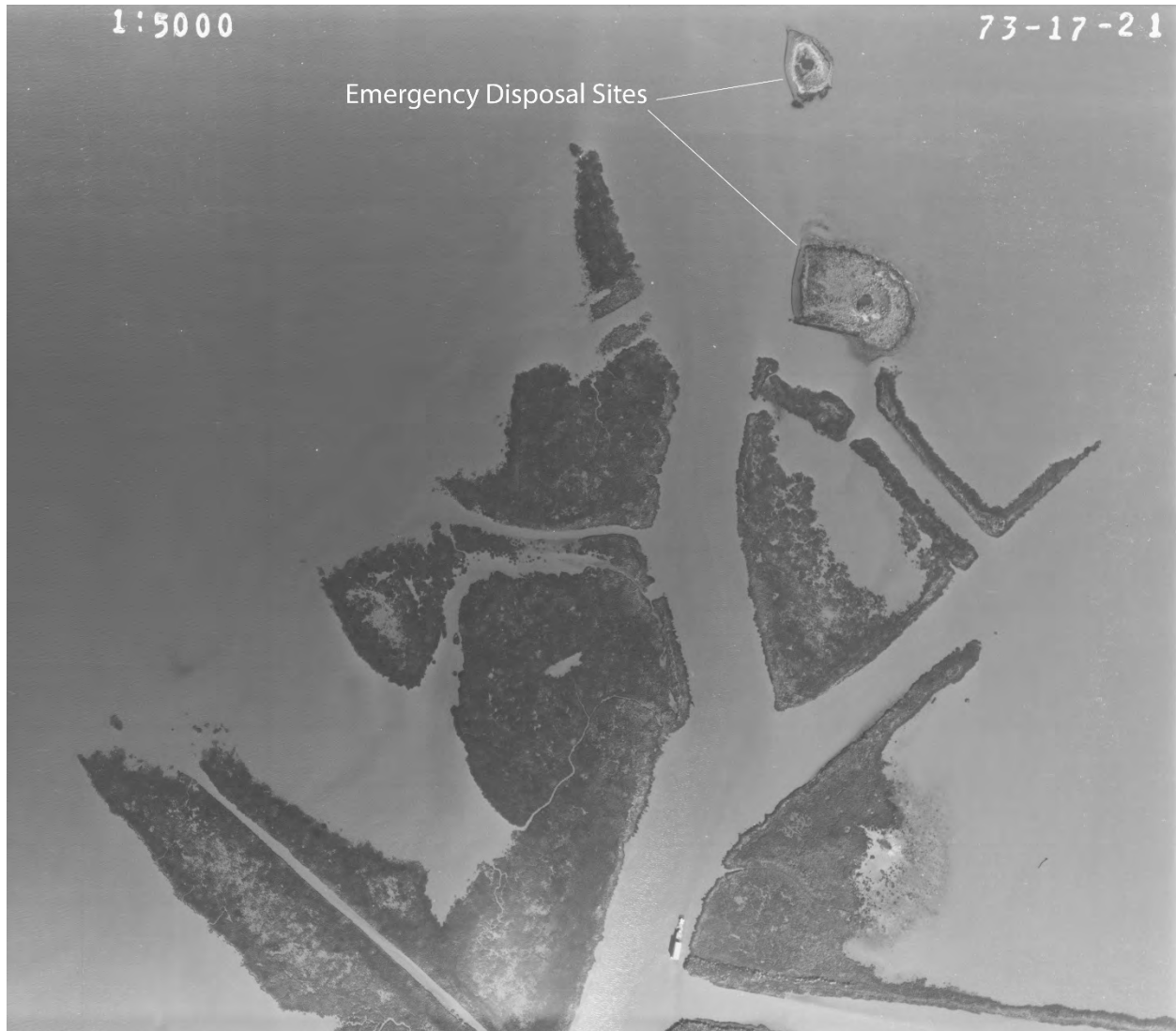
Baptiste Collette Bayou existed as a small canal in 1868 that extended between the Mississippi River and what was then known as the Bird Island Sound. In 1874, a crevasse occurred, and by 1893, a small subaerial subdelta had been formed. In 1908, the U.S. Army Corps of Engineers (USACE) dammed the crevasse to maintain the flow through the navigation channels. In 1915, the dam was breached and growth of the subdelta resumed. The subdelta was nearly 20 square miles in 1959, but considerable subsidence and ponding was evident on the 1959 survey, indicating that the deterioration phase of this subdelta had already begun (Morgan, 1977).

The River and Harbors Act of 1968, approved August 13, 1968, authorized the USACE, New Orleans District (CEMVN) to enlarge the existing channel of Baptiste Collette Bayou to -14 feet Mean Low Gulf (MLG) over a bottom width of 150 feet with an entrance/bar channel in open water 16 feet deep over a bottom width of 250 feet. Jetties to the 6 foot depth contour also were authorized.



15 November 1969: Prior to Baptiste Collette channel construction

In April 1972 and April 1973, prior to channel construction, due to emergency operations on the Inner Harbor Navigation Canal Lock, it became necessary to dredge an alternate navigation channel of dimensions 9 feet deep by 125 feet wide through the gulfward reach of Baptiste Collette Bayou. The alignment followed a northerly direction through North Pass to avoid existing pipelines. The total dredging required in 1972 was 265,520 cubic yards (CY), and in 1973 was 395,916 CY. After one week had elapsed, the channel was no longer at project depth and consequently, navigation was very limited. During the 1973 emergency dredging, strong winds of about 40-45 miles per hour were experienced from the north, northeast, and southeast. These winds are attributed with being the primary cause for the rapid shoal development.



24 October 1973: Emergency dredging disposal sites on east side of channel

Enlargement of the channel began in November, 1977 and was completed in May, 1978. Jetty construction was completed in May 1979.

Beneficial use of dredged material from maintenance of the Baptiste Collette bar channel began in 1977 with the placement of dredged material in shallow open water on the east side of the

channel in a manner conducive to wetland creation and to the creation of islands for colonial nesting seabirds. This use of dredged material to create/restore coastal habitat was considered to be experimental at the time. Wetland creation on the west side of the jettied channel began in 1988. Typically, maintenance dredging occurs annually and dredged material is generally utilized in unconfined wetland creation/restoration areas and for the creation of islands suitable for colonial nesting seabirds. Following the initial construction of bird nesting islands, the CEMVN periodically deposits dredge material back on these islands to set back vegetative succession and keep the island clear of vegetation for breeding terns, gull, black skimmers and other colonial nesting seabirds that prefer relatively bare ground for nesting purposes.

Since the initial construction of the Baptiste Collette navigation channel, over 1,000 acres of coastal habitat have been created by placement of dredged material during routine maintenance dredging events. Created habitats include marsh, scrub-shrub, bare land and beach. Seventy-six species of salt and fresh water plants have been documented on these sites. The bird nesting islands have been identified as a U.S. Important Bird Area because of the essential habitat they provide to significant numbers of breeding Caspian and gull-billed terns and roosting pelicans. Five species of terns have been recorded as breeding on these islands.

FY 1977-1978

1. Under contract 77-237, construction of the channel began. The cutterhead dredges ARMADILLO and PONTCHARTRAIN performed all contract dredging work. Dredging work began on 3 November 1977 and was completed on 10 May 1978. A total of 3,084,733 CY was removed and placed into disposal areas located adjacent to the channel.

Final contract cost was \$1,736,000.

2. Under contract 78-264, the cutterhead dredge G.D. WILLIAMS (working from 27 July 1978 to 9 August 1978) removed a total of 199,590 CY from the jetty/bar channel reach (between Station 318+00 and Station 480+00) and placed this material in shallow open water located on the east side of the channel just over the jetties (disposal area **Gypsy** and **Paul Island**). Dredge material was discharged to a maximum initial elevation of +3.5 feet MLG to develop marsh.

Final contract cost was \$266,100.



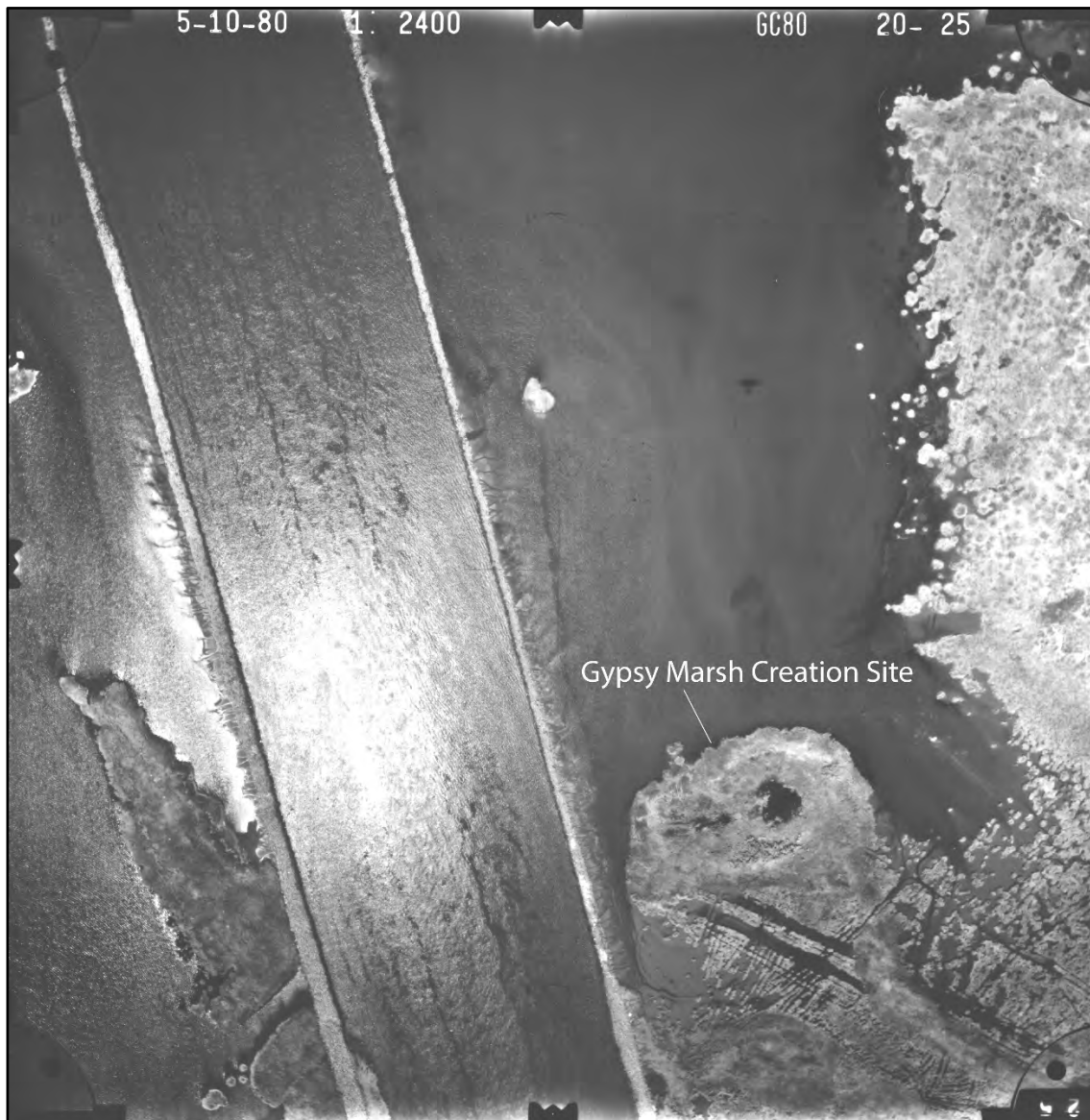
1978 Aerial Photography

FY 1980

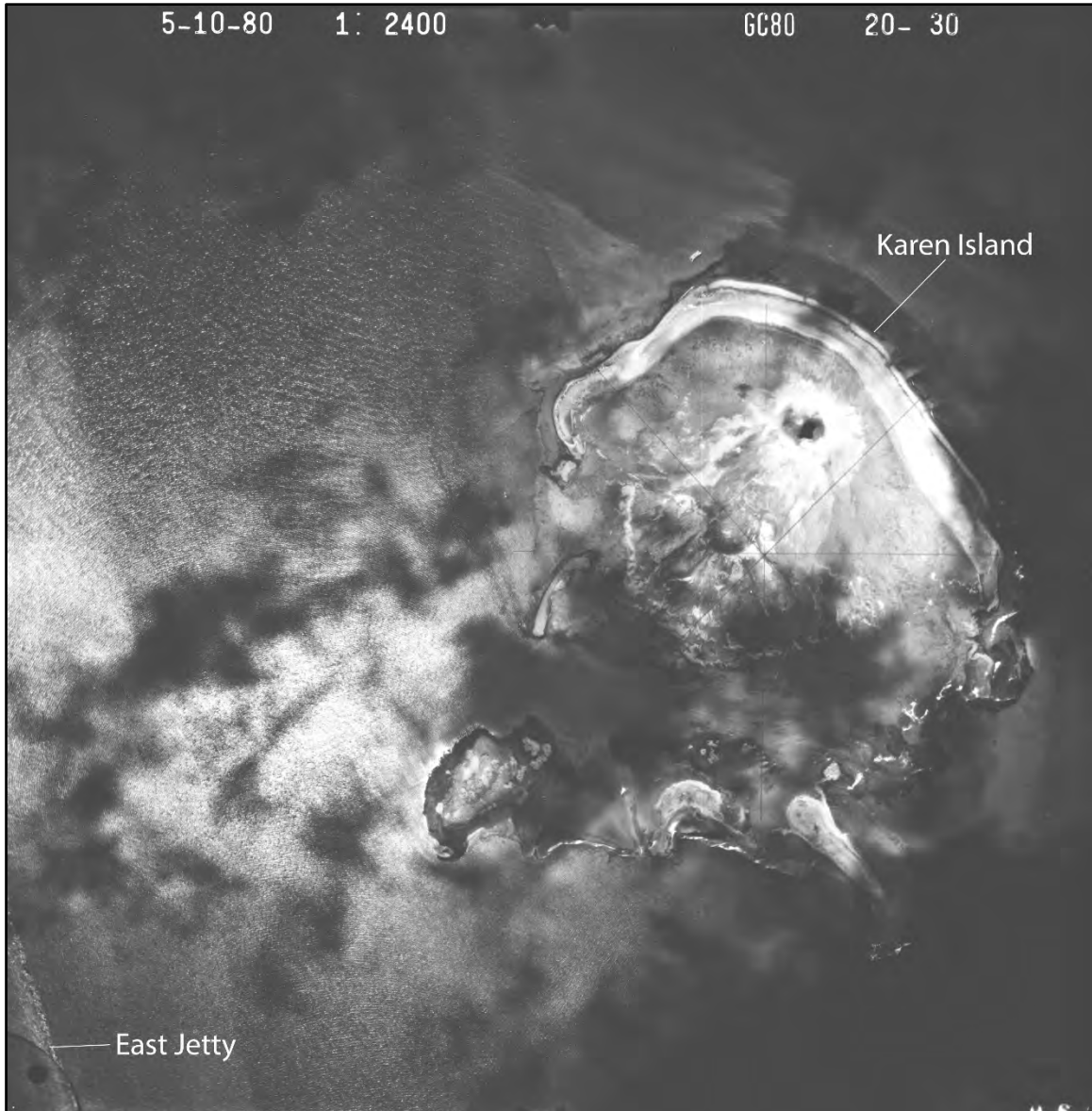
Under contract 80-C-0047, the cutterhead dredge ARKANSAS (working from 26 November 1979 to 4 January 1980) removed a total of 830,484 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 480+00 (Mile 9.1). Dredged material placed on the east side of the channel for wetlands creation was limited to a maximum initial discharge elevation of about +1.5 to +2.5 feet MLG, while dredged material placed at bird nesting island sites was limited to a maximum initial discharge elevation of about +3.5 feet MLG.

All dredged material was placed in shallow open water located on the eastern side of the channel about 2000 feet from the channel centerline. Dredged material was pumped perpendicular to the channel at 3 placement sites to a maximum initial elevation of +3.5 feet MLG to create a series of bird islands no larger than 5 acres in size apiece. Locations of these 3 bird islands coincided with the location of the **Gypsy** marsh creation site (Station 337+00) and the future locations of **Karen** (Station 410+00) and **Lynda** (Station 423+00) islands. The majority of dredged material placed at these 3 sites did not break the water surface at the conclusion of this maintenance dredging work.

Final contract cost was \$814,806.



10 May 1980: Gypsy marsh creation site on east side of channel jetties



10 May 1980: Karen Island located east of jetties

FY 1982

Under contract 82-C-0019, the cutterhead dredge PONTCHARTRAIN (working from 2 November 1981 to 5 December 1981) removed a total of 798,040 CY from the jetty/bar channel reach between Station 340+69 (Mile 6.5) and Station 490+00 (Mile 9.28). All dredged material was placed in shallow open water located on the eastern side of the channel over 2000 feet from the channel centerline. Dredged material was pumped perpendicular to the channel at multiple placement sites to a maximum initial elevation of 3.5 feet MLG to create a series of bird islands no larger than 5 acres in size apiece. Placement of these small bird islands coincided with the future locations of **Paul, Karen, Lynda, Plover** and **Shea** islands. Final contract cost was \$677,535.

FY 1983

Under contract 83-C-0163, the cutterhead dredge E. STROUD (working from 17 May 1983 to 1 July 1983) removed a total of 956,545 CY from the jetty/bar channel reach (from Station 328+00 to Station 490+00). Exact dredged material placement sites are unknown, but are presumed to be located on the east side of the channel. Final contract cost was \$771,754.



June 1983

FY 1984

Under contract 84-C-0112, the cutterhead dredge E. STROUD (working from 13 July 1984 to 18 August 1984) removed a total of 1,065,818 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 490+00 (Mile 9.28).

Field inspections of Baptiste Collette disposal sites in 1984 revealed the need to adjust initial placement height restrictions to achieve the desired wetlands and bird nesting island goals. The maximum initial discharge elevation for wetland creation disposal sites was increased to about +6.0 feet MLG to achieve a final, settled elevation of about +2.5 feet MLG. The maximum initial discharge elevation for bird nesting island disposal sites was increased to about +8.0 feet MLG to achieve a final, settled elevation of about +5.0 feet MLG.

Dredged material was placed adjacent to the east jetty (disposal site **Gypsy**) approximately between Station 329+00 and Station 352+00 to create a 150-foot wide area of marsh. Dredged material placed at the **Gypsy** disposal area was discharged to a maximum initial elevation of +6.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction).

Dredged material was placed at a number of bird nesting island sites on the eastern side of the channel centerline in shallow open water. The **Paul Island** site was located about 4,000 feet east of the channel at Station 389+50. Seventeen other separate discharge locations for the creation of bird nesting islands were located about 2,000 feet from the channel centerline between Station 406+00 and Station 490+00 to create a series of 150-foot wide bird nesting islands no larger than

5 acres in size. Dredged material was pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction) at these bird nesting island sites.

Final contract cost was \$614,214.

FY 1985

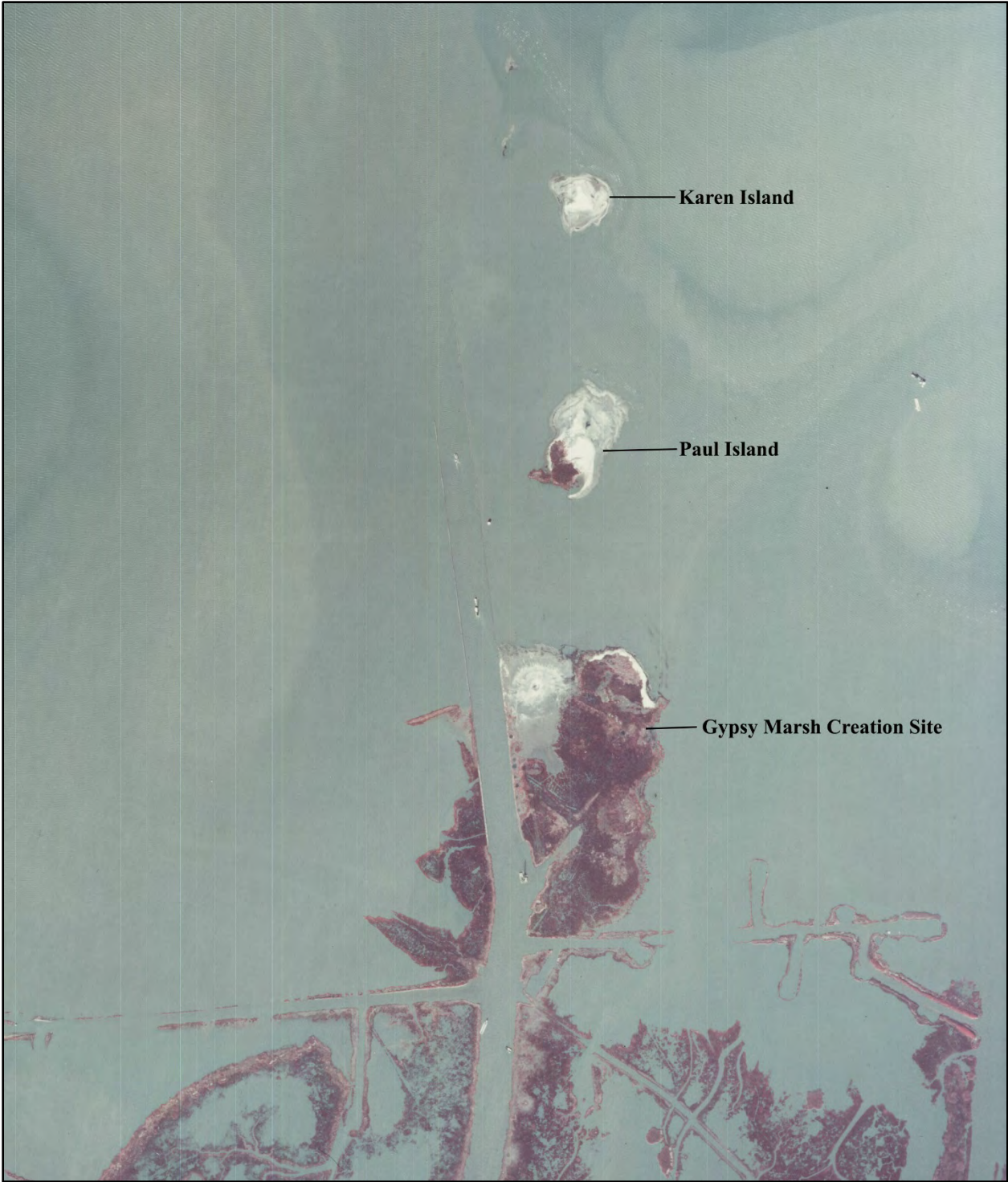
Under contract 85-C-0138, the cutterhead dredge ARKANSAS (working from 21 August 1985 to 12 October 1985) removed a total of 1,377,189 CY from the jetty/bar channel reach approximately between Station 330+00 (Mile 6.25) and Station 490+00 (Mile 9.28).

Approximately 193,635 CY were placed at marsh creation disposal site **Gypsy** at about Station 345+00 over the east jetty. Dredged material placed at the **Gypsy** disposal area was discharged to a maximum initial elevation of +6.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction).

Approximately 618,539 CY were placed at the **Karen Island** disposal site located between Station 388+00 and Station 402+00. Dredged material was discharged a minimum of 2,000 feet east of the channel centerline and pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction) at this bird nesting island site.

Approximately 565,015 CY were placed between Station 402+00 and Station 485+00 to create a series of 150-foot wide bird nesting islands no larger than 5 acres in size. Dredged material was discharged a minimum of 4,000 feet east of the channel centerline and pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction) at these bird nesting island sites.

Final contract cost was \$578,940.



1985 Aerial Photography

FY 1986

A site visit was conducted on 13 July 1986 with a Delta National Wildlife Refuge representative to examine dredged material islands constructed along the east side of Baptiste Collette Bayou for colonially nesting seabirds. The first and largest island (**Paul Island**), which was located around mile marker 7, contained about 10 Least Tern nest scrapes one of which contained a single egg. This island was high in elevation with shrub-scrub vegetation in the middle, marsh in front, and open sand in the rear. The terns were located in the open sand area in a site with sand mixed with shell. The second island (**Plover Island**) was located between mile markers 3 and 5 and specifically designed for seabird use. Several thousand birds were present on this island. Found nesting here were Caspian Terns, Royal Terns, Black Skimmers, Gull-billed Terns, and Sandwich Terns. Nesting was very asynchronous, even for the same species. Black Skimmers and Royal Terns had both fledged young and new nest scrapes. Caspian Terns, Sandwich Terns and Gull-billed Terns had chicks and eggs. About 4,000 pairs of birds are estimated to have nested on the island. A small sand spit of dredged material located across from marker 3 contained loafing White Pelicans. A small island just above the water was located between mile markers 1 and 3, and was used by loafing White and Brown Pelicans, Laughing Gulls, and the afore-mentioned species. This is the first time these islands had been used for nesting.

Under contract 86-C-0123, the cutterhead dredge LOUISIANA (working from 16 July 1986 to 8 August 1986) removed a total of 1,094,245 CY from the jetty/bar channel reach approximately between Station 330+00 (Mile 6.25) and Station 490+00 (Mile 9.28).

Dredged material was placed at the **Gypsy** marsh creation disposal site (Station 348+00 to 3500+00), at **Lynda Island** (Station 430+00), and at **Plover Island** (Station 464+00) bird nesting island disposal sites. Dredged material placed at the **Gypsy** disposal area was discharged to a maximum initial elevation of +6.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). Dredged material placed at the bird nesting island sites was discharged a minimum of 2,000 feet east of the channel centerline and pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction).

Final contract cost was \$646,000.

FY 1987

Under contract 87-C-0176, the cutterhead dredge E. STROUD (working from 28 July 1987 to 28 August 1987) removed a total of 1,179,217 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 490+00 (Mile 9.28).

Dredged material was placed at the **Gypsy** marsh creation disposal site, and at unidentified bird nesting island disposal sites. Dredged material placed at the **Gypsy** disposal area was discharged to a maximum initial elevation of +6.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). Dredged material placed at the bird nesting island sites was discharged a minimum of 2,000 feet east of the channel centerline and pumped to a

maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction).

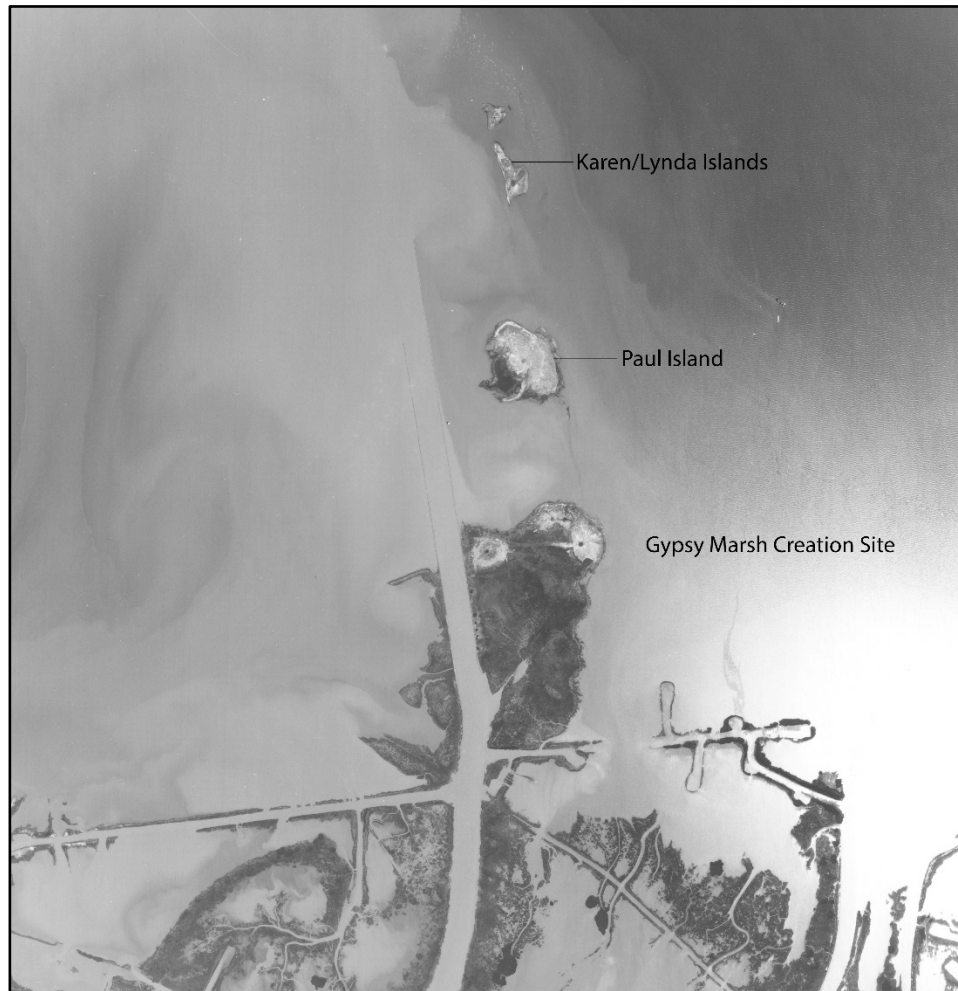
Final contract cost was \$585,400.



17 August 1987: Bird Nesting Island construction (possibly Plover Island)



1987: Gypsy Marsh Creation Site and Paul Island



7 April 1988: Just prior to FY 1988 maintenance dredging event

FY 1988

Under contract 88-C-0142, the cutterhead dredge E. STROUD (working from 28 July 1988 to 4 September 1988) removed a total of 985,163 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 490+00 (Mile 9.28).

Approximately 264,775 CY were placed at the **Gypsy** marsh creation disposal site (Station 350+00). Dredged material placed at the **Gypsy** disposal area was discharged to a maximum initial elevation of +6.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction).

Approximately 426,769 CY were placed at the **Karen Island** (Station 410+00) bird nesting disposal site, and 293,619 CY were placed at the **Lynda Island** (Station 446+00) bird nesting disposal site. Dredged material placed at the bird nesting island sites was discharged a minimum of 2,000 feet east of the channel centerline and pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and

compaction). Material placed at **Lynda Island** failed to break the water surface at the completion of dredging work.

Final contract cost was \$622,300.



1988 Aerial Photography

FY 1989

Under contract 89-C-0112, the cutterhead dredge ALASKA (working from 13 August 1989 to 27 August 1989) removed a total of 877,041 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 490+00 (Mile 9.28).

Following a field inspection of the successful man-made wetlands on the east side of the channel, wetlands development on the west side of the channel commenced using the same dredged material placement height restrictions. A total of approximately 190,739 CY was placed unconfined on the west side of the channel over the west jetty at 3 separate locations within the marsh creation **Jasper** disposal site: 23,200 CY at Station 356+00, 61,360 CY at Station 366+00, and 106,179 CY at Station 379+00. Dredged material placed at the **Jasper** disposal area was discharged to a maximum initial elevation of +6.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction).

Dredged material was also placed at 3 of the bird nesting islands located on the east side of the channel. Approximately 235,695 CY were placed at **Karen Island** (Station 414+00), approximately 289,362 CY were placed at **Plover Island** (Station 459+00) , and approximately 161,245 CY were placed at **Shea Island** (475+00). Dredged material placed at the bird nesting island sites was discharged a minimum of 2,000 feet east of the channel centerline and pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction).

Final contract cost was \$548,500.

FY 1990

Under contract 90-C-0090, the cutterhead dredge LOUISIANA (working from 25 September 1990 to 25 October 1990) removed a total of 983,037 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 495+00 (Mile 9.37).

To avoid discharging dredged material directly onto an active pipeline, dredged material was discharged at 2 locations adjacent to the west jetty on either side of the pipeline within the **Jasper** marsh creation disposal site. A total of approximately 108,999 CY were placed at the 2 discharge sites located adjacent to the west jetty: 20,213 CY at Station 348+50 and 88,786 CY at Station 366+00. Dredged material placed at the **Jasper** disposal area was discharged to a maximum initial elevation of +6.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). However, material placed at Station 348+50 only achieved an elevation of +3.5 feet MLG, and material placed at Station 366+00 only achieved an elevation of +3.0 feet MLG.

A total of approximately 874,038 CY were placed at 3 bird nesting islands: 335,567 CY at **Karen Island** (Station 405+00), 399,281 CY at **Plover Island** (Station 461+31), and 139,190 CY at **Shea Island** (Station 482+50 to Station 493+00). Dredged material placed at the bird nesting island sites was discharged a minimum of 2,000 feet east of the channel centerline and pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction). Material placed at **Karen Island** achieved an elevation of +8.0 feet MLG, while material placed at **Plover Island** achieved an elevation of +5.0 feet MLG, and material placed at **Shea Island** only achieved an elevation of +1.0 feet MLG.

Final contract cost was \$582,000.

FY 1991

Under contract 91-C-0091, the cutterhead dredges LOUISIANA and GALVESTON (working from 4 September 1991 to 14 November 1991) removed a total of 807,041 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 495+00 (Mile 9.37).

The maximum initial elevation for dredged material placed at marsh creation sites was lowered from +6.0 feet MLG to +4.0 feet MLG with the intent to result in a final elevation of +2.5 feet MLG following dewatering and compaction.

Approximately 33,735 CY were placed on west side marsh creation disposal site “C” (located between Station 325+00 and Station 341+25). Earthen retention dikes were constructed around the perimeter of disposal site “C”. Surveys performed before placement of dredged material at this site showed an average elevation of +1.8 feet MLG. Following placement of dredged material at disposal site “C”, surveys showed this site had achieved an elevation of +3.6 feet MLG.

Approximately 3,400 CY were placed unconfined on the west side marsh creation disposal site **Jasper** (between Station 356+00 and Station 370+00). Surveys performed before placement of dredged material at this site showed an average elevation of +2.8 feet MLG. Following placement of dredged material at the **Jasper** disposal site, surveys showed this site had achieved an elevation of +3.6 feet MLG.

Approximately 163,800 CY were placed unconfined on the west side marsh creation disposal site **Chris Spit North** (between Station 375+80 and Station 381+00). This disposal site was to be constructed as the first of a series of peninsulas oriented perpendicular to the west side of the channel. Surveys performed before placement of dredged material at this site showed an average elevation of +2.0 feet MLG. Following placement of dredged material at the **Chris Spit North** disposal site, and after mechanical degrading of portions of this disposal site, surveys showed this site had achieved an elevation of +3.8 feet MLG.

Approximately 606,106 CY were placed at the **Plover Island** bird nesting disposal site (between Station 452+00 and Station 465+00). Dredged material placed at the bird nesting island site was discharged a minimum of 2,000 feet east of the channel centerline and pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction). Surveys performed before placement of dredged material at this site showed an average elevation of +2.0 feet MLG. Following placement of dredged material at **Plover Island**, surveys showed this site had achieved an elevation of +5.0 feet MLG with a subaerial length of 1,700 feet oriented approximately perpendicular to, and east of, the channel.

Final contract cost was \$746,000.

FY 1993

Under contract 92-C-0067, the cutterhead dredge ALASKA (working from 9 October 1992 to 10 November 1992) removed a total of 1,323,840 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 500+00 (Mile 9.47).

Approximately 52,980 CY were placed confined in the marsh creation disposal site “C” (between Station 320+00 and Station 332+50). Dredged material placed at the disposal site “C” was discharged from 700 to 1,450 feet west of the channel centerline and pumped to a maximum initial elevation of +4.0 feet MLG (to result in a final elevation of +2.5 feet MLG following

dewatering and compaction). Surveys performed before placement of dredged material at this site showed an average elevation of -0.6 feet MLG. Following placement of dredged material at disposal site “C”, surveys showed this site had achieved an elevation of +3.7 feet MLG. Approximately 440,672 CY were placed unconfined in marsh creation disposal site **Chris Spit South** (Station 364+00). Discharge of dredged material placed at the **Chris Spit South** disposal site began about 600 feet west of the channel centerline with material being pumped in a peninsula configuration oriented perpendicular to the channel. Material was pumped to a maximum initial elevation of +4.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction) over a distance of 2,000 feet. Surveys performed before placement of dredged material at this site showed an average elevation of -1.3 feet MLG. Following placement of dredged material at the **Chris Spit South** disposal site, surveys showed this site had achieved an elevation of +2.1 feet MLG.

Approximately 830,188 CY were placed at the **Shea Island** bird nesting disposal site (Station 480+00). Dredged material placed at this bird nesting island site was discharged a minimum of 2,500 feet east of the channel centerline and pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction). Surveys performed before placement of dredged material at this site showed an average elevation of -5.2 feet MLG. Following placement of dredged material at **Shea Island**, surveys showed this site had achieved an elevation of +2.3 feet MLG oriented approximately perpendicular to the channel.

Final contract cost was \$872,565.

FY 1993-1994

Under contract 93-C-0080, the cutterhead dredge BLACKBURN (working from 11 September 1993 to 11 October 1993) removed a total of 788,681 CY of material from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 500+00 (Mile 9.47). This maintenance dredging work began in FY 1993 and was completed in FY 1994.

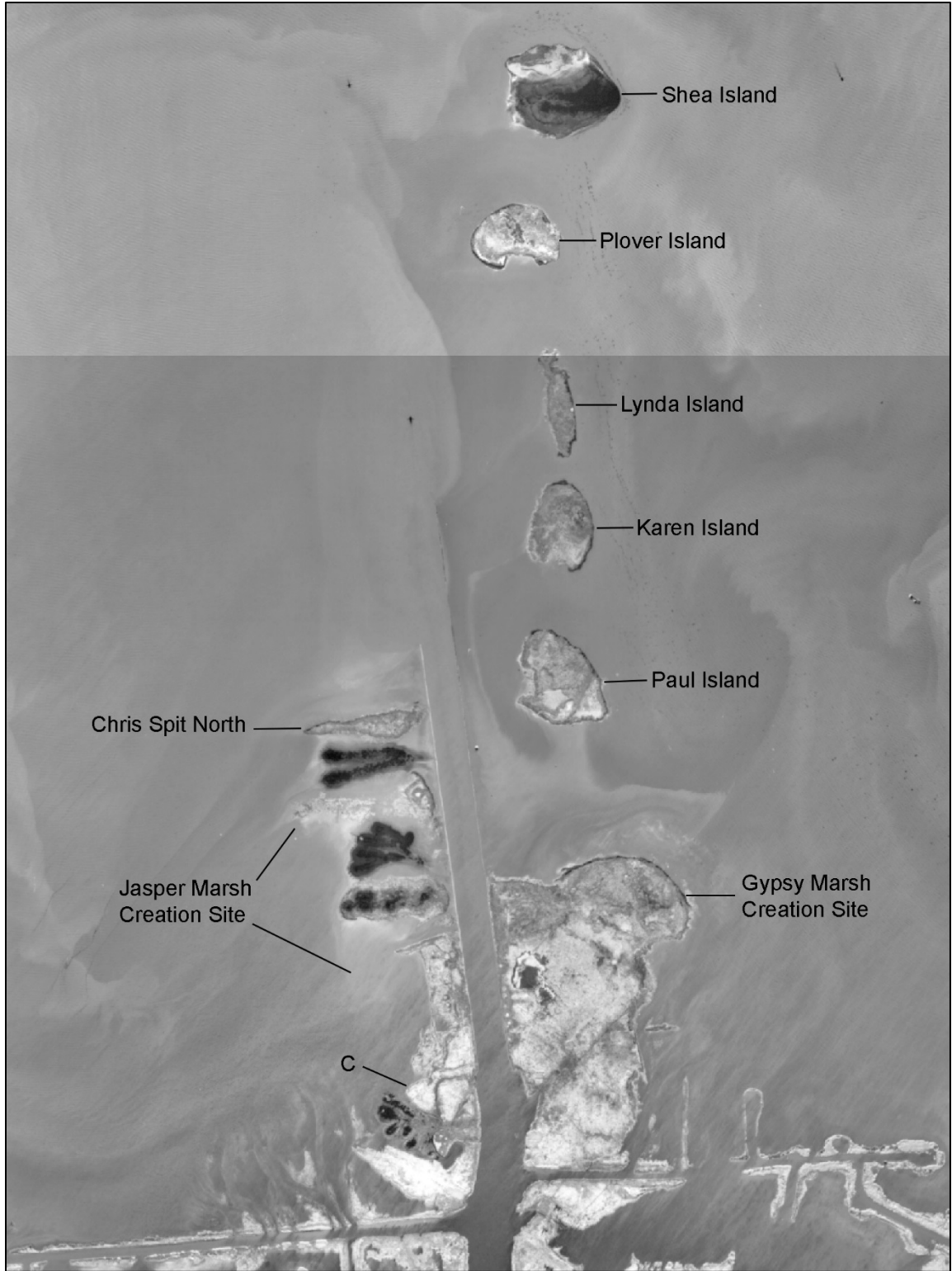
Approximately 17,890 CY were placed confined in the marsh creation disposal site “C” (between Station 320+00 and Station 332+50). Dredged material placed at the disposal site “C” was discharged from 700 to 1,450 feet west of the channel centerline and pumped to a maximum initial elevation of +4.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). Surveys performed before placement of dredged material at this site showed an average elevation of -0.6 feet MLG. Following placement of dredged material at disposal site “C”, surveys showed this site had achieved an elevation of +3.7 feet MLG.

Approximately 191,722 CY were placed unconfined in the **Jasper** marsh creation disposal site (Station 348+00). Discharge of dredged material placed at the **Jasper** disposal site began about 100 feet west of the channel centerline with material being pumped in a peninsula configuration oriented perpendicular to the channel. Material was pumped to a maximum initial elevation of +3.5 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction) over a distance of 1,900 feet. Surveys performed before placement of dredged material at this site showed an average elevation of -1.2 feet MLG. Following placement of

dredged material at the **Jasper** disposal site, surveys showed this site had achieved an elevation of +3.5 feet MLG.

Approximately 579,019 CY were placed at the **Shea Island** bird nesting disposal site (Station 480+00). Discharge of dredged material placed at **Shea Island** began at the eastern edge of the island that was created in FY 1992 and was pumped to the east perpendicular to the channel. Dredged material was pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction). Surveys performed before placement of dredged material at this site showed an average elevation of -5.5 feet MLG. Following placement of dredged material at **Shea Island**, surveys showed this site had achieved an elevation of +6.0 feet MLG oriented approximately perpendicular to the channel.

Final contract cost was \$897,019.



January 1994 Aerial Photography

FY 1994

Under contract 94-C-0081, the cutterhead dredge GEORGIA (working from 15 Aug 1994 to 17 Sep 1994) removed a total of 1,765,955 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 500+00 (Mile 9.47).

Approximately 35,339 CY were placed confined at marsh creation disposal site “C” (Station 310+00).

Approximately 11,824 CY were placed in the **Jasper** marsh creation disposal site at Station 354+00. Dredged material placed at this **Jasper** disposal site was pumped in a peninsula configuration oriented perpendicular to the channel. Material was pumped to a maximum initial elevation of +3.5 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction).

Approximately 193,244 CY were placed in the **Jasper** marsh creation disposal site at Station 371+75. Dredged material placed at this **Jasper** disposal site was pumped in a peninsula configuration oriented perpendicular to the channel. Material was pumped to a maximum initial elevation of +3.5 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction).

Approximately 736,867 CY were placed along the southern boundary of **Shea Island** bird nesting disposal site (Station 474+00). Dredged material was pumped to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction).

Final contract cost was \$1,183,709.

During the 1994 breeding season all colonial breeding bird activity was limited to **Shea Island**, which was the outermost island. Nesting was well underway by early June and continued until the last week of August when a handful of Black Skimmer and Caspian Tern chicks were still at the fledgling stage. The lack of higher than normal tide activity (i.e., no tropical storms or hurricanes) favored a productive breeding season by providing suitable nesting habitat located above the average water line where nests would not be washed out. The number of birds breeding on **Shea Island** was impressive compared to other coastal Louisiana seabird colonies in terms of both numbers and species variety.

Royal Terns and Sandwich Terns were nesting in the island's interior on the highest ground. Due to the presence of numerous chicks and eggs, no exact count was taken to avoid disruption of the colony. An estimated 500 pairs of Royal Terns and 1,000 pairs of Sandwich Terns were breeding in close proximity to each other. In early August, young of both species were quite numerous.

During June and July, indications pointed to active Gull-billed Tern nesting when between 20 and 30 pairs of Gull-billed Terns were observed flying with food into the center of **Shea Island** in the vicinity of the Royal and Sandwich Tern colony. Actual Gull-billed Tern nests could not

be identified due to the numbers of Royal Terns and Sandwich Terns. In August it was noted that a number of fledged Gull-billed Tern juveniles were still being fed by their parents. This is a very local species along the mid-Gulf coast and during most years fewer than 20 colonies exist in Louisiana.

Caspian Terns were notably abundant on **Shea Island**. This colony was one of only a handful in coastal Louisiana, and one of the largest on the entire Gulf coast between Florida and Texas. An estimated 550 pairs bred, apparently successfully, with at least 30 large, but flightless young, still swimming offshore as late as 23 August 1994. These terns bred on the southeastern interior of the island at a very low elevation, only a couple of inches above the normal high tide range.

A single Sooty Tern was seen on **Shea Island** in mid-July in breeding plumage. It is possible that at least one pair of this pantropical species bred on the island as timing was right and the species breeds on the nearby Chandeleur Islands. If so, this site would represent only about the fourth breeding location for this species in the United States

Brown Pelicans do not nest in the Baptiste Collette area. **Shea Island** and neighboring **Plover Island** provide resting grounds for several hundred birds, both adults and young of the year. Estimates were 150 on **Plover Island** and 500 on **Shea Island** with highest numbers on 4 August 1994 denoting post-breeding dispersal of individuals from breeding colonies on the Chandeleur Islands or off the lower outlets of the Mississippi River. Smaller numbers of Brown Pelicans were also using spits on **Lynda, Karen, and Paul Islands** for loafing, but were not counted. Up to 200 White Pelicans were also using the island as a loafing ground in August. White Pelicans are not known to breed in Louisiana, but do breed in coastal Texas. Their numbers have been increasing during the summer months in recent years and may reflect the growing continental-wide population of this species. A small potential does exist for Brown Pelicans to breed on one of the Baptiste Collette islands and this species should be closely monitored in this area.

Other summering birds on **Shea Island**, some of which likely breed, include Common Nighthawk (one pair), Black-necked Stilt (3-4 pairs, probably bred), Crow (sp.), Boat-tailed Grackle, Killdeer (one pair), Ring-billed Gull (increased in August with birds arriving from the north), Laughing Gull (numbers ranged from 200 in June to 1200 birds in late August), and a few Herring Gulls which arrived in August. Single Mottled Ducks were seen on two occasions, but little habitat exists for this species on the outer islands. Migrant or summering (non-breeding) shorebirds included a few Willets, Ruddy Turnstone, Wilson's Plover (breeds on adjacent Plover Island), American Avocet, Least Sandpiper, and Sanderling.

During June 1994 two sets of coyote tracks, presumably a pair as one was much larger than the other, were found with fresh scat on **Plover Island**. During the 1993 breeding season, this island was the primary colonial seabird nesting site. This year no colonial bird colonies were active although several hundred terns, Laughing Gulls, and Brown Pelicans used the two small spits for roosting. The only species known to have successfully bred on the island was a pair of Wilson's Plovers which fledged at least one young. A pair of Black-necked Stilts also may have bred.

During June 1994, 47 pairs of Mottled Ducks were counted in the waters between the jetty and **Karen Island** and **Paul Island**. These birds were not present in open water in July and may have been nesting in nearby marshes. Large numbers of Laughing Gulls, mainly 1994-hatch immatures, were present on the Baptiste Collette jetties including many Herring and Ring-billed Gull migrants by late July. Large numbers of Brown Pelicans and a few Magnificent Frigatebirds used the jetties and/or channel markers for roosting all summer.



23 August 1994: Brown and White pelicans on Shea Island



23 August 1994: Caspian Tern chicks on Shea Island

FY 1995

In 1995, the maximum initial discharge elevation for bird nesting islands was lowered from +8.0 feet MLG to +7.0 feet MLG. Just prior to the awarding of the second FY 1995 Baptiste Collette maintenance dredging contract, the maximum initial discharge elevation for marsh creation sites located on the west side of the channel was increased from +3.5 feet MLG to +4.0 feet MLG.

1. Under contract 95-C-0039, the cutterhead dredge BLACKBURN (working from 2 May 1995 to 17 May 1995) removed a total of 470,945 CY from the jetty/bar channel reach between Station 370+00 (Mile 7.0) and Station 490+00 (Mile 9.28).

Approximately 208,545 CY were placed at marsh creation disposal site "D" (Station 380+60 to Station 401+10). Dredged material placed at this disposal site was pumped in a peninsula configuration oriented to the north, parallel to the channel, beginning from the western end of the **Chris Spit North** marsh creation disposal site created in FY 1991. Material was pumped to a maximum initial elevation of +3.5 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). Equipment and pipeline access from the channel to this disposal site was allowed across the **Chris Spit North** disposal site.

Approximately 262,400 CY were placed at the **Plover Island** bird nesting disposal site (Station 452+00) to slightly increase island elevations, and cover vegetation to improve the bird nesting habitat quality. A minimum distance of 1000 feet was maintained between adjacent bird nesting island center points. Dredged material was pumped on **Plover Island** to a maximum initial elevation of +7.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction). Dredged material was also used to construct a "spit" to enlarge the subaerial footprint of **Plover Island**. The spit was designed to help protect the island from wave induced erosion, provide a "loafing" area for adults, and provide a calmer, shallower water area for young birds. The maximum initial elevation for "spit" construction was +5.0 feet MLG with an expected final height of +4.0 feet MLG. A minimum distance of 800 feet was to be maintained between spits constructed on any of these bird nesting islands.

Final contract cost was \$821,516.

2. Under contract 95-C-0095, the cutterhead dredge BLACKBURN (working from 31 August 1995 to 21 September 1995) removed a total of 638,477 CY from the jetty/bar channel reach between Station 330+00 (Mile 6.25) and Station 500+00 (Mile 9.47).

Approximately 367,979 CY were placed at marsh creation disposal site "E" (Station 379+00). Dredged material placed at this disposal site was pumped in a peninsula configuration oriented to the northwest beginning from the western end of the **Chris Spit North** marsh creation disposal site created in FY 1991. Material was pumped to a maximum initial elevation of +4.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). Equipment and pipeline access from the channel to this disposal site was allowed across the **Chris Spit North** disposal site.

Approximately 270,498 CY were placed at the **Plover Island** bird nesting disposal site (Station 454+00 to Station 455+00) to extend the island to the east. A minimum distance of 1000 feet was maintained between adjacent bird nesting island center points. Dredged material was pumped on **Plover Island** to a maximum initial elevation of +7.0 feet MLG (to achieve a final elevation of about +5.0 feet MLG following dewatering and compaction).

Final contract cost was \$782,000.

A site inspection of the bird nesting islands was performed on 13 December 1995. Wintering waterfowl usage around the five islands and west-side spits was extensive with an estimated 11,000 ducks present in the project vicinity. About 3,500-4,000 ducks were observed using the bird islands and water located between individual islands. Canvasback and Redhead Ducks were notable, both are relatively scarce species in this region. A total of 13 duck species were utilizing this site, which represented a high level of diversity that compared favorably to natural marshes in the region.

Shea Island appeared to be settling nicely with marsh present on the older part of the island. The older part of **Shea Island** had been characterized by a shrub-weed type of marsh, but is now dominated by *Spartina alterniflora* and beginning to show signs of development into a more mature salt marsh habitat. The island appeared to have weathered the hurricane season relatively well with some overall settling, some minor dune development in center of the newer portion of island, and a small inlet area still present on the Gulf side. However, the inlet on the bayside was nearly gone. Elevation on **Shea Island** was measured on 29 August 1996. The average elevation ranged from about +3.4 feet MLG to +4.6 feet MLG. Highest elevation was measured at about +7.7 feet MLG along the eastern side of the island. Resident birds included Seaside Sparrows, Clapper Rails, and a Peregrine Falcon. There were some signs of mammals on the island that included nutria, raccoons, and at least one coyote.

On **Plover Island**, the addition of dredged material in 1995 covered approximately 85% of the island. Additionally, hurricane passages and tidal actions have deposited sand over portions of this island. **Plover Island** was un-vegetated enough to be suitable for seabird colonization, but predator use of island, even though moderate, would seem to preclude much future seabird breeding activity. The island had not settled much and the soil remained very loose and unconsolidated. Dredged material has spread out on the island's gulf side and created a 4-5 acre tidal flat and spit, which was utilized by loafing/roosting seabirds. Unfortunately, some of this spit had been transported towards **Shea Island** such that portions of these two islands were only separated by about 100-150 yards of shallow water, which would allow small predators such as raccoons to easily cross between them.

Elevation measurements were taken for the northern portion of **Jasper** marsh creation site on 30 August 1995. The highest measured elevation was about +3.7 feet MLG, with an average elevation of about +2.6 feet MLG.



9 November 1995 Aerial Photography

FY 1996

Under contract 96-C-0055, the cutterhead dredge BLACKBURN (working from 31 July 1996 to 16 September 1996) removed a total of 692,000 CY from the jetty/bar channel reach between Station 380+00 (Mile 7.2) and Station 520+00 (Mile 9.87).

Approximately 276,000 CY were placed to extend marsh creation disposal site “E” located on the west side of the channel. Dredged material placed at this disposal site was pumped in a peninsula configuration oriented to the northwest beginning from the far end of disposal site “E” created in FY 1995. Material was pumped to a maximum initial elevation of +4.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). Surveys performed following placement of dredged material at disposal site “E” showed this site had achieved an elevation of +3.5 feet MLG. Equipment and pipeline access from the channel to this disposal site was allowed across the **Chris Spit North** disposal site. About 30 acres of marsh habitat were created as a result of this placement effort.

Approximately 416,000 CY were placed at **Willet Island** (Station 480+00), a new nesting bird island disposal site located about 2,000 feet northeast of **Shea Island**. Dredged material was pumped on **Willet Island** to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +6.0 feet MLG following dewatering and compaction).

Surveys performed following placement of dredged material at **Willet Island** showed this site had achieved an elevation of +3.5 feet MLG. Although the initial placement of dredged material at **Willet Island** resulted in the formation of some sub-aerial land, the combination of subsidence/compaction and wave erosion at this site resulted in no visible land by the time aerial photography was flown on 8 November 1996.

Final contract cost was \$970,123.

A site visit to the bird nesting islands was performed on 20 June 1996. Although nesting birds were present, their numbers were low for these islands. The low numbers of nesting birds may have been related to the reduced amount of habitat available for nesting purposes due to the high water conditions at the time of this visit. No coyote tracks or scats were observed.

Birds present on **Shea Island** included: Sandwich Terns (40 nesting pairs), Royal Terns (10 nesting pairs), Caspian Terns (100 nesting pairs), Black-necked Stilts (5 nesting pairs), Mottled Ducks (1 nesting pair with 7 eggs in their nest), Common Nighthawks (1 pair), Willets (1 pair), American Oystercatchers (1 pair), Brown Pelicans (20), White Pelican (1), Tricolored Heron (1), Gull-billed Tern (possibly breeding), Forster's Terns, Red-winged Blackbirds (6 pairs), Boat-tailed Grackles (1 pair), Magnificent Frigatebirds, Ring-billed Gulls, and an immature Great Black-backed Gull (first record for the island).

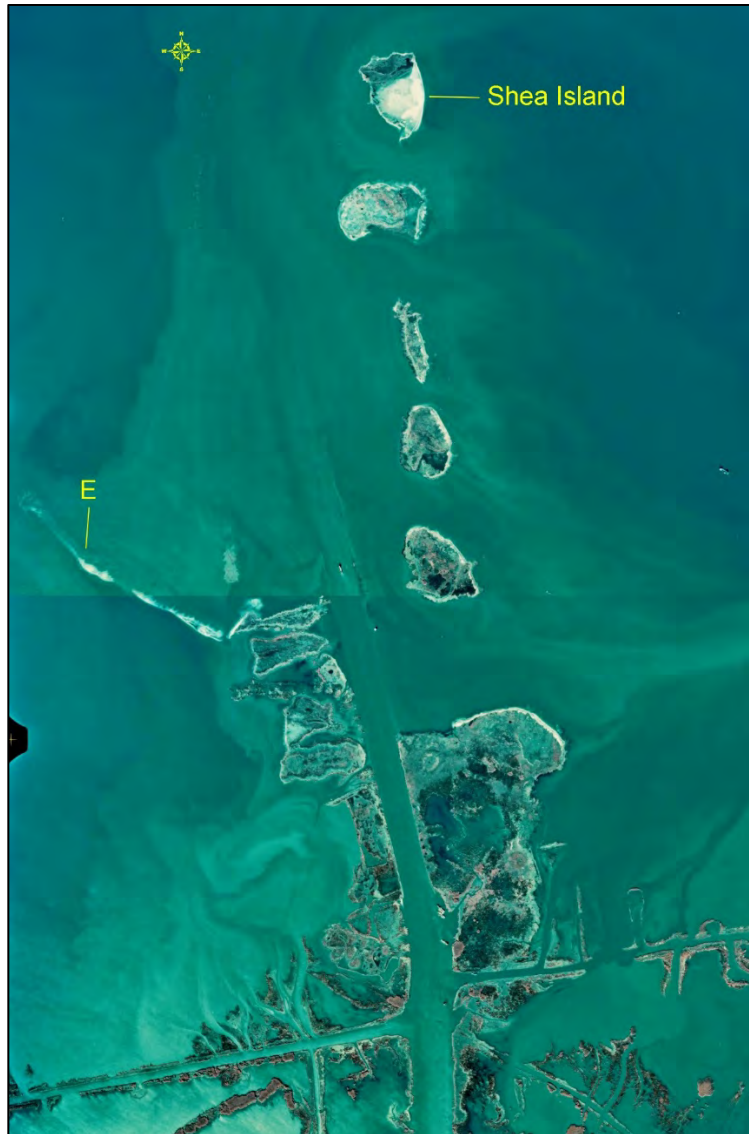
Birds present on **Plover Island** included: Gull-billed Terns (120 breeding pairs, some with large young and others with eggs), Black Skimmers (400 pairs, some with young but most with eggs), Willets (1 pair), Common Nighthawk (3), Wilson's Plovers (8 individuals total, 4 of which were young), Mottled Ducks (3 individuals), a Reddish Egret (dark phase), Brown

Pelicans (40), and Black-necked Stilts (10 breeding pairs), Red-winged Blackbirds (10 pair), Sandwich Terns, Forster's Terns, Royal Terns, Caspian Terns, Ruddy Turnstones, and White Pelicans. No coyote tracks or scats were noted on **Plover Island**.

The 1995 placement of dredged material on **Plover Island** was very successful in reducing the amount of vegetation covering the island. Shell and debris deposited on the island was very attractive to Gull-Billed Terns who placed their nests next to such objects. The number of nesting Gull-Billed Terns indicated that this island was a major nesting colony site for this species in coastal Louisiana. A large tidal flat comprised the eastern end of the island where hundreds of waterbirds were observed roosting/loafing and many shorebirds foraging.

Approximately 25 Mottled Ducks, most in pairs, were observed in the channel between the east jetty and **Karen Island**. Only a few pelicans and terns were present on west side of the jetties, most likely due to high water conditions experienced during this site visit.

Elevation measurements were taken across the **Jasper** marsh creation site on 15 August 1996. The highest measured elevation was about +3.6 feet MLG, with an average elevation of about +2.5 feet MLG, which was about 0.1 feet lower than that measured in 1995. The primary vegetative community was characterized by plants commonly found in scrub-shrub habitats as most of the site could be classified as scrub-shrub upland habitat at the time of the survey. However, plants typical for marsh habitats could be found along the site's edges where the elevations were lower.



8 November 1996 Aerial Photography

FY 1998

Under contract 98-C-0009, the cutterhead dredges CONWAY (working from 15 March 1998 to 23 April 1998), MARION (working from 31 May 1998 to 8 July 1998), and ALABAMA (working from 22 June 1998 to 29 July 1998) removed a total of 1,300,192 CY from the jetty/bar channel reach from Station 350+00 (Mile 6.65) to Station 520+00 (Mile 9.87).

Approximately 272,236 CY were placed unconfined at marsh creation disposal site “D” by the cutterhead dredge CONWAY with the intent of extending this disposal site northwards. The contractor’s inability to keep the discharge pipeline fixed in place during disposal operations resulted in the creation of several small islands along the planned disposal site alignment rather than depositing material continuously in a linear alignment along the central axis of disposal site “D” as called for in the plans. Material was supposed to be pumped to a maximum initial

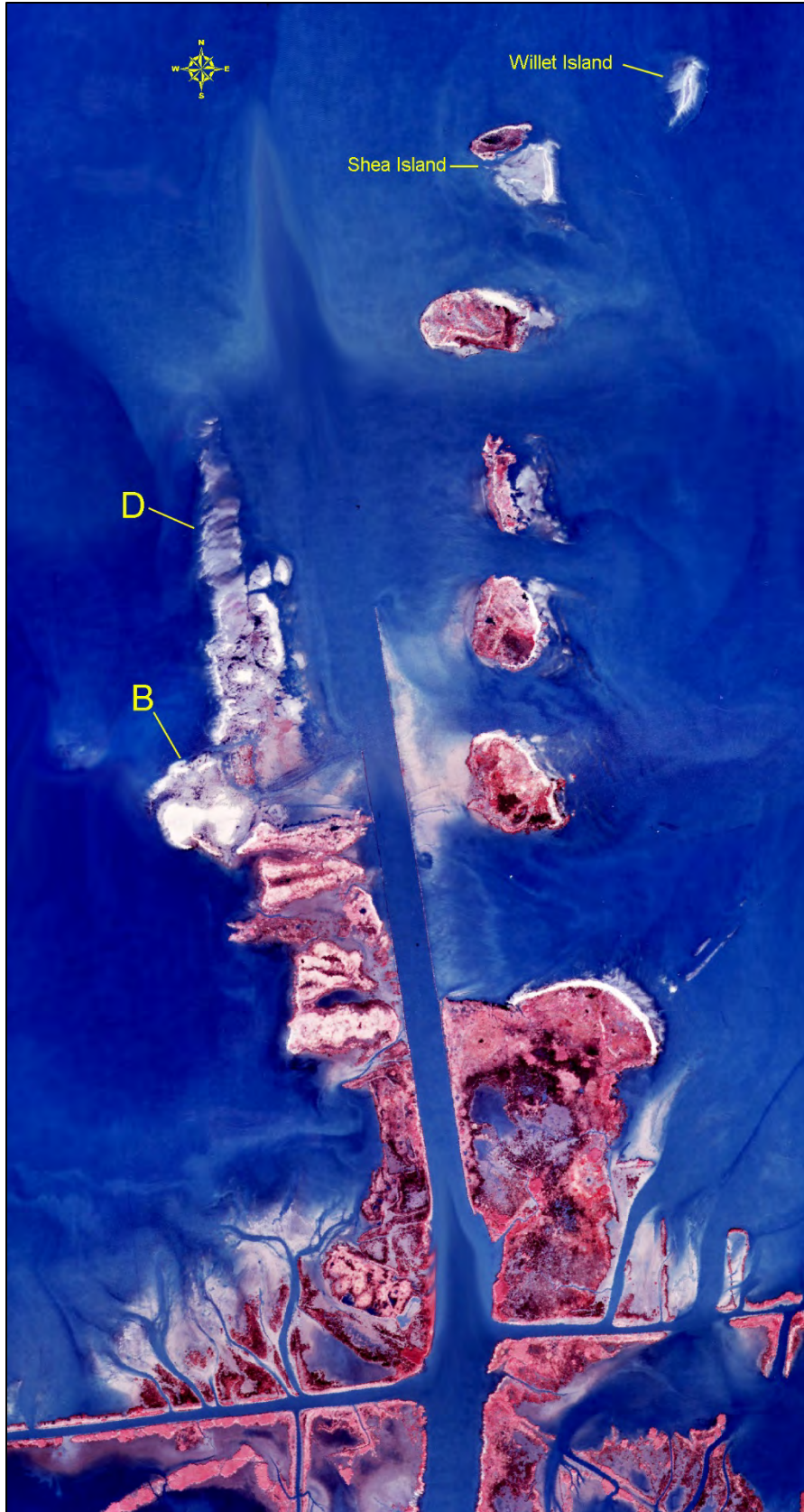
elevation of +4.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). However, portions of disposal site “**D**” were pumped to an initial elevation exceeding +4.0 feet MLG as a result of contractor equipment malfunctions and the inability of CEMVN project inspectors to access the disposal site until mid-April 1998.

Approximately 323,859 CY were placed unconfined at marsh creation disposal site “**D**” by the cutterhead dredge ALABAMA. Material was pumped to a maximum initial elevation of +4.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). During the period of no dredging activity (24 April 1998 to 30 May 1998) between the CONWAY’s work and the ALABAMA’s work, seabirds began nesting on disposal site “**D**”. As a result of this nesting activity, work at disposal sites “**D**” and “**B**” were not allowed to be performed closer than 600 feet from the nesting site. About 133 acres of marsh habitat were created as a result of this placement effort.

Approximately 68,508 CY were placed unconfined at marsh creation disposal site “**B**”. Material was pumped to a maximum initial elevation of +3.5 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). No measurable land was created by this placement effort.

Approximately 748,935 CY were placed unconfined at **Willet Island** bird nesting disposal site. Dredged material was pumped on **Willet Island** to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +6.0 feet MLG following dewatering and compaction). Surveys performed following placement of dredged material at **Willet Island** showed this site had achieved an elevation of +3.5 feet MLG. About 4 acres of bird nesting island habitat were created by this placement effort.

Final contract cost was \$1,309,192.



11 January 1999 Aerial Photography

FY 1999

Under contract 99-C-0022, the cutterhead dredge MARION (working discontinuously from 24 February 1999 to 15 June 1999) removed a total of 950,977 CY from the jetty/bar channel reach between Station 300+00 (Mile 5.65) and Station 520+00 (Mile 9.87).

Approximately 443,508 CY were placed at marsh creation sites “**D**” and “**E**” with the intent of extending these disposal peninsulas to the north and northwest, respectively. Material was pumped to a maximum initial elevation of +4.0 feet MLG (to result in a final elevation of +2.5 feet MLG following dewatering and compaction). About 28 acres of marsh habitat were created by this placement effort.

Approximately 507,469 CY were placed at **Willet Island** bird nesting disposal site. Dredged material was pumped on **Willet Island** to a maximum initial elevation of +8.0 feet MLG (to achieve a final elevation of about +6.0 feet MLG following dewatering and compaction). About 7 acres of bird nesting island habitat were created by this placement effort.

Final contract cost was \$1,824,849.

An interagency site visit to inspect Baptiste Collette disposal sites was conducted on 26 August 1999. **Plover Island** was heavily used by Mottled Ducks as nesting habitat during 1999. Elevation of all bird islands appear to be reduced following the passage of recent Hurricanes Danny (18 July 1997) and Georges (28 September 1998).

Following the 1998 passage of Hurricane Georges, most of the historic Brown Pelican nesting sites on the Chandeleur Islands chain were destroyed. Within two years, Brown Pelicans began nesting on **Plover Island** located adjacent to the Baptiste Collette Bayou bar channel in Breton Sound. A site visit to **Plover Island** was conducted on 6 June 2000, and approximately 11,000 pairs of Brown Pelicans were present and nesting on the island.



6 June 2000: Brown Pelicans nesting on Plover Island



17 January 2000 Aerial Photography