

## **BENEFICIAL USE OF DREDGED MATERIAL DISPOSAL HISTORY ATCHAFALAYA RIVER AND BAYOUS CHENE, BOEUF AND BLACK, LA ATCHAFALAYA BAY AND BAR**

The Rivers and Harbors Act of 25 June 1910 authorized the USACE, New Orleans District (CEMVN) to construct and maintain the Atchafalaya River, Morgan City to the Gulf of Mexico, Louisiana, project which provided a navigation channel 20 feet deep, 200 feet wide and 15.75 miles long from the 20 foot contour in the Atchafalaya Bay, approximately 4 miles beyond the mouth of the Atchafalaya River, to the 20 foot contour in the Gulf of Mexico. Traffic sufficient to warrant maintenance of the authorized navigation channel to full project dimensions did not immediately develop. The channel was progressively enlarged during maintenance events from 10 by 100-feet in 1939 to 20 by 200-feet in 1974.

The Rivers and Harbors Act of 1968 authorized construction and maintenance of the Atchafalaya River and Bayous Chene, Boeuf, and Black, Louisiana, project. It incorporated the existing project and provided an increase in channel width of the navigation channel in Atchafalaya Bay and Bar to 400 feet. Construction of the channel in the bay and Gulf of Mexico was initiated in April 1974 and was complete in December of the same year.

### **BAY CHANNEL DISPOSAL HISTORY**

Dredged material disposal history prior to construction of the enlarged channel in 1974 is limited. Dredging records dating back to 1957 indicate that maintenance of *discontinuous* reaches of the bay and/or bar channels occurred on an annual basis from 1957 until 1974 except for 1958. It is likely that dredged material was placed unconfined in open water on either side of the navigation channel

Dredged material removed during new work dredging associated with construction of the 400 foot navigation channel in 1974 was placed in open water and on sub-aerial levees of existing delta lobes on the west side of the navigation channel. During maintenance events beginning in 1979, and continuing on an annual basis through 1985, this practice continued. During this period, Big Island was created (1975-1984); dredged material was used to construct a campground at the Louisiana Department of Wildlife and Fisheries (LWDF) camp; dredged material was used to construct islands for colonial nesting seabirds; and some wetlands were created on the western side of Big Island.

In 1987, at the request of the LDWF and the US Fish and Wildlife Service (FWS), the CEMVN began placement of dredged material on the east side of the navigation channel in an effort to stimulate growth of the east side of the delta. Disposal plans developed in coordination with the LDWF, FWS, and other state and Federal natural resources agencies, were designed to direct sediment-laden water through existing natural channels, i.e., God's Pass, East Pass, Ratcliffe Pass, to the east side of the delta. In general, dredged material was to be placed as a series of mounds on the eroding sub-aerial levees of existing delta lobes and on the heads of islands at existing channel bifurcations. The maximum initial placement height of the dredged material mounds was about +5.0 feet NGVD (+5.72 feet MLG). The mounds of dredged material would refurbish the sub-aerial levees which would direct flows into the desired locations within the developing delta. During high flow events, the re-furbished levees would be over-topped and sediment-

laden waters would drop sediment behind them at elevations suitable for the establishment of fresh marsh (+2.3 feet MLG) and/or submerged aquatic vegetation. The refurbished levees also would protect the developing wetlands from wave-induced erosion.

During upper bay maintenance events in 1987, 1988, and 1989, in accordance with the plan, dredged material was placed on the eroded sub-aerial levees of Roger Brown Island, Poule Deaux Island, and Roseate Island and on the heads of God's Island and Long Island. In the lower bay, dredged material was used to maintain and construct islands for colonial nesting seabirds (terns, gulls, and black skimmers) on the west side of the navigation channel. The maximum initial placement height of the dredged material for bird island creation was about +6.0 feet MLG (+5.28 feet NGVD).

### **Fiscal Year 1980**

During the 1980 maintenance event (8 November 1979 – 6 March 1980), working under contract 79-C-0401, the cutterhead dredges E STROUD and GALVESTON placed a total of approximately 3,040,000 cubic yards at eight sites in the Atchafalaya Bay. Dredged material removed from the upper part of the bay channel consisted of hard packed sand with very little silt. The bay channel was shifted to the east of its original alignment from Station 76+00 to Station 130+00 to take advantage of deeper water in this reach.

Approximately 1,950,000 cubic yards were placed by the E STROUD on **Big Island, Andrew Island, Poule Deaux Island, Community Island, Willow Island, and Donna Island** (colonial nesting seabird island). Although dikes were not constructed, the contractor took advantage of existing ridges on the previously used disposal sites to pump material on the non-channel side to minimize return of sediments into the channel. Average elevation of dredged material placed at **Donna Island** was about +4.5 feet MLG, with the highest point reaching an elevation of about +6.1 feet MLG.

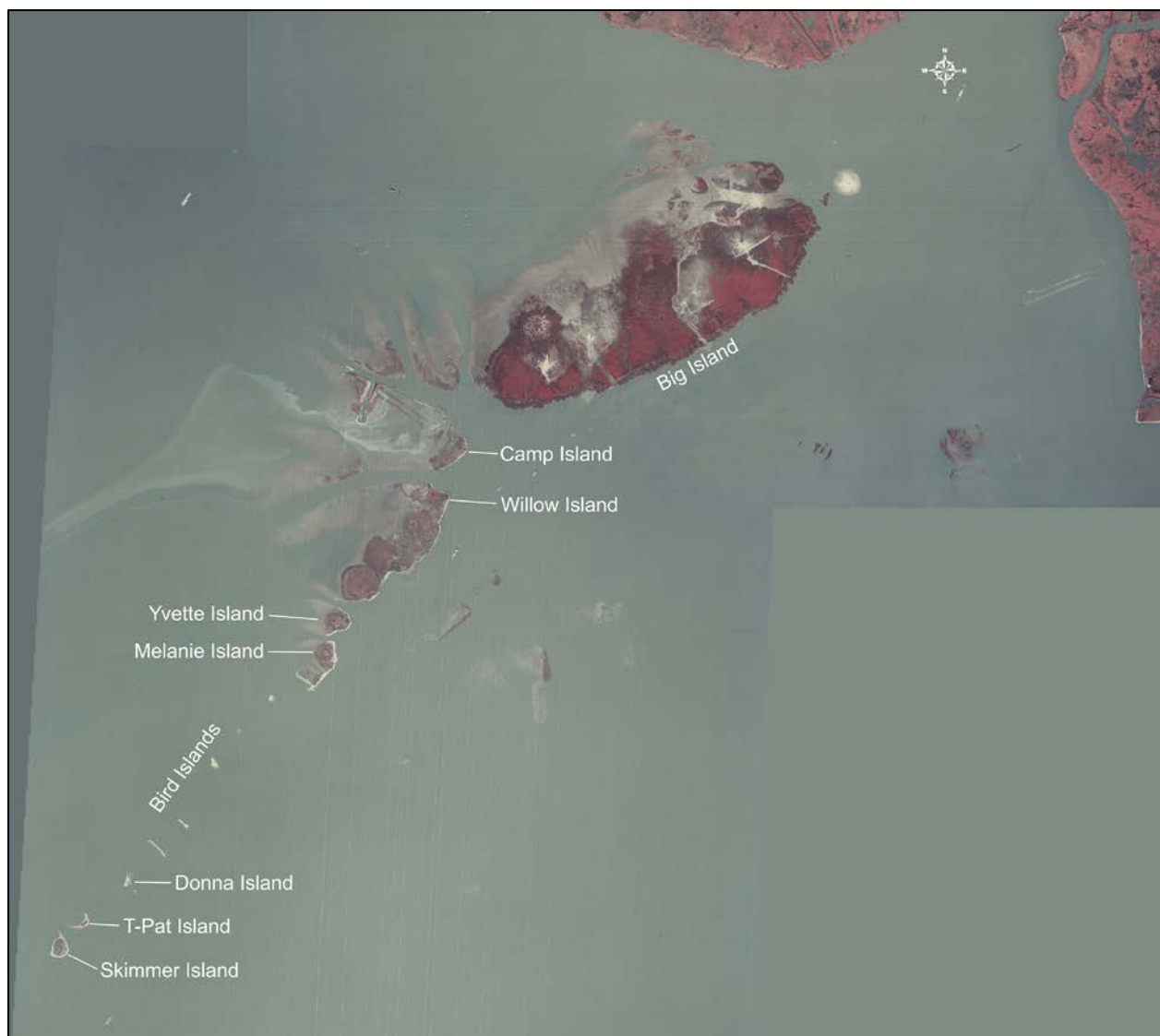
Approximately 1,090,000 cubic yards were placed by the GALVESTON on colonial nesting seabird islands **T-Pat Island** and **Skimmer Island**. Dredged material was placed unconfined, and perpendicular to the channel, at the colonial nesting seabird islands to a maximum initial elevation of +6.0 feet MLG. The average elevation of dredged material placed at **T-Pat Island** was about +2.5 feet MLG, with the highest point reaching an elevation of about +3.6 feet MLG. The average elevation of dredged material placed at **Skimmer Island** was about +2.0 feet MLG, with the highest point reaching an elevation of about +2.7 feet MLG.



Atchafalaya Bay – 27 July 1982

### **Fiscal Year 1984**

During the 1984 maintenance event (21 November 1983 – 1 January 1984), working under contract 84-C-0013, the cutterhead dredge LOUISIANA placed a total of approximately 1,143,273 cubic yards of dredged material unconfined at three colonial nesting seabird islands: **Skimmer Island, Donna Island, and T-Pat Island.** Dredged material consisted of approximately 80% sand and 20% silt and was placed to a maximum initial elevation of +6.0 feet MLG.



Atchafalaya Bay – 1985

### **Fiscal Year 1986**

During the 1985 maintenance event (25 September 1985 – 8 February 1986), working under contract 85-C-0151, the cutterhead dredges FRITZ JAHNCKE and BUSTER BEAN placed a total of approximately 3,119,779 cubic yards of dredged material at five sites in the Atchafalaya Bay: **Big Island**, **Camp Island**, **Skimmer Island**, **Donna Island**, and **T-Pat Island**.

Placement on **Big Island** required the construction of 4-foot high earthen dikes along the back of the discharge site, and earthen dikes were constructed along a portion of the channel side of the placement site to facilitate the northwesterly flow of dredged material slurry.

Placement on **Camp Island** was intended to construct an upland site suitable for camping and required the construction of earthen retention dikes around the perimeter of the site. Following

completion of dredging and disposal work on this contract, the contractor breached retention dikes to allow the site to dewater. Aerial photography analysis reveals that approximately 142 acres were created at this placement site.

Dredged material was placed unconfined at the colonial nesting seabird islands (**Skimmer Island, Donna Island, and T-Pat Island**) to a maximum initial elevation of +6.0 feet MLG.



Atchafalaya Bay – 1986



Atchafalaya Bay – 1986



## Fiscal Year 1987

During the 1987 maintenance event (23 June 1987 – 14 August 1987), working under contract 87-C-0142, the cutterhead dredge MISSOURI H placed a total of approximately 1,625,594 cubic yards of dredged material unconfined at six sites in the Atchafalaya Bay selected by LDWF representatives. Four placement sites were peninsula fingers (**Roseate Island, Mile Island, Poule Deux Island, and God's Island**), and 2 placement sites were colonial nesting seabird islands (**T-Pat Island and Skimmer Island**). The NCR did not provide a cubic yard breakdown of how much material was placed at each of these sites. Dredged material placed at the peninsula sites were limited to a maximum placement elevation of +5.0 feet MLG. Dredged material placed at colonial nesting seabird islands were limited to a maximum placement elevation of +6.0 feet MLG.



Atchafalaya Bay – 11 November 1987

### **Fiscal Year 1988**

During the 1988 maintenance event (2 August 1988 – 30 September 1988), working under contract 88-C-0120, the cutterhead dredge MISSOURI H placed a total of approximately 881,336 cubic yards of dredged material unconfined at three peninsula sites in the Atchafalaya Bay selected by LDWF representatives: **Roger Brown Island, Poule Deaux Island, and God's Island**. The NCR did not provide a cubic yard breakdown of how much material was placed at each of these sites. Dredged material placed at the peninsula sites were limited to a maximum placement elevation of +5.0 feet MLG, and discharges were to be located between existing dredged material mounds such that they would be connected into a single ridge feature. Dredged material consisted of about 60 percent sand and 40 percent silt.



Atchafalaya Bay – 1988

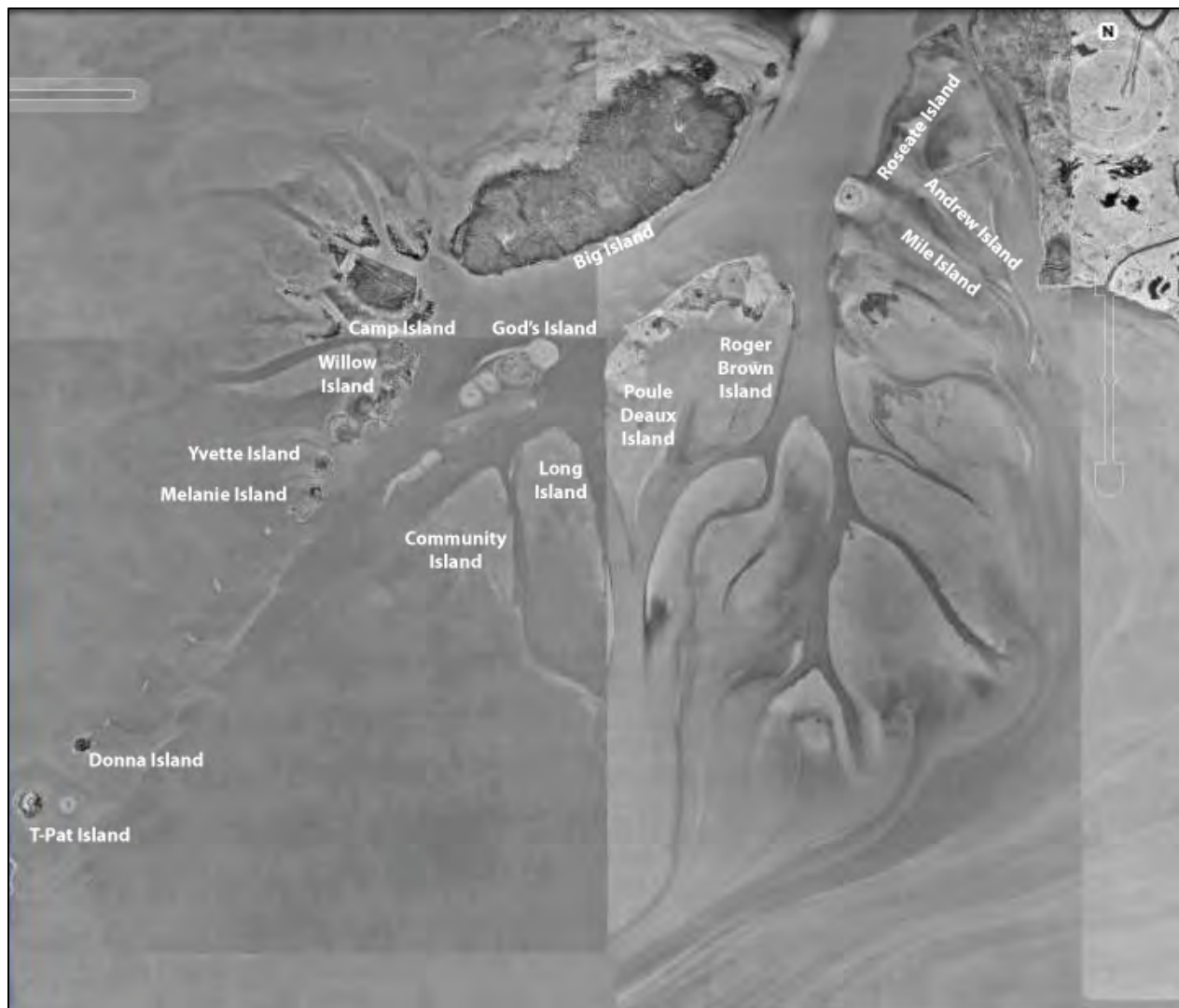
### **Fiscal Year 1989**

During the 1989 maintenance event (29 May 1989 – 6 August 1989), working under contract 89-C-0085, the cutterhead dredge DREDGE 32 placed a total of approximately 2,545,587 cubic yards of dredged material unconfined at seven sites in the Atchafalaya Bay. Five placement sites were peninsula fingers, and 2 placement sites were colonial nesting seabird islands. Dredged material placed at the peninsula sites were limited to a maximum placement elevation of +5.0 feet MLG, and discharges were to be located between existing dredged material mounds such that they would be connected into a single ridge feature. Dredged material placed at colonial nesting

seabird islands were limited to a maximum placement elevation of +6.0 feet MLG. Dredged material was allowed to overtop any vegetation present on bird nesting islands.

1. Approximately 293,363 cubic yards of coarse sand and silt were placed at **Andrew Island** to a maximum initial elevation of +5.0 feet MLG.
2. Approximately 248,711 cubic yards of coarse sand and silt were placed at **Roger Brown Island** to a maximum initial elevation of +5.0 feet MLG.
3. Approximately 881,007 cubic yards of coarse sand and silt were placed at **Poule Deaux Island** to a maximum initial elevation of +5.0 feet MLG.
4. Approximately 355,291 cubic yards of coarse sand and silt were placed at **Long Island** to a maximum initial elevation of +5.0 feet MLG.
5. Approximately 33,013 cubic yards of coarse sand and silt were placed at **God's Island** to a maximum initial elevation of +5.0 feet MLG.
6. Approximately 135,930 cubic yards of sand were placed at **T-Pat Island** (colonial nesting seabird island) to a maximum initial elevation of +6.0 feet MLG.
7. Approximately 598,272 cubic yards of sand were placed at **Skimmer Island** (colonial nesting seabird island) to a maximum initial elevation of +6.0 feet MLG.





Atchafalaya Bay – 8 November 1989