

The

# Midnight Pass



SOCIETY, INC.

"MIDNIGHT PASS - PASS IT ON!"

POST OFFICE BOX 38865  
SARASOTA, FLORIDA 34281

ROBERT D. MEADOR, PRESIDENT (813) 849-1825  
JAMES P. HERBERT, EXECUTIVE DIRECTOR (813) 923-3317

## MIDNIGHT PASS POSITION PAPER

RESEARCH COMMITTEE  
Dr. John B. Morrill  
James P. Herbert

January 29, 1990

## INTRACOASTAL WATERWAY- ITS IMPACT ON MIDNIGHT PASS

### SYNOPSIS

Midnight Pass, a naturally formed inlet, was both strong and stable. The dredging of the Intracoastal Waterway in the 1960's and especially the improper deposition of the resulting spoil had a major impact on Pass equilibrium. Tidal flow problems were exacerbated by Australian Pine trees falling into and clogging the northern channel. Midnight Pass was caused to become unstable. In spite of official recognition "early-on" of the need for Pass maintenance, its artificial closure was permitted by governmental agencies in December, 1983.

RELEVANT HISTORY. An 1889 hydrographic survey chart reveals that the NATURAL northern and southern tidal channels of Little Sarasota Bay met to the WEST of the Bird Keys at the mouth of the inlet. The Bird Keys represent an historic flood tidal delta. The Bay EAST of the Bird Keys was quite shallow. In the very early 1900's the Army Corps of Engineers created a navigation channel EAST of the Bird Keys in the vicinity of the current ICW. The controlling depth of the channel was three (3) feet. Originally called the Inland Waterway, by the 1930's it was known as the Intracoastal Waterway. During the 1930's the controlling depth was increased to five (5) feet through maintenance dredging. Physical evidence of this early dredging activity is evident in the long, thin mangroved islands running parallel to the present-day ICW; this is where the dredged spoil was placed.

The early navigation channel needed regular maintenance. A 1950 navigation chart reports the controlling depth between Venice and Sarasota as only 2½ feet. An area just south and east of the Bird Keys in Little Sarasota Bay was subject to severe shoaling. By 1954, this area of the channel had shoaled-in to a depth of less than two (2) feet MLW. Just north of the present Stickney Point bridge was another shallow area. Residents waded across at this point to get to the beach. Additional history is set forth in the SAFETY VALVE paper.

DREDGING THE ICW. The 152 mile long West Coast Intracoastal Waterway was initiated in 1934 with final dedication in 1967. The channel is nine (9) feet deep and 100 feet wide. Construction of the Little Sarasota Bay leg of the waterway was part of Sarasota County Section 4. The work was performed in 1962-1963. In 1962 the Hendry Corporation dredged their way from the Gulf through the southern channel of Midnight Pass to the ICW project site. At the request of the property

.....more

## INTRACOASTAL WATERWAY

January 29, 1990

Page Two

owners, dredging spoil was placed on north Casey key beaches. Other spoil sites in the area included the north end of Casey Key and two locations on the Bird Keys.

Nearly 200,000 cubic yards of spoil material was placed on top of the mangroved Bird Keys. Some 14 acres of island were covered with an un-diked spoil "mountain." The clay fines from this pile filled tidal channels running through the bird Keys and spread out several inches thick on the shallows surrounding the spoil area. These clays are still readily identifiable today. Two major derelect land forms were thus created and are now vegetated principally by Australian Pines.

Soon after completion of this section of the ICW, the channel shoaled in just south and east of the bird keys where similar shoaling-in had previously been experienced. This area was re-dredged with the ICW widened here to overcome the shoaling problem.

IMPACT ON MIDNIGHT PASS. Prior to the 1962-1963 dredging of the Intra-coastal Waterway, the controlling depths to the north, to the south and through the Pass were all reported to be five (5) feet. The ICW is a north-south waterway nine (9) feet deep and 100 feet wide. It is generally accepted that the wider, deeper channel increased water flow north and south at the expense of the tidal flow through Midnight Pass. The reduction in tidal flow caused the Pass to become unstable.

Increasing the north-south controlling depths but not those through the Pass channels most certainly upset the tidal flow equilibrium and reduced the percentage of water flowing through Midnight Pass. Less tidal flow equates to less inlet stability.

But other factors related to the ICW may well have had as much or even MORE of an effect on the stability of Midnight Pass as this generally recognized answer. The placement of the un-diked spoil on the Bird Keys also had a significant impact on Bay currents and Pass tidal flow. The vast amount of spoil dumped on the Bird Keys filled in tidal channels running through the Keys. This diverted the sheet flow of water that used to Pass through the Bird Keys and out Midnight Pass to the Gulf of Mexico on an ebbing tide.

The "mountain" of spoil was quickly eroded and winnowed down with the clay fines spreading out several inches thick over historic grass beds. The material tended to accumulate in and shoal up the northern Pass channel. Around 1970 a few Australian Pines were cut down and left in the northern channel... kids had been swinging into the water on them. The damming effect of these trees greatly exacerbated the shoaling-in of the northern channel. Then, as the inlet migrated northward and the northern channel migrated through historic uplands, additional Australian Pines fell into the channel, further impeding current flow.

So, it was a combination of several factors joined together that reduced tidal flows and upset the equilibrium of the north-south channel configuration. By 1972 the flow of water through the northern channel had become seriously impeded. Hurricane Agnes in June, 1972,

.....more

## INTRACOASTAL WATERWAY

January 29, 1990

Page Three

added to the blockage. The southern channel became dominant and began to shift the inlet to the north. As northward migration proceeded, more and more Australian Pines fell into the channels, further blocking tidal flows. These trees were never removed from these navigable waters.

The loss of equilibrium, the northward migration and the ultimate closing of Midnight Pass were caused by MAN, not Mother Nature. Many of our activities had an impact on the Pass... shoreline hardening, dredge & fill projects, the maintenance of other inlets. But the single largest factor was the dredging of the Intracoastal Waterway in the 1960's; the improper placement of the dredged spoils caused the blockage of one of the two channels leading to the inlet.

MAINTENANCE PLANS. A thorough review of WCIND files indicates broad and earnest interest in the maintenance of Midnight Pass and its two channels as early as 1966. During the 1960's there were numerous expressions of interest and concern by North Casey Key homeowners in obtaining beach compatible material to protect their properties from erosion. Their arguments included the need to maintain Midnight Pass for the benefit of Little Sarasota Bay! Then, about 1973, a "Save Our Waters" petition was circulated calling for the maintenance of the northern channel... it was said to have been signed by thousands!

During the 1960's the WCIND staff and the Army Corps. of Engineers were expressing the need to acquire permanent spoil sites for purposes of maintaining the navigability of the Midnight Pass inlet and the Intracoastal Waterway in this vicinity. Steps were taken to acquire the Bird Keys as a permanent spoil site. An additional parcel at the north end of Casey Key was also being considered. WCIND files don't indicate why these plans were abandoned.

In 1980, Sarasota County acquired the Bird Keys and the northern end of Casey key as part of a settlement with the Potter Palmer estate. These lands were deemed to be of "great public benefit" and were specifically recognized as needed for the "... possible widening, relocation and stabilization of Midnight Pass." The Final Judgement, to which Sarasota County was a party as defendant, included the following:

"The migration and shallowing of Midnight Pass in recent years has greatly reduced the natural tidal flushing action of this waterway to the detriment of Little Sarasota Bay and adjacent waters. The acquisition of Bird Islands, north Casey Key and construction and maintenance easements over south Siesta Key will enable the County or other appropriate governmental agencies to relocate, deepen and stabilize Midnight Pass, which will have a direct beneficial effect on the waters and marine life of Little Sarasota Bay and adjacent waters."

This CLEARLY sets forth not only the spirit of the settlement stipulation but the environmental commitment by Sarasota County to the ecosystem of Little Sarasota Bay. They recognized the problem, acquired the land to solve the problem and enumerated the anticipated benefits to be derived therefrom.

.....more

## INTRACOASTAL WATERWAY

January 29, 1990

Page Four

### CONCLUSIONS

1. The natural tidal flow of water in Little Sarasota Bay was to the WEST of the Bird Keys.
2. As early as 1908 a man-made channel was dredged EAST of the Bird Keys.
3. The 1962-1963 dredging of the Intracoastal Waterway increased the flow of water to the north and south at the expense of historic tidal flow through Midnight Pass.
4. The improper placement on the Bird Keys of large quantities of dredged spoil in 1962-1963 played a MAJOR role in the subsequent instability of Midnight Pass.
  - \*\* The dredged spoil clogged the natural channels running through the Bird Keys which historically delivered significant quantities of sheet flow from the east of Midnight Pass.
  - \*\* Large amounts of clay "fines" from the un-diked dredge spoil spread out across historic seagrass beds, found their way to the northern Pass channel and impeded water flow from/to that direction.
5. Australian Pine trees that fell into the northern Pass channel due to cutting or erosion were left there. The damming effect created further reduced tidal flow through this channel.
6. The instability of Midnight Pass was due to Man's interference in Bay hydraulics. It was NOT a natural occurrence.
7. After the 1962-1963 dredging of the ICW, there was considerable interest in maintaining Midnight Pass as a navigable waterway.
8. In 1980, Sarasota County specifically recognized the environmental problems associated with the instability of Midnight Pass and the beneficial effects inlet stabilization would have on the waters and marine life of Little Sarasota Bay. North Casey Key and the Bird Keys were acquired, at least in part, to address this issue.

### REFERENCES

- A. WCIND Intracoastal Waterway Dedication booklet, 2-25-67.
- B. 1889 hydrographic survey chart.
- C. 1955 hydrographic survey chart.
- D. Navigation charts from 1917, 1926, 1935 and 1950.
- E. WCIND correspondence files.
- F. Final Judgement-- Potter Palmer et al VS. Sarasota County, 1980.
- G. Camp, Dresser & McKee. August, 1983. Final Report. Little Sarasota Bay Circulation Study.