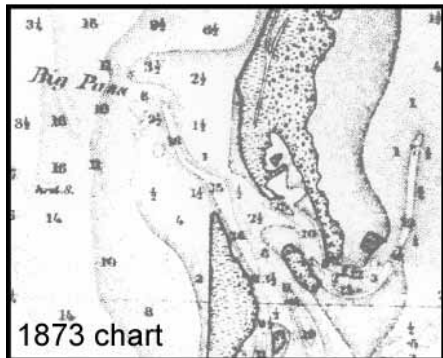


Dunedin Pass Coastal Management History



Dunedin Pass, formerly known as Big Pass (see 1873 chart above), was the inlet that separated Caladesi and Clearwater Beach islands. It was the dominant inlet serving St. Joseph Sound (the back-barrier bay in northern Pinellas County) prior to the hurricane of 1921, which opened Hurricane Pass to the north. The combination of this natural event and significant changes in tidal circulation in St. Joseph Sound led to the destabilization of Dunedin Pass. Construction of the Clearwater Memorial Causeway in 1926, and the Dunedin Causeway and Gulf Intracoastal Waterway both in 1963 redirected tidal flow away from Dunedin Pass. Other dredge-and-fill construction, such as Island Estates in the 1950's, decreased the surface area of the sound.

Following the 1921 hurricane, Dunedin Pass migrated over 1 km to the north as the spit on north end of Clearwater Beach Island extended. Shoaling became a persistent problem in the 1970's. The U.S. Army Corps of Engineers studied the pass, but addition to the federal program was not authorized. By 1984, the pass had narrowed only about 50 m wide and 1.5 m deep, and the ebb delta exposed at low tide. In 1985, the passage of Hurricane Elena generated 2.5 m waves, and eroded the ebb delta (shoal) of Dunedin Pass. Without the protection of the ebb delta, tidal flow was not sufficient to maintain the inlet and the pass shoaled and closed in 1988. The photo below looks south at the closed Dunedin Pass in 1992.



Due to public interest in reopening Dunedin Pass, Pinellas County conducted an engineering and cost-benefit analysis study in 1994. The study concluded that a \$2.6 million (1994 dollars) dredging project could open a 335-ft wide channel. Maintenance dredging would be frequent and costly at \$500,000 every two years to preserve a navigable channel. The cost-benefit ratio was extremely low. In addition, surveys indicate that [water quality](#) in St. Joseph Sound in the vicinity of Dunedin Pass is better than in most other areas of the County, with substantial seagrass coverage throughout the sound.

Pinellas County's Coastal Management policy for Dunedin Pass has been an advertent "no action" plan. (i.e., we mean to do nothing). Today, the former position of Dunedin Pass is difficult to distinguish as you walk along this beach. Nearly continuous dredging would be necessary to maintain a navigable channel that would likely prove more costly than beneficial to both humans and the environment

The plot below illustrates the relative changes in inlet widths at Clearwater, Dunedin, and Hurricane Passes. It illustrates the decreasing inlet width (dashed line) resulting from construction activities that redirected tidal flow away from Dunedin Pass. This is a good example of the combination of natural events and human modifications landward of the barrier islands resulting in natural inlet closure.

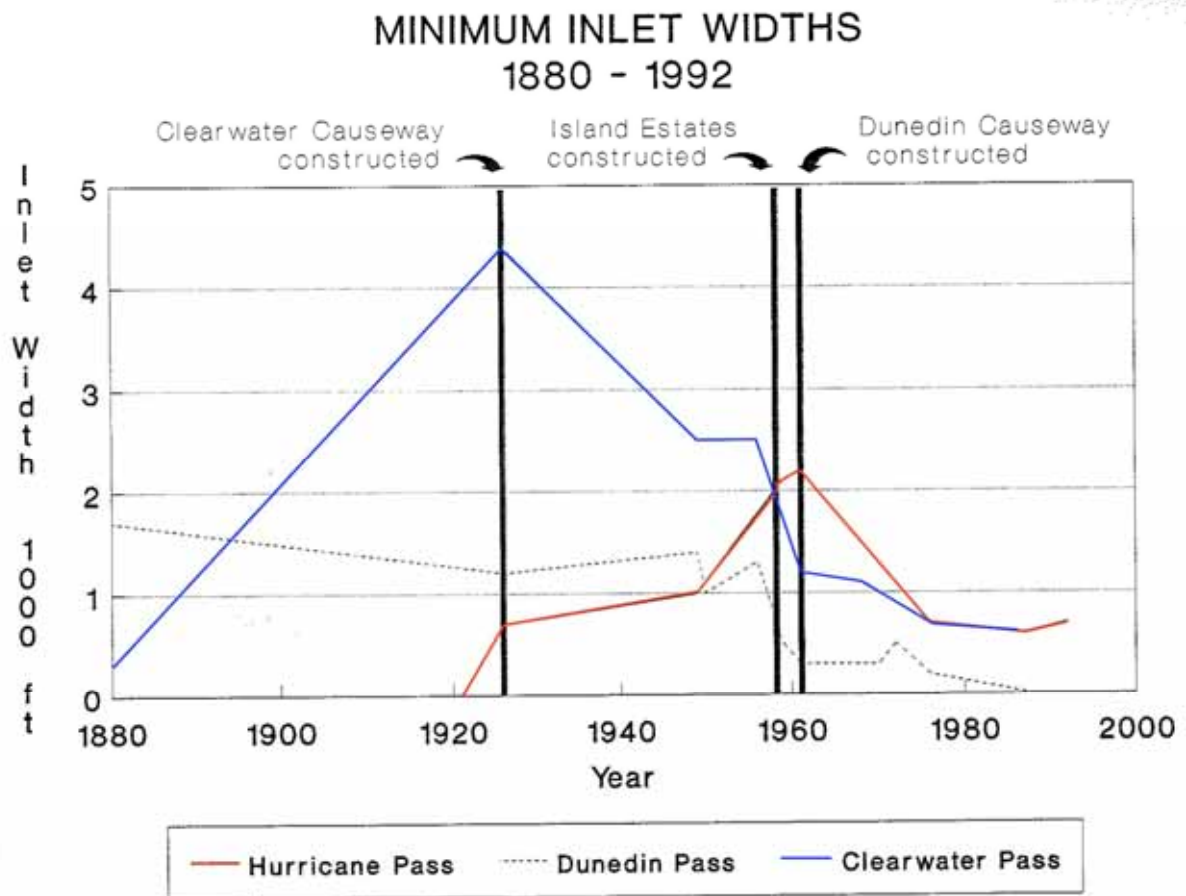


Figure from Lynch-Blosse and Davis, 1977.