

Mad Bch - Enviro.

*Charles  
For your  
History File 2/2/84*

April 8, 1976

M. P. O'Brien, President  
American Shore and Beach  
Preservation Association  
412 O'Brien Hall  
University of California  
Berkeley, California 94720

Date Posted	APR 08 1976
Mayor	✓
Commissioner District 1	<del>_____</del>
Commissioner District 2	<i>J</i>
Commissioner District 3	<i>PPB</i>
Commissioner District 4	<i>PPB</i>
Return To	

*Col  
DB*

Dear Mr. O'Brien:

I have enclosed my version of the story on the Madeira Beach groin field which uses much of the information you provided.

Also enclosed are two glossy prints picturing the improvement provided by the groin system during seventeen years.

I will be pleased to be identified as author. I regret the long delay in finding adequate pictures.

Sincerely,

CITY OF MADEIRA BEACH

Marlin H. Eldred  
Vice-Mayor

MHE/wdh  
Enclosures

cc: Commission Master Board ✓  
City Manager

*No pictures  
were attached  
to this memo.*

## A GROIN SYSTEM AT MADEIRA BEACH, FLORIDA

The City of Madeira Beach, located on a Gulf of Mexico barrier island west of Tampa Bay, was suffering from a badly eroding beach prior to 1956. The U.S. Corps of Engineers in a 1947 study had recommended a beach nourishment project with initial costs of about \$7,000,000 with yearly maintenance of \$500,000 to \$1,000,000. This was far beyond any local financing ability since the Corps at that time would participate to a maximum of 20%.

Madeira Beach decided to act on its own in 1956 and to install a system of groins. Designs were studied and a system of 37 groins, 300 feet apart and 210 feet long was selected. Each groin consists of 21 king-piles on 10 feet centers, the lengths from 16 feet to 20 feet at the beach. The tops were at high water. Each pile has 4 inch slots for the 18 inch concrete barrier slabs. The design stipulated that no more than one slab width above the sand line was to be installed at any time. This procedure has been faithfully followed and 77 slabs will be installed in 1976 at a cost of \$3,300.

Madeira Beach sold a \$300,000 bond issue in 1956 to finance the groin system construction. These bonds have been repaid from assessments on the Gulf-front owners, including the City owned portions. No Federal or State participation was involved. The groin system was built in 1957-58, and with the exception of the No. 1 groin at John's Pass, is a viable system today.

In 1959 it became evident that the No. 1 groin at John's Pass was not aligned to accomplish its purpose. A stone rip-rap jetty about 500 feet long aligned with the John's Pass current was built. The cost was \$69,000 with the State of Florida contributing \$19,000.

This groin system has definitely done the job intended. The beach has rebuilt vertically four to six feet and horizontally 150 to 250 feet. In June 1972, Hurricane Agnes caused Gulf Boulevard, which runs 250 to 500 feet east of the beach, to be covered with 2-4 feet of sand. A vertical loss of 1-1½ feet of sand on the beach occurred and the normal off-shore bar moved seaward about 200 feet. However, in less than a week the sand on the beach had reaccumulated and the off-shore bar was back to its former position. Whether all this is due to the groins is speculative. However, cities on each side of Madeira Beach suffered much more damage of a more permanent nature.

Some engineers say groins do more damage than good. The Madeira Beach groin system has certainly been a great asset for its beach. No damage is apparent to the adjoining beaches. Since 1961, Treasure Island has had a large amount of accretion on their beach at the north end adjoining John's Pass. Perhaps a study would be worthwhile to determine why the Madeira Beach groin system does work.

Marlin H. Eldred  
Vice-Mayor  
City of Madeira Beach, Florida