JOB REPORT

Joseph P. Breuer
Marine Biologist

Project No. M-9-D-1 Date: July 30, 1959

Project Name: A Developmental Survey of the Waters of Willacy County, Especially Those Which are Affected by the Opening of the Port Mansfield Pass and Channel.


A Survey of the Waters of Willacy County Which is Affected by or Influenced by the Port Mansfield Pass, Jetties, and Channel.

Objectives: To compare existing ecological conditions with those conditions which existed prior to the completion of this pass and channel.

Procedure: Follow precisely the collecting methods used during the original ecological survey; compare the present conditions with those which existed prior to the opening of the pass; and determine to what extent this pass has affected the marine fisheries resources of the area.

Findings: During this period, no material changes have occurred in the status of the east channel, pass or jetties. The channel from the Intracoastal Canal to Padre Island has remained about as it was at the completion of the dredging. The pass through the island has changed shape somewhat due to encroaching sand dunes from the south. The pass entrance into the gulf has changed to the characteristic "S" shape toward the south, which is typical of natural passes on the coast. A midground has built up in the middle of the pass about 1,000 yards inland from the beach. The tetrapod jetties have sunk to a point where they no longer function properly, and sand bars have re-appeared in the surf zone as they were prior to the pass construction. A narrow migrating channel of about 3 to 4 feet in depth exists between the gulf and the midground.

The result is a fairly stable fish pass but not navigable except to small boats. The plans for re-dredging the channel to 18 feet and re-building the jetties are awaiting Congressional passage of appropriation bills. There are no indications that plans for the building of a causeway from Port Mansfield to Padre Island will get underway in the near future.

Current in the channel and pass continues strong enough to keep the channel scoured and prevent complete closing of the pass. It appears that in its present condition this pass and channel, although unable to function as it was intended (for navigation), will continue to aid the area as a fish pass and water outlet.

The prevailing current in the pass is from bay to gulf, except in the winter during hard northerly. The pass, therefore, is more beneficial for water circulation and as an outlet from bay to gulf for adult marine
forms than for the transport of larval and juvenile forms from gulf to bay.

It would be well to state that the period under consideration here could not be considered as typical or average, in that in October and November of 1958, heavy flooding of the Rio Grande caused a considerable volume of flood waters to enter the Laguna Madre at Port Mansfield, as well as other points along the project area. Salinities dropped 10 to 15 o/oo in the bay and as much as 7.3 at the jetties. Salinities remained lower than normal until January. It is impossible to state to what degree all biological conditions were affected by the influx of fresh water from the Rio Grande.

Vegetation appears to be increasing, both in stand in range, throughout Redfish Bay. Beds of shoal grass mixed with sprigs of widgeon grass have appeared between the east channel and the resulting spoil banks to the south. The stands of shoal grass along the mainland shore from Port Mansfield north to the land cut appear to have increased. Spawning and rearing of trout seem to have increased in these areas. Pinperch continue to arrive earlier in the year than previously, and pigfish have appeared in large numbers in the area for the first time. Juvenile brown shrimp have increased both in number and in range during the spring and summer months. The spring and summer flounder population has changed from one of a few scattered individuals to one of great significance. Since trout, redfish, and drum populations in this area have always been large, no significant change in their numbers has been noted.

Comments: While many changes have occurred in the Redfish Bay area since the construction of the channel, pass, and jetties, the construction is not yet complete and in its final state. Nor has this period under consideration been a normal one. It will, therefore, be advisable to continue this job until the channel, pass, and jetties are completed to form a stable navigable pass or even until the proposed causeway is built, if it ever is.

Prepared by Joseph P. Breuer. Approved by Howard T. Lee

Marine Biologist Date Approved: 26 August 1959