



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
PEACHTREE-SEVENTH BUILDING
ATLANTA 23, GEORGIA

October 22, 1962

District Engineer
U. S. Army, Corps of Engineers
New Orleans, Louisiana

CE-LM-po

Dear Sir:

Your letter of September 11, 1962, advised that you are considering a modification of the Lake Pontchartrain hurricane protection plan in response to a local interests' request. Comments on this modification, by the U. S. Fish and Wildlife Service, to supplement our report of March 13, 1962, were requested by October 15, 1962.

It is our understanding, on the basis of your September 11 letter and additional information obtained from your office by our field representatives, that the project modification would consist of an extension of the protected area to include additional lands north of Chalmette, Louisiana.

The modified plan would provide for the construction of new levees along the south side of the Gulf Intracoastal Waterway from the Inner Harbor Navigation Canal eastward to Paris Road, thence along the south side of the Mississippi River-Gulf Outlet to Bayou Dupre, thence southward along Bayou Dupre or Lake Borgne Canal (Violet Canal) to Violet, Louisiana. The hurricane levee along the south side of the Mississippi River-Gulf Outlet between Paris Road and Bayou Dupre, constructed on top of the existing spoil bank, would cross and permanently close two openings through the spoil retention area designed to maintain the channels of Bayou Villere and a navigable pipeline canal.

In order to provide for interior drainage and water exchange, two hurricane sector-gated structures would be installed along the Mississippi River-Gulf Outlet levee alignment. One floodgate would be constructed on Bayou Bienvenue; the other would be located on an outlet to Bayou Dupre.

The present back-dike canal, paralleling the landward side of the Mississippi River-Gulf Outlet spoil area, would be maintained or enlarged to connect the two floodgate openings, thereby serving as a collection ditch for interior drainage and providing for an interchange of tidal flow. You propose that the two floodgates remain open except during the occurrence of a hurricane in the vicinity.

The additional area which is to be enclosed by the hurricane protection levee consists principally of marsh, though a considerable area of cypress swamp occurs adjacent to the higher ground along the Mississippi River. This wetland area has appreciable fish and wildlife values which have been described in some detail in our March 1962 report.

Since you have stated that the plan would provide for maintenance of the brackish water circulatory system, it does not appear that the hurricane levees would directly affect fish and wildlife resources to any major degree. However, as we have pointed out in the previous report, levee protection would hasten land reclamation for industrial and other developments, thereby paving the way for reduction in total habitat area.

Installation of hurricane control features of the modified plan may provide opportunity for environmental control within the protected area to lessen damaging effects anticipated from the Mississippi River-Gulf Outlet project, and this possibility should be considered in design and operation of the floodgates. Continuing studies on salinity intrusion via the Mississippi River-Gulf Outlet channel indicate that significant increases in salinity would occur from this source and that adjacent marshes would be detrimentally affected. Attention, therefore, should be given to the feasibility of modifying the structures for purpose of salinity control within the leveed area.

Apart from the change in levee alignment, we note that a lock structure, labeled "Seabrook Lock", is shown on the diagram attached to your September 19 letter. Location of this proposed lock is at the confluence of the Inner Harbor Navigation Canal and Lake Pontchartrain, in the vicinity of the existing Seabrook Bridge. Follow-up communication with your office reveals that this lock structure has been included in your draft report on this project.

Our March 1962 report recommended that a structure be built in the Seabrook location for salt-water intrusion control. It recommended, also, that the pertinent design criteria and operational procedure for this structure be developed as a part of the continuing studies on the Gulf Outlet project.

In view of the fact that the model studies conducted by the Waterways Experiment Station were not sufficiently detailed to establish criteria for the control structure, and that our joint studies of salinity intrusion in this area are still in progress, we do not believe that structure specifications should be finalized at this time.

Salinity control apparently will be a complex problem. This was indicated in a general way in our previous report, and is becoming more evident as additional records of salinity intrusion become available. It will be desirable not only to control saline waters entering the lake from the Gulf Outlet channel, but also to utilize outflowing lake water to depress excessively high saline concentrations in the channel. Since stratification also may be an important factor, accomplishment of these objectives may require vertical control of water flow in addition to directional control. Additional data will need to be accumulated and salinity intrusion patterns ascertained before design and operational requirements of a control structure can be reasonably defined.

It is the opinion of the Service, therefore, that the design specifications for the Seabrook structure as included in your report to higher authority should be sufficiently flexible to permit such modifications as may become advisable following studies now in progress.

In view of events which have transpired since release of the Service's March 1962 report, the Service wishes to make two recommendations additional to those contained in the earlier report.

1. The two floodgates proposed for the Chalmette section of the hurricane protection area be modified as necessary to provide, within feasible limits, for maintenance of the natural salinity regimen of interior waters. Design and operation for this purpose be established during advanced planning for this project.
2. Your request for authorization on this project should provide sufficient flexibility in regard to the Seabrook structure that design and operation can be established during advanced planning and in accordance with findings of salinity studies currently in progress.

This supplement to the Lake Pontchartrain hurricane study report has been reviewed by the Louisiana Wild Life and Fisheries Commission and their letter of concurrence is attached.

We appreciate the opportunity for commenting on the modified

plans and request that you keep us advised of the status of your studies and reporting on this project.

Sincerely yours,



W. L. Towns
Acting Regional Director
Bureau of Sport Fisheries
and Wildlife



Seton H. Thompson
Regional Director, Bureau
of Commercial Fisheries

Enclosure