



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

SOUTHEAST REGION

(REGION 4)

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ADDRESS ONLY THE
REGIONAL DIRECTOR

CE-SE-sf

July 22, 1960

District Engineer
U. S. Army, Corps of Engineers
Jacksonville, Florida

Dear Sir:

The U. S. Fish and Wildlife Service has reviewed the application of the Board of Lee County Commissioners, Fort Myers, Florida, for a Department of the Army permit (Bridges 1057) to construct a causeway with three bridges across San Carlos Bay so as to connect Sanibel Island with the mainland at Punta Rassa in Lee County, Florida. A sketch of the proposed project is attached.

The total length of the proposed causeway would be 15,919 feet. Its four fill embankments, which would traverse shallow areas, would total 9,641 feet. The three bridges, which would span the existing deeper channels, would total 6,278 feet.

The plans also propose dredging in two areas - those portions of the deeper channels adjacent to the center and the easterly bridges. Approximately 576,000 cubic yards of material would be removed in this work; dredging would be to a depth of 12.5 feet below mean low water.

In this report, the Service has considered the fish and wildlife resources of the following areas adjacent to the proposed project: The lower estuary of the Caloosahatchee River, the south half of Matlachas Pass, lower Pine Island Sound, and that portion of San Carlos Bay which would lie north of the proposed causeway. It is the natural resources of these areas which would be affected by the project.

In 1957 and 1958, the Fish and Wildlife Service made intensive studies of these areas and their natural resources in respect to the authorized Caloosahatchee River Basin project, and therefore is fortunate to have at hand much information useful to this report.

ENCLOSURE (1)

Considering the hydrological and biological complexity of the area, and the brief time available for reporting, advantage is being taken of that information in this report.

The commercial fish producers of Lee County have consistently led all other counties of the State in production of bay scallops, sea trout, mullet and redfish. During 1958, Lee County produced approximately 9,086,000 pounds of these species. A very significant portion of this production was taken from the four water areas cited above. Furthermore, these waters are believed to be significantly important nursery grounds for pink shrimp which subsequently migrate to offshore waters where they are harvested.

The Service's earlier study indicates that approximately 105,000 man-days are expended by sport fishermen in the cited project area of influence. The principal species sought are redfish, sea trout, mangrove snapper, snook and tarpon. The greater part of this sport fishing activity is by boat, but some bridge fishing occurs, particularly on the Matlacha Pass Bridge.

Principal wildlife resources of the project area of influence are its large and varied bird populations, whose values are largely aesthetic. Some of the birds which make use of the area are common and snowy egrets, Louisiana and great blue herons, white ibis, brown pelicans, Florida cormorants, anhingas, frigate-birds and several species of ducks. The Service's Sanibel Island National Wildlife Refuge, and the two islands under lease to the Florida Audubon Society - Kitchel Key and Bird Island - are dedicated to the preservation and enjoyment of these and other valued species.

The preservation at present population levels of these valuable sport and commercial species of fish and wildlife in the project area depends on maintenance of the particular habitat conditions to which they are now adapted. Hydrologically, that habitat is largely estuarine. Its component species require marine or brackish water. This is true for its fishes, and for the complex of plants, mollusks and crustaceans which sustain them. It is also true in another sense for the birds of the area, for these subsist largely on the numerous marine and brackish water organisms which now occur in the area.

Use of the fish and wildlife resources of the project area has greatly increased in recent years along with the growth of the human population of Florida. Lee County, in particular, increased in population from 14,900 to 33,000 in the 25-year period from 1930

to 1955. Concurrent growth in tourism has also increased the use of the resources, and consequently their value to the economy of the area.

The monetary and aesthetic values of the fish and wildlife resources which the project would affect are already great; with the growth expected for Florida and Lee County their future values will be even greater. Preliminary estimates of the 1960 U. S. census showed Florida to be the fastest growing State in the Union, with a gain of better than 76 percent in the past decade. Certainly Lee County and all of south Florida have shared in this growth and will continue to do so.

Citizens of Lee County have shown obvious interest in their natural resources, and the Lee County Commission has taken steps toward preservation of these resources.

The project as proposed would adversely affect the fish and wildlife resources of the area in two different ways. One of these would be the effect of dredging and filling. The bottom plant and animal communities in the areas to be filled would be permanently destroyed. The communities in the areas to be dredged would be destroyed at least temporarily and permanently if frequent maintenance dredging were required. Such reduction in bottom communities would have the effect of reducing important fish populations to some degree.

A second effect of the project, and a much more damaging one, would result from reduced salinities in lower Pine Island Sound, San Carlos Bay, Matlacha Pass, and the lower estuary of the Caloosahatchee River. With lowering of the salinity, changes in the biota would result. As a particular example, the scallop beds of lower Pine Island Sound might very well be eliminated, inasmuch as these mollusks require salinities of better than 20 parts per thousand. In more complex fashion, the abundance of some of the brackish and marine fishes in the area would be reduced.

The effects would of course be greater when sustained discharges are being made from the Caloosahatchee River. When the Caloosahatchee is enlarged in the future, in accordance with present plans, the salinity reductions resulting from the causeway project will be even greater.

It is the Service's understanding that the openings provided for in the project - the three bridges - were planned to permit adequate tidal exchange from the standpoint of navigation through San

Carlos Bay to and from the Gulf of Mexico. Despite such provision, peculiarities in the fresh-salt water interface are such that the project should tend to favor the outward flow of salt water, and disfavor the outward flow of fresh.

Fresh water coming out of an estuary tends strongly to sheet out over the surface of the heavier salt water below. Along the line of the proposed causeway, under river discharge conditions, the extensive shallow flats are covered with an out-flowing sheet of fresh water. In contrast, the deeper channels transport salt water, overlain by a blanket of fresh water a few feet in depth. Because of this circumstance, the fill embankments would retard the outflow of fresh water through simple reduction of the cross-section available for such flow.

The Service expects salinities in lower Pine Island Sound and Matlachas Pass to be reduced by the proposed project. Reduction of salinities in these two areas would detract from the high quality and varied fishing which they now offer.

In its function in the interest of fish and wildlife resources in Florida, the Fish and Wildlife Service has become increasingly aware of the alarming rate of loss of coastal marine areas for fishing. A number of Florida coastal counties already have irreplaceably lost the greater part of their valuable aquatic resources through dredging and filling operations, pollution of various kinds, and other man-made conditions. The water bodies in the area of influence of this project are indeed unusual in that thus far they have been relatively little damaged.

Therefore, it is requested that your agency determine the effects of the proposal on salinity patterns in the included area and provide this information to the Lee County Commission so that they may adequately consider the effects, and if desirable, modify their application. With the submission of these data, we would appreciate the opportunity to meet with your staff and the Lee County Commission for the purpose of discussing the salinity data in terms of their effects on fish and wildlife.

The respective Directors of the Florida Board of Conservation and the Florida Game and Freshwater Fish Commission have reviewed and concur with this report, as indicated by copies of their teletypes, dated July 18, 1960.

Your views and proposed actions are requested. The Service has appreciated this opportunity to review and comment on this project which involves so directly the outstanding fish and wildlife resources of Lee County, Florida.

Sincerely yours,

W. L. Towns

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

Seton H. Thompson

Seton H. Thompson, Regional Director
Bureau of Commercial Fisheries