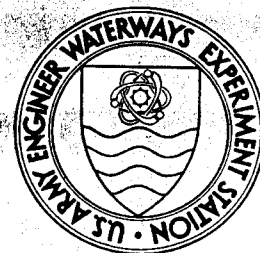


DREDGED MATERIAL RESEARCH PROGRAM



TECHNICAL REPORT D-78-8

USE OF DREDGED MATERIAL ISLANDS BY COLONIAL SEABIRDS AND WADING BIRDS IN TEXAS

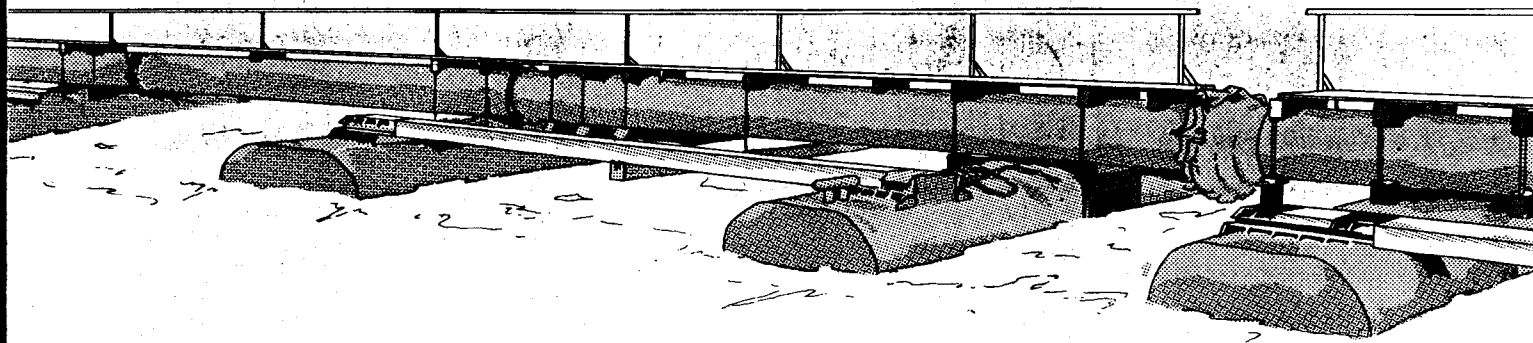
by

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April 1978

Final Report

Approved For Public Release; Distribution Unlimited



Prepared for Office, Chief of Engineers, U. S. Army
Washington, D. C. 20314

Under Contract No. DACW39-76-C-1065
(DMRP Work Unit No. 4F01B)

Monitored by Environmental Laboratory
U. S. Army Engineer Waterways Experiment Station
P. O. Box 631, Vicksburg, Miss. 39180



DEPARTMENT OF THE ARMY
WATERWAYS EXPERIMENT STATION, CORPS OF ENGINEERS
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FEB 17 1981

IN REPLY REFER TO: WESYV

15 June 1978

SUBJECT: Transmittal of Technical Report D-78-8

TO: All Report Recipients

1. The technical report transmitted herewith represents the results of Work Unit 4F01B regarding vegetation succession and wildlife use of dredged material islands in Texas. This work unit was conducted as part of Task 4F (Island Habitat Development) of the Corps of Engineers' Dredged Material Research Program (DMRP). Task 4F was part of the Habitat Development Project of the DMRP and had as its objective the investigation, evaluation, and testing of methodologies for habitat creation and management on dredged material islands.
2. Island habitat development has been studied by the DMRP throughout the United States through the evaluation of vegetation succession and animal use of existing dredged material islands. The most significant wildlife aspect of these islands is their use by colonial nesting sea and wading birds (such as gulls, terns, egrets, herons, ibises, and pelicans). This wildlife resource, although generally inadvertently created, presents a significant opportunity for habitat management and development that is consonant with continued dredged material disposal.
3. In the study reported herein, Work Unit 4F01B, the entire Intra-coastal Waterway in Texas and the Houston Ship Channel were evaluated. Of the numerous dredged material islands in Texas, 136 were surveyed, and 17 in the Galveston Bay area and 17 in the Upper Laguna Madre were selected for more detailed study. It was found that 62 percent of all colonial species (more than 156,000 adult birds) along the Texas coast in 1977 nested on dredged material islands. Five of these species, the least tern, the gull-billed tern, the roseate spoonbill, the reddish egret, and the brown pelican (endangered), are of local and national interest because of their limited numbers.
4. From a local perspective, this study will be of direct value in managing and developing dredged material island habitats in Texas. A national perspective is presented in a report entitled "Development and Management of Avian Habitat on Dredged Material Islands" (4F03), which

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Birds Dredged material Dredged material disposal Environmental effects Habitats Islands (Landforms) Sampling Seabirds Shore birds Texas coast Waste disposal sites		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The disposal of dredged material resulting from the creation and maintenance of navigation waterways and harbors has become a matter of national interest and concern. Dredging operations in shallow coastal bays and estuaries have generated islands or chains of islands which have become a substrate for the development of plant and animal communities. Certain of these islands with their vegetative communities have become attractive to (Continued)		

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20. ABSTRACT (Continued).

colonial seabirds and wading birds as nesting sites. The purpose of this study was to aid personnel of the U. S. Army Corps of Engineers in assessing the environmental impact of dredged material disposal sites by gathering information on those islands in Texas waters. Thirty-four islands were selected for detailed study, 17 in the Galveston-Houston area and 17 in the upper Laguna Madre near Corpus Christi. The following investigative activities were concluded: (1) the islands were photographed, visited by boat, and measured as to elevation and area; (2) over 3000 soil samples were taken; (3) the vegetation on each island was identified, measured, and quantified in over 3000 quadrats; (4) plant communities were identified and vegetation maps of each island were constructed; (5) birds using the islands as nesting sites were identified and their nests were monitored; (6) location of colonies was plotted on island maps and nesting information was summarized and placed in tabular form; (7) islands, birds, and vegetation were related to each other and discussed; (8) the numbers and species of nesting birds were compared with those nesting on natural sites in each area and for the entire Texas coast; and (9) recommendations were made concerning island construction, maintenance, and management in relation to nesting seabirds and wading birds.

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