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DREDGED MATERIAL RESEARCH PROGRAM



TECHNICAL REPORT D-78-14

COLONIAL BIRD USE AND PLANT SUCCESSION ON DREDGED MATERIAL ISLANDS IN FLORIDA

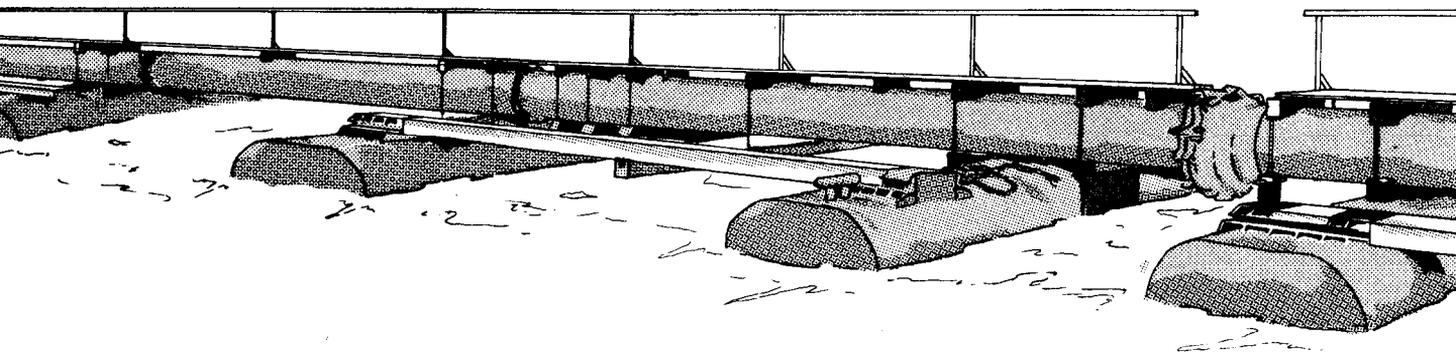
VOL. II: PATTERNS OF PLANT SUCCESSION

by

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15 June 1978

SUBJECT: Transmittal of Technical Report D-78-14 (Volume II)

TO: All Report Recipients

1. The technical report transmitted herewith represents the results of Work Unit 4F01C regarding vegetation succession and wildlife use of dredged material islands in Florida. 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 (in two volumes), Work Unit 4F01C, 40 dredged material islands in Florida were selected for detailed analysis from the more than 250 in five specific study areas. These study areas were located in the vicinity of Tampa Bay, the Indian River, Yankeetown, the Pithlachascotee River, and the Caloosahatchee River. Vegetative colonization of dredged material islands proceeded from a bare substrate through a grass-herb stage characterized by species such as smooth cordgrass to a shrub and tree cover represented by Brazilian pepper, Australian pine, sabal palm, and mangroves. Approximately 50 percent of the colonial nesting sea and wading birds in Florida nest on dredged material, and many more species use the islands for feeding and roosting. Species of particular significance, because of their low numbers nationally, are the reddish egret, roseate spoonbill, least tern, black skimmer, and brown pelican (endangered).

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4. From a local perspective, this study will be of direct value in managing and developing dredged material island habitats in Florida. A national perspective is presented in a report entitled "Development and Management of Avian Habitat on Dredged Material Islands" (4F03), which synthesizes island habitat research in Florida, the Great Lakes (4F01A), New Jersey (4F01D), North Carolina (4F02), Texas (4F01B), the Pacific Northwest (4F01E), and the Upper Mississippi River (4F01F).



JOHN L. CANNON
Colonel, Corps of Engineers
Commander and Director

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This study was made to determine succession of vegetation on various aged dredged material islands in Florida. Forty islands in five selected study areas were intensively examined. An extensive literature review was conducted. Vertical aerial photographs and vegetation maps of each island are presented. A total of 141 plant species were found to occur on the islands. In Florida, typical island vegetation occurred through colonization by propagules from water-, wind-, and bird-carried sources. Marsh grasses (Continued)		

20. ABSTRACT (Continued).

such as smooth cordgrass preceded establishment by upland species such as Brazilian pepper, Australian pine, sabal palm, and herbaceous and grass cover. Bird use of the islands was directly related to the stage of plant succession, and bird fecal material was found to affect the vegetation both adversely and beneficially depending upon location. Recommendations for management include creation of new islands and enlargement and stabilization of existing eroding islands for bird use. Maintenance of unvegetated sites as critical habitat for terns and black skimmers is also recommended.