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CERC -- 50 YEARS OF SERVICE

This fall the Coastal Engineering Research Center (CERC) will celebrate its 50th year as an agency dedicated to the development of coastal engineering. The Beach Erosion Board (BEB), predecessor of CERC, was established in 1930; CERC formally replaced BEB in November 1963.



DEAN MORROUGH P. O'BRIEN RECEIVES AWARD

On 28 April 1980, Dr. Morrough P. O'Brien, Dean Emeritus, College of Engineering, University of California, received the Decoration for Distinguished Civilian Service award. Dean O'Brien, a member of the Corps of Engineers Coastal Engineering Research Board (CERB) since its creation on 7 November 1963, has been actively concerned with the direction of research and development efforts of the Department of the Army, particularly in the preservation and enhancement of the Nation's shorelines and wetlands.

His wide-ranging interest, knowledge, and experience have enabled him to provide

outstanding input to all aspects of the coastal engineering research program. As a CERB member, and as a member of its predecessor, the Beach Erosion Board, from 1938-63, he has provided consultant advice on a number of Corps coastal projects. Almost every beach restoration, beach protection, and beach nourishment project undertaken in the United States has had beneficial input from his activities.

Dean O'Brien has been a member of the National Academy of Engineering, the Army Scientific Advisory Panel, the National Science Board, and the Defense Science Board. He was also the recipient of the Decoration for Distinguished Civil Service award in 1963.

General Morris, Chief of Engineers, awarded Dean Morrough P. O'Brien the Decoration for Distinguished Civilian Service award which consists of a gold medal, rosette, and citation certificate signed by the Secretary of the Army.

CERC STAFF PRESENT PAPER AT PORTS '80 CONFERENCE

A paper entitled "Surging in the Shark River Boat Basin" by J. Richard Weggel and Robert M. Sorenson was presented by Dr. Weggel at the ASCE's Ports '80 Conference held in Norfolk, Virginia, on 19-21 May 1980. The paper discusses a hydraulic model study of the intermittent surging problem in a rectangular U.S. Coast Guard (USCG) boat basin in New Jersey's Shark River. Several times a year the basin experiences excessive agitation (due to as yet undefined causes) that requires USCG vessels to moor outside the basin. It is suspected that long-period waves originating in the Atlantic Ocean travel into the

Shark River and excite the basin; however, the lack of ocean wave measurements in the area precludes confirmation of this. The model study, coupled with an analytical study, investigated long-period surging (~50 seconds) within the existing harbor geometry and recommended modifications that would suppress the surging. The recommended solution involves modification of the basin entrance and subdividing the rear of the basin into two mooring areas with different periods of transverse oscillation by constructing an impermeable wall perpendicular to the back basin wall. The 1 to 18-scale plywood model was tested in CERC's 15-foot-wide by 140-foot-long wave tank.

CERC WORKSHOP ON ENGINEERING USES OF COASTAL VEGETATION

CERC's Coastal Ecology Branch held its first field workshop on engineering with plants. Representatives from the Baltimore, Charleston, New Orleans, and New York Districts, Lower Mississippi Valley Division, and the Cold Regions Research and Engineering Laboratory attended the 3-day workshop (13-15 May) at CERC's Field Research Facility (FRF) in Duck, North Carolina.



Students learn to recognize and use coastal plants for engineering.

Attendees learned firsthand where and how to plant native beach grasses to repair and create coastal dunes, to stabilize beach fills, sand dikes and levees, and to reduce the movement of windblown sand into navigation channels. Instruction was given on determining (on a case-by-case basis) where planting marsh vegetation can be used successfully to reduce



Plants are harvested in preparation for planting.

erosion on the shores of estuaries. Planting techniques for dunes and marshes were discussed and six sample projects were designed in class. However, classroom exercises were only the beginning. The real work began when the class actually planted each of the six projects they had designed. In all, 10,000 plants were harvested and planted.

The 182-acre Field Research Facility proved to be an ideal environment for studying this unique field of engineering. Subsequent communications with workshop participants have indicated that immediate use is being made of experience gained at the workshop.

A second planting workshop is scheduled for May 1981. The class size will be limited to 15.



Beach grasses were planted with a tobacco planter at a rate of 700 plants per man-hour.

RECENT CERC PUBLICATIONS

NO.	TITLE, AUTHOR, AND DATE	AD NO.
MISCELLANEOUS REPORTS (MR)		
80-1	"Evaluation of Benthic Communities Adjacent to a Restored Beach (Broward County), Florida," Vol. II, <i>Ecological Evaluation of a Beach Nourishment Project at Hallandale (Broward County), Florida</i> , G.A. Marsh, et al., Mar. 1980.	A085802
	Benthic communities adjacent to a restored beach at Hallandale, Florida, were analyzed and compared to similar nearby communities. Five sand stations and four reef stations were sampled along a transect from the intertidal zone through the second reef. The postnourishment condition of sandy bottom and reef-dwelling communities about 7 years after nourishment and offshore dredging is discussed.	
80-2	"The Effect of Structures and Lake Level on Bluff and Shore Erosion in Berrien County, Michigan, 1970-74," W.A. Birkemeier, Apr. 1980.	----- ¹
	Rates of bluff erosion and shoreline changes along five 1.6-kilometer reaches in Berrien County, Michigan, between 1970-74, were measured from aerial photos. Average recession rate for the five reaches was 3.8 meters per year; the rate varied from 2.4 meters for a reach with low foredunes to 4.5 meters along a reach with a high bluff. Procedures used in analyzing the air photos and their accuracy are described in an Appendix.	
80-3	"Beach and Inlet Changes at Ludlam Beach, New Jersey," C.H. Everts, A.E. Dewart, and M.T. Czerniak, May 1980.	-----
	Repetitive surveys of the above MSL beach were made along 20 profile locations on Ludlam Beach, New Jersey, from 1962-72. The surveys provided data on temporal and spatial beach volume change and shoreline position.	
80-5	"An Annotated Bibliography of CERC Coastal Ecology Research," E.J. Pullen, et al., June 1980.	-----
	This bibliography supersedes MR 78-2, May 1978, NTIS AD No. A058712. It identifies the research work that was either funded by or published by the CERC Coastal Ecology Branch from 1967 to June 1980.	
COASTAL ENGINEERING TECHNICAL AIDS (CETA)		
80-1	"Maximum Wave Heights and Critical Water Depths for Irregular Waves in the Surf Zone," W.N. Seelig, Feb. 1980.	A084222
	The nearshore irregular wave deformation model of Goda (1975) is used to develop prediction curves for the magnitude and location of peak wave heights in the surf zone as a function of profile slope and offshore wave steepness. An example that demonstrates the use of these curves is presented.	
80-2	"Planting Guidelines for Seagrasses," R.C. Phillips, Feb. 1980.	A085592
	The historical and present work on transplanting seagrasses, including eelgrass, turtle grass, shoalgrass, manatee grass, and ditch grass, was reviewed. The best seasons, recommended methods of transplanting, and propagules to use for each species are listed for the U.S. coasts.	
80-3	"Computation of Longshore Energy Flux Using LEO Current Observations," T.L. Walton, Jr., Mar. 1980.	A085526
	A computational technique is presented for the longshore energy flux factor, P_{L_S} , using current observations from the LEO program. Chapter 4 of the SPM gives various equations for P_{L_S} as a function of wave height, wave period, and breaking wave angle. This report details how P_{L_S} can be calculated using longshore current and breaking wave height data only.	
80-4	"Data Collection Methods for Sand Inventory-Type Surveys," D.A. Prins, Mar. 1980.	-----
	Shallow areas of the Continental Shelf have been found to be a potential source of suitable sand for beach fill. This report describes the techniques and methods used in the planning and implementation of the data collection effort to locate and delineate this source.	
OTHER PUBLICATIONS		
	"Bibliography of Publications of the Coastal Engineering Research Center and Beach Erosion Board," A. Szwalski and L. Clark, June 1980.	-----
	This bibliography supersedes the publication with the same title dated June 1979, AD No. A072923. CERC publications and author, subject, and keyword indexes have been updated.	
	"Coastal Engineering Research Center--Its Mission and Capabilities," A. Szwalski and L. Clark, May 1980.	-----
	The Coastal Engineering Research Center (CERC) is one of five major laboratories and research centers of the U.S. Army Corps of Engineers. This publication describes CERC's mission, capabilities, and facilities.	

¹Not available at time of printing.

Copies of the above reports are obtainable by AD Number from National Technical Information Service, Springfield, Virginia 22161.

CERC CONTRACTOR RECEIVES TEXAS TECH RESEARCH AWARD

After severe flooding from Hurricane Carla in 1961, residents on the Texas mainland agitated for restoration of gulf coastal barrier islands as a first line of defense against the sea. In 1968 CERC funded a field study on Padre Island, a barrier island in south Texas, to develop methods for restoring damaged barrier dune systems.

The study was started by Dr. Don Woodard and completed by Dr. Bill E. Dahl of Texas Tech University. Two native grasses, sea oats and bitter panicum, were used to stabilize miles of barrier dunes on Padre Island while determining optimal seasons for planting and fertilizing and developing efficient planting methods. Dr. Dahl estimated that damaged dunes could be restabilized with about 250 man-hours of effort per mile.

Dr. Dahl has authored two CERC reports (MP 9-75 and MR 77-8). These reports and other publications on this work are the principal sources which cover dune stabilization on the gulf coast. For this landmark achievement, Dr. Dahl recently received the Texas Tech University, College of Agricultural Sciences Research Award. Our congratulations to Dr. Dahl.

ERRATA TO CERC MP 2-67

Data presented in Table 4 (p. 15) of MP 2-67 (Galvin and Nelson, 1967) are in error. The values under the heading BVAL belong under the heading VMEAS, and vice versa. This was determined by comparing these values with those in Table A3 (p. 68) of TM-10 (Galvin and Eagleson, 1964).

Technical articles on coastal engineering research achievements for highlighting in this CERCular should be submitted to the Commander and Director.

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Comments on this CERCular may be addressed to the CERC Public Affairs Officer (Andre Szuwalski).


TED E. BISHOP
Colonel, Corps of Engineers
Commander and Director

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