vista, Florida, in 1986, has provided a straight deep navigation channel at costs far below conventional dredging technology. The STADEEP System has resulted in improved fishing within Lake LaVista and allowed the marina there to reopen and expand.

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BOOK REVIEWS

The journal and CERF board members may not necessarily agree with all of the statements contained in the following book reviews. These boards do not assume responsibility for the reviewer's assessments of the books that they evaluate.

The Effects of Seawalls on the Beach, edited by N.C. Kraus and O.H. Pilkey, 1988. Special Issue no. 4, 1988, *Journal of Coastal Research.* P.O. Box 368, Lawrence, Kansas, 66044, U.S.A., 146p. $37 including mailing costs.

Seawalls are one form of coastal protection. They may be used singularily or combined with other measures. When shore and upland areas are endangered by inundation or by a high erosion rate leading to high economical or ecological losses seawalls may become "A MUST." There is, however, much misunderstanding on the use of seawalls and their possible disadvantages related to their upsetting of natural beach processes and particularly to their contribution to beach erosion in general. Disagreements on the function of seawalls have caused problems for coastal managers. It is generally agreed that shore management must tend to adhere to natural processes. This is best accomplished by "soft measures" like beach and dune nourishment.

For various reasons, an optimal strategy is not always possible. It may often be decided to build a seawall just to protect shore property. The role of the coastal engineer then is to clarify the possible advantages and disadvantages of a decision on protection which may related not only to the local problem but to the neighboring shores as well.

The ASCE-sponsored technical conference "Coastal Sediments 1987," held in May, 1987, had as one of its themes "the effects of seawalls on the coast." Various points of views were presented in technical sessions and in one plenary meeting. It would be very time-consuming for readers of the proceedings to summarize the main points of general value. We shall, therefore, be thankful to *The Journal of Coastal Research* for the initiative taken in preparing an extensive summary useful for a special issue of the journal.

The index for the eight papers is:

Interactions of Storms, Seawalls, and Beaches of the Texas Coast, by Robert A. Morton, p. 115.
Effects of Seawalls on Profile Adjustment Along Great Lakes Coastlines, by William L. Wood, p. 37.

The first four papers summarize general topics. The illustration of the problems and practical experiences are presented in the last four papers related to four coasts in the United States.

The first paper is an extended literature-review in which Nicolas Kraus has tried to answer general questions related to the application of sea walls. The state of knowledge is summarized in eight points:

(1) What is the maximum scour depth at a seawall and the time scale of its development under given wave conditions, water depth, and reflection characteristics of the wall?

(2) Is the amount of sand locally scoured on a seawall-backed profile equal to the amount eroded across the profile on adjacent beaches without structures?

(3) Do seawalls accelerate or enhance erosion?

(4) Are there systematic patterns of scour or undulatory features of the profile in front of seawalls, and which parameters determine the scour type?

(5) Is the recovery pattern different for beaches with and without a seawall?

(6) Is the longshore bar system in front of a seawall similar to that along neighboring, unstructured beaches?

(7) How does a seawall alter the longshore current and longshore sediment transport rate?

(8) Is it beneficial to design seawalls to be "softer," *i.e.*, possess lower reflection coefficients and therefore approach the hydrodynamic behavior of a sandy beach?

The authors of the other papers formulated general statements on the function of sea walls. Much valuable information is submitted.

The main points of criticism may be the following: (a) The information given by practical examples is solely related to American shores. They are not representative for the broad scale of coastal defence. For low-land countries like Holland the danger of inundation is evident. Whether "soft defences" like dunes or hard defences like (armored) dikes are being used depends upon local circumstances. The general strategy of coastal defence under such conditions is not represented in the special issue. (b) The topic of sea walls is treated in individual cases in comparison only with nature's strategy or with nourishments—and not in the context of the total number of available protective systems. Comparing seawalls with soft measures, walls will always include some disadvantages, *e.g.* that they prevent dune erosion, thereby depriving the beach of material! The reason why in Holland and at many other European shores that have a large number of sea walls or revetments is not that they do not like or want soft measures. But soft measures alone simply are not able to solve the erosion problems efficiently within the given freedom of financial and space limitations. And we should never forget that most coastal protective measures have to include beach and storm tide protection.

Looking at other protection systems it may be said that *e.g.* coast-parallel breakwaters sometimes are viable solutions, but they are only effective in areas with low tidal ranges and do not solve any problem of deep-water erosion.

If we consider groins, the possible disadvantage, mostly related to leeside erosion, is often much more severe than any adverse effect by sea walls. We must realize that coastal management in the world scale is so complicated that no general solution exists to all problems. It will often become necessary to choose or compromise solutions within political, social, economical and environmental limitations under various geographical conditions.

The Special Issue gives us a better idea of physical interactions and contributes to the understanding between researchers and practitioners. The evaluation for sea walls could be extended to the whole range of coastal protection methods providing more general guidelines for the proper choice of the system most suitable to solve particular problems. "The Effects on Seawalls on the Beach" is a valuable addition to the libraries of researchers as well as managers in coastal engineering.

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