

Iceland Coastal and River Symposium, Proceedings, edited by Guttormur Sigbojarnarson, 1986, National Energy Authority, Reykjavik, 387p., No ISBN.

This book includes the proceedings of an international meeting held in Reykjavik in September 1985. The meeting was prepared under Per Bruun's leadership, a scientist well known throughout the world for his studies on coast stability and/or erosion and their causes. Indeed the larger part of the papers cover coastal dynamics, although several concern streams, with which beach evolution has, of course, connections through sediment supply.

Bruun's paper may be considered as an excellent introduction since he discusses the coastal sediment balance as exemplified by the south coast of Iceland, also the subject of some presentations and visited by the participants after the symposium (a field trip reviewed in this Journal, vol. 2, n. 2, 1986, pp. 219–224). Global sea-level rise has been confirmed by tidal gauge records, and its causes were discussed during the meeting, particularly by Hoffman *et al.*, who propose an anthropic global warming of the earth, so that coastal evolution depends primarily on the amount of river sediment transported to the sea, unless artificial nourishment occurs. Yet, although shoreline retreat is experienced in a very large number of sites around the world, local situations are complex, and sea-level rise differs considerably from site to site, *e.g.* along the eastern coast of the United States (from 1.0 to 4.0 mm/year with a peak near Cape Hatteras, according to Lisle). On the other hand, a part of Bruun's statements have been contested by Pizzuto, whose results in Delaware Bay do not show an offshore transport sediment as sea-level rises: in that area, as barriers migrate landward, sediment is supplied from offshore.

The North Sea coasts of Europe have provided several fruitful studies, particularly in the German Bight where the effects of different tidal ranges have been analyzed. Partensky and Dieckmann suggest that the sediment of the German tidal marshes comes from the bottom of the North Sea, a conclusion which was previously held in the Netherlands, but is now disputed (see Postma *Marine Geology*, vol. 40, 1981, pp. 199–213). Thus the problem of sediment sources seems unresolved here, and elsewhere. The paper on Scolt Head Island in Norfolk, England, on ebb and flow velocities of

currents in tidal creeks, is an example of new trends in coastal marsh studies.

Rocky coasts have not been excluded from the scope of the symposium, since they appear in a paper on Icelandic strandflats, and another one on cliffs in the Lias (Jurassic) of South Wales, in both cases, considering erosion processes so widening the examination of coastal dynamics. Interaction between volcanism and coastal sedimentation is also discussed for Icelandic sites (mainland and Surtesy Island).

These proceedings will be quite useful in that they include a set of papers showing, beside general ideas and facts, different procedures in the changing field of modern coastal and stream research.

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Wave Dynamics and Radio Probing of the Ocean Surface, edited by O. M. Phillips and Klaus Hasselmann 1986, Plenum Press, New York and London, \$US 95.00 (Hardbound) 694 pp., ISBN 0-306-41992-0.

This book is the proceedings of a symposium with the same name, held May 13-20 1981, in Miami, Florida. It is an advanced text giving results of current research by some of the leading specialists in their fields. It assumes some knowledge of the physics of wind wave growth, the different spectral forms, wave statistics and wave/wave interactions. While it will primarily be a book for wave specialists it will also be of great interest anyone wanting to know the state of the art. The papers generally contain review material with frequent reference to the original works. Hence a new reader could use this book with reference back to the original texts where necessary. The five years that have elapsed between the symposium and publication might suggest that the material is somewhat outdated. However this is not the case as the reporting of the discussion following papers contains much current thinking and in some cases papers have been updated with notes added in proof and additional references.

The book contains 45 papers divided into 7 sections. Some idea of the breadth of subject matter can be gauged by summarizing these sections. "Ocean Wave Spectra" begins with a comprehensive review of the equilibrium range in the wave spectrum (Kitaigorodskii). There

are papers on nonlinear energy transfer between random waves and the interaction between ripples and long waves. There are three papers on wind/wave interaction including the effect of a surfactant and an interesting paper on an experimental study of wind generated wave statistics (Huang, Long and Bli-ven). The section concludes with two papers on finite depth wind waves.

"Wave Propagation" contains papers on the results of a wave dynamics experiment (WAVDYN), the transformation of the statistical properties of waves propagating into shallow water and experimental studies of the velocity field and dispersion.

"Wave Instabilities and Breaking" begins with a review of dynamics of wave breaking (Longuet-Higgins). Then follow papers on experimental studies of strong nonlinear interactions, breaking in wave trains, measurement of breaking waves and the statistics of breaking waves. There are papers on microwave scattering from breaking waves, the influence of breaking waves on upper ocean dynamics and the stability of capillary waves.

In his keynote address Sir George Deacon describes the measurement of air pressures close to the ocean surface as one of the hard core problems. The three papers in "Air Flow Over Waves" tackle aspects of this problem. There are papers on experiments measurements of the pressure distribution over broken and unbroken waves, flow separation over short waves in a laboratory tank and measurements of wave induced pressure over waves in the North Sea.

In "Methods of Remote Sensing" papers by Harger and Hasselmann & Alpers tackle the vexed question of Synthetic Aperture Radar (SAR) imaging theory. There are papers on the performance of the SEASAT SAR in the JASIN experiment and the limitations of SAR in high sea states. The section concludes with two papers on microwave radar experiments and a paper on the visibility of rms sea surface slope.

"Sea Surface measurements" contains seven papers describing particular experiments on wind and wave measurements. These include SEASAT altimeter measurements over the Southern Ocean, five papers on different microwave radar experiments and a paper on the passive microwave radiation characteristics of a roughened sea.

The "Wave Modeling" section opens with a theoretical treatment on estimating the full two dimensional wave spectrum from the statistical observations using inverse methods

(Long). There are three papers on particular models in use and these papers will be complimentary to the results of the SWAMP Group presented at the same symposium but published as a separate volume (Plenum Press 1985). There are papers on the anomalous dispersion effects in numerical models, the performance of waverider buoys and the performance of wave models for hurricane winds.

The editors state in their preface that "Many important questions remain but it is to be hoped that the advances described in this book will serve as a timely summary of the state of the art that will be of interest to oceanographers, ocean engineers and meteorologists and will, at the same time, reset the stage for future directions of research." With the wealth of material contained in this volume the editors aims have been achieved.

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Coast Dune Management Guide, D. S. Ranwell and Rosalind Boar, 1986, Institute of Terrestrial Ecology, Abbots Ripton, Huntingdon, Price £6.95 105p., ISBN 0-904282-93-7 (soft-cover).

This book's objective is to provide coastal engineers with information about using vegetation to promote dune growth and to provide protection against coastal erosion and flooding. The book is divided into five sections. Section One deals with the physics of eolian sand movement and the influence of vegetation on causing sediment accumulation. The effects of wave and wind erosion on a dune are also discussed, as are various characteristics of the dune environment. The section closes with a classification of dune systems along the British coastline.

Section Two deals with human uses of the beach/dune system and with the impacts of those uses on coast protection. Practices discussed include mining, recreation, wildlife habitat, grazing, cultivation, transportation, industry and housing. Techniques for using vegetation in dune protection projects are reviewed in Section Three. The Section begins with a discussion of problems associated with coastal dune systems, including sand supply and vegetation damage. Standard beach protection techniques are discussed next with specific reference to the way in which they affect vegetation and dune growth. The Section ends with