terranean Sea including the Alboran Sea, the Balearic Sea, the Ligurian-Provencal Basin, and the Tyrrhenian Sea. Part C, "Seasonal and Interannual Variability in the Surface and Deep Waters," contains four diverse chapters. The first chapter presents an analysis of historical satellite thermal data which reveals a general warming trend of 1.5 °C between 1982 and 1990. Within this warming trend, relatively short-lived cool events are identified which correspond with major El Niño events. This chapter is followed by a review of the variability in core properties of two main water masses, the Modified Atlantic Water (MAW) and the Levantine Intermediate Water (LIW). Data obtained over forty years show a definite increase in the LIW core temperature and salinity, which the authors suggest may be due to regional or global climatic changes or decreases in river runoff in the eastern Mediterranean. The third chapter focuses on the analysis of Coastal Zone Color Scanner satellite data through which the spatial and temporal scales of chlorophyll variability are examined, particularly in the Alboran Sea. The fourth chapter reviews the state of knowledge of deep water convection processes in the Northwestern Mediterranean which result primarily from winter-time heat loss from the cold, dry, continental winds, termed "Mistral." This chapter should be of considerable interest to any oceanographer concerned with deep water formation processes as no other area worldwide has been as intensively studied as the Gulf of Lions.

The final part of the book, entitled "Western Mediterranean Basin Dynamics," presents the results of modeling studies in four separate chapters. The first chapter presents results of the NRL n-layer primitive equation ocean circulation model which is used to systematically study the effects of various forcing mechanisms on circulation dynamics of the western Mediterranean. The second chapter discusses results of the Gher Three-Dimensional primitive equation model. The third chapter discusses the barotropic response of the Western Mediterranean Sea to observed atmospheric pressure using a space spectral representation of the shallow water equations for the entire Mediterranean Sea, including exchange through the Strait of Gibraltar. In the final chapter, the GFDL Modular Ocean Model is used to explore eddy–topography interaction.

In summary, this book provides an affordable comprehensive overview of circulation processes and recent physical oceanographic research in the Western Mediterranean Sea. Each chapter includes extensive literature lists. The quality of illustrations varies considerable from chapter to chapter but on the whole is above average.

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Coastal Lagoon Processes, B. Kjerfve (ed.), 1994. New York: Elsevier, Oceanography Series No. 60, 577p. $US 200. ISBN 0-444-88258-8.

"Coastal Lagoon Processes" is a collective work whose editor, Björn Kjerfve, is professor at the University of South Carolina. Most of the 25 authors come from the United States, Australia, Brazil or Mexico, and only 5 are from the United Kingdom, France, the Philippines and The Netherlands. These authors have different backgrounds: biologists, ecologists, geographers, geologists, oceanographers and engineers.

The book is very well edited and printed, and bound in a solid hard cover. It is composed of 19 chapters. The book is supplemented with an excellent thematic index and each chapter contains an abstract and up-to-date reference section. The chapters have an average of 29 pages and 10 illustrations.

After an introduction by B. Kjerfve in which coastal lagoons are defined, E.C.F. Bird describes their physical setting and geomorphology, in relation to geological, hydrological, climatological and ecological factors. L. Martin and J.M. Landim Dominguez focus on the geological history and evolution of lagoons and of the barrier island enclosing the lagoons in relation to sea-level rise or fall, tidal range, and shoreface dynamics. N.P. Smith presents a balance of water, salt and heat in comparison with estuaries. M.L. Spaulding reviews various strategies to model the circulation and pollutant transport for inlet-lagoon systems to assess management strategies. S.V. Smith and M.J. Atkinson present models for net mass balance approach to the analysis of coastal systems, including coastal lagoons, especially for site selection. M.M. Nichols and J.D. Boon III review sediment transport processes with historical development, general concepts, sources of sediments, sediments dynamics and distribution, and influence of climate and of sea-level change. L.

Drude de Lacerda studies biochemistry of heavy metals, especially sources, fate and cycling. B. Knoppers describes primary production with measurements, global production and producers, nutrient supply, sources and loss, regeneration, and finally phytoplankton, macrophytes and macroalgal. S. Alvarez Borrego describes secondary production with zooplankton, nekton, benthic secondary productivity and pelagic-benthic coupling. R.S.K. Barnes describes macro-faunal community structure with processes, recruitment and colonization, agents of mortality and their effects, competition and environmental adversity. A. Yanez Arancibia, A.L. Lara Dominguez and D. Pauly discuss fish habitats and species whereas D. Pauly and A. Yanez Arancibia describe lagoon fisheries, fish population dynamics (recruitment, growth, usable stock, capture or natural mortality) and management. D.J. MacIntosh discusses aquaculture practices especially shrimp, mollusk and seaweed cultures and socio-economic issues. M.A. Borowitzka reviews applications of biotechnologies for aquaculture, production of high value chemicals, environmental management, and waste treatment and environmental remediation. C. Hearn, R. Lukatelich and A.J. McComb explore the use of mathematical models of process and ecosystem function with the case of southwest Australia. A.L. Philomena explores the symbiosis between economy and ecology and presents "emergy" as a measure of quantity and quality of energy used to evaluate coastal lagoon resources with a case study in southern Brazil. Also, P. Bruun discusses a variety of engineering projects in coastal lagoons, such as water table management, dredging, land reclamation, managing with sea-level rise, water quality. Finally, H. Postma concludes on methodologies and problems of future research; the greatest problem is that each lagoon is an individual coastal system with its own characteristics and generalization of results to other systems is more difficult.

The book is not a colloquium proceedings but a multi-disciplinary synthesis which will certainly fill a void in the existing literature. Nevertheless, it is unfortunate that such an effort will be affordable only to libraries or specialists because of its very high price.

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