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Estuaries: a physical introduction

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Abstract

Estuaries is a comprehensive introductory text emphasizing the physical processes involved in the mixing of sea and river water and the transport of fine sediments within the complex estuarine topographic context. The theoretical and mathematical formulation of these processes are treated at a fairly elementary level, and are used to develop a foundation for more extensive study. The second edition retains the classical approaches to the tidally averaged circulation and mixing conditions but broadens them to consider recent advances in the understanding of processes occurring within the tide. The scope has also been widened to include more detail on the morphology of estuaries and their development, the fluxes of suspended fine sediments, and the generation and maintenance of turbidity maximum. The book provides an excellent introduction for research students in oceanography, environmental science, geography, geology, and water and coastal engineering. It will also be useful as a reference book for those working in water quality, morphological modelling and estuarine environmental management.

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The Yura Estuary has on average three floods during summer, this coincides with when phytoplankton is most productive in the river and indicates that the short temporal variations in the river discharge has important effects not only on the hydrodynamics, but also on the ecosystem in the estuary. Related Articles: Open Access. Articles. Code Switching in Sons and Lovers. Dimin Luo. DOI: 10.4236/als.2013.14010 6 453 Downloads 10 953 Views Citations. The word estuary is derived from the Latin word aestus which means tide, also the adjective aestuarium has tidal or abrupt high wave as a meaning, an environment highly dynamic with changes due to natural forces. This word is generally used to indicate the place where the river meets the sea, characterizing a coastal river discharge. 1. Estuaries: Origins and Types of Estuaries Physical Characteristics of Estuaries (Salinity, Substrate, Other Physical Factors) Estuaries as Ecosystem (Types of Communities, Feeding Interactions) Human Impact on Estuarine Communities. 2. http://www.earthgauge.net/wp-content/images/Estuaries_Low.jpg Estuaries are partially closed bodies of water where freshwater rivers and streams meet and mix with the salt water of the ocean. No other marine environments changes so rapidly in many ways as an estuary. Few species have adapted to estuarine conditions • LIVING IN AN ESTUARY. Estuaries are unique water systems; they are the interface between fresh river water and saline coastal water. They have a high biological productivity, and are generally situated in densely... Dyer KR (1973) Estuaries: a physical introduction. John Wiley & Sons, London, 140 ppGoogle Scholar. Dyer KR (1977) Lateral circulation effects in estuaries. Estuaries: A Physical Introduction 2nd Edition. by Keith R. Dyer (Author). 4.6 out of 5 stars 5 ratings. Estuaries is a comprehensive introductory text emphasizing the physical processes involved in the mixing of sea and river water and the transport of fine sediments within the complex estuarine topographic context. The theoretical and mathematical formulation of these processes are treated at a fairly elementary level, and are used to develop a foundation for more extensive study. The second edition retains the classical approaches to the tidally averaged circulation and mixing conditions but broadens them to consider recent advances in the understanding of processes occurring within the tide.