

1. Record Nr.	UNINA9910299427803321
Titolo	Broad Scale Coastal Simulation : New Techniques to Understand and Manage Shorelines in the Third Millennium // edited by Robert J. Nicholls, Richard J. Dawson, Sophie A. Day (née Nicholson-Cole)
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2015
ISBN	94-007-5258-X
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (414 p.)
Collana	Advances in Global Change Research, , 1574-0919
Disciplina	333.917
Soggetti	Climatic changes Civil engineering Coasts Computers Geography Regional planning City planning Climate Change Civil Engineering Coastal Sciences Models and Principles Geography, general Landscape/Regional and Urban Planning
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Contents -- 1. The Challenge for Coastal Management During the Third Millennium -- 2. Climate Downscaling: Local Mean Sea-Level, Surge and Wave Modelling -- 3. Broad-Scale Hydrodynamic Simulation, Wave Transformation and Sediment Pathways -- 4. Land Use Dynamics and Coastal Management -- 5. Evaluating Broad-Scale Morphological Change in the Coastal Zone Using a Logic Based Behavioural Systems Approach -- 6. Coastal Wetland Habitats: Future Challenges and Potential Solutions -- 7. Simulating the Shore and Cliffs of North

Norfolk -- 8. Broad Scale Coastal Inundation Modeling -- 9. Broad Scale Flood and Erosion Risk Analysis -- 10. Visualising Potential Coastal Change: Communicating Results Using Visualisation Techniques -- 11. The Coastal Simulator Interface: Integration and Application -- 12. Many Stakeholders, Multiple Perspectives: Long-Term Planning for a Future Coast -- 13. Living With Uncertainty: Difficult Choices for Coastal Management in the UK During the Third Millennium -- 14. Generic Lessons for Coastal Management in the Third Millennium -- Index.

Sommario/riassunto

This volume details research underpinning the 'Coastal Simulator' developed by the Tyndall Centre for Climate Change Research. The Simulator provides a framework to analyze long term coastal evolution taking account of all the relevant factors. These include the uncertain future climate and other conditions, such as land use change and allows evaluation of diverse management responses. Coastal zones exemplify the environmental pressures we face: their beauty attracts settlement, they offer potential for diverse economic activities, and they are sensitive natural habitats for important species, as well as providing a range of ecosystem services. They are also extremely vulnerable to the vicissitudes of climate change, which include rising sea levels and changes in extreme events such as storms. With large populations living in coastal and estuarine cities facing the ongoing threat of inundation, coordinated management is essential, especially as coastal zones form a linked system in which piecemeal, uncoordinated management could be counterproductive. The Simulator's current detailed application to the Norfolk coast goes from global climate modelling and broad socio-economic change to the details of evolving coastal habitats, coastal erosion and coastal flood risk and their societal implications. This framework reflects the work of a multi-disciplinary team of key players who analysed these diverse factors in a coherent and integrated manner. The book offers a compelling synthesis of the lessons learned so far at national and international levels, drawing on the expertise of policy makers as well as respected figures in the field.
