

# Contents

## Part I Remote Sensing, Mapping and Survey of Coastal Biophysical Environments

<b>1</b>	<b>Remote Sensing of Coastal Ecosystems and Environments . . . . .</b>	<b>3</b>
	Victor V. Klemas	
<b>2</b>	<b>Advanced Techniques for Mapping Biophysical Environments on Carbonate Banks Using Laser Airborne Depth Sounding (LADS) and IKONOS Satellite Imagery . . . . .</b>	<b>31</b>
	Charles W. Finkl, Christopher Makowski, and Heather Vollmer	
<b>3</b>	<b>Terrestrial Laser Scanner Surveying in Coastal Settings . . . . .</b>	<b>65</b>
	Michael A. O’Neal	
<b>4</b>	<b>Advances in Applied Remote Sensing to Coastal Environments Using Free Satellite Imagery . . . . .</b>	<b>77</b>
	Cristina Lira and Rui Taborda	
<b>5</b>	<b>Remote Sensing and Modeling of Coral Reef Resilience . . . . .</b>	<b>103</b>
	Anders Knudby, Simon J. Pittman, Joseph Maina, and Gwilym Rowlands	
<b>6</b>	<b>An Assessment of Physiographic Habitats, Geomorphology and Evolution of Chilika Lagoon (Odisha, India) Using Geospatial Technology . . . . .</b>	<b>135</b>
	Ashis Kr. Paul, Sk. Majharul Islam, and Subrata Jana	
<b>7</b>	<b>Foreshore Applications of X-Band Radar . . . . .</b>	<b>161</b>
	G.M. Jahid Hasan and Satoshi Takewaka	

## Part II Advances in the Study and Interpretation of Coastal Oceans, Estuaries, Sea-Level Variation, and Water Quality

<b>8</b>	<b>Digital Ocean Technological Advances . . . . .</b>	<b>195</b>
	Xin Zhang, Xiaoyi Jiang, Suixiang Shi, and Tianhe Chi	

**9 A New Statistical-Empirical Hybrid Based Model to Estimate Seasonal Sea-Level Variation in the Gulf of Paria from River Discharge . . . . . 215**  
Carol Subrath-Ali

**10 Advances in Modeling of Water Quality in Estuaries . . . . . 237**  
Isabella Ascione Kenov, Francisco Campuzano,  
Guilherme Franz, Rodrigo Fernandes, Claudia Viegas,  
João Sobrinho, Hilda de Pablo, Andreia Amaral,  
Ligia Pinto, Marcos Mateus, and Ramiro Neves

**11 Advances in Video Monitoring of the Beach and Nearshore: The Long-Term Perspective . . . . . 277**  
Ana Nobre Silva and Rui Taborda

**12 Application of Advanced Remote Sensing Techniques to Improve Modeling Estuary Water Quality . . . . . 295**  
A.K.M. Azad Hossain, Yafei Jia, Xiaobo Chao, and Mustafa Altinakar

**Part III Advances in Coastal Modeling Using Field Data, Remote Sensing, GIS, and Numerical Simulations**

**13 Developments in Salt Marsh Topography Analysis Using Airborne Infrared Photography . . . . . 317**  
Francisco Andrade, Jackson Blanton, M. Adelaide Ferreira,  
and Julie Amft

**14 Examining Material Transport in Dynamic Coastal Environments: An Integrated Approach Using Field Data, Remote Sensing and Numerical Modeling . . . . . 333**  
Richard L. Miller, Ramón López, Ryan P. Mulligan, Robert E. Reed,  
Cheng-Chien Liu, Christopher J. Buonassissi, and Matthew M. Brown

**15 Simulation Management Systems Developed by the Northern Gulf Coastal Hazards Collaboratory (NG-CHC): An Overview of Cyberinfrastructure to Support the Coastal Modeling Community in the Gulf of Mexico . . . . . 365**  
Robert R. Twilley, Steve Brandt, Darlene Breaux, John Cartwright,  
Jim Chen, Greg Easson, Patrick Fitzpatrick, Kenneth Fridley,  
Sara Graves, Sandra Harper, Carola Kaiser, Alexander Maestre,  
Manil Maskey, William H. McAnally, John McCorquodale,  
Ehab Meselhe, Tina Miller-Way, Kyeong Park, Joao Pereira,  
Thomas Richardson, Jian Tao, Amelia Ward, Jerry Wiggert,  
and Derek Williamson

**16 Advancement of Technology for Detecting Shoreline Changes in East Coast of India and Comparison with Prototype Behavior . . . . . 395**  
Ramasamy Manivanan

**17 Advances in Remote Sensing of Coastal Wetlands: LiDAR, SAR, and Object-Oriented Case Studies from North Carolina . . . . . 405**  
Thomas R. Allen

**Part IV Advances in the Management of Coastal Resources Using Remote Sensing Data and GIS**

**18 Numerical Modelling and Satellite Remote Sensing as Tools for Research and Management of Marine Fishery Resources . . . . . 431**  
Grinson George

**19 Identifying Suitable Sites of Shrimp Culture in Southwest Bangladesh Using GIS and Remote Sensing Data . . . . . 453**  
Shak Md. Bazlur Rahaman, Khandaker Anisul Huq, and Md. Mujibor Rahman

**20 A Multi-criteria Approach for Erosion Risk Assessment Using a New Concept of Spatial Unit Analysis, Wave Model and High Resolution DEMs . . . . . 481**  
Helena Granja, José Pinho, and João Mendes

**Index . . . . . 495**



<http://www.springer.com/978-3-319-06325-6>

Remote Sensing and Modeling

Advances in Coastal and Marine Resources

Finkl, C.W.; Makowski, C. (Eds.)

2014, XX, 502 p. 208 illus., 151 illus. in color.,

Hardcover

ISBN: 978-3-319-06325-6