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| Nota di contenuto | Responding to Changes in Sea Level -- Copyright -- Preface -- Contents -- Executive Summary -- CONCLUSIONS AND RECOMMENDATIONS -- Conclusions -- Recommendations -- 1 Relative Mean Sea Level -- PAST CHANCES IN RELATIVE MEAN SEA LEVEL -- Geologic Record of Sea Level -- Sea Level Rise in the Twentieth Century -- Range of Sea Level Estimates Available -- METHODS OF OBSERVING RELATIVE MEAN SEA LEVEL -- Two Examples -- 2 Assessment of Changes in Relative Mean Sea Level -- ESTIMATES OF FUTURE MEAN SEA LEVEL RISE -- SCENARIOS USED IN THIS REPORT -- 3 Relative Sea Level Rise Effects And Responses -- 4 Affected Hydrodynamic Processes -- STORM SURGE -- TIDAL RANGES AND CURRENTS -- WAVES -- Case A -- Case B -- 5 Effects of Sea Level Rise in the Coastal Zone -- SANDY COASTLINES -- Geologic Indicators -- Historical Records -- Techniques of Projecting Shoreline Retreat Due to Sea Level |

Rise -- Historical Trend Analysis -- The Bruun Rule -- Sediment Budget Approach -- Dynamic Equilibrium Model -- BLUFF AND CLIFF RETREAT -- TIDAL INLETS -- WETLANDS -- Back-Barrier Marshes -- Estuarine (Brackish) Marshes -- Tidal Freshwater Marshes -- Processes of Marsh Loss with Sea Level Rise -- Human-Induced Changes -- Prospects for Wetlands -- 6 Alternative Responses -- COASTAL STRUCTURES AND PROTECTIVE TECHNIQUES -- Groins -- Bulkheads and Sea Walls -- Revetments -- Beach Nourishment -- Method I -- Method II -- Beach Nourishment with Groins -- Perched Beach -- Offshore Breakwaters -- Storm Surge Barriers -- Other Devices -- Engineering Case Studies -- Galveston, Texas -- The Netherlands -- Miami Beach, Florida -- Harrison County, Mississippi -- Tybee Island, Georgia -- Terminal Island, California -- RETREAT -- Mechanism of Retreat -- Engineering, Geologic, and Economic Considerations -- CONTROLLING THE RATE OF SEA LEVEL RISE.

7 Assessment of Response Strategies for Specific Facilities and Systems -- AIRPORTS -- LEVEES -- Existing Levees -- New Levees -- SEDIMENTATION OF SEAPORTS AND HARBORS, NAVIGATION CHANNELS, TURNING BASINS, AND DOCKING AREAS -- BREAKWATERS, SEA WALLS, AND JETTIES -- NAVIGATION GATES -- PIERS AND WHARVES -- DRY DOCKS AND WET DOCKS -- HIGHWAYS, RAILROADS, BRIDGES, AND VEHICULAR TUNNELS -- COMMERCIAL AND INDUSTRIAL BUILDINGS -- POWER PLANTS -- PIPELINES -- FLOODING AND STORM DRAINS -- HOTELS AND MALLS -- RESIDENTIAL CENTERS -- WATER SUPPLY SYSTEMS -- Perched Fresh Water -- Aquifers -- Freshwater Intakes from Upstream Regions of Estuaries -- LANDFILLS AND WASTE DISPOSAL SITES -- OFFSHORE PLATFORMS AND ARTIFICIAL ISLANDS -- 8 Decisions for the Future -- STRATEGIC DECISIONS -- Economic Factors -- Long-Term Costs -- Design Life Versus Remedial Measures -- Social Factors -- Degree of Risk from Sea Level Rise -- Maintenance Capability -- ENVIRONMENTAL FACTORS -- Geological/Geographical Factors -- NATIONAL POLICY DECISIONS -- Coping with these trends will require -- 9 Conclusions and Recommendations -- CONCLUSIONS -- RECOMMENDATIONS -- References -- Appendix A Summary of Committee Expertise -- Appendix B Acknowledgments -- Index.

Sommario/riassunto

Over the last 100 years, sea level has risen approximately 12 centimeters and is expected to continue rising at an even faster rate. This situation has serious implications for human activity along our coasts. In this book, geological and coastal engineering experts examine recent sea level trends and project changes over the next 100 years, anticipating shoreline response to changing sea level and the consequences for coastal development and uses. Scenarios for future sea level rise and several case studies are presented.
