COASTAL SEDIMENTS '07

VOLUME ONE

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May 13–17, 2007
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Top: East Island, Isle Dernieres, Louisiana, October 20, 1990. Bottom: Belle Pass and Port of Fouchon, Louisiana, November 3, 1989. *Images Courtesy USGS*

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Foreword

The COASTAL SEDIMENTS '07 conference was organized as a technical specialty conference devoted to the physical aspects of sediment processes and morphology change in the coastal and inlet environment. Following previous conferences in the Coastal Sediments series that were held in 1977, 1987, 1991, 1999, and 2003, COASTAL SEDIMENTS'07 celebrated 30 years of the Coastal Sediments series and promoted exchange of information and views among specialists in the fields of coastal engineering, geology, oceanography, and related disciplines. The theme of COASTAL SEDIMENTS '07 was "Coastal Engineering and Science in Cascading Spatial and Temporal Scales," which established the trend of thinking and approach of the conference, as well as determined in part the composition of the papers that were presented. This theme was chosen to stimulate research devoted to the various scales of processes and their interactions at which coastal engineers and scientists must work in developing knowledge and capabilities to assist society in managing the coast under present and future conditions. Emphasis was on papers that recognize and relate to coastal morphology change of long-term consequence.

The COASTAL SEDIMENTS '07 conference returned to the site of the 1987 conference, New Orleans, Louisiana, because of the extraordinary morphologic change along the coasts of Louisiana, Mississippi, and Texas, caused by Hurricanes Katrina and Rita that struck in August and September, respectively, of 2005. In addition to the recent hurricanes, this coast is experiencing long-term natural and anthropogenic change including rapid and differential subsidence, severe reduction in renewable sediment supply, deltaic adjustment of fine-grained material, and oil and gas exploration and extraction. The theme is intended to generate papers and discussion of coastal sediment processes from the micro-scale to the regional scale at which integrated coastal design and management must be accomplished. Participants were given an overview of recent hurricane damage within the context of the long-term morphologic change in Louisiana in the Keynote Address delivered by Mr. James R. (Randy) Hanchey, Deputy Secretary of the Louisiana Department of Natural Resources.

Professor Leo van Rijn of Delft Hydraulics and the University of Utrecht, The Netherlands, accepted the 2007 Coastal Award at the Conference Awards Luncheon on May 16th. Starting in 2001, the Coastal Award has been presented every 2 years alternately at the Coastal Dynamics conference and the Coastal Sediments conference through coordination between the organizing committees of these two technical specialty conferences. The Organizing Committee of Coastal Sediments '07 joins conference participants and the extended research community in celebrating Professor van Rijn's research contributions that have greatly influenced engineers and geologists working in the areas of coastal sediment transport and morphology change.

These *Proceedings* volumes are the permanent record of the conference, containing the latest thinking and progress of the world's leading scientists and

engineers in the areas of coastal sediment transport and morphology change. The contents are a valuable source of information on coastal sediment and morphology processes ranging from basic research to case studies and lessons learned. The papers contained herein provide the most recent results and ideas in a wide range of approaches and viewpoints not assembled elsewhere in both quality and breadth. The *Proceedings* were produced in hard copy in two volumes in black and white and also provided to conference participants as a CD ROM with searchable index of PDF files in color. All papers are available to the public in PDF format via the ASCE Research Library at www.ascelibrary.org.

Three-hundred fifty abstracts were submitted to the Conference Steering Committee. On average, each abstract received five reviews, and 225 submissions were invited for development into full papers and presentation over 3 days of technical sessions. The 197 papers appearing in these Proceedings originated from approximately 24 countries, demonstrating the international scope of COASTAL SEDIMENTS '07. Each paper included in these *Proceedings* received positive peer review. Each paper is eligible for discussion in the *Journal of Waterway, Port, Coastal and Ocean Engineering* and can be nominated for ASCE awards.

The Steering Committee of COASTAL SEDIMENTS '07 gratefully acknowledges the assistance of many individuals, both known and anonymous, in the 2 years of preparations by an all-volunteer committee. Numerous individuals assisted the Steering Committee in review of abstracts and final papers. The efforts of the following persons are acknowledged: Matthew Arsenault, U.S. Geological Survey (USGS); Mark Byrnes, Applied Coastal Research and Engineering, Inc.; Duncan FitzGerald, Boston University; Guy Gelfenbaum, USGS; Cheryl Hapke, USGS; John Headland, Moffatt & Nichol; Todd Holland, Naval Research Laboratory; Peter Howd, USGS; Bruce Jaffe, USGS; Magnus Larson, University of Lund; Jeffrey List, USGS; Randy Parkinson, Coastal and Environmental Geological Consulting; Robert Morton, USGS; James O'Connell, Woods Hole Oceanographic Institution; Lisa Robbins, USGS; Vladimir Shepsis, Coast and Harbor Engineering; Donald Stauble, U.S. Army Corps of Engineers; Marcel Stive, Delft Hydraulics; Hilary Stockdon; USGS; and Curt Storlazzi, USGS.

We also thank the session moderators for agreeing to lend their time and experience to run the conference smoothly and productively. We are indebted to the tour leaders and their organizations for arranging and conducting memorable and stimulating technical trips. The "Geology of the Louisiana Coastal Zone: Implications for Coastal Management and Restoration" tour was led by Mark Kulp, University of New Orleans (UNO); Mike Miner, UNO; Duncan FitzGerald, Boston University; and Ioannis Giorgiou, UNO. The "Wax Lake-Atchafalaya Delta Complex Sedimentation, Stratigraphy" tour was led by Harry Roberts, Louisiana State University. Finally, we thank Lucy King of ASCE for assisting and often leading in conference logistics; Donna Dickert of ASCE for accurately producing the Proceedings; and Lesa Rair and Chris Hanson of COPRI for assisting with conference arrangements, including exhibitors and sponsors.

We also would like to thank our exhibitors and sponsors for Coastal Sediments 2007 for their support:

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To everyone who participated, we thank you for contributing to this remarkable conference that is precious to all of us.

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