

Mark R. Byrnes, Ph.D.

Principal Coastal Scientist, Applied Coastal Research and Engineering, Inc.

Areas of Expertise

- Coastal change assessment
- Coastal and nearshore sediment transport
- Processes affecting land loss in coastal and estuarine environments
- Offshore sand resource evaluations
- Physical environmental impact assessments for coastal environments
- Impact of coastal structures on shoreline response
- GIS/mapping for coastal environments
- Numerical modeling of wave transformation and shoreline change

Education

1988 Ph.D., Oceanography, Old Dominion University

1978 B.A., Earth Science, Millersville University

Experience

Dr. Byrnes is a Principal Coastal Scientist at Applied Coastal Research and Engineering, Inc. (Applied Coastal). For the past 20 years, he has been a Principal Investigator/Program Manager on more than 60 coastal and nearshore process studies as a Research Scientist at the U.S. Army Engineer Research and Development Center, Coastal and Hydraulics Laboratory (formerly the Coastal Engineering Research Center); Coastal Geology Section Chief for the Louisiana Geological Survey; Research Professor at the Coastal Studies Institute, Louisiana State University; Senior Coastal Scientist at Aubrey Consulting, Inc.; and Principal Coastal Scientist at Applied Coastal. The emphasis for most studies has been on regional coastal change and geomorphic evolution of nearshore sedimentary deposits (shoreline and bathymetric change), physical environmental impact assessments for coastal and estuarine environments, wave transformation and sediment transport, offshore sand resource assessments, sediment budget evaluations, shoreline restoration strategies, wetland loss delineation and classification, and geologic framework of coastal deposits. He has authored more than 90 publications in these research areas.

Over the past 20 years, Dr. Byrnes has been responsible for managing and conducting numerous projects focused on coastal sedimentation processes and regional response of beaches, inlets, and estuaries to incident wave and current processes. Projects include Channel Dredging Impacts on Shoreline Response at and Adjacent to Main Pass, Mobile Bay Entrance, Alabama; Quantifying Regional Sediment Dynamics in Nearshore Environments: Historical Sediment Pathways, Lateral Inlet and Island Migration, and Detailed Sediment Budgets; Environmental Survey of Identified Sand Resource Sites Offshore Alabama, Central East Florida, North Carolina, New Jersey, and New York; Study of the Environmental Impacts of Offshore Sand Mining in Massachusetts Bay; Physical Environmental Impacts of Pipeline Construction and Operation for the Mardi Gras Pipeline, Barataria Basin, Louisiana; Rockefeller Refuge Gulf Shoreline Stabilization: Coastal Geology and Processes Analyses; Assessment of Beach Response to a Segmented Breakwater System: Southwest Louisiana Coast; Sediment Budget Evaluation Using Historical Shoreline and Beach Profile Data: Western Town Line to Horton Point, Southold, NY; Feasibility of Barrier Shoreline Restoration in Coastal Louisiana-Coastal Geology, Geomorphology, and Physical Processes; Coastal Change Assessment for Brevard County, FL; Numerical Modeling Evaluation of the Cumulative Physical Effects of Offshore Sand Dredging for Beach Nourishment; Shoreline Change Assessment: Satellite Beach to Fort Pierce Inlet, Florida; Sediment Bypassing at

Structured Entrances and Geomorphic Change Modeling; Inlet Sediment Transport Patterns at Grays Harbor, WA and Development of an Entrance Sediment Budget; Regional Analysis of Sediment Transport and Dredged Material Disposal Patterns, Columbia River Mouth, Washington/Oregon, and Adjacent Shores; Inlets Online: A Tutorial of Interpreting Aerial Photography for the Analysis of Sediment Transport Patterns and Geomorphic Change at Entrances; and Geographic Information System Development for Evaluating Sediment Transport Patterns at Inlets and Adjacent Environments: Data Capture, Analysis, and Management. GIS/mapping tools and numerical modeling are integral components of the strategy used to address project objectives. State-of-knowledge compilation and analysis techniques form the basis for providing innovative strategies for addressing complex coastal environmental issues.

Coastal Change Assessment

Since 1990, Dr. Byrnes has contracted with Federal agencies such as the U.S. Army Corps of Engineers (USACE), the U.S. Geological Survey (USGS), and the Federal Emergency Management Agency (FEMA) to develop state-of-science methods for compiling and analyzing historical hydrographic and shoreline surveys for quantifying change in the coastal zone. Detailed procedures were developed for compiling historical map data, where conversion from various cartographic parameters to a common coordinate system, map projection, ellipsoid, and datum are critical for accurately assessing change and associated potential measurement uncertainties. These data represent the most basic and useful information for evaluating local and regional sediment transport dynamics and their influence on coastal evolution. The USGS and MMS use hydrographic and shoreline surveys for basic and applied scientific research on sediment transport dynamics in the coastal zone. USACE uses shoreline data for calibrating numerical shoreline change models and for developing coastal structure design criteria. FEMA uses these data for determining setback criteria for coastal construction. Hydrographic surveys are used to quantify channel shoaling rates and supply bathymetric data for developing regional circulation and sediment transport numerical modeling grids. Dr. Byrnes also has applied these techniques in wetland environments for evaluating the impact pipelines have on wetland loss, including scour associated with pipeline landfall from offshore sites. Recently, Dr. Byrnes has applied these procedures for developing coastal change data sets in support of litigation, for which he has served as an expert witness.

Offshore Sand Resource Evaluations

Over the past 16 years, Dr. Byrnes has conducted offshore sand resource evaluations for determining the sedimentary characteristics of deposits and the associated potential environmental issues concerning sand mining on the Continental Shelf. The geographic extent of these studies ranges from coastal Louisiana to offshore Massachusetts. Dr. Byrnes' primary interest is with the geological development of offshore shoals and the physical environmental effects of dredging activities in altering fluid and sediment transport patterns at potential borrow sites and along shorelines landward of resource areas. Analyses rely on comparison of NOAA historical bathymetry and shoreline data sets and numerical modeling of wave transformation over variable bathymetry. Analysis results supply information for policy decisions regarding potential dredging effects and for development of impact reports required under the National Environmental Policy Act in support of potential lease agreements.

Channel and Shoal Dynamics at Inlets

Since 1992, Dr. Byrnes has compiled and analyzed site-specific and regional bathymetric surveys to document the evolution of channels and shoals at entrances relative to navigation safety and environmental concerns. Many studies were funded under the USACE Inlets Research Program to address shoal migration and sedimentation processes in navigation channels and environmental considerations associated with maintenance dredging activities. Because

sedimentation patterns and rates of change were determined by comparing sequential bathymetric and shoreline surveys, detailed procedures were developed for compiling and analyzing data sets and associated potential measurement uncertainties. Net sediment volume changes were quantified to develop inlet sediment budgets for predicting long-term system response to engineering activities.

Impact of Coastal Structures on Shoreline Change

Since 1984, Dr. Byrnes has evaluated the impact of coastal structures on sediment transport dynamics and coastal evolution throughout the U.S. He has been principal investigator on several studies assessing the influence of navigation and shore protection structures on beach response, including an evaluation of beach change to construction of 85 segmented breakwaters offshore southwestern Louisiana and an assessment of downdrift beach evolution in response to jetty construction at St. Marys Entrance, GA/FL; Grays Harbor and Columbia River, WA; Port Canaveral and Sebastian Inlet, FL; and Mattituck and Goldsmith Inlets, Southold, NY. All projects relied on the application of GIS/mapping tools for accurate compilation and analysis of data sets. Presently, he is evaluating the physical environmental impacts of offshore sand dredging and beach replenishment (soft structure) on coastal and nearshore sediment transport patterns for the U.S. Mineral Management Service.

Geologic Framework Evaluation

In a number of regional projects, Dr. Byrnes has conducted studies on the geologic evolution of coastal environments. These deposits represent the framework upon which modern coastal change is occurring. As such, he has devoted substantial time understanding the geological factors contributing to the evolution of nearshore, barrier beach, and estuarine deposits. Sediment dynamics at the land-sea boundary exerts substantial influence on the placement of structures relative to erosion trends. Dr. Byrnes has conducted most of these studies with the U.S. Geological Survey and the U.S. Army Corps of Engineers.

Professional Societies

- Coastal Education and Research Foundation (CERF)
- American Geophysical Union (AGU)
- Society for Sedimentary Geology (SEPM)
- Geological Society of America (GSA)
- Sigma Xi - The Scientific Research Society
- Phi Kappa Phi

Professional Committees

- Editorial Board, Geo-Marine Letters, 1993-2004
- Editorial Board, Marine Models Online, 1996-1999
- Associate Editor, Gulf of Mexico Science, 1996-1999
- Gulf Coast Section SEPM Editor for Gulf Coast Association Geological Societies Conference, 1995
- Technical Study Advisor for Coastal Wetland Planning, Protection, and Restoration Act (CWPPRA): Louisiana Barrier Shoreline Study, Louisiana Department of Natural Resources, October 1994 to March 1995
- Public Policy Committee, Southeast GSA, 1991-1994
- Workshop on the Future Needs of Users for Nautical Information, Working Group 3: Database Issues/Nautical Charts and Marine GIS, National Research Council, 1993

Refereed Publications

Byrnes, M.R., R.M. Hammer, and T.D. Thibaut, 2004. Physical and biological effects of sand mining offshore Alabama. *Journal of Coastal Research*, 20(1): 6-24.

Byrnes, M.R., R.M. Hammer, and T.D. Thibaut, 2004. Effects of sand mining on physical processes and biological communities offshore New Jersey. *Journal of Coastal Research*, 20(1): 25-43.

Kelley, S.W., J.S. Ramsey, and M.R. Byrnes, 2004. Evaluating the physical effects of offshore sand dredging for beach nourishment. *Journal of Coastal Research*, 20(1): 89-100.

Drucker, B.S., W. Waskes, and M.R. Byrnes, 2004. The U.S. Minerals Management Service Outer Continental Shelf Sand and Gravel Program: environmental studies to assess the potential effects of offshore dredging operations in Federal waters. *Journal of Coastal Research*, 20(1): 1-5.

Byrnes, M.R., M. Crowell, and C. Fowler, 2003. Preface. In: Byrnes, M.R., M. Crowell, and C. Fowler (editors), *Shoreline Mapping and Change Analysis: Technical Considerations and Management Implications*. *Journal of Coastal Research*, Special Issue 38, pp. 1-4.

Taylor, M.J., R.A. McBride, L.C. Anderson, and M.R. Byrnes, 2002. Building on the research of our founders: 65 years of chenier plain studies at Louisiana State University. In: M.K. Steinberg and P.F. Hudson (editors), *Cultural and Physical Expositions: Geographic Studies in the Southern United States and Latin America*. *Geoscience and Man Series*, Volume 36, Louisiana State University Press, Baton Rouge, LA, pp. 261-276.

Byrnes, M.R. and N.C. Kraus, 1999. Regional sediment transport patterns adjacent to Canaveral Harbor, Florida. In: N.C. Kraus and W.G. McDougal (editors), *Coastal Sediments '99*, American Society of Civil Engineers, New York, NY, pp. 750-760.

Underwood, S.G., R. Chen, G.W. Stone, X. Zhang, M.R. Byrnes, and R.A. McBride, 1999. Beach response to a segmented breakwater system, southwest Louisiana, U.S.A. In: N.C. Kraus and W.G. McDougal (editors), *Coastal Sediments '99*, American Society of Civil Engineers, New York, NY, pp. 2042-2056.

Anderson, L.C., R.A. McBride, M.J. Taylor, and M.R. Byrnes, 1998. Late Holocene record of community replacement preserved in time-averaged Molluscan assemblages, Louisiana Chenier Plain. *Palaios*, 13: 488-499.

McBride, R.A. and M.R. Byrnes, 1997. Regional variations in shore response along barrier island systems of the Mississippi River delta: historical change and future prediction. *Journal of Coastal Research*, 13(3): 628-655.

Anderson, L.C., B.K. Sen Gupta, R.A. McBride, and M.R. Byrnes, 1997. Reduced seasonality of Holocene climate and pervasive mixing of Holocene marine section: northeastern Gulf of Mexico shelf. *Geology*, 25(2): 127-130.

Byrnes, M.R. and M.W. Hiland, 1995. Large-scale sediment transport patterns on the continental shelf and influence on shoreline response: St. Andrew Sound, Georgia to Nassau Sound, Florida, U.S.A. In: J.H. List and J.H.J. Terwindt (editors), *Large-Scale Coastal Behavior*. *Marine Geology*, 126: 19-43.

McBride, R.A., M.R. Byrnes, and M.W. Hiland, 1995. Geomorphic response-type model for barrier coastlines: a regional perspective. In: J.H. List and J.H.J. Terwindt (editors), *Large-Scale Coastal Behavior*. *Marine Geology*, 126: 143-159.

Byrnes, M.R., R.A. McBride, Q. Tao, and L. Duvic, 1995. Historical shoreline dynamics along the Chenier Plain of southwestern Louisiana. *Gulf Coast Association Geological Societies Transactions*, 45: 113-122.

- Anderson, L.C., M.R. Byrnes, and R.A. McBride, 1995. Paleoenvironmental and taphonomic evidence of diverse bioclast sources for southwester Louisiana Cheniers. *Gulf Coast Association Geological Societies Transactions*, 45: 21-30.
- McBride, R.A. and M.R. Byrnes, 1995. Surficial sediments and morphology of the southwestern Alabama/Florida Panhandle shelf. *Gulf Coast Association Geological Societies Transactions*, 45: 393-404.
- McBride, R.A. and M.R. Byrnes, 1995. A megascale systems approach for shoreline change analysis and coastal management along the northern Gulf of Mexico. *Gulf Coast Association Geological Societies Transactions*, 45: 405-414 (2nd Place, Best Paper Award, GCS-SEPM).
- Taylor, M.J., M.R. Byrnes, and R.A. McBride, 1995. Sediment texture and composition changes along the southwest Louisiana coast: implications to sediment supply. *Gulf Coast Association Geological Societies Transactions*, 45: 557-564.
- Zenero, R.R., D.L. Seng, M.R. Byrnes, and R.A. McBride, 1995. Geophysical techniques for evaluating the internal structure of cheniers, southwestern Louisiana. *Gulf Coast Association Geological Societies Transactions*, 45: 611-620 (1st Place, Best Paper Award, GCAGS).
- Byrnes, M.R. and M.W. Hiland, 1994. Shoreline position and nearshore bathymetric change (Chapter 3). In: N.C. Kraus, L.T. Gorman, and J. Pope (editors), *Kings Bay Coastal and Estuarine Monitoring and Evaluation Program: Coastal Studies*. Technical Report CERC-94-09, Coastal Engineering Research Center, Vicksburg, MS, p. 61-143.
- Byrnes, M.R. and M.W. Hiland, 1994. Compilation and analysis of shoreline and bathymetry data (Appendix B). In: N.C. Kraus, L.T. Gorman, and J. Pope (editors), *Kings Bay Coastal and Estuarine Monitoring and Evaluation Program: Coastal Studies*. Technical Report CERC-94-09, Coastal Engineering Research Center, Vicksburg, MS, p. B1-B90.
- Kraus, N.C. and M.R. Byrnes, 1994. Conclusions. In: N.C. Kraus, L.T. Gorman, and J. Pope (editors), *Kings Bay Coastal and Estuarine Monitoring and Evaluation Program: Coastal Studies*. Technical Report CERC-94-09, Coastal Engineering Research Center, Vicksburg, MS, p. 261-268.
- Byrnes, M.R. and M.W. Hiland, 1993. Regional seafloor changes near St. Marys Entrance, Georgia/Florida and their influence on shoreline response. In: List, J.H. (editor), *Large-Scale Coastal Behavior '93, Research Conference Proceedings, U.S. Geological Survey Open File Report 93-381*, p. 17-20.
- McBride, R.A. and M.R. Byrnes, 1993. Shoreline response types along barrier coastlines: a regional perspective. In: List, J.H. (editor), *Large-Scale Coastal Behavior '93, Research Conference Proceedings, U.S. Geological Survey Open File Report 93-381*, p. 119-122.
- Stable, D.K., S.G. Underwood, M.R. Byrnes, and M.W. Hiland, 1993. Regional impacts of inlet engineering and beach replenishment at Fenwick and Assateague Islands, Maryland. In: List, J.H. (editor), *Large-Scale Coastal Behavior '93, Research Conference Proceedings, U.S. Geological Survey Open File Report 93-381*, p. 185-188.
- Byrnes, M.R., R.A. McBride, S. Penland, M.W. Hiland, and K.A. Westphal, 1991. Historical changes in shoreline position along the Mississippi Sound barrier islands. In: *Coastal Depositional Systems in the Gulf of Mexico: Quaternary Framework and Environmental Issues, GCS-SEPM 12th Annual Research Conference*, pp. 43-55.
- Byrnes, M.R., S. Penland, K.E. Ramsey, T.G. Crawford, R.F. Kelly, and J. Rowland, 1991. Offshore sand resources for coastal erosion in Louisiana: physical environmental considerations and economic feasibility. *MTS '91 Proceedings, Marine Technology Society, Washington, D.C.*, pp. 755-761.

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Hansen, M. and M.R. Byrnes, 1991. Development of optimum beach fill design cross section. In: N.C. Kraus, K.J. Gingerich, and D.L. Kriebel (editors), Coastal Sediments '91, American Society of Civil Engineers, New York, NY, pp. 2067-2080.

McBride, R.A., M.R. Byrnes, S. Penland, D.L. Pope, and J.L. Kindinger, 1991. Geomorphic history, geologic framework, and hard mineral resources of the Petit Bois Pass area, Mississippi-Alabama. In: Coastal Depositional Systems in the Gulf of Mexico: Quaternary Framework and Environmental Issues, GCS-SEPM 12th Annual Research Conference, pp. 116-127.

McBride, R.A., M.W. Hiland, S. Penland, S.J. Williams, M.R. Byrnes, K.A. Westphal, B. Jaffe, and A.H. Sallenger, Jr., 1991. Mapping barrier island changes in Louisiana: Techniques, Accuracy, and Results. In: N.C. Kraus, K.J. Gingerich, and D.L. Kriebel (editors), Coastal Sediments '91, American Society of Civil Engineers, New York, NY, pp. 1011-1026.

McBride, R.A., D.W. Davis, F.W. Jones, M.R. Byrnes, D. Braud, M.W. Hiland, A.J. Lewis, and H.R. Streiffer, 1991, Louisiana Coastal Geographic Information System Network (LCGISN): access to spatial data. *Meridian*, 6: 29-43.

Byrnes, M.R. and K.J. Gingerich, 1987. Cross-island profile response to Hurricane Gloria. In: N.C. Kraus (editor), Coastal Sediments '87, American Society of Civil Engineers, New York, NY, p. 1486-1502.

Books and Edited Volumes

Byrnes, M.R., M. Crowell, and C. Fowler, 2003. Shoreline Mapping and Change Analysis: Technical Considerations and Management Implications. *Journal of Coastal Research*, Special Issue 38, 215 p.

John, C.J. and M.R. Byrnes, 1995. Gulf Coast Association of Geological Societies Transactions, Gulf Coast Geology: A Global Resource. GCAGS 45th Annual Convention, Baton Rouge, LA, 648 p.

Technical Reports

Byrnes, M.R., 2006. Processes Affecting Wetland Change in the Calcasieu-Sabine Basin with Special Reference to Doré Energy Corporation Property. Expert Report to Defendants, 41 pp.

Byrnes, M.R. and S.F. Griffiee, 2006. Regional Sediment Transport Patterns Relative to Engineering Activities at the Mouth of the Columbia River, Washington/Oregon. Report to the U.S. Army Corps of Engineers, Portland District, Portland, OR, 45 p. plus 5 Appendices.

Byrnes, M.R., 2006. Chronology of Events Affecting Wetland Change in Terrebonne Parish with Special Reference to Harry Bourg Corporation Property. Supplemental Expert Report to Frilot, Partridge, Kohnke & Clements, LC, 30 p.

Byrnes, M.R., 2005. Processes Affecting Wetland Change in Terrebonne Parish with Special Reference to Harry Bourg Corporation Property South of Falgout Canal Between Bayou Du Large and the Houma Navigation Canal. Expert Report to Kean, Miller, Hawthorne, D'Armond, McGowan, & Jarman, LLP, 37 p.

Byrnes, M.R. and J.L. Baker, 2005. Sediment Budget Analysis: Culloden Point to Shagwong Point, Lake Montauk, NY. Final Report to Offshore and Coastal Technologies, Chadds Ford, PA, 17 p.

Hammer, R.M., M.R. Byrnes, D.B. Snyder, T.D. Thibaut, J.L. Baker, S.W. Kelley, J.M. Cote, L.M. Lagera, S.T. Viada, B.A. Vittor, J.S. Ramsey, and J.D. Wood, 2005. Environmental Surveys of Potential Borrow Areas on the Central East Florida Shelf and the Environmental Implications of Sand Removal for Coastal and Beach Restoration. U.S. Department of the Interior, Minerals Management Service, Leasing Division, Marine Minerals Branch, Herndon, VA. OCS Report MMS 2004-037, Volume I: Main Text, 328 pp. + Volume II: Appendices, 276 pp.

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Wise, L.A., T.N. McLellan, and M.R. Byrnes, 2004. Feasibility analysis of shore protection for Rockefeller Wildlife Refuge in the chenier plain of southwestern Louisiana (USA). Proceedings Coastal Structures '03, Portland, OR, 13 p.

Byrnes, M.R., R.M. Hammer, B.A. Vittor, S.W. Kelley, D.B. Snyder, J.M. Cote, J.S. Ramsey, T.D. Thibaut, N.W. Phillips, and J.D. Wood, 2003. Collection of Environmental Data Within Sand Resource Areas Offshore North Carolina and the Environmental Implications of Sand Removal for Coastal and Beach Restoration. U.S. Department of the Interior, Minerals Management Service, Leasing Division, Sand and Gravel Unit, Herndon, VA. OCS Report MMS 2000-056, Volume I: Main Text, 256 pp. + Volume II: Appendices, 69 pp.

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Byrnes, M.R., and F. Li, 2003. Chapter 3: Regional Processes. In: Gailani, J.Z. and others, Monitoring Dredged Material Disposal at Mouth of Columbia River, Washington/Oregon, USA. Technical Report TR-03-5, USAE Research and Development Center, Coastal and Hydraulics Laboratory, Vicksburg, MS, pp. 42-82.

Byrnes, M.R., J.L. Baker, and N.C. Kraus, 2003. Coastal sediment budget for Grays Harbor, WA. In: Proceedings Coastal Sediments 2003, The Fifth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, Clearwater, FL, 10 p.

Byrnes, M.R., R.M. Hammer, and T.D. Thibaut, 2003. Environmental survey of identified sand resource areas offshore Alabama. 21st Annual Information Transfer Meeting Proceedings, MMS 2003-005, U.S. Minerals Management Service, New Orleans, LA, pp. 333-340.

Byrnes, M.R., R.M. Hammer, and T.D. Thibaut, 2003. Environmental survey of potential sand resource sites: offshore New Jersey. 21st Annual Information Transfer Meeting Proceedings, MMS 2003-005, U.S. Minerals Management Service, New Orleans, LA, pp. 349-354.

Byrnes, M.R., R.M. Hammer, and T.D. Thibaut, 2003. Collection of environmental data within sand resource areas offshore North Carolina and the environmental implications of sand removal for coastal and beach restoration. 21st Annual Information Transfer Meeting Proceedings, MMS 2003-005, U.S. Minerals Management Service, New Orleans, LA, pp. 355-360.

Kelley, S.W., J.S. Ramsey, and M.R. Byrnes, 2003. Numerical modeling evaluation of the cumulative physical effects of offshore sand dredging for beach nourishment. 21st Annual Information Transfer Meeting Proceedings, MMS 2003-005, U.S. Minerals Management Service, New Orleans, LA, 417-422.

Kraus, N.C. and M.R. Byrnes, 2002. Technical Comments on 30 September 2002 Final Report "Independent Study Report, Brevard County, Florida, Shore Protection Project" by Independent Coastal Expert Team (ICET). Memorandum for Record dated 2 December 2002 from the U.S. Army Engineer Research and Development Center, Coastal and Hydraulics Laboratory, Vicksburg, MS to U.S. Army Corps of Engineers, Jacksonville District, Jacksonville, FL, 21 pp.

Byrnes, M.R., F. Li, and J.D. Rosati, 2002. Inlets Online: A Tutorial for Evaluating Inlet/Beach Processes Using Aerial Photography. ERDC/CHL CHETN-IV-51, Coastal and Hydraulics Laboratory, U.S. Army Engineer Research and Development Center, Vicksburg, MS, 10 p.

Byrnes, M.R., J.L. Baker, and F. Li, 2002. Quantifying potential measurement errors and uncertainties associated with bathymetric change analysis. ERDC/CHL CHETN-IV-50, Coastal and Hydraulics Laboratory, U.S. Army Engineer Research and Development Center, Vicksburg, MS, 17 p.

Kelley, S.W., J.S. Ramsey, and M.R. Byrnes, 2001. Numerical Modeling Evaluation of the Cumulative Physical Effects of Offshore Sand Dredging for Beach Nourishment. U.S. Department of the Interior, Minerals Management Service, International Activities and Marine Minerals Division (INTERMAR), Herndon, VA. OCS Report MMS 2001-098, 96 pp. + 90 pp. appendices

Cote, J.M. and M.R. Byrnes, 2001. Total Current Observations, Hudson River, Rensselaer, NY: March 27, 2001. Final Report to ENSR International, Acton, MA, 40 pp.

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