

ERDC/ITL SR-17-1

Information Technology Laboratory



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Publications of the U.S. Army Engineer Research and Development Center

Appendix E: FY20 (October 2019-September 2020)

Compiled by James A. Dolan

December 2020

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Publications of the U.S. Army Engineer Research and Development Center

Appendix E: FY20 (October 2019-September 2020)

Compiled by James A. Dolan

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Report 5 of a series

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Prepared for U.S. Army Engineer Research and Development Center
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Abstract

Publications issued October 2019 through September 2020 by the U.S. Army Engineer Research and Development Center (ERDC) are listed. The publications are grouped according to the technical laboratories or technical program for which they were prepared. Procedures for obtaining ERDC reports are included in the Preface.

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Preface

The purpose of this report is to provide an annual update of literature produced by the U.S. Army Engineer Research and Development Center (ERDC). Publications issued October 2019 through September 2020 are listed herein. The publications are grouped according to the technical laboratories and/or technical programs for which they were prepared.

ERDC publications containing the statement “Approved for Public Release; Distribution is Unlimited” are available electronically by clicking on the Digital Object Identifier (DOI) link located under each report or from the ERDC Library’s digital repository at <https://erdc-library.erdcdren.mil/>. A footnote by the report number denotes a limited distribution report. Limited distribution reports are available to qualified agencies from the Defense Technical Information Center (DTIC) at www.dtic.mil. For ordering purposes and when available, Accession Document (AD) numbers have been supplied.

Some Miscellaneous Papers (MP) were originally published as a journal article or conference proceeding. The link and document will be accessible after a 12-month embargo expires.

When electronic access is not an option, library-to-library loaning is available through Online Computer Library Center (OCLC). The ERDC Library’s OCLC symbol is AERDC. Requestors should contact their local library for interlibrary loans. The ERDC Library does not loan directly to individuals. The loaning of limited distribution reports is at the discretion of the ERDC Library and only if the requestor meets the qualifications of the report’s limited distribution statement.

This report was compiled by the U.S. Army Engineer Research and Development Center, Information Technology Laboratory (ERDC-ITL), under the general supervision of Ms. Molly S. McManus, Chief, Information Science and Knowledge Management Branch, ITL; Ms. Vernessa F. Noye, Acting Chief, Software Engineering and Informatics Division, ITL; Ms. Patti S. Duett, Deputy Director, ITL; and Dr. David A. Horner, Director, ITL.

At the time of publication, COL Teresa A. Schlosser was the Commander of ERDC. Dr. David W. Pittman was the Director.

1 Engineer Research and Development Center (ERDC)

Special reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC SR-20-1	Jun 2020	Applications of Value Modeling to USACE Civil Works and Beyond, by R.C. Salter, C.H. Rinaudo, K.A. Staebell, B.H. Hargis, K.A. Cotterman, and M.D. Smith http://dx.doi.org/10.21079/11681/37139	AD1102423

Miscellaneous papers

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
¹ ERDC MP-20-1	Aug 2020	Artificial Intelligence and Machine Learning for Autonomous Military Vehicles, by S. Vecherin, J. Desmond, T. Hodgdon, J. Bates, M. Parker, J. Lever, G. Hoch, M. Bodie, and S. Shoop	AD1106872

Technical reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC TR-19-26	Dec 2019	Army Terrestrial Environmental Modeling and Intelligence System, ARTEMIS, by J. Eylander, S. Shoop, E. Deeb, C. Vuyovich, S. Peckham, S. LeGrand, R. Barbato, T. Letcher, D.K. Wilson, A. Fisher, J. Nedza, D. Khona, M. Paquette, J. Bieszczad, and C. Borden http://dx.doi.org/10.21079/11681/35093	
ERDC TR-20-1	Jan 2020	Harmful Algal Bloom Interception, Treatment, and Transformation System, "HABITATS": Pilot Research Study Phase I - Summer 2019, by M. Page, B. MacAllister, A. Urban, C. Veinotte, I. MacAllister, K. Pokrzywinski, J. Riley, E. Martinez-Guerra, C. White, C. Grasso, A. Kennedy, C. Thomas, J. Billing, A. Schmidt, D. Schmidt, B. Colona, D. Pinelli, and C. John http://dx.doi.org/10.21079/11681/35214	AD1089605

¹ 12-month embargo; see Preface.

ERDC TR-20-2	Feb 2020	Carbonation Processes in Submerged Concrete in a Simulated CO ₂ Invasive Fish Barrier System, by R.D. Moser, T.R. Johnson, M.C. Madden, C.A. Weiss Jr., W.R. Long, M.A. McKechnie, and D.L. Smith http://dx.doi.org/10.21079/11681/35675	AD1091947
ERDC TR-20-3	Mar 2020	Operation and Deployment Risk Assessment Report for the City of Cedar Rapids, Iowa: Alternative and Sequencing Optimization for Removable Flood Barriers, by G.B. Myrick, J.A. Hicks, L.I. Yates, and M.C. Allison http://dx.doi.org/10.21079/11681/35776	AD1092595
ERDC TR-20-4	Apr 2020	Evaluation of the Potential Impacts of the Proposed Mobile Harbor Navigation Channel Expansion on the Aquatic Resources of Mobile Bay, Alabama, by J.F. Berkowitz, S. Altman, K. Reine, D. Wilbur, M.E. Kjelland, T. Gerald, S.-C. Kim, C.D. Piercy, T.M. Swannack, W.T. Slack, J. Killgore Jr., K.D. Philley, N.R. Beane, C.L. Saltus, M.T. Saltus, T.A. Keys, and C.J. Trahan http://dx.doi.org/10.21079/11681/36035	
ERDC TR-20-5		NO REPORT	
ERDC TR-20-6	May 2020	Phase-Field Simulations of Solidification in Support of Additive Manufacturing Processes, by J.B. Allen, R.D. Moser, Z.B. McClelland, J.A. Kallivayalil, and A. Tekalur http://dx.doi.org/10.21079/11681/36654	AD1099563
¹ ERDC TR-20-7	May 2020	Border Tunneling Activity Detection System Point (BTADS-P) Gen 1 Baseline Characterization and 3C Sensor Capability Testing Demonstration. USBP CBTT BTADS-P Technology Demonstration Plan: Phase 1, by G. Galan-Comos, E. Zettergren, R.F. Lee, A.P. Lester, R. Perry, J. Pulli, A. Cam, and R.D. Costley	AD1099837
ERDC TR-20-8	May 2020	Theory, Formulation, and Implementation of The Cartesian and Spherical Coordinate Two-Dimensional Depth-Averaged Module of the Adaptive Hydraulics (AdH) Finite Element Numerical Code, by G. Savant, C. Berger, C.J. Trahan, and G.L. Brown http://dx.doi.org/10.21079/11681/36993	AD1101572

¹ Limited distribution; see Preface.

ERDC TR-20-9	May 2020	Development and Application of the CASM-SL to Support Nutrient Management in Potential Sangamon River Levee Setbacks, by S.M. Bartell, C.T. Woodard, C.H. Theiling, and T.A. Dahl http://dx.doi.org/10.21079/11681/37039	AD1102360
ERDC TR-20-10	May 2020	Quantification of the Flow Field around a Draghead Using a Physical Model, by D.B. Bryant, B.C. McFall, R.E. Randall, Y. Zhi, T.L. Welp, and D.L. Smith http://dx.doi.org/10.21079/11681/37096	
ERDC TR-20-11	May 2020	Projecting Changes in Food Security Throughout Central America, by K.A. Cotterman, A. Petri, J.D. Westervelt, and A.M. Rhodes http://dx.doi.org/10.21079/11681/36878	AD1100914
ERDC TR-20-12	Jul 2020	Foundations of Mission Analysis Storytelling (FOMAS), by T.K. Perkins, H. Yu, and S. Sovine http://dx.doi.org/10.21079/11681/37335	AD1103322
ERDC TR-20-13	Jul 2020	Environmental Analysis of Aqueous 3-Nitro-1,2,4-Triazol-5-One (NTO) by Ion Chromatography with Conductivity Detection, by S.A. Beal, S. Taylor, R.A. Crouch, and A.J. Bednar http://dx.doi.org/10.21079/11681/37415	AD1103706
ERDC TR-20-14	Jul 2020	High-Performance Photocatalytic Degradation of Model Contaminants with Iron Oxide-Based Colloidal Solutions under Broad-Spectrum Illumination, by E.K. Ambrogi, E. Asenath-Smith, and J.A. Brame http://dx.doi.org/10.21079/11681/37418	AD1103719
ERDC TR-20-15	Aug 2020	New York/New Jersey Harbor Sedimentation Study: Numerical Modeling of Hydrodynamics and Sediment Transport, by T.O. McAlpin, J.V. Letter, Jr., M. Bryant, A.G. Emiren, G.L. Brown, G. Savant, B.W. Wisemiller, J.A. Sulayman, and C.J. Trahan http://dx.doi.org/10.21079/11681/37899	AD1106725
¹ ERDC TR-20-16	Aug 2020	Barrier and Shelter Performance - Iron Warrior Experiment 2, by C.S. Stephens, O.G. Flores, R.E. Walker, C.E. Grey, and J.S. Davidson	AD1106968
¹ ERDC TR-20-17	Aug 2020	Barrier and Shelter Performance - Iron Warrior Experiment 4, by C.S. Stephens, O.G. Flores, R.E. Walker, C.E. Grey, and J.S. Davidson	AD1106989
¹ ERDC TR-20-18	Aug 2020	Barrier and Shelter Performance - Iron Warrior Experiment 3, by C.S. Stephens, O.G. Flores, R.E. Walker C.E. Grey, and J.S. Davidson	AD1107478

¹ Limited distribution; see Preface.

ERDC TR-20-19	Sep 2020	Study of Sand Boil Development at Kaskaskia Island, IL, Middle Mississippi River Valley, by J.R. Kelley, J.B. Dunbar, K.B. Parkman, R.C. Strange, B.R. Breland, M.K. Corcoran, T.E. Berry, M.E. Lord, E.R. Gore, and I. Stephens http://dx.doi.org/10.21079/11681/38040	AD1107939
¹ ERDC TR-20-20	Sep 2020	Remote APOD Assessment: Advanced Evaluation Technologies, by J.K. Newman, S.E. Howington, J.R. Ballard, JR., R.V. Kala, L.P. Priddy, J.D. Doyle, G. Galan-Comas, M.D. Bray, W.D. Hodo, E.S. Berney, R.E. North, R.C. Strange, S.S. Jackson, S.G. Bourne, J.E. Ball, L. Dabiru, and J.V. Aanstoes	AD1109655
ERDC TR-20-21	Sep 2020	Hydrodynamic and Sediment Transport Modeling for James River Dredged Material Management, by T.C. Lackey, S. Bailey, J. Gailani, S.-C. Kim, and P. Schroeder http://dx.doi.org/10.21079/11681/38255	AD1110250
ERDC TR-20-22	Sep 2020	Microbiological Indicators Reflect Patterns of Life, by A.K. Thurston, A. Hoisington, A. Fisher, S.A. Rosten, E.J. Corriveau, R.M. Jones, and R.A. Barbato http://dx.doi.org/10.21079/11681/38252	AD1110239

¹ Limited distribution; see Preface.

2 Coastal and Hydraulics Laboratory (CHL)

Contract reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CHL CR-19-2	Nov 2019	Measuring Climate and Extreme Weather Vulnerability to Inform Resilience, Report 1: A Pilot Study for North Atlantic Medium- and High-Use Maritime Freight Nodes, by R.D. McIntosh, E.L. Mclean, and A. Becker http://dx.doi.org/10.21079/11681/35196	AD1089516
ERDC/CHL CR-19-3	Nov 2019	Measuring Climate and Extreme Weather Vulnerability to Inform Resilience Report 2: Port Decision-Makers' Barriers to Climate and Extreme Weather Adaption, by E.L. Mclean and A. Becker http://dx.doi.org/10.21079/11681/35199	AD1089521

Letter reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
¹ ERDC/CHL LR-18-1	May 2018	USCGC MARIA BRAY Fouling Study: Confirming Presence and Process of Shipboard Fouling. By B.M. Scully and M.B. Taylor	
¹ ERDC/CHL LR-18-2	May 2018	U.S. Coast Guard Shoaling Study: Station South Padre Island, South Padre Island, TX, by B. Scully and L. Dunkin	
¹ ERDC/CHL LR-19-3	Oct 2019	Estimating Channel/Port Depth Using Visual Vessel Length in Data-Deficient Environments, by B.H. Hargis, E.M. Yeates, A.R. Byrd, and J.L. Gutenson	
¹ ERDC/CHL LR-19-7	Jul 2019	A Brief Overview of the Coastal Texas Protection and Restoration Feasibility Study: Coastal Storm Model Simulations of Waves and Water Levels, by T.C. Massey, R. Jensen, M. Bryant, Y. Ding, M. Owensby, and N.C. Nadal-Caraballo	
¹ ERDC/CHL LR-19-9	Dec 2019	Calibration and Validation of the Puerto Rico/U.S. Virgin Island Domain Model Setup for the South Atlantic Coastal Study (SACS), by M. Owensby, M. Bryant, T. Hesser, L. Provost, T.C. Massey, and Y. Ding	

¹ Limited distribution; see Preface.

¹ ERDC/CHL LR-19-11	Sep 2019	Port of Long Beach: Feasibility Ship Simulation Study, by S.K. Martin and D. Webb
¹ ERDC/CHL LR-19-13	Nov 2019	Two-dimensional Hydrodynamic Analysis of the St. Clair River System, by D.A. Loney, K.C. Pevey, J.T. McAlpin, and T. Calappi
¹ ERDC/CHL LR-19-15	Dec 2019	Red River Structure Physical Model Study: Verification of the Proposed Structure's Flow Capacity, by G. Bell, J. Sharp, G. Savant, and H. Park
¹ ERDC/CHL LR-20-1	Feb 2020	Brunswick Harbor Feasibility Ship Simulation Study Report, by M.M. Johnston and M.C. Allison
¹ ERDC/CHL LR-20-2	Apr 2020	Dauphin Island Data Collection, by M. T. Ramirez, W. C. Butler, and T. C. Pratt
¹ ERDC/CHL LR-20-4	Apr 2020	Reducing Uncertainty and Improving Precision in Coincident Geospatial Datasets Using Weight-of-Evidence: Part 3, by D.A. Loney, J. Cegan, D. DeSmet, M. Wood, and I. Linkov
¹ ERDC/CHL LR-20-6	Jun 2020	Development of a Runoff Tool, by K.A. Cotterman, R. Vera, C. Hamilton, D. Brown, R. Blevins, and M. Follum
¹ ERDC/CHL LR-20-7	Jul 2020	Charleston Harbor Wave Climate and Vessel Wake Data Collection and Analysis, by B.M. Scully, R. Styles, and J. Smith
¹ ERDC/CHL LR-20-8	Jul 2020	CSTORM-MS Storm Surge, Wave, Circulation and Particle Tracking Modeling for Proposed Dyke Marsh Northern Sill, by T.C. Massey, T. Lackey, L. Provost, and F. Bukhari
¹ ERDC/CHL LR-20-11	Jun 2020	An Overview of the Coastal Storm Model Simulations of Waves and Water Levels for the Tyndall AFB Feasibility Study, by T.C. Massey and A.S. Tritinger

Special reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CHL SR-20-1	Apr 2020	Investigation into Laboratory Bathymetric Measurement Techniques, by B.C. McFall and G. Wolters http://dx.doi.org/10.21079/11681/36038	AD1095041

¹ Limited distribution; see Preface.

ERDC/CHL SR-20-2	May 2020	Nearshore Placement Workshop 2019: Sediment Nourishment of the Nearshore Environment, by D.R. Krafft, D.L. Young, K.E. Brutsché, B.C. McFall, and B.L. Bruder http://dx.doi.org/10.21079/11681/36915	AD1100954
ERDC/CHL SR-20-3	Sep 2020	Laboratory Evaluation of Aquablok™ Erosion Resistance: Implications for Geotechnical Applications, by A.M. Priestas, J.H. Hull, R. Ellis, C.F. McKenzie, and J.Z. Gailani http://dx.doi.org/10.21079/11681/38140	AD1109103
ERDC/CHL SR-20-4	Sep 2020	Framework Geology of Cape Shoalwater and Northwest Willapa Bay, Washington: Assessing Potential Geologic Impacts on Recent Shoreline Change, by H.M. Wadman, J.E. McNinch, and J. Smith http://dx.doi.org/10.21079/11681/38144	AD1109230

Technical notes

Section I – Waves and coastal flooding

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CHL CHETN-I-99	Jun 2020	Rapid Tidal Reconstruction for the Coastal Hazards System and StormSim Part I: Coastal Texas and Louisiana, by M.J. Torres and N.C. Nadal-Caraballo http://dx.doi.org/10.21079/11681/37253	AD1103111

Section II – Beach behavior and restoration

ERDC/CHL CHETN-II-58	Aug 2020	Evaluating Collection Parameters for Mobile Lidar Surveys in Vegetated Beach-Dune Settings, by I. Conery, N. Cohn, N. Spore, and K. Brodie http://dx.doi.org/10.21079/11681/37759	AD1105858
ERDC/CHL CHETN-II-59	Aug 2020	On the Use of CSHORE for Beach-fx, by B. Johnson and D. Sanderson http://dx.doi.org/10.21079/11681/37949	AD1107118

Section IV – Inlets and estuary channels

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CHL CHETN-IV-120	Oct 2019	Lessons Learned from Coastal Mapping Efforts during the 2018 Hurricane Season Using Unmanned Aerial Systems (UAS) at Sandbridge, Virginia, by A. Renaud, N. Spore, B. Bruder, and K. Brodie http://dx.doi.org/10.21079/11681/34346	
ERDC/CHL CHETN-IV-121	Jan 2020	Vessel Wake Prediction Tool, by M.A. Hartman and R. Styles http://dx.doi.org/10.21079/11681/35153	AD1092183
ERDC/CHL CHETN-IV-122	Jan 2020	Uncertainty Associated with the Sediment Mobility Tool, by B.C. McFall, V.M. Gonzalez, E. Ramos-Santiago, N.C. Nadal-Caraballo, K.E. Brutsché http://dx.doi.org/10.21079/11681/35054	AD1092088
ERDC/CHL CHETN-IV-123	Apr 2020	Cross-Shore Transport Feature for GenCade, by Y. Ding, R. Styles, S.-C. Kim, R. Permenter, and A. Frey http://dx.doi.org/10.21079/11681/35893	AD1094846
ERDC/CHL CHETN-IV-124	Apr 2020	A Comparison of GenCade, Pelnard-Considere, and LITPACK, by S.-C. Kim, R. Styles, J. Rosati, Y. Ding, and R. Permenter http://dx.doi.org/10.21079/11681/35933	AD1094848
ERDC/CHL CHETN-IV-125	May 2020	Technical Feasibility of Creating a Beach Grain Size Database with Citizen Scientists, by B.C. McFall, D.L. Young, K.A. Fall, D.R. Krafft, S.J. Whitmeyer, A.E. Melendez, D. Buscombe http://dx.doi.org/10.21079/11681/36456	AD1098737
ERDC/CHL CHETN-IV-126	Aug 2020	Computer-Based Calibration and Uncertainty Analysis of GenCade: Description and Proof of Concept, by S. Munger http://dx.doi.org/10.21079/11681/37900	AD1107092

Section VII – River engineering and sedimentation

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CHL CHETN-VII-22	May 2020	Rapid Watershed Assessment Tools Based on High-Resolution Terrain Data, by C.P. Haring, C.H. Theiling, and M.P. Dougherty http://dx.doi.org/10.21079/11681/36714	AD1101348
ERDC/CHL CHETN-VII-23	Aug 2020	Fine-Grained Sediment within Olcott Harbor, Eighteenmile Creek, NY, by H.M. Wadman http://dx.doi.org/10.21079/11681/37860	AD1106493

Section VIII – Flood management

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CHL CHETN-VIII-13	Oct 2019	Watershed and Catchment Meshing Python Tool Utilizing the XmsMesh Meshing Software, by C.J. McKnight, D. Loney, and K. Winters http://dx.doi.org/10.21079/11681/34323	AD1092181

Section IX – Navigation

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CHL CHETN-IX-51	Apr 2020	AIS Data Case Study: River Level and Vessel Approach Variation at Melvin Price Locks and Dam in St. Louis District, by C. Tabbert, J. Vest, A. Rhoads, D. Myers, T. Lauth, E. Brauer, J. Wallace, D. Gordon, and M. Kress http://dx.doi.org/10.21079/11681/35957	AD1095043
ERDC/CHL CHETN-IX-52	Apr 2020	AIS Data Case Study: St. Louis Area Commercial Vessel Fleeting Activity and Potential River Training Structures, by C. Tabbert, J. Vest, A. Rhoads, D. Myers, T. Lauth, E. Brauer, J. Wallace, D. Gordon, and M. Kress	AD1098423
ERDC/CHL CHETN-IX-53	May 2020	AIS Data: Real-Time Operation Support, Incident Investigations, and Waterway Use Analysis, by M.M. Kress, B.J. Tetreault, K.N. Mitchell, M.T. Balazik, and M.C. Booton http://dx.doi.org/10.21079/11681/36395	AD1099861

Technical reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CHL TR-19-18	Oct 2019	Houma Navigation Canal Lock Complex (TE-113) Study, Louisiana: Houma Navigation Canal Ship Simulation Results, by M.J. Sanchez, S.K. Martin, and M.M. Johnston http://dx.doi.org/10.21079/11681/34582	AD1085153
ERDC/CHL TR-19-19	Dec 2019	Performance of Nearshore Berms from Dredged Sediments: Validation of the Sediment Mobility Tool, by A.M. Priestas, B. McFall, and K.E. Brutsché http://dx.doi.org/10.21079/11681/34756	AD1085786
ERDC/CHL TR-19-20	Nov 2019	Prototype Test of a Water Jet System to Mitigate the Transport of Asian Carp by Barges, by D.B. Bryant, J. Smith, R. Styles, B. Burnham, C. Callegan, J. Marshall, and M.C. Allison http://dx.doi.org/10.21079/11681/34913	AD1087735
ERDC/CHL TR-19-21	Nov 2019	Inland Marine Transportation System Fluidity: Case Studies from the Ohio River, Lower Mississippi River, and Gulf Intracoastal Waterway, by K.N. Mitchell, P.K. DiJoseph, M. Chambers, and M.M. Kress http://dx.doi.org/10.21079/11681/34693	AD1085137
ERDC/CHL TR-19-22	Nov 2019	Quantifying Wave Breaking Shape and Suspended Sediment in the Surf Zone, by P.J. Dickhudt, N.J. Spore, K.L. Brodie, and A.S. Bak http://dx.doi.org/10.21079/11681/35076	AD1088847
ERDC/CHL TR-19-23	Dec 2019	Wave Averaging for Scoping Level Estimates of Nearshore Berm Morphodynamics, by D.R. Krafft, B.C. McFall, R. Styles, and K.E. Brutsché http://dx.doi.org/10.21079/11681/34873	AD1087819
¹ ERDC/CHL TR-19-24	Dec 2019	Hydrodynamics of the Improved Ribbon Bridge: Physical Model Testing, by D.B. Bryant, J. Sharp, and C. Kees	AD1087900
ERDC/CHL TR-20-1	Jan 2020	Towing Vessel Delays and Barge Lane Navigability along the Houston Ship Channel, Texas, by K.N. Mitchell, P.K. DiJoseph, B.M. Scully, and M.M. Kress http://dx.doi.org/10.21079/11681/35182	AD1089400

¹ Limited distribution; see Preface.

ERDC/CHL TR-20-2	Mar 2020	A Practical Two-Phase Approach to Improve the Reliability and Efficiency of Markov Chain Monte Carlo Directed Hydrologic Model Calibration, by B.E. Skahill and J.S. Baggett http://dx.doi.org/10.21079/11681/35753	AD1092579
ERDC/CHL TR-20-3	Mar 2020	Nested Physics-Based Watershed Modeling at Seven Mile Creek: Minnesota River Integrated Watershed Study, by C.W. Downer, M. Wahl, N. Raj Pradhan, B. Skahill, S. Turnbull, and R. Pickett http://dx.doi.org/10.21079/11681/35777	AD1092781
ERDC/CHL TR-20-4	Mar 2020	Analysis of Nearshore Placement of Sediments at Ogden Dunes, Indiana, by D.L. Young, K.E. Brutsché, H. Li, B.C. McFall, E.C. Maloney, K.E. McClain, D.F. Bucaro, J.Z. LeRoy, J.J. Duncker, K.K. Johnson, and P.R. Jackson http://dx.doi.org/10.21079/11681/35853	AD1093210
ERDC/CHL TR-20-5	Apr 2020	Alabama Barrier Island Restoration Assessment Life-Cycle Structure Response Modeling, by V.M. Gonzalez, F.A. Garcia-Moreno, J.A. Melby, N.C. Nadal-Caraballo, and E.S. Godsey http://dx.doi.org/10.21079/11681/36236	AD1093210
ERDC/CHL TR-20-6	Apr 2020	Lower Columbia River Adaptive Hydraulics (AdH) Model: Development, Water Surface Elevation Validation, and Sea Level Rise Analysis, by K.C. Pevey, G. Savant, H.R. Moritz, and E.O. Childs http://dx.doi.org/10.21079/11681/36295	AD1096581
ERDC/CHL TR-20-7	Apr 2020	Analysis of Snow Water Equivalent Annual Maxima in the Upper Connecticut River Basin Using a Max-Stable Spatial Process Model, by B. Skahill, J. Kanney, and M. Carr http://dx.doi.org/10.21079/11681/36415	AD1097406
ERDC/CHL TR-20-8	May 2020	Sediment Sorting by Hopper Dredging and Pump-Out Operations: Conceptual Model and Literature Review, by A.M. Priestas, S.J. Smith, and K.E. Brutsché http://dx.doi.org/10.21079/11681/36997	AD1101684
ERDC/CHL TR-20-9	Jun 2020	Effect of Tropical Storms and Precipitation on Dredging Volumes: Houston-Galveston, TX, and Mayport, FL, by A.E. Frey and L.A. Coe http://dx.doi.org/10.21079/11681/37093	

ERDC/CHL TR-20-10	Jun 2020	Spatial Analysis of Precipitation and Snow Water Equivalent Extremes for the Columbia River Basin, by B.E. Skahill, A.M. Duren, L. Cunha, and C. Bahner http://dx.doi.org/10.21079/11681/37255	AD1102959
ERDC/CHL TR-20-11	Jul 2020	Hydrodynamics of a Recently Restored Coastal Wetland: Hamilton Wetlands, California, by R. Styles, D.W. Perkey, S.J. Smith, D.B. Bryant, J. Gailani, and B.M. Boyd http://dx.doi.org/10.21079/11681/37313	AD1103256
ERDC/CHL TR-20-12	Jul 2020	Investigation of Shoaling in the Federal Navigation Channel, Waukegan Harbor, Illinois, By Z. Demirbilek, L. Lin, J.A. Wethington, M. Nguyen, D.F. Bucaro, M. Ott, P. Horstman, J.L. Schmidt, A.R. Hoxsie, S.R. Goodpaster, W. Kluza, and E.J. Theuerkauf http://dx.doi.org/10.21079/11681/37453	AD1103970
ERDC/CHL TR-20-13	Jul 2020	Erosion Thresholds and Rates for Sand-Mud Mixtures, by D.W. Perkey, S.J. Smith, and A.M. Priestas http://dx.doi.org/10.21079/11681/37495	AD1104225
ERDC/CHL TR-20-14	Jul 2020	Post-Project Monitoring of a Navigation Solution in a Dynamic Coastal Environment, Smith Island, Maryland: Year One of Post-Project Monitoring, by J.A. Seiple, C.C. Spaur, S. Altman, M.T. Balazik, L.E. Santiago, D.O. Mensah, W.G. Amarasingha, S.M. Golder, and A.W. Payson http://dx.doi.org/10.21079/11681/37573	AD1104759
ERDC/CHL TR-20-15	Aug 2020	Sediment Sorting by Hopper Dredging and Pump-Out Operations: Sampling Methods and Analysis, by D.B. Bryant, A.M. Priestas, S.J. Smith, and K.E. Brutsché http://dx.doi.org/10.21079/11681/37656	AD1105219
ERDC/CHL TR-20-16	Aug 2020	Three Rivers, Southeast Arkansas Navigation Study: Ship Simulation Report, by M.M. Johnston, R.E. Heath, and M.C. Allison http://dx.doi.org/10.21079/11681/37760	AD1105824
ERDC/CHL TR-20-17	Aug 2020	Utilizing Stream Flows to Forecast Dredging Requirements, by E.M. Yeates, A.A. Tavakoly, K.N. Mitchell, G.W. Dreaper, and S. Afshari http://dx.doi.org/10.21079/11681/37761	AD1105836

ERDC/CHL TR-20-18	Aug 2020	Shallow Water Seakeeping Tests with Columbia Class Submarine for Integration into the Environmental Monitoring and Operator Guidance System, by A.L. Stehno and J.A. Melby http://dx.doi.org/10.21079/11681/37779	AD1105940
ERDC/CHL TR-20-19	Sep 2020	Physical Factors That Influence Muddy Bed Aggregate Production, Size, and Durability, by D.W. Perkey, K.A. Fall, and S.J. Smith http://dx.doi.org/10.21079/11681/38257	AD1110276
ERDC/CHL TR-20-20	Sep 2020	Red River Structure Physical Model Study, by G.L. Bell, J.A. Sharp, L.M. Williams, H.E. Park, D.B. Bryant, and G. Savant http://dx.doi.org/10.21079/11681/38305	AD1110883

3 Cold Regions Research Engineering Laboratory (CRREL)

Contract reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CRREL CR-20-1	Sep 2020	Fusion of Spectral Data from Multiple Handheld Analyzers (LIBS, XRF and Raman) for Chemical Analysis and Classification of Soil, by R.S. Harmon, R.R. Hark, C.S. Throckmorton, J.R. Plumer, J.M.H. Hendrickx, J.B. Harrison, K.A. Harmon, and J.L. Clausen http://dx.doi.org/10.21079/11681/38061	AD1108076

Miscellaneous papers

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CRREL MP-20-1	Jul 2020	A Comparison of Frost Depth Estimates from Ground Observations and Modelling Using Measured Values and Reanalysis Data for Vehicle Mobility, by L. Barna, K. Jones, C. Vuyovich, and S. Shoop http://dx.doi.org/10.21079/11681/37395	AD1103526
¹ ERDC/CRREL MP-20-2	Jul 2020	Geospatial Snow Estimation for Engineering Applications and Operations, by E. Deeb, C. Polashenski, Z. Courville, C. Hiemstra, A. Wagner, J. Eylander, and R. Davis http://dx.doi.org/10.21079/11681/37615	AD1105000
¹ ERDC/CRREL MP-20-3	Aug 2020	Methods for Measuring Snow Moisture and Density, by B. Elder, S. Shoop, M. Feyrer, and S. Beal http://dx.doi.org/10.21079/11681/37655	AD1105217
¹ ERDC/CRREL MP-20-4	Aug 2020	SnowMicroPenetrometer Applications for Winter Vehicle Mobility, by T. Meehan, H.P. Marshall, E. Deeb, and S. Shoop http://dx.doi.org/10.21079/11681/37673	AD1105287
¹ ERDC/CRREL MP-20-5	Aug 2020	Using the Light Weight Deflectometer in Winter Climates, by A. Menke, W. Wieder, and S. Shoop http://dx.doi.org/10.21079/11681/37674	AD1105318

¹ 12-month embargo; see Preface.

¹ ERDC/CRREL MP-20-6	Aug 2020	Mechanical Property Measurements on Various Snow Surfaces, by S. Shoop, W. Wieder, and B. Elder http://dx.doi.org/10.21079/11681/37695	AD1105454
¹ ERDC/CRREL MP-20-7	Aug 2020	Peat and Organic Soil Characterization During Seasonal Mobility Testing, by S. Frankenstein, L. Barna, B. Elder, S. Shoop, M. Parker, M. Michaels, and M. Feyrer http://dx.doi.org/10.21079/11681/37721	AD1105617
¹ ERDC/CRREL MP-20-8	Aug 2020	Vehicle Mobility on Highly Organic Soils, by M. Parker, A. Stott, M. Bodie, S. Frankenstein, and S. Shoop http://dx.doi.org/10.21079/11681/37921	AD1106705
¹ ERDC/CRREL MP-20-9	Aug 2020	Recent Improvements to Snow Mobility Algorithms, by S. Shoop, M. Bodie, S. Frankenstein, and M. Bigl http://dx.doi.org/10.21079/11681/37821	AD1106206
¹ ERDC/CRREL MP-20-10	Aug 2020	Street-Scale Mapping of Urban Radio Frequency Noise at Very High Frequency and Ultra High Frequency, by D.J. Breton, C.E. Haedrich, M.J. Kamrath, and D.K. Wilson http://dx.doi.org/10.21079/11681/37824	AD1106216
ERDC/CRREL MP-20-11	Aug 2020	Seasonal Effects on Vehicle Mobility: High-Latitude Case Study, by T.S. Hodgdon, S.A. Shoop, S. Frankenstein, M.F. Bigl, and M.W. Parker http://dx.doi.org/10.21079/11681/37924	AD1106727
ERDC/CRREL MP-20-12	Aug 2020	Isarithmic Mapping of Radio-Frequency Noise in the Urban Environment, by C.E. Haedrich, D.J. Breton, and D.K. Wilson http://dx.doi.org/10.21079/11681/37959	AD1107062
ERDC/CRREL MP-20-13	Aug 2020	Preliminary Measurements on the Geography of Urban VHF Radio-Frequency Noise, by C.E. Haedrich, D.J. Breton, D.K. Wilson http://dx.doi.org/10.21079/11681/37962	AD1107139
¹ ERDC/CRREL MP-20-14	Aug 2020	Modeling RF Noise in Urban Environments with Spatially Distributed Point Sources, by C.E. Haedrich and D.J. Breton http://dx.doi.org/10.21079/11681/38003	AD1107637

¹ 12-month embargo; see Preface.

ERDC/CRREL MP-20-15	Aug 2020	Evaluating Parametric Probability Density Functions for Urban Acoustic Noise, By M.J. Kamrath, D.K. Wilson, C.R. Hart, D.J. Breton, and C.E. Haedrich http://dx.doi.org/10.21079/11681/38006	AD1107641
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Special reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CRREL SR-19-4	Oct 2019	Review of Landscape Data Available to Evaluate the Accuracy of Wetland Indicator Status Ratings, by B.L. Harbert, R.W. Lichvar, and J.J. Goulet http://dx.doi.org/10.21079/11681/34483	AD1086520
ERDC/CRREL SR-20-1	Jul 2020	Site-Specific Case Studies for Determining Ground Snow Loads in the United States, by J. Buska, A. Greatorex, and W. Tobiasson http://dx.doi.org/10.21079/11681/37574	AD1105146

Technical reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CRREL TR-19-21	Oct 2019	Ice Management Operations at Albeni Falls Dam, by J. Giovando, C. Engel, J. Rocks, S.F. Daly, D. O'Connor, and D. Hamill http://dx.doi.org/10.21079/11681/34364	AD1087744
ERDC/CRREL TR-19-22	Oct 2019	Long-Term Durability of Cold Weather Concrete Phase I Report, by D.E. Kennedy, B.E. Watts, C.E. Smith, and J.I. Oren http://dx.doi.org/10.21079/11681/34464	
ERDC/CRREL TR-19-23	Apr 2020	Preliminary Assessment of Landform Soil Strength on Glaciated Terrain in New Hampshire, by T.S. Hodgdon and S.A. Shoop http://dx.doi.org/10.21079/11681/36373	AD1098431
ERDC/CRREL TR-19-24	Nov 2019	Frost-Depth Penetration and Frost Heave in Frost-Susceptible Soils, by W.A. Lein, S.M.L. Slone, C.E. Smith Jr., A.P. Bernier, and J.I. Oren http://dx.doi.org/10.21079/11681/34893	AD1087890
ERDC/CRREL TR-19-25	Dec 2019	Improving Snow Estimates over the Red River Basin during the Spring Using Empirical Relationships Between Satellite Snow Water Equivalent and Snow-Covered Area, by T.W. Letcher, C. Vuyovich, and J. Jacobs http://dx.doi.org/10.21079/11681/35013	AD1088279

ERDC/CRREL TR-19-26	Dec 2019	Web-Based Monitoring of Piezometers for the U.S. Army Corps of Engineers Moose Creek Dam, North Pole, Alaska, by A. Gelvin, C. Williams, and S. Saari http://dx.doi.org/10.21079/11681/35293	AD1090965
ERDC/CRREL TR-20-1	Jan 2020	Matrix and Target Particle-Size Effects on LIBS Analysis of Soils, by S.A. Beal, A.M. Mossell, and J.L. Clausen http://dx.doi.org/10.21079/11681/35374	AD1091335
ERDC/CRREL TR-20-2	Feb 2020	Snow-Road Light-Truck Tire Testing, by T.D. Melendy Jr., A. Menke, D.C. Friedman, and R.R. Winter http://dx.doi.org/10.21079/11681/35514	AD1091340
ERDC/CRREL TR-20-3	Feb 2020	Sieve Stack and Laser Diffraction Particle Size Analysis of IMX-104 Low-Order Detonation Particles, by M.F. Bigl, S.A. Beal, M.R. Walsh, C.A. Ramsey, and K.M. Burch http://dx.doi.org/10.21079/11681/35515	AD1091644
ERDC/CRREL TR-20-4	May 2020	A Generalized Approach for Modeling Creep of Snow Foundations, by D.T. O'Connor and R.B. Haehnel http://dx.doi.org/10.21079/11681/36593	AD1099739
ERDC/CRREL TR-20-5	May 2020	Fenton's Reagent Treatability Study for Hydrocarbon-Contaminated Soils, McMurdo Station, Antarctica, by S.A. Beal, A.M. Mossell, R.T. Affleck, J.L. Clausen, and N.D. Williams http://dx.doi.org/10.21079/11681/36533	AD1099730
ERDC/CRREL TR-20-6	May 2020	Assessment for Soil Reuse Standards at McMurdo Station, by R.T. Affleck, A.J. Barker, A.K. Meyer, and J.L. Clausen http://dx.doi.org/10.21079/11681/36594	AD1101692
ERDC/CRREL TR-20-7	Jun 2020	Obstacle Detection and Quantification for Vehicle Mobility in Winter Conditions, by S.N. Vecherin, J.M. Shaker, and M.W. Parker http://dx.doi.org/10.21079/11681/37259	AD1103024
ERDC/CRREL TR-20-8	Jul 2020	The Urban Ground-to-Ground Radio-Frequency Channel: Measurement and Modeling in the Ultrahigh Frequency Band, by D.J. Breton, C.E. Haedrich, G.R. Hoch, S.S. Streeter, and M.L. Maxson http://dx.doi.org/10.21079/11681/37554	AD1104661
ERDC/CRREL TR-20-9	Aug 2020	Concept for Artificial Freezing of Sea Ice at Winter Quarters Bay, Antarctica, by A.M. Wagner and G.L. Blaisdell http://dx.doi.org/10.21079/11681/37701	AD1105574

ERDC/CRREL TR-20-10	Aug 2020	Spatial and Temporal Variance in the Thermal Response of Buried Objects, by J.L. Clausen, J.R. Dorvee, A. Wagner, S. Frankenstein, B.F. Morriss, K.J. Claffey, T.M. Sobecki, C.R. Williams, S.D. Newman, B.K. Booker, R.T. Affleck, C.E. Smith, M.L. Maxson, A.P. Bernier, and B.J. Jones http://dx.doi.org/10.21079/11681/37799	AD1106085
ERDC/CRREL TR-20-11	Sep 2020	Evaluation of Solid-Polymer-Modified Asphalt Mixtures Phase 1: Construction and Performance Testing of Field Pavement Sections, by C.J. Decarlo, M.H. Elshaer, A. Wheeler, and J.I. Oren http://dx.doi.org/10.21079/11681/38189	AD1109810
¹ ERDC/CRREL TR-20-12	Sep 2020	Microscale Dynamics between Dust and Microorganisms in Alpine Snowpack, by Z.R. Courville, A.K. Thurston, L.B. Farnsworth, R. Lieblappen, S.A. Rosten, J.M. Fegyveresi, S.J. Doherty, R.M. Jones, and R.A. Barbato	AD1110373
ERDC/CRREL TR-20-13	Sep 2020	Improving Design Methodologies and Assessment Tools for Building on Permafrost in a Warming Climate, by K.L. Bjella, Y. Shur, M. Kanevskiy, P. Duvoy, B. Grunau, J. Best, S. Bourne, and R. Affleck http://dx.doi.org/10.21079/11681/38879	

¹ Limited distribution; see Preface.

4 Construction Engineering Research Laboratory (CERL)

Special reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CERL SR-19-4	Sep 2019	Finding space: A Field Guide for Incorporating Low Impact Development into Military Historic Districts, by E.R. Hartman	AD1084211
ERDC/CERL SR-19-5	Oct 2019	An Army Guide to Navigating the Cyber Security Process for Facility Related Control Systems: Cybersecurity and Risk Management Framework Explanations for the Real World, by M.C. Long, J. Bush, S. Briggs, T. Patel, E. Westervelt, D. Shepard, E. Lynch, and D. Schwenk http://dx.doi.org/10.21079/11681/35294	AD1090789

Technical reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/CERL TR-19-19	Sep 2019	Seismic Testing of an Indigenous Material Troop Constructible Building, by J. Wilcoski http://dx.doi.org/10.21079/11681/36573	AD1099558
ERDC/CERL TR-19-20	Sep 2019	Using the Social Vulnerability Index to Forecast Disaster Migration, by C.M. Armstrong and L.L. Larkin http://dx.doi.org/10.21079/11681/35433	AD1090876
ERDC/CERL TR-19-21	Sep 2019	Conspecific Attraction as a Management Tool for Endangered and At-Risk Species on Military Lands, by J.H. Sperry, B.A. DeGregorio, S.A. Tyndel, and M.P. Ward http://dx.doi.org/10.21079/11681/35993	AD1094617
ERDC/CERL TR-20-1	Jan 2020	Guidelines for Minimizing Potable Water Loss Due to Water Distribution System Flushing, by E.M. Jenicek, V.E. Heath, N.W. Garfinkle, and A. Hur http://dx.doi.org/10.21079/11681/35258	
ERDC/CERL TR-20-2	Jan 2020	Incidence of Zebra Mussel on U.S. Army Corps of Engineers Structures, by K.J. Hay, I.E. MacAllister, R.C. Wilson, and A.M. Brake http://dx.doi.org/10.21079/11681/35273	AD1090783

ERDC/CERL TR-20-3	Jul 2020	Army Installation Makerspaces in the Morale, Welfare, and Recreation (MWR) Operational Environment: A Business Case Analysis, by S.D. Hirschi, D.A. Morrison, M.A. Kreiger, M. Carrasquillo-Mangual, B.N. Diggs-McGee, J.M. Goebel, and B.K. Oberg http://dx.doi.org/10.21079/11681/37553	AD1104637
ERDC/CERL TR-20-4	Aug 2020	Water Security Scenarios: Planning for Installation Water Disruptions, by E.M. Jenicek, N.W. Garfinkle, V.E. Heath, L. Miller, M. Mithaiwala, A.T. Rodriguez, and D. Takov http://dx.doi.org/10.21079/11681/37944	AD1106944
ERDC/CERL TR-20-5	Aug 2020	Enhancing Army Energy Culture with Behavioral Approaches, by E.T. Westervelt, P.M. Loechl, S.A. Clark, and C.E. DuPont http://dx.doi.org/10.21079/11681/37945	AD1106961
ERDC/CERL TR-20-8	Aug 2020	Comparison of Antifungal Efficiencies of Photocatalytic and Antimicrobial-Infused Coatings: Evaluation of Five Antimicrobial Coatings Using Standard Test Methods, by C.M. Arnett, R.C. Wilson, and K.A. Guy http://dx.doi.org/10.21079/11681/38282	AD1110370
ERDC/CERL TR-20-9	Sep 2020	Autonomous Vehicle Pilot at Joint Base Myer-Henderson Hall: Project Report Summary and Recommendations, by J.P. Allen, N.R. Myers, T.A. Carlson, J.T. Stinson, R.J. Liesen, L.L. Larkin, B. Eubanks, and J.L. Davila-Perez http://dx.doi.org/10.21079/11681/38088	AD1108418
ERDC/CERL TR-20-10	Sep 2020	Estimating the Density of Secretive, At-risk Snake Species on DoD Installations Using an Innovative Approach: IDEASS, by P. Wolff, B. DeGregorio, J.D. Willson, J. Mortensen, and J. Sperry http://dx.doi.org/10.21079/11681/38319	AD1111269

5 Environmental Laboratory (EL)

Miscellaneous papers

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/EL MP-20-1	May 2020	Rapid Screening for Uranium in Soils Using Field Portable X-Ray Fluorescence Spectrometer : A Comparative Study, by G. Proctor, H. Wang, S.L. Larson, J.H. Ballard, H. Knotek- Smith, C. Waggoner, R. Unz, J. Li, J. McComb, D. Jin, Z. Arslana, and F. Han http://dx.doi.org/10.21079/11681/37175	AD1102566
ERDC/EL MP-20-2	Jun 2020	Laboratory Simulation of Uranium Metal Corrosion in Different Soil Moisture Regimes, by Q. Zhang, S.L. Larson, J.H. Ballard, P. Cheaha, X. Zhu, H.M. Knotek-Smith, F.X. Han http://dx.doi.org/10.21079/11681/37215	AD1102771
ERDC/EL MP-20-3	Jun 2020	A Novel Laboratory Simulation System to Uncover the Mechanisms of Uranium Upward Transport in a Desert Landscape, by Q. Zhang, S.L. Larson, J.H. Ballard, P. Cheah, J.A. Kazery, H.M. Knotek-Smith, F.X. Han http://dx.doi.org/10.21079/11681/37233	AD1102877
ERDC/EL MP-20-4	Jun 2020	Electrokinetic-enhanced Phytoremediation of Uranium-contaminated Soil using Sunflower and Indian Mustard, by J. Li, J. Zhang, S.L. Larson, J.H. Ballard, K. Guo, Z. Arslan, Y. Ma, C.A. Waggoner, J.R. White and F.X. Han http://dx.doi.org/10.21079/11681/37237	AD1102912
ERDC/EL MP-20-5	Jun 2020	Laboratory Spiking Process of Soil with Various Uranium and Other Heavy Metals, by L. Chen, S.L. Larson, J.H. Ballard, Y. Ma, Q. Zhang, J. Li, L. Wu, Z. Arslan, and F.X. Han http://dx.doi.org/10.21079/11681/37258	AD1102991
ERDC/EL MP-20-6	Jun 2020	Influences of U Sources and Forms on Its Bioaccumulation in Indian Mustard and Sunflower, by F. Meng, D. Jin, K. Guo, S.L. Larson, J.H. Ballard, L. Chen, Z. Arslan, G. Yuan, J.R. White, L. Zhou, Y. Ma, C.A. Waggoner, and F.X. Han http://dx.doi.org/10.21079/11681/37275	AD1103259
ERDC/EL MP-20-7	Jul 2020	Novel Magnetic Nanocarbon and Its Adsorption of Hg and Pb from Water, by K. Guo, S.L. Larson, J.H. Ballard, Z. Arslan, R. Zhang, Y. Ran, Y. Su, and F.X. Han http://dx.doi.org/10.21079/11681/37373	AD1103458

ERDC/EL MP-20-8	Jul 2020	Removing Uranium (VI) from Aqueous Solution with Insoluble Humic Acid Derived from Leonardite, by F. Meng, G. Yuan, S.L. Larson, J.H. Ballard, C.A. Waggoner, Z. Arslan, and F.X. Han http://dx.doi.org/10.21079/11681/37378	AD1103460
ERDC/EL MP-20-9	Jul 2020	Kinetics and Thermodynamics of Uranium (VI) Adsorption onto Humic Acid Derived from Leonardite, by F. Meng, G. Yuan, S.L. Larson, J.H. Ballard, J.R. White, Z. Arslan, and F.X. Han http://dx.doi.org/10.21079/11681/37381	AD1103559

Special reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/EL SR-19-9	Nov 2019	A Systems Approach to Ecosystem Adaptive Management: A USACE Technical Guide, by J.C. Fischenich, S.J. Miller, and A.J. LoSchiavo http://dx.doi.org/10.21079/11681/34855	AD1086523
ERDC/EL SR-20-1	Apr 2020	Proceedings from the US Army Corps of Engineers (USACE) and the National Oceanic and Atmospheric Administration (NOAA)–National Ocean Service (NOS): Ecological Habitat Modeling Workshop, by B. Herman, T. Swannack, J. King, P. Whitfield, J. Davis, D. Szimanski, D. Bryant, J. Gailani, M. Whitbeck, and R. Golden http://dx.doi.org/10.21079/11681/36095	
ERDC/EL SR-20-2	Aug 2020	A Proposed Ecosystem Services Analysis Framework for the U.S. Army Corps of Engineers, by L.A. Wainger, A. McMurray, H.R. Griscom, E.O. Murray, J.A. Cushing, C.H. Theiling, and S. Komlos http://dx.doi.org/10.21079/11681/37741	AD1105752
ERDC/EL SR-20-3	Sep 2020	Aligning Research and Management Priorities for <i>Nitellopsis obtusa</i> (Starry Stonewort), by K. Pokrzywinski, K. Getsinger, B. Steckart, and J. Midwood http://dx.doi.org/10.21079/11681/38234	AD1110154
ERDC/EL SR-20-4	Sep 2020	Acid Sulfate Soils in Coastal Environments: A Review of Basic Concepts and Implications for Restoration, by C.M. VanZomeren, J.F. Berkowitz, C.D. Piercy, and J.K. King http://dx.doi.org/10.21079/11681/38240	AD1110187

ERDC/EL SR-20-5	Sep 2020	Method Selection Framework for the Quantitation of Nanocarbon Scientific Operating Procedure Series (SOP-C-3): Selection of Methods for Release Testing and Quantitation of Solids, Suspensions, and Air Samples for Carbon-Based Nanomaterials, by R.A. Crouch, D.P. Martin, V.K. Hicks, J.A. Brame, A.R. Poda, M.L. Ballentine, A.J. Kennedy, and A.J. Bednar http://dx.doi.org/10.21079/11681/38243	AD1110193
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Technical notes

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/EL TN-20-1	Sep 2020	Raster-Based Floristic Quality Index: Proof of Concept, by G.M. Suir, M.V. Carle, J.M. Harris, C.E. Sasser, and C.L. Saltus http://dx.doi.org/10.21079/11681/38124	AD1108803
ERDC/EL TN-20-2	Sep 2020	Biopolymer Production in the Aquifer of a Groundwater Pump-and-Treat System, by H.M. Knotek-Smith, C.M. Jung, D. Harrelson, A. Poda, and A. Bednar http://dx.doi.org/10.21079/11681/38221	AD1110044
ERDC/EL TN-20-3	Sep 2020	Evaluating Soil Phosphorus Storage Capacity in Constructed Wetlands: Sampling and Analysis Protocol for Site Selection, by C.M. VanZomerem and J.F. Berkowitz http://dx.doi.org/10.21079/11681/38224	AD1110070
ERDC/EL TN-20-4	Sep 2020	Optimization of LC-MS/MS Parameters for Analysis of Per- and Polyfluoroalkyl Substances (PFAS), by L. Moores, A. Kimble, G. George, D. Henderson, B. Stromer, R. Crouch, L. Soblosky, J. Smith, and A. Bednar http://dx.doi.org/10.21079/11681/38237	AD1110174

Technical reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/EL TR-19-19	Nov 2019	Regional Analysis of Lake and Reservoir Water Quality with Multispectral Satellite Remote Sensing Images, by M. Xu, H. Liu, R.A. Beck, M.K. Reif, E.B. Emery, and J.L. Young http://dx.doi.org/10.21079/11681/34933	AD1087816

ERDC/EL TR-19-20	Dec 2019	<i>waterquality</i> : An Open-Source R Package for the Detection and Quantification of Cyanobacterial Harmful Algal Blooms and Water Quality, by R.A. Johansen, M. Reif, E. Emery, J. Nowosad, R. Beck, M. Xu, and H. Liu http://dx.doi.org/10.21079/11681/35053	AD1088696
ERDC/EL TR-20-1	Jan 2020	Evaluation of Iron Sulfide Soil Formation Following Coastal Marsh Restoration – Observations from Three Case Studies, by J.F. Berkowitz, and C.M. VanZomeren http://dx.doi.org/10.21079/11681/35275	AD1090082
ERDC/EL TR-20-2	Apr 2020	Benefits of Engineered Habitats to Seasonal Bird Communities on the Savannah Harbor Navigation Project, Dredged Material Containment Areas, 1994-2012, by M.P. Guilfoyle, J.S. Calver, S.S. Jackson, M.E. Richards, and R.A. Fischer http://dx.doi.org/10.21079/11681/36039	AD1096168
ERDC/EL TR-20-3	Apr 2020	Baldcypress (<i>Taxodium distichum</i>) at the Wallisville Lake Project: A Review of Applicable Literature and Management Considerations, by N.R. Beane http://dx.doi.org/10.21079/11681/36319	
ERDC/EL TR-20-4	Sep 2020	Barriers to Innovation in USACE, by M.D. Wood, S. Larkin, E. Wells, I. Linkov and T.S. Bridges http://dx.doi.org/10.21079/11681/38246	AD1110208
ERDC/EL TR-20-5	Sep 2020	Development of a General Anadromous Fish Habitat Model: Phase 2: Initial Model Quantification, by B.D. Herman, T.M. Swannack, N.S. Richards, N.C. Gleason, and S. Altman http://dx.doi.org/10.21079/11681/38249	AD1110227
ERDC/EL TR-20-6	Sep 2020	Eutrophication Management via Iron-Phosphorus Binding, by E.L. Martinez-Guerra, L.A. Gurtowski, and C.M. Jung http://dx.doi.org/10.21079/11681/38260	AD1110290
ERDC/EL TR-20-7	Sep 2020	Evaluation of Unmanned Aircraft System Coastal Data Collection and Horizontal Accuracy: A Case Study at Garden City Beach, South Carolina, by M. Reif, S. Bourne, J. Laird, T. Berry, J. Wilkens, K. Philley, and K. Matheson http://dx.doi.org/10.21079/11681/38281	AD1110346
ERDC/EL TR-20-8	Sep 2020	The Demonstration and Validation of a Linked Watershed-Riverine Modeling System for DoD Installations – Patuxent Watershed, Maryland, by B.E. Johnson and Z. Zhang http://dx.doi.org/10.21079/11681/38299	AD1110608

6 Geospatial Research Laboratory (GRL)

Miscellaneous papers

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/GRL MP-19-2	Dec 2019	Estimation of 2D Clutter Maps in Complex Under-Canopy Environments from Airborne Discrete-Return Lidar, by H. Lee, M.J. Starek, S.B. Blundell, M. Schwind, C. Gard, and H. Puffenberger http://dx.doi.org/10.21079/11681/34995	AD1088294
ERDC/GRL MP-20-1	Jan 2020	An Airborne Lidar Point Cloud-based Below-Canopy Line-of-Sight Visibility Estimator, by H. Lee, S.B. Blundell, M.J. Starek, and J.G. Harris http://dx.doi.org/10.21079/11681/35175	AD1089559

Technical notes

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/GRL TN-19-3	Oct 2019	Robust Methods for Fusing Heterogeneous Spatiotemporal Data, by C.L. Ellison, Z.J. Roth, and C. Chen http://dx.doi.org/10.21079/11681/34755	
ERDC/GRL TN-19-4	Dec 2019	Temporal Disaggregation of Annual Dengue Cases to Monthly Dengue Cases, by N. Wayant http://dx.doi.org/10.21079/11681/35217	AD1108431
ERDC/GRL TN-20-1	Feb 2020	Spatial Downscaling Disease Risk Using Random Forests Machine Learning, by S.P. Griffin http://dx.doi.org/10.21079/11681/35618	AD1091776
ERDC/GRL TN-20-2	May 2020	An Assessment of an Inexpensive COTS 360-degree Camera for Mapping and Localization in a GPS-denied Area, by G.P. Glaspell http://dx.doi.org/10.21079/11681/36835	AD1101208
ERDC/GRL TN-20-3	Jul 2020	Spatiotemporally Coherent Tensor Decompositions for the Analysis of Trajectory Data, by T. Ruiz and C. Ellison http://dx.doi.org/10.21079/11681/37355	AD1103382
ERDC/GRL TN-20-4	Sep 2020	Using Unmanned Aircraft System (UAS) and Satellite Imagery to Map Aquatic and Terrestrial Vegetation, by S. Griffin and K. Lasko http://dx.doi.org/10.21079/11681/38086	

ERDC/GRL TN-20-5	Sep 2020	Understanding the Disease Vector Operational Environment by Predicting Presence of Anopheles Mosquito Breeding Sites Using Maximum Entropy Modeling and the Maxent Software Platform, by S.L. Lyon and K.V. Payne http://dx.doi.org/10.21079/11681/38127	AD1108826
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Technical reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/GRL TR-19-2	Dec 2019	Creation, Transformation, and Orientation Adjustment of a Building Façade Model for Feature Segmentation: Transforming 3D Building Point Cloud Models into 2D Georeferenced Feature Overlays, by S.B. Blundell and P. Devine http://dx.doi.org/10.21079/11681/35115	AD1089177
ERDC/GRL TR-20-1	Feb 2020	Coincidence Processing of Photon-Sensitive Mapping Lidar Data, by C. Marchant, R. Kirkpatrick, and D. Ober http://dx.doi.org/10.21079/11681/35599	AD1091618
ERDC/GRL TR-20-2	Feb 2020	Species Distribution Modeling of Ixodes scapularis and Associated Pathogens in States East of the Mississippi River, by K.V. Payne, S.P. Griffin, S.L. Lyon, R.E. Lopez, and N.M. Wayant http://dx.doi.org/10.21079/11681/35615	AD1091629
ERDC/GRL TR-20-3	Feb 2020	New and Enhanced Tools for Civil Military Operations (NET-CMO), by N.M. Wayant, S.J. Becker, J. Parker, S.B. Blundell, S. Lyon, M. Maloney, R. Lopez, S. Griffin and J.A. Nedza http://dx.doi.org/10.21079/11681/35621	AD1091735
¹ ERDC/GRL TR-20-4	Feb 2020	Harris GmAPD System Analysis: Range Resolution, Under Canopy Detection Rate, and Horizontal Resolution, by R.W. Kirkpatrick, C.C. Marchant, T. Scholtz, G. Hummel and A. Pogany	AD1091813
ERDC/GRL TR-20-5	Feb 2020	Local Spatial Dispersion for Multiscale Modeling of Geospatial Data: Exploring Dispersion Measures to Determine Optimal Raster Data Sample Sizes, by S.B. Blundell and N.M. Wayant http://dx.doi.org/10.21079/11681/35678	AD1091989

¹ Limited distribution; see Preface.

ERDC/GRL TR-20-6	Mar 2020	Optimized Low Size, Weight, Power and Cost (SWaP-C) Payload for Mapping Interiors and Subterranean on an Unmanned Ground Vehicle, by G. Glaspell, S. Lessard, B. Christie, K. Jannak-Huang, N. Wilde, W. He, O. Ennasr, D. Pham, D. Hasemann, P. Devine, and J. Kiene http://dx.doi.org/10.21079/11681/35878	AD1093600
ERDC/GRL TR-20-7	Mar 2020	Use of Convolutional Neural Networks for Semantic Image Segmentation Across Different Computing Systems, by A.R. Fisher, T.A. Middleton, J. Cotugno, E. Sava, L. Clemente-Harding, J. Berger, A. Smith, and T.C. Li http://dx.doi.org/10.21079/11681/35881	AD1094055
ERDC/GRL TR-20-8	Jul 2020	Autonomous QUerying And PATHogen Threat Agent Sensor System (AQUA PATH): Monitoring Source Waters with Geospatially Wirelessly Networked Distributed Sensing Systems, by C.B. Smith, A.R. Fisher, A.T. Ly, and M.J. Anderson http://dx.doi.org/10.21079/11681/37533	AD1104407
¹ ERDC/GRL TR-20-9	Jul 2020	Multiple Payload Configurations for Mapping Interiors and Subterranean on an Unmanned Ground Vehicle, by G. Glaspell and S. Lessard	AD1105065
¹ ERDC/GRL TR-20-10	Aug 2020	Captur3D: Building Interior and Subterranean Mapping, Modeling, and Visualization, by R.W. Curran, M.L. Collins, P.M. Devine, C.D. Gard, and K.V. Payne	AD1105621
¹ ERDC/GRL TR-20-11	Aug 2020	Diffraction-Limited Geiger-Mode Lidar Studies: FY2019 Deliverables Tech Report, by R.W. Kirkpatrick, R. Chapurin, D. Fried, D. Kelley, and E. Phelps	AD1106259

¹ Limited distribution; see Preface.

7 Geotechnical and Structures Laboratory (GSL)

Miscellaneous papers

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/GSL MP-20-1	Apr 2020	Improved Vehicle Mobility by Using Terrain Surfacing Systems, by J.F. Rushing and D.E. Harder http://dx.doi.org/10.21079/11681/36357	AD1097706

Technical reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
¹ ERDC/GSL TR-19-51	Dec 2019	Experimental Results for Scoping Test Series ST1, ST3, ST6, ST9, and ST11: Scoping Subjects ST1 (simulant ignition), ST3 (shock interaction), ST6 (aerosol size distribution), ST9 (pressurized liquid response to fragments), and ST11 (fragment mass loss), by P.W. Graham	AD1089655
ERDC/GSL TR-19-52	Dec 2018	Laboratory Characterization of Alkali-Silica Reaction Susceptibility of Aggregates for Charleroi Lock and Dam, Monongahela River Project, by M.A. Ramsey http://dx.doi.org/10.21079/11681/35118	AD1089173
¹ ERDC/GSL TR-20-1	Feb 2020	Experimental results for bimodal test series 3 (H2O with surfactant): tests BM42 through BM 62, by P.W. Graham	AD1092589
¹ ERDC/GSL TR-20-2	Jan 2020	Penetration Modelling of Ultra-High Performance Concrete Using the Nonlinear Meshfree Analysis Program (NMAP), by P.A. Sparks, J.A. Sherburn, W.F. Heard, B.A. Williams, D. Roman-Castro, and R. Magee	AD1089650
¹ ERDC/GSL TR-20-3	Feb 2020	Market survey and analysis of alternatives of surface capping technologies, by W.D. Carruth and W.C. Floyd	AD1091257
ERDC/GSL TR-20-4	Feb 2020	Development of Magnesium Phosphate Cement (MPC) Concrete Mixture Proportioning for Airfield Pavements: Laboratory and Field Validation MPC Test Report, by M.A. Ramsey, D.A. Scott, C.A. Weiss Jr., and J.S. Tingle http://dx.doi.org/10.21079/11681/35475	AD1091295

¹ Limited distribution; see Preface.

¹ ERDC/GSL TR-20-5	Feb 2020	Characterization of Near-Surface Soils from Three OCONUS Sites: RNCf, RFFT, and RHCS, by K.J. Ratliff, S.S. Graham, and S.A. Akers	AD1091843
¹ ERDC/GSL TR-20-6	Feb 2020	Characterizing Effects from a HELLFIRE R9E Warhead Buried in a Simulated Asphalt Roadbed, by W.S. Myers, S. Bartyczak, M. Gallamore, B.L. Kolaya, J.Q. Ehr Gott, Jr., E. Cruz-Guiterrex, J.E. Windham, and T.A. Waddell	AD1091808
¹ ERDC/GSL TR-20-7	Feb 2020	Modeling of Optimized High-Performance Concrete Beams in Four-Point Bending, by A.B. Groeneveld, M.Q. Chandler, R.E. Walker, and C.K. Crane	AD1092090
¹ ERDC/GSL TR-20-8	Feb 2020	Nuclear Airblast and Thermal Environments Testing and Modeling: FY16 Comparison of Open-Air Testing, by J.L. O'Daniel, A.T. Barnes, G.C. Bessette, G. Emmanuelli, M.A. Hunt, and R.A. Weed	AD1092166
ERDC/GSL TR-20-9	Apr 2020	Evaluation of Rapid-Setting Cementitious Materials and Testing Protocol for Airfield Spall Repair, by M.A. Ramsey, J.S. Tingle, and Dr. C.A. Rutland http://dx.doi.org/10.21079/11681/36098	AD1095430
ERDC/GSL TR-20-10	Apr 2020	Feasibility Investigation of Inductive Heating of Asphalt Repair Materials, by B.C. Cox, W.C. Floyd, J.F. Rushing, T.A. Carr, and C.A. Rutland http://dx.doi.org/10.21079/11681/36115	AD1095506
ERDC/GSL TR-20-11	Apr 2020	Laboratory Characterization of Rapid-Setting Flowable Fill, by W.D. Carruth and M.A. Ramsey http://dx.doi.org/10.21079/11681/36353	AD1097199
ERDC/GSL TR-20-12	Apr 2020	Effects of Boric Acid and Water Content on Fundamental Properties of Proprietary Magnesium Phosphate Cement (MPC) Products, by M.A. Ramsey, D.A. Scott, C.A. Weiss Jr., and J.S. Tingle http://dx.doi.org/10.21079/11681/36393	AD1097282
ERDC/GSL TR-20-13	Apr 2020	Structural Analysis of an Improved Ribbon Bridge Subjected to Hydrodynamic and Vehicular Loading, by M.W. Trim and J.A. Padula http://dx.doi.org/10.21079/11681/37100	AD1102169

¹ Limited distribution; see Preface.

¹ ERDC/GSL TR-20-14	Apr 2020	Connector durability testing for the line of communication bridge, by C.K. Crane, R.D. Whitlow, A.B. Groeneveld, R.E. Bennett, Z.B. McClelland, R.A. Andreatta, A. Hull, A. Kashtelyan, and M. Pohland	AD1098253
¹ ERDC/GSL TR-20-15	May 2020	Optimization of Armor Configuration for the Modular Protective System Overhead Cover (MPS-OHC) Against 155-mm M107 (Composition B Filled) Artillery: Fragment Simulating Facility Testing, by D.H. Rios, J.B. Jordan, O. Esquilin-Mangual, C.S. Stephens, and U.Y. Carambot-Rodriguez	AD1101313
¹ ERDC/GSL TR-20-16	May 2020	Advanced Computational Mechanics: Post-Experiment Calculations, by J.A. Sherburn, A.O. Frank, M.D. Adley, R.S. Browning IV, M.I. Hammons, M.J. Roth, and P.A. Sparks	AD1100876
ERDC/GSL TR-20-17	May 2020	Full-Scale Testing of Commercially Available Cementitious Backfill and Surface Capping Materials for Crater Repairs, by W.D. Carruth http://dx.doi.org/10.21079/11681/36875	AD1100871
¹ ERDC/GSL TR-20-18	May 2020	Characterizing Effects from a HELLFIRE R9E Warhead Buried in a Clayey Sand Soil, by W.S. Myers Jr., E. Cruz-Gutierrez, J.Q. Ehrgott Jr., T.A. Waddell, S.L. Bartyczak, M. Gallamore, S. Strand, and B.L. Kolaya	AD1101057
¹ ERDC/GSL TR-20-19	May 2020	Near-Field Airblast for the High Explosive Composition C4: Modeling, Simulation, and Experiments, by A.O. Frank, S.D. Turner, W.N. Stephens, and D.C. Guynes	AD1101131
ERDC/GSL TR-20-20	May 2020	Investigation of Materials for Charleroi Lock and Dam Monongahela River Reconstruction Project, by M.A. Ramsey and C.M. Strack http://dx.doi.org/10.21079/11681/36937	AD1101229
¹ ERDC/GSL TR-20-21	May 2020	Near-Field Airblast for the Homemade Explosive AN/AI (12 to 1): Modeling, Simulation, and Experiments, by A.O. Frank, S.D. Turner, W.N. Stephens, and D.C. Guynes	AD1102417
ERDC/GSL TR-20-22	May 2020	Improved Ribbon Bridge Structural Response Validation Testing, by M.W. Trim and R.E. Bennett http://dx.doi.org/10.21079/11681/37113	AD1102175

¹ Limited distribution; see Preface.

¹ ERDC/GSL TR-20-23	Jun 2020	Investigating Matched Filter Approaches for Automatic Target Recognition in Synthetic Mid-Wave Infrared Imagery, by S.R. Price	AD1102788
¹ ERDC/GSL TR-20-24 Part 1	Jun 2020	Experimental Evaluation of the Impulse Reduction by Plywood and Insulated Foam Panels as Triggering Materials: Part 1 of 3, by O. Esquilin-Mangual, D.H. Nelson, and E.M. Gonzalez-Centeno	AD1102975
¹ ERDC/GSL TR-20-24 Part 2	Aug 2020	Experimental Evaluation of the Impulse Reduction by Plywood and Insulated Foam Panels as Triggering Materials: Part 2 of 3, by O. Esquilin-Mangual, N. Ramos-Olivieri, and D.H. Nelson	AD1107475
¹ ERDC/GSL TR-20-24 Part 3	Aug 2020	Experimental Evaluation of the Impulse Reduction by Plywood and Insulated Foam Panels as Triggering Materials: Part 3 of 3, by O. Esquilin-Mangual, F.J. Acosta, B.A. Jones, J.A. Romeu-Torres, D.H. Nelson, and C.S. Stephens	AD1107643
¹ ERDC/GSL TR-20-25	Jul 2020	Experimental Study of Blast Mitigation Schemes for Masonry Walls, by B.G. Woodson, B.W. Foust, and J.O. Torres-Alamo	AD1103330
¹ ERDC/GSL TR-20-26	Jul 2020	DBA-105P Cratering Performance Experiments, by J.K. Fulk, D.G. Roman-Castro, A.O. Frank, M.J. Roth, and D.V. Senior	AD1103826
ERDC/GSL TR-20-27	Jul 2020	Development of Expedient Ultra-High Molecular Weight Aircraft Arresting System Panel Installation Procedures, by P.G. Bly http://dx.doi.org/10.21079/11681/37536	AD1104490
¹ ERDC/GSL TR-20-28	Jul 2020	Full-Scale Validation of Blast Mitigation Scheme for Masonry Tunnels, by B.G. Woodson, B.W. Foust, S.W. Alves, and L. McMichael	AD1104552
¹ ERDC/GSL TR-20-29	Jul 2020	Nuclear Airblast and Thermal Environments Testing and Modeling – FY16: Column Scenario, by A.T. Barnes, J.L. O’Daniel, G.C. Bessette, G. Emmanuelli, M.A. Hunt, and R.A. Weed	AD1105009
¹ ERDC/GSL TR-20-30	Aug 2020	Preliminary Testing of Pavement Cutting, Breaking, and Excavation Technologies: E-ADR Spiral 1, by H.P. Bell, S.D. Turner, D.D. Rickman, and J.Q. Ehrgott, Jr.	AD1106611
¹ ERDC/GSL TR-20-31	Aug 2020	Near-Field Airblast for the Homemade Explosive ANFO: Modeling, Simulation, and Experiments, by A.O. Frank, S.D. Turner, W.N. Stephens, and D.C. Guynes	AD1106972

¹ Limited distribution; see Preface.

ERDC/GSL TR-20-32	Aug 2020	Sensor and Environment Physics in the Virtual Autonomous Navigation Environment (VANE), by J.T. Carrillo, C.T. Goodin, and J. Fernandez http://dx.doi.org/10.21079/11681/37968	AD1107266
ERDC/GSL TR-20-33	Sep 2020	Investigation of Testing Materials for the Chickamauga Lock and Dam Reconstruction Project, by M.A. Ramsey, T.R. Johnson, and E.R. Reed http://dx.doi.org/10.21079/11681/38037	AD1107899
¹ ERDC/GSL TR-20-34	Sep 2020	Technical Demonstration of Pavement Cutting, Breaking, and Excavation Technologies: E-ADR Spiral 1, by H.P. Bell, S.D. Turner, D.D. Rickman, J.R. Davis, Jr., and J.Q. Ehrgott, Jr.	AD1109233
ERDC/GSL TR-20-35	Sep 2020	Electronic Railroad Inspection Database System for Military Facilities, by T.J. Beasley, A.J. Falls, C.A. Gartrell, L.L. Johnson, J. Reagan, and C. Carter http://dx.doi.org/10.21079/11681/38149	AD1109407

¹ Limited distribution; see Preface.

8 Information Technology Laboratory (ITL)

Miscellaneous papers

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/ITL MP-20-1	Jul 2020	Understanding State-of-the-Art Material Classification through Deep Visualization, by J.T. Donovan http://dx.doi.org/10.21079/11681/37618	AD1105032

Special reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/ITL SR-17-1 App. D	Nov 2019	Publications of the U.S. Army Engineer Research and Development Center; Appendix D: FY19 (October 2018-September 2019, by J.A. Dolan http://dx.doi.org/10.21079/11681/34897	AD1087396
ERDC/ITL SR-20-1-	Apr 2020	The Forefront: A Review of ERDC Publications, Spring 2020, by the Information Technology Laboratory (U.S.). Information Science and Knowledge Management Branch http://dx.doi.org/10.21079/11681/36316	AD1097763
¹ ERDC/ITL SR-20-2	Apr 2020	Information Technology Laboratory Symposium Proceedings 2019, by K.J. Walker	AD1097340
ERDC/ITL SR-20-3	Apr 2020	Using Morton Codes to Partition Faceted Geometry: An Architecture for Terabyte-Scale Geometry Models, by R.H. Hunter, B.C. White, R.R. Patel, and J.R. Ballard, Jr. http://dx.doi.org/10.21079/11681/36516	AD1098221
ERDC/ITL SR-20-4	Jun 2020	Water Quality Visualization Tools: A Python Application (1/A), by C.H. Mize http://dx.doi.org/10.21079/11681/37053	AD1102382
ERDC/ITL SR-20-5	May 2020	Parallel File I/O for Geometric Models: Formats and Methods, by R.H. Hunter, B.C. White, R.R. Patel, and J.R. Ballard, Jr. http://dx.doi.org/10.21079/11681/36758	
ERDC/ITL SR-20-6	Aug 2020	Insights: An Update on the USACE Data Strategy Initiative; April 2019 Edition, by C.D. Butler, M.C. Kittrell, and R.G. Dixon http://dx.doi.org/10.21079/11681/37939	AD1106809

¹ Limited distribution; see Preface.

ERDC/ITL SR-20-7	Aug 2020	Insights: An Update of the USACE Data Strategy Initiative; November 2019 Edition, by C.D. Butler, M.C. Kittrell, A.P. Strelzoff, J.E. Ross, J.M. Bailey, and A.N. Abraham http://dx.doi.org/10.21079/11681/37940	AD1106827
ERDC/ITL SR-20-8	Aug 2020	Analysis of ERS Use Cases for iRODS. by K.D. Winters, M.A. Cowan, G.E. George, M.E. Gonzalez, B. Priest, O. Morris, and J. Landrum http://dx.doi.org/10.21079/11681/38009	AD1107657
ERDC/ITL SR-20-9	Aug 2020	Web-Enabled Interface for iRODS: Comparing Hydroshare and Metalnx, by K.D. Winters, M.A. Cowan, G.E. George, M.E. Gonzalez, B. Priest, O. Morris, and J. Landrum http://dx.doi.org/10.21079/11681/38012	AD1107677
ERDC/ITL SR-20-10	Aug 2020	Integrated Rule-Oriented Data System (iRODS) and High Performance Computing (HPC) Requirements Document, by K.D. Winters, M.A. Cowan, G.E. George, M.E. Gonzalez, B. Priest, O. Morris, and J. Landrum http://dx.doi.org/10.21079/11681/38021	AD1107725
ERDC/ITL SR-20-11	Aug 2020	Integrated Rule-Oriented Data System (iRODS) and High Performance Computing (HPC) Project Management Plan, by K.D. Winters, M.A. Cowan, G.E. George, M.E. Gonzalez, B. Priest, O. Morris, and J. Landrum http://dx.doi.org/10.21079/11681/38027	AD1107741
ERDC/ITL SR-20-12	Sep 2020	Integrated Rule-Oriented Data System (iRODS) and High Performance Computing (HPC) Architecture Design, by K.D. Winters, M.A. Cowan, G.E. George, M.E. Gonzalez, B. Priest, O. Morris, and J. Landrum http://dx.doi.org/10.21079/11681/38034	AD1107809
¹ ERDC/ITL SR-20-13	SEP 2020	Customizing a NavyFOAM Virtual Towing Tank Module for the Galaxy Simulation Builder, by A.N. Mohamed, T.A. Mondragon, G.G. George, and A.E. Bednar	AD1108963
ERDC/ITL SR-20-14	Sep 2020	USACE BIM Object Library user guide: Release 1.0 http://dx.doi.org/10.21079/11681/38185	AD1109747
ERDC/ITL SR-20-15	Sep 2020	Mindbreeze InSpire Search Appliance Implementation and Lessons Learned, by B.M. Garton, J.S. Broderick, and M.A. Clement http://dx.doi.org/10.21079/11681/38188	AD1109769

¹ Limited distribution; see Preface.

ERDC/ITL SR-20-16	Sep 2020	Discover Employees User's Guide, by B.M. Garton, J.S. Broderick, and M.A. Clement http://dx.doi.org/10.21079/11681/38228	AD1110107
ERDC/ITL SR-20-17	Sep 2020	Discover ERDC Support Staff User's Guide, by B.M. Garton, J.S. Broderick, and M.A. Clement http://dx.doi.org/10.21079/11681/38231	AD1110143
ERDC/ITL SR-20-18	Sep 2020	Discover ERDC Knowledge Management Representative (KMR) User's Guide, by B.M. Garton, J.S. Broderick, and M.A. Clement http://dx.doi.org/10.21079/11681/38359	AD1111463

Technical reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
¹ ERDC/ITL TR-20-1	Aug 2020	Adapting the NavyFOAM VTT 2.0 Workflow for Galaxy, by T.A. Mondragon, A.N. Mohamed, G.E. George, and A.E. Bednar	AD1105865
ERDC/ITL TR-20-2	Sep 2020	STE Environmental Manager (STEEM) Demonstration Web Application, by J. Boone, N. Swain, G. Larsen, and M. Souffront http://dx.doi.org/10.21079/11681/38201	AD1109881
¹ ERDC/ITL TR-20-3	Sep 2020	Forward Operating Base (FOB) Unmanned Aerial System (UAS) Detection and Defense Planning, by W.B. Leonard, C.H. Rinaudo, J.E. Richards, S.R. Goerger, W.H. Brown, and K.N. Niles	AD1112764

¹ Limited distribution; see Preface.

9 Aquatic Plant Control Research Program (APCRP)

Technical notes

Biological control

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/TN APCRP-BC-43	Sep 2020	A First Examination of the Interaction between <i>Alternaria alternantherae</i> and <i>Agasicles hygrophila</i> on <i>Alternanthera philoxeroides</i> , by N. Harms and J.F. Shearer http://dx.doi.org/10.21079/11681/38087	AD1108437

10 Dredging Operations and Environmental Research Program (DOER)

Technical notes

Dredged material management

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/TN DOER-D22	May 2020	Characterization of Eroded Mud Aggregates with the Flume Imaging Camera System (FICS) and Its Added Value to Sediment Management Projects, by K.A. Fall, D.W. Perkey, and S.J. Smith http://dx.doi.org/10.21079/11681/36519	AD1099825

Dredging technologies

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/TN DOER-T-15	Mar 2020	SPDAT Rainfall and Streamflow Analysis at Mobile, Alabama, by L. Coe and C. Moore http://dx.doi.org/10.21079/11681/35793	AD1093213

Environmental resource protection

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/TN DOER-E44	Jan 2020	Thin Layer Placement of Sediments for Restoring Ecological Function to Submerging Salt Marshes: A Quantitative Review of Scientific Literature, by C.M. VanZomeren and C.D. Piercy http://dx.doi.org/10.21079/11681/35373	AD1092359

Risk

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/TN DOER-R28	Nov 2019	Basics of Life-Cycle Assessment for Navigation, by C. Fox-Lent, M.E. Bates, and M.H. Kurth http://dx.doi.org/10.21079/11681/34856	

ERDC/TN DOER-R29 Dec 2019 Future Directions of Threatened and Endangered Species and Environmental Windows Research within the Dredging Operations and Environmental Research Program, by B.C. Suedel and R.A. Fischer
<http://dx.doi.org/10.21079/11681/34955>

11 Dredging Operations Technical Support Program (DOTS)

Technical notes

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/TN DOTS-20-1	Jan 2020	Fate and Effects of Microcystin in Nearshore and Upland Environments: A Literature Review, by A.D. McQueen, M.W. Habberfield, K.G. Keil, and B.C. Suedel http://dx.doi.org/10.21079/11681/35274	AD1092361

12 Engineering with Nature Program (EWN)

Technical notes

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/TN EWN-20-1	Jan 2020	Use of Engineering With Nature® Concepts on the Savannah Harbor Navigation Project, Dredged Material Containment Areas, Savanna, GA, by M.P. Guilfoyle, J.S. Calver, M.E. Richards, and R.A. Fischer http://dx.doi.org/10.21079/11681/35353	AD1096172
ERDC/TN EWN-20-3	Sep 2020	Documenting Engineering with Nature® Implementation within the US Army Corps of Engineers Baltimore District – Completed Projects and Opportunities for Chronosequence Analysis, by J.F. Berkowitz and D. Szimanski http://dx.doi.org/10.21079/11681/38141	AD1109181

13 Regional Sediment Management Demonstration Program (RSM)

Technical notes

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/TN RSM-19-8	Nov 2019	Reservoir Sediment Management and Analysis Workshop for Engineers, by J. Shelley, P. Boyd, S. Gibson, I. Floyd, B. Greimann, M. Ramos-Villanueva, and T. Dahl http://dx.doi.org/10.21079/11681/34503	AD1092179
ERDC/TN RSM-20-1	Jan 2020	Effects of Bank Stabilization on Regional Sediment Management: Lessons Learned from the Kansas River and Grand River Basins, by A. Williams and J. Shelley http://dx.doi.org/10.21079/11681/35313	AD1091334
ERDC/TN RSM-20-2	Feb 2020	Design Considerations for Beneficial Use Sites along the Channel to Victoria, Calhoun County, Texas, by P. Hamilton, L. Lin, S. Howard, A. Burgin, and B. Crawford http://dx.doi.org/10.21079/11681/35553	AD1091937
ERDC/TN RSM-20-3	Feb 2020	Bed-Load Transport Measurements on the Chippewa River Using the ISSDOTv2 Method, by D. Abraham, J. Hendrickson, K. Jones, A. Jackson, and T. McAlpin http://dx.doi.org/10.21079/11681/35634	AD1092255
ERDC/TN RSM-20-4	Apr 2020	Seamless Integration of Lidar-Derived Volumes and Geomorphic Features into the Sediment Budget Analysis System, by L. Dunkin, E. Eisemann, M. Hartman, and J. Wozencraft http://dx.doi.org/10.21079/11681/36296	AD1097429
ERDC/TN RSM-20-5	Apr 2020	Geochemical Fingerprinting of Sediment Sources Associated with Deposition in the Calcasieu Ship Channel, by D. Perkey, A. Priestas, B. Boyd, J. Corbino, and L. Moores http://dx.doi.org/10.21079/11681/36313	AD1097409
ERDC/TN RSM-20-6	Aug 2020	Contribution of Two Eroding Banks to Multipurpose Pool Sedimentation at a Midwestern Reservoir, by J. Shelley, M. Kenney, A. Layzell, and T. Brown http://dx.doi.org/10.21079/11681/37946	AD1107078

ERDC/TN RSM-20-7	Sep 2020	South Atlantic Division (SAD) Regional Sediment Management Optimization Pilot, by C.A. McCoy, J.J. Keiser, K.N. Mitchell, and L.S. Lillycrop http://dx.doi.org/10.21079/11681/37969	AD1108015
ERDC/TN RSM-20-8	Sep 2020	Development of a HEC-RAS Sediment Model for the Chippewa River, Wisconsin for Use in Predicting Future Dredging Activities, by A. Nelson http://dx.doi.org/10.21079/11681/38256	AD1110270

14 Wetlands Regulatory Assistance Program (WRAP)

Technical notes

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
ERDC/TN WRAP-20-1	Sep 2020	Readily Available Hydrologic Models: Pertinence to Regulatory Application, by B.A. Pruitt http://dx.doi.org/10.21079/11681/38031	AD1107965

15 Miscellaneous Publications

Technical reports

<u>Report Number</u>	<u>Date</u>	<u>Title</u>	<u>AD Number</u>
MRG&P Report No. 29	Jan 2020	Comparison of Benthic Fish Assemblages along Revetted and Natural Banks in the Lower Mississippi River: A 30-Year Perspective, by K.J. Killgore and S.G. George http://dx.doi.org/10.21079/11681/35259	AD1090929
MRG&P Report No. 30	Feb 2020	Numerical Sedimentation Investigation Mississippi River Cairo to Pilots Station, by R.R. Copeland, L. Lombard, R.A. Gaines http://dx.doi.org/10.21079/11681/35573	AD1091695
MRG&P Report No. 31	Feb 2020	Application of Chirp Acoustic Sub-Bottom Data in Riverine Environments: Identification of Underlying Rocky Hazards at Cape Girardeau, Missouri, and Thebes, Illinois, by H.M. Wadman and J.E. McNinch http://dx.doi.org/10.21079/11681/35734	AD1092298
MRG&P Report No. 32	Apr 2020	Lake Providence to Old River Geomorphology Assessment, by W. Echevarria-Doyle, D.S. Biedenharn, and C.D. Little Jr. http://dx.doi.org/10.21079/11681/36333	
MRG&P Report No. 33	May 2020	Hydraulic Analysis and Modeling of Navigation Conditions near the Mississippi River Bridges in Vicksburg, Mississippi, by K.E. Jones, T.O. McAlpin, and T.N. Waller http://dx.doi.org/10.21079/11681/37133	AD1102470
MRG&P Report No. 34	Jun 2020	Changes in Hydrology and Suspended-Sediment Transport in the Mississippi River Basin over the Past Century, by A. Simon, K. Artita, G. Simon, S. Darby, and J. Leyland http://dx.doi.org/10.21079/11681/37073	AD1102465

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