New Sediment Transport Modeling Capability Presented at International Cohesive Sediment Conference (INTERCOH), Incheon, South Korea

Impact Statement: Dense mud aggregates, formed by the dredging process or natural sediment processes, often transport as bedload, which makes them much more likely to be trapped by navigation channels, ports, and reservoirs. The experimental research and the developed predictive method provide a first capability to evaluate the trapping of these dense mud aggregates near channel-adjacent dredged material placement and reservoir sediment management activities.

Dr. Jarrell Smith (CHL) attended the 2023 International Cohesive Sediment Conference (INTERCOH) held in Incheon, South Korea, 18-22 September 2023. Dr. Smith presented "Erosion, Transport, and Abrasion of Dense Mud Aggregates" co-authored by David Perkey, Kelsey Fall, Danielle Tarpley, and Richard Styles (all of CHL) and "Modeling the Transport and Abrasion of Dense Mud Aggregates in the James River Estuary, Virginia" authored by Earl Hayter with co-authors Jonathan Hollingsworth, Jarrell Smith, and Danielle Tarpley (all of CHL) (Figure 1). The research presented was funded by the USACE Dredging Operations and Environmental Research (DOER) Program, Coastal Inlets Research Program (CIRP), and the Regional Sediment Management (RSM) Research Program, to address the strong potential of channel sedimentation by dense mud aggregates transported from channel-adjacent dredged material placement sites. The experiments and new predictive capability are novel, cutting-edge research and development now available in the Long-Term Fate (LTFATE) sediment transport model.

INTERCOH features cutting-edge research in cohesive sediment transport presented by leading researchers from around the globe. Dr. Smith serves on the Conference Steering Committee and is a member of the local organizing committee for the 2025 INTERCOH conference to be held in the United States.

Attendance at INTERCOH 2023 was funded by the USACE Dredging Operations and Environmental Research (DOER) Program, Coastal Inlets Research Program (CIRP), and the Regional Sediment Management (RSM) Research Program.

Figure 1. Presentations featuring ERDC-led sediment research at the International Cohesive Sediment Conference in Incheon, South Korea.

POC: Dr. Jarrell Smith Jarrell.Smith@usace.army.mil