**Title:** Light Availability Calculator: Case Study Demonstration and Sensitivity Analysis

**Abstract:** The Light Availability Calculator is a geospatial tool that calculates existing submerged aquatic vegetation (SAV) habitat suitability as a function of wind-wave induced turbidity as well as prescribe beneficial use of dredged material (BUDM) lifts that can improve the light environment. The tool was developed to inform site selection for open water BUDM to support SAV habitat expansion. A case study demonstration around placement sites in Barnegat Bay, NJ fringed with SAV is presented. To validate tool output, suitable SAV habitat was compared to SAV coverage observations. SAV was mostly found in areas classified as suitable, but not all suitable habitat locations were occupied by SAV. This suggests that additional factors may control SAV presence. We also present the results of a sensitivity analysis of the input parameters to highlight differences in tool efficiency and predictions. Other case studies are being tested by USACE Districts.

## Presenters:



**Emily Russ, PhD**
Research Biologist
Environmental Laboratory
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**Bio:** Dr. Emily Russ is a Research Biologist at the U.S. Army Engineer Research and Development Center (ERDC). She works within the Environmental Laboratory (EL) on the Integrated Ecological Modeling Team, where her research focuses on sediment transport, coastal ecology, and nature-based solutions.



**Thomas Huff, PhD**
Research Biologist
Environmental Laboratory
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**Bio:** Dr. Thomas P. Huff is a Research Biologist at the U.S. Army Engineer Research and Development Center (ERDC), specifically working within the Environmental Laboratory (EL) based in Vicksburg, Mississippi. His expertise sits at the intersection of ecosystem science, numerical modeling, and coastal resilience.



**Liz Holzenthal, PhD**
Research Civil Engineer
Coastal and Hydraulics Laboratory
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**Bio:** Dr. Elizabeth (Liz) R. Holzenthal is a Research Civil Engineer at the U.S. Army Engineer Research and Development Center (ERDC), operating within the Coastal and Hydraulics Laboratory (CHL) based in Vicksburg, Mississippi. Her research spans coastal hydrodynamics, wave-vegetation interactions, and sediment management.