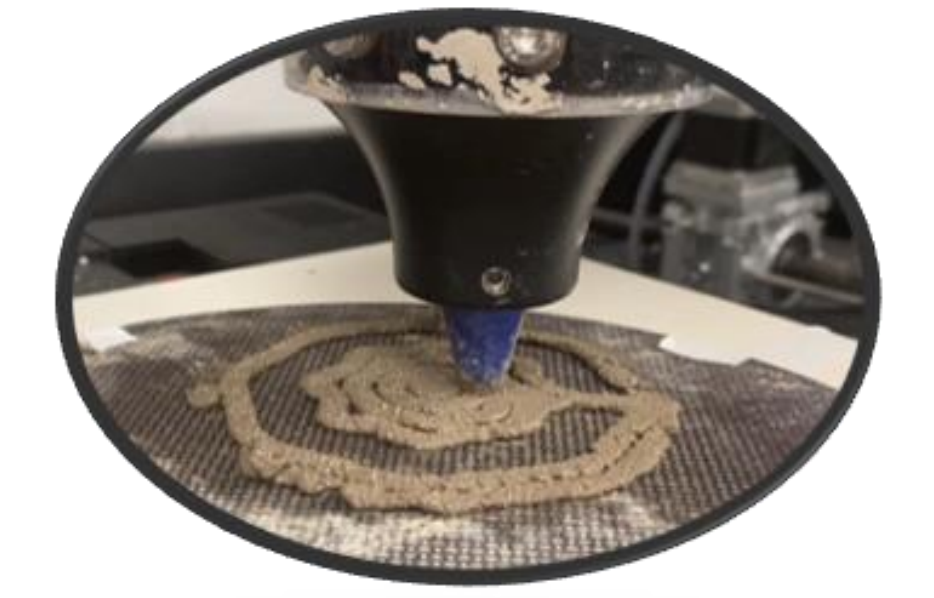


Beneficial Use of Dredged Sediment by 3D

Printing Into Nature-Inspired Infrastructure

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CHALLENGE

- Perception dredged sediment is waste to be disposed of
- Beneficial use of fine-grained sediment (70/30 goal)
- Artificial reefs lack natural geometric complexity; constructed from unsuitable, unsustainable materials



RESEARCH

- Demonstrate the power of 3D printing to transform dredged sediment into Nature-Inspired Infrastructure
- Determine which sediments and harbors are amendable to 3D printing into nature-based features
- Determine capability gaps to overcome for demonstration, field-scale use



CAPABILITY & TRANSITION

- Multi-sector community of practice
- Demonstrated structures promoting NBS for:
 1. Habitat creation and restoration
 2. Coastal resilience
- Structure, sediment, print property database
- Large format printing on-site to promote increased beneficial use of dredged sediment



Participate in Technical Discussion

- Research integrating 3-D printing (3DP) into nature-inspired infrastructure (NII)
- Past and current application of 3DP capabilities for NII
- Natural feedstocks and beneficial use of dredge material
- Feasible paths forward to implement scalable demonstrations
- Research and technology gaps to further advance this field
- Proving ground for near-term testing & validation of 3DP-NII applications



Featured on the EWN Podcast
3D Printing Nature-Based Solutions



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<https://ewn.erdcdren.mil/research/project/removing-artificial-from-artificial-habitats-3d-printing-natural-materials-to-unlock-complex-nature-inspired-infrastructure/>

