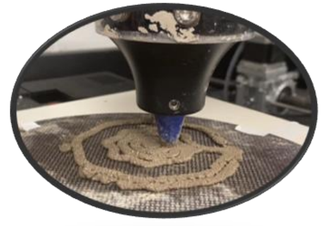
Beneficial Use of Dredged Sediment by 3D Printing Into Nature-Inspired Infrastructure



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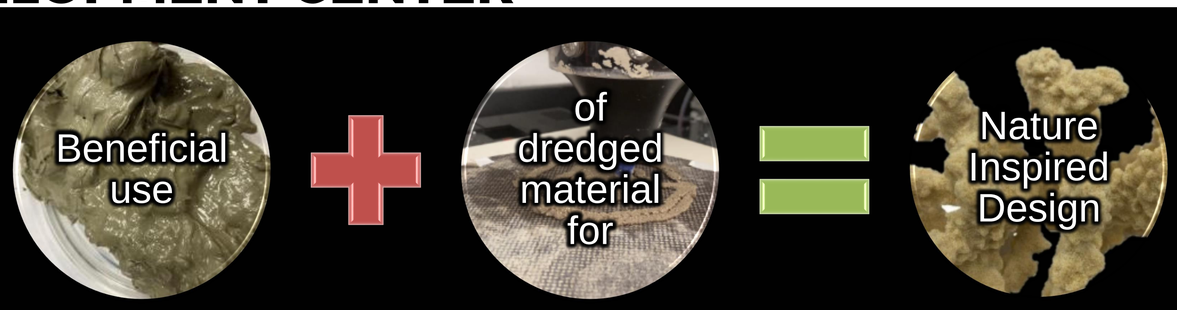
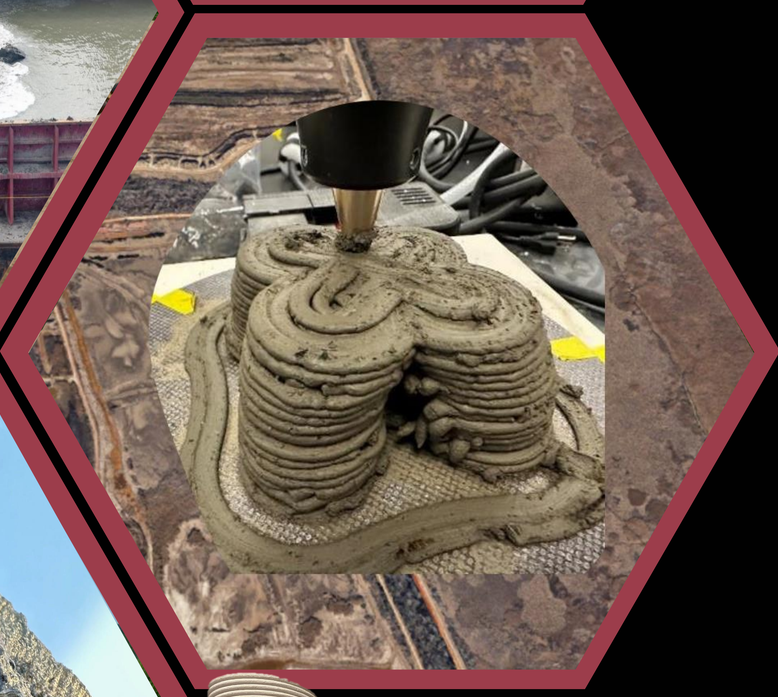
CHALLENGE

- 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



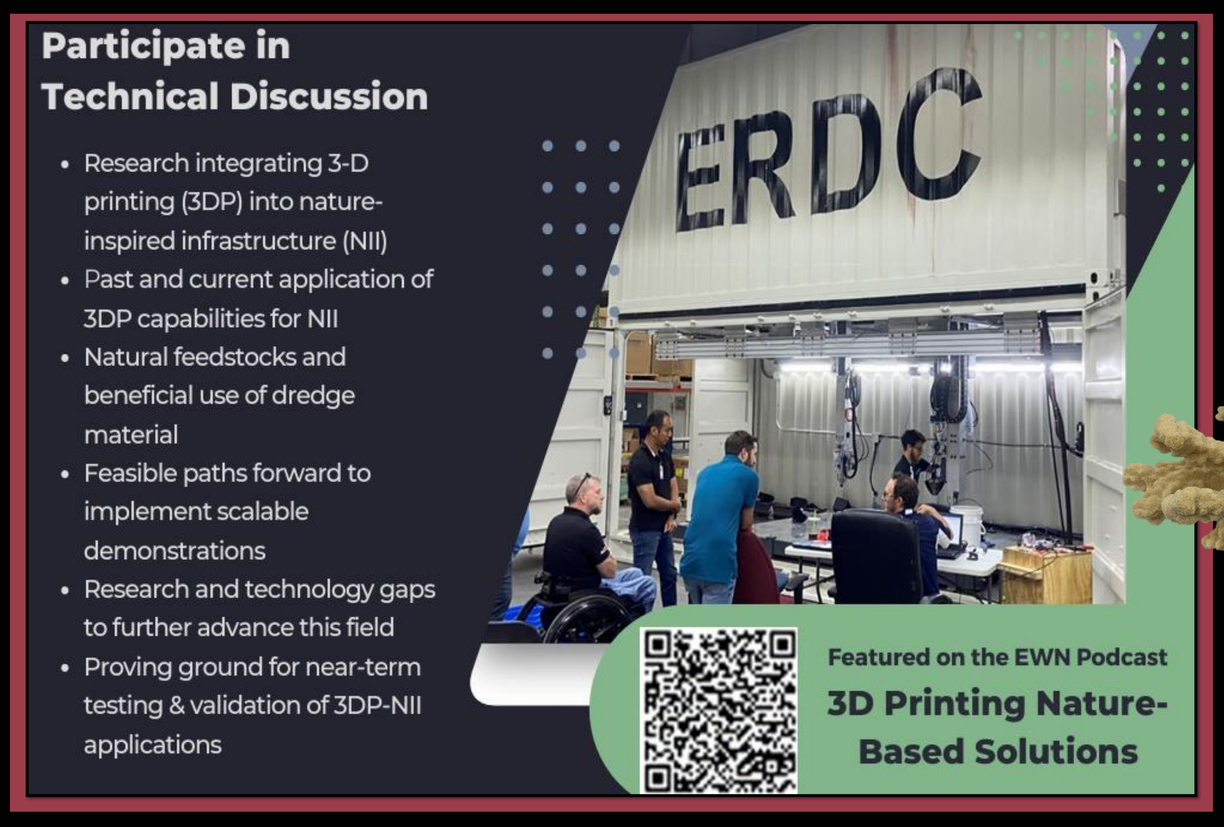
RESEARCH

- 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



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

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