



US Army Corps of Engineers
BUFFALO DISTRICT, GREAT LAKES AND OHIO RIVER DIVISION



Maumee Bay

Beneficial Use of Dredged Material
Regional Sediment Management, Section 204 Project

Habitat Type and Target Species Coordination Meeting

February 24, 2009

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BUFFALO DISTRICT, GREAT LAKES AND OHIO RIVER DIVISION



Welcome

- City of Oregon
- Ohio Dept. of Natural Resources (ODNR)
- Toledo-Lucas County Port Authority
- Ohio Environmental Protection Agency
- US Fish & Wildlife Service
- Industry Interests
- Toledo University
- Lake Erie Waterkeeper
- Ducks Unlimited

USACE Team

- Craig Forgette, P.E. – Project Manager
- Colleen O'Connell – Coastal Engineer
- Scott Schlueter – Biologist
- David Schulenberg – Plan Formulator

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Purpose

- Define Customer/Stakeholder Expectations
 - Habitat Type
 - Target Species
 - Ditch Relocation
- Outline Key Constraints
 - Maintain Coastal Wetlands
 - Environmental Windows



Schedule

- Feasibility – FY08-FY10
(100% Federal)
- Detailed Project Report
- National Environmental Protection Act Coordination
- Design – FY11
(65% Federal, 35% non-Federal)
- Plans & Specifications
- Construction – FY12
(65% Federal, 35% non-Federal)



Feasibility Study: Where are we now?

PROCESS

- ✓ Inventory existing conditions
- ✓ Problem identification
- ✓ Determine planning objectives and constraints
- ✓ Develop measures
 - Combine measures to formulate alternative plans
 - Evaluate alternative plans
 - Select a plan

DOCUMENTS

- Detailed Project Report
- Environmental Assessment or Environmental Impact Statement



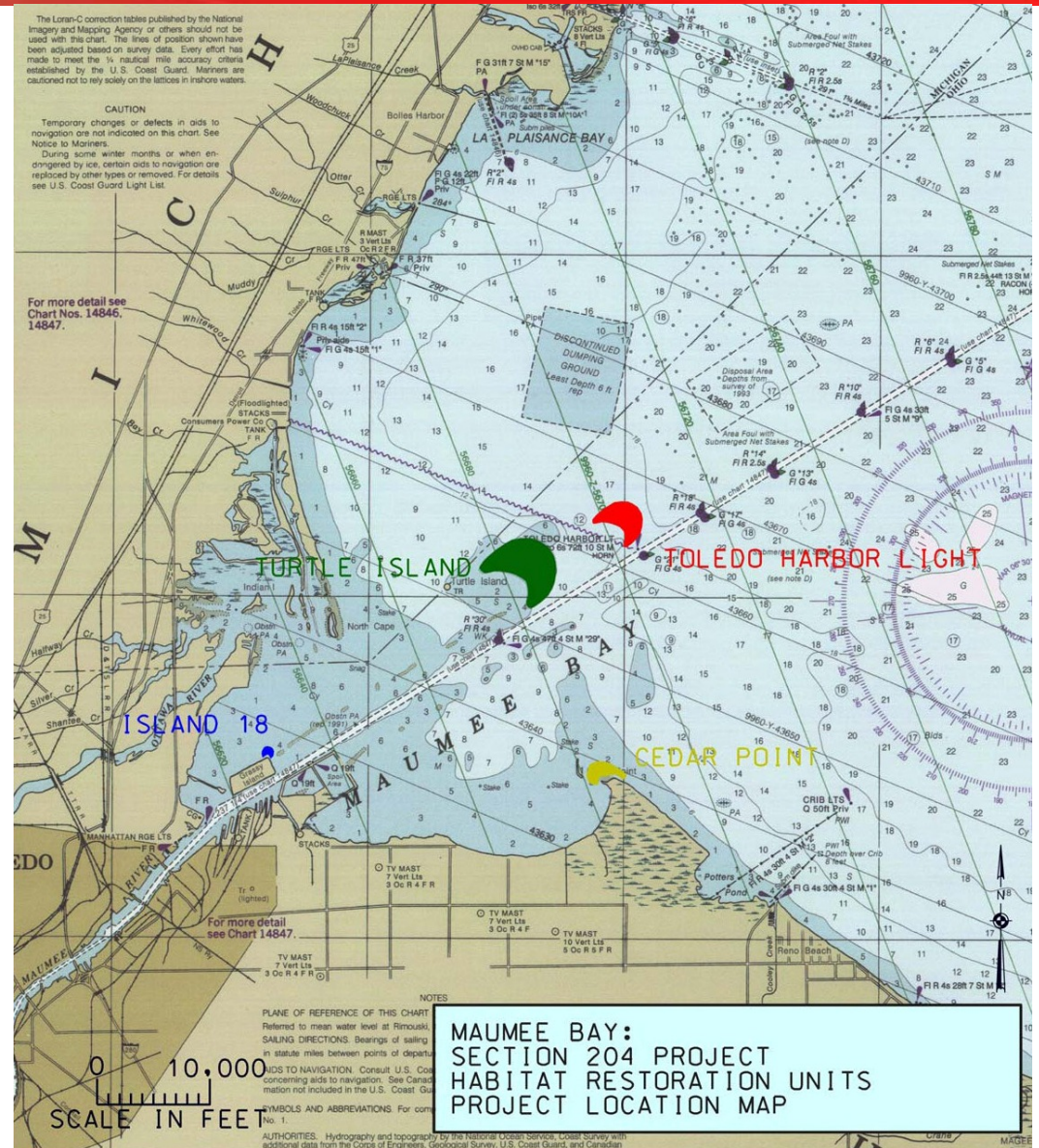
Maumee Bay

Problems

- Open lake placement of dredged material
- Loss of wetlands

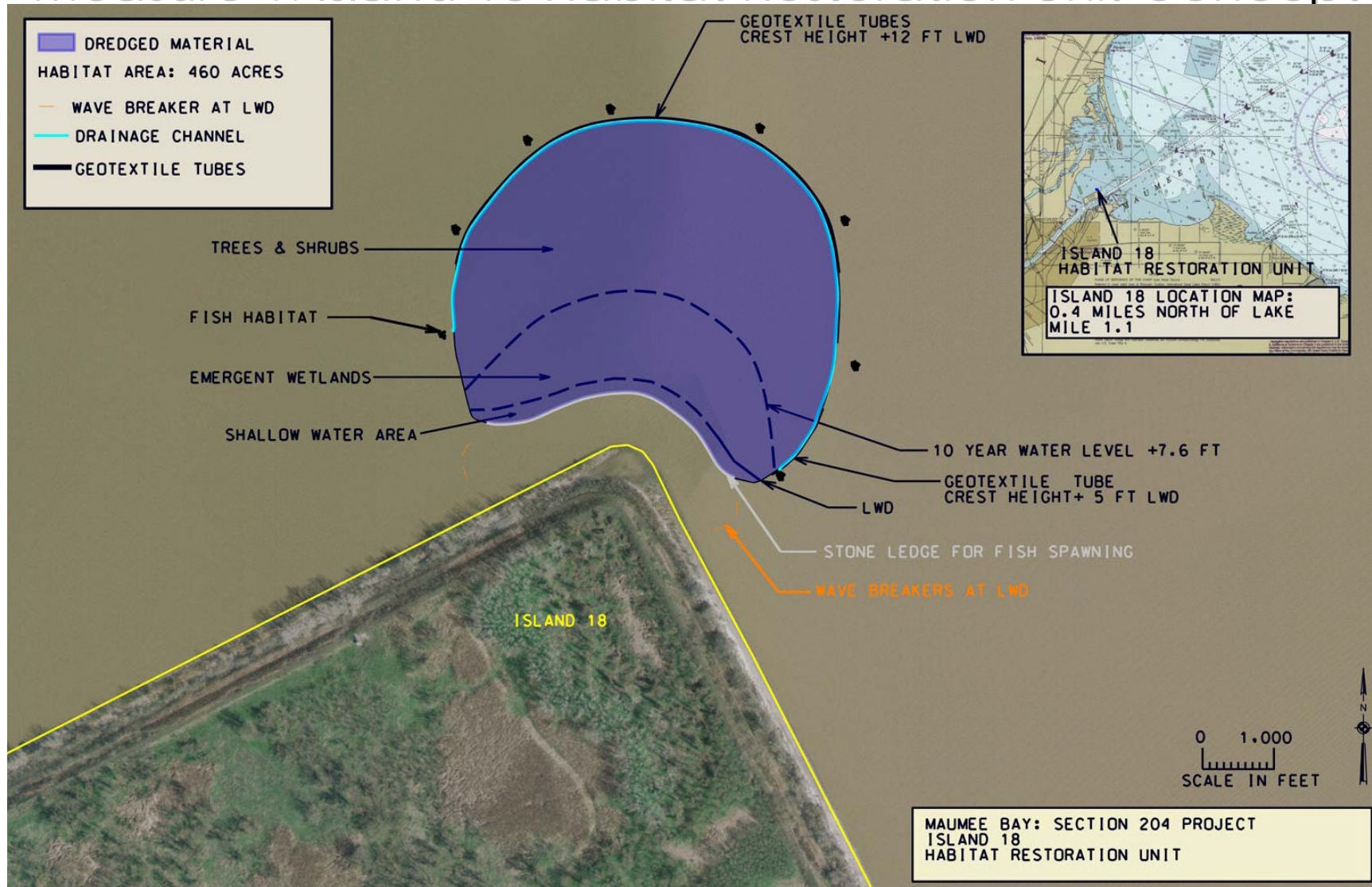
Opportunities

- Beneficial Use of Dredged Material





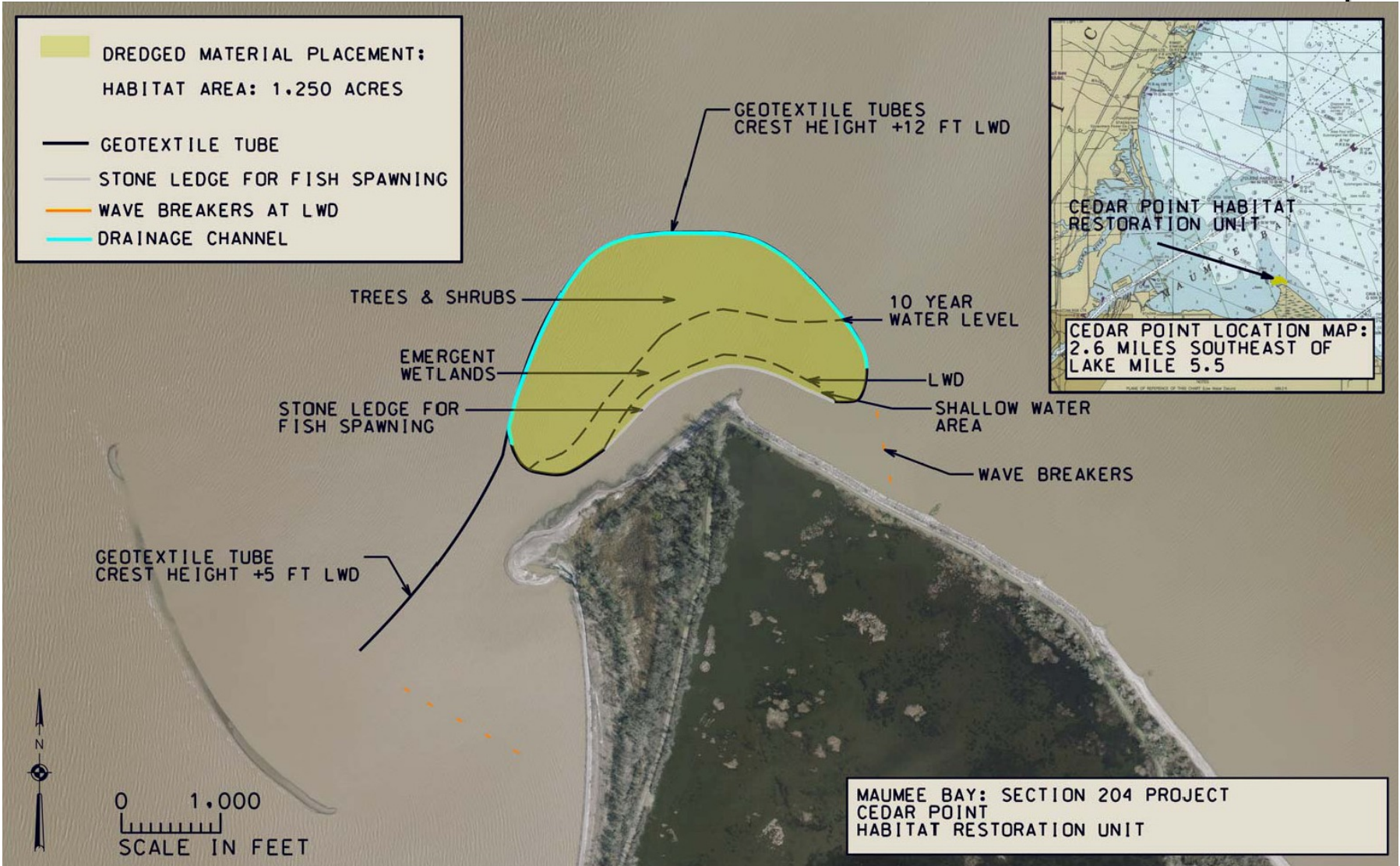
Measure 1: Island 18 Habitat Restoration Unit Concept



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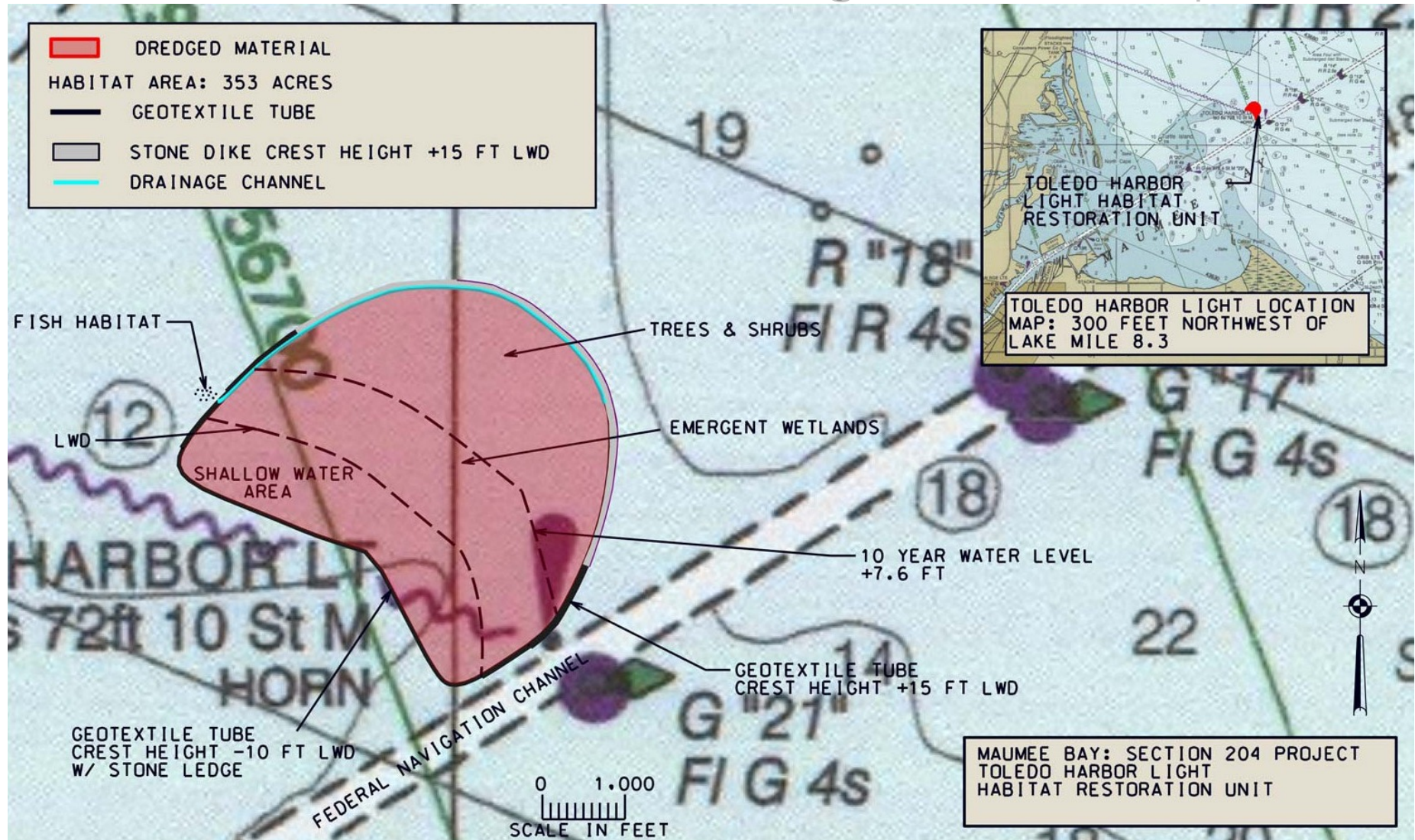
Measure 2: Cedar Point Habitat Restoration Unit Concept



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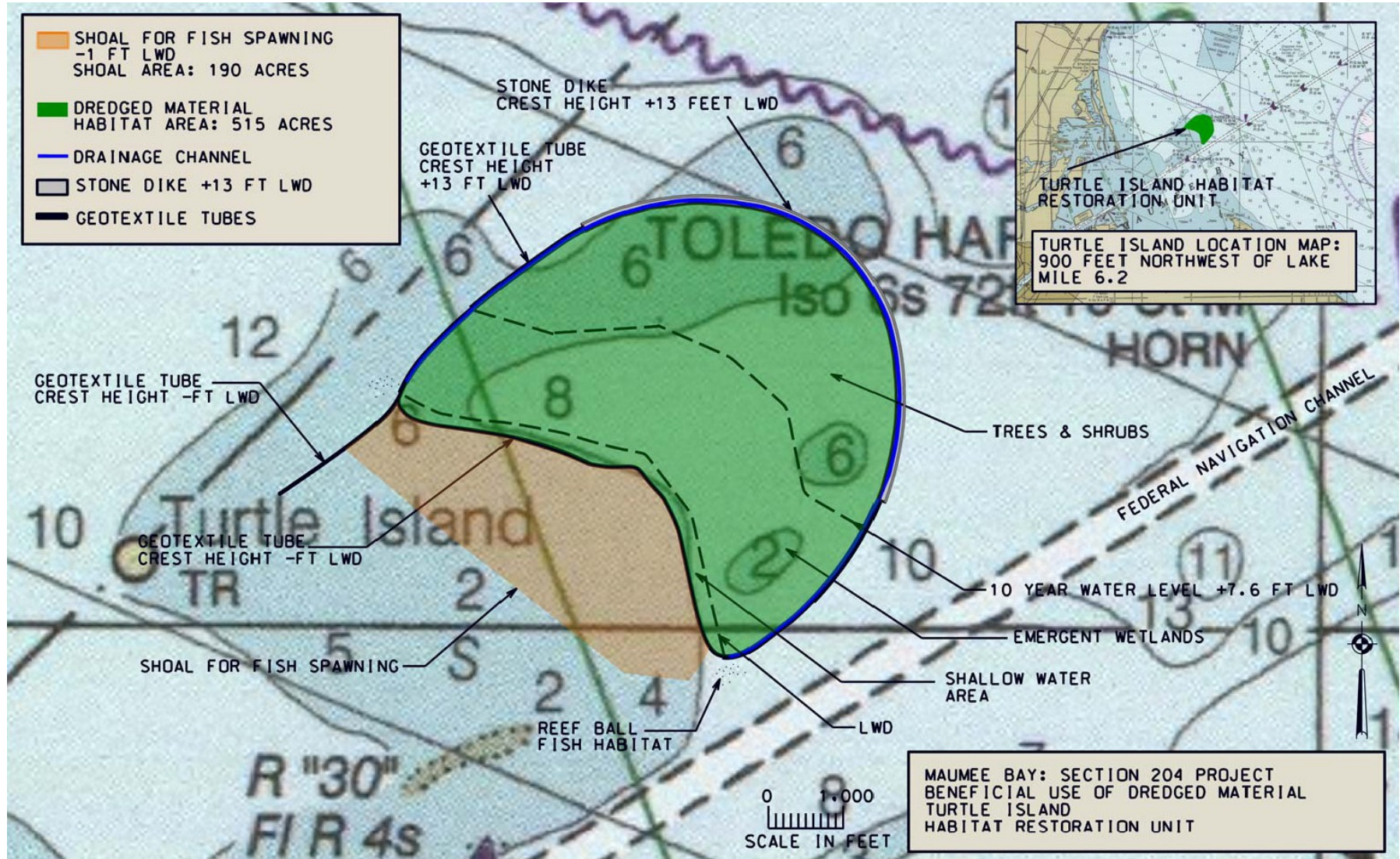


Measure 3: Toledo Harbor Light HRU Concept





Measure 4: Turtle Island Habitat Restoration Unit Concept



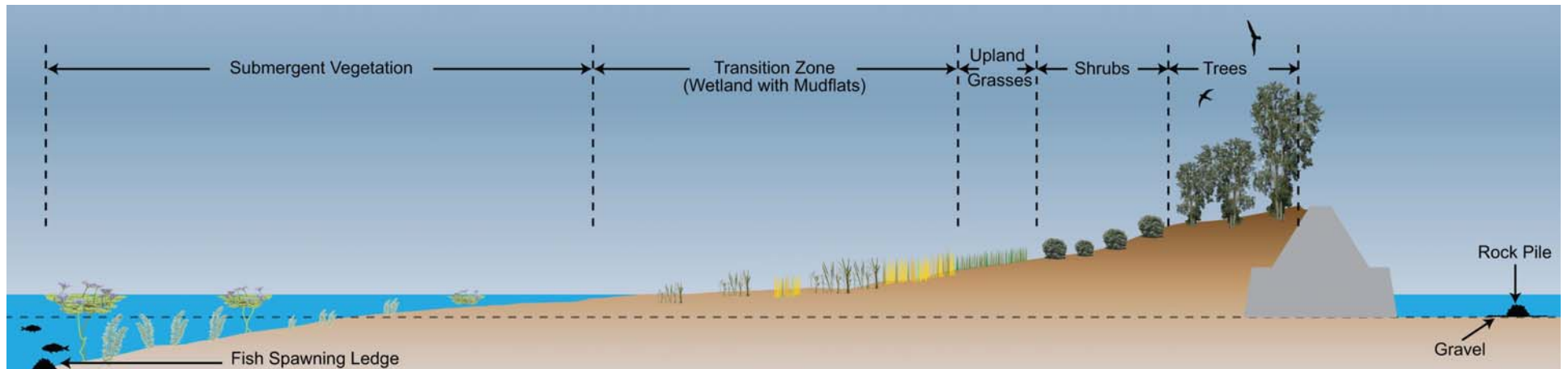


Quantity of Dredged Material (Cubic Yards)

Depth Below HRU Surface (feet)*	Turtle Island	Toledo Harbor Light	Cedar Point	Island 18
0	11,500,000	12,000,000	18,500,000	7,500,000
1	10,669,133	11,430,493	16,483,333	6,757,867
2	9,838,267	10,860,987	14,466,667	6,015,733
3	9,007,400	10,291,480	12,450,000	5,273,600
4	8,176,533	9,721,973	10,433,333	4,531,467
5	7,345,667	9,152,467	8,416,667	3,789,333



Habitat Restoration Unit Cross Section



* Scale exaggerated for visual effect

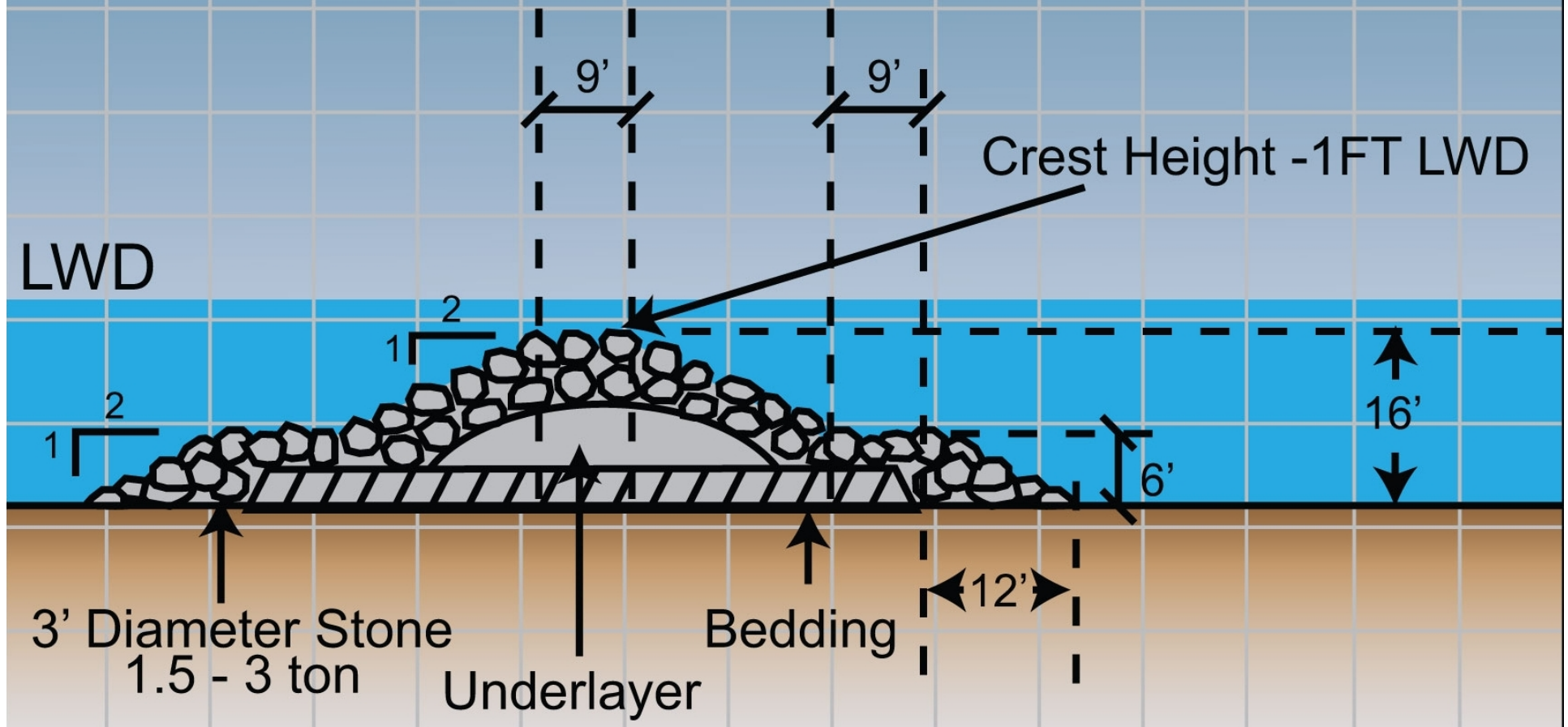


HRU Construction Techniques

- Submerged Berm for Wave Protection
- Ledge for Fish Spawning
- Reef Balls
- Geotextile Tubes
- Dike



Submerged Stone Berm for Wave Protection - 1 Square = 10'

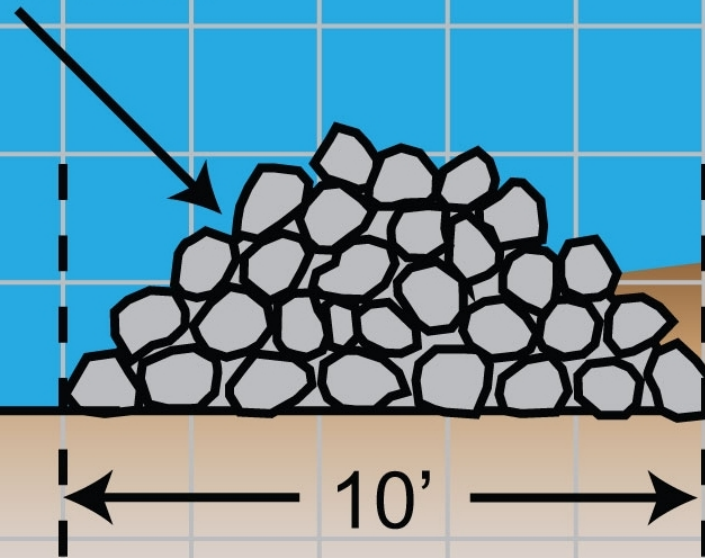


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Stone Ledge For Fish Spawning - 1 Square = 2'

12"-18" Stone

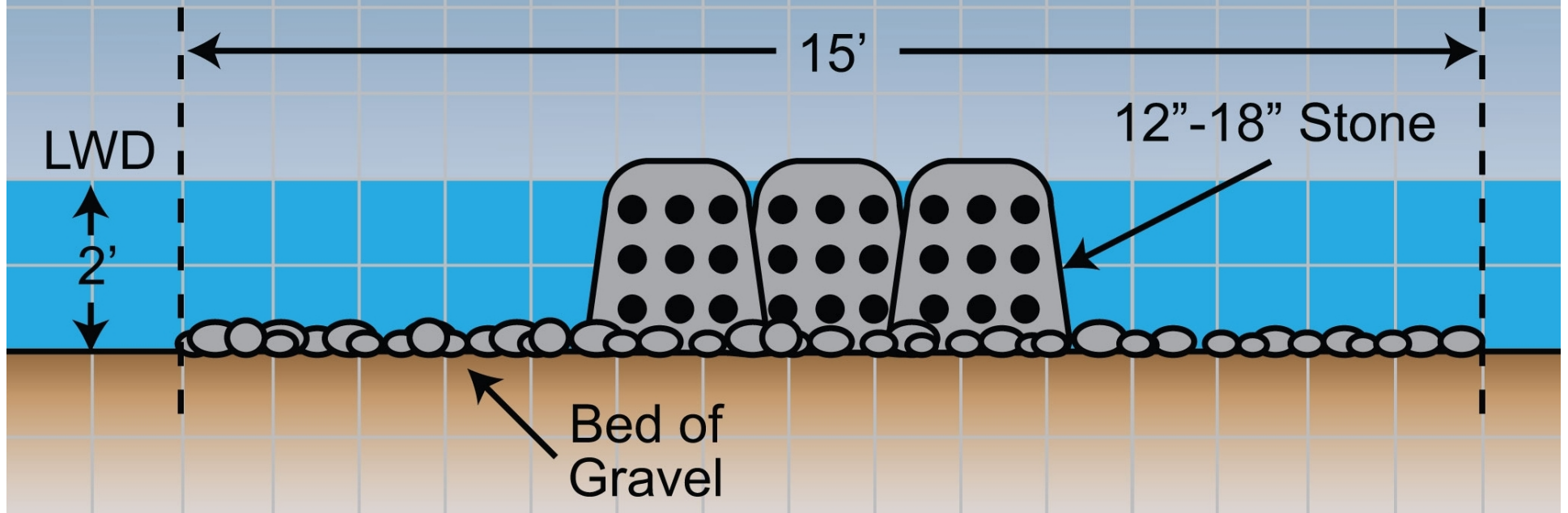


Dredged Material

10'

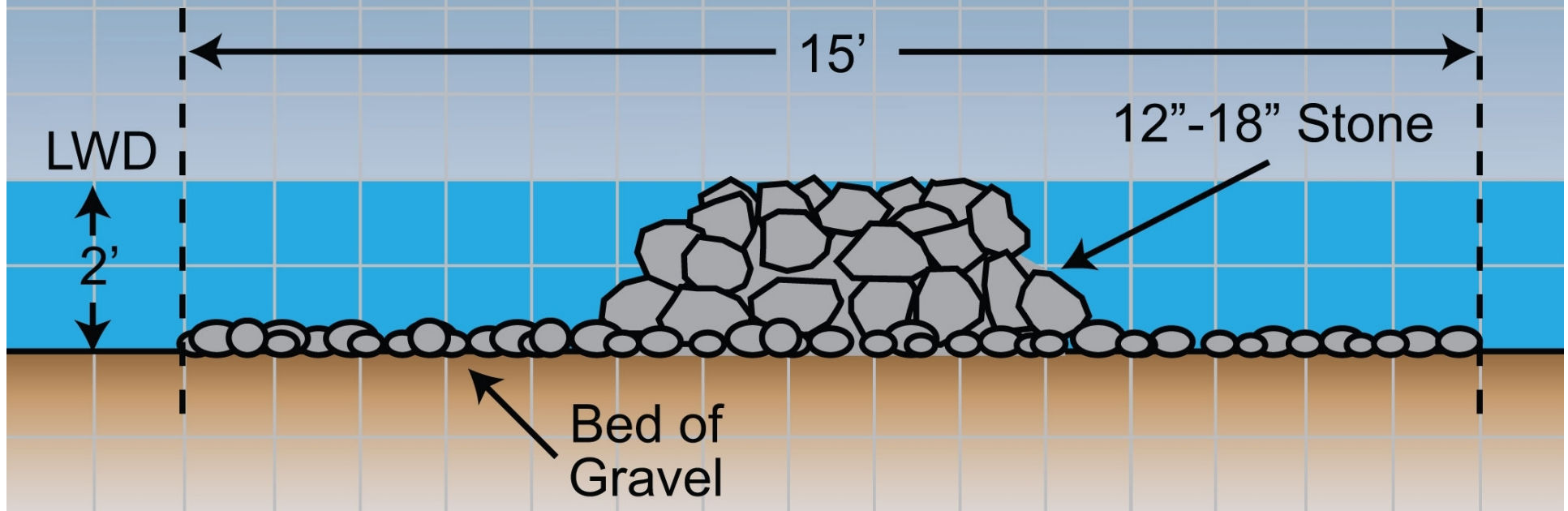


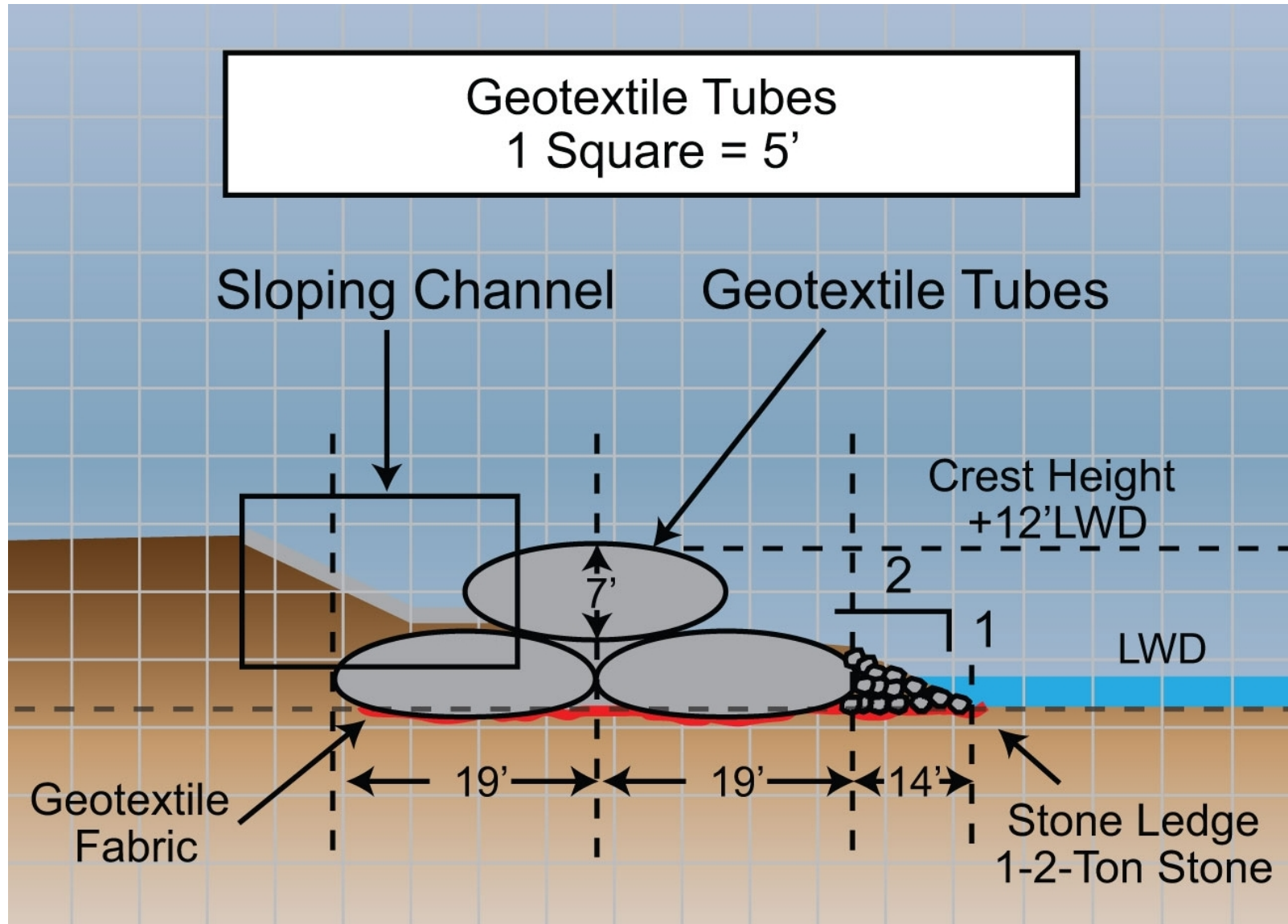
Fish Habitat - Option 1
Reef Balls For Fish Spawning
1 Square = 1'

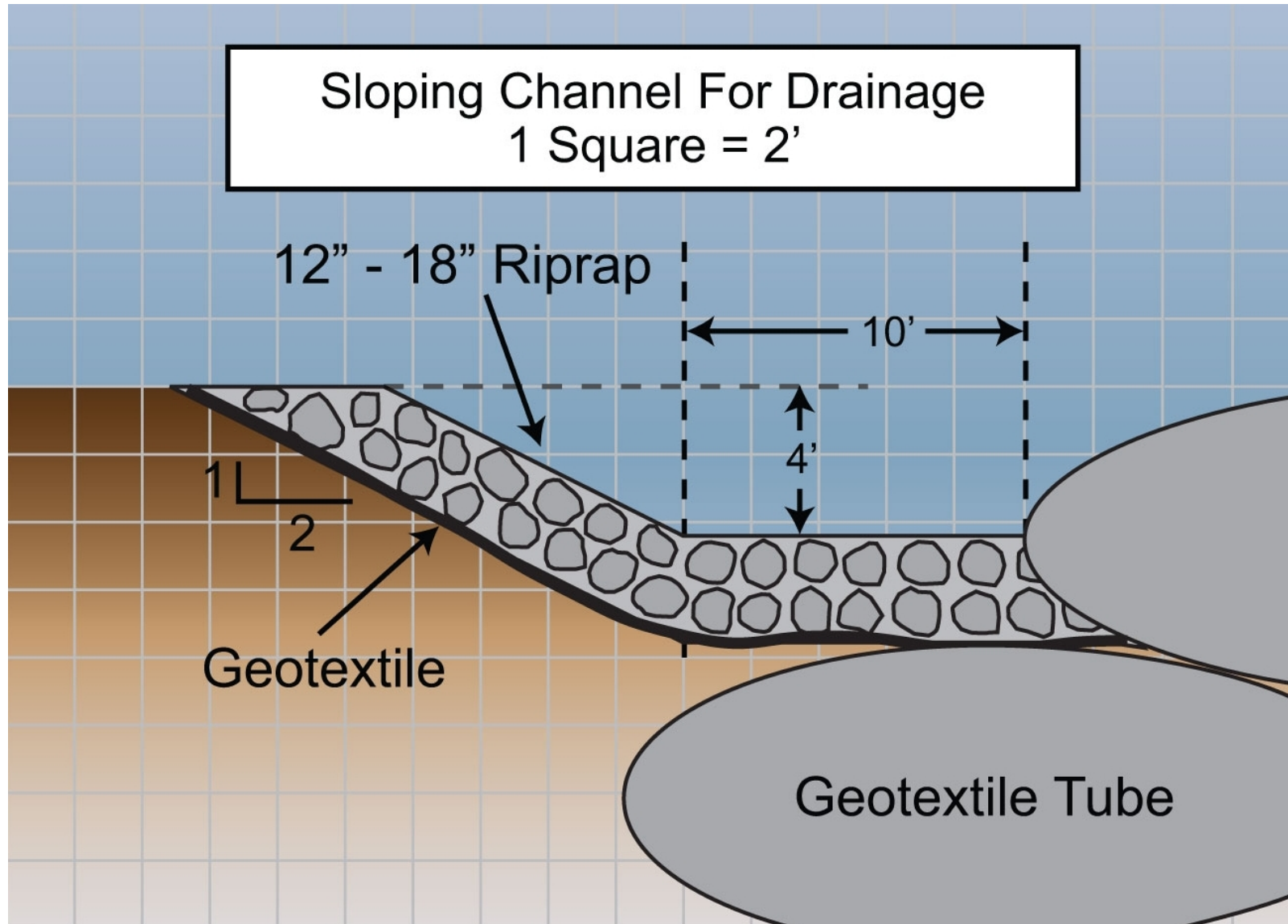


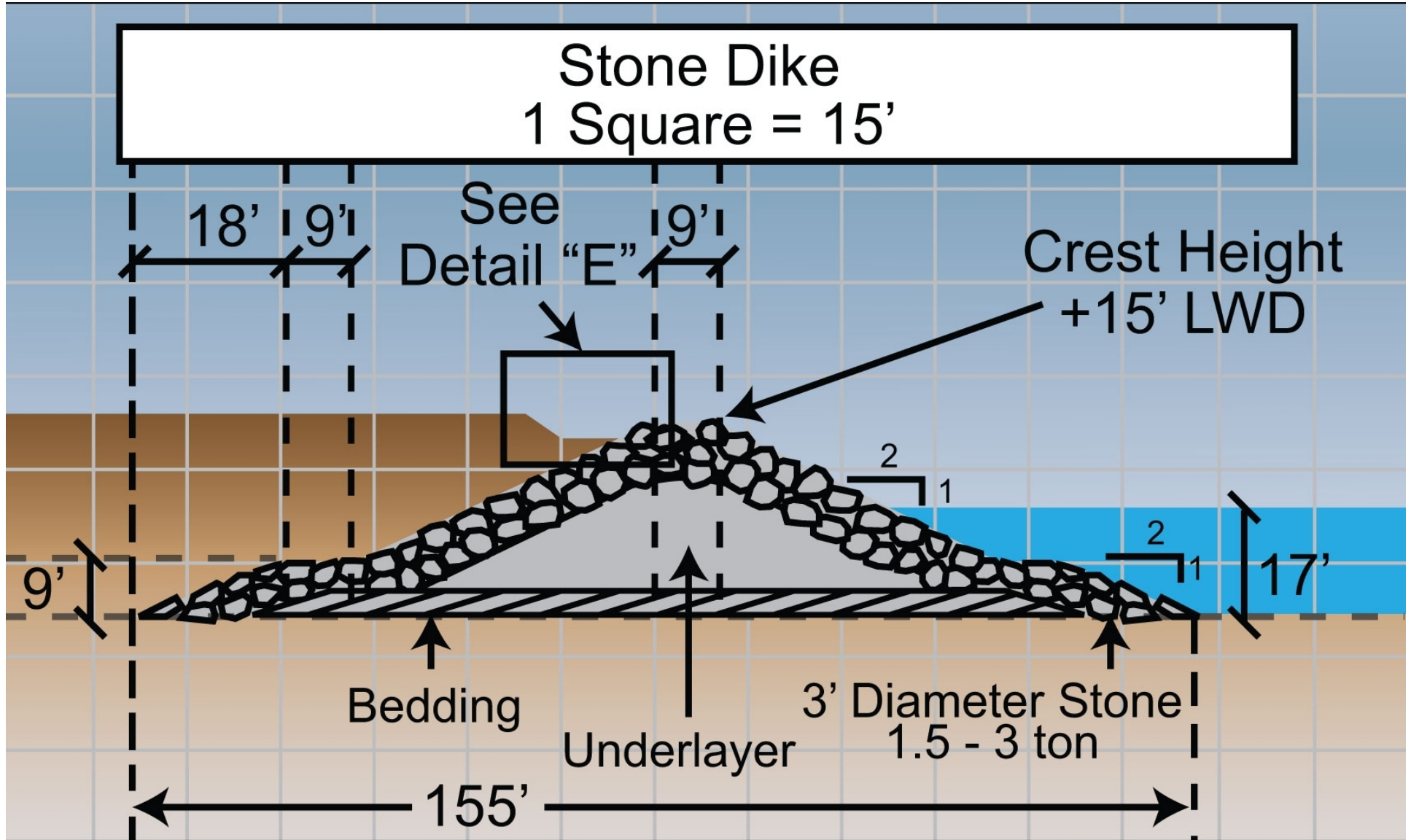


Fish Habitat - Option 2
Stone Pile For Fish Spawning
1 Square = 1'





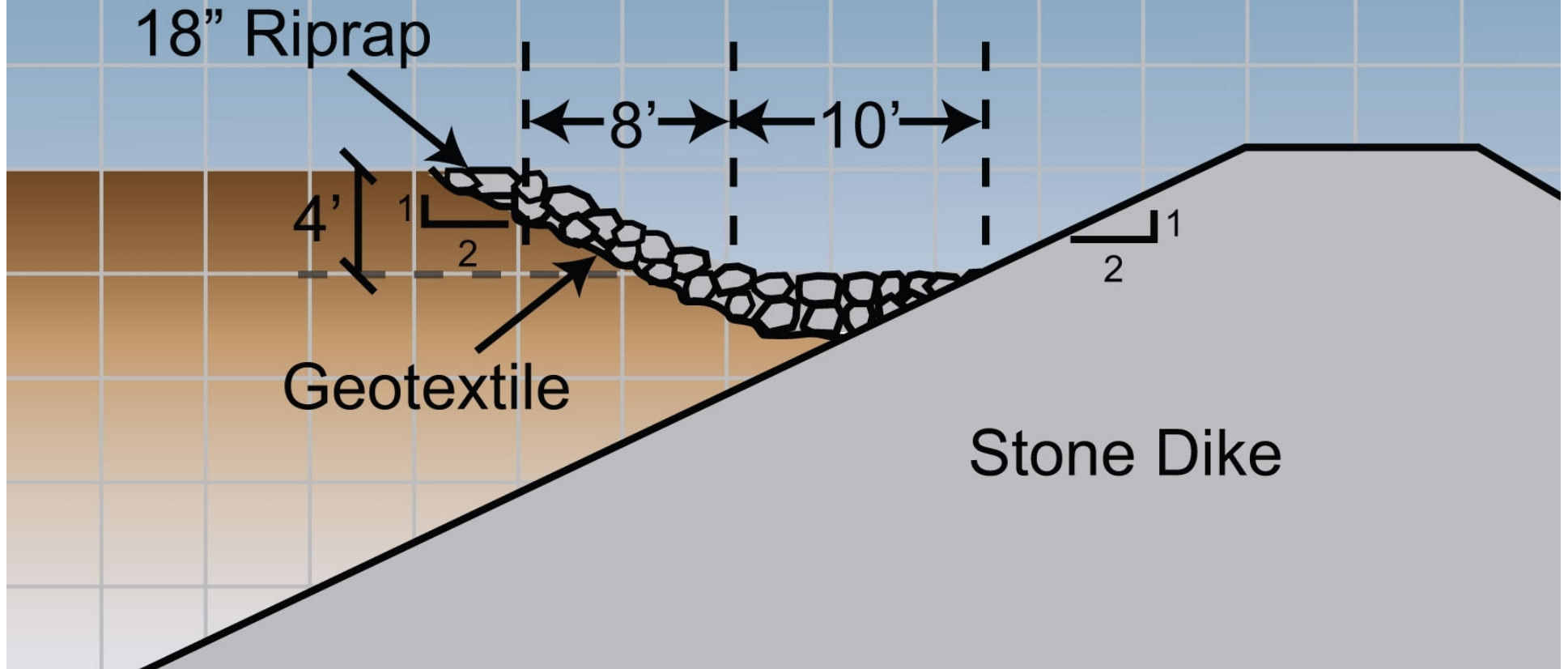




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Sloping Channel for
Drainage - 1 Square = 4'





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What are Your thoughts?

Please share your
comments, questions and ideas.

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