

# **Evaluating Mitigation Opportunities: Offshore Wind and Scallop Aquaculture**

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# Environmental Restoration as Mitigation

- ❑ Section 404 of Clean Water Act
- ❑ Alternatives Analysis under the National Environmental Policy Act
- ❑ Ecological restoration under the Water Resource Development Act
- ❑ Natural Resource Damage Assessment under Comprehensive Environmental Response Compensation, and Liability Act

# Offshore Wind Mitigation BMP 5

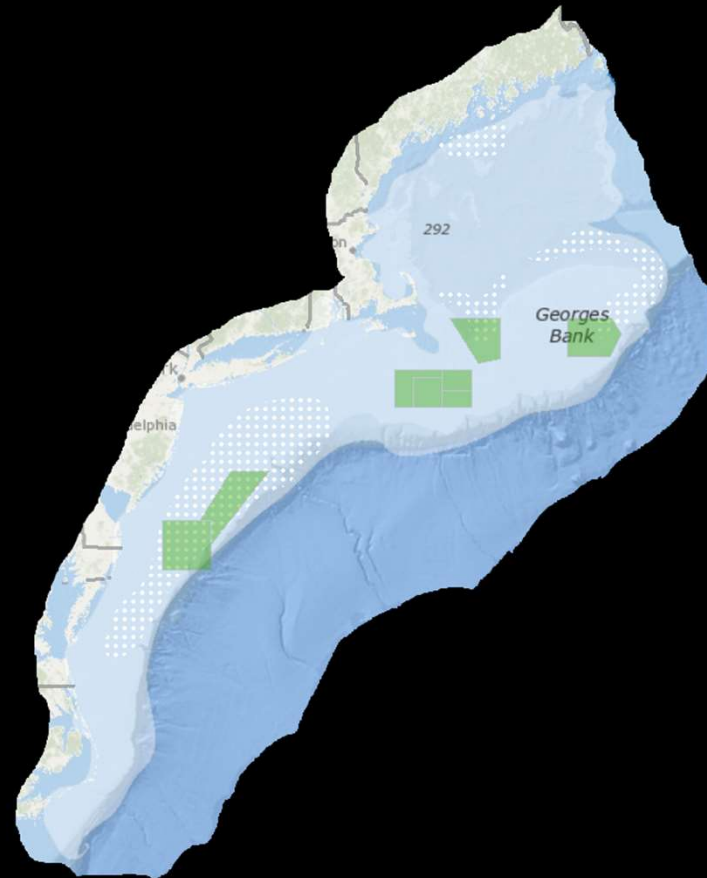
- The lessee will explore measures that could have a beneficial impact on fishing to offset any negative consequences
- Approaches for Enhancing Fish Stock
  - MPA's
  - Enhance/create habitat
  - Direct stock enhancement
    - Stocking
    - Seeding

# Why Scallops?

- Impact Potential
  - Size of fishery
  - Location of fishery
  - Size of vessels
- Offset Viability
  - Proven concept
  - Potential measurability
  - Potential cost effectiveness
  - Strong market
  - Minimal negative environmental impacts
- Scientific value
  - Integrate with site specific stock assessment
  - Understand role of currents and temperatures
  - Integrate with wind farms.

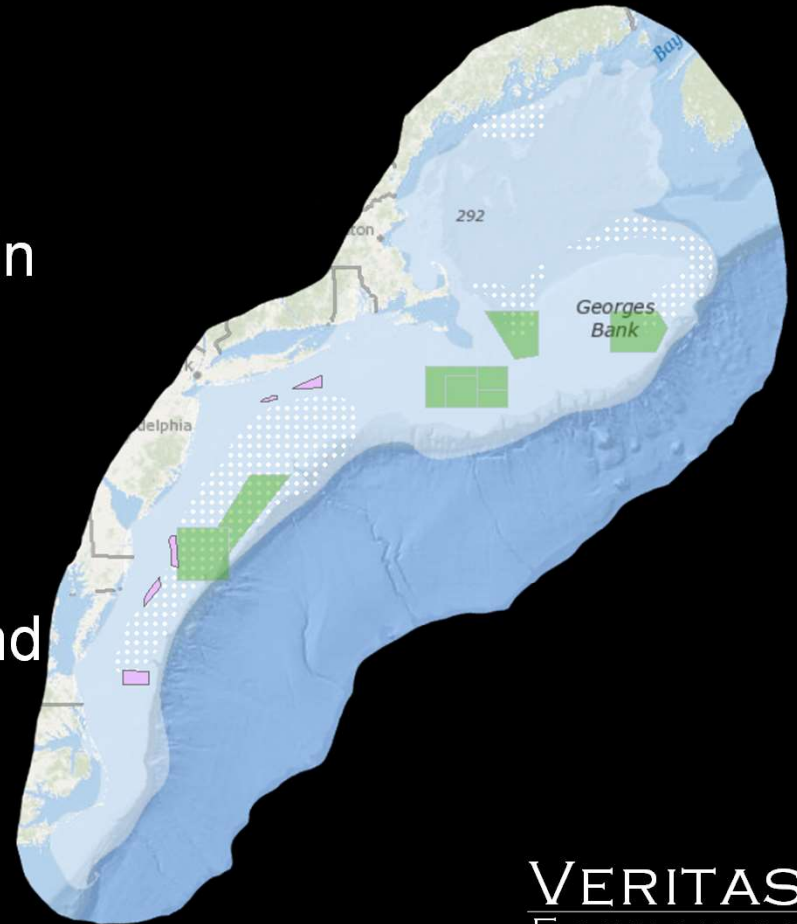
# The U.S. Scallop Fishing Industry

- ❑ Big fishery
- ❑ Several different grounds
- ❑ Centered in New Bedford
- ❑ Intensively managed
  - Rotational areas
  - Spatial stock assessment

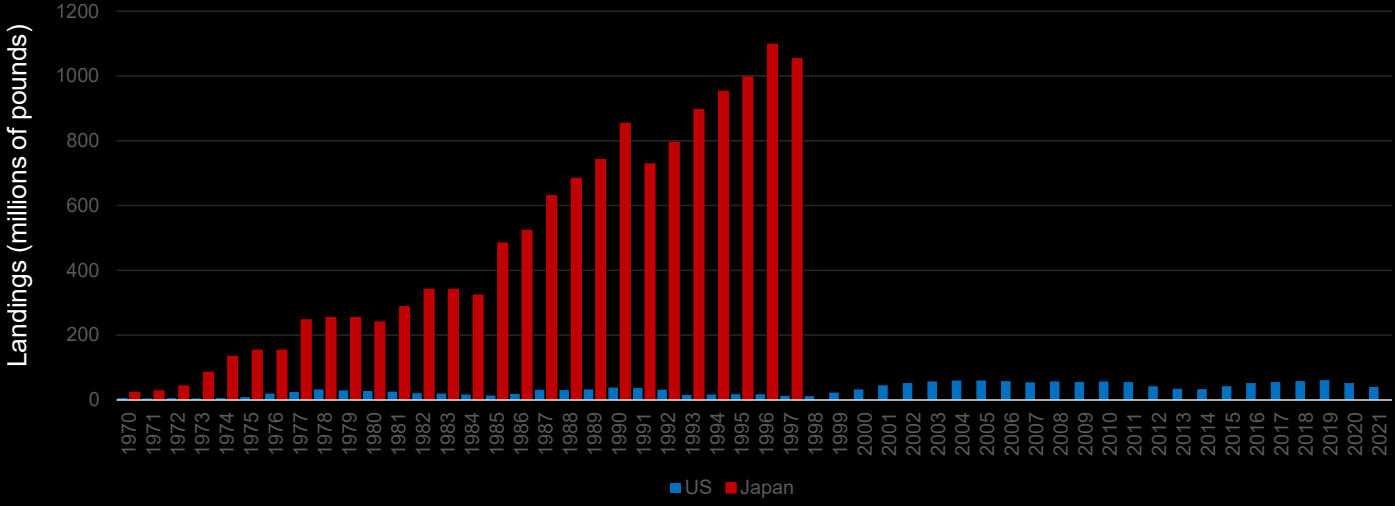
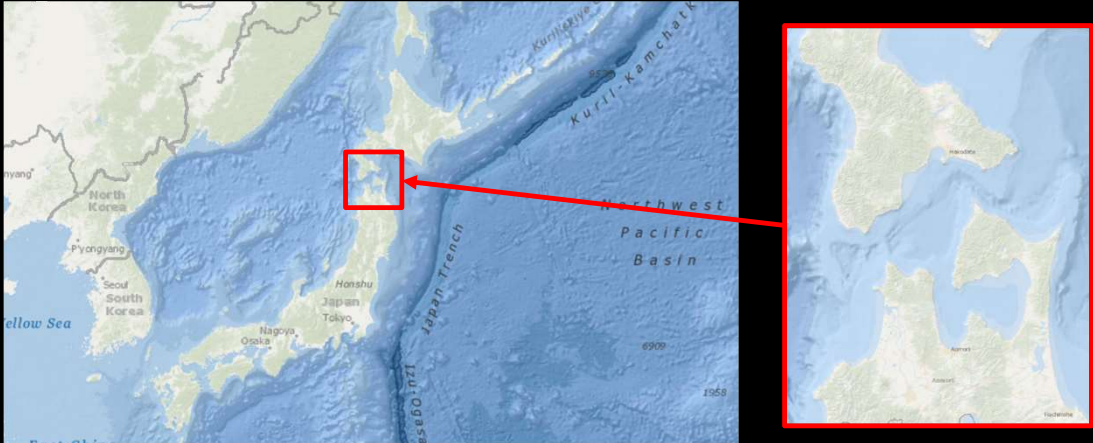


# Offshore Wind and the U.S. Scallop Fishing Industry

- ❑ Current overlap
- ❑ Future overlap
- ❑ Existing management regime
- ❑ The US fleet consists of vessels ranging in size from 60' – 100' as well as smaller vessels that take shorter trips.
- ❑ There are 44 scallop homeports from Maine to North Carolina. The major ports are: New Bedford, MA, Cape May, NJ, and Newport News, VA.



# Scallop Aquaculture—Locations and History



# Scallop Harvest Methods



Dredge



Spat is collected and sorted



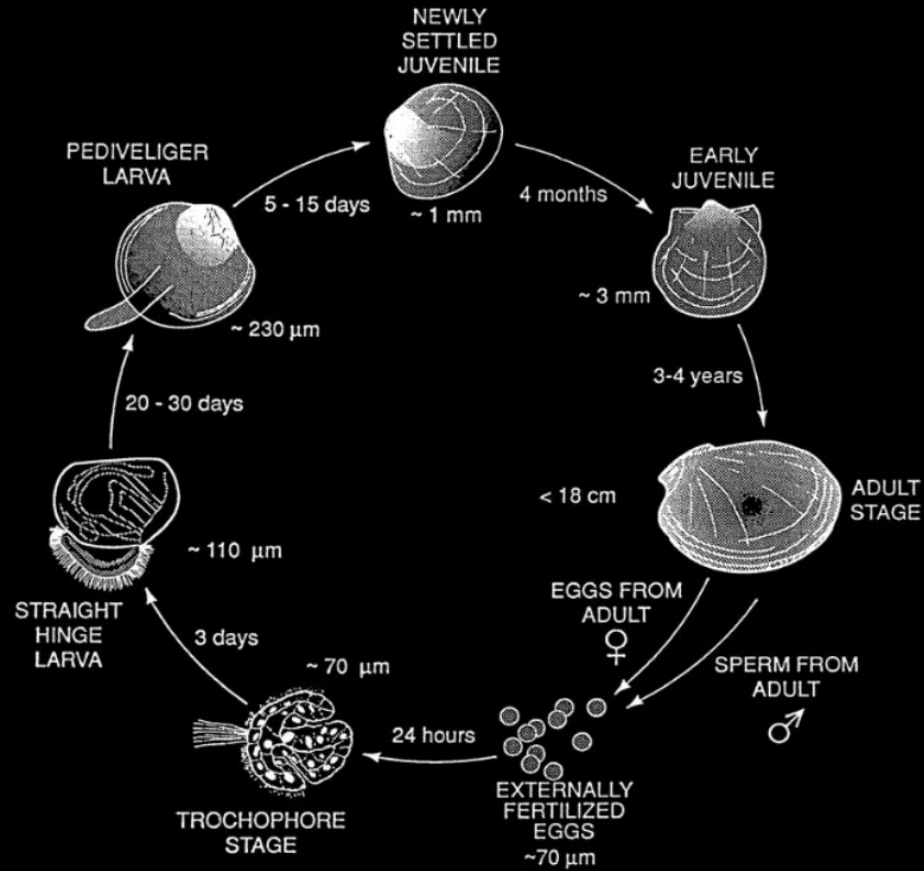
Then matured in pearl nets or lantern nets 8



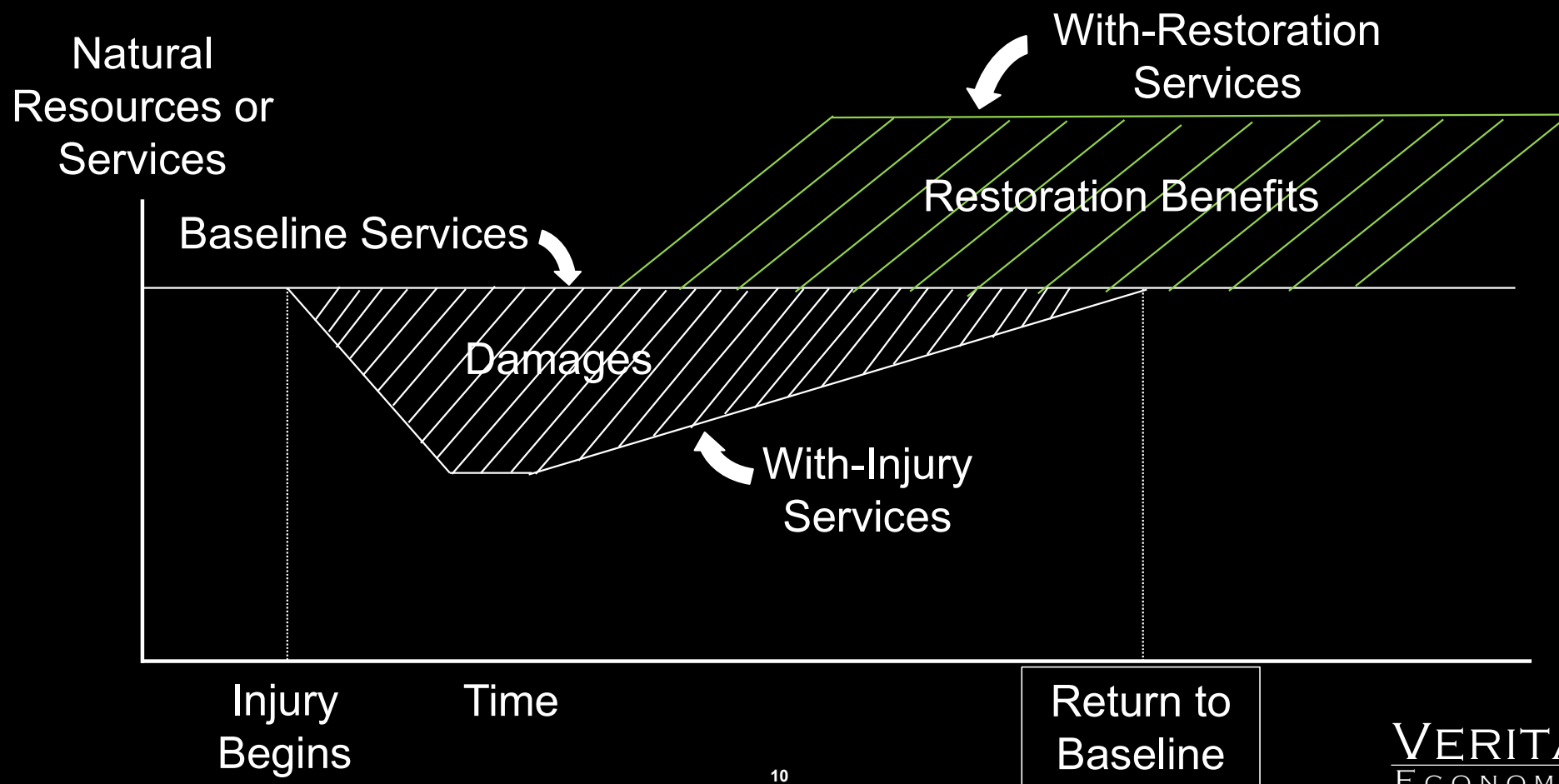
Then hung from lines to complete maturation



# Sea Scallop Life Stages



# Estimating the Benefits of Restoration



# Project Evaluation Framework

## Integrated Planning Framework for Urban River Rehabilitation

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**Abstract:** In 2002, 2005, and 2006, the U.S. Environmental Protection Agency (EPA) and the Department of the Army entered into memoranda of understanding to implement the Urban Rivers Restoration Initiative (URRI). The URRI is a collaborative process where numerous agencies and stakeholders having different values, interests, and responsibilities come together to agree on actions to restore urban rivers. Much of the literature on collaborative planning addresses topics such as appropriate stakeholder representation, and securing and facilitating participation in planning over time. Less attention is paid to another key to successful collaborative planning processes: utilization of a common planning framework. A common planning framework will help collaborators to develop a shared understanding of the factual basis needed to define the nature and scope of problems and the merits of possible solutions. This paper identifies how the analytical frameworks of the principal URRI participating agencies (U.S. Army Corps of Engineers and EPA) can be integrated to serve the goals of the URRI in ways that highlight incremental effects on costs and benefits from choosing among alternative plans and presented in a manner enabling collaborators to compare the benefits from different combinations and permutations of all the potential measures for given budgets. The conclusion discusses the contribution of the integrated planning framework to building consensus among federal agencies, nonfederal agencies, and other stakeholders on a URRI implementation plan.

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	Objectives (O)					Targets (T)	
	O1	O2	O3	O4	O5	T1	T2
	Increase fish/shellfish and invertebrate populations	Increase recreational opportunities	Increase area and quality of wetlands	Increase bird use	Reduce floating debris	Reduce and manage exposure to contaminants	Reduce and manage exposure to pathogens
Restoration option							
Wetland creation and/or restoration	X	X	X	X		X	
Storm water runoff control	X	X		X	X	X	X
Combined sewer overflow upgrades	X	X		X	X	X	X
Trash skimmer		X			X		
Park/trail creation and improvements		X		X			
Impose harvest limits	X	X					
Streambank improvements	X	X					
Removal of contaminants (dredging)	X	X		X		X	
Isolation of contaminants (capping, containment)	X	X		X		X	
Wetlands establishment over cap on contaminated sediments	X	X	X	X		X	
Fish consumption advisory						X	X
Beach closure notification							X

# Discussion