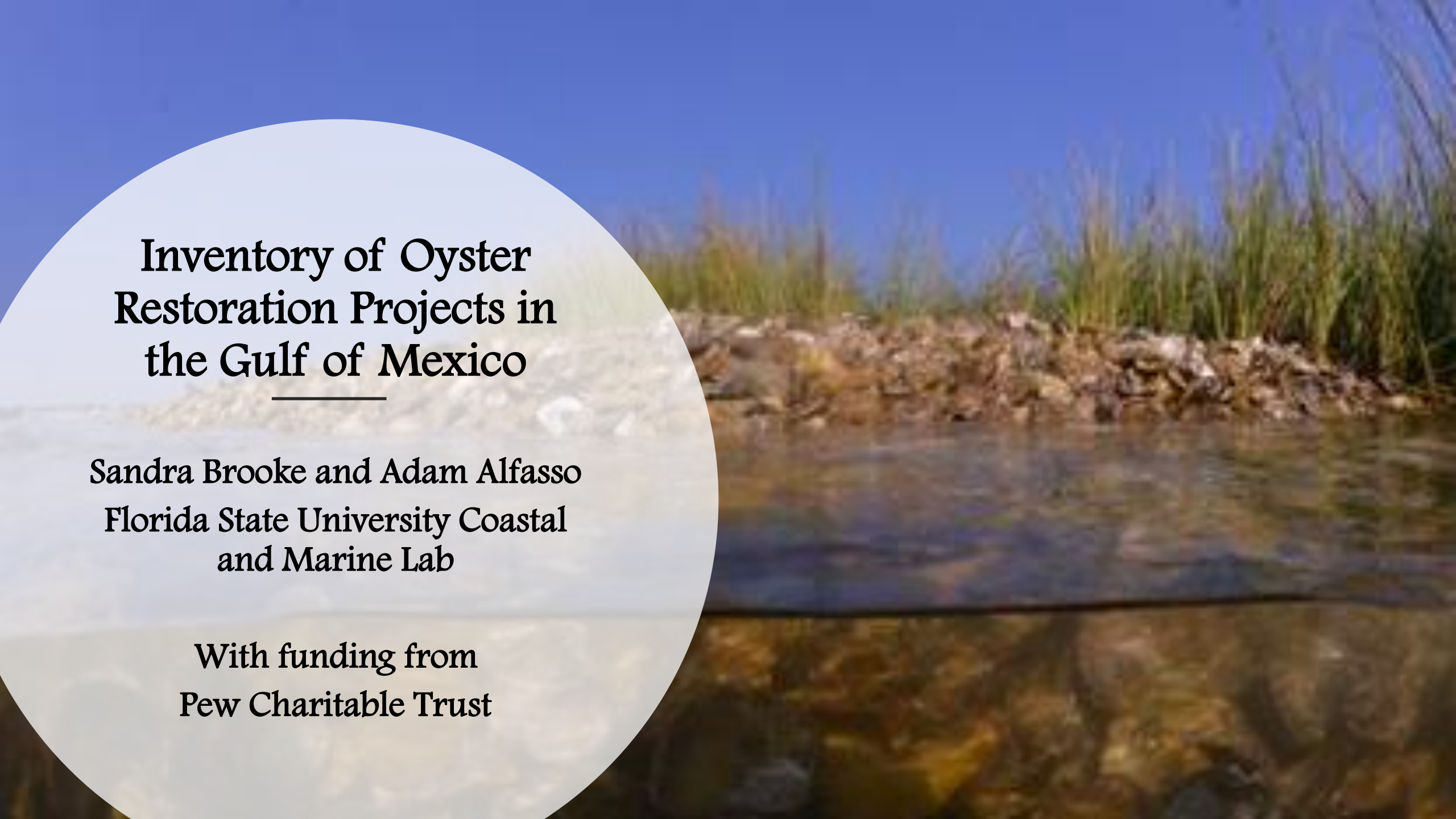


Inventory of Oyster Restoration Projects in the Gulf of Mexico

Sandra Brooke and Adam Alfasso
Florida State University Coastal and Marine Lab

With funding from
Pew Charitable Trust

Placing cultch on oyster reefs to replace lost material is a traditional approach to oyster fishery management

Habitat restoration includes

- Replacement of lost materials
- Reef construction
- Living shorelines for erosion protection

Funding sources

- Government agencies
- Non-profits
- Local entities

Reports often not readily available

Practitioners cannot assess different approaches for their needs and learn from others

Deepwater Horizon ~ April 2010

Millions of gallons of oil and dispersant released into the Gulf of Mexico

$20.8 billion in damages

$231,128,573 for oyster restoration

Deepwater Horizon project tracker – centralized repository

Create inventory and synthesis of oyster restoration and related projects funded by Deepwater Horizon disaster funds

- Compile database of oyster restoration projects funded since the DWH
- Identify funding source, project lead, location and project duration
- Summarize objectives, outcomes, products and other project metrics
- Provide project reports, manuscripts and other products where possible
- Summarize data by funding source, location, objectives etc.
- Compile project reports, presentations and publications for public access
- Create a report summarizing project metadata and outcomes

Database

Microsoft Excel Worksheet

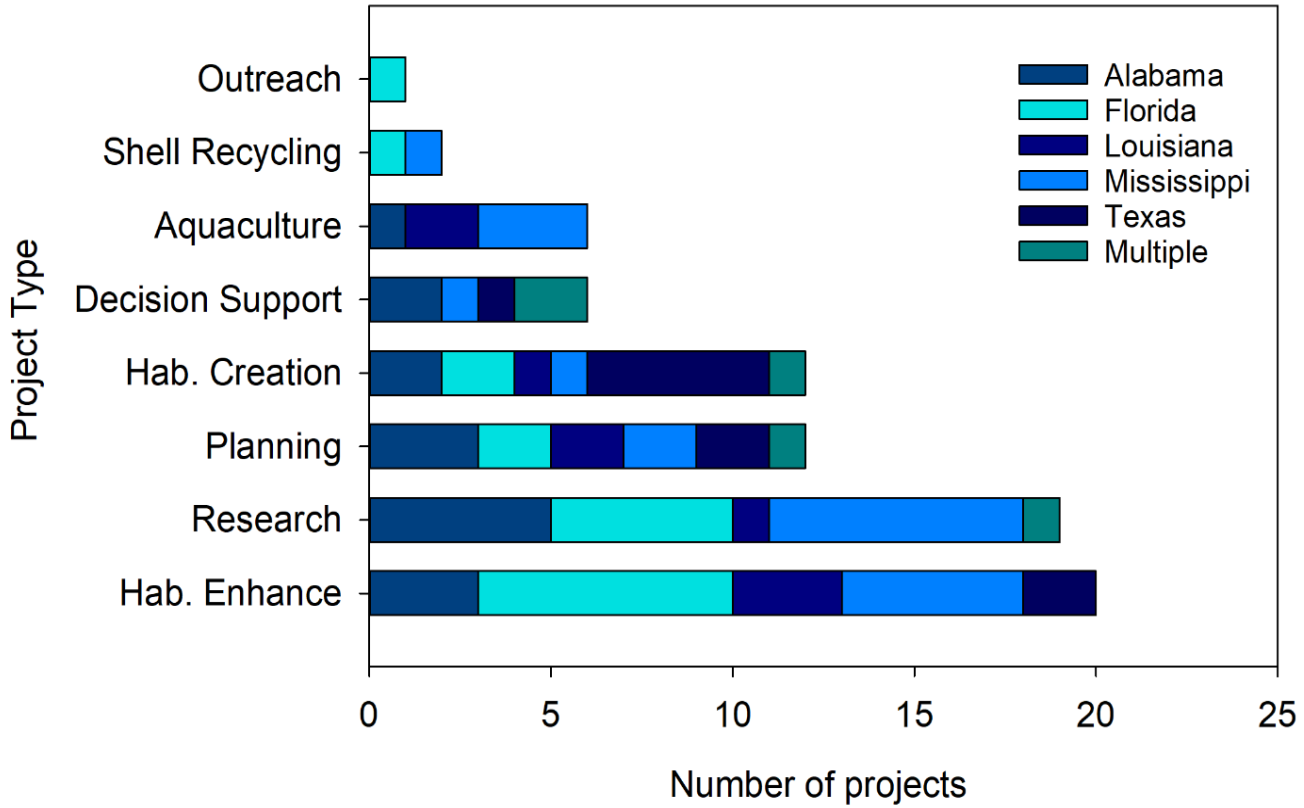
Database Number	Project Name	State	Region	County	Lead Agency/Organization	Project Lead/ Conta	Contact Email	Contact Phone Number	Award Year	Award End Yea	Project
1	Restoration & Enhancement of Oyster Reefs in Alabama	Alabama (AL)	Southeast	Baldwin	Alabama Department of Conservation and Natural Resources	Chris Blankenship	chris.blankenship@dcnr.alabama.gov	1-334-242-3486	2013	2020	Comp
2	Coastal Habitat Restoration Planning Initiative	Alabama (AL)	Southeast	Mobile, Baldwin	Mobile Bay National Estuary Program, Marine Environmental Sciences Consortium	Roberta Swann	rswann@mobilebaynep.com	1-251-431-6409	2014	Unknown	Act
3	Lightning Point Restoration Project - Phase I	Alabama (AL)	Southeast	Mobile	The Nature Conservancy	Judy Haner	jhaner@tnc.org	1-251-433-1150	2016	2022	Act
4	Lightning Point Restoration Project - Phase II	Alabama (AL)	Southeast	Mobile	The Nature Conservancy	Judy Haner	jhaner@tnc.org	1-251-433-1150	2018	2023	Act
5	Alabama Oyster Cultch Restoration	Alabama (AL)	Southeast	Mobile	Alabama Department of Conservation and Natural Resources	John Mareska	john.mareska@dcnr.alabama.gov	1-251-861-2882	2015	2025	Act
6	Oyster Cultch Relief and Reef Configuration	Alabama (AL)	Southeast	Mobile	Alabama Department of Conservation and Natural Resources	Amy Hunter	Amy.Hunter@dcnr.alabama.gov	1-251-621-1216	2018	2024	Act
7	Side-scan Mapping of Mobile Bay Relic Oyster Reef	Alabama (AL)	Southeast	Mobile	Alabama Department of Conservation and Natural Resources	Amy Hunter	Amy.Hunter@dcnr.alabama.gov	1-251-621-1216	2018	2022	Act
8	Oyster Grow-Out and Restoration Reef Placement	Alabama (AL)	Southeast	Baldwin	Alabama Department of Conservation and Natural Resources	Amy Hunter	Amy.Hunter@dcnr.alabama.gov	1-251-621-1216	2018	2022	Act

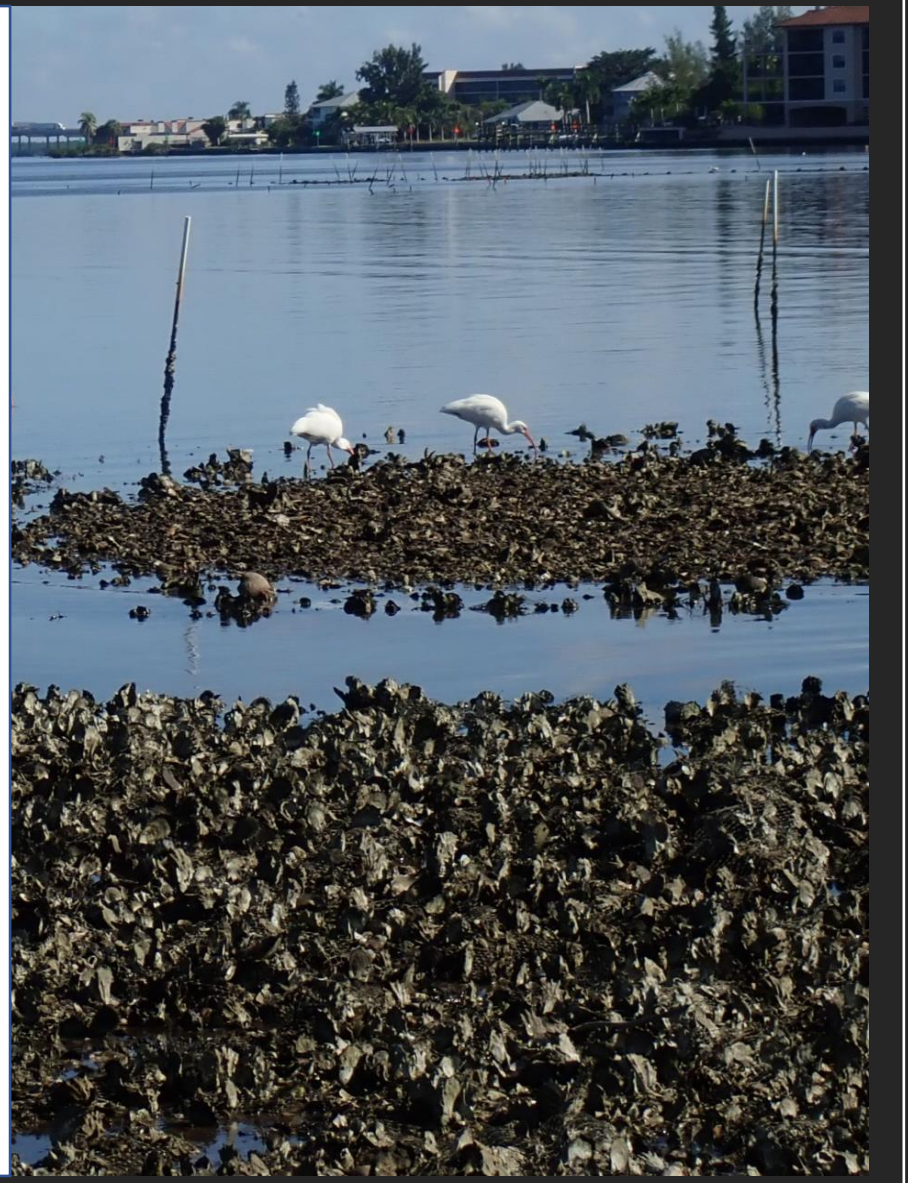
Project information | Column definitions

Project categories

- Habitat enhancement: Placement of materials to restore or enhance oyster reefs
- Habitat creation: Construction of oyster reefs, living shorelines etc. using solid structures
- Research: Projects included oil impacts, monitoring, habitat mapping and modeling, hydrodynamic modeling, data analysis
- Aquaculture: Hatchery operations to produce larvae for research and restoration
- Shell recycling: Collection, curing and distributing recycled shell for restoration
- Decision support: Data synthesis and/or model creation to support management and conservation decisions
- Planning: Design, engineering and permitting for restoration projects
- Outreach: Support of local seafood industry, promotion of shell recycling

Distribution of project categories across Gulf of Mexico states

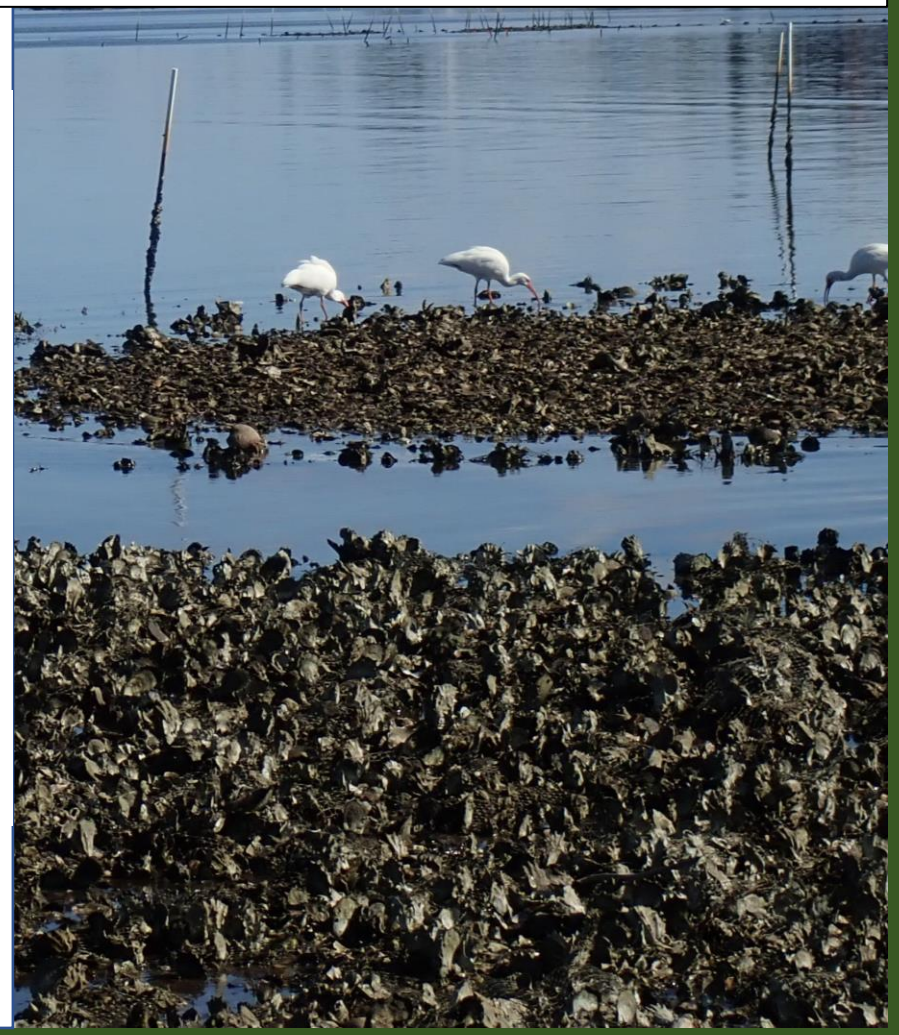




Completed Projects Summary

Target and actual enhancement (km^2) or creation (km) of oyster habitat

Project #	Project type	Target (km^2)	Actual (km^2)	Difference (km^2)	Target (km)	Actual (km)	Difference (km)
1	Enhancement	2.43	3.20	0.77			
22	Enhancement	1.02	1.30	0.28			
34	Enhancement	0.06	0.10	0.04			
46	Enhancement	0.41	0.41	0.00			
47	Enhancement	5.79	5.79	0.00			
60	Enhancement	0.12	0.20	0.08			
24	Creation				0.48	0.48	0.00
56	Creation				1.60	1.37	-0.23
Total		**9.83**	**11.0**	**1.17**	**2.08**	**1.85**	**-0.23**



Restoration outcomes

Cost of completed projects $27,646,507

Projects generally met or exceeded construction goals

Projects ususally did not meet oyster population targets

Causes:

- Environmental conditions (freshwater, hypoxia, sedimentation)
- Placement in sub-optimal locations (no pre-construction planning)
- All cultch placed in thin layer – few projects considered reef height as necessary part of planning

Conclusions and observations

- Some DWH funded projects are not in the project tracker
- Funding entities have different reporting requirements; e.g. NFWF does not post project reports so information on much of the restoration funding is not publicly available.
- Database allows practitioners to target systems of interest
- Synthesizing data from multiple projects highlights overarching problems – e.g. placing thin layer of material on badly degraded reefs may not be an optimal approach
- Many projects did not meet production goals; it may be beneficial to incorporate research component prior to construction

Next steps

- Find a ‘home’ for the database so projects can be added and information updated as they progress
- Expand database scope to include projects funded under other sources (State, local, NGOs)
- Establish database as a repository for restoration project reports, which are often not in public domain
- Create information sharing platform for practitioners to optimize restoration techniques and optimize funding benefits

https://marinelab.fsu.edu/absi/research

Oyster Restoration Database

In partnership with The Pew Charitable Trusts, ABSI has created an inventory of oyster restoration and related projects funded through the Deepwater Horizon settlement. This inventory is intended to serve as a foundation from which to develop guidance for future restoration projects to maximize their effectiveness.

Oyster Restoration Database