



Open Ocean Restoration Area Monitoring and Adaptive Management (MAM) Stakeholder Engagement Workshop

February 4, 2019

Today's Agenda

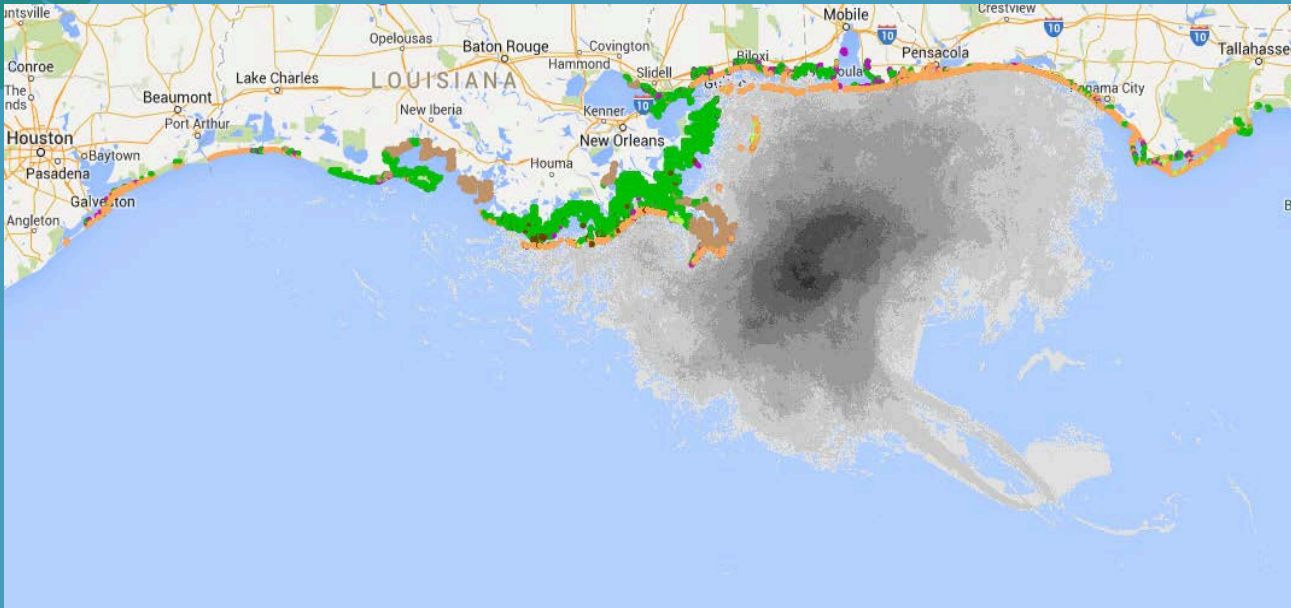
- Introduction
- Question and Answer Session
- Resource Type Breakout Groups and Discussion
- Break
- Ecosystem Breakout Groups and Discussion
- Wrap-up





Introduction

Deepwater Horizon oil spill



- 11 workers killed, 17 injured
- Over 3 million barrels of oil released
- Nearly 2 million gallons of dispersant used
- Oil slicks observed across 43,300 square mile area
- At least 1,300 miles of shoreline oiled

OPA and NRDA Goals

Natural Resource Damage Assessment (NRDA) is a legal process under the Oil Pollution Act and implementing NRDA regulations (15 CFR 990)

The goal of NRDA is to compensate the public for injuries to natural resources

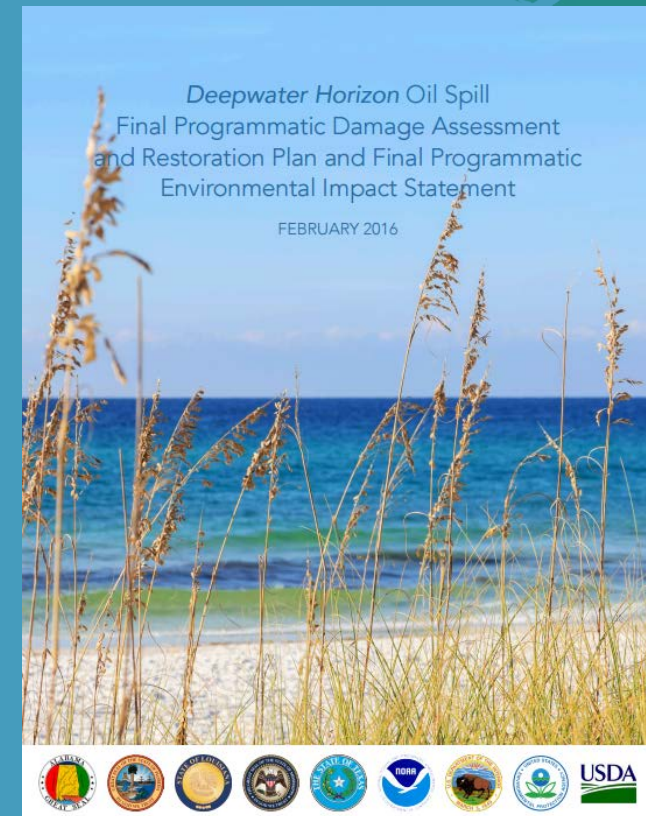
How?

- Determine injuries to, or lost use of, the public's natural resources
- Determine the appropriate amount & type of restoration needed
- Implement and monitor projects to restore injured natural resources

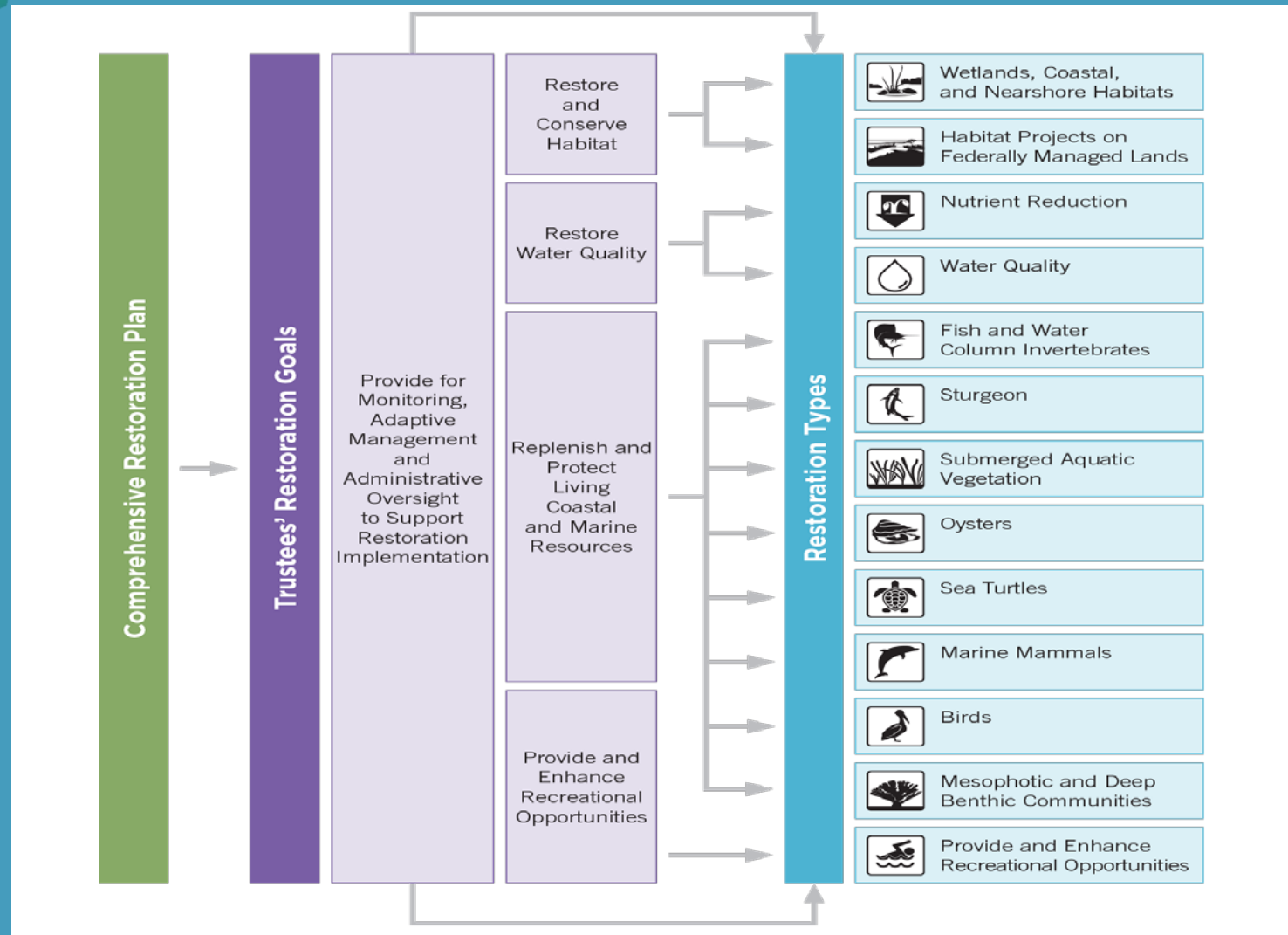


Programmatic Restoration Plan

- **Damage assessment:** Injuries to natural resources and services
- **Restoration:** Integrated, ecosystem approach and science-based adaptive management
- **Governance:** Framework for future decision-making, including selection & implementation of projects



Overview of Programmatic Restoration Plan



DWH Trustees Governance Structure

Trustee Implementation Groups (TIGs)

Texas

*Trustees for Texas
Federal Trustees*

Louisiana

*Trustees for Louisiana
Federal Trustees*

Mississippi

*Trustees for Mississippi
Federal Trustees*

Alabama

*Trustees for Alabama
Federal Trustees*

Florida

*Trustees for Florida
Federal Trustees*

Regionwide

All Trustees

Open Ocean

Federal Trustees

Unknown Conditions and Adaptive Management

All Trustees



DWH Trustees Governance Structure

Restoration Funding in Dollars

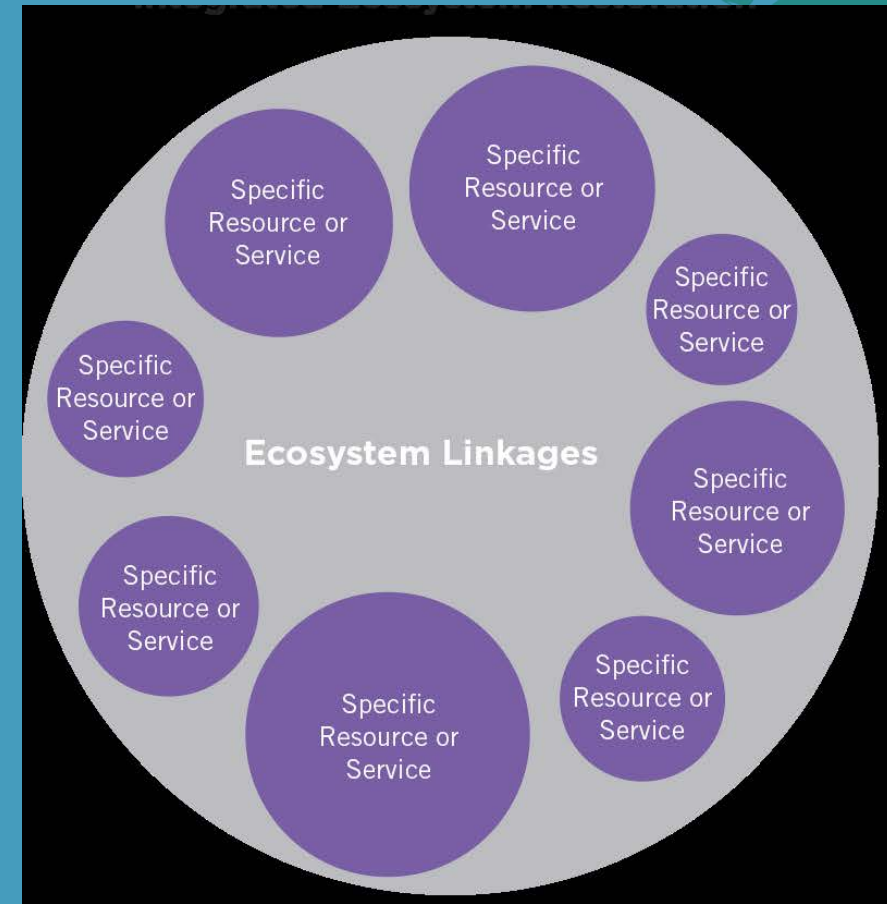
Major Restoration Categories	Unknown Conditions	Regionwide	Open Ocean	Alabama	Florida	Louisiana	Mississippi	Texas	Total Restoration Funding*
1. Restore and Conserve Habitat									
Wetlands, Coastal, and Nearshore Habitats				65,000,000	5,000,000	4,009,062,700	55,500,000	100,000,000	4,234,562,700
Habitat Projects on Federally Managed Lands				3,000,000	17,500,000	50,000,000	5,000,000		75,500,000
Early Restoration (through Phase IV)				28,110,000	15,629,367	259,625,700	80,000,000		383,365,067
2. Restore Water Quality									
Nutrient Reduction (Nonpoint Source)				5,000,000	35,000,000	20,000,000	27,500,000	22,500,000	110,000,000
Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation, etc.)					300,000,000				300,000,000
3. Replenish and Protect Living Coastal and Marine Resources									
Fish and Water Column Invertebrates			380,000,000						380,000,000
Early Restoration Fish and Water Column Invertebrates			20,000,000						20,000,000
Sturgeon			15,000,000						15,000,000
Sea Turtles		60,000,000	55,000,000	5,500,000	20,000,000	10,000,000	5,000,000	7,500,000	163,000,000
Early Restoration Turtles		29,256,165						19,965,000	49,221,165
Submerged Aquatic Vegetation						22,000,000			22,000,000
Marine Mammals		19,000,000	55,000,000	5,000,000	5,000,000	50,000,000	10,000,000		144,000,000
Birds		70,400,000	70,000,000	30,000,000	40,000,000	148,500,000	25,000,000	20,000,000	403,900,000
Early Restoration Birds		1,823,100		145,000	2,835,000	71,937,300		20,603,770	97,344,170
Mesophotic and Deep Benthic Communities			273,300,000						273,300,000
Oysters		64,372,413		10,000,000	20,000,000	26,000,000	20,000,000	22,500,000	162,872,413
Early Restoration Oysters				3,329,000	5,370,596	14,874,300	13,600,000		37,173,896
4. Provide and Enhance Recreational Opportunities									
Provide and Enhance Recreational Opportunities				25,000,000	63,274,513	38,000,000	5,000,000		131,274,513
Early Restoration Recreational Opportunities			22,397,916	85,505,305	120,543,167	22,000,000	18,957,000	18,582,688	287,986,076
5. Monitoring, Adaptive Management, and Administrative Oversight									
Monitoring and Adaptive Management		65,000,000	200,000,000	10,000,000	10,000,000	225,000,000	7,500,000	2,500,000	520,000,000
Administrative Oversight and Comprehensive Planning		40,000,000	150,000,000	20,000,000	20,000,000	33,000,000	22,500,000	4,000,000	289,500,000
Adaptive Management NRD Payment for Unknown Conditions	700,000,000								700,000,000
Total NRD Funding	\$700,000,000	\$349,851,678	\$1,240,697,916	\$295,589,305	\$680,152,643	\$5,000,000,000	\$295,557,000	\$238,151,458	

* The total restoration funding allocation for the Early Restoration work; each restoration type; and monitoring, adaptive management, and administrative oversight is \$8.1 billion (plus up to an additional \$700 million for adaptive management and unknown conditions).

- The Trustee Implementation Groups (TIGs) each have their own restoration categories and funding breakdowns

Integrated, Ecosystem Approach

- Focus on coastal and nearshore habitat restoration, including water quality in priority watersheds.
- Invest in resource-specific restoration to address all injured species, life stages, and/or services
- Implement restoration at a broad, regional level to restore key linkages
- Consider ecological factors such as: connectivity, size, and distance between projects; resiliency and sustainability



Why is MAM Important?

Deepwater Horizon NRDA:

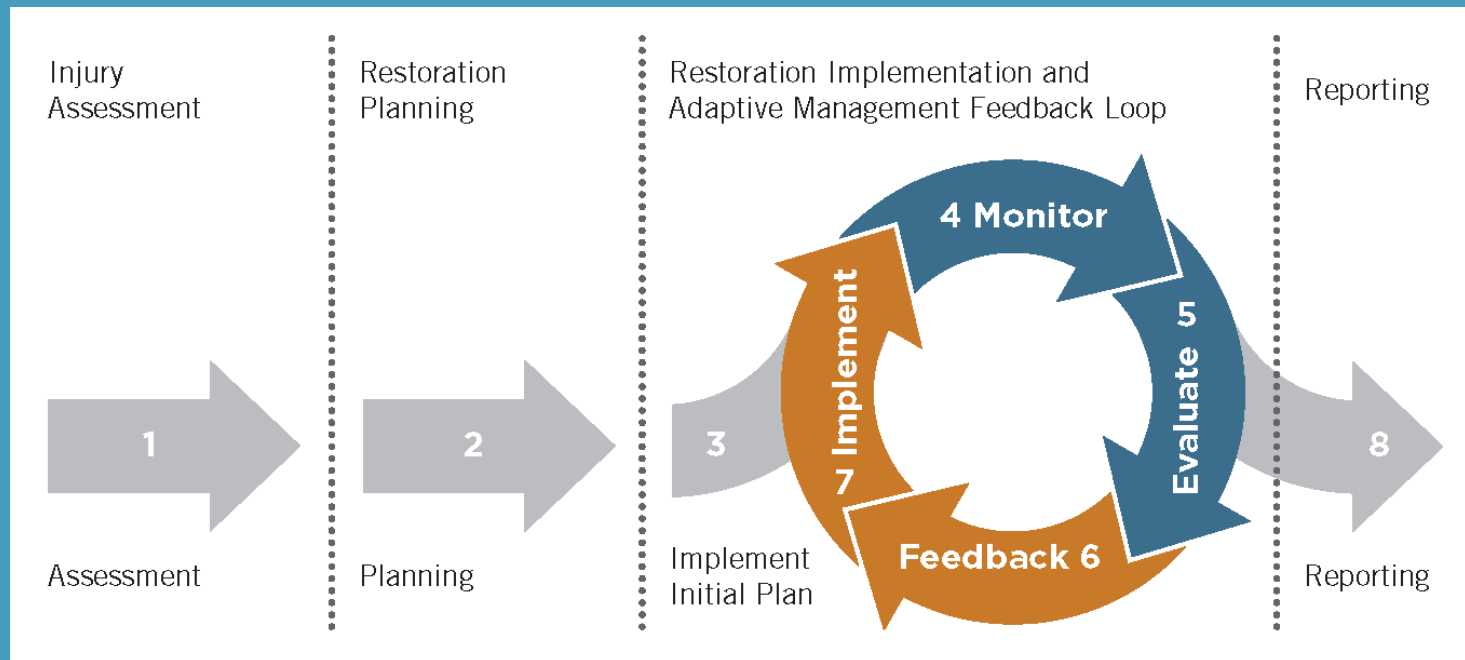
- Dynamic, changing environment
- Unprecedented scale of the injury and required restoration
- Lengthy timeline of restoration implementation
- Matrix of restoration efforts in the Gulf of Mexico
- Currently unknown conditions may influence restoration outcomes



The Adaptive Management Process

Applies at multiple levels:

Restoration Projects, Restoration Types (habitats and resources), Programmatic (e.g., across resources and areas).





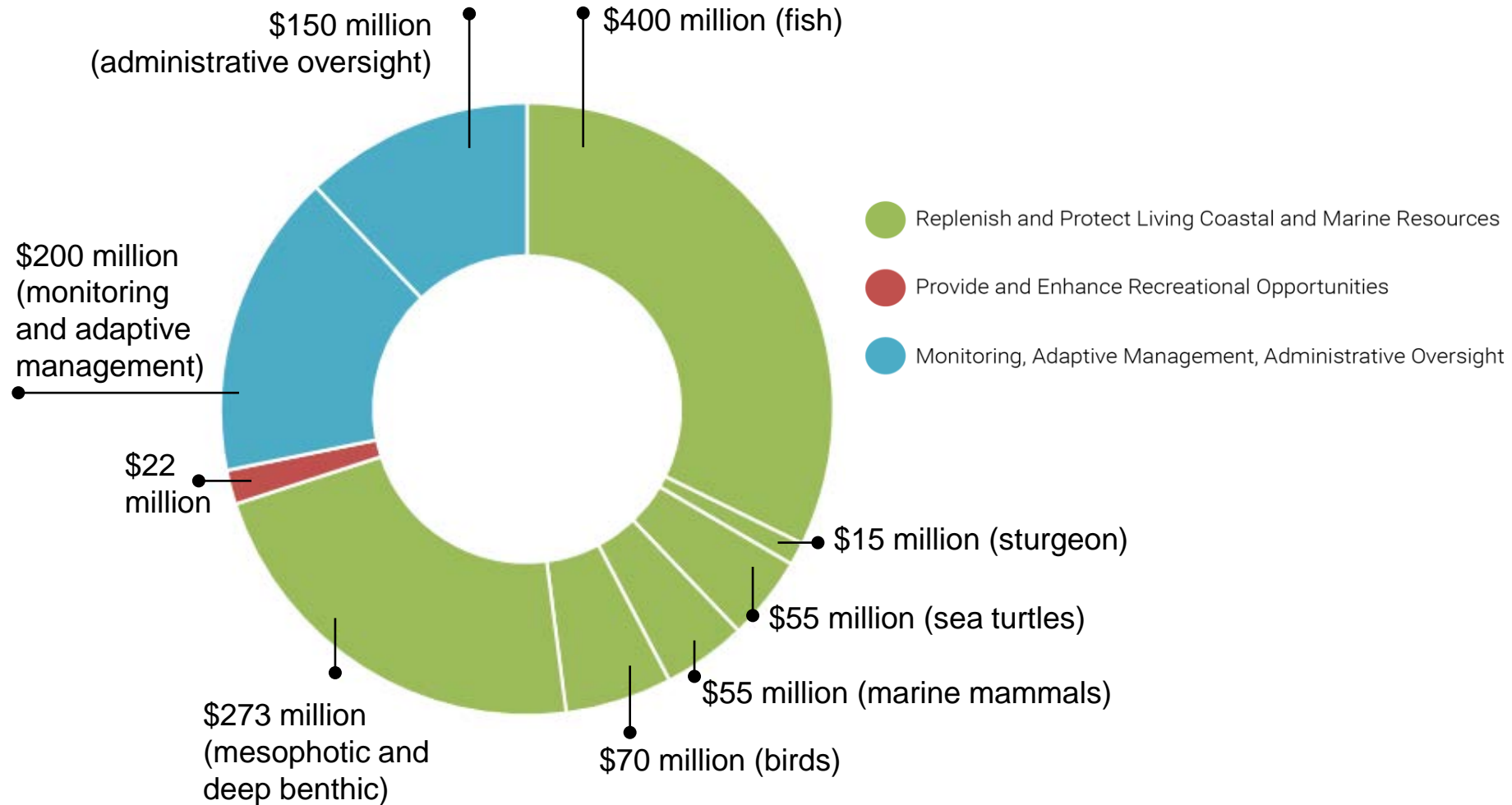
Open Ocean Trustee Implementation Group: Overview

Open Ocean Trustee Implementation Group

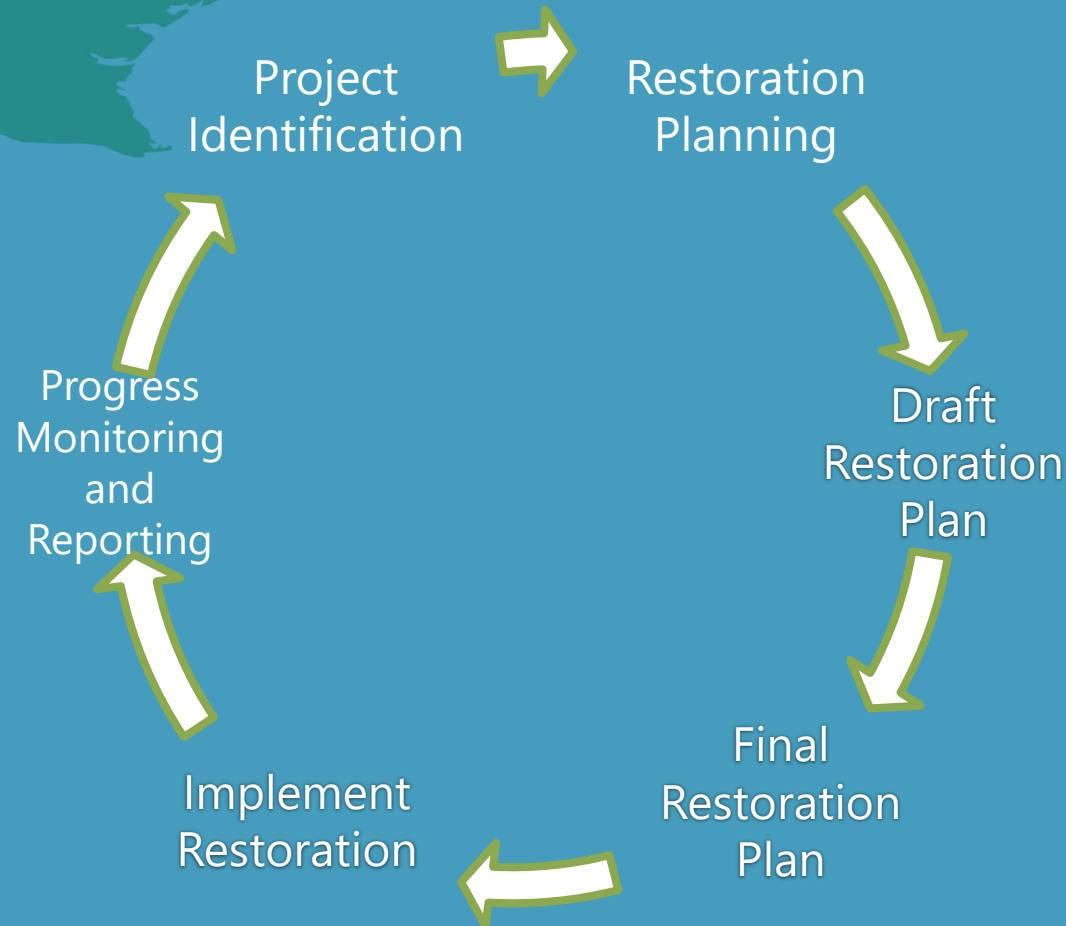


NOAA	USDA	EPA	DOI
Chris Doley	Ron Howard	Gale Bonanno	Kevin Reynolds
Laurie Rounds	Mark Defley	Treda Grayson	Ashley Mills

Resources Covered by the OO TIG



TIG Restoration Planning



CURRENT RESTORATION PLANNING

- 2017- Requested project ideas from the public and completed screening.
- Winter 2018- Began drafting two restoration plans.
- October 2018- Released Draft Restoration Plan 1/EA: Birds and Sturgeon. Final to be released soon.
- 2019 – Anticipate release of Draft Restoration Plan 2/EA.

Initial Restoration Plan Priorities

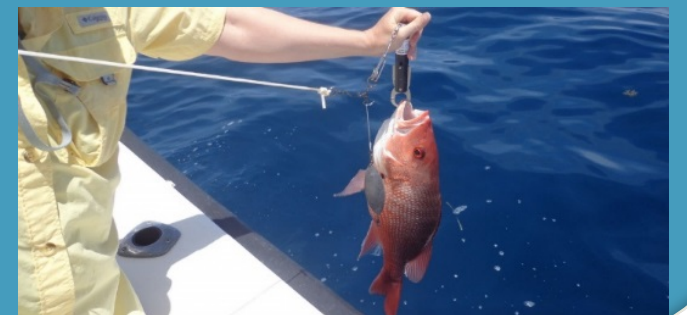
Birds: Restoring lost birds by facilitating additional production and/or reduced mortality of injured bird species, and Restoring or protecting habitats on which injured birds rely.



Sturgeon: Characterizing Gulf Sturgeon spawning habitat, habitat Use, and origins of juvenile sturgeon.



Fish & Water Column Invertebrates: Reducing mortality of coastal pelagic, reef & highly migratory species by improving bycatch reduction devices, enhancing fishing practices and tools for fishermen, and reducing barotrauma in reef fish.



Initial Restoration Plan Priorities

Mesophotic and Deep Benthic Communities: Mapping and assessment, developing innovative restoration techniques, and reducing threats.

Sea Turtles: Reducing bycatch in commercial & recreational fishing; conserve nesting beaches, collecting and integrating sea turtle restoration data.

Marine Mammals: Reducing risk of vessel collisions; reducing impacts from human-made noise; increasing capacity to respond to disasters; and collecting and integrating marine mammal restoration data.



OO Monitoring and Adaptive Management

Open Ocean MAM Strategy

- Processes to identify MAM priorities
- Priority MAM needs for restoration planning and evaluation
- Strategy documents will be released over time

MAM Activities

- Activities for data collection to inform restoration planning and evaluation



OO TIG MAM Strategy

- Describe the goals for Open Ocean MAM
- Develop a strategy for:
 - identifying and prioritizing MAM needs
 - developing and releasing MAM activities
 - MAM coordination with other TIGs and external restoration programs
 - Describe initial set of Open Ocean TIG MAM priorities
 - Open Ocean MAM Strategy will be a living document



Intro



Resource
Breakout



Break



Ecosystem
Breakout



Importance
Exercise



Wrap-Up

Identification of Data Gaps

- Information needed to plan and implement effective restoration for injured Open Ocean resources and services
- Data and/or applied science needed to develop future restoration projects or suites of projects



Evaluation of OO TIG Restoration Outcomes



- Evaluation of progress towards the restoration goals in the PDARP/PEIS
- Inform adaptive management decision-making over 15+ years of restoration implementation
- Contribute to reporting to the public on NRDA restoration progress and outcomes

Workshop Purpose and Goals

Purpose and Goals

- To seek input from stakeholders on data needs to best inform planning, implementation, and evaluation of Open Ocean TIG restoration
- To seek input from stakeholders on potential MAM priorities to facilitate restoration of injured resources within the Open Ocean restoration area

Not a solicitation of restoration project ideas or research ideas for funding

Workshop Format

- **Questions & Answers** (background information, workshop purpose and format)
- **Breakout Groups - Resource Type Data Needs** (45 minutes)
 - Resource Type Report outs (30 minutes)
- **Break** (2:45 - 3:00)
- **Breakout Groups – Ecosystem Discussion** (30 minutes)
 - Ecosystem Report outs (20 minutes)
 - Importance Exercise (20 minutes)
- **Wrap-up**



Questions?



Restoration Type Break-out Groups

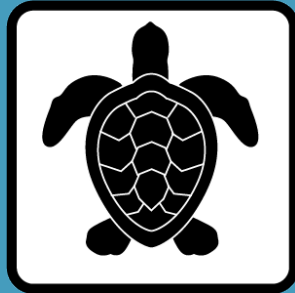
Breakout Charge: Open Ocean TIG Resources

- Identify data needs that will facilitate resource specific:
 - Planning/implementation
 - Evaluation
 - Adaptive management
- Based on discussion of topics above, identify potential monitoring and adaptive management priorities

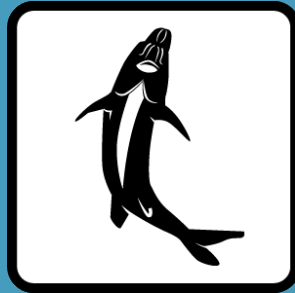
Restoration Type Breakouts



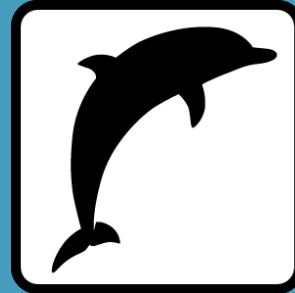
Fish and
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Invertebrates



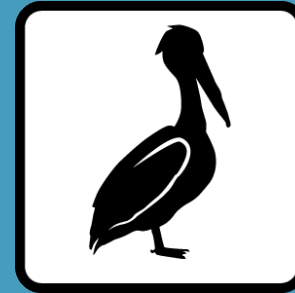
Sea Turtles



Sturgeon



Marine
Mammals



Birds

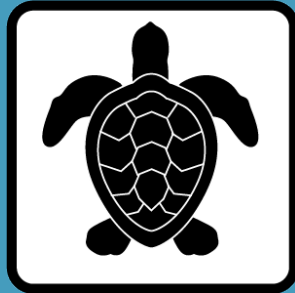


Mesophotic
and Deep
Benthic
Communities

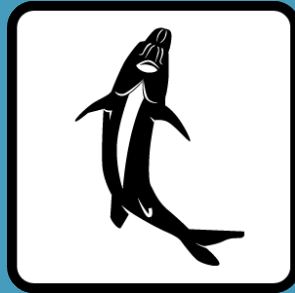
Restoration Type Report-Outs



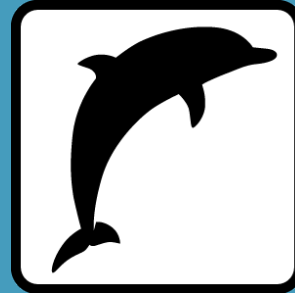
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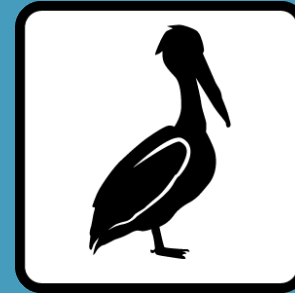
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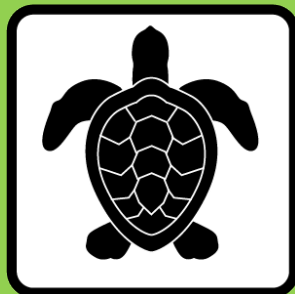


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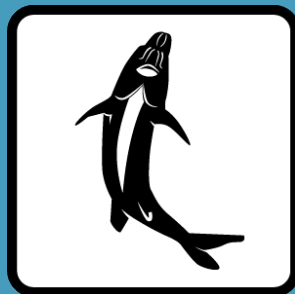
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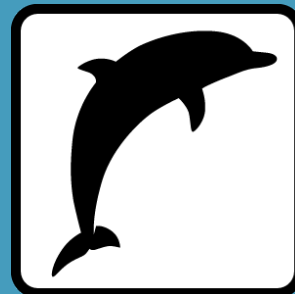
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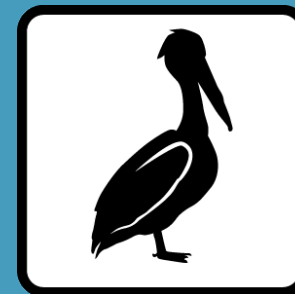
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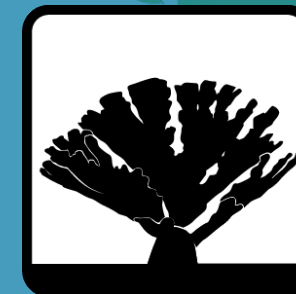
Sturgeon



Marine
Mammals



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and Deep
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Communities



Intro



**Resource
Breakout**



Break



Ecosystem
Breakout



Importance
Exercise

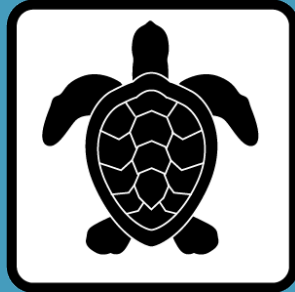


Wrap-Up

Restoration Type Report-Outs



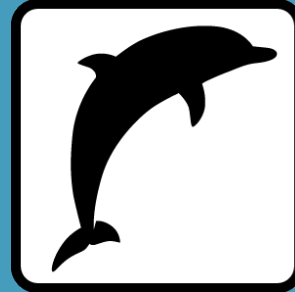
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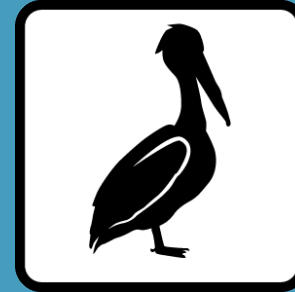
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Mesophotic
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Benthic
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Intro



**Resource
Breakout**



Break



Ecosystem
Breakout



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Exercise

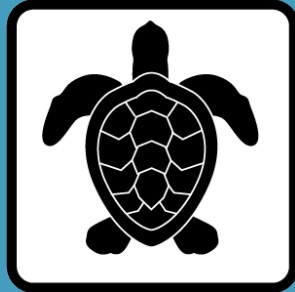


Wrap-Up

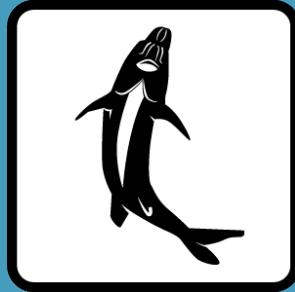
Restoration Type Report-Outs



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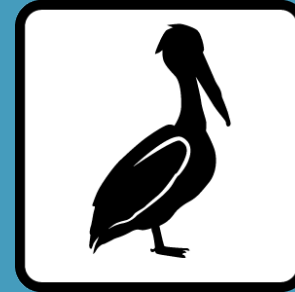
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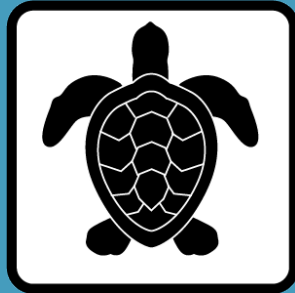


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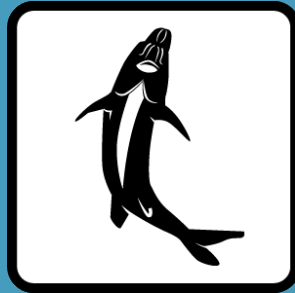
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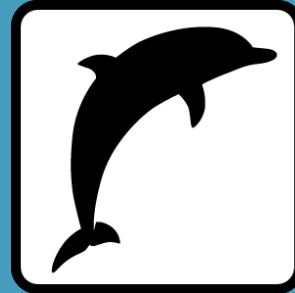
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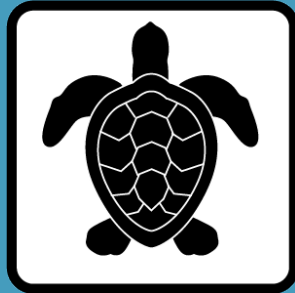


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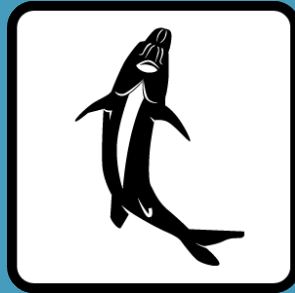
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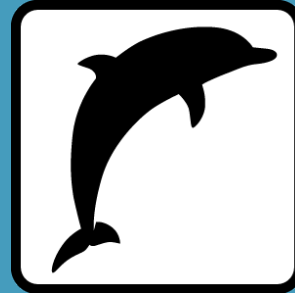
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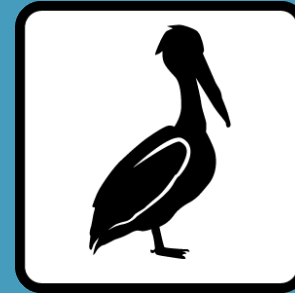
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Intro



**Resource
Breakout**



Break



Ecosystem
Breakout



Importance
Exercise



Wrap-Up



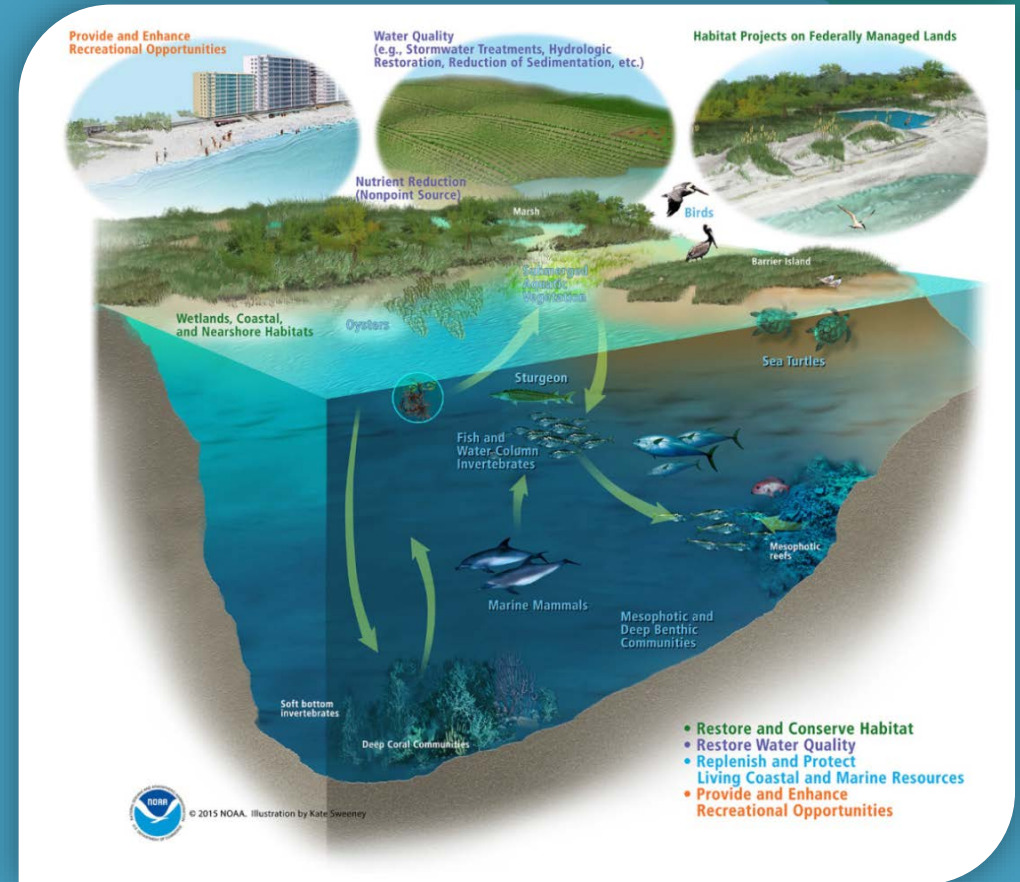
15-Minute Break



Cross Resource and Ecosystem Break-out Groups

Cross-resource and ecosystem-level MAM needs

- What data are most useful for measuring the TIG's ecosystem-level outcomes?
 - Open Ocean TIG restoration contribution to the "Integrated, Ecosystem Approach"
 - Other TIGs benefits to Open Ocean TIG resources/ services and vice versa
 - Synergies among resources in the Open Ocean TIG
- Are there important cross-resource data gaps for Open Ocean resources?



Breakout Charge: Cross-resource and ecosystem

- Discuss ecosystem approach to restoration
- Discuss and **identify data needs** to facilitate:
 - Planning for integrated ecosystem restoration in the Open Ocean restoration area
 - Evaluation of ecosystem-level outcomes across Open Ocean projects
 - Addressing cross-cutting data gaps or uncertainties related to Open Ocean restoration
- Based on discussion of topics above, **identify potential monitoring and adaptive management priorities**
- Conduct group exercise to **identify priorities and importance** of data needs identified.

Ecosystem Breakouts

Group 1

Group 2

Group 3

Group 4

Group 5

Group 6

Ecosystem Report-Out

Group 1

Group 2

Group 3

Group 4

Group 5

Group 6

Ecosystem Report-Out

Group 1

Group 2

Group 3

Group 4

Group 5

Group 6

Ecosystem Report-Out

Group 1

Group 2

Group 3

Group 4

Group 5

Group 6

Ecosystem Report-Out

Group 1

Group 2

Group 3

Group 4

Group 5

Group 6

Ecosystem Report-Out

Group 1

Group 2

Group 3

Group 4

Group 5

Group 6

Ecosystem Report-Out

Group 1

Group 2

Group 3

Group 4

Group 5

Group 6

Importance Exercise Charge

Group exercise to discuss results of workshop and identify relative importance, for participants, of the data needs identified.

- Discuss compiled list of data needs identified through breakout groups.
- Each participant receives three sticker dots.
- Place a dot beside the data need you feel is a priority.



Wrap-Up

Wrap-Up

Expected next steps

- Open Ocean TIG to review input obtained today along with any future input received as we develop the MAM Strategy.
- Feedback and stakeholder input to be incorporated, as appropriate, into MAM Strategy.
- Open Ocean TIG to revisit MAM priorities as needed.
- There will be other opportunities for the public to engage in the Open Ocean TIG restoration and monitoring and adaptive management planning efforts.



Intro



Resource
Breakout



Break



Ecosystem
Breakout



Importance
Exercise



Wrap-Up



Thank you



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