Communicating coastal habitat value to fishery production:

*Science is only half the battle*
Bridging the Gap

Production Controls
Recruitment, growth, survival, etc.

Extraction Controls
Season closures, gear restrictions, limited entry, quotas, min/max sizes, etc.

Ecosystem-based fishery management

Fishable Stock
Production Controls
Recruitment, growth, survival, etc

HABITAT

Management

Conservation

Restoration
RESOURCE VALUE

Policy shifts; Public/private investments; Secure long-term investments in ecosystem services...

Quantification of ecosystem services

Provided at scales relevant to decision-makers

Compelling models where economic incentives aligned with conservation

Delivered in ways that are accessible, relevant and useable

GLOBAL OCEANS
NORTH AMERICA OCEANS & COASTS

Restore America’s Estuaries | December 2016
Fish Stock Enhancement by Oyster Reefs

[Map showing the United States and the Atlantic Ocean with two blue circles highlighting areas.]

- Gulf of Mexico
- Atlantic Ocean

[Graphs showing production (g/m².year⁻¹) for various fish species over different years.]
An estimated 7% of the bay is currently filtered by oysters. To increase the filtration of the bay to 50% will require 18 ha (45 ac) of restored habitat. This restored habitat could support 2.6 M young of the year fish per year, which will contribute an estimated 58507 kg biomass over their lifetime.
- Integrate multiple tools for spatially and socially relevant decision-making, based on ecosystem service provision of habitat
- Provided in useful and easily accessible formats
Estimating ecosystem service values for salt marsh and seagrass habitat
Search for available data

Determine regions where production models can be applied

Produce enhancement values per area of habitat per region

Compile (past and present) habitat maps and reformat to apply to models

Publish in scientific literature

Expert workshop

Manager’s Guide

Web platform

Direct outreach and training

Build the science

Communicate
Questions?
Quantitative studies (31) Gulf and Atlantic

Identify consistently enhanced species

Determine density by size class of fishes on oyster reef and control bottom

Apply published growth rate and age specific survival of identified species

Calculate species specific enhancement

Calculate uncertainty in production

Total production and uncertainty