Oyster Futures

VIMS | William & Mary
Virginia Institute of Marine Science

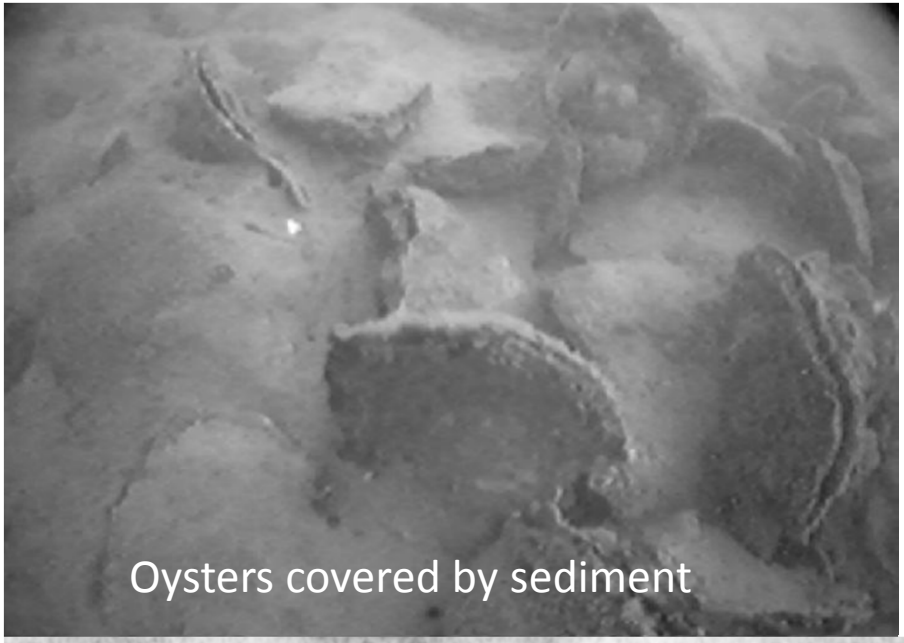
University of Maryland
Center for Environmental Science

FCRC Consensus Center

presented by:
Elizabeth North
University of Maryland
Center for Environmental Science
Horn Point Laboratory

NSF

January 25, 2016
Sustainable Fisheries
Goal Implementation Team
Executive Committee


Oysters covered by sediment

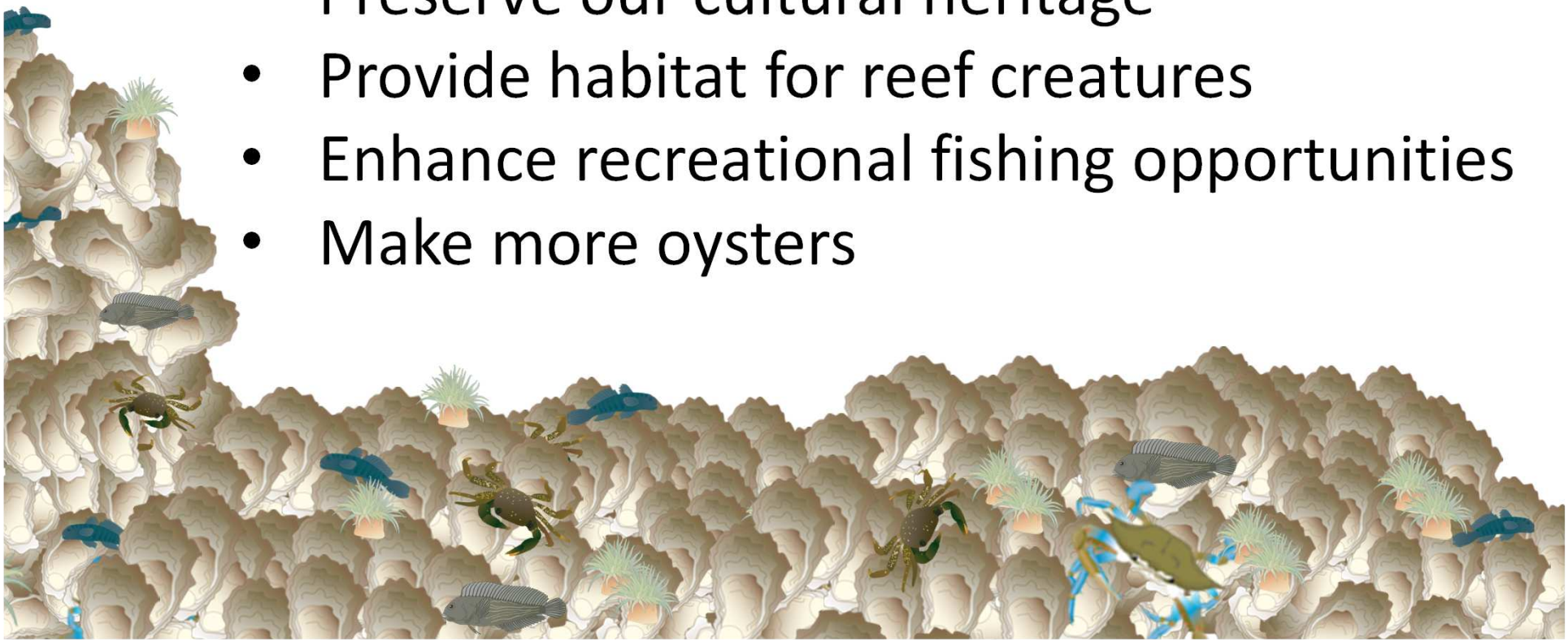
Maryland's oysters need help

Overharvest
Habitat Loss
Disease


One year's worth of shell from one shucking house

We need more oysters to …

- Support a sustainable wild oyster fishery
- Improve the health of Chesapeake Bay
- Maintain and create jobs
- Stimulate the economy
- Preserve our cultural heritage
- Provide habitat for reef creatures
- Enhance recreational fishing opportunities
- Make more oysters



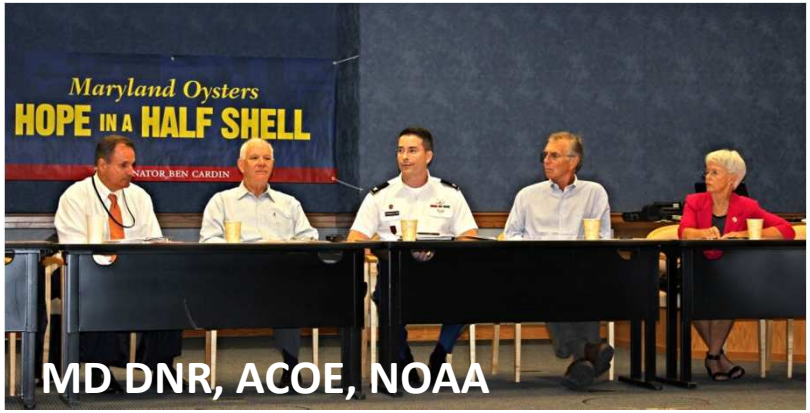
State, federal, waterman and citizen group partnerships have taken significant steps toward more oysters …


Horn Point Oyster Hatchery

Oyster Recovery Partnership


CBF, TNC, CCA


Paynter Lab



MD DNR, ACOE, NOAA

Yet there remains significant conflict over how to get more oysters…

stardem.com

THE STAR DEMOCRAT

menu

Maryland DNR asks Army Corp to delay Tred Avon oyster restoration work

By KATIE WILLIS kwillis@stardem.com | Posted 4 weeks ago

EASTON — The Maryland Department of Natural Resources recently asked the U.S. Army Corp of Engineers to delay oyster restoration work currently taking place in the Tred Avon River.

In a statement released this past week, Stephen Schatz, executive director of communications for DNR, said a review of oyster restoration efforts will take place and a report on the efforts to date will be released this summer.

"The Maryland Department of Natural Resources has

A crane on a ba
oyster reefs Tue
work began in t

Bay Journal

Watermen seek, win, halt in Tred Avon oyster restoration project

Corps of Engineers, State to meet this month to discuss future for restoration

Tim Wheeler Rona Kobell | January 13, 2016

Therefore we are testing a new approach for developing fishing regulations and restoration policies that

- are integrated
- meet the needs of major stakeholders

Grant:
Integrating stakeholder objectives with natural system models to promote sustainable natural resource policy

Integrating stakeholder objectives with natural system models to promote sustainable natural resource policy

Elizabeth North[1]
Jeff Blair[2]
Jeffery Cornwell[1]
Troy Hartley[3],
Raleigh Hood[1]
Robert Jones[2]
Thomas Miller[1]
Lisa Wainger[1]
Michael Wilberg[1]

[1]University of Maryland Center for Environmental Science
[2]Florida State University
[3]Virginia Institute of Marine Science

- **Premise**: Natural resources can be better sustained by policies developed cooperatively among all affected stakeholders, scientists, and government representatives.
- However, a systematic approach for conducting collaborative policy development that is grounded in sound science is needed.
- We will use the oyster fishery in Chesapeake Bay as a test case to study and improve this approach.

Method: apply the **FishSmart** process

Marine Recreational Information Program

Berkley Conservation Institute

SaltWater Sportsman

New England Fishery Management Council

NOAA

Chesapeake Bay Foundation – Save the Bay

e Environmental Defense Fund – finding the ways that work

Florida Fish and Wildlife Conservation Commission

University of Maryland Center for Environmental Science Chesapeake Biological Laboratory

Coastal Conservation Association

Coastside Fishing Club – Have You Posted Today?

Nelson Resources Consulting, Inc.

Gordon and Betty Moore Foundation

Southern Kingfish Association – SKA

The Nature Conservancy – Protecting nature. Preserving life.™

North Carolina Marine Fisheries

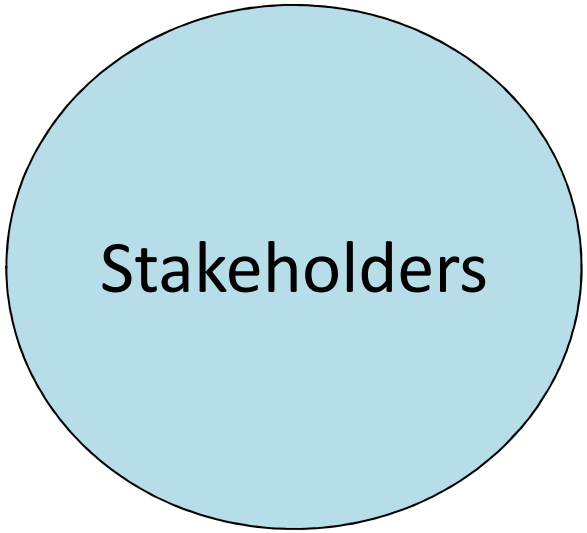
FCRC Consensus Solutions

Maryland Department of Natural Resources

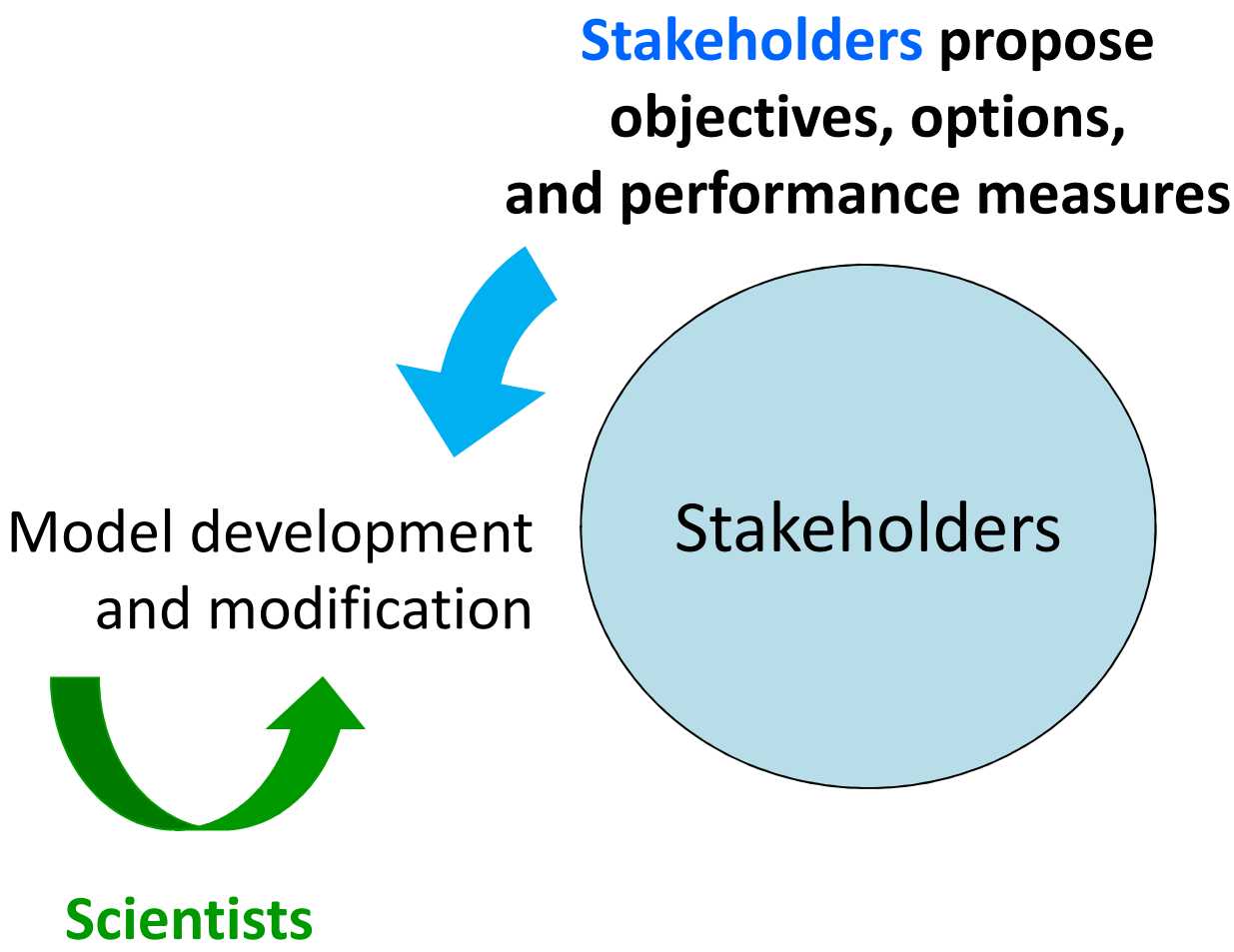
American Sportfishing Association

Stakeholder-centered approach

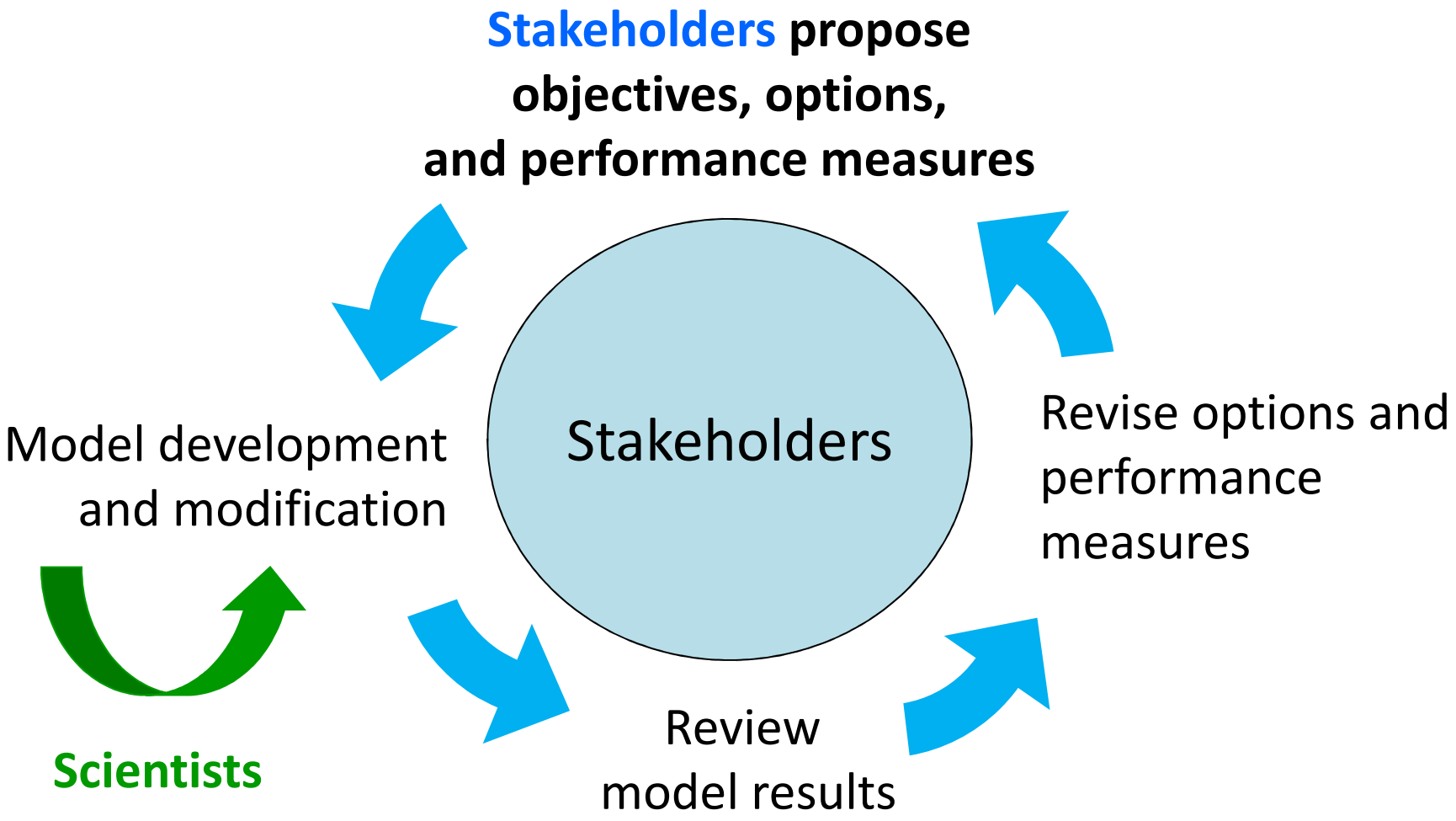
Stakeholders propose objectives, options, and performance measures



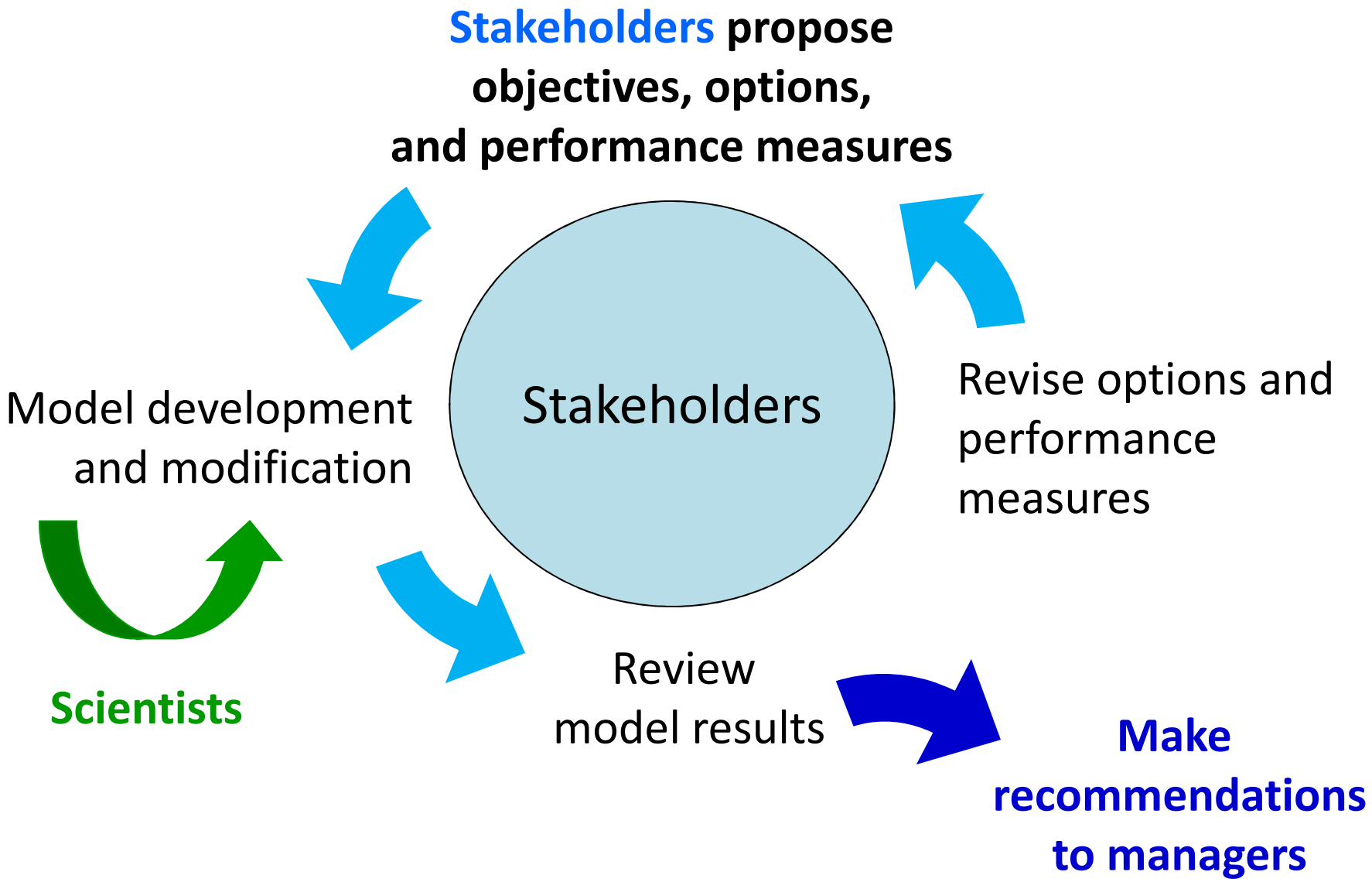
Stakeholder-centered approach



Stakeholder-centered approach



Stakeholder-centered approach



Oyster Futures

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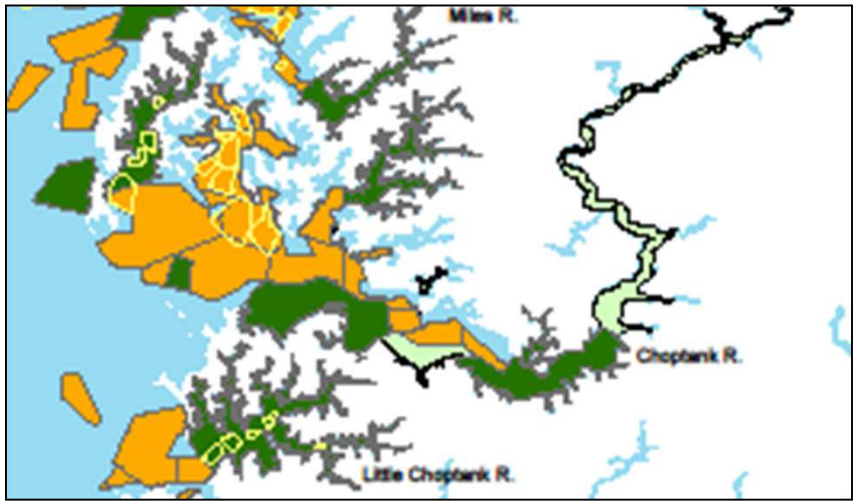
Goal: to develop recommendations for oyster policies and management that meet the needs of industry, citizen, and government stakeholders in the Choptank and Little Choptank Rivers.



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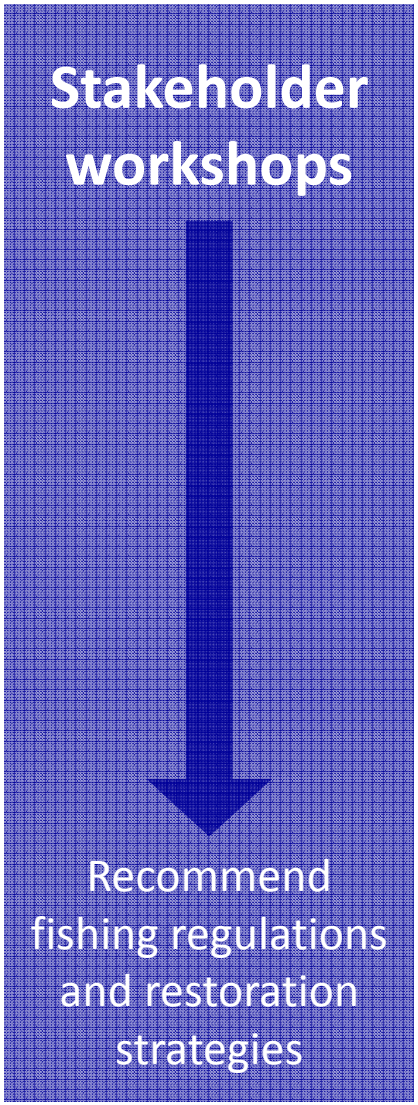

Stakeholder's collective vision guides the process which is:

- **fair**
- **collaborative**
- **transparent**

OysterFutures stakeholder workgroup

Waterman	Member	
Waterman	Member	
Waterman	Member	
ORP	Member	
NOAA/ACOE	Member	
DNR	Member	
	Scientist	
	Scientist	
	Scientist	
		Member — Waterman
		Member — Waterman
		Member — Waterman
		Member — CCA
		Member — CBF
		Member — TNC
		Member — Phillips Wharf
		Member — Seafood buyer
		Member — Aquaculture
		Member — Aquaculture

Facilitator | Facilitator

Projector Screen

OysterFutures stakeholder workgroup

Waterman
Waterman
Waterman
ORP
NOAA/ACOE
DNR

Member
Member
Member
Member
Member
Member
Scientist
Scientist
Scientist

Member
Member
Member
Member
Member
Member
Member
Member
Member

Waterman
Waterman
Waterman
CCA
CBF
TNC
Phillips Wharf
Seafood buyer
Aquaculture
Aquaculture

Key Points

- **Consensus-driven**
- **60% Industry**
- **75% Agreement**
- **Science-based**

Facilitator
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Projector Screen

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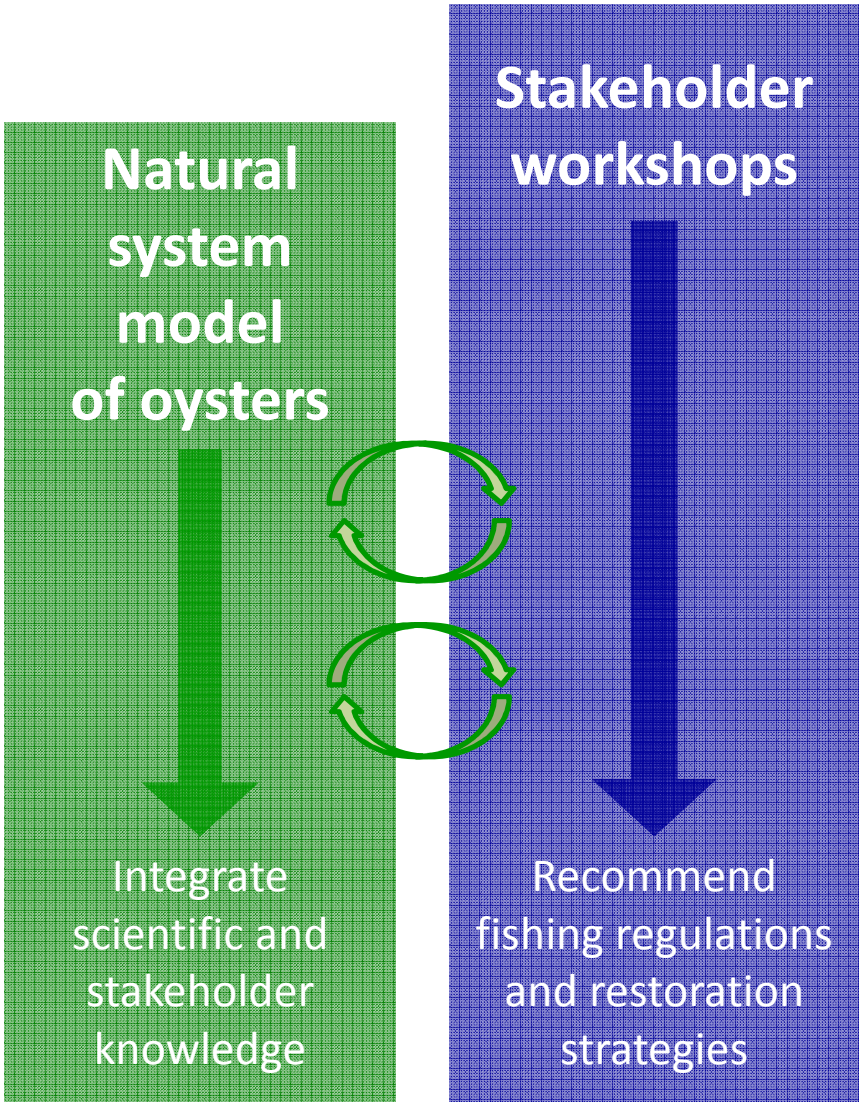

Scientists serve as consultants

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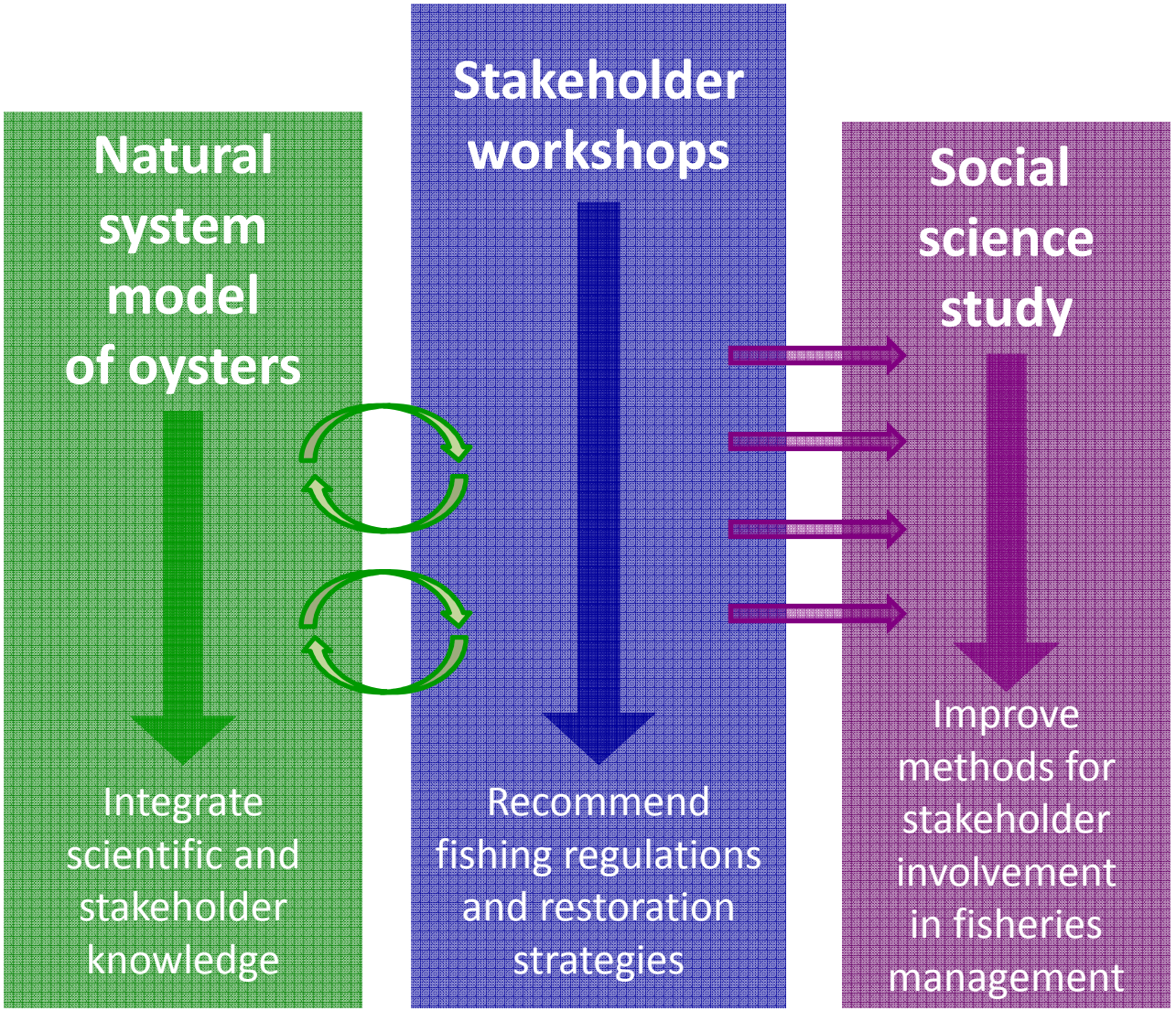

Timeline

2016

February	1st workshop: visioning
Spring	2nd workshop: model directives
Fall	3rd workshop: model development

2017

Winter	4th workshop: model development
Spring	5th workshop: recommendations
June	**Submit recommendations to DNR**

Timeline

2016	
February	1st workshop: visioning
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2017	
Winter	4th workshop: model development
Spring	5th workshop: recommendations
June	Submit recommendations to DNR
2018	**Future change: sea level, nutrients**
Winter	6th workshop: visioning and directives
Spring	7th workshop: model development
Fall	8th workshop: recommendations

Questions, comments, advice?

Many thanks to:

OysterFutures Team Members
Mathew Damiano
Amy Freitag
Rasika Gawde
Taylor Goelz
Chris Hayes
Dan Sweeney
Jane Thomas

Images
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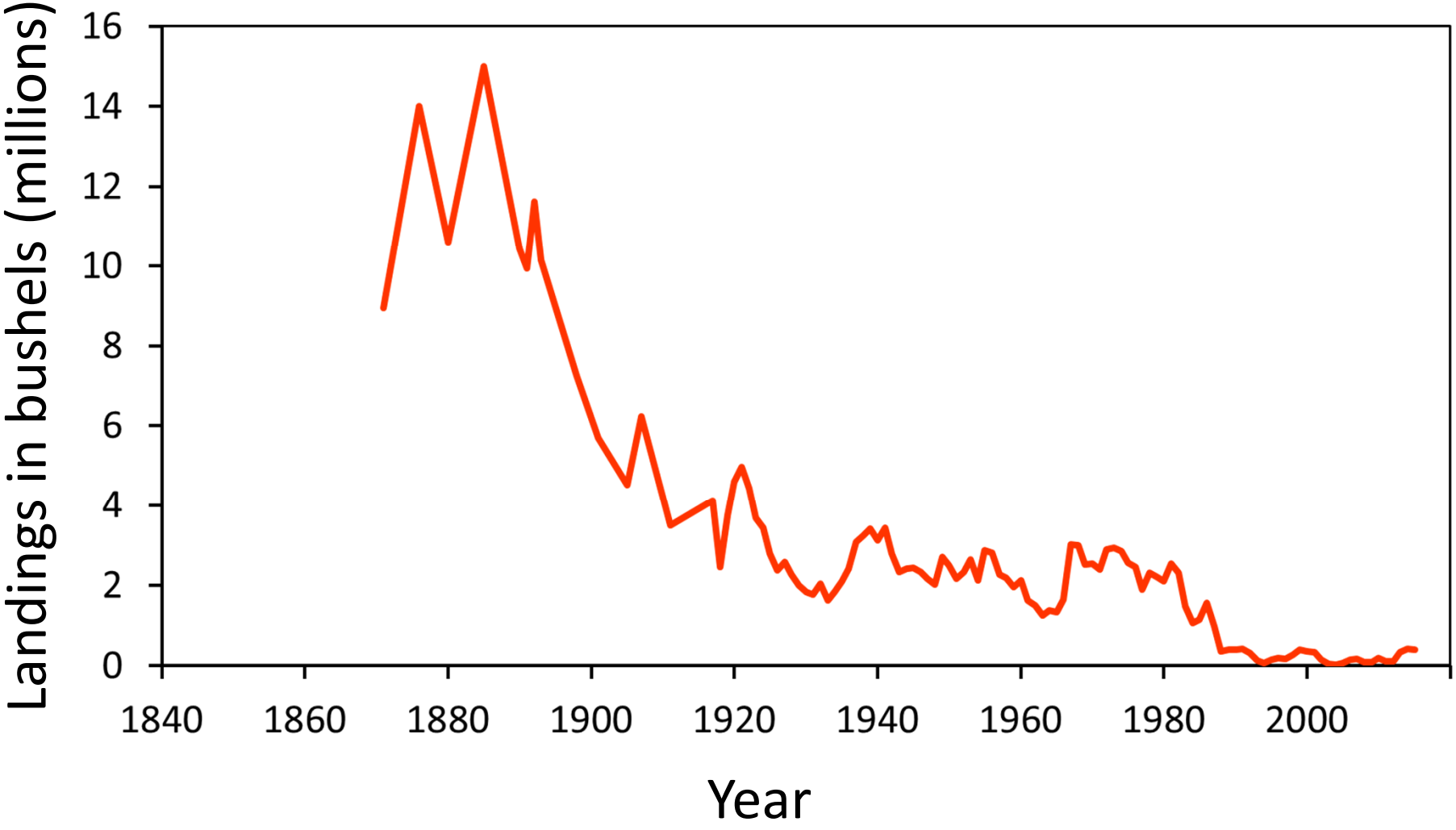
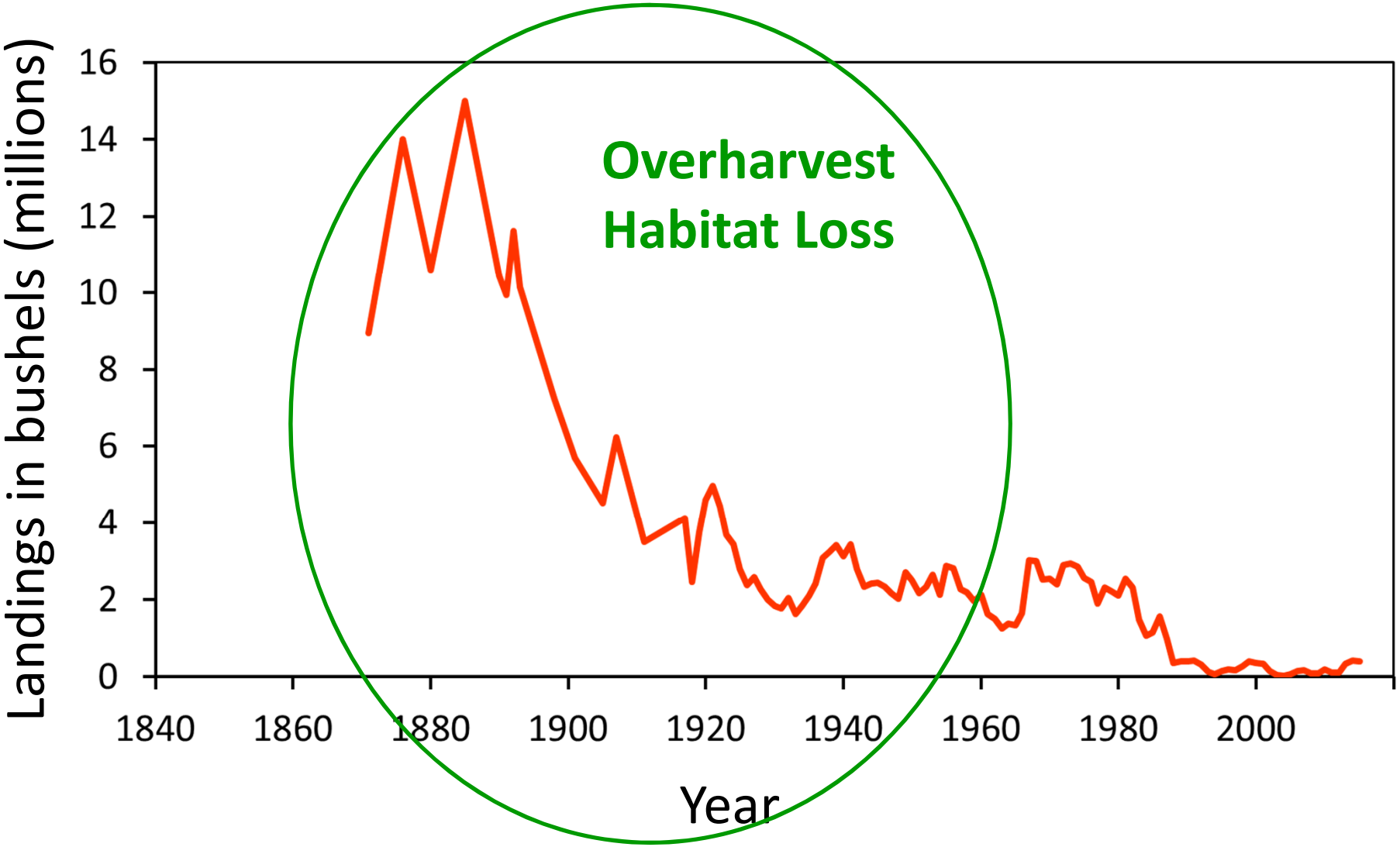
FCRC Consensus Center

Over a century of decline in landings in Maryland



Data from MD DNR

Over a century of decline in landings in Maryland



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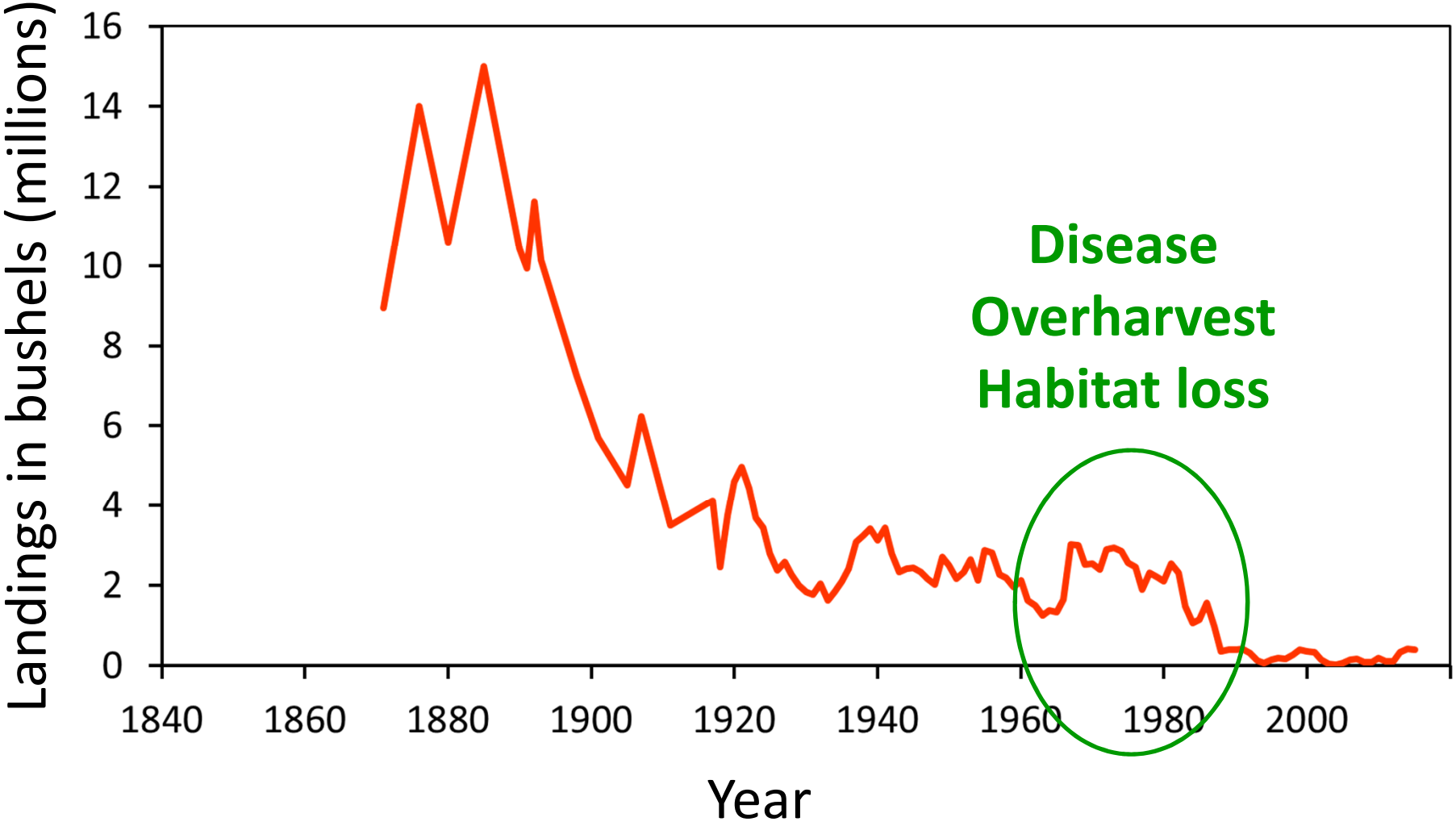

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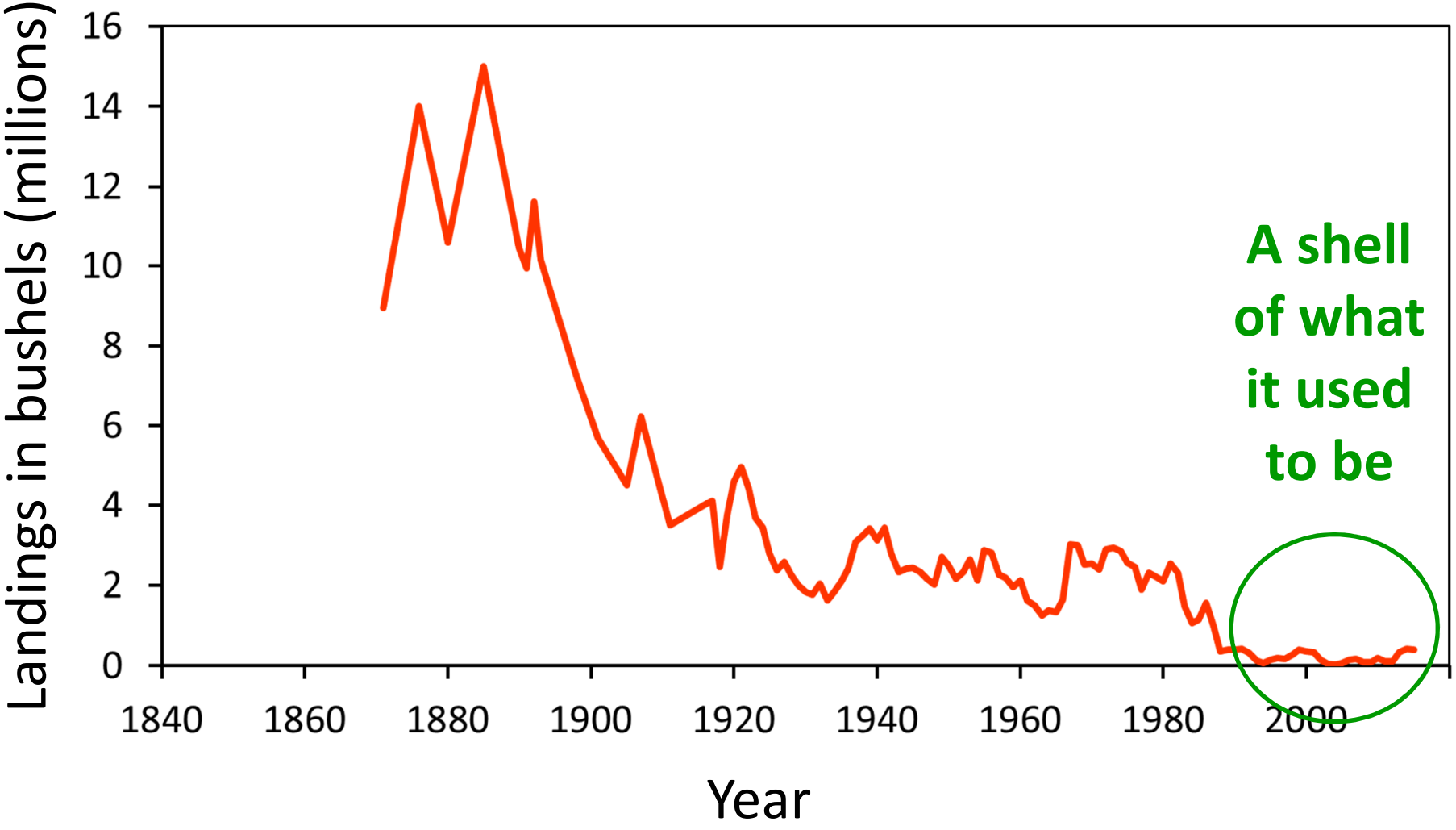

Data from MD DNR

Technical Description of the NSF Coastal SEES Grant

Integrating stakeholder objectives with natural system models to promote sustainable natural resource policy

This research will advance strategies for integrating stakeholder values, natural science, and scientists in sustainable resource management. Environmental policies often create controversy and can be difficult to enforce, particularly when affected parties do not understand and accept the rationale for the rules or do not consider the rules fair. Natural resources can be better sustained by policies developed cooperatively among all affected stakeholders, scientists, and government representatives. However, a systematic approach for conducting collaborative policy development that is grounded in sound science is needed. We will use the oyster fisheries in the Chesapeake Bay as a test case and hold a series of workshops in which a full set of stakeholders will work with scientists to guide model development, select policy objectives, and apply the model to make policy recommendations. The stakeholders will participate in building a computer model of the system that will allow the effectiveness of policy options to be forecasted. This collaborative modeling approach will ensure that stakeholders have an opportunity to incorporate their values, objectives, and knowledge into the model of the estuarine ecosystem which will include many benefits from the natural system such as commercial and recreational fishing, safe swimmable water, and other ecosystem services. We will study the sociology and economics that influence stakeholder involvement and policy formation in order to better understand the human dimensions, improve the process, and enhance the implementation success of recommended policies. The lessons learned regarding the oyster ecosystem and fishery will advance the tools and practices of sustainable management of shellfisheries. The policy recommendations from the stakeholder workshops will be evaluated by state and federal agencies, and if implemented, would be an outcome that would directly enhance coastal sustainability. One Ph.D. student, two M.S. students, and one postdoctoral researcher will be trained in the science of coupled natural-human systems.

Statement of Purpose

The goal of OysterFutures is to develop recommendations for oyster policies and management that meet the needs of industry, citizen, and government stakeholders in the Choptank and Little Choptank Rivers.

With funding from the National Science Foundation, we will hold a series of workgroup meetings with a representative group of stakeholders. Through these meetings, the stakeholders will produce a collective vision for the future of oysters in this region and build consensus on policy and regulatory options which will be informed by stakeholder and scientific knowledge and by the joint development and use of a modeling tool. The Maryland Department of Natural Resources has agreed to evaluate the consensus recommendations that result.

The stakeholders participating on the workgroup will be representatives from the key interest groups that affect and are affected by the oyster fishery. Researchers from the University of Maryland Center for Environmental Science and the Virginia Institute of Marine Science will serve as consultants to the stakeholders. Professional independent facilitators with experience in fisheries issues will convene the stakeholder meetings. The facilitators will ensure that a consensus-based approach which includes the input of diverse stakeholders is used to develop the collective vision and recommended actions for a sustainable and profitable future for the oyster industry in the Choptank and Little Choptank Rivers.