Oyster Futures

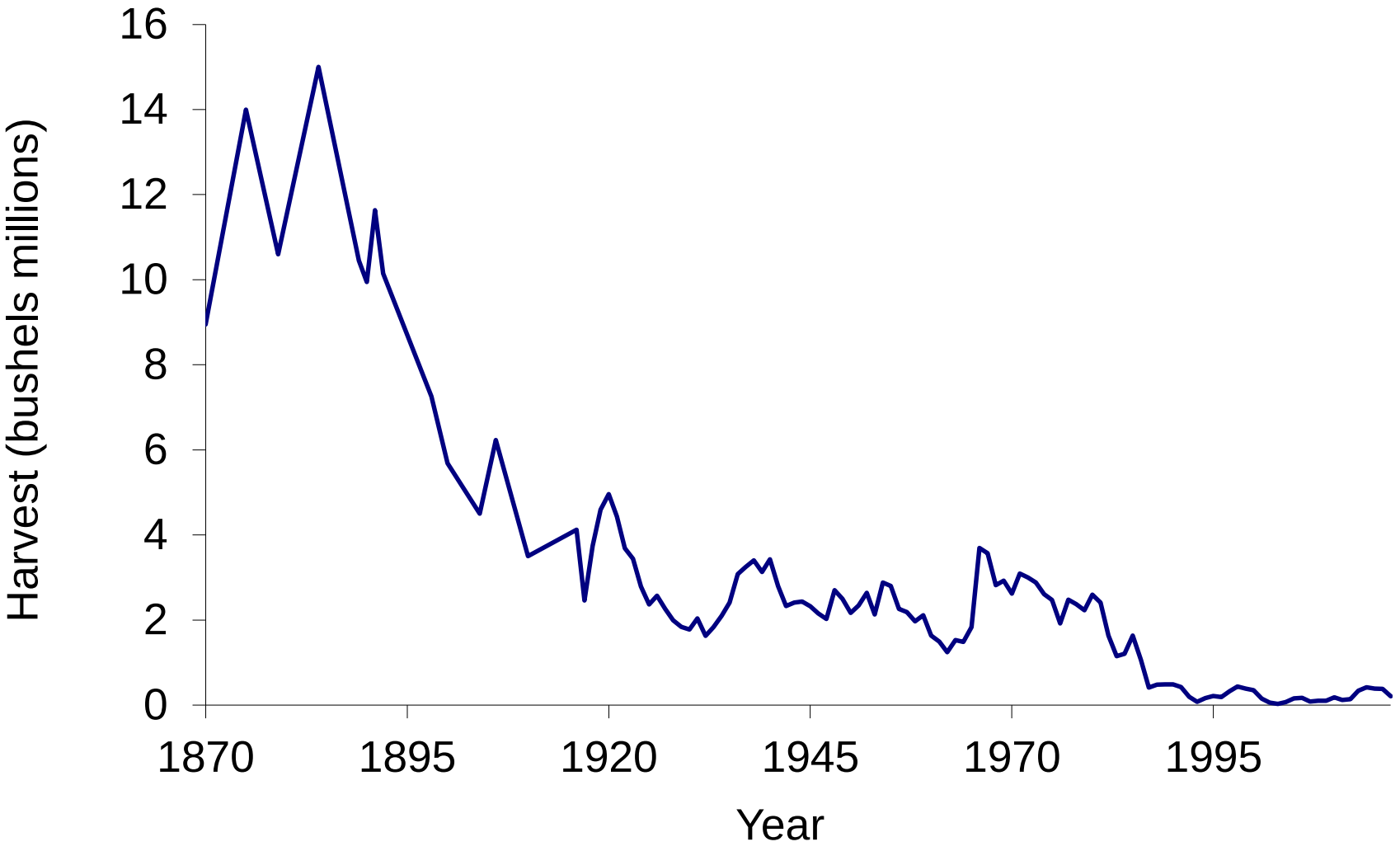
Abundance of Oysters in the Choptank River Complex, MD

Michael Wilberg and Matthew Damiano

University of Maryland
Center for Environmental Science

NSF

Maryland Harvest



OysterFutures

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

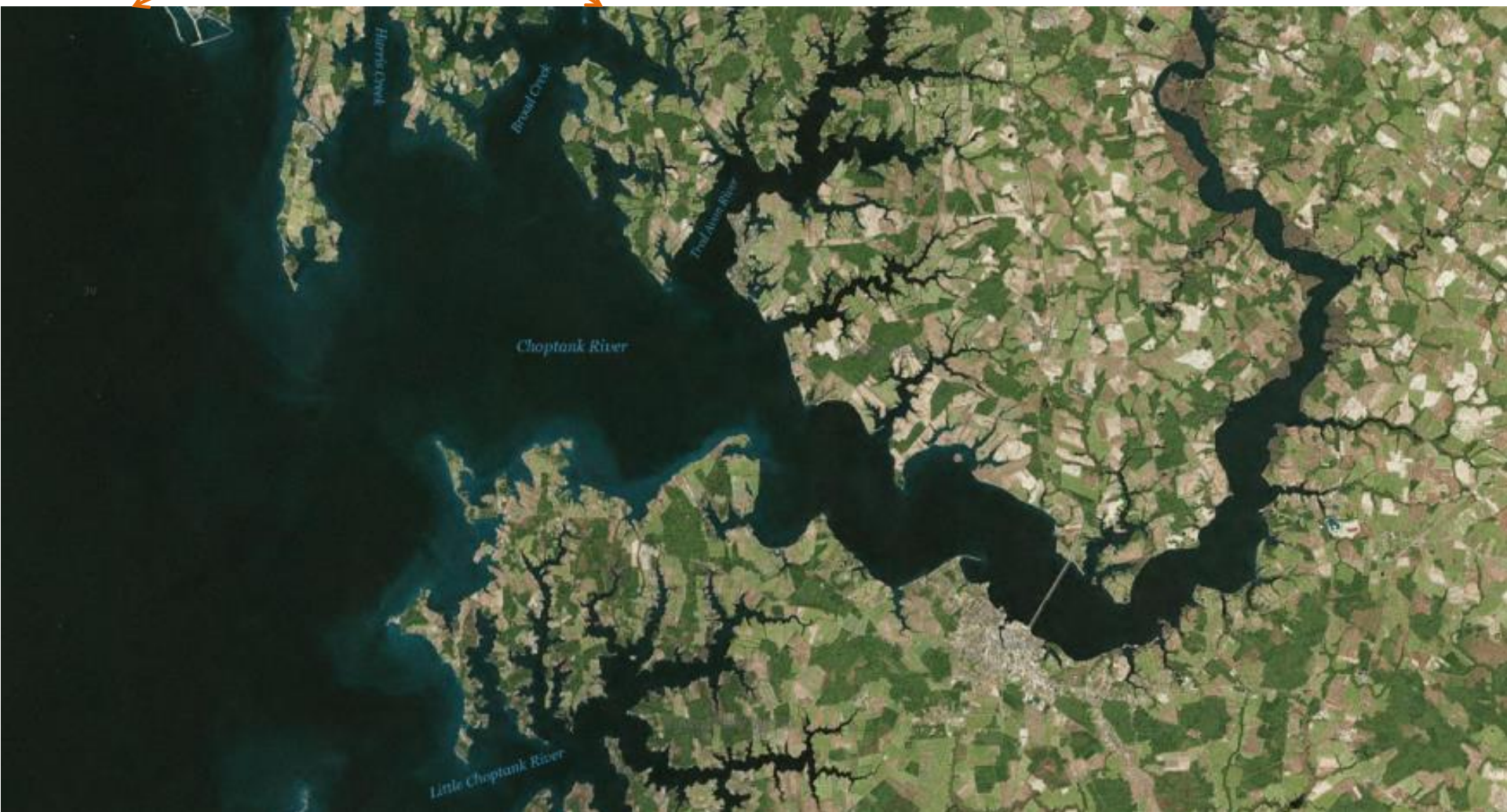
- are integrated
- meet the needs of major stakeholders

Coastal SEES grant:
Integrating stakeholder objectives with natural system models to promote sustainable natural resource policy

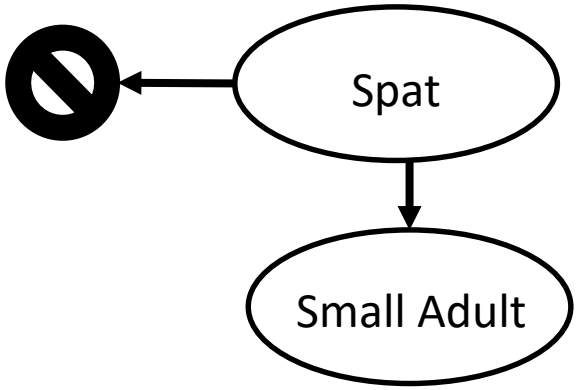
Objectives

- Estimate abundance, exploitation rates, and natural mortality rates of oysters in the Choptank River complex, MD

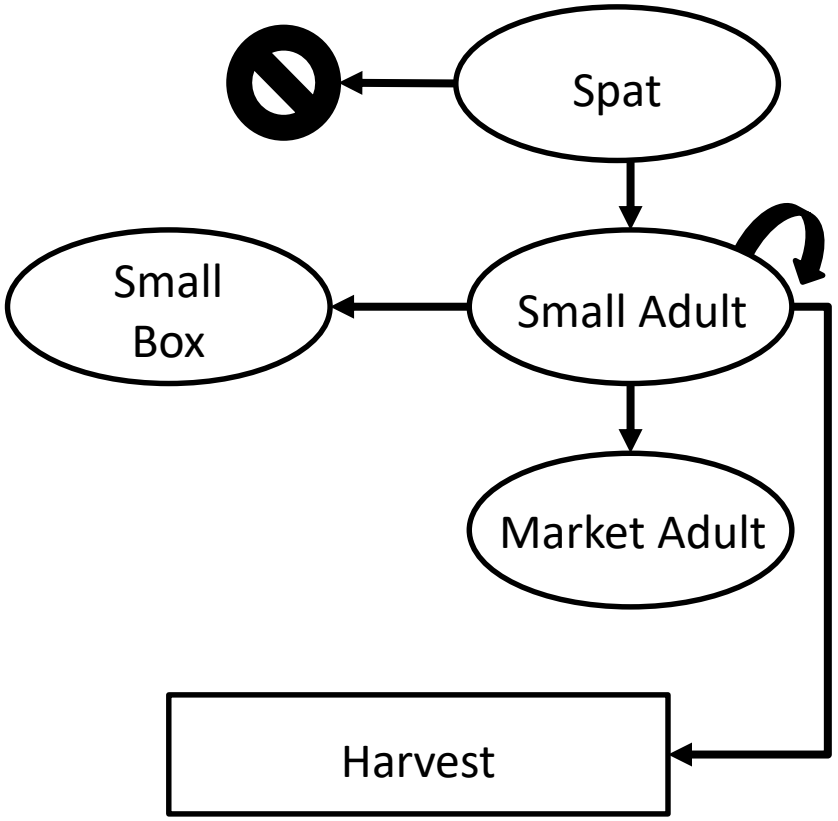
Choptank and Little Choptank Rivers



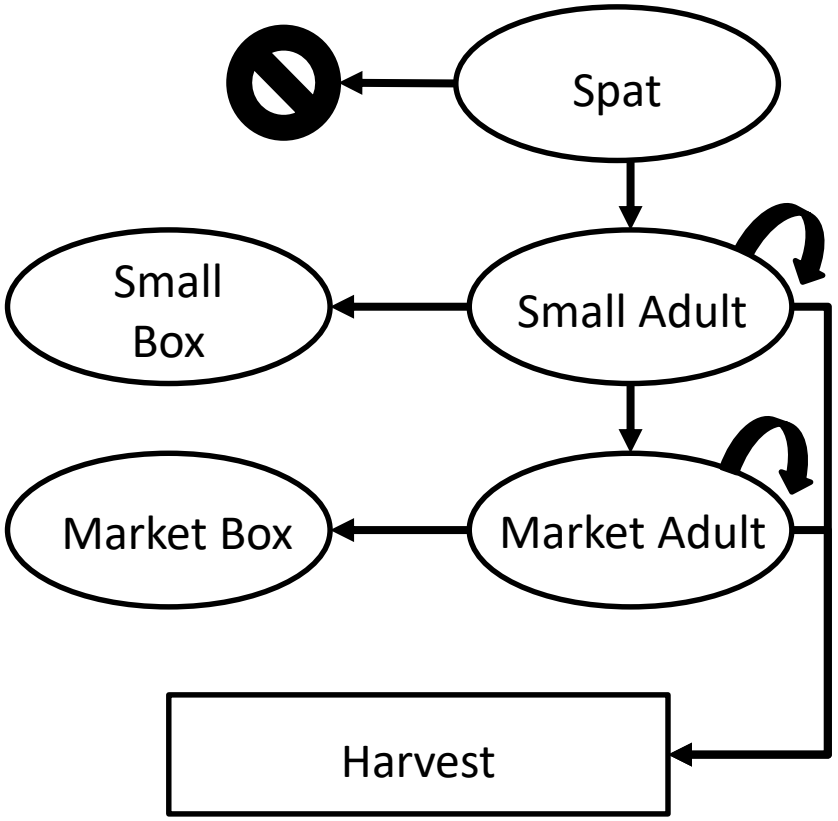
Assessment Model



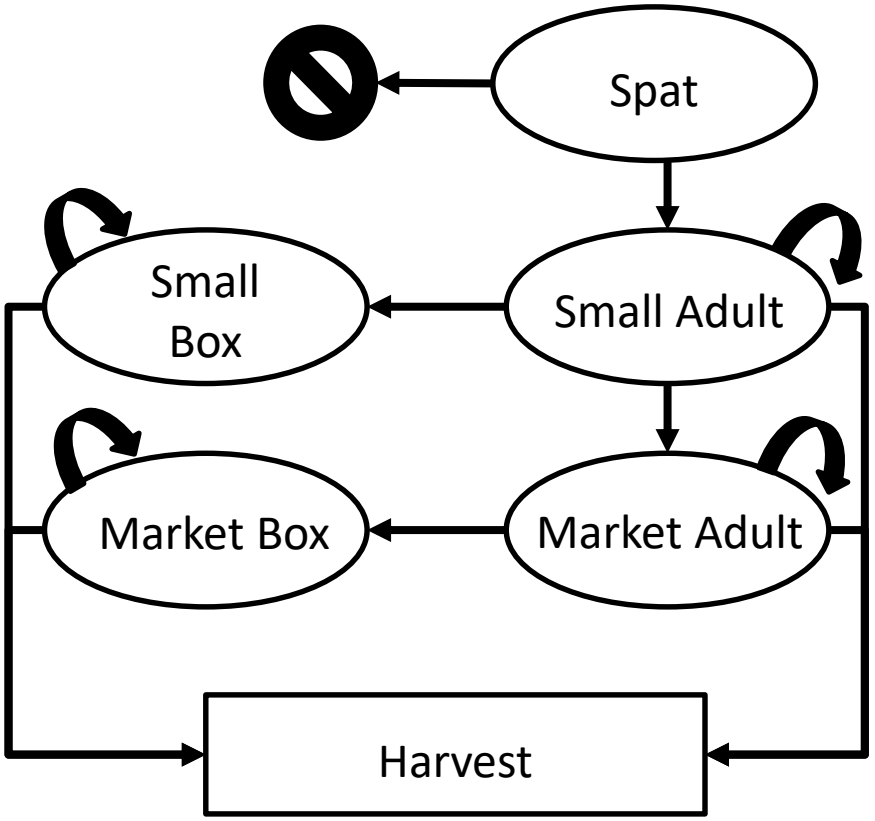
Assessment Model



Assessment Model



Assessment Model



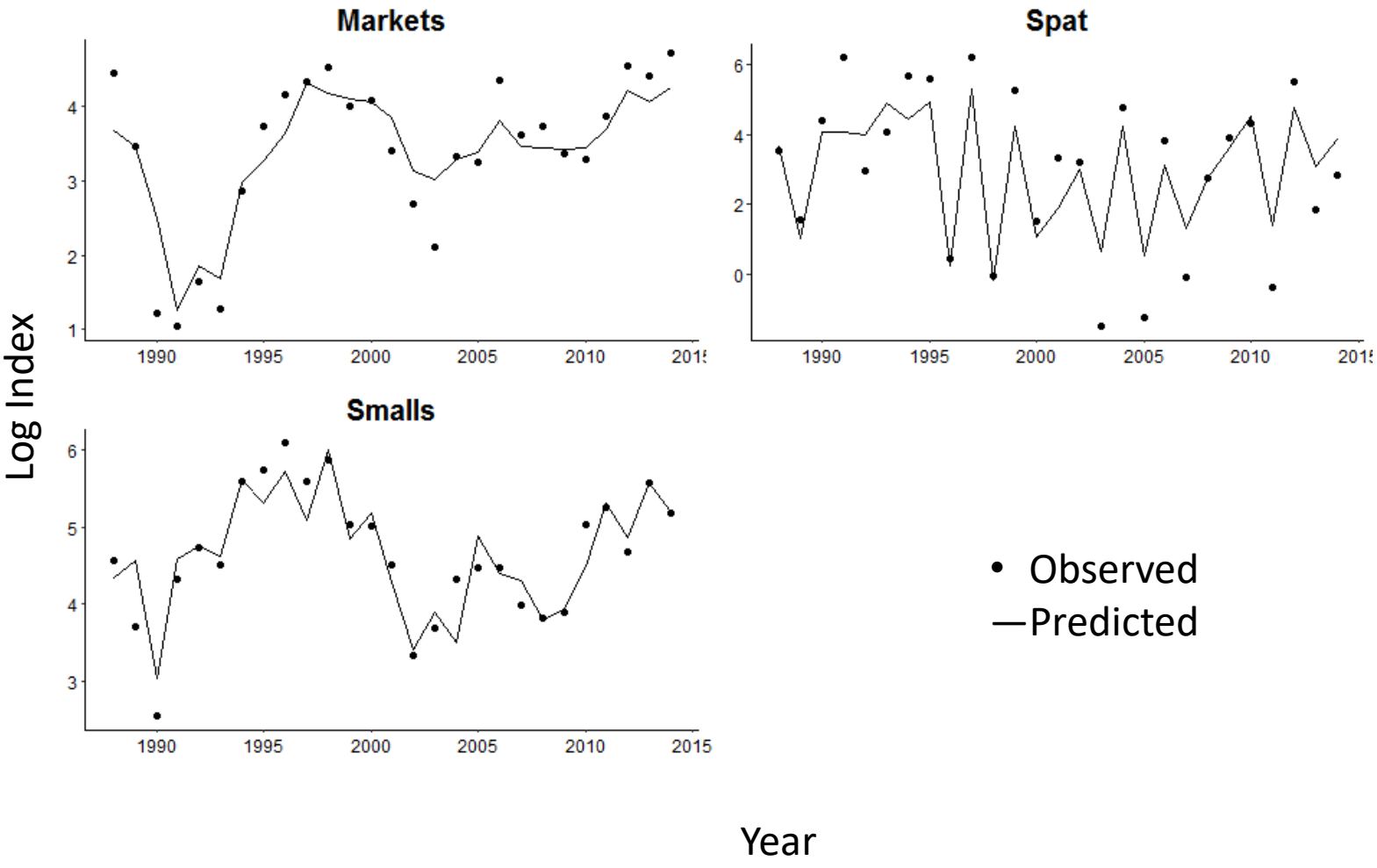
Data

- Fall dredge survey
- Harvest
- Fishery catch/man hr for hand tong and power dredge
- Estimates of hard-bottom habitat from sonar surveys
- Estimated abundance in 2012 from patent tong surveys
- Estimated abundance from Harris Creek monitoring
- Spat planting
- Habitat restoration

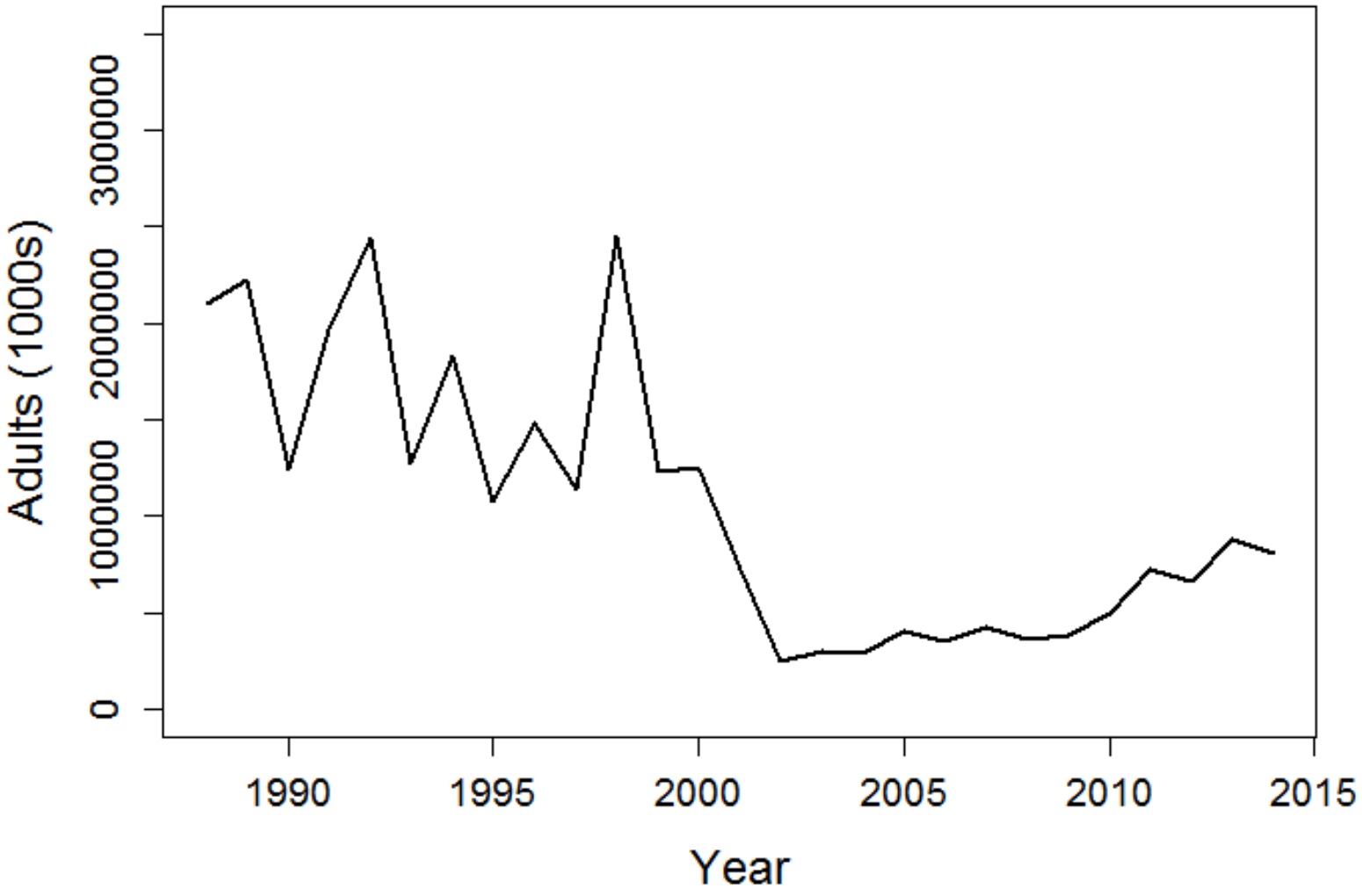
Regions

- Implemented estimation models for nine regions
  - Little Choptank (2)
  - Lower Choptank
  - Middle Choptank
  - Upper Choptank
  - Harris Creek (2)
  - Broad Creek
  - Tred Avon River

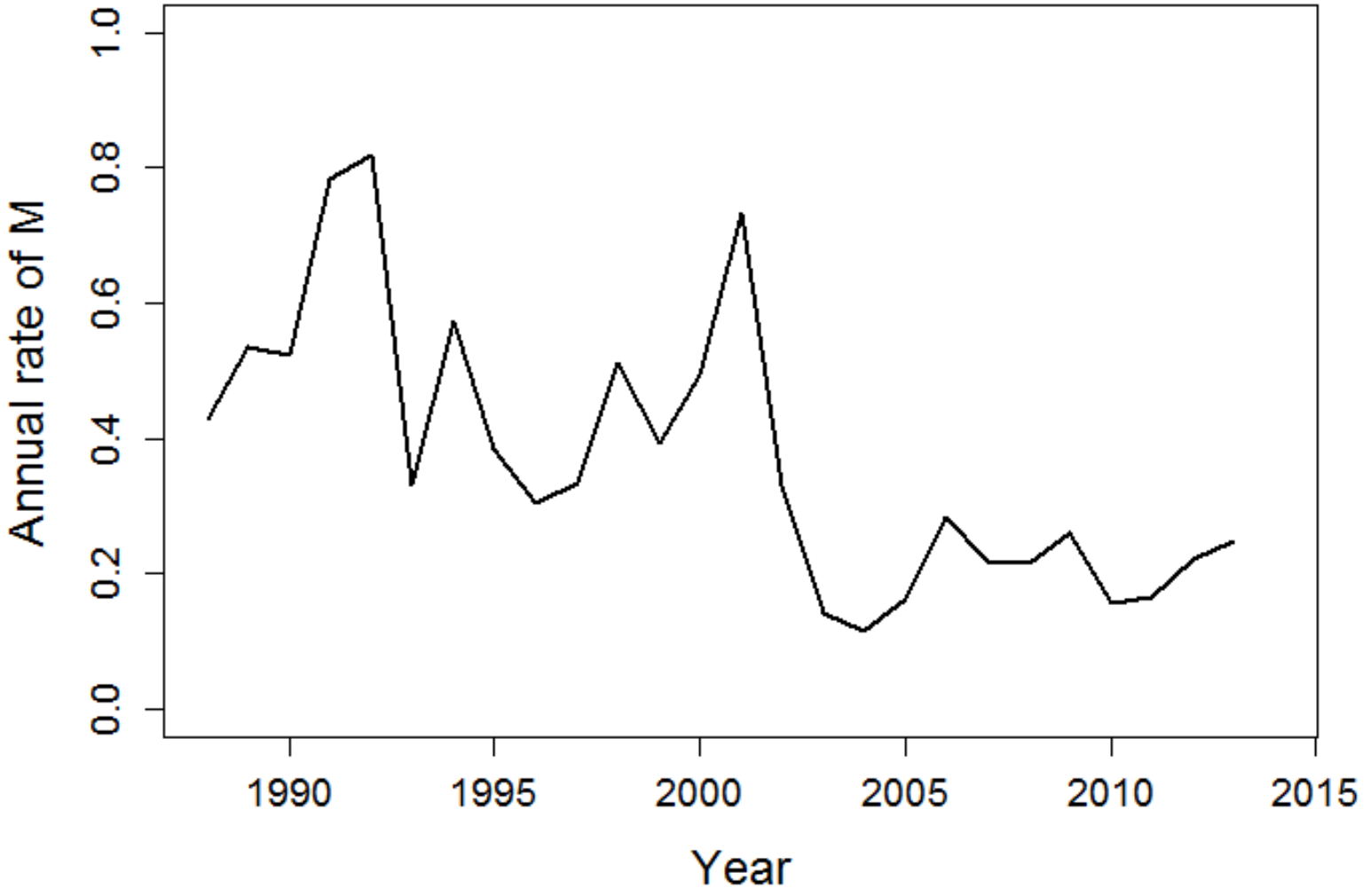
Broad Creek – Live Oyster Model Fits



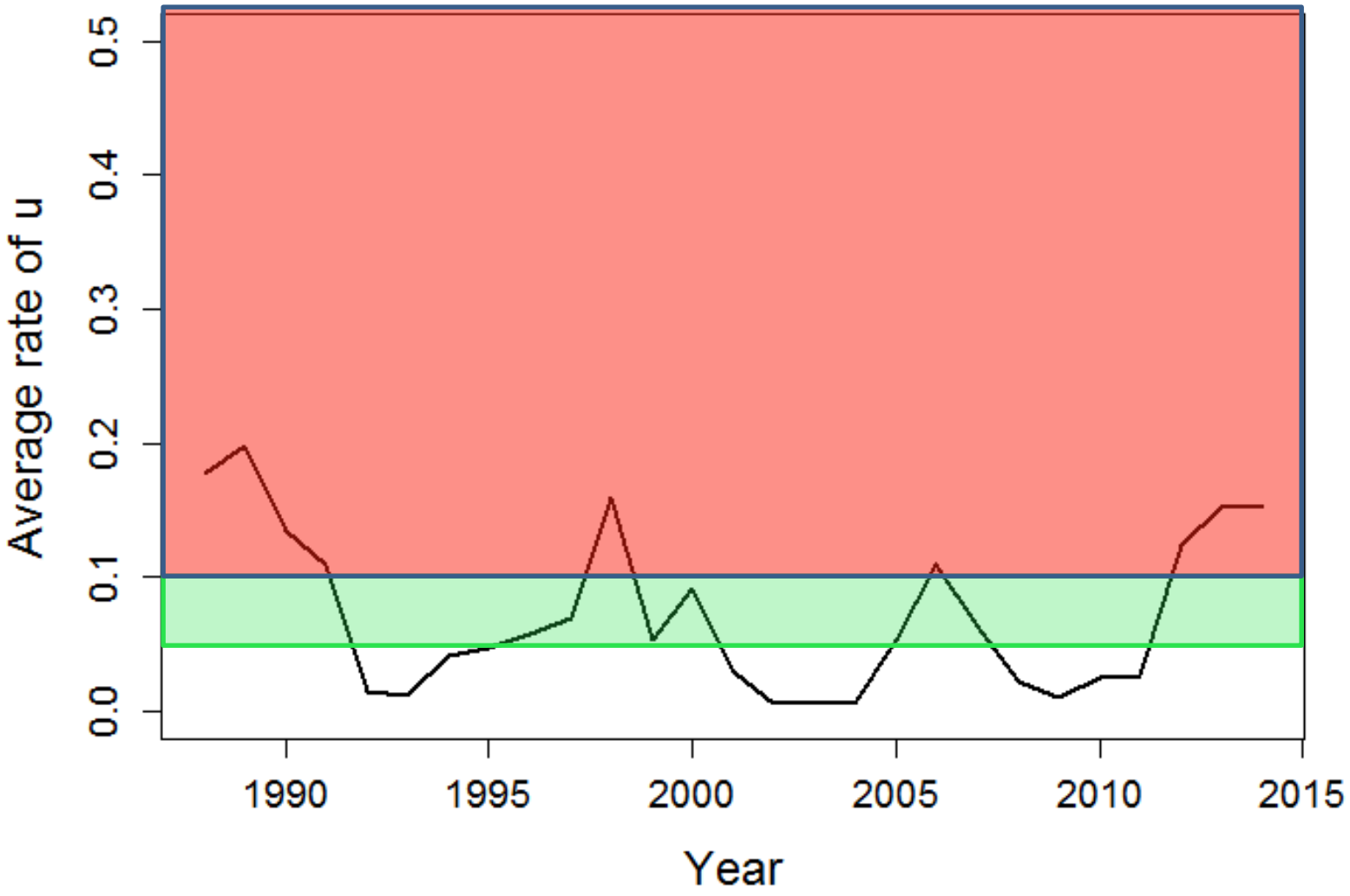
Model results: Total abundance of adults (age 1+)



Model results: Average annual natural mortality



Model results: Average rate of exploitation



Conclusions

- We can estimate abundance and mortality rates from available data
- Abundance has declined since the 1990s
- Natural mortality has been low in the last decade
- Fishing mortality in recent years appears to be above levels that would achieve maximum sustainable yield

Questions?

Many thanks to:

OysterFutures Team Members

Maryland DNR
Paynter Lab
NOAA
ORP

VIMS | WILLIAM & MARY
VIRGINIA INSTITUTE OF MARINE SCIENCE

University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE

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