CHESAPEAKE BAY STRIPED BASS NURSERY HABITAT

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Outline

- Background
- Project Objective
- Conceptual Model
- Next Steps

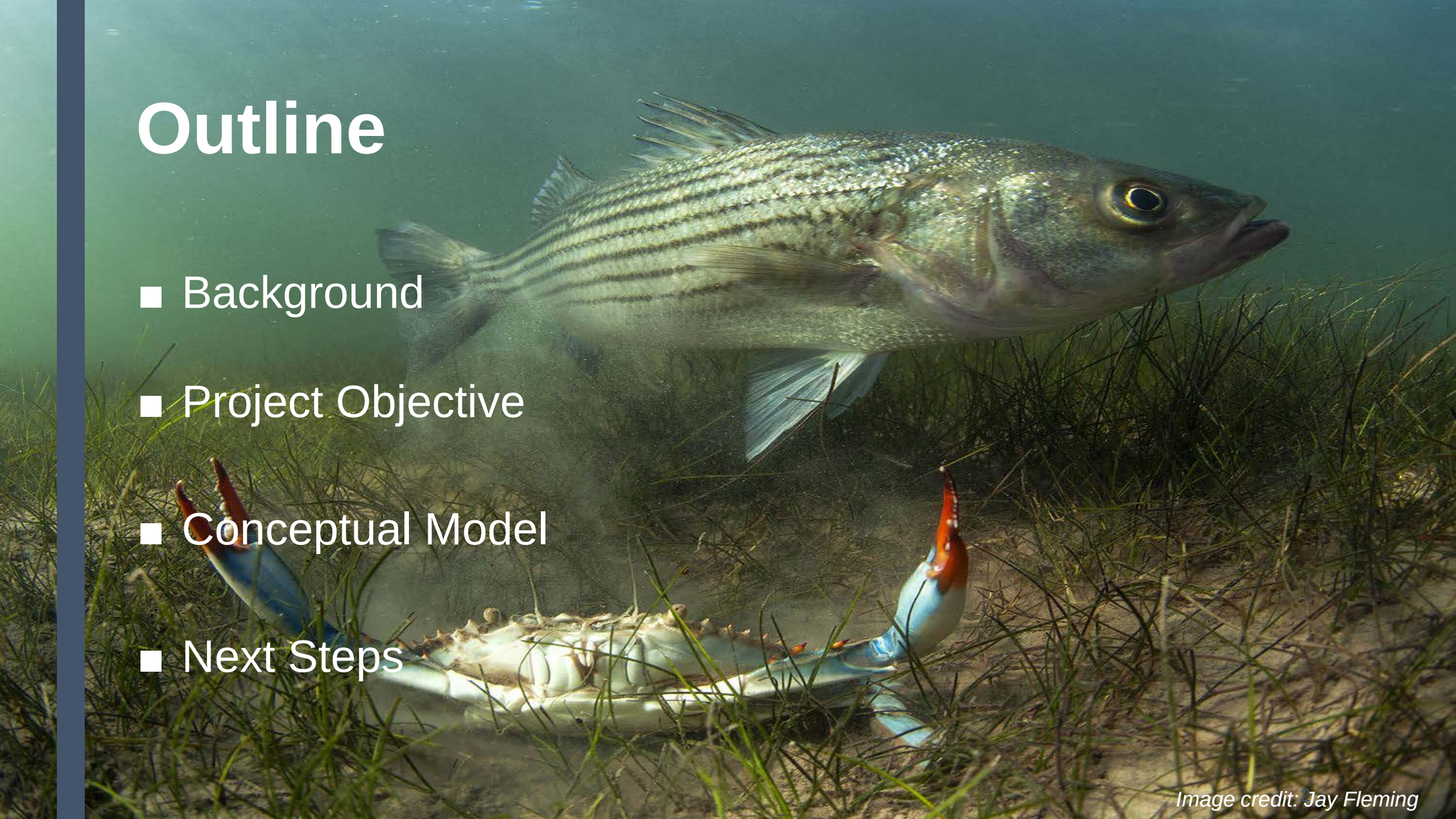
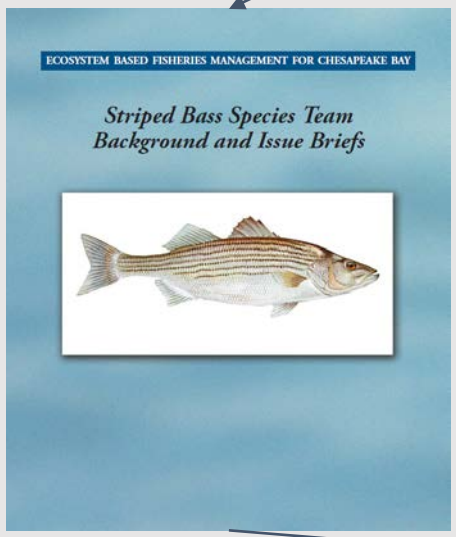


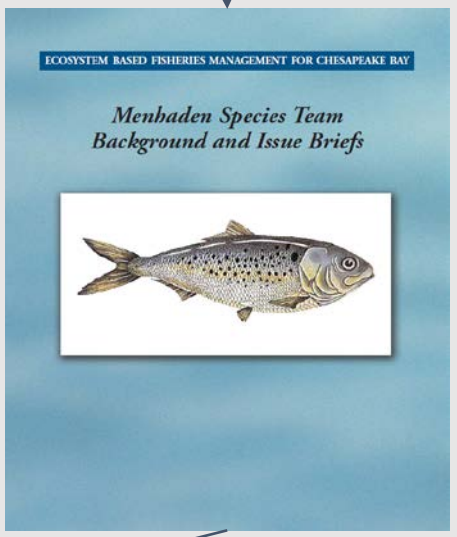
Image credit: Jay Fleming

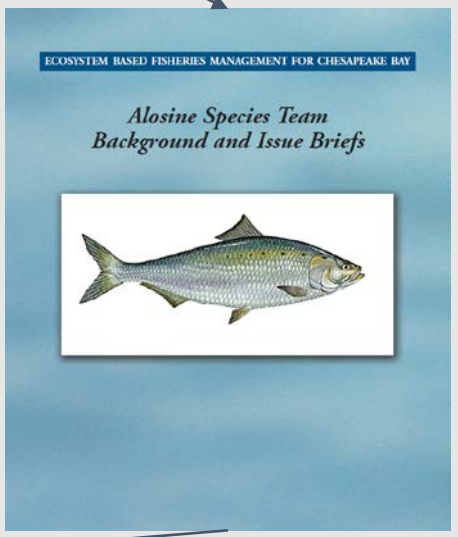
Striped Bass and the Chesapeake Bay

- Commercially and Recreationally important
- Ecological importance as a top predator in the bay
- The largest nursery for striped bass on the Atlantic Coast
- Most recent stock assessment shows striped bass are overfished and overfishing is occurring

Image credit: U.S. Geological Survey, NASA. Public domain







Quantitative Ecosystems Team (QET)

- Habitat suitability
- Food Web
- Stock Assessment
- Socio-economics

Previous Efforts

- Striped Bass Species Team Background and Issues Brief list the following as threats to the population:
  - *Exploitation*
  - *Habitat degradation*
  - *Climate change*
- Nurseries linked to critical spawning units must be functional and remain intact for successful recruitment

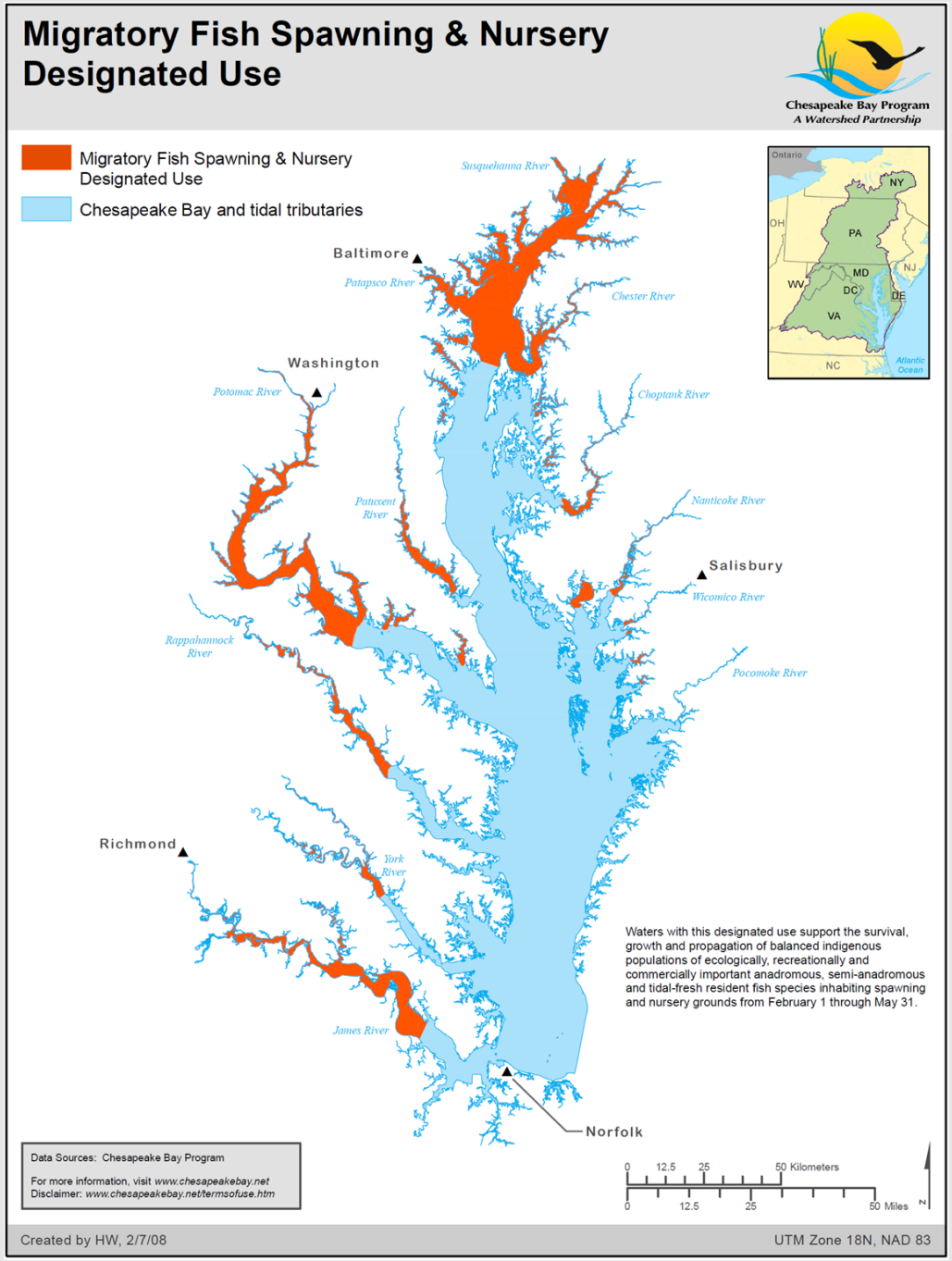


Image credit: U.S. Fish and Wildlife Service

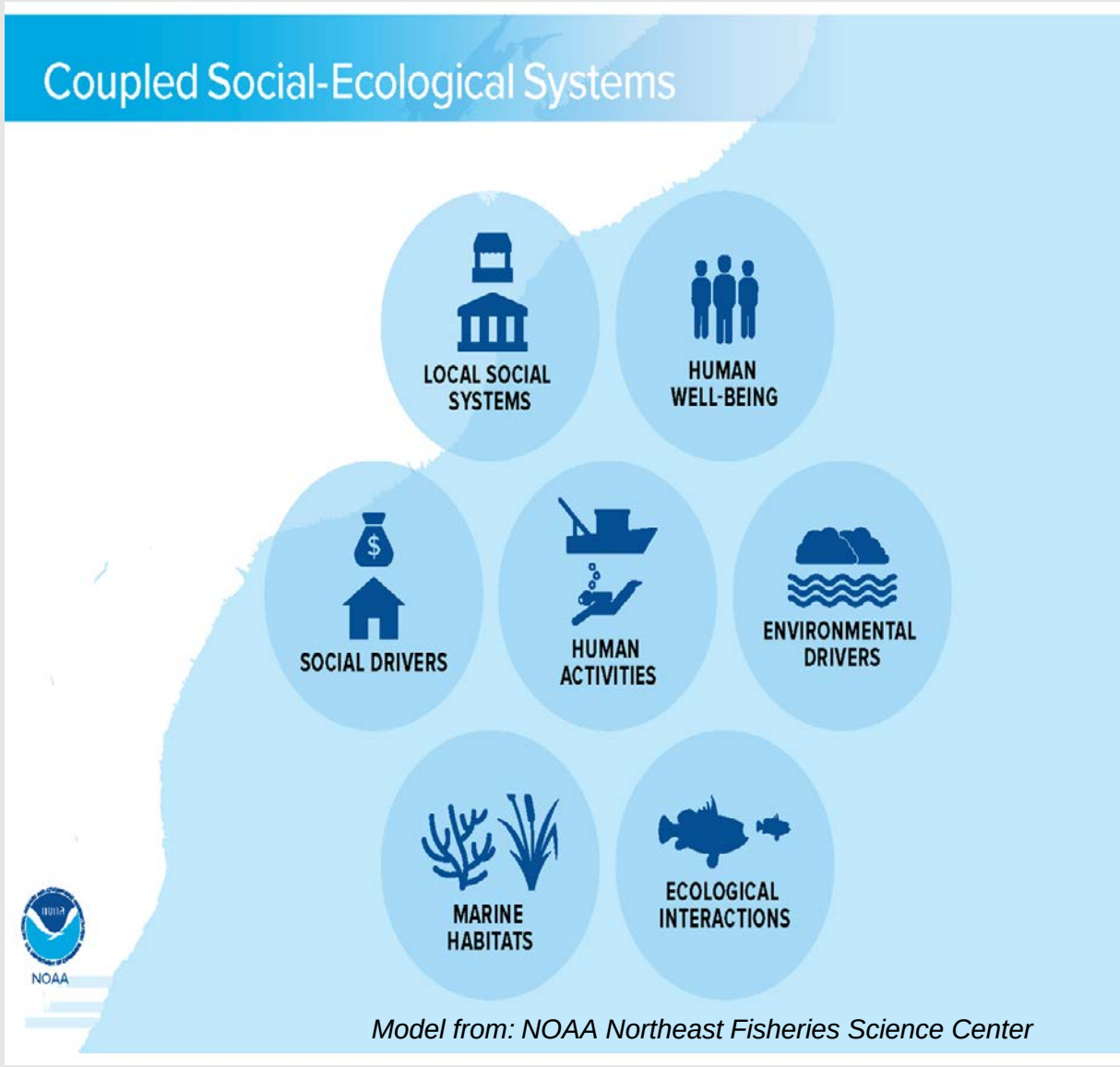
Objective

- Improve the understanding of nursery habitat areas for juvenile striped bass (age 1-4) that support survival and recruitment to the adult population.
- Identification of “high quality” nursery habitat to help target tributaries most important to supporting juvenile striped bass development.
- Develop a conceptual model that identifies important variables impacting striped bass nursery habitat

Conceptual Models

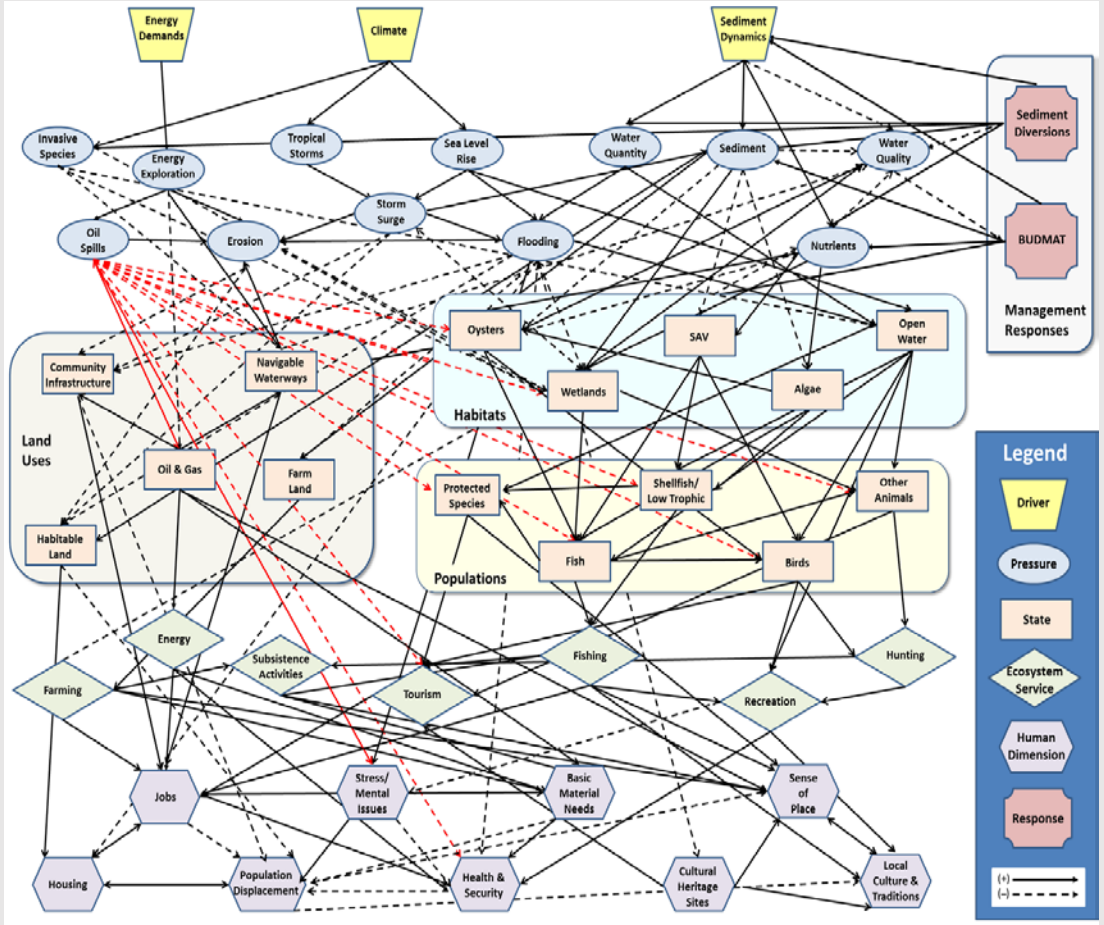
Northeast

- Increase and visualize understanding of complex system dynamics and relationships
- Provide a unifying framework across people and disciplines
- Promote dialog among interested parties
- Identify and define what indicators are need for each ecosystem component
- Show managers with different mandates how they all fit together



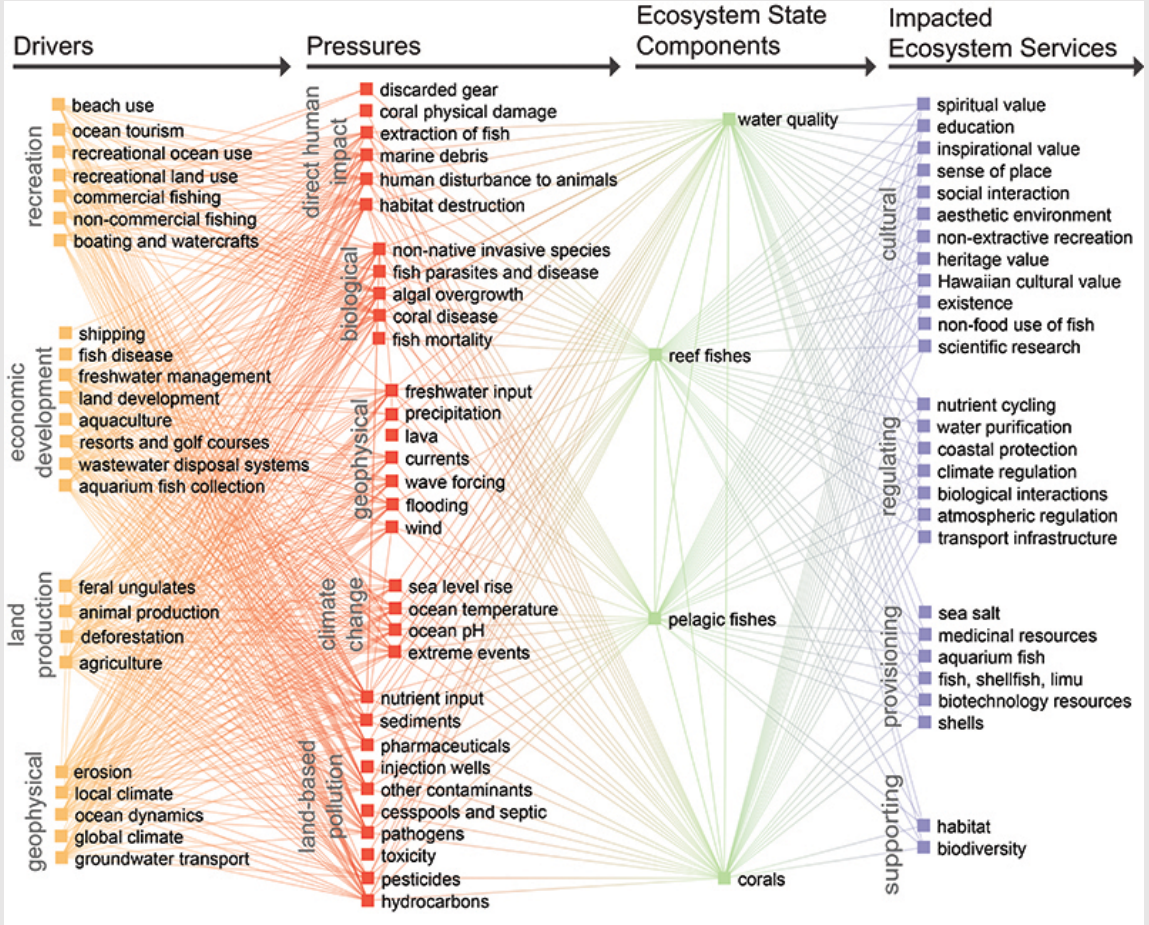
Model from: NOAA Northeast Fisheries Science Center

Gulf of Mexico



Model from: Ingram et al. (2018)

West Hawaii



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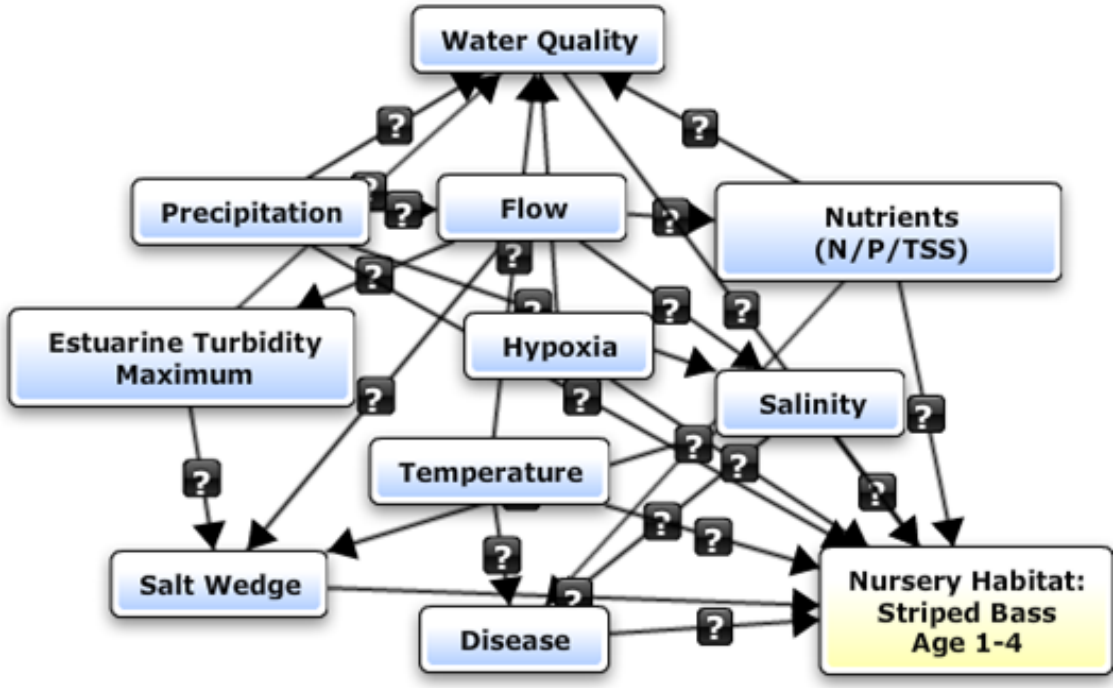
Conceptual Model



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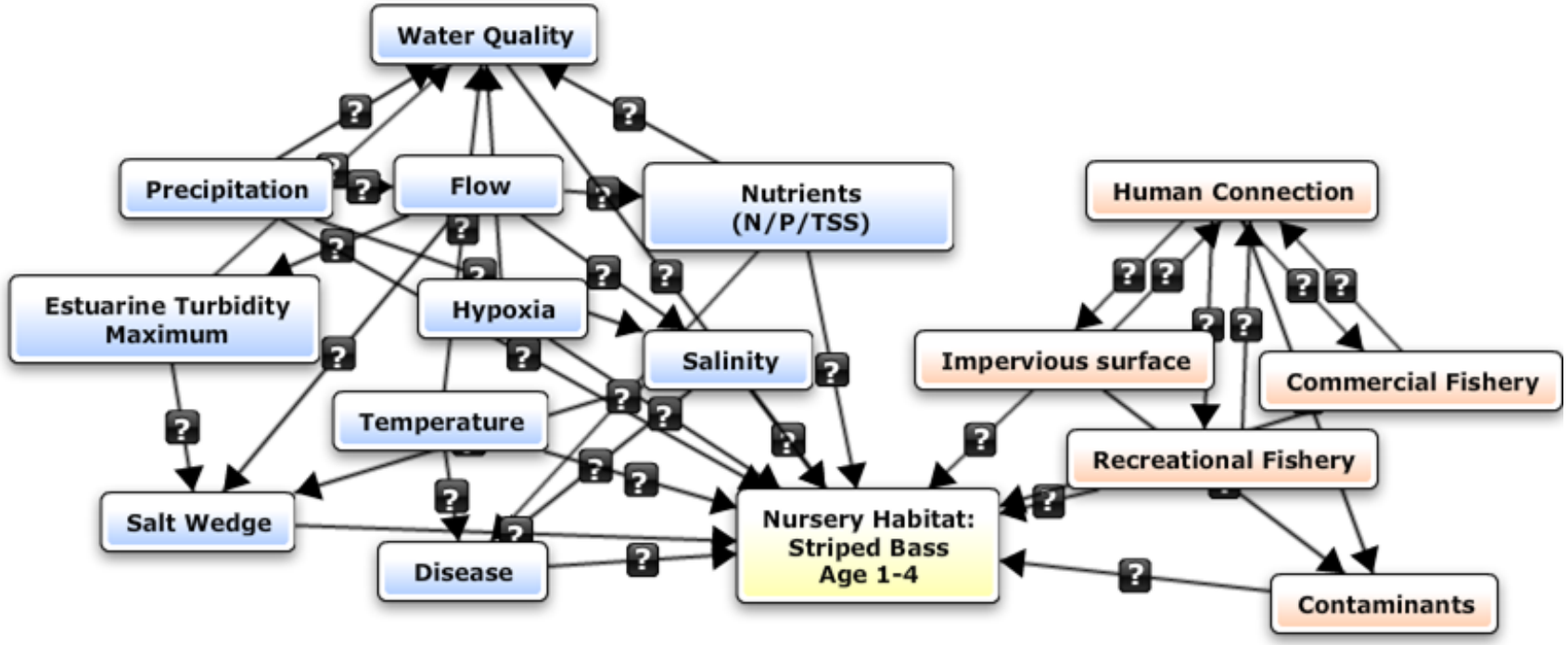

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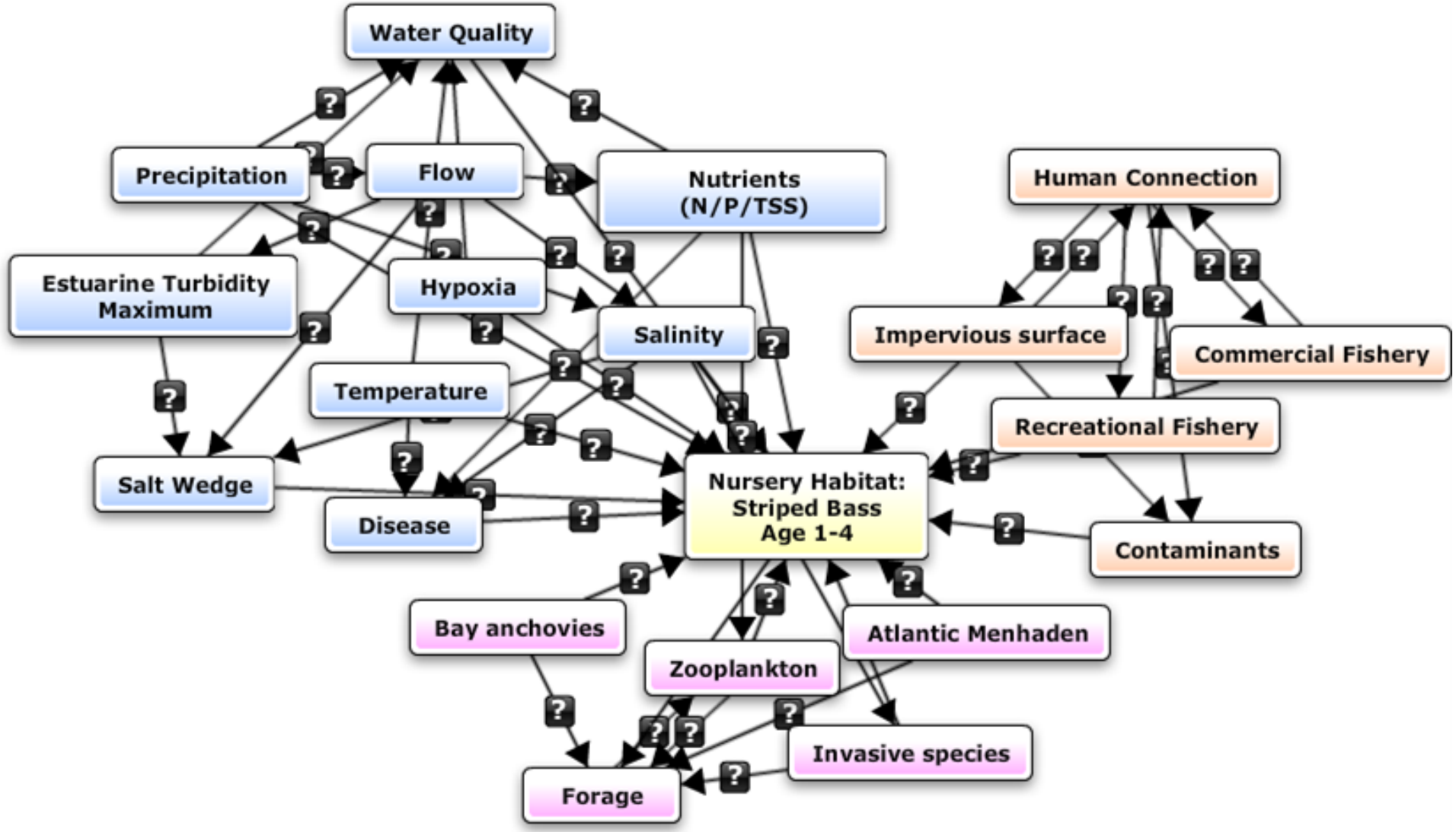

Next Steps

- Proposal will be submitted to the Chesapeake Bay Program for funding
  - *Evaluation of juvenile striped bass nursery habitat area, condition, and historical trends Bay wide*
  - *Indicators/metrics of nursery habitat suitability and resilience*
  - *Estimates of juvenile striped bass carrying capacity in the Chesapeake Bay*

THANK YOU!
QUESTIONS?

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Chesapeake Bay Program
Science. Restoration. Partnership.