



Climate Change Impacts for Chesapeake Bay Fish Production

Modeled with the

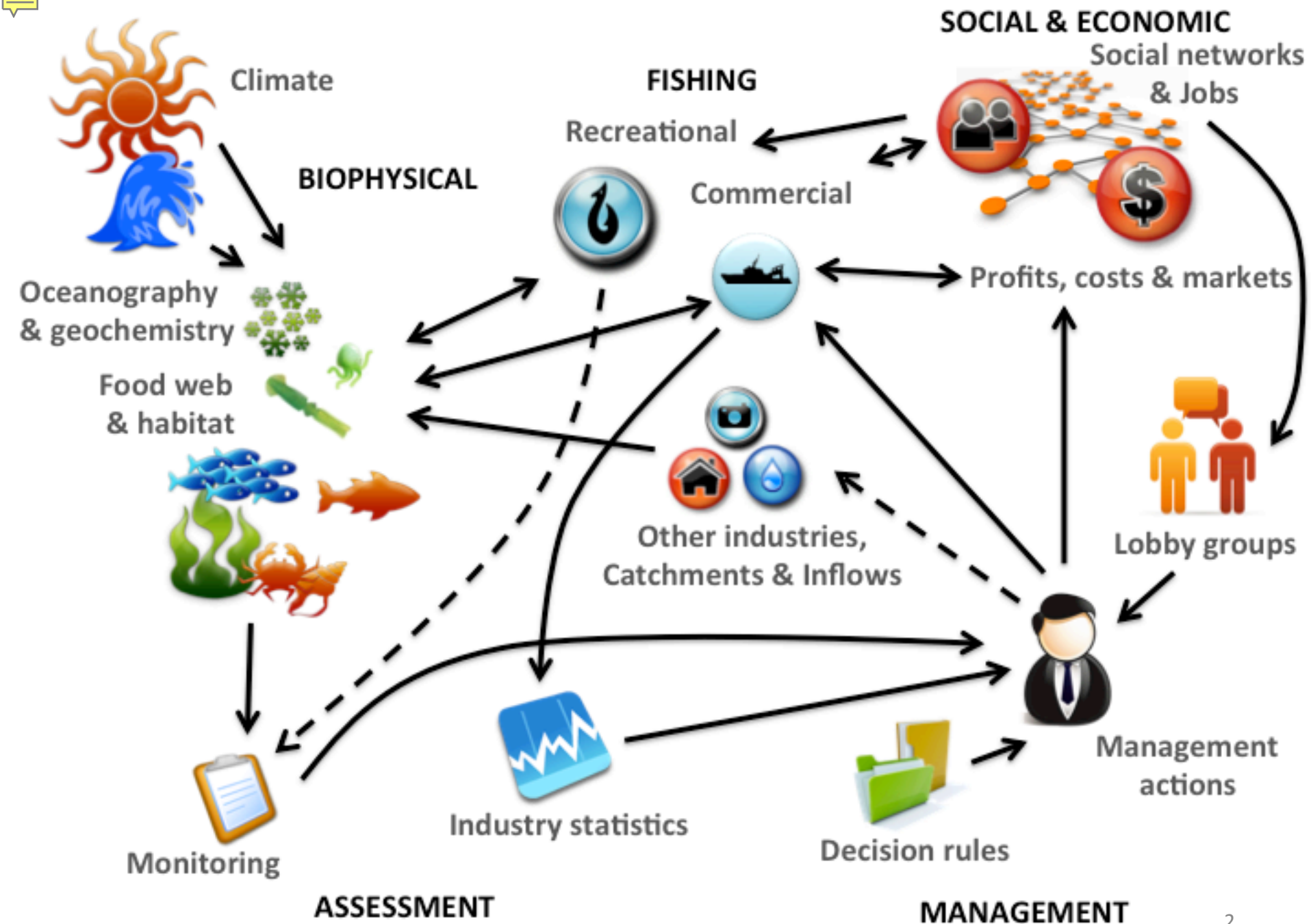
Chesapeake Atlantis Model

Tom Ihde – ERT, Inc.

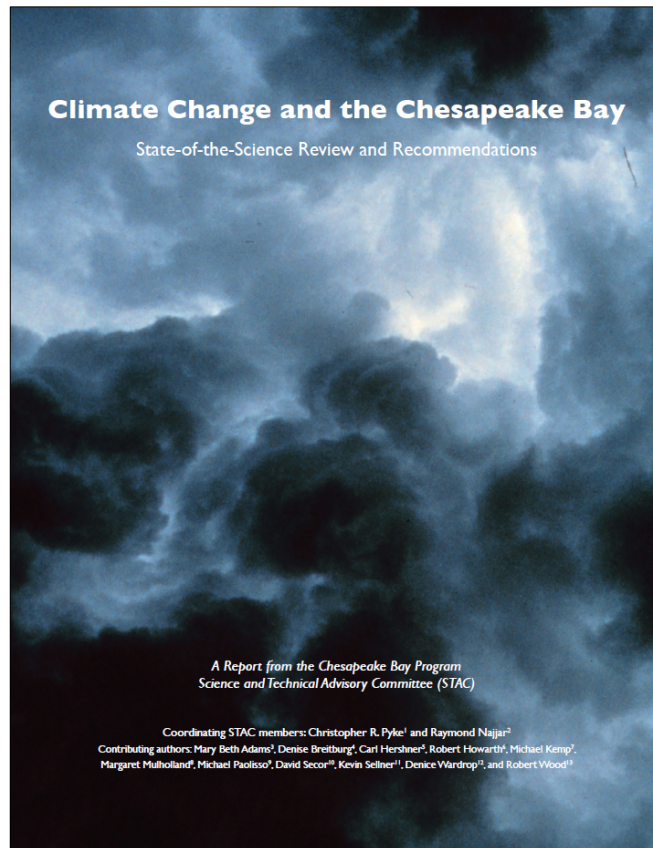
Tom.Ihde@noaa.gov

Howard Townsend – NMFS

SF-GIT – 1 June, 2015



Climate Change Assumptions



- 50 years from now:
 - ✓ Increased water temperature (1.5°C)
 - ✓ Salinity (+/- 2 ppt)



Habitat Scenario Assumptions

- 50% loss of Marsh (area & biomass)

Due to multiple, interacting factors:

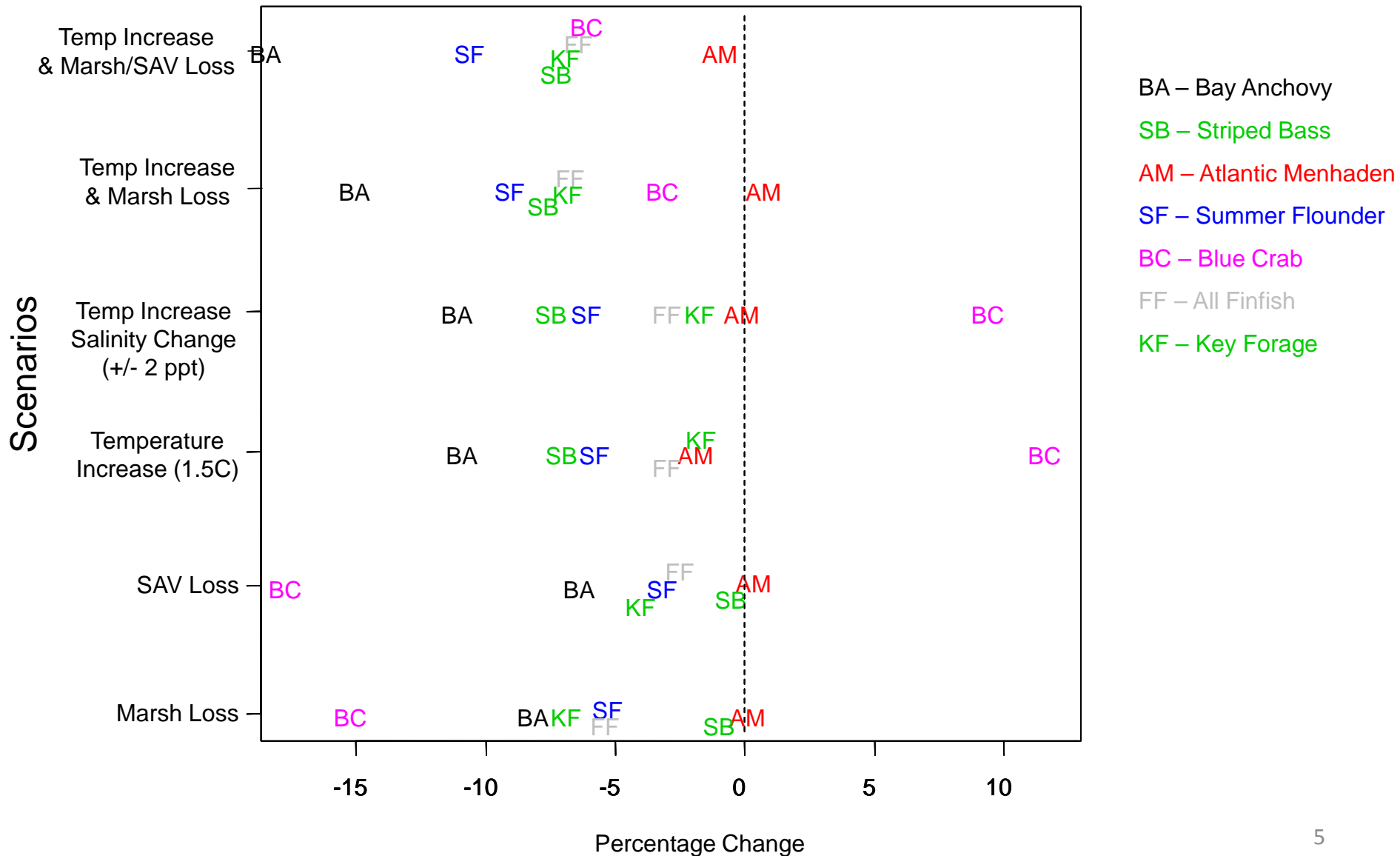
- shoreline armoring
- subsidence
- sea level rise

- 50% loss of Seagrass



Sensitivity To Climate Change

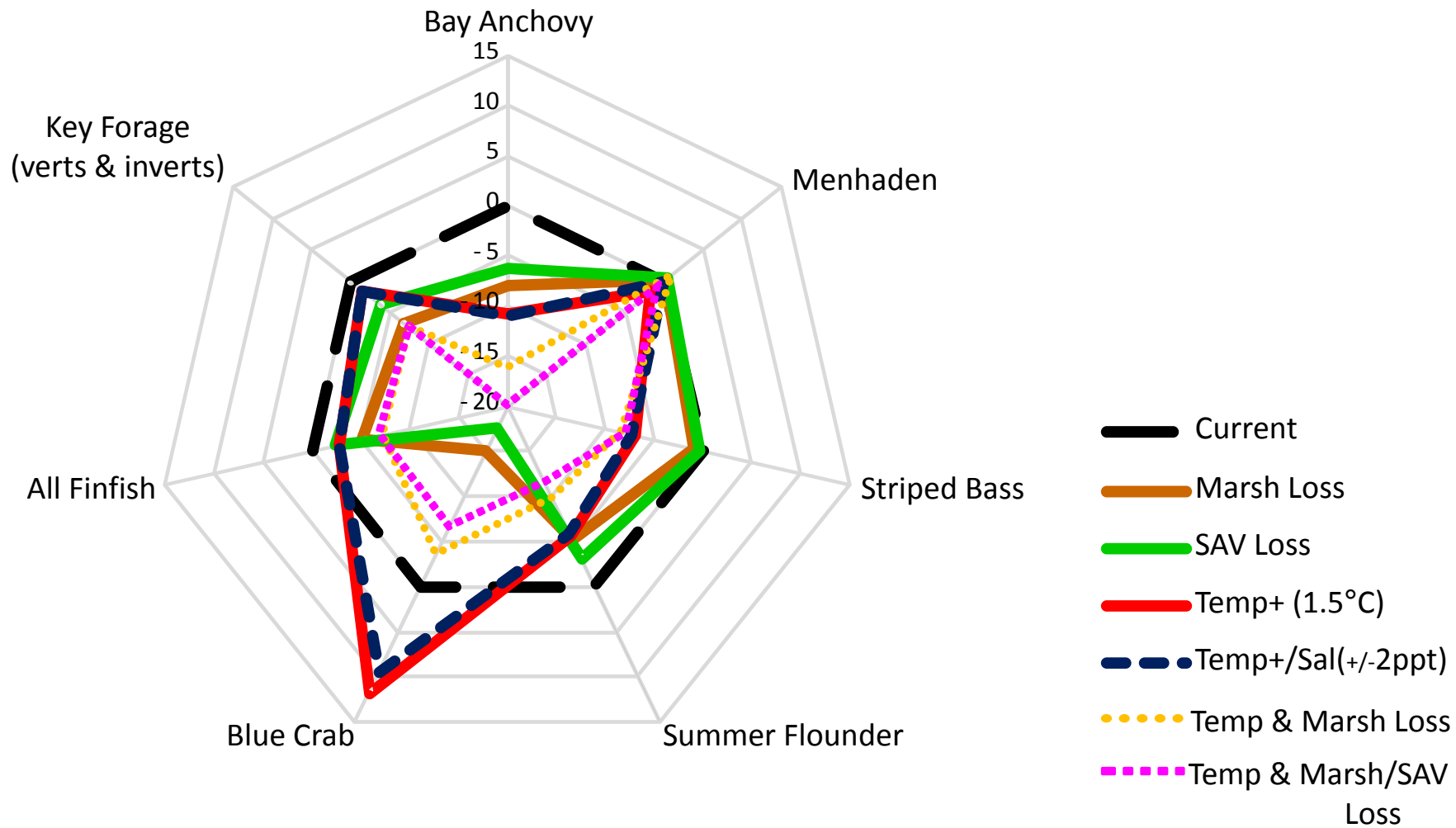
Selected Group Effects of Interest to Management





Sensitivity To Climate Change

Selected Group Effects of Interest to Management

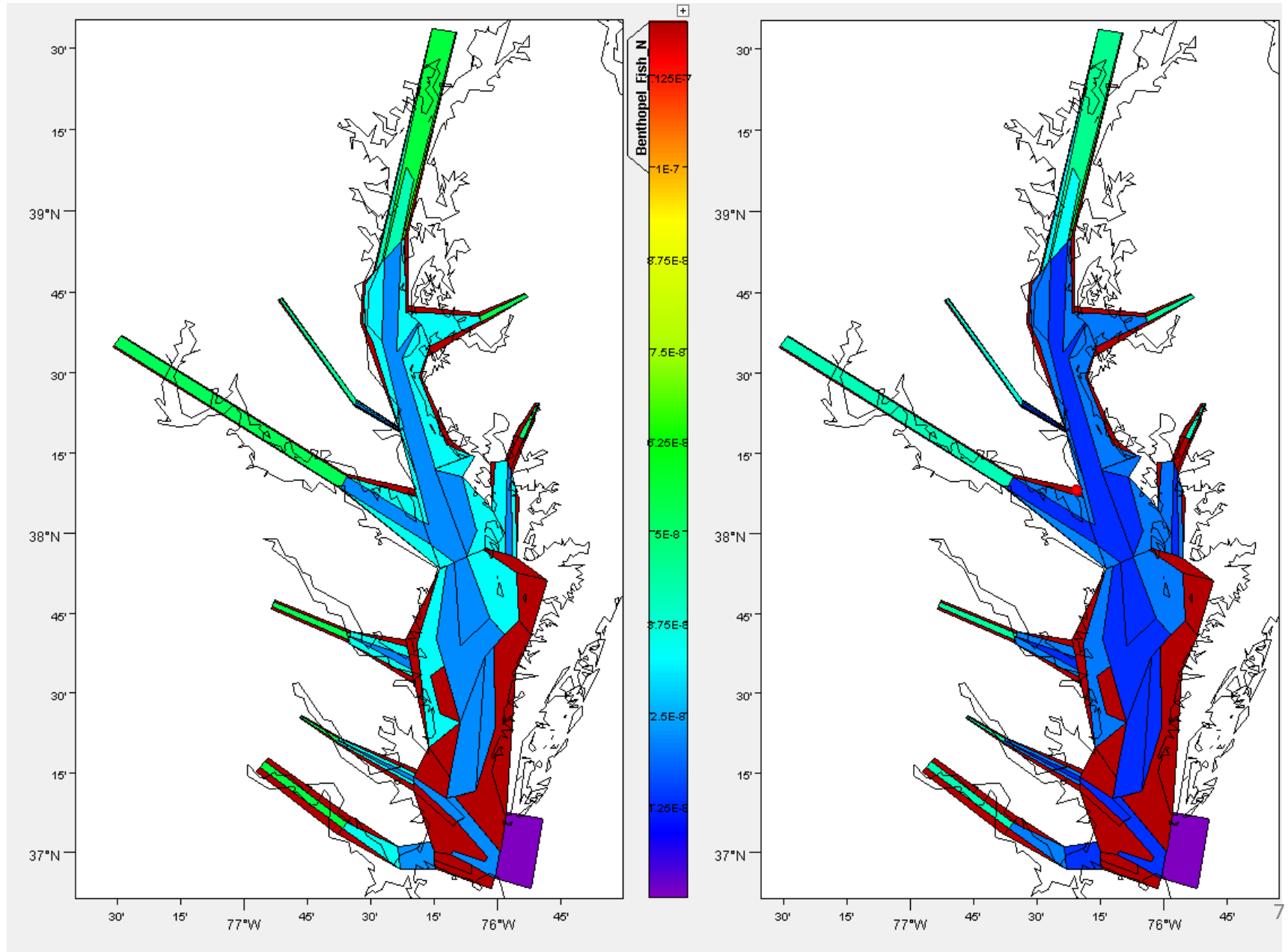




Striped Bass

Current Conditions

Temperature increase
& Habitat Loss



Next...

- ✓ Animal preferences for temperature and salinity
- establish new 'base' model
- ✓ Rerun all models to date, ensures
apple-apple comparisons with new base model
- ✓ Interesting combinations – *what is most useful?*
- ✓ Add TMDL scenario to comparison/
combinations

Thanks to:



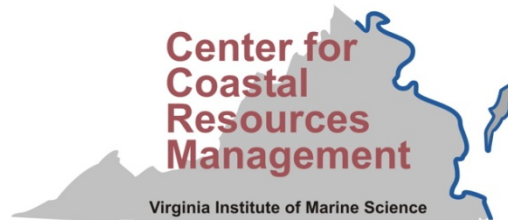
NOAA OFFICE OF SCIENCE AND TECHNOLOGY
NATIONAL MARINE FISHERIES SERVICE



NOAA HABITAT CONSERVATION
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National Science Foundation
WHERE DISCOVERIES BEGIN



Marine and Atmospheric Research



Northwest Fisheries Science Center
NOAA Fisheries Service



Northeast Fisheries Science Center



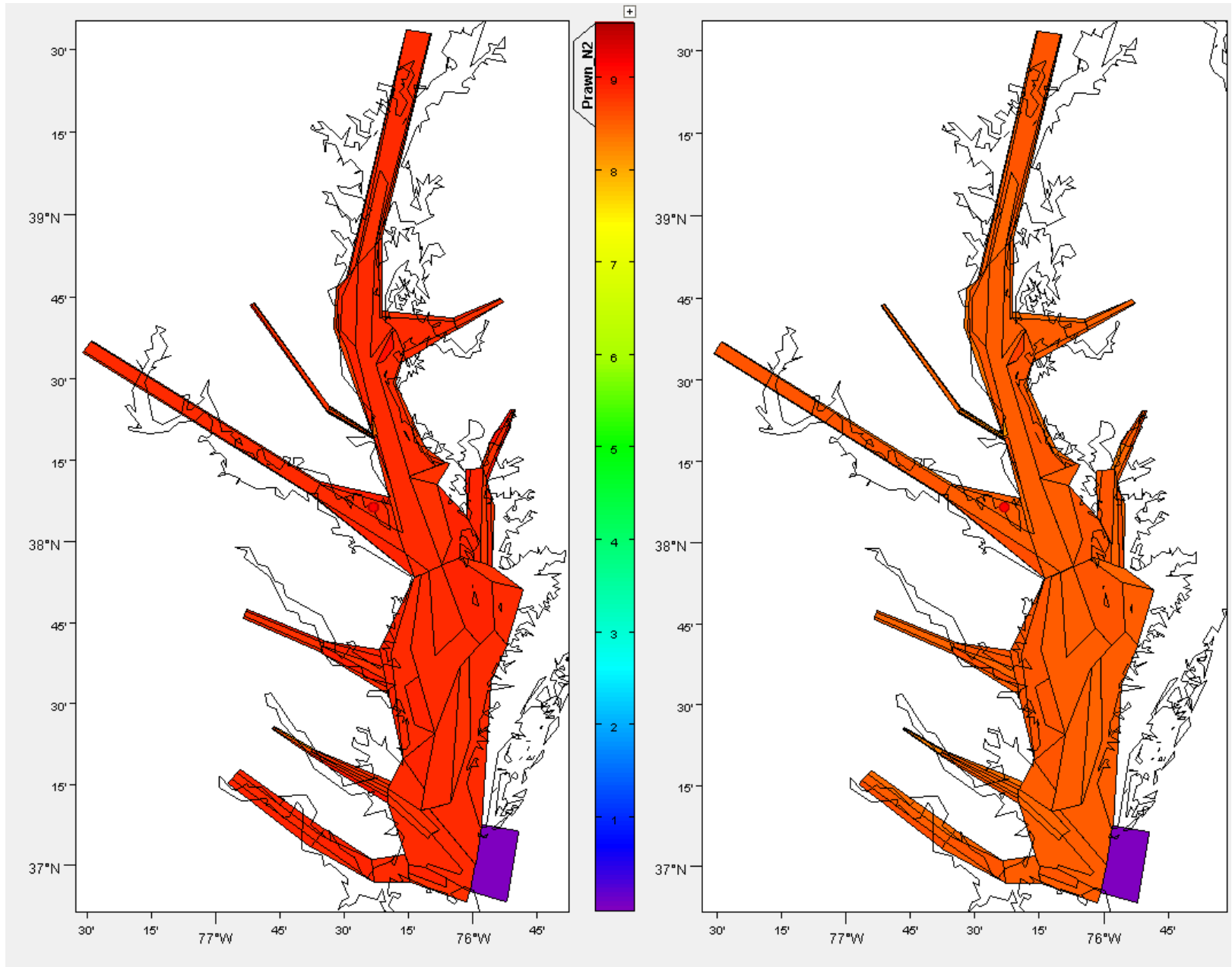
An underwater photograph showing a massive school of fish, likely sardines or anchovies, swimming in a clear blue sea. The fish are densely packed in the lower half of the frame, creating a textured, shimmering effect. Several individual fish are visible in the upper half of the frame, swimming away from the school. The text "Extra Slides for Discussion" is overlaid in the center in a bold, red font.

Extra Slides for Discussion

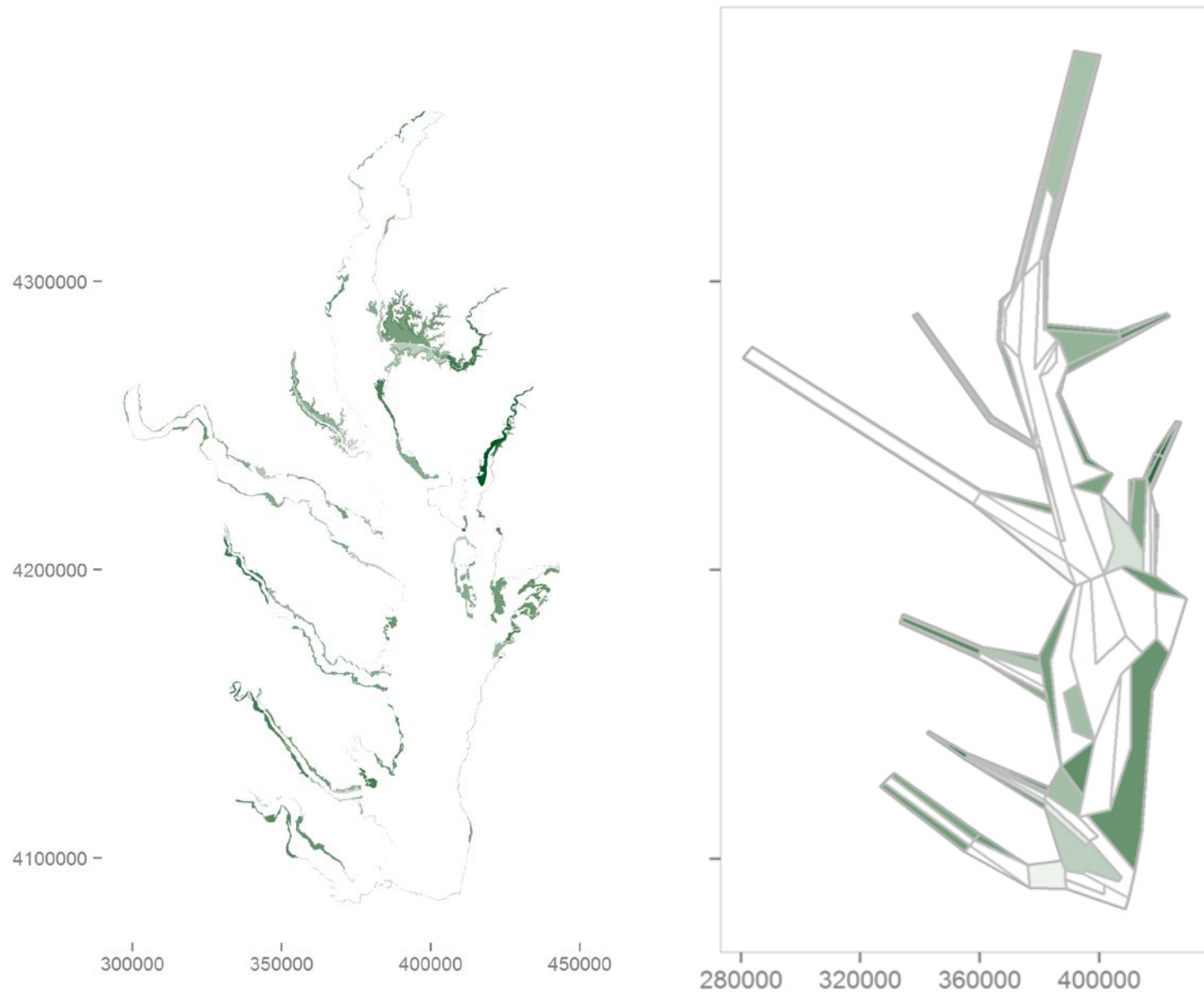
Blue Crab

Current Conditions

Temperature increase
& Habitat Loss



SAV Modeled in CAM



Marsh Modeled in CAM

