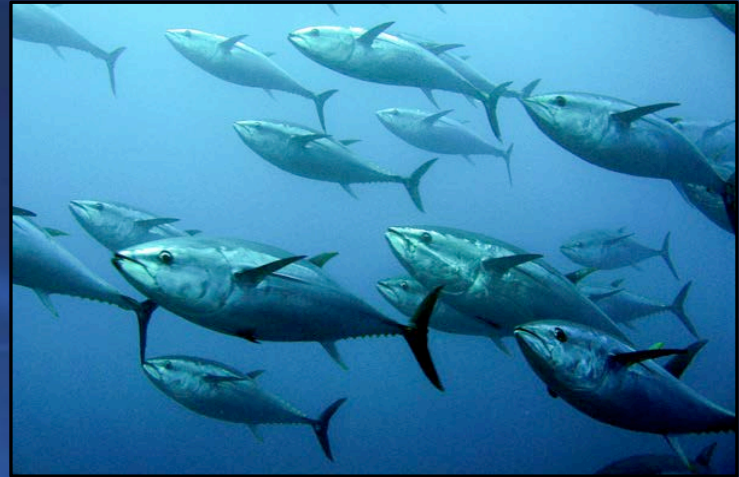
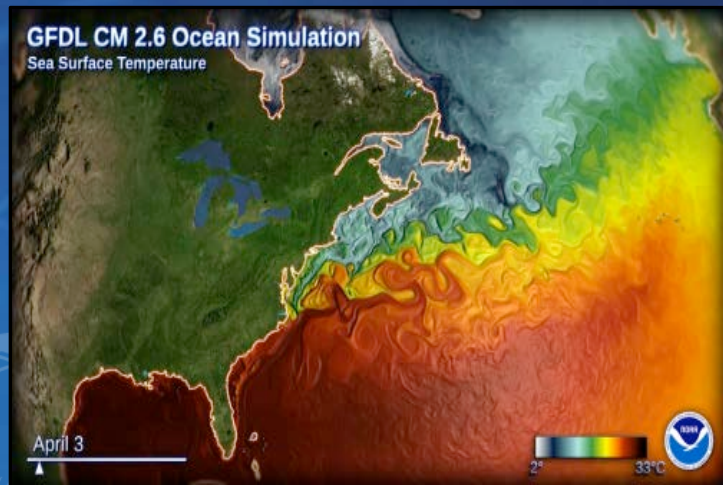


Future warming and impacts on U.S. Northwest fisheries



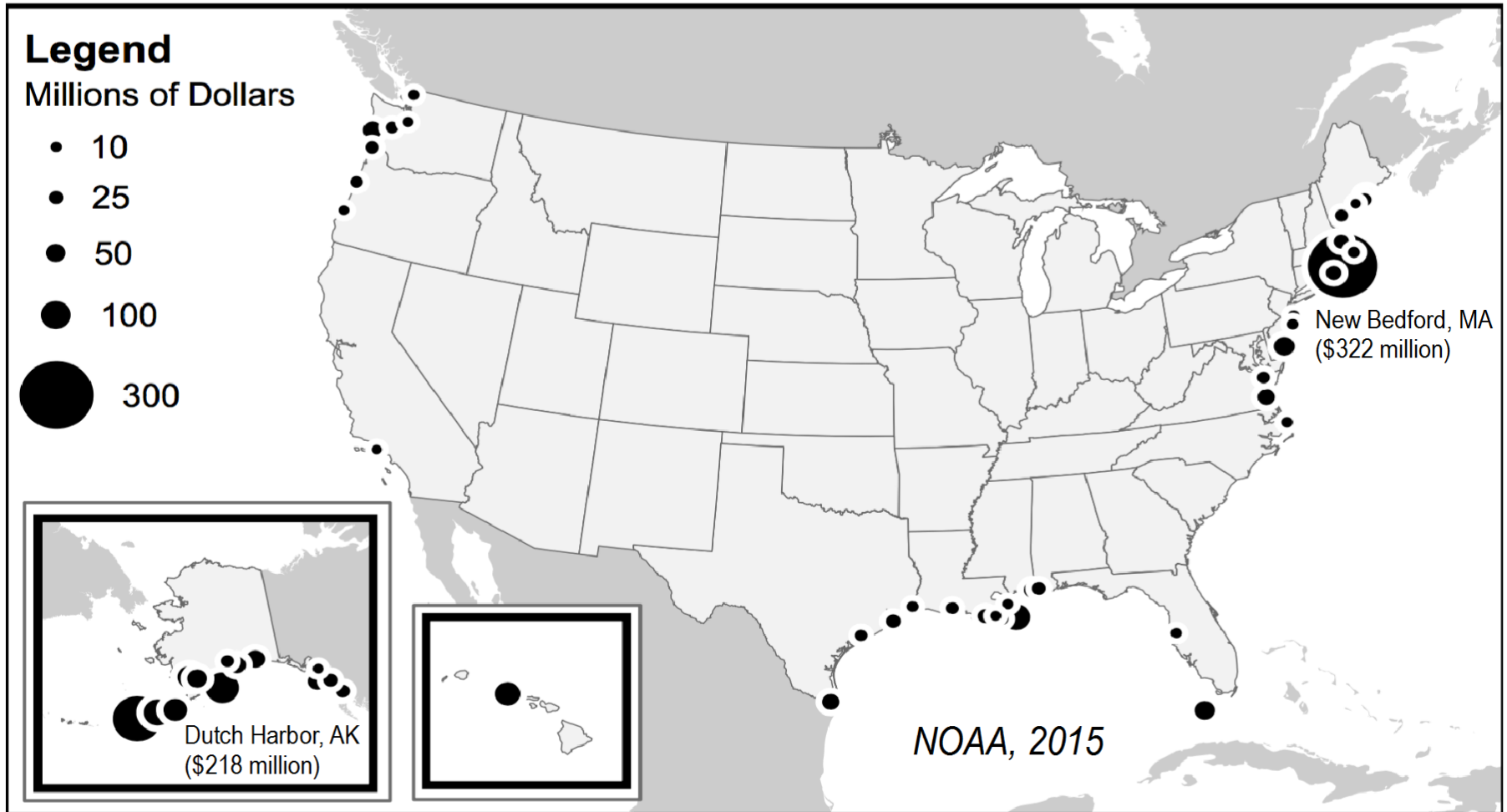
Presented by
Vincent Saba

Geophysical Fluid Dynamics Laboratory Fall Science Symposium
November 2, 2017

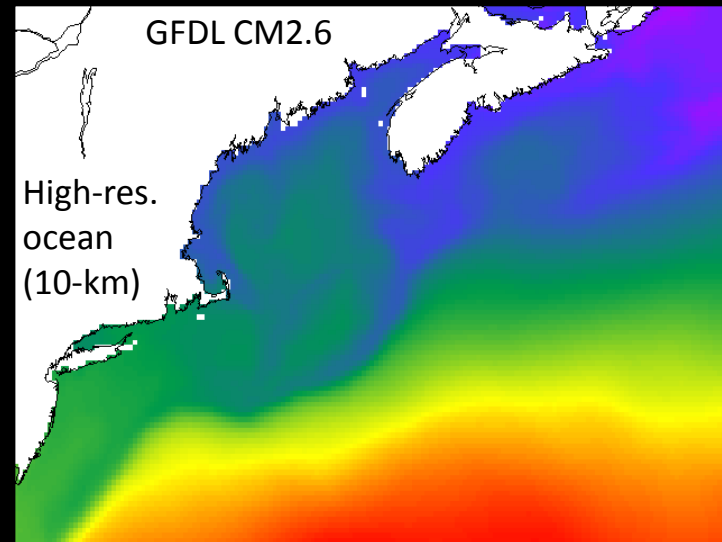
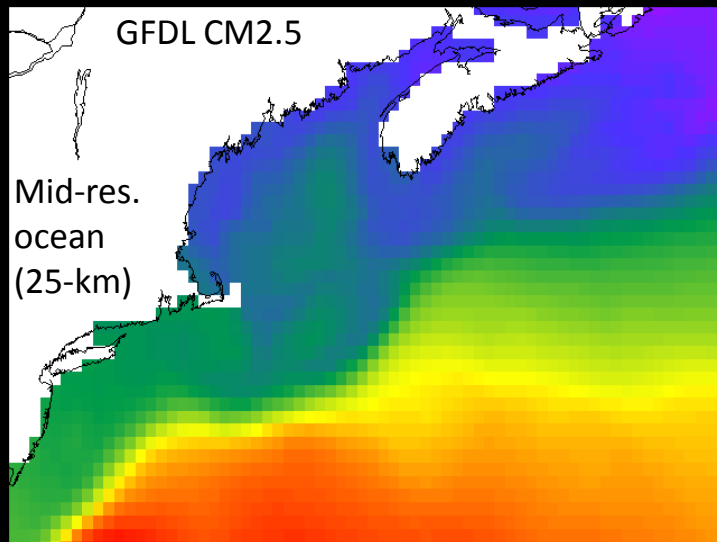
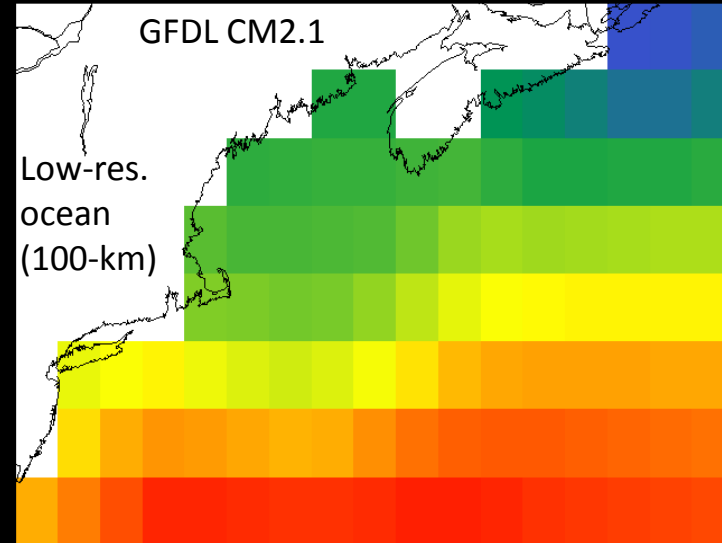
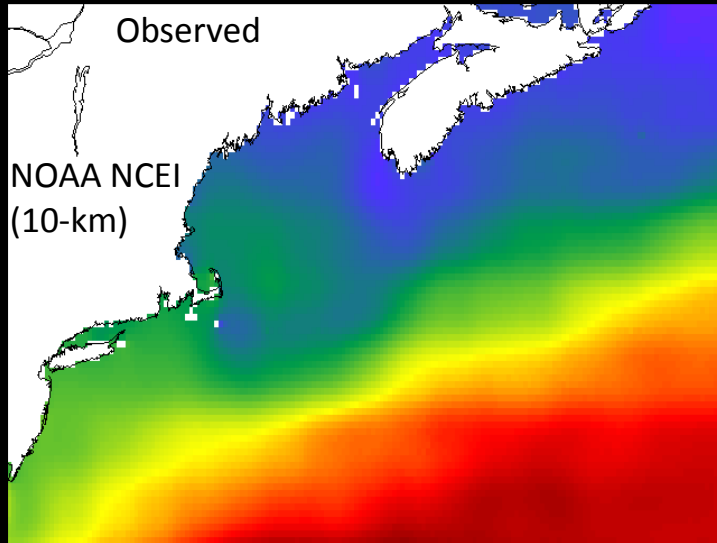


Northeast U.S. Commercial Fishery Value

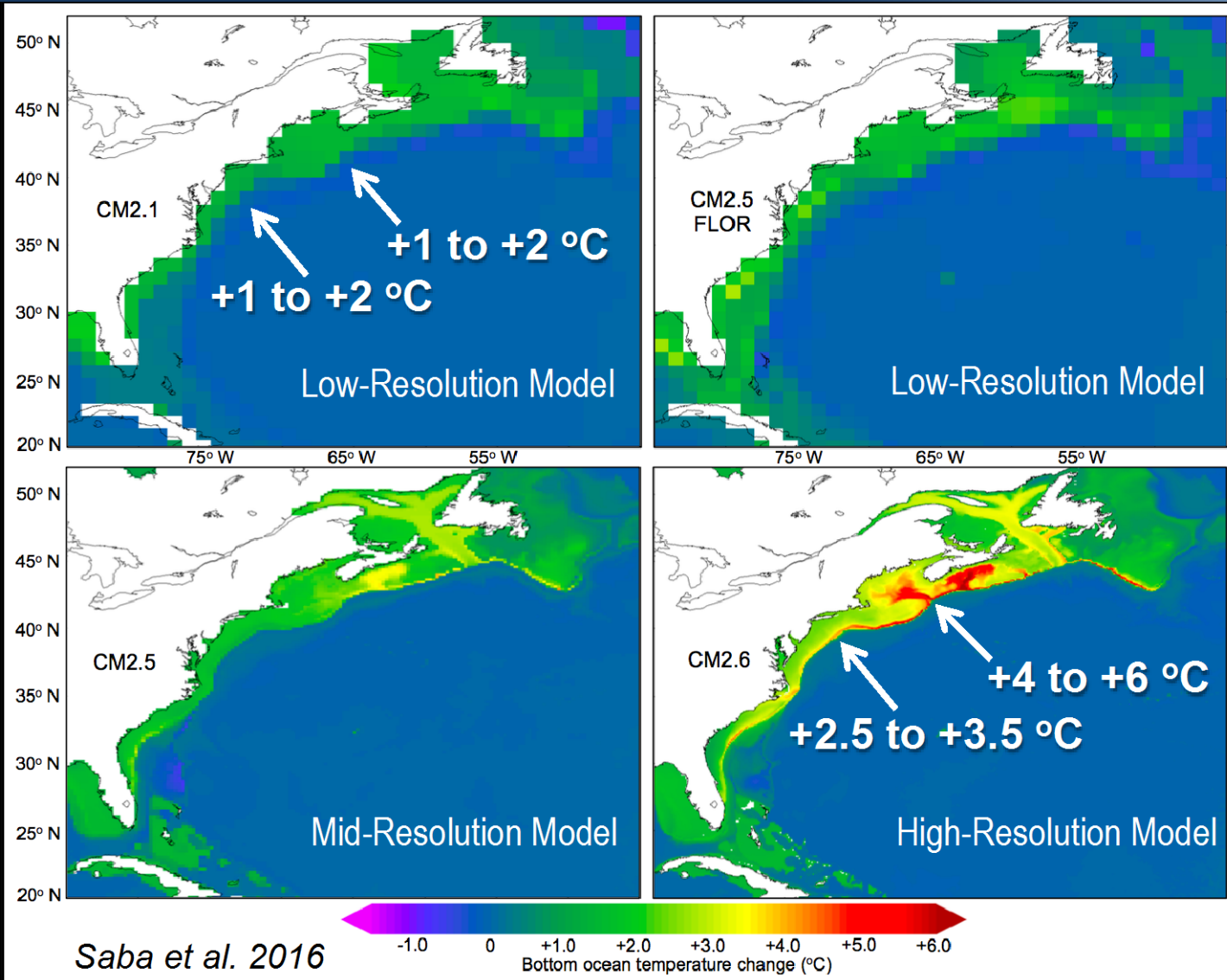
Commercial Fishery Value at Major U.S. Ports, 2015



Importance of Climate Model Resolution

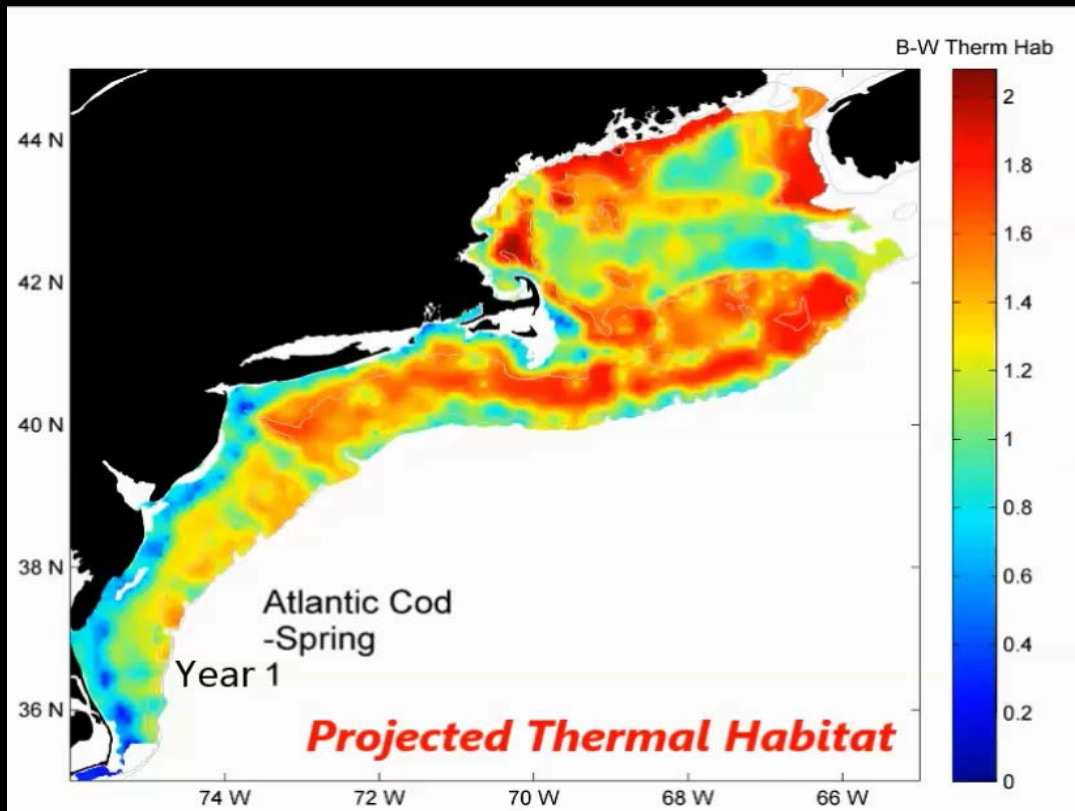


Importance of Climate Model Resolution

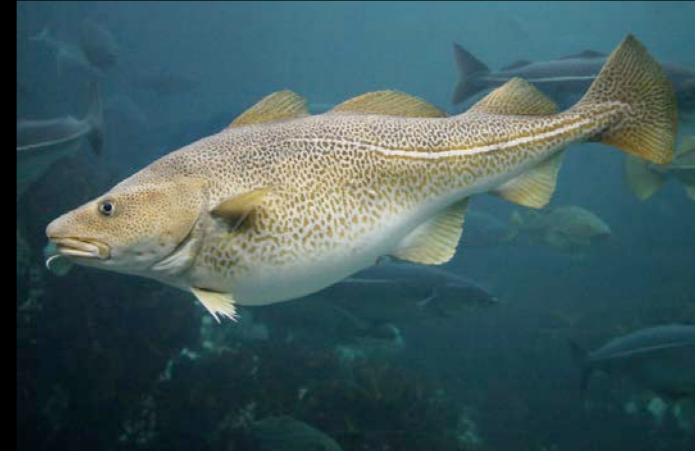


Using GFDL's CM2.6 for species projections

Atlantic cod

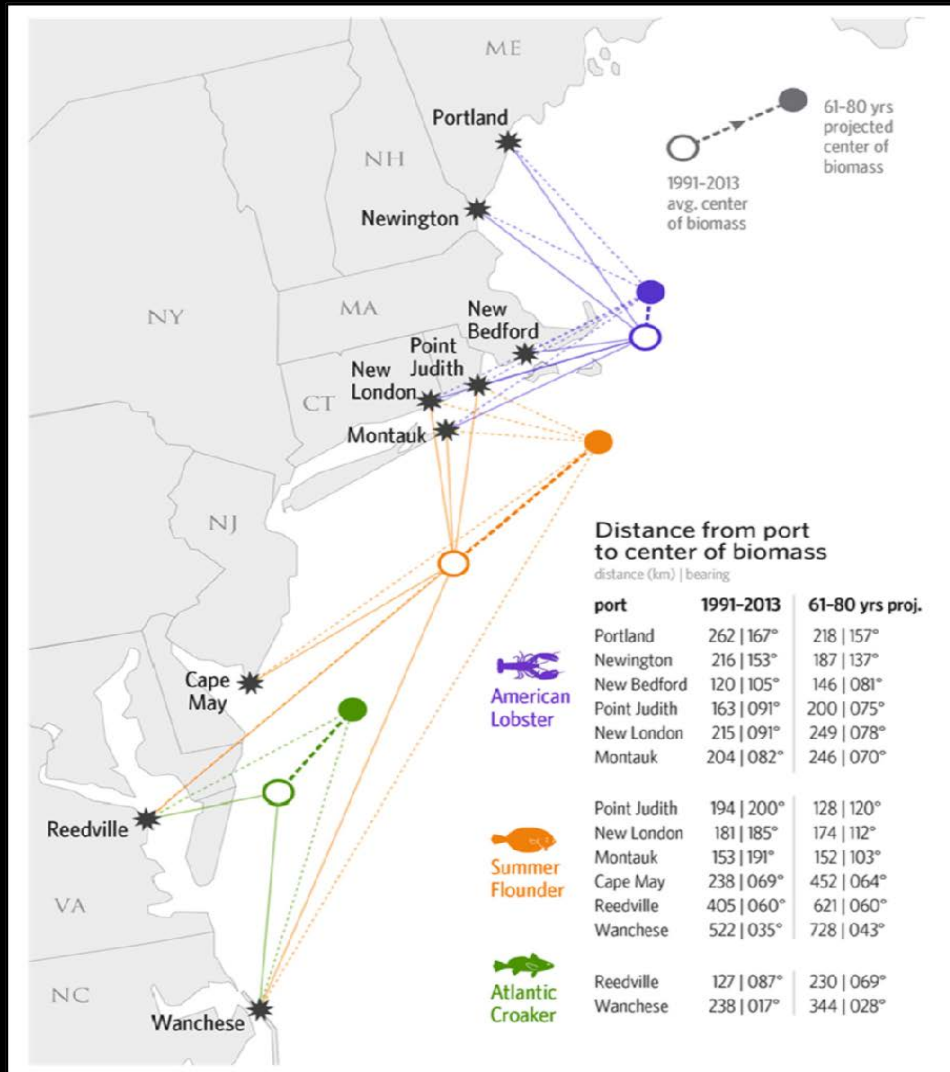


Kleisner et al. 2017



Value of Landings		
Rank	Species	Thousand Dollars
1	Lobsters	679,214
2	Crabs	678,727
3	Shrimp	488,384
4	Salmon	460,166
5	Pollock	449,198
6	Scallops	440,496
7	Cod	264,191
8	Flatfish	263,615
9	Oysters	213,773
10	Clams	206,299

Using GFDL's CM2.6 for species projections



Distance to port under continued ocean warming.

Does not account for:

- Fishing mortality change.
- Bottom-up forcing
- Species interactions.

Kleisner et al. 2017

Summary



**NOAA
FISHERIES**

NOAA Fisheries Climate Science Strategy Highlights

- GFDL's CM2.6 is now being widely used for Northeast U.S. fisheries research
- Thermal habitat projections for all major species are on nefsc.noaa.gov
- CM2.6 - Zooplankton distribution shifts
- CM2.6 - Predator/prey interactions
- CM2.6 - Sea turtles

