

Modeling the Economic Impacts to the Scallop Fishery from Offshore Wind

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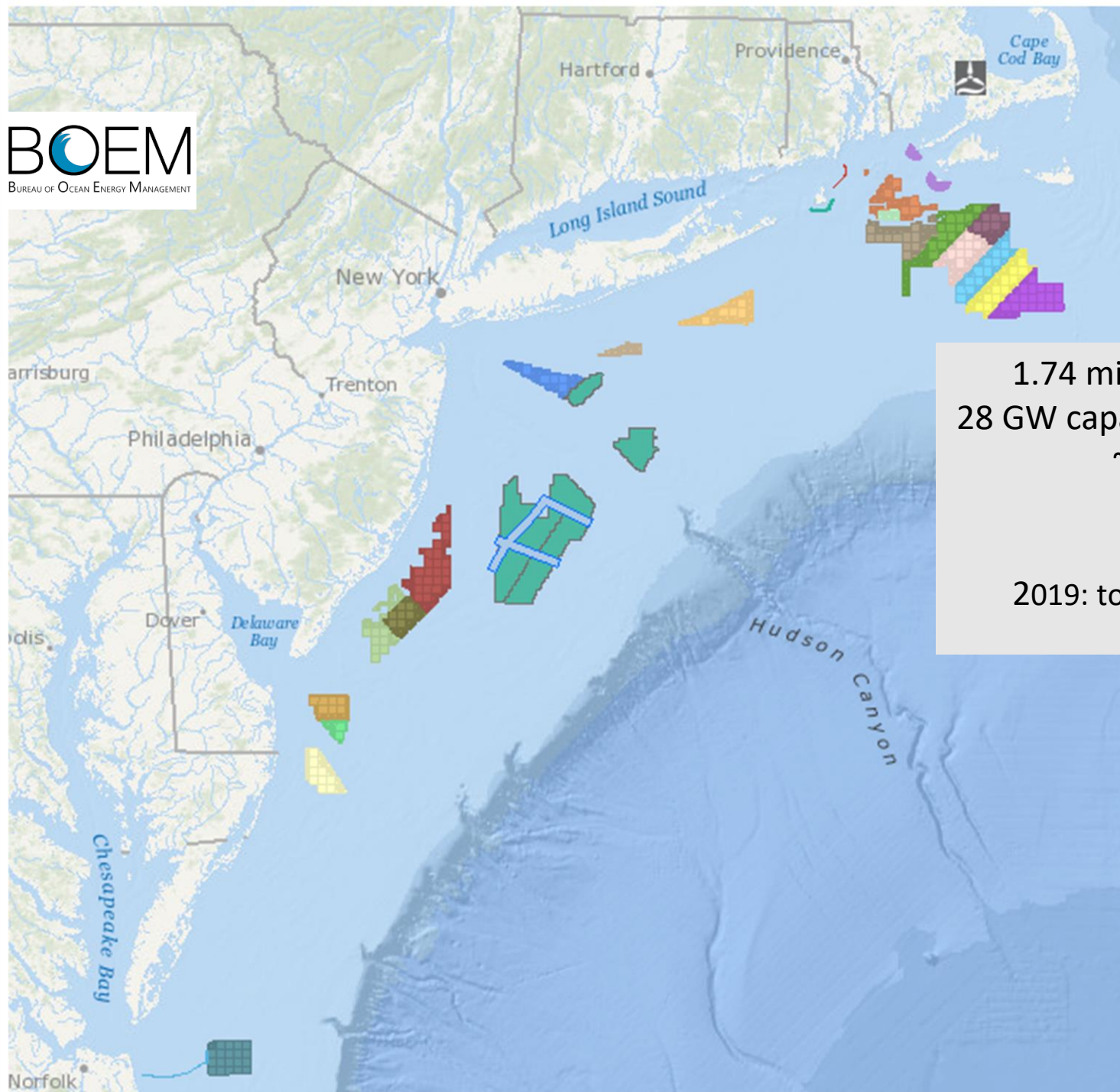


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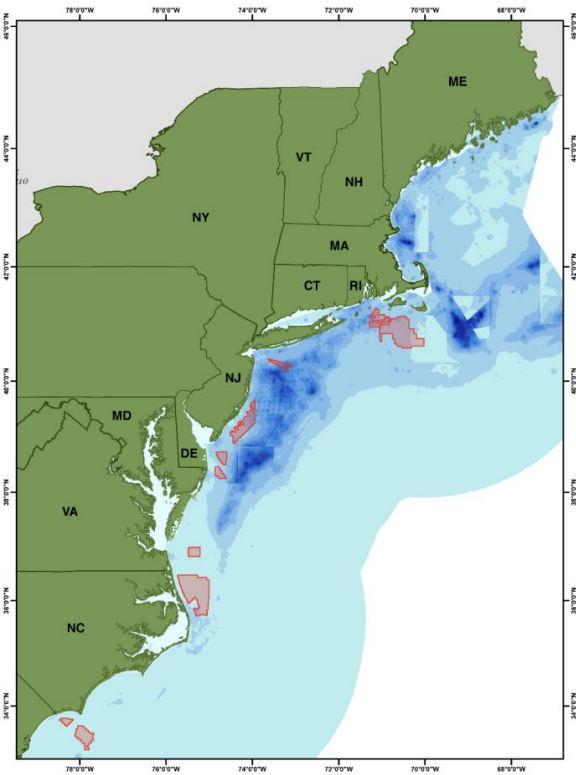


1.74 million acres under lease
28 GW capacity over the next decade
~1400 turbines*

2019: total global OSW~ 29.1 GW
Global Wind Energy Council

Socio-Economic Impact on Continental Shelf Wind Energy on Fisheries in the U.S. Atlantic

Volume I—Report Narrative

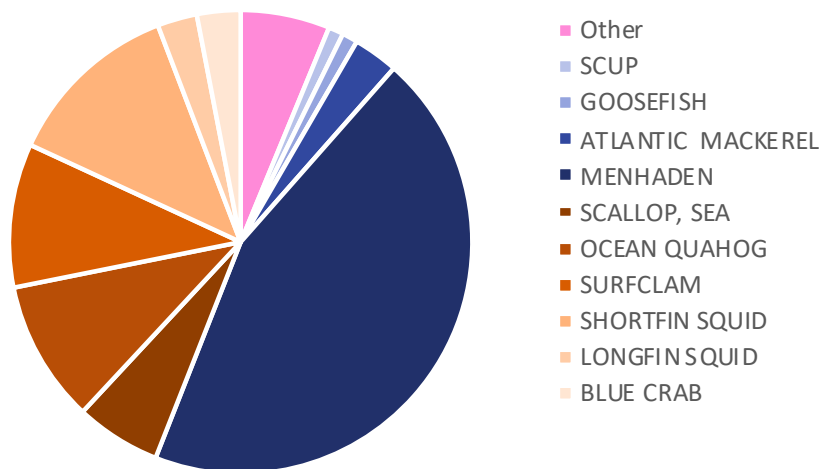


U.S. Department of the Interior
Bureau of Ocean Energy Management
Office of Renewable Energy Programs

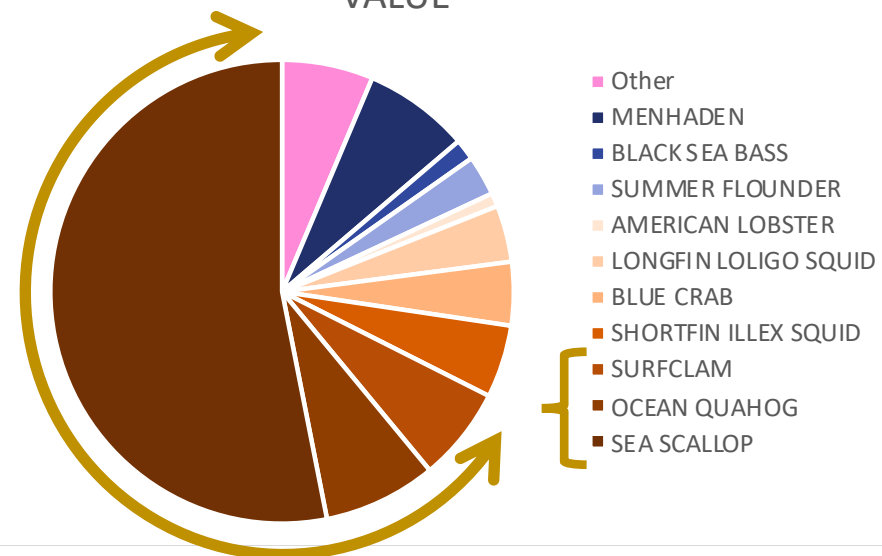


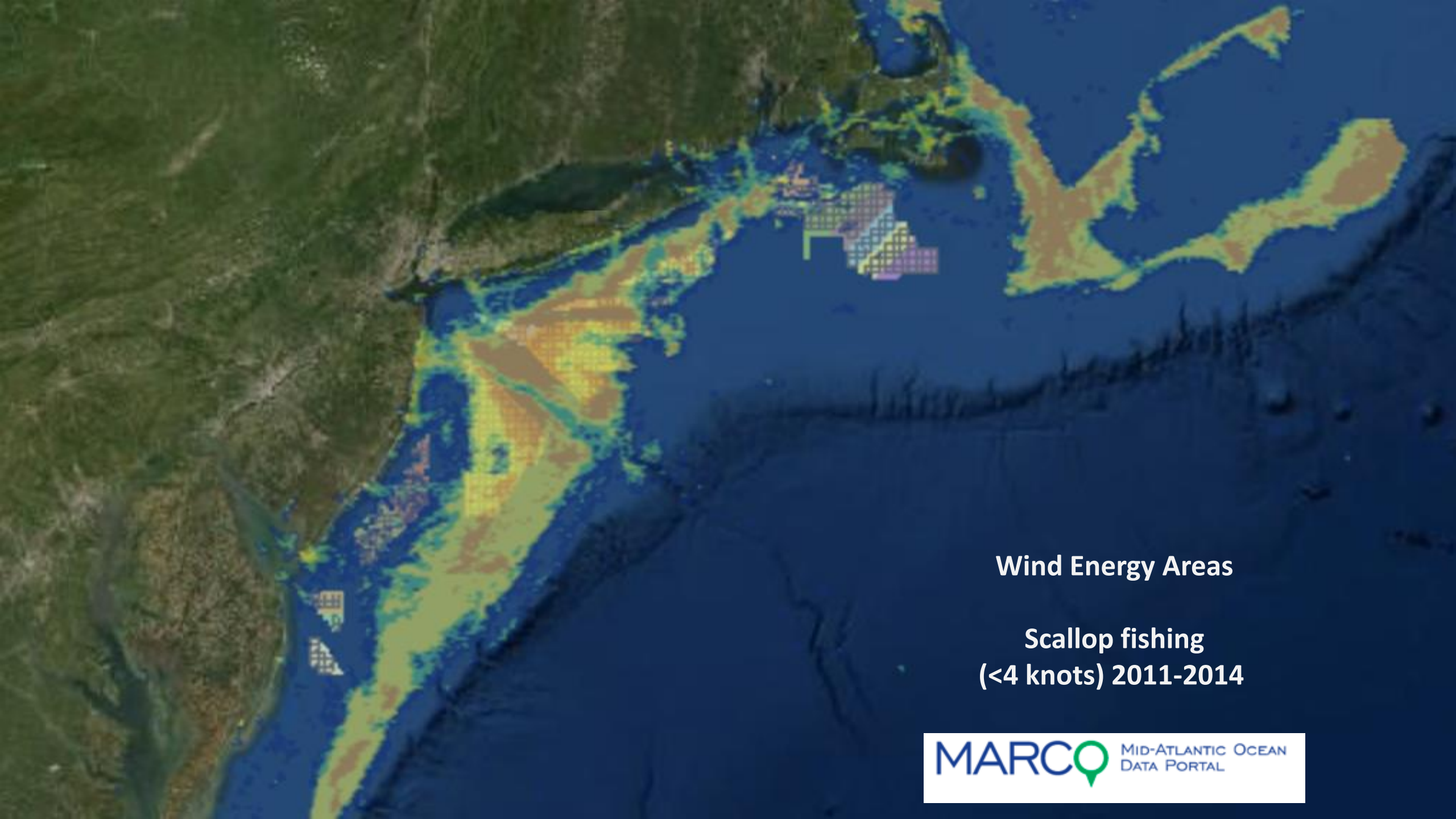
NOAA
FISHERIES

NEW JERSEY 2019 COMMERCIAL LANDINGS WEIGHT



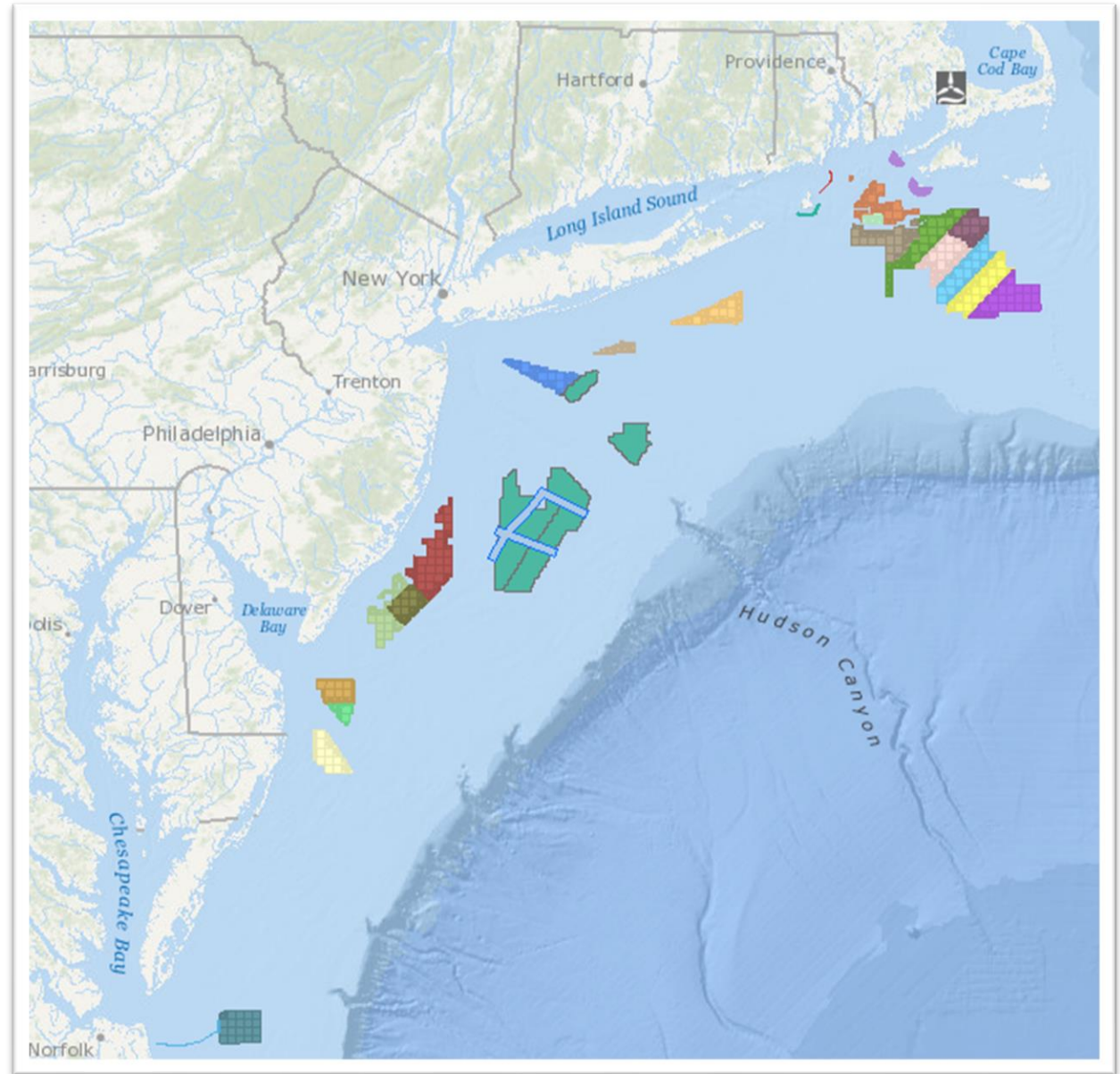
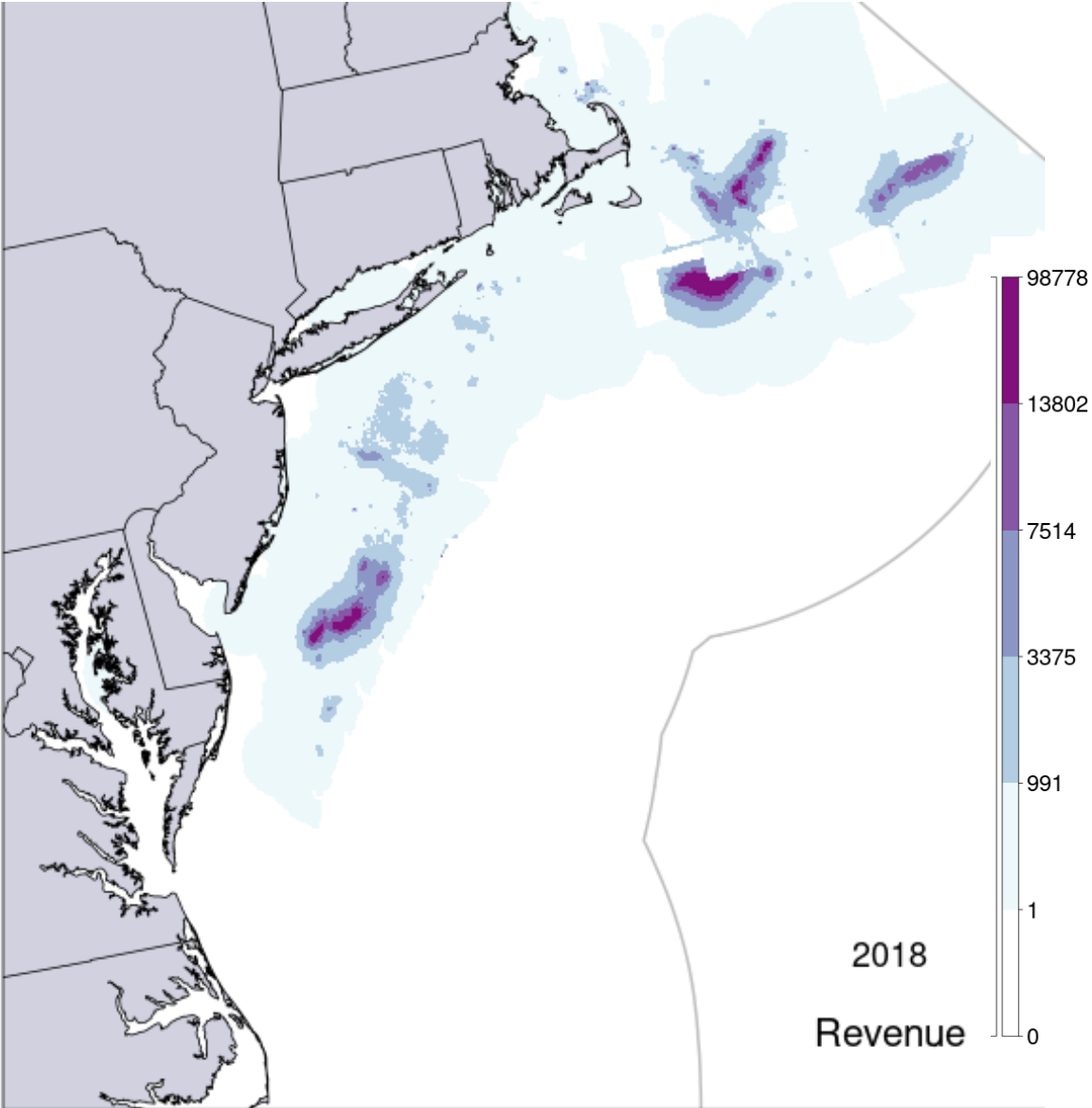
NEW JERSEY 2019 COMMERCIAL LANDINGS VALUE





Wind Energy Areas

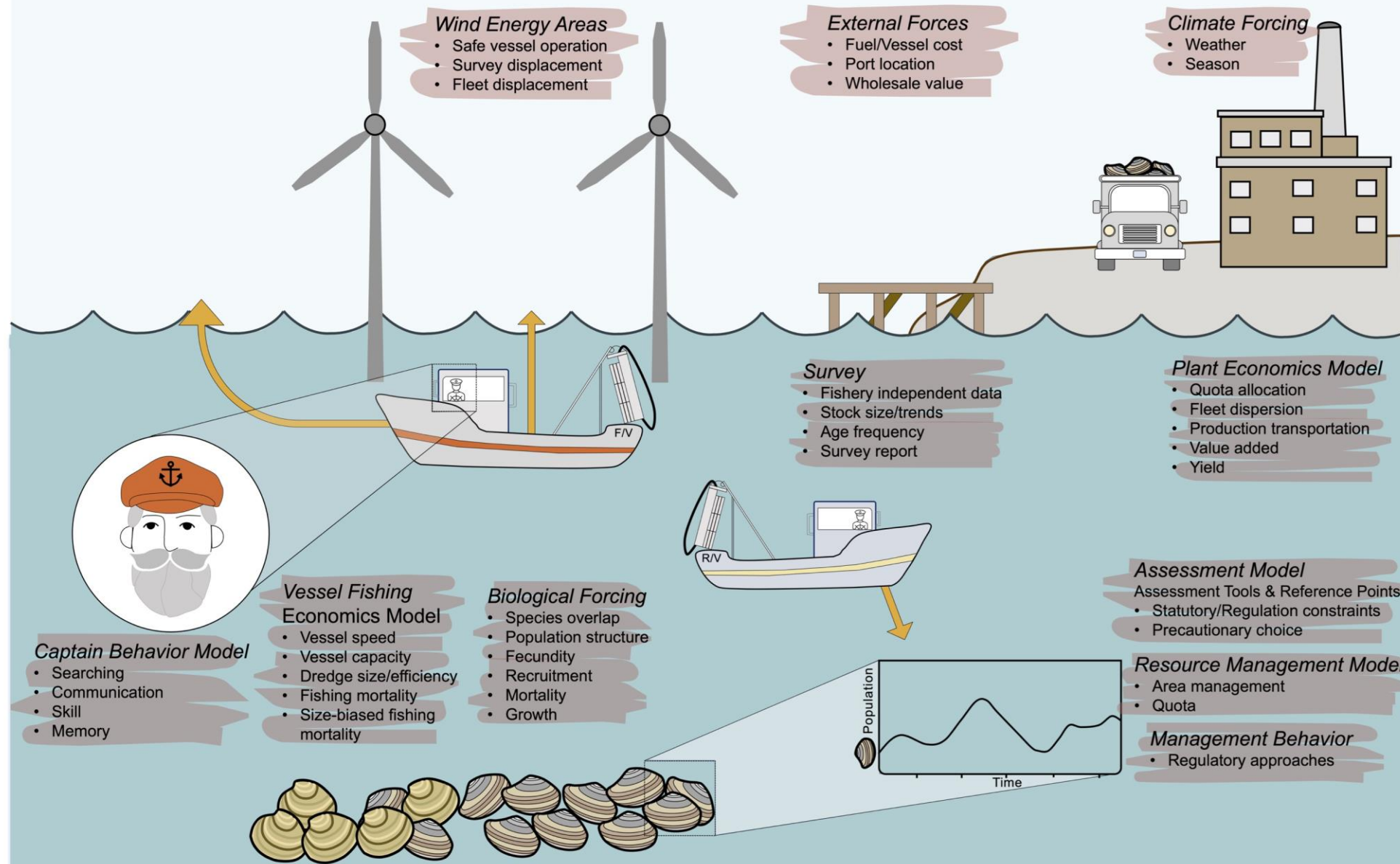
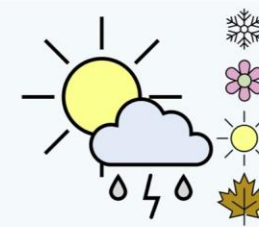
**Scallop fishing
(<4 knots) 2011-2014**



NOAA Fishing Footprints

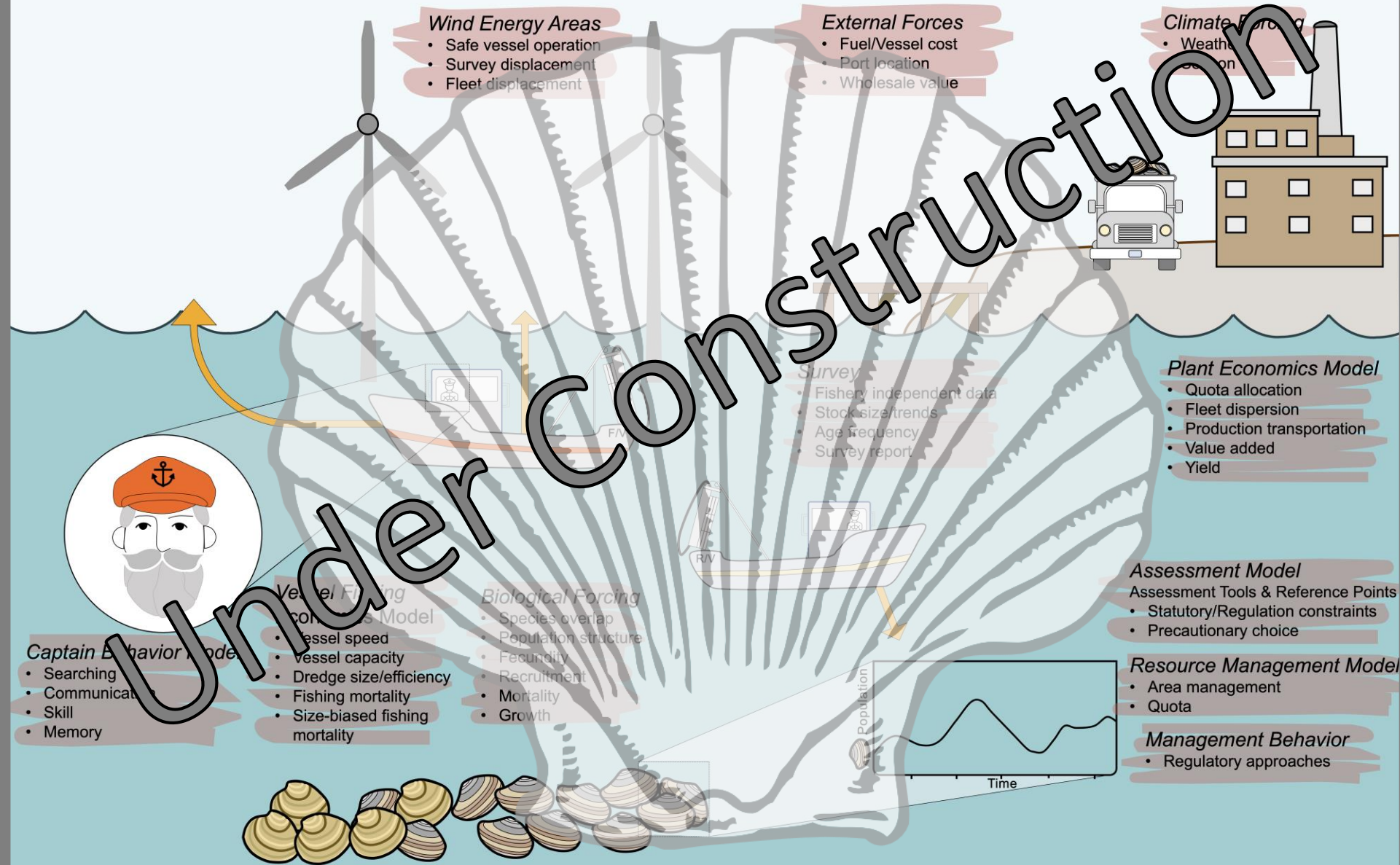
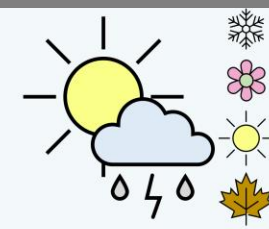
Spatially Explicit Fisheries Economic Simulator

SEFES



Spatially Explicit Fisheries Economic Simulator

SEFES





Model Setup

Advisory Teams

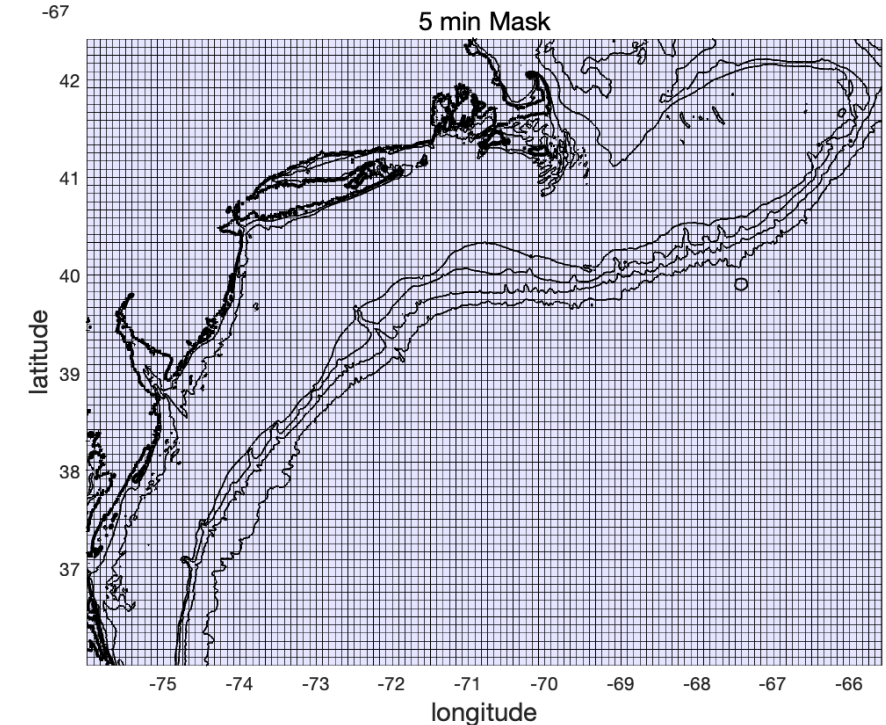
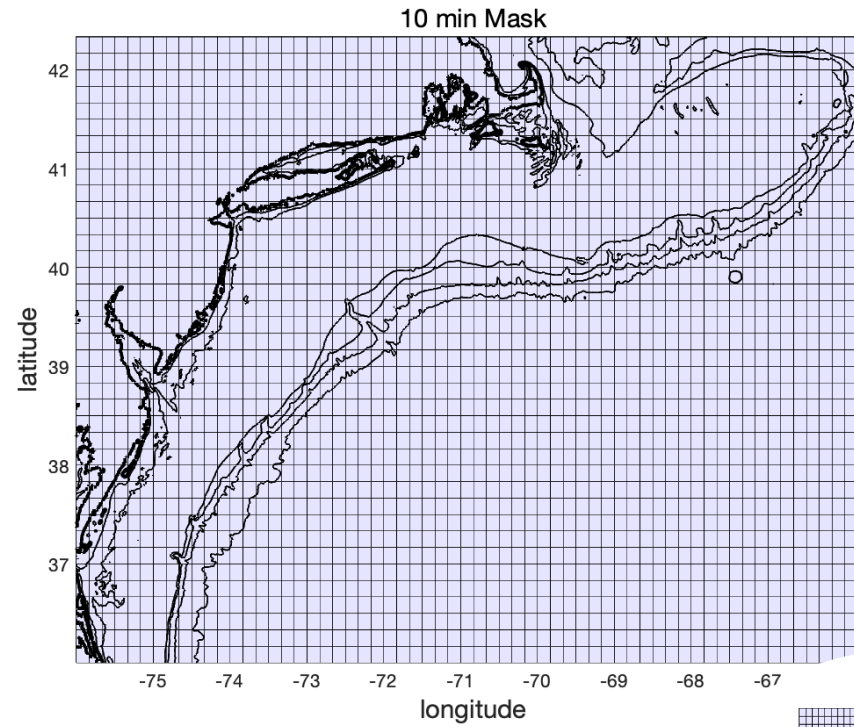
- Industry Advisors
 - Provide basic information
 - Liason with captains for advice
 - Validate model performance
- Management Advisors
 - Help with data needs
 - Validate model structure and performance

Credit: Virginia Sea Grant

Model Setup

Model Domain

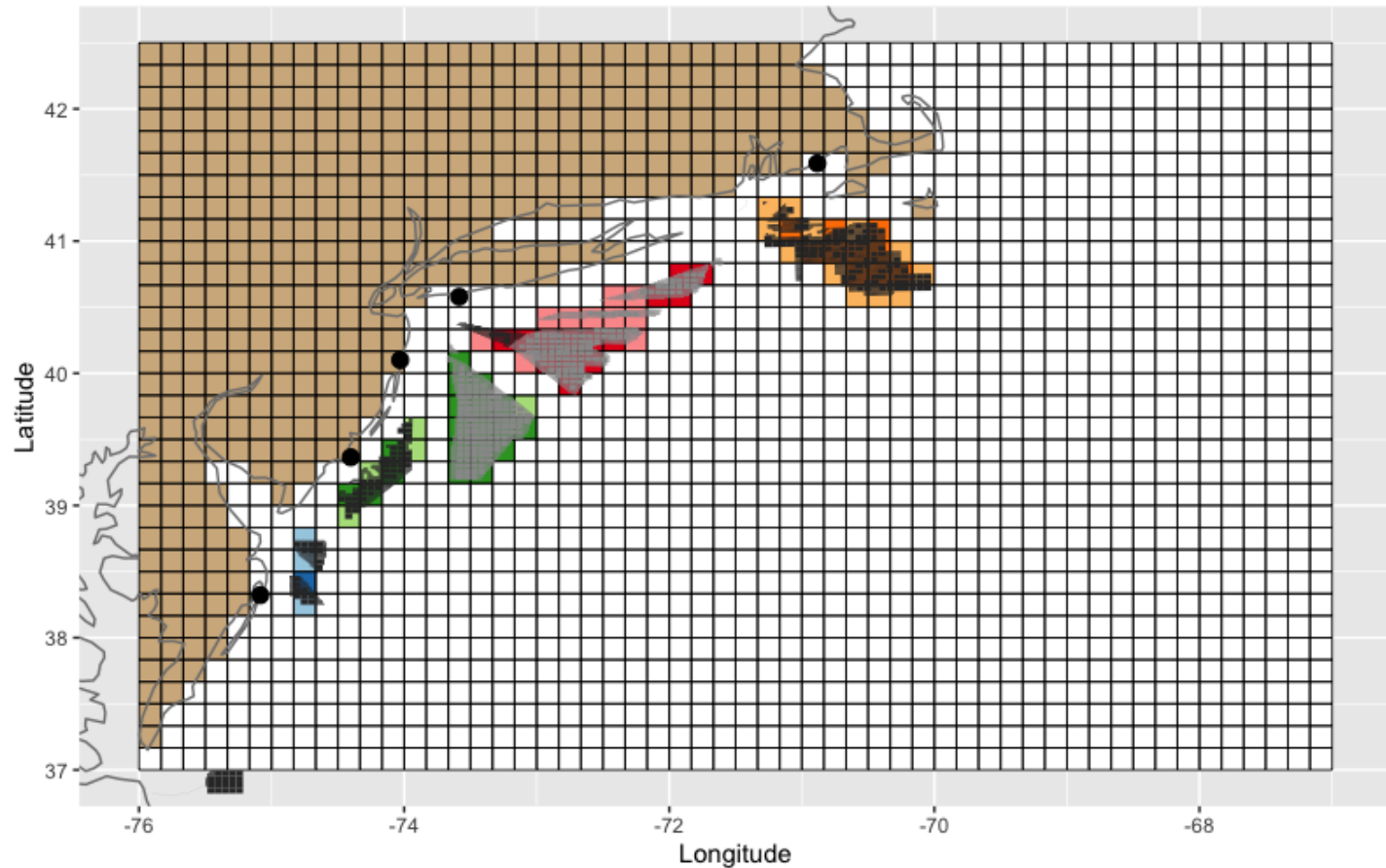
- Distance tracking
- Wind Lease Areas
- Habitat definitions
 - land
 - biological habitat
 - ports



Model Setup

Model Domain

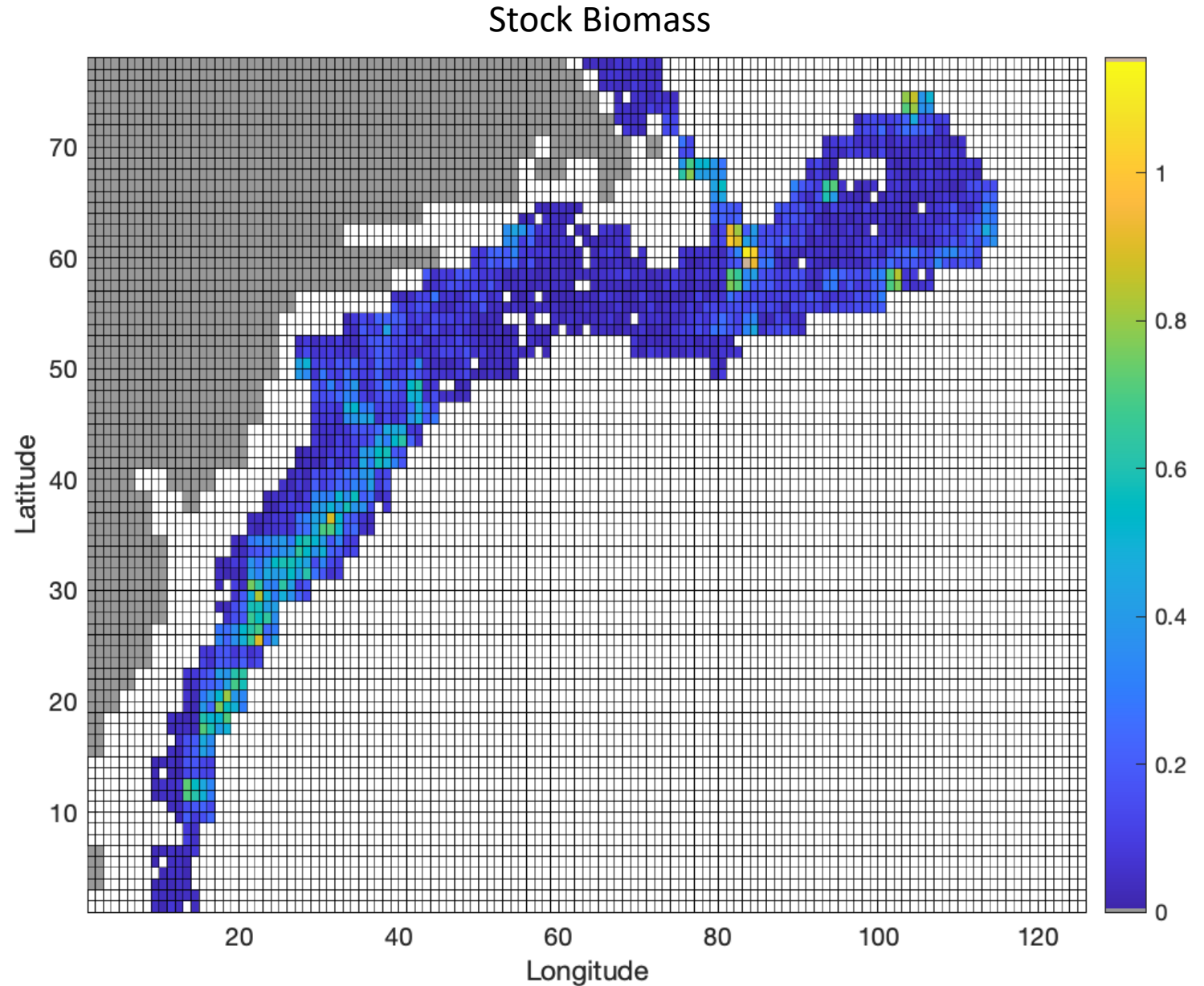
- Distance tracking
- Wind Lease Areas
 - Includes NYB leases auctioned in Feb.
- Habitat definitions
 - land
 - biological habitat
 - ports



Model Setup

Model Domain

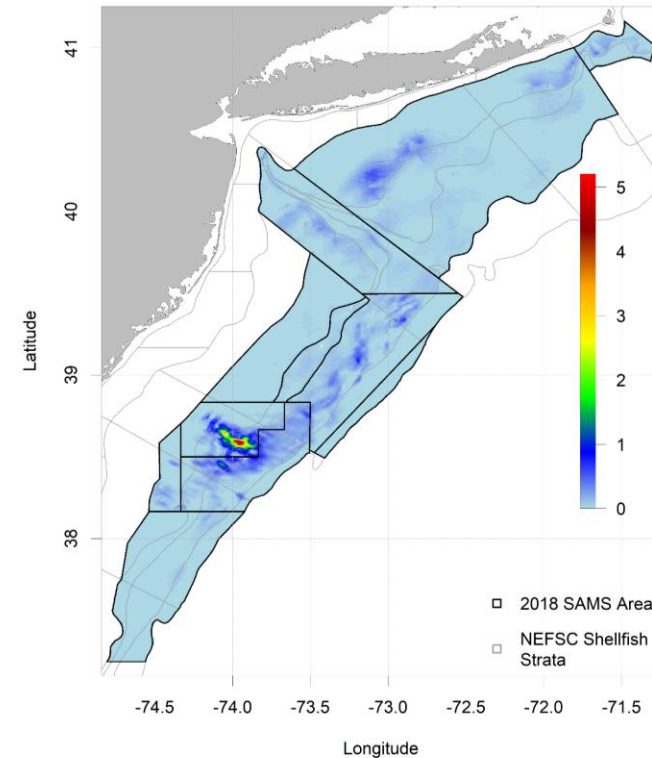
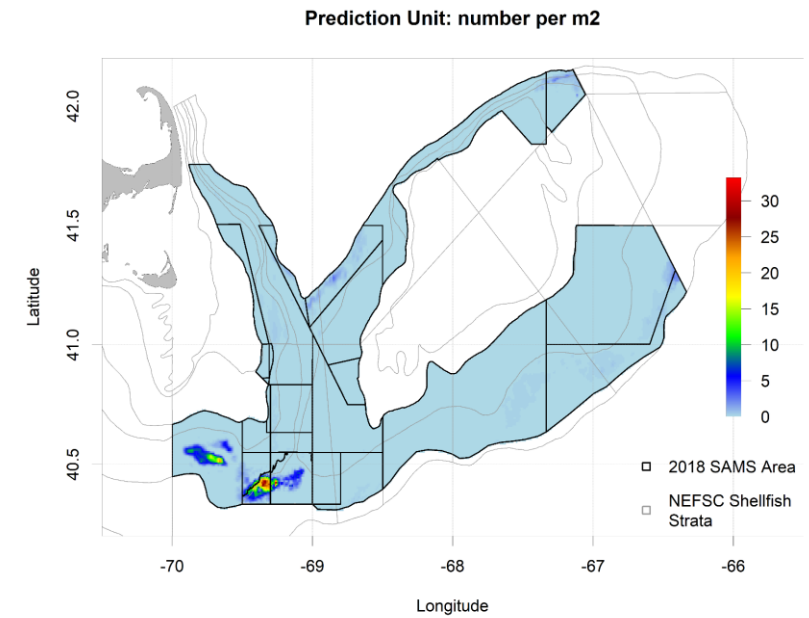
- Distance tracking
- Wind Lease Areas
- Habitat definitions
 - land
 - biological habitat
 - ports



Model Setup

Biology

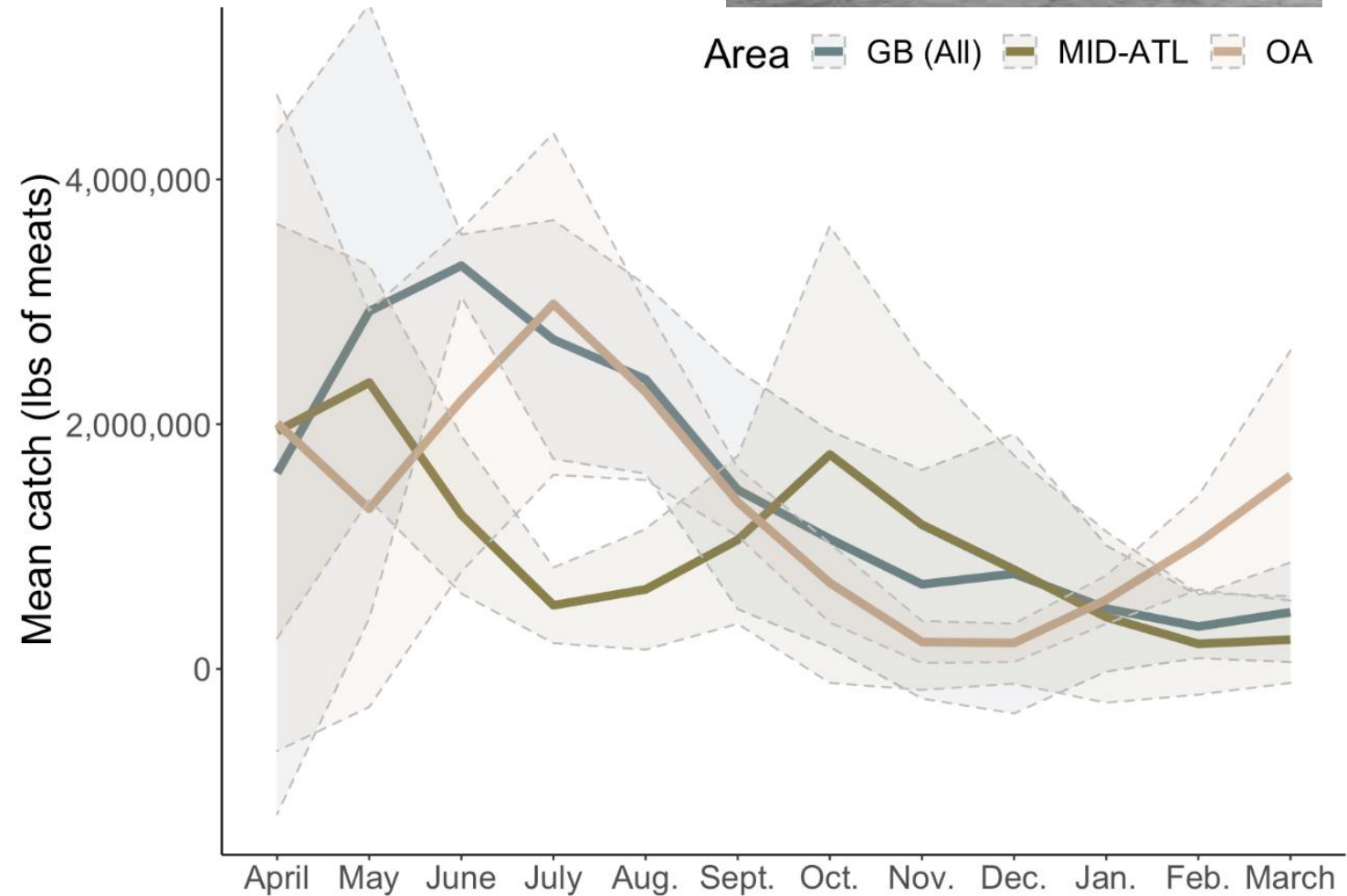
- Data rich – many sources of information
- Focus on recent data
 - Last 5 years
- Spatial patterns in:
 - Growth
 - Recruitment
 - Mortality
 - Biomass



Model Setup Strategy

Fishery

- Fleet
- Permits
- Ports
- Landings
- Seasonal Patterns



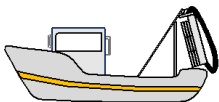


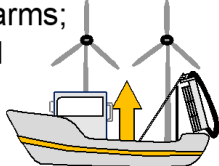






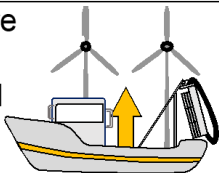



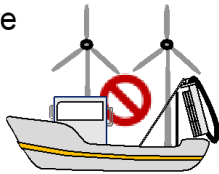
Model Setup Strategy

Economics

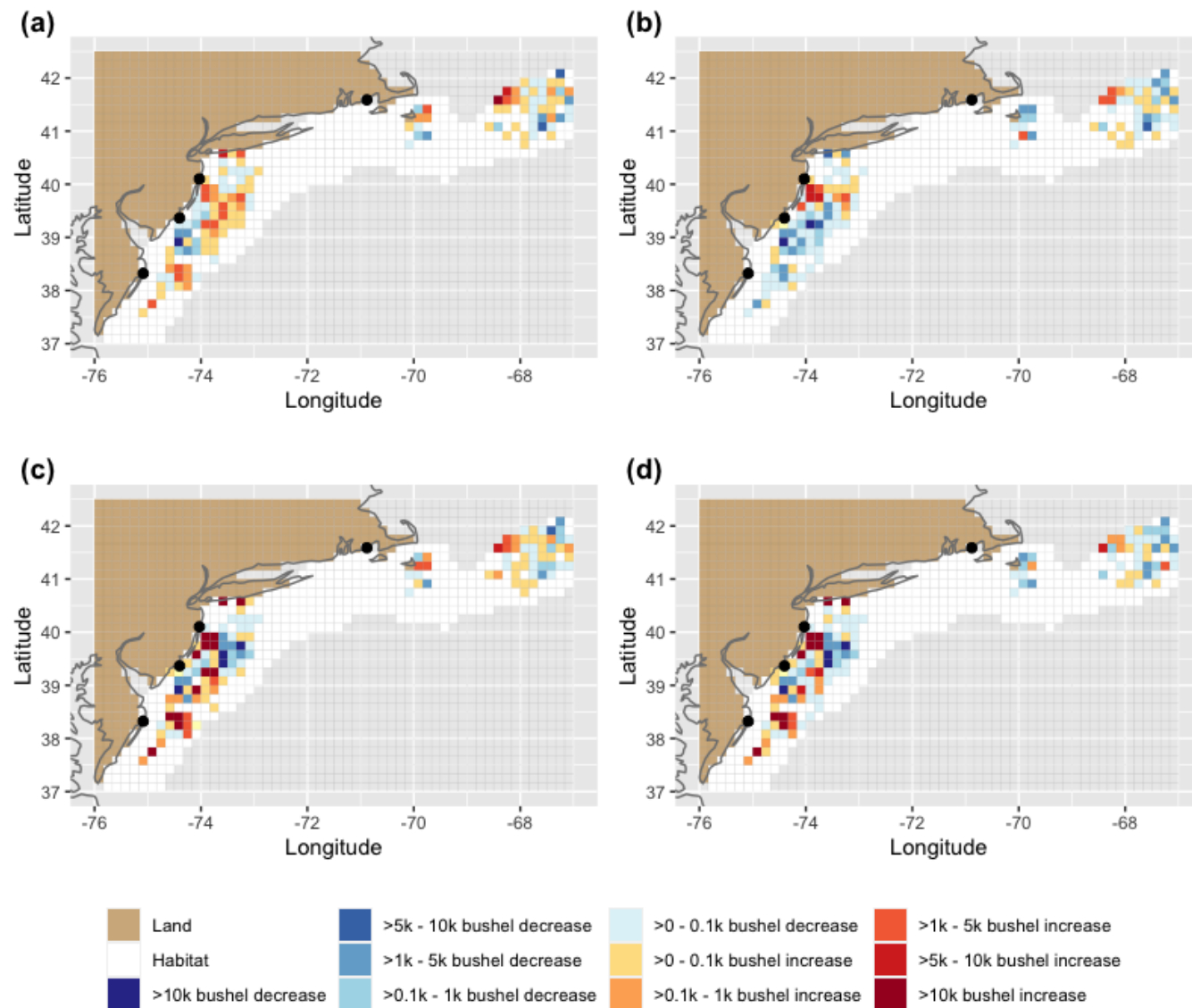
- Trip costs depend on transit & fishing activity (fuel use, gear maintenance)
- Additional fixed costs considered
 - Major maintenance / haul-out, insurance, permits
- Ex-vessel prices
 - Utilize NEFMC demand model to evaluate price shifts in response to changes in annual landings levels



Simulations

Wind energy scenario	Description
Status Quo	Status quo; no wind farms 
 	Current wind farms; Transit allowed  <div>CURRENT LEASES</div>
  	Current wind farms; No transit allowed  <div>CURRENT LEASES</div>
 	Current & future wind farms; Transit allowed  <div>CURRENT LEASES</div> <div>FUTURE LEASES</div>
  	Current & future wind farms; No transit allowed  <div>CURRENT LEASES</div> <div>FUTURE LEASES</div>

Example Output



New Website
<https://sites.rutgers.edu/smdsf/>

