Examining Habitat Characteristics and Spatial Footprints of Key Groundfish Stocks (GMRI/NOAA CINAR)

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NOAA FISHERIES
Northeast Fisheries Science Center

Congressman Moulton Groundfish Trawl Task Force

- Formed in 2015
- Fisheries scientists working with industry on concerns raised by the fishing industry
- Worked together on a report exploring the strengths and weakness of the NOAA NEFSC Bottom Trawl Survey

Strengths and Weaknesses of the Northeast Fisheries Science Center's Bottom Trawl Survey

Congressman Moulton Groundfish Trawl Task Force

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Taskforce Recommendations

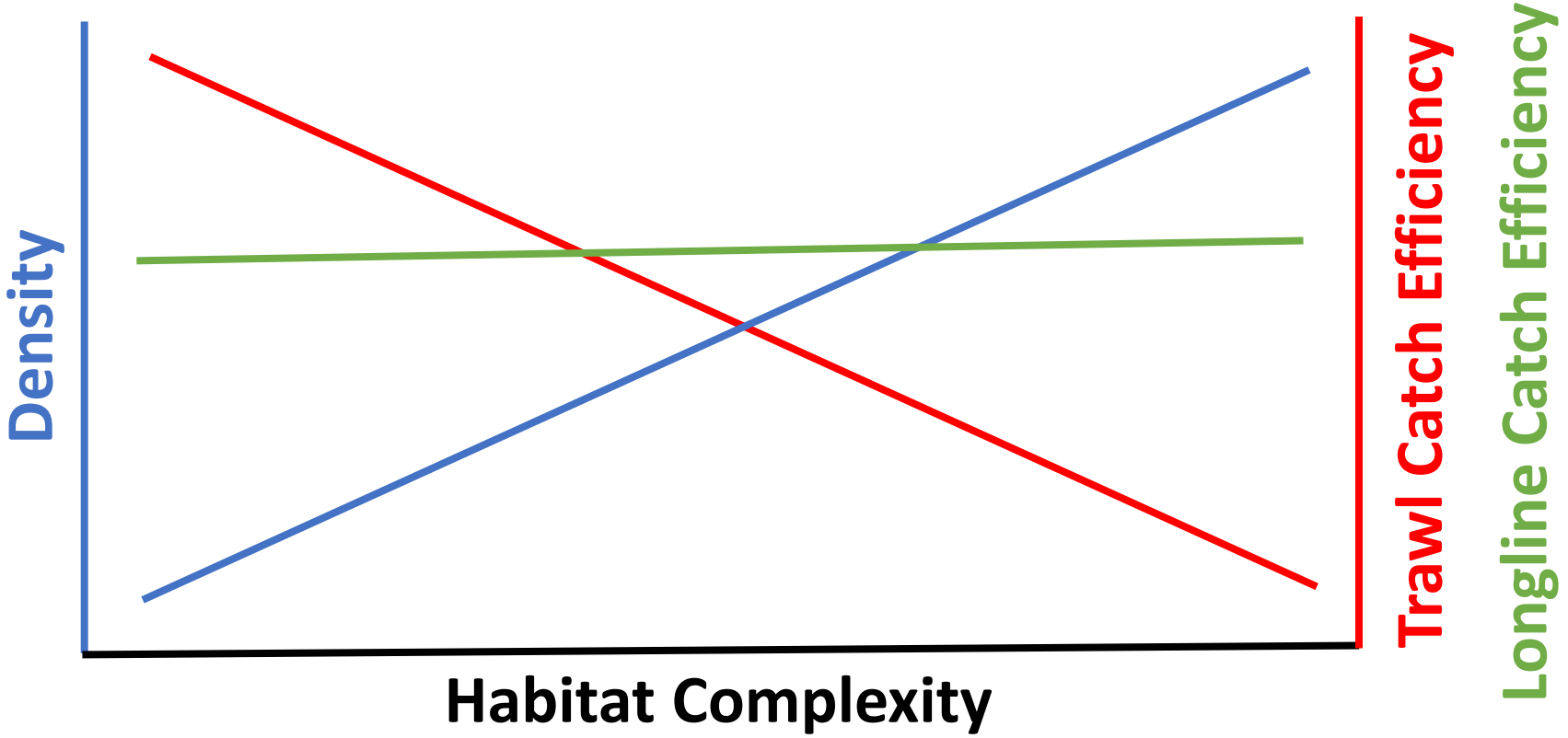
- *The effects of fish use of habitat and density dependence on catch efficiency* – The trawl survey is less likely to catch species that prefer more complex habitat and is consequently likely to have lower catch efficiencies for those species.
- *Increasing the use of additional data sources* – Understanding the “footprint” of species such as Atlantic cod, could help guide targeted fisheries independent sampling efforts aimed at better describing the abundance, size-frequency distribution, spawning stock biomass, etc. of these species.

Research Objectives

- Objective 1: Explore the degree to which groundfish stocks use structured habitats

- Objective 2: Quantify the spatial and temporal footprints of groundfish stocks in the Gulf of Maine

Objective 1: Explore the degree to which groundfish stocks use structured habitats



Approach

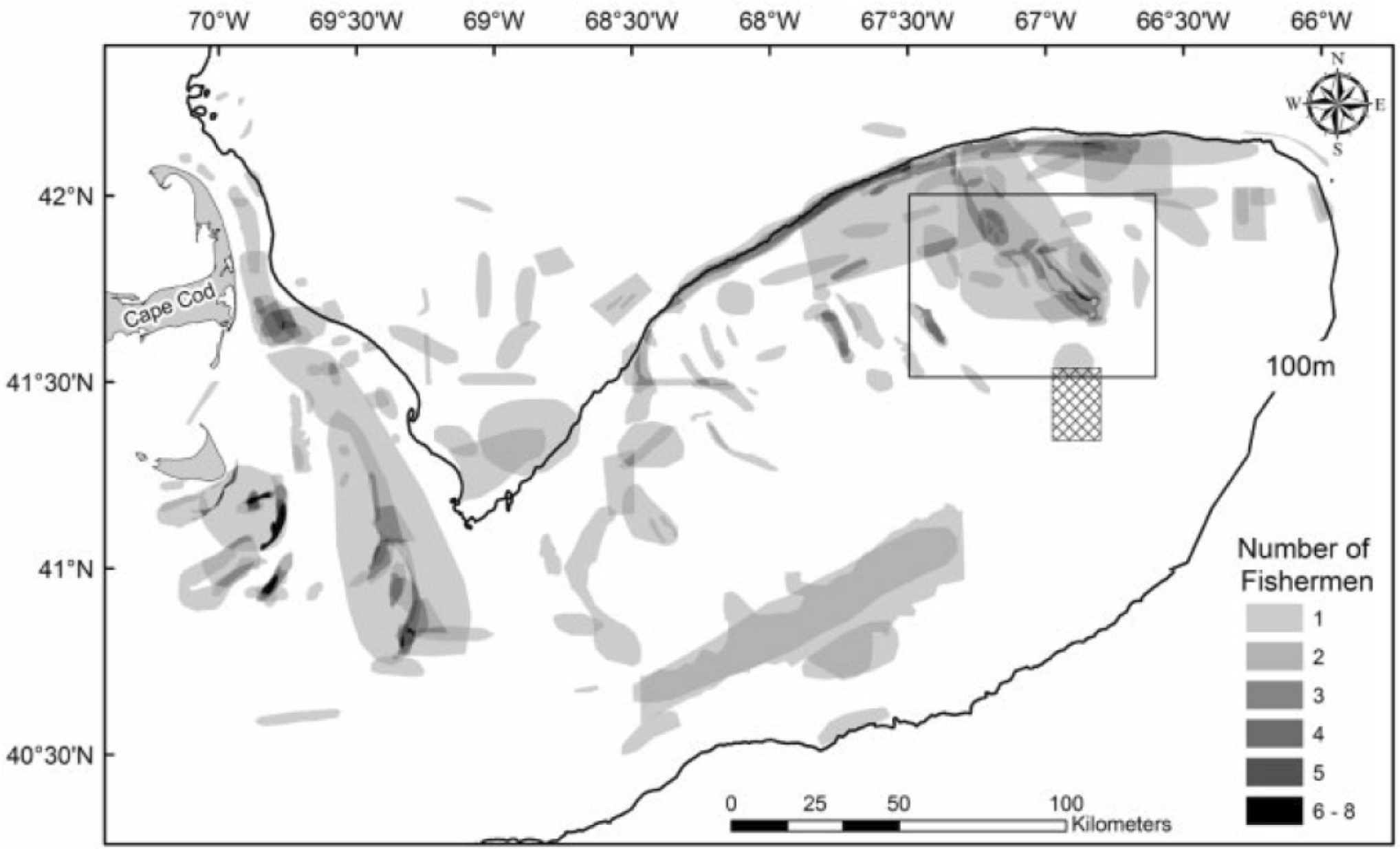
- Quantify relative abundances of groundfish species in simple, intermediate and complex habitats using the longline survey
- Compare with bottom trawl survey catch rates in areas with simple and intermediate complexity where trawling is possible
- Use the two surveys to estimate densities in complex habitats that are unable to be towed
- Develop new indices for key groundfish stocks that account for habitat characteristics
- Create habitat-specific maps of groundfish habitat

Objective 2: Quantify the spatial and temporal footprints of groundfish stocks in the GOM

Approach:

- Outline Gulf of Maine cod footprint using multiple sources:
  - Trawl survey
  - Fisheries dependent data
  - Longline surveys
  - Interview fishermen

Fishermen identify herring spawning aggregations



DeCelles et al. 2017 ICES JMS

Additional Analyses

Compare the trawl survey to the cod footprint:

- Is the degree of overlap changing with time?
- Does the degree of overlap correlate with catch rates & stock estimates?

Questions?