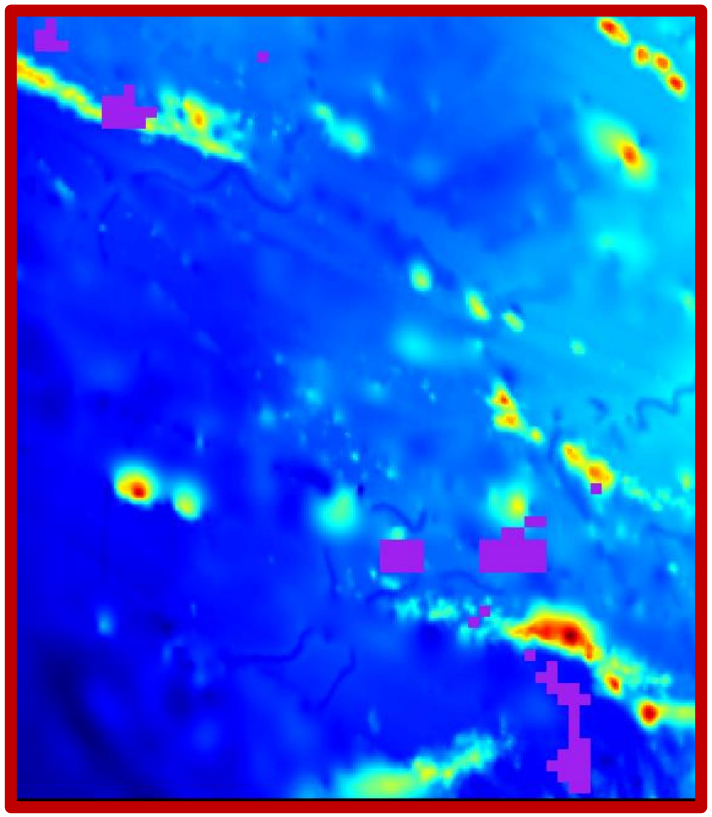
A Standardized Approach to Identifying potential SAI

(NPFC-2020-SSC BFME01-WP15)



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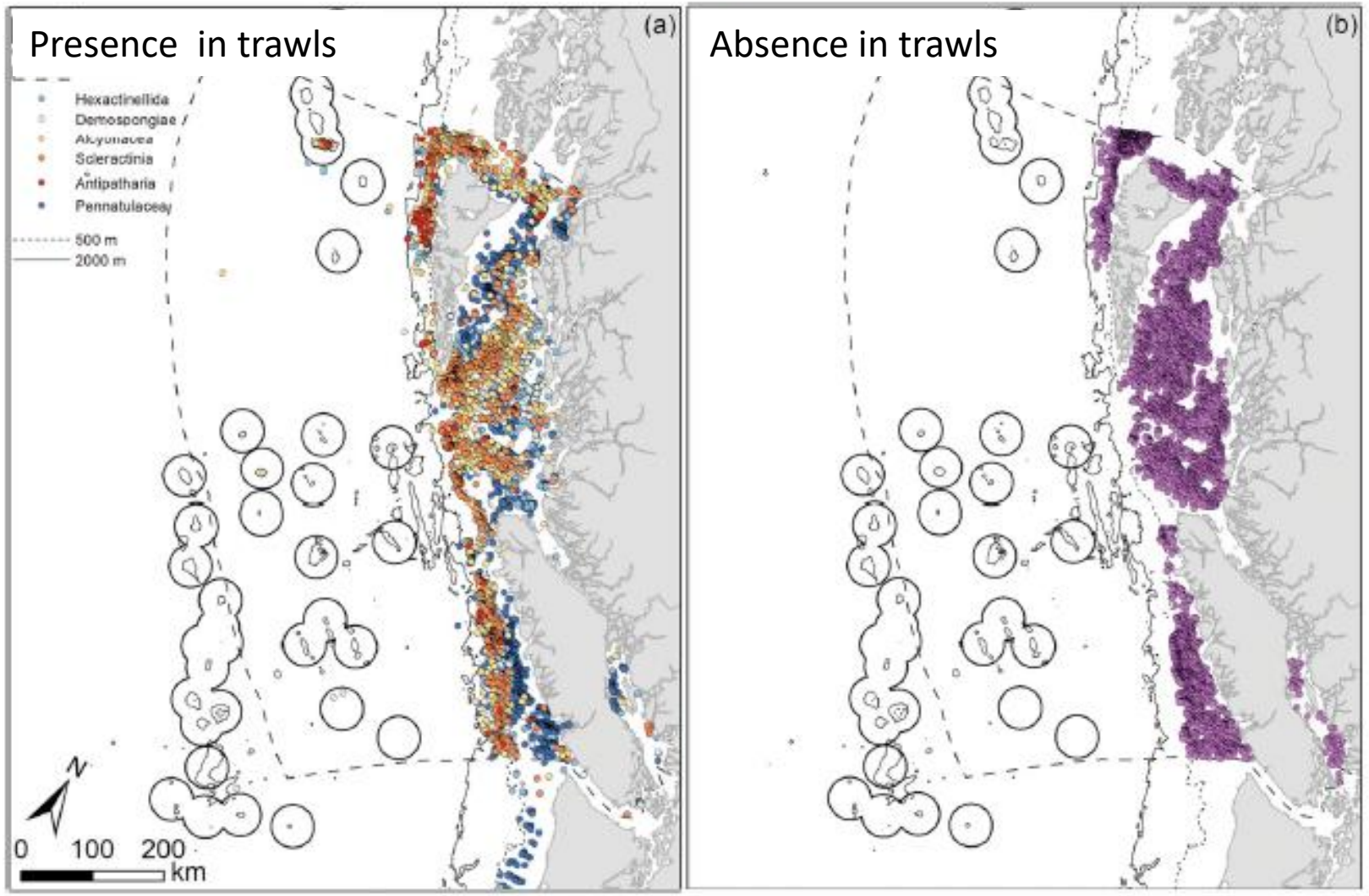
Predictive models of VME Indicator Taxa

Chu JWF, Nephin J, Georgian S, Knudby A, Rooper CN, Knudby A, Gale KSP. 2019. Modeling the environmental niche space and distributions of cold-water corals and sponges in the Canadian northeast Pacific Ocean. Deep Sea Res I 151

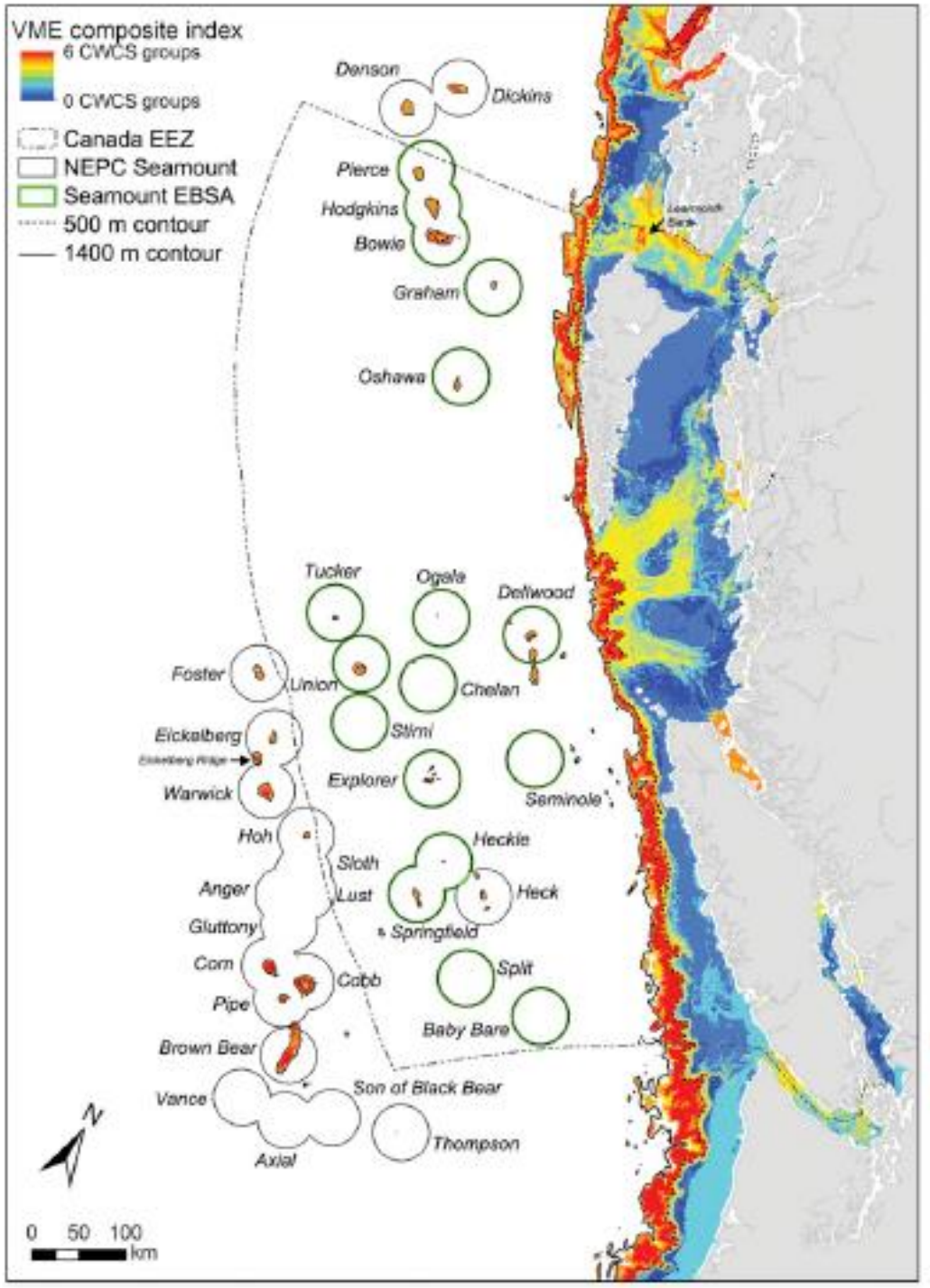
- MaxEnt (Maximum Entropy with presence/background)
- 6 taxonomic groups
  - 3 NPFC VME indicator orders
  - 2 sponge groups
  - sea pens (Pennatulacea)
- Presence observations mostly from the shelf



Composite model

Chu et al 2019. Deep Sea Res I 151

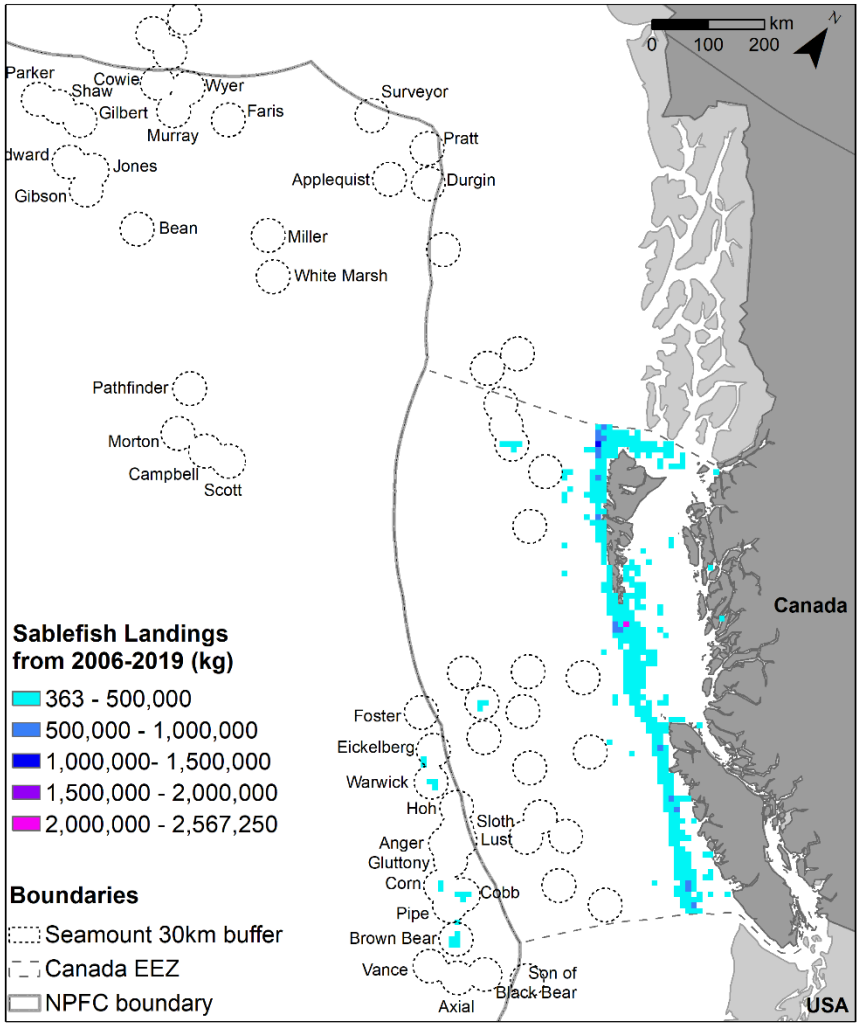
- 32 Environmental predictors
- 1 km^2 resolution



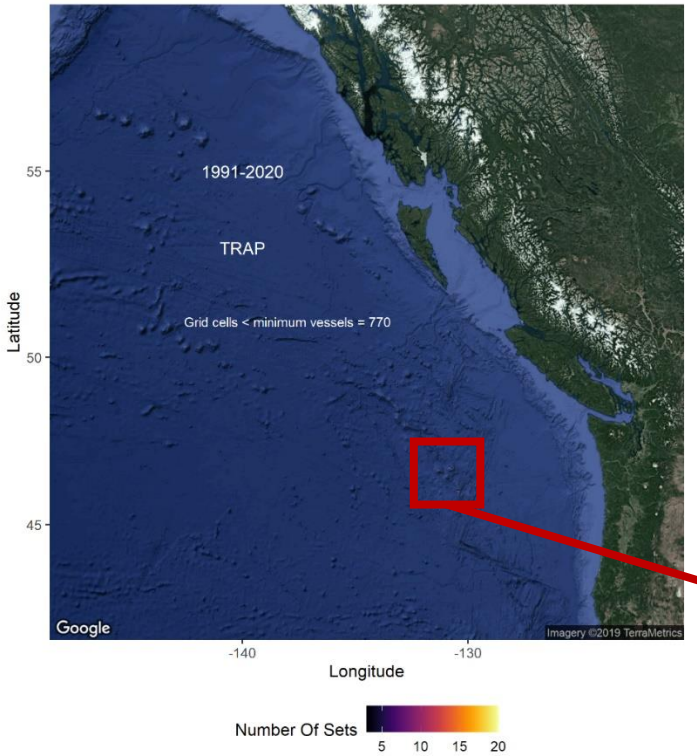
Canada fishes for Sablefish in the NPFC Convention Area

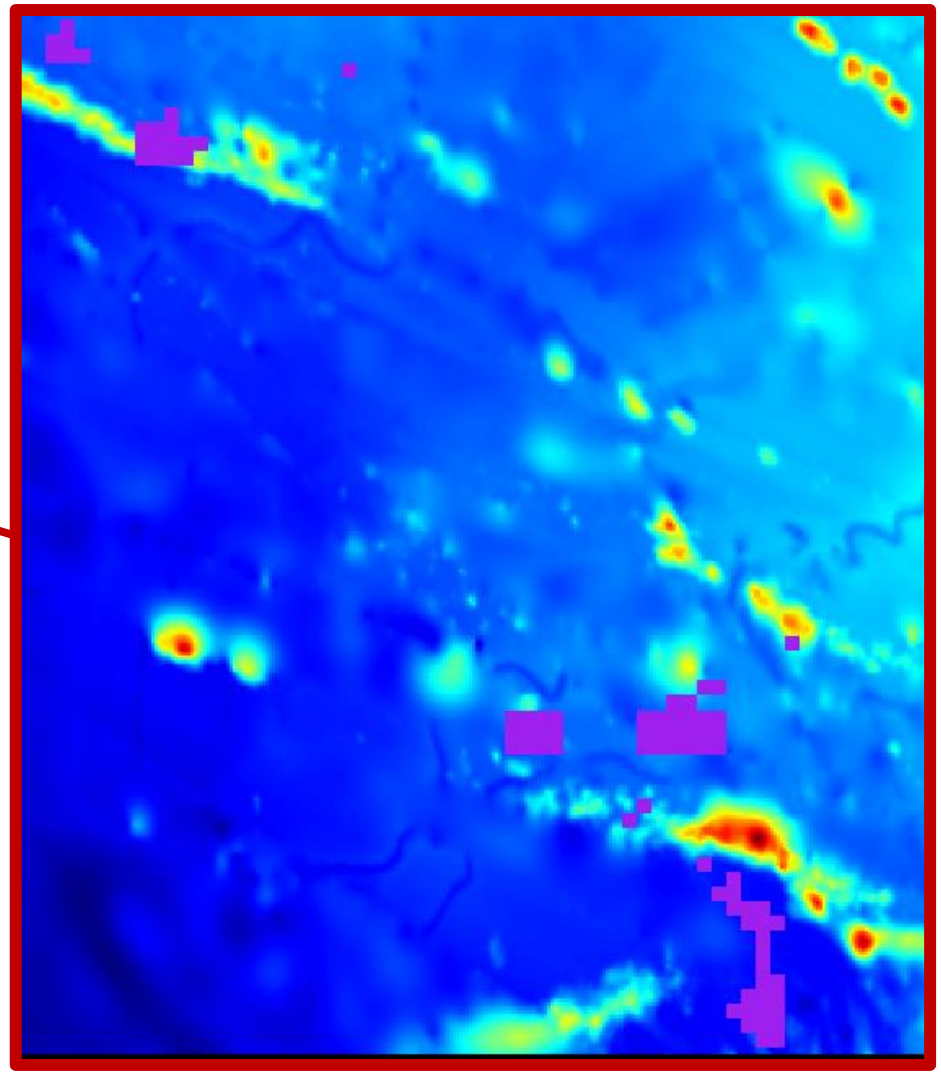
www.westcoast.fisheries.noaa.gov/publications/protected_species/marine_mammals/fixed_gear_guide_final_12.14.11.pdf

Sablefish are caught with traps attached to a common ground line



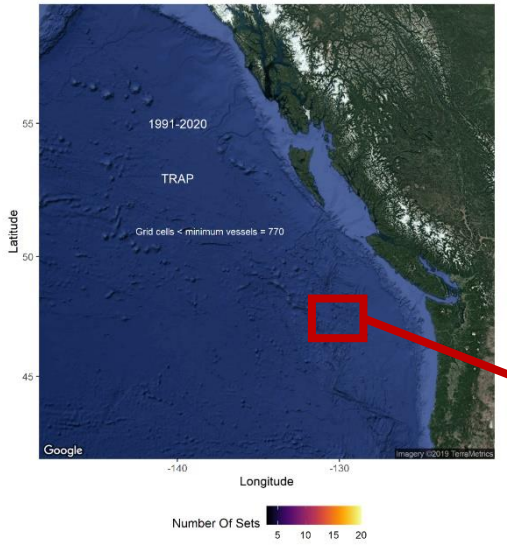
Sablefish Fishing Footprint in part of NPFC CA

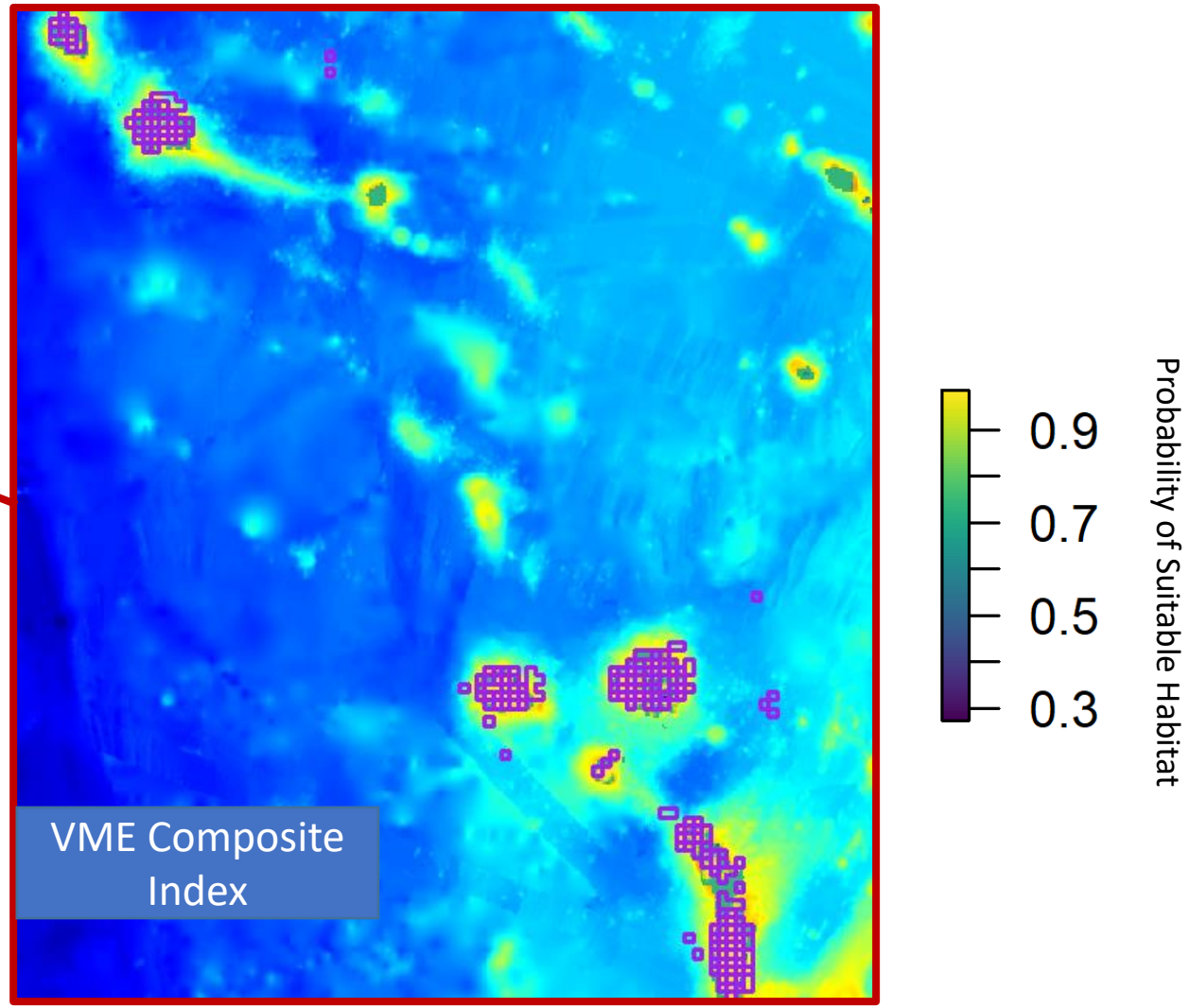




- 2.5 km area on both sides of each set
- areas merged to create a fishing footprint (grid at 5 km^2)

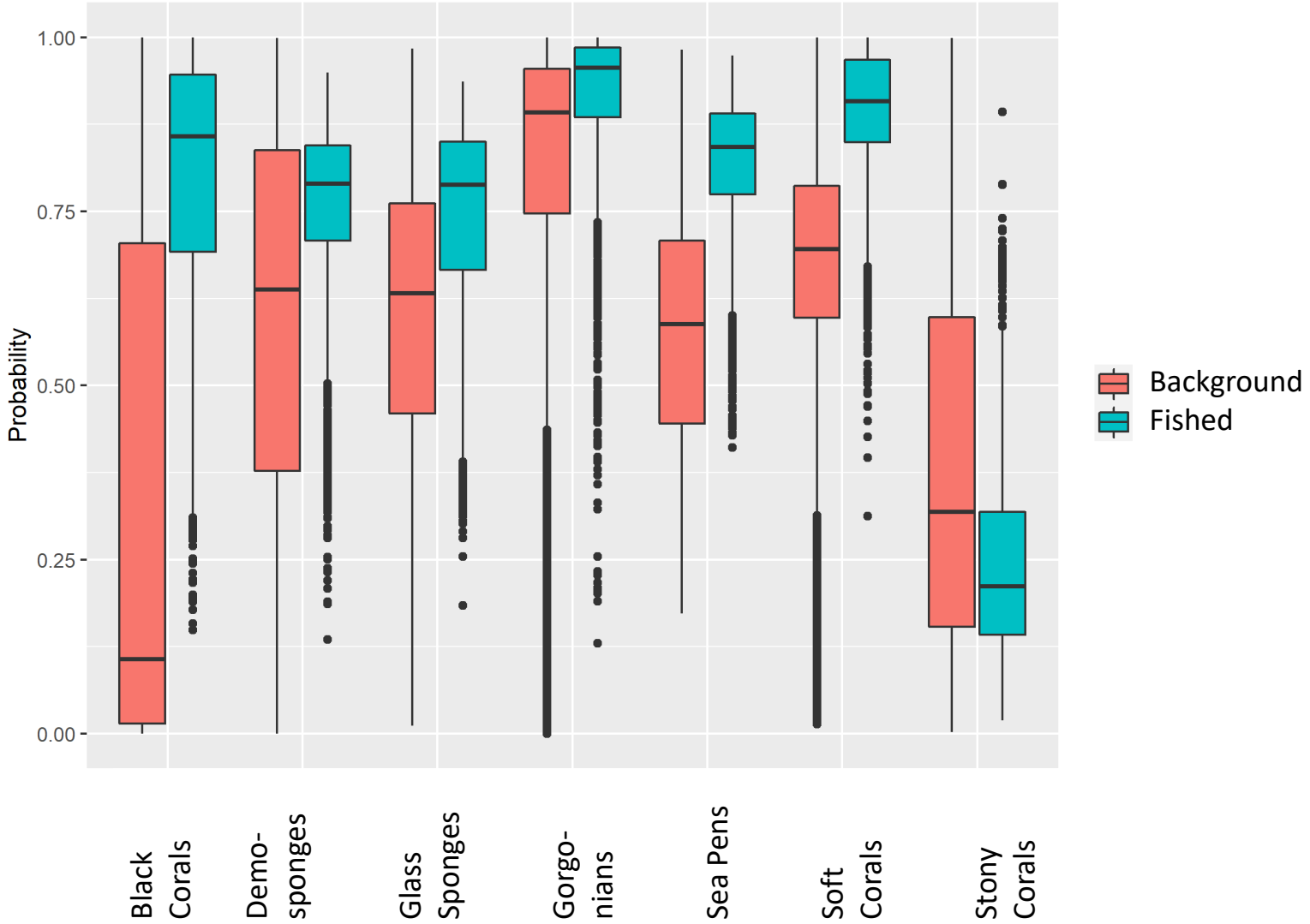
Overlay of fishing footprint on model predictions





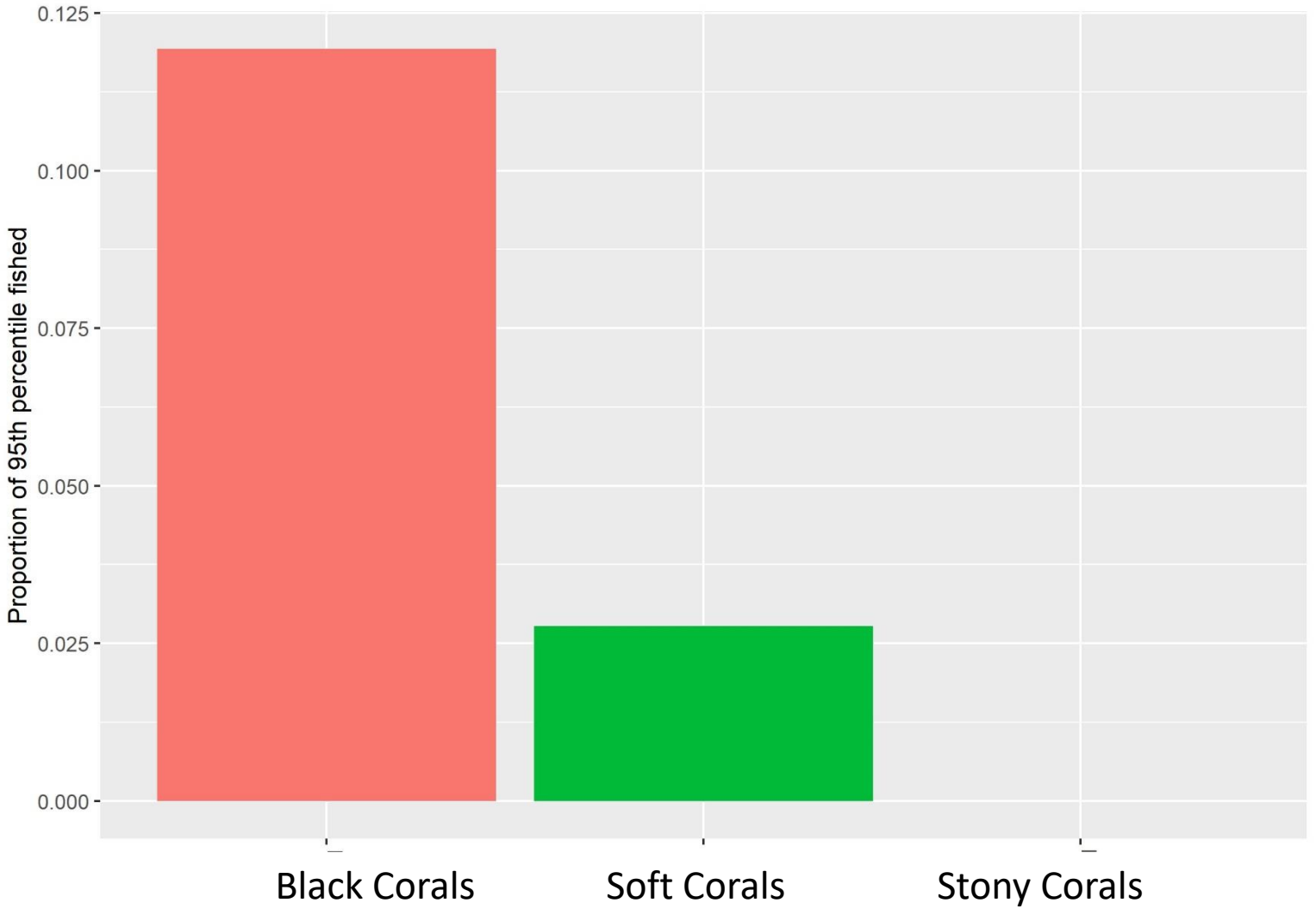
Preliminary Results

In general, fished areas have a higher probability of the presence of suitable habitat for VME taxa than the background probability



Preliminary Results

Of the total area in the upper 95% percentile of VME indicator suitable habitat, >88% is outside of the fishing footprint



Many Caveats

This is work in progress

Our predictive models are not well supported by catch data from seamounts

Other things to consider:

Use of a composite index vs individual VME indicator taxa

Use of fishing effort vs sets with reported Sablefish catches

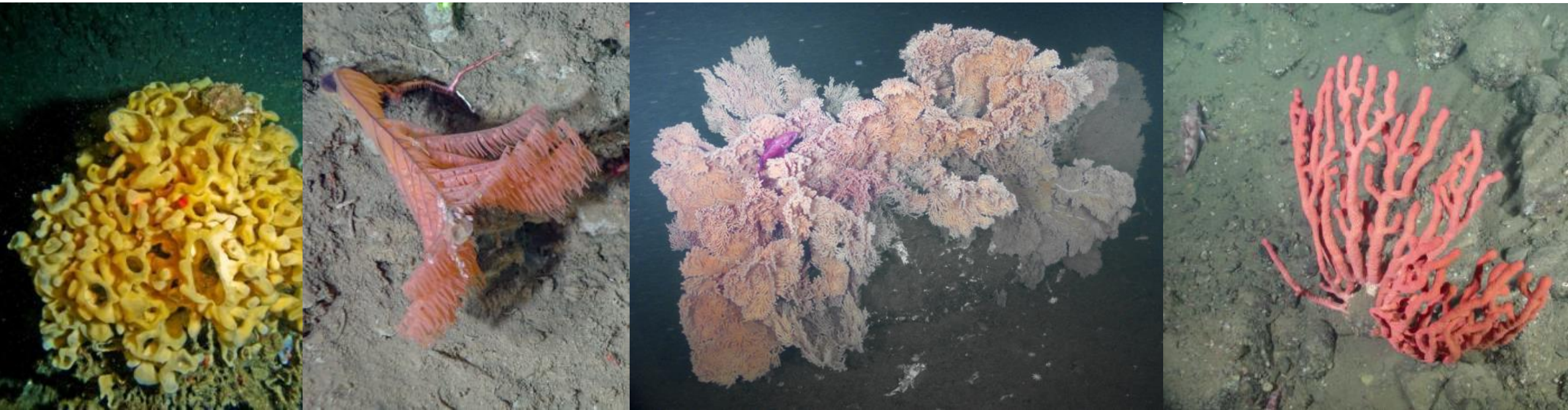
Connectivity

Reproduction

Recolonization / recovery

Recommendation

SSC BFME established a formal SWG to continue developing this approach to identification of SAIs

Thank you

Questions? Comments? Suggestions?