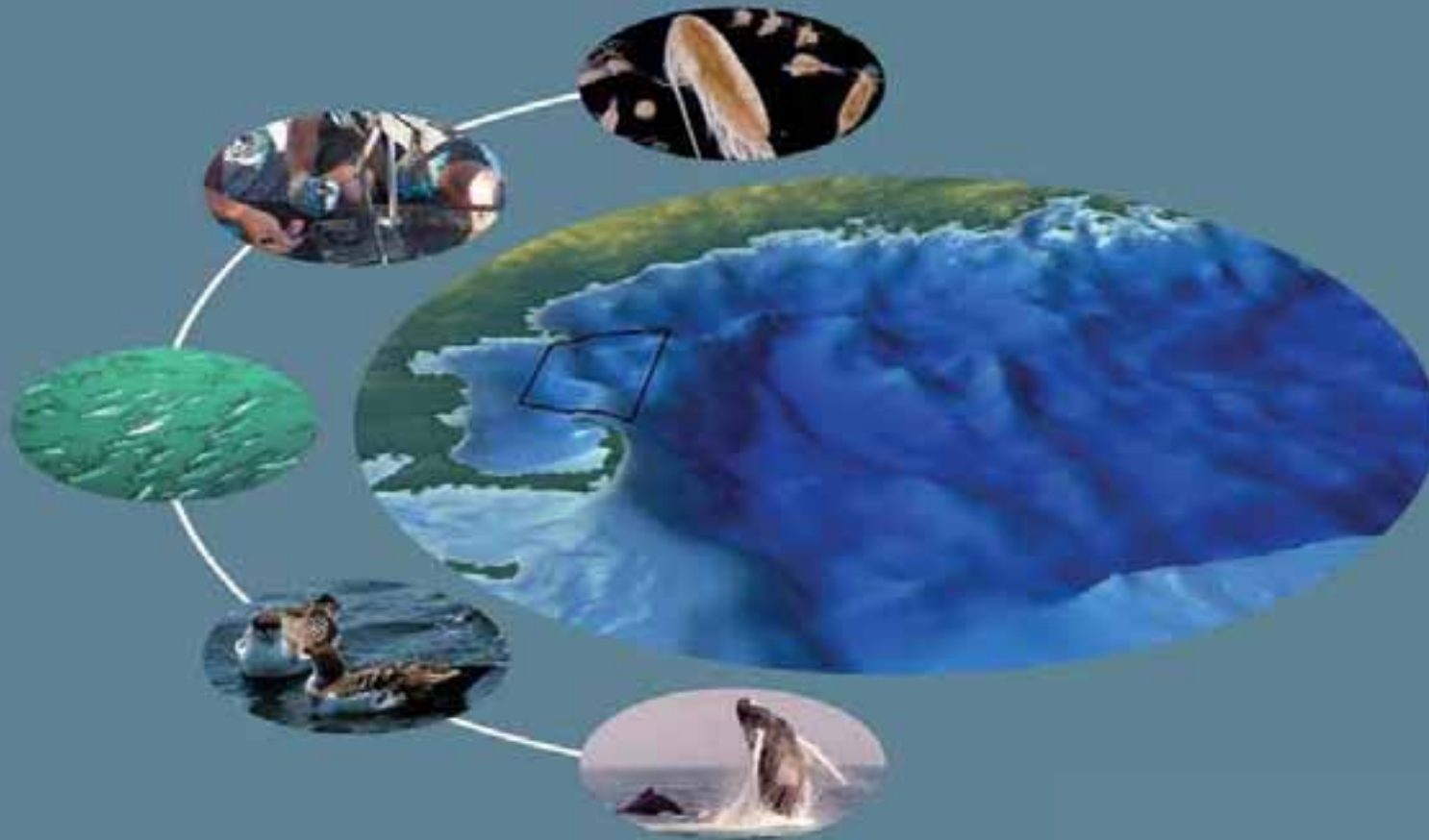


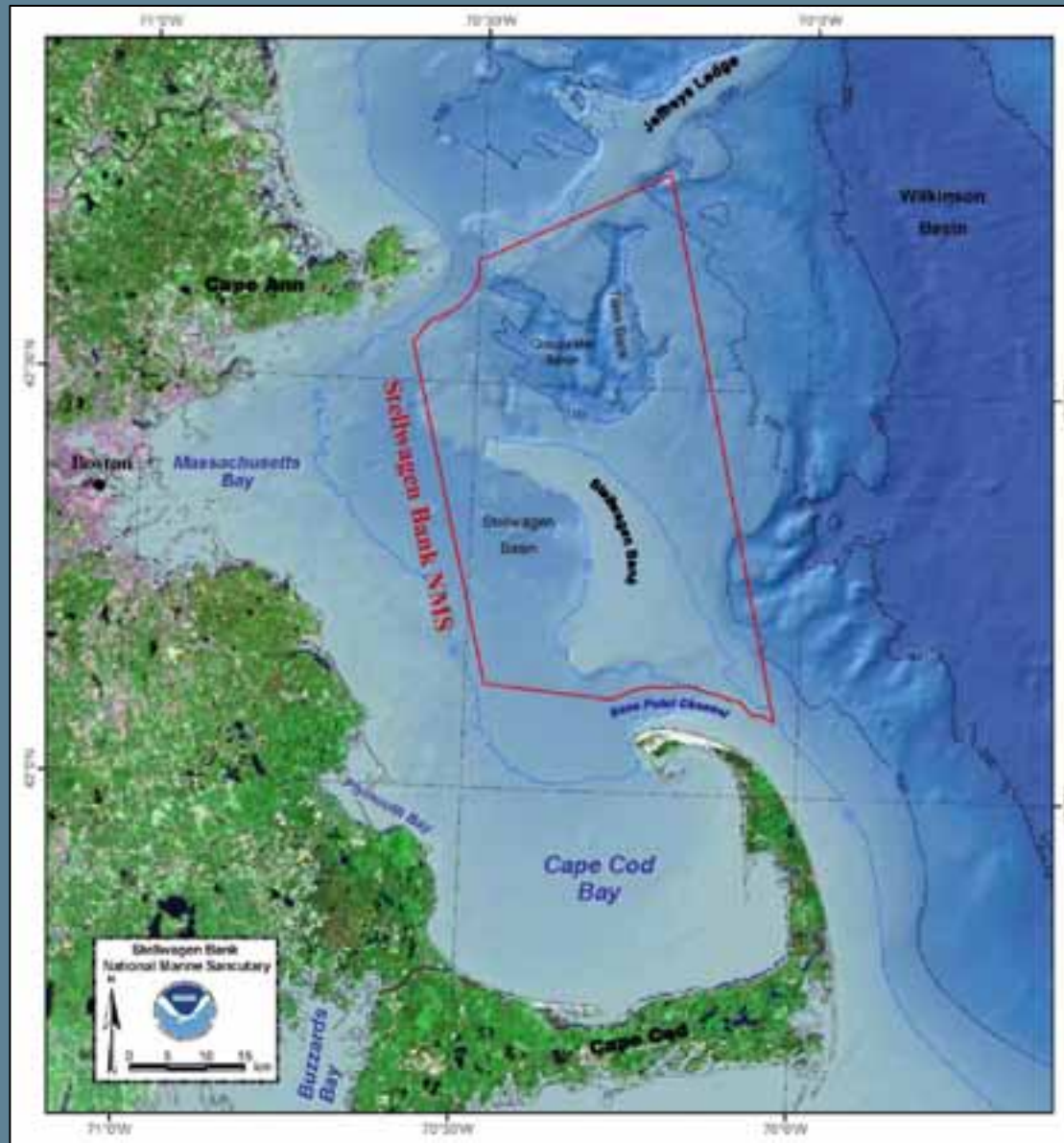
An Ecological Characterization of the Stellwagen Bank National Marine Sanctuary Region



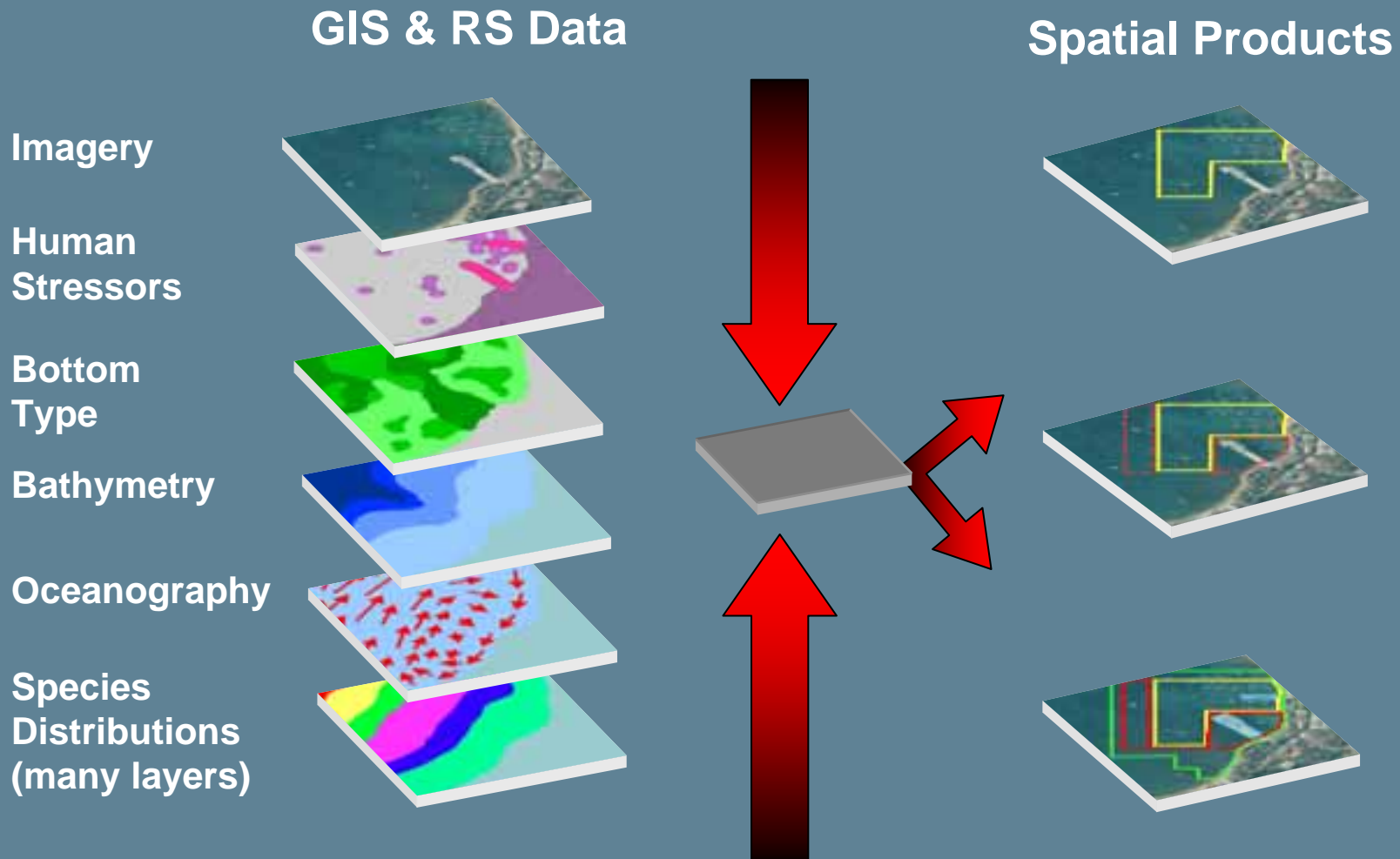
*Bryan Costa, Tim Battista, Simon Pittman, Randy Clark, Falk Huettman,
Kate Eschelbach, Connie Kot & Ian Hartwell
NOAA/NOS/CCMA Biogeography Team*



Introduction: *Gulf of Maine & SBNMS*

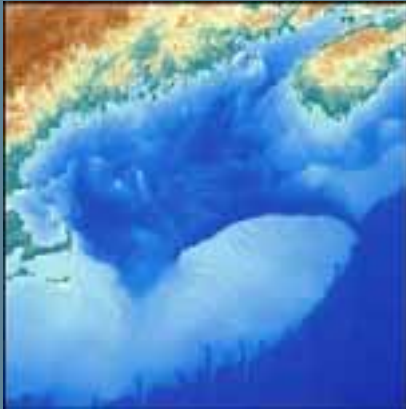


Methods: *Biogeographic Assessments*

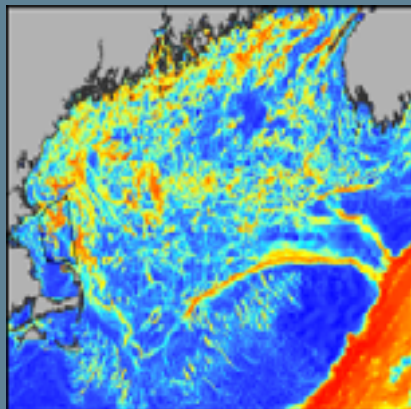


Methods: *Abiotic Spatio-Temporal Data*

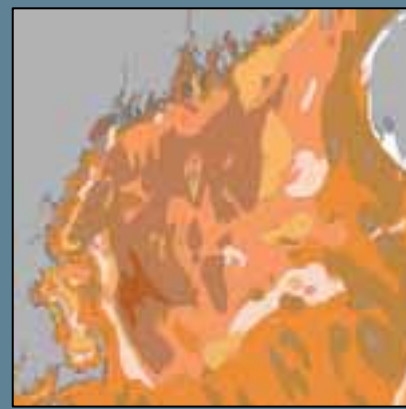
STATIC VARIABLES



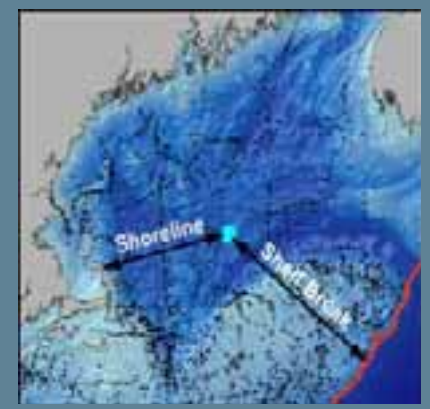
Bathymetry



Slope

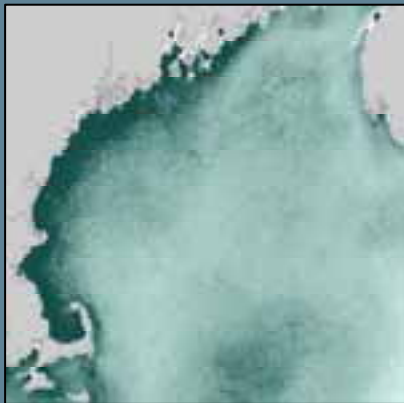


Substrate

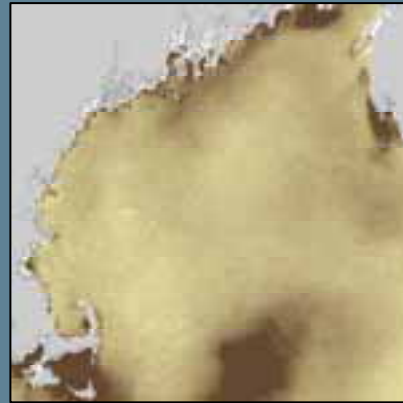


Distance to Features

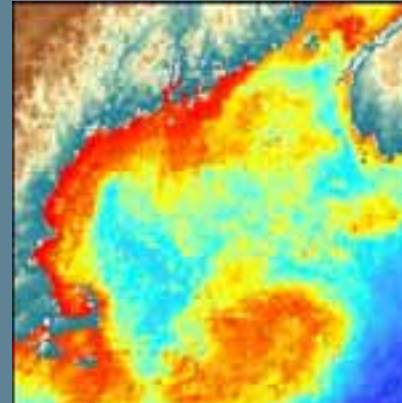
DYNAMIC VARIABLES



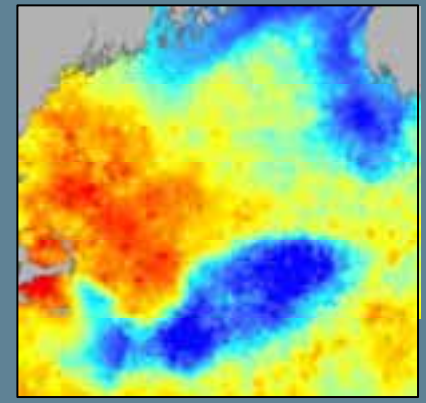
Chlorophyll a



Turbidity



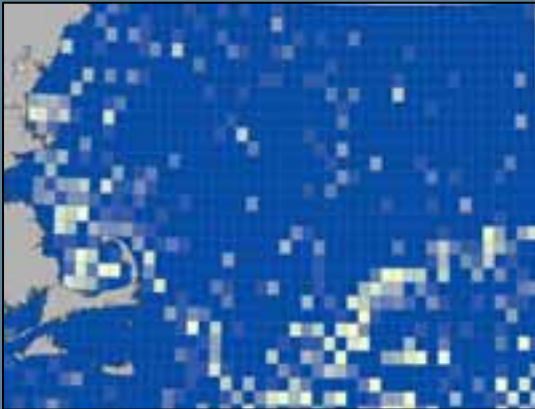
Sea Surface Temp.



Seasonal Water Stratification

Methods: *Biotic Spatio-Temporal Data*

PREY ABUNDANCES



Atlantic Mackerel

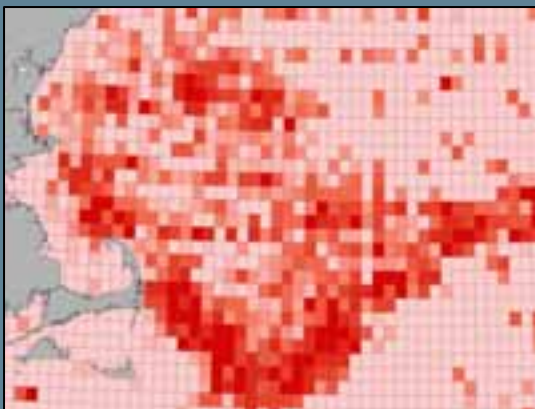


Northern Sand Lance

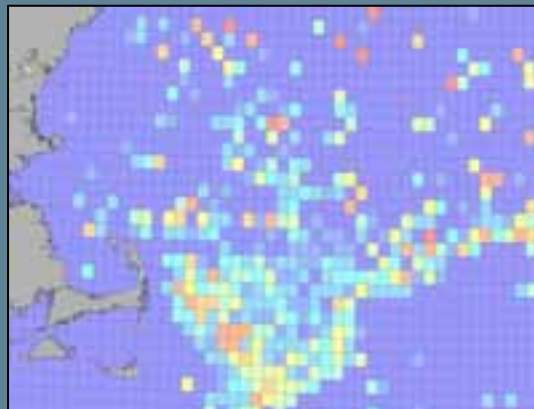


Zooplankton

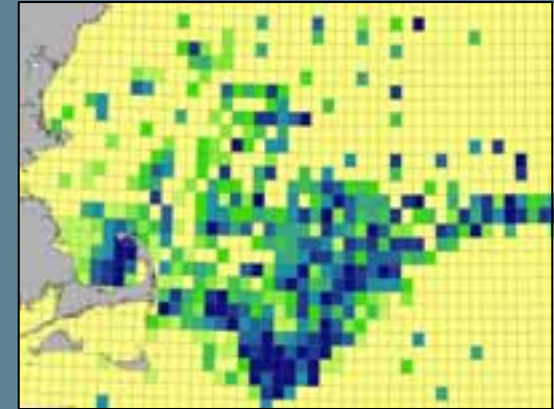
CETACEAN ABUNDANCES



Mysticeti
(Baleen Whales)

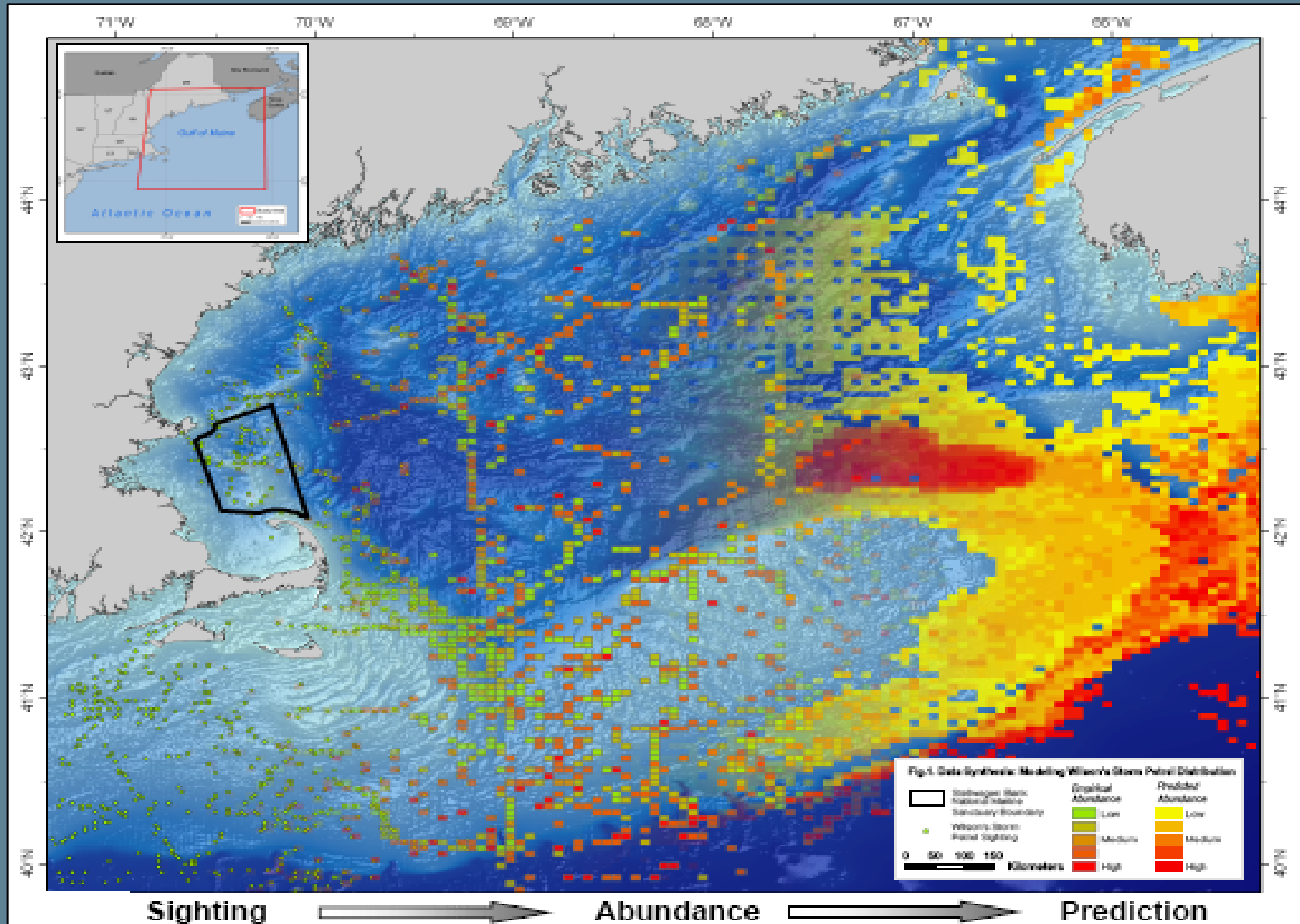


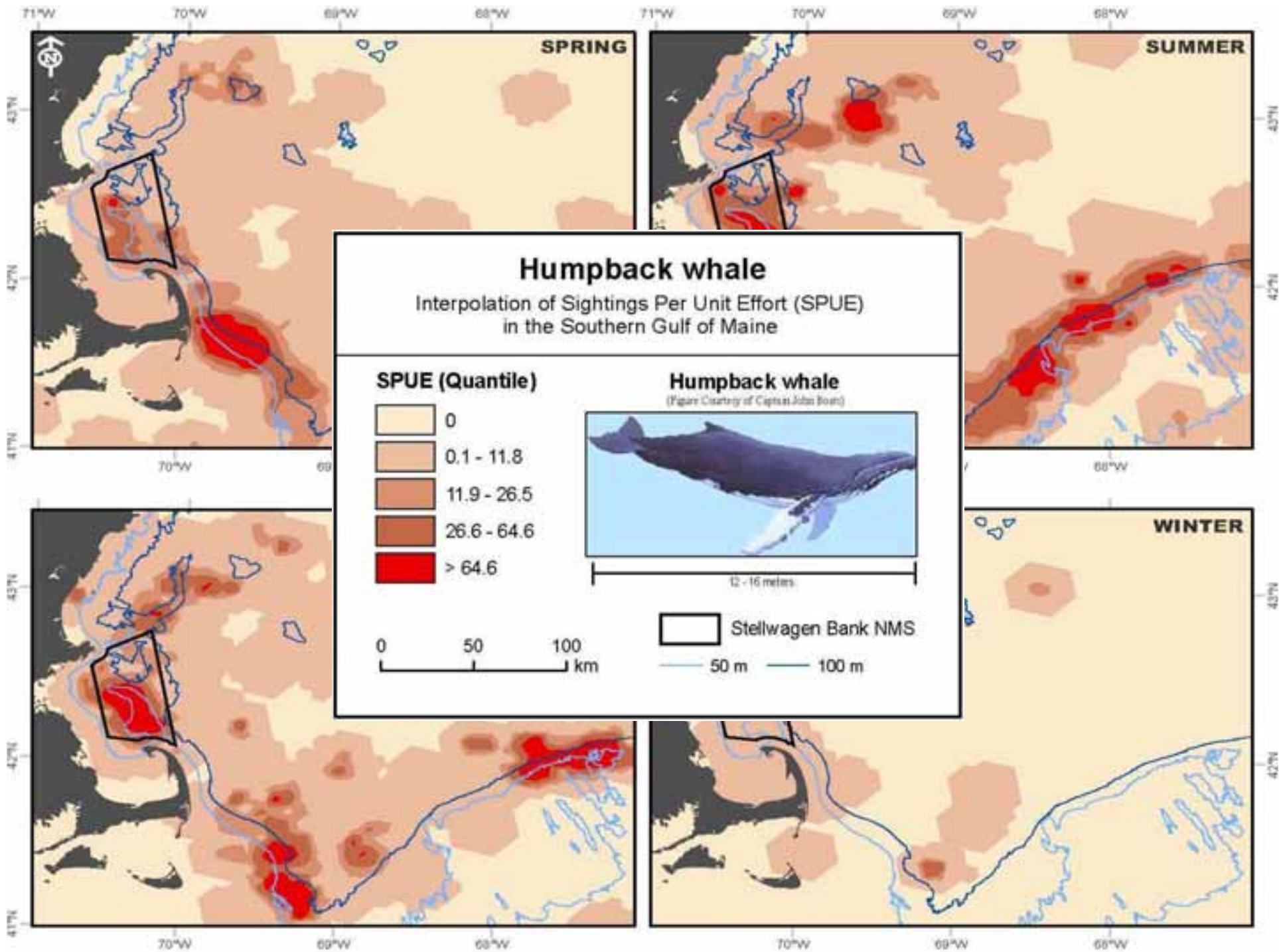
Atlantic White-Sided
Dolphin



Northern Atlantic
Right Whales

Methods: *Data Integration*





MARS Cost of Omission: Humpback Whales

SPRING

Variable	Cost of omission
Distance 100 m isobath	0.218
Distance to shelfbreak	0.149
Distance to shore	0.144
Mean depth	0.124
Fish abundance (all species)	0.117
Chlorophyll <i>a</i> concentration	0.116

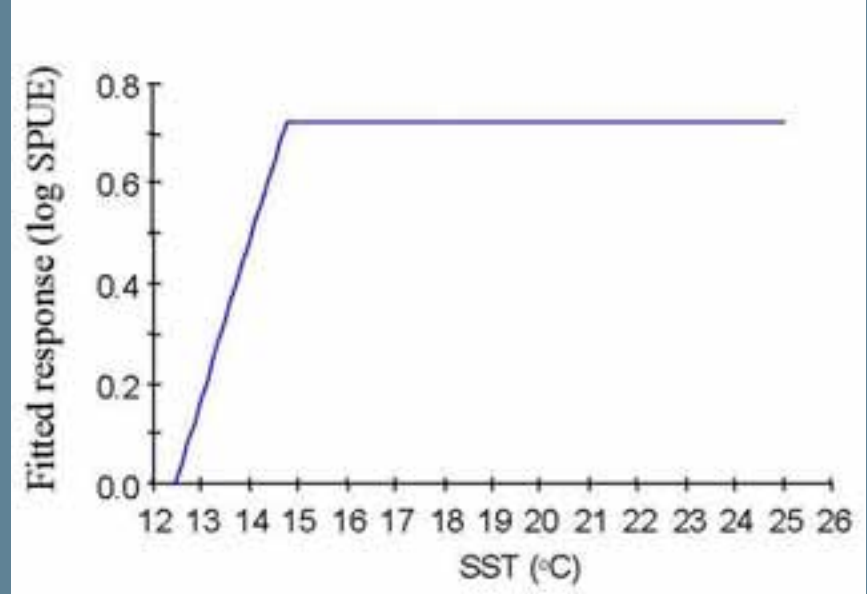
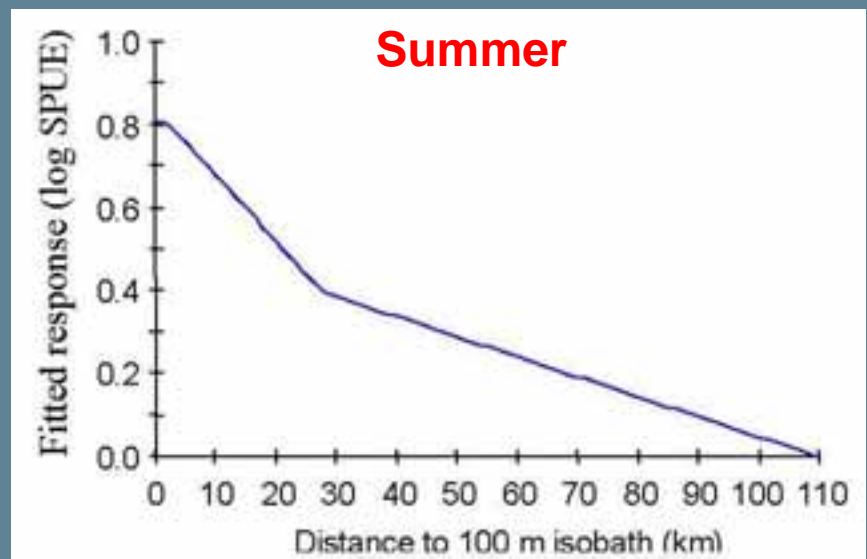
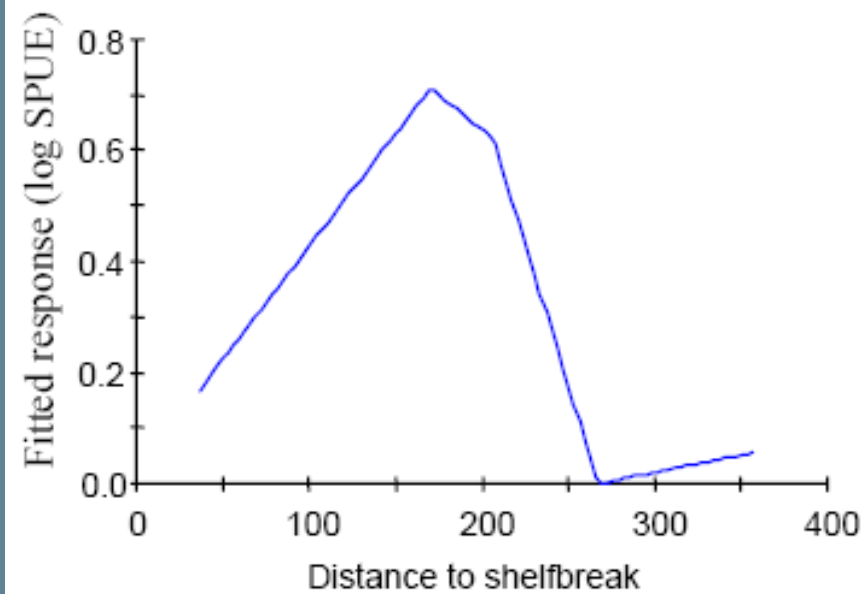
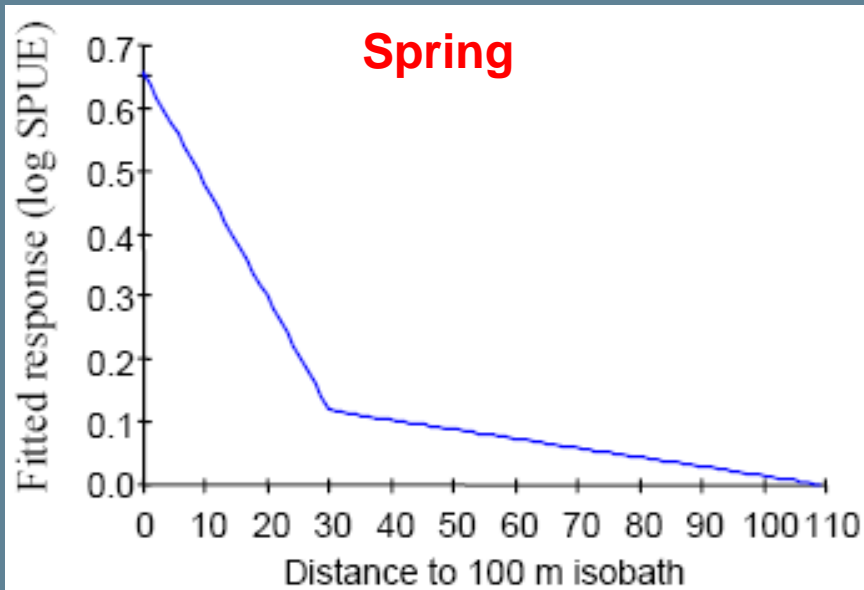
Increasingly Influential

SUMMER

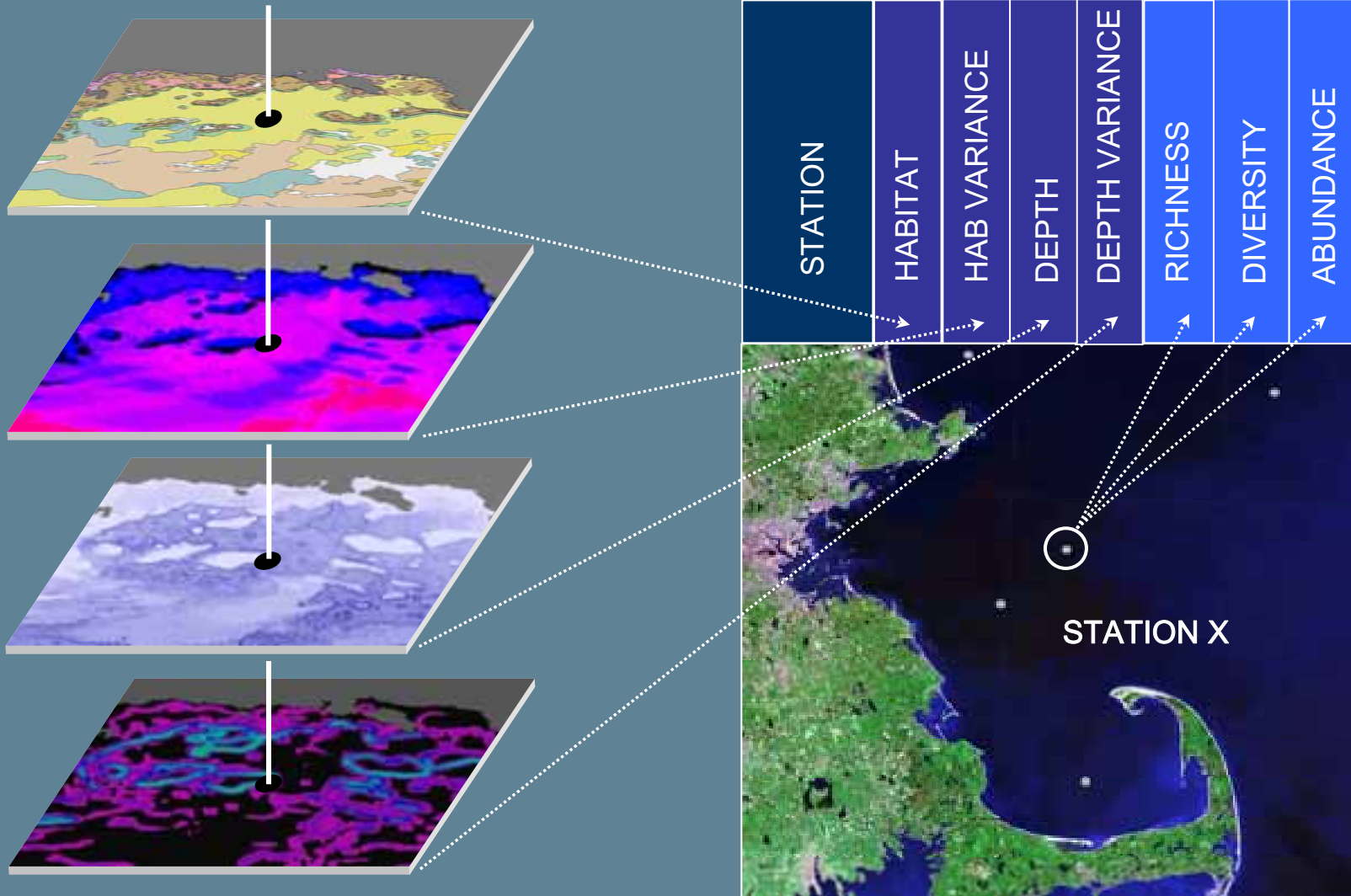
Variable	Cost of omission
Distance 100 m isobath	0.414
Sea surface temperature	0.195
Distance to shelfbreak	0.191
Mean stratification	0.189
Distance to shore	0.181
<i>C. finmarchicus</i> abundance	0.179
Mean depth	0.179

Increasingly Influential

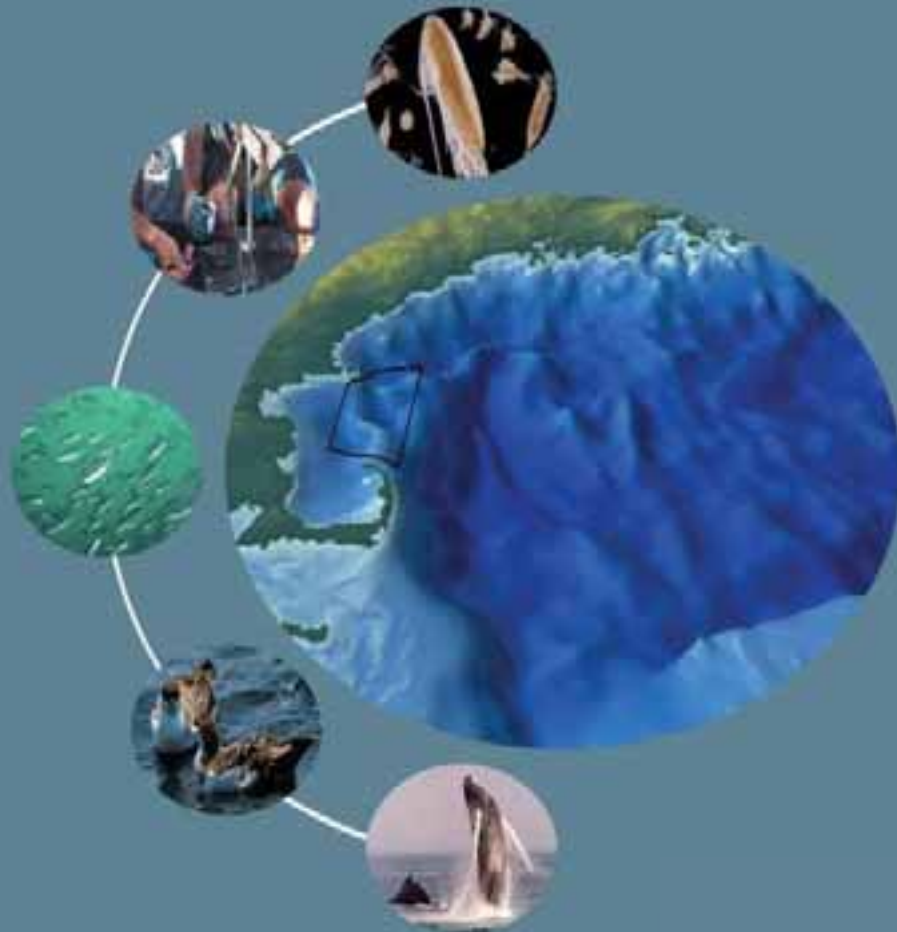
Results: *Humpback Whale*



Conclusion: *Models for Decision Support*



Understanding species' habitat relationships to develop management tools



Acknowledgements: National Marine Sanctuaries Program



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For the full report, please navigate to:

<http://ccma.nos.noaa.gov/products/biogeography/stellwagen/welcome.html>