

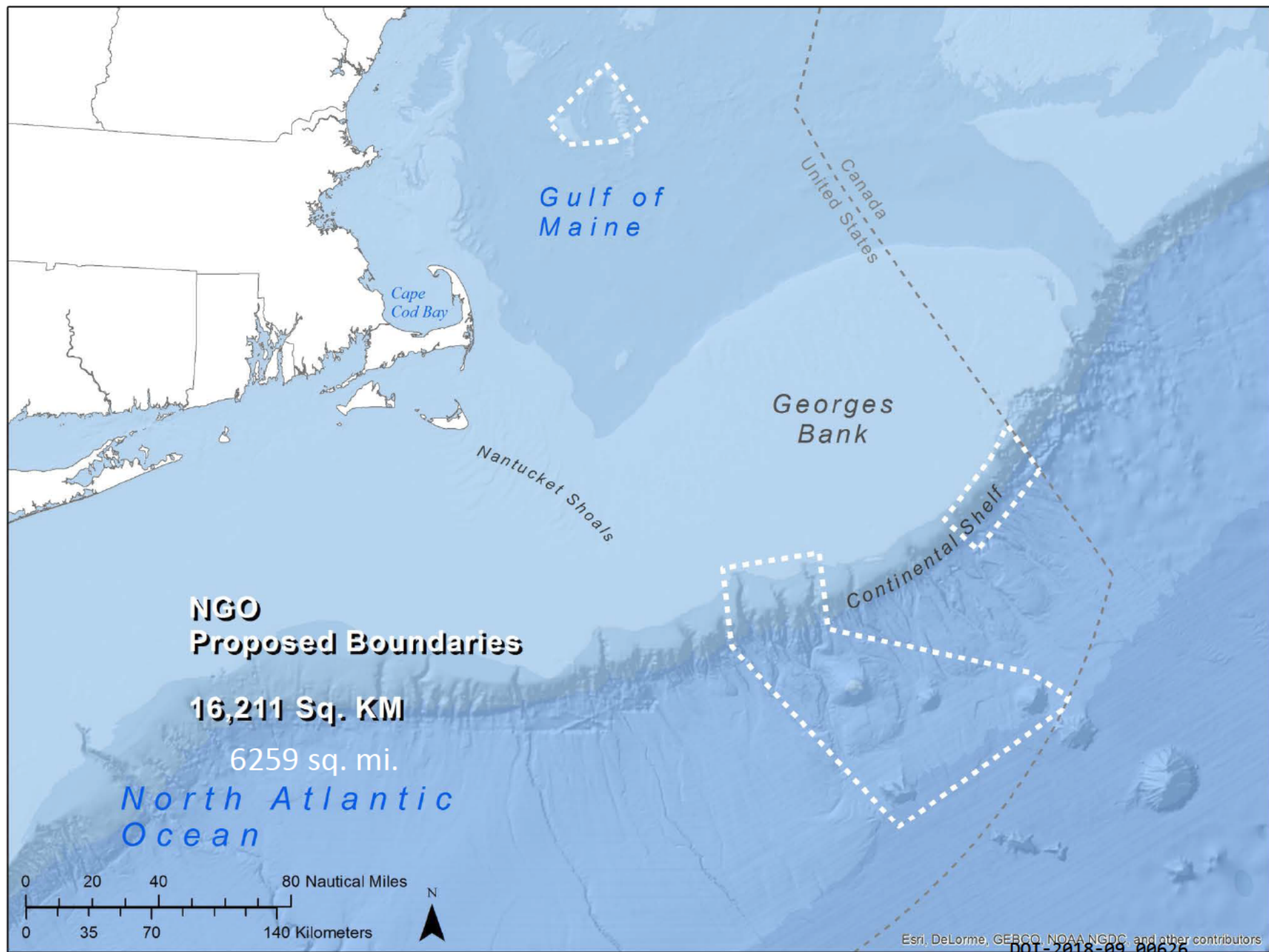
From: Bowman, Randal
To: [Downey Magallanes](#)
Subject: Charts from NE Seamounts briefing
Date: Monday, July 10, 2017 8:55:51 AM
Attachments: [Secretary Zinke Briefing Kraus \(1\).pdf](#)

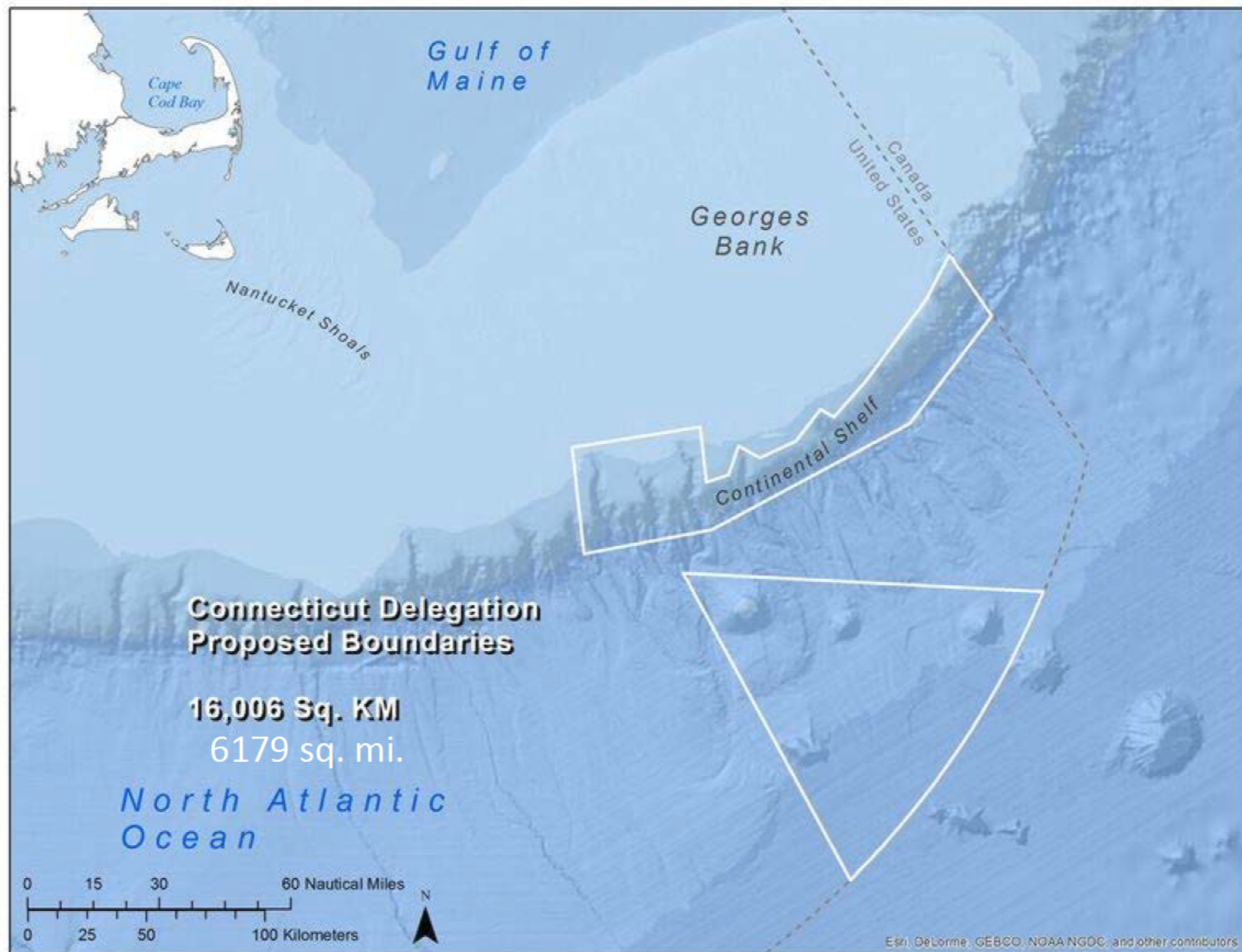
Here is a copy of the briefing with several charts. When you have a chance let me know which one(s) you are interested in and I'll have FWS pull them out and blown up. I presume it is page 17, or possibly 19, or both, but wanted to check so as not to ask them to do it twice.

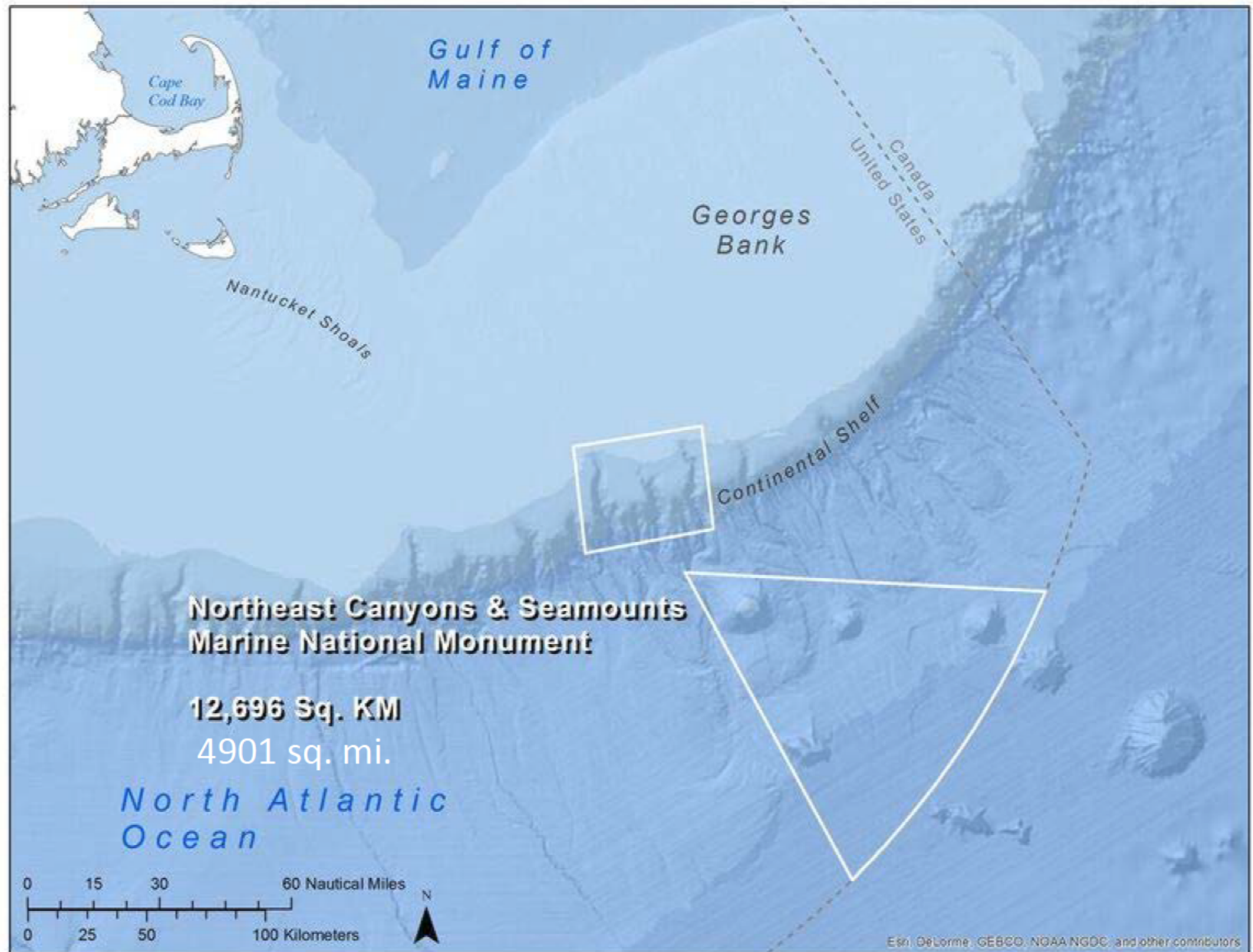
The Northeast Canyons and Seamounts Marine National Monument

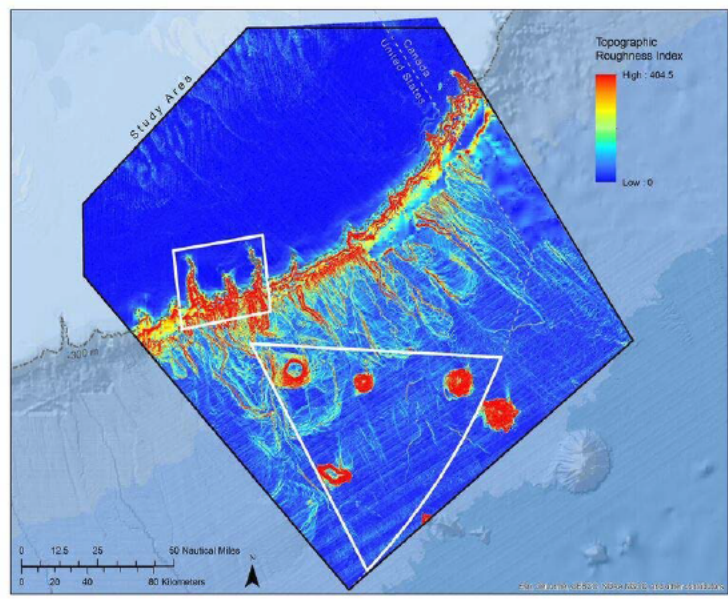
Scott Kraus and Peter Auster



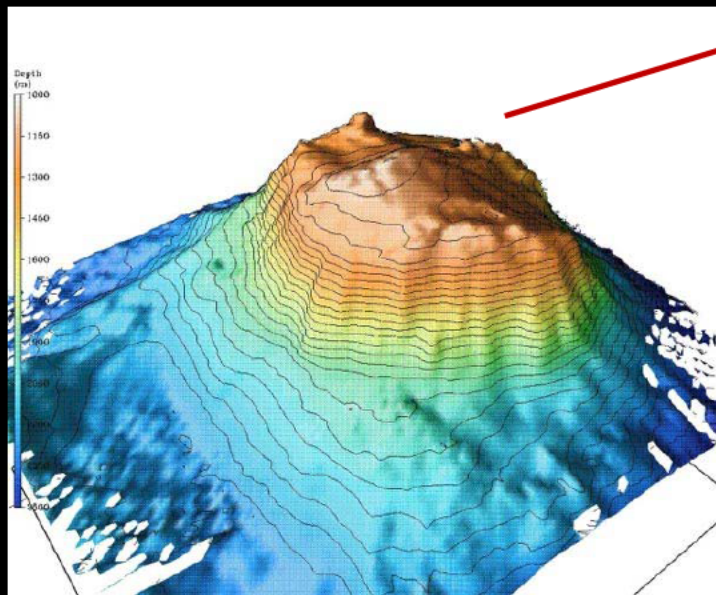




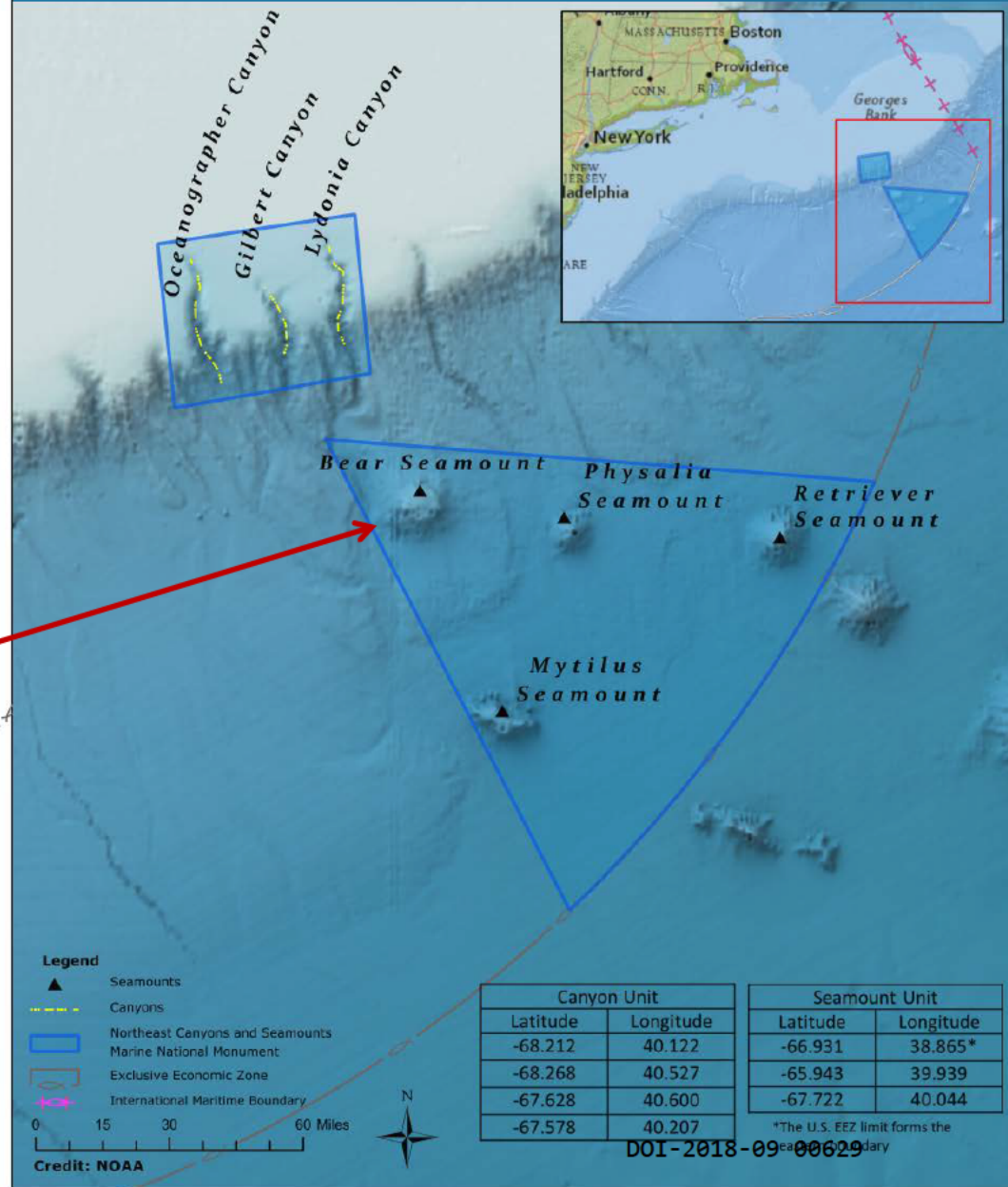




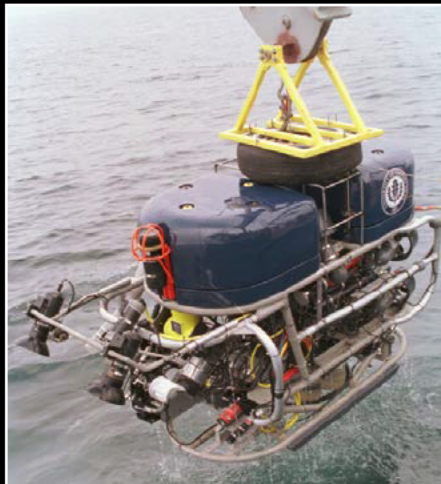
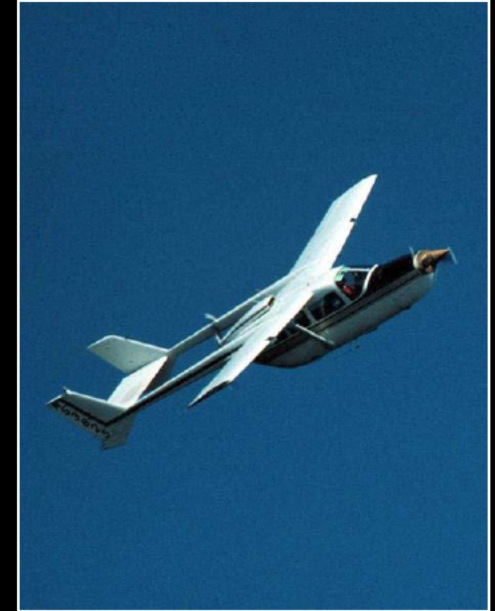
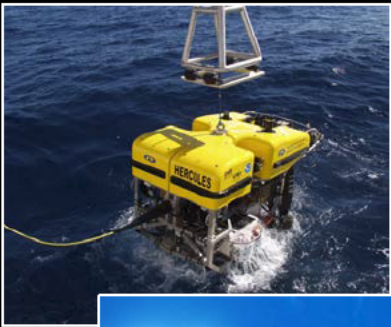
- ~4,900 square miles
- Ca 1% of U.S Atlantic EEZ
- Depths range from 1000ft to 14,000ft

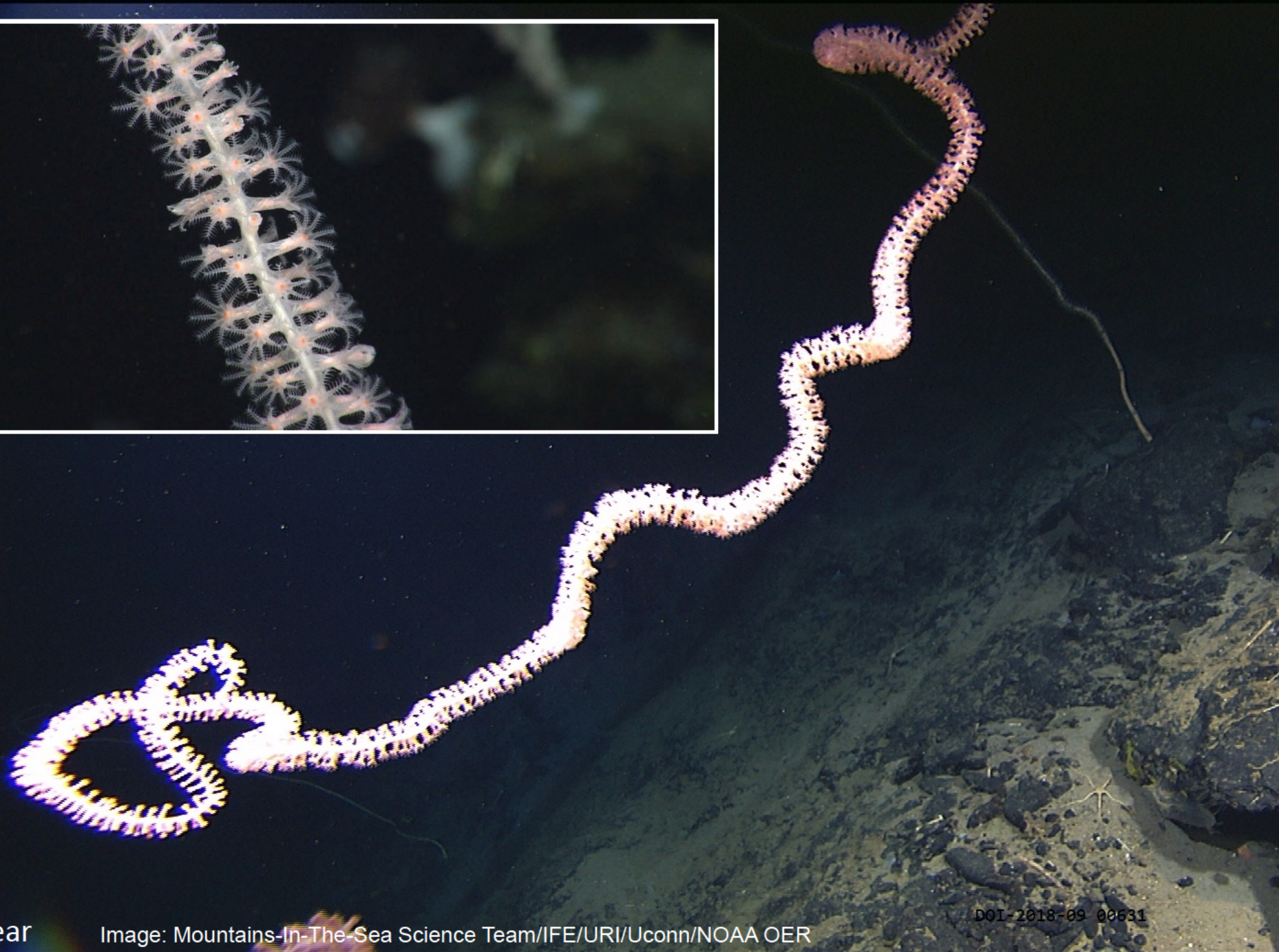


Northeast Canyons and Seamounts Marine National Monument



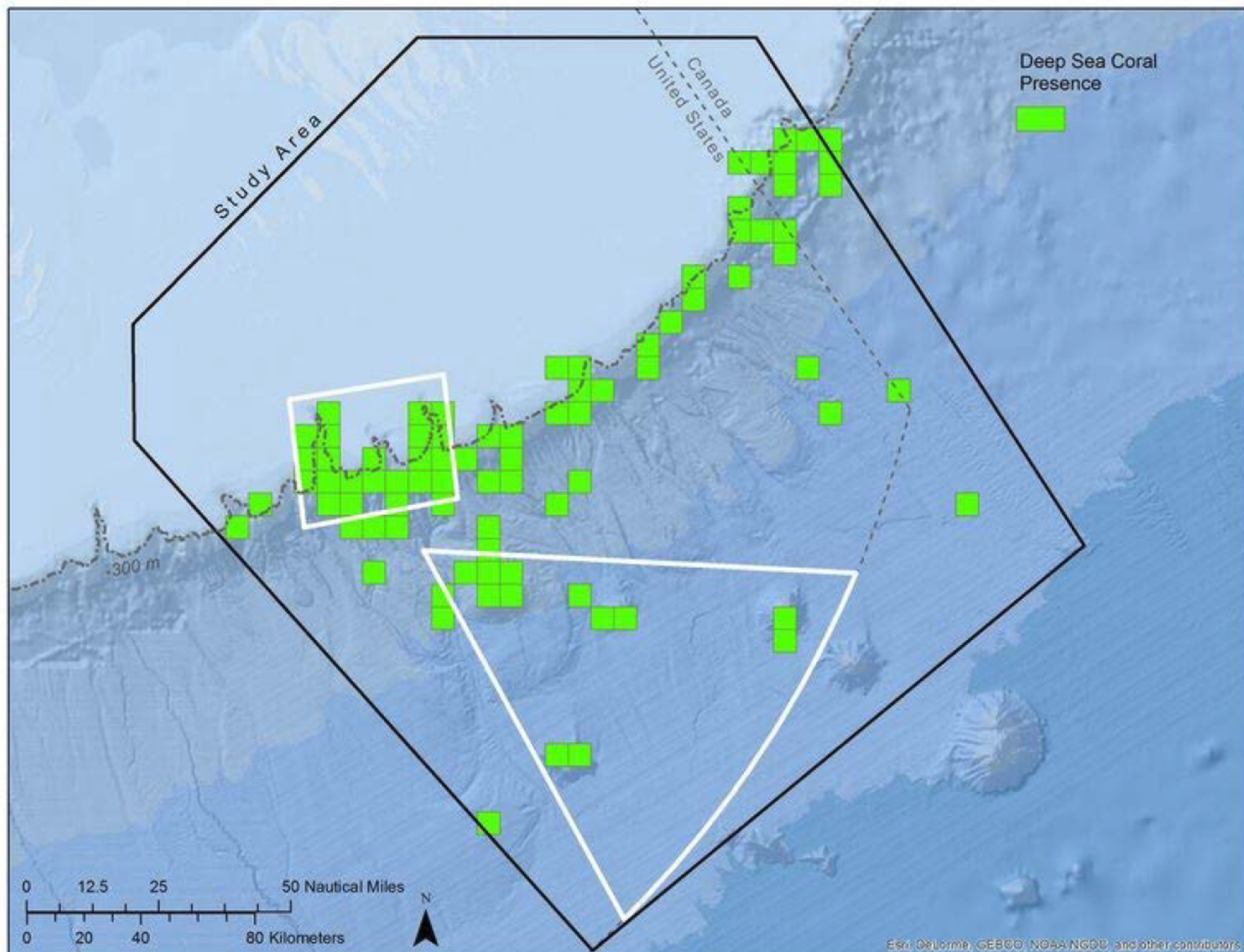
Tools for research, opportunities for public/private partnerships and engagement





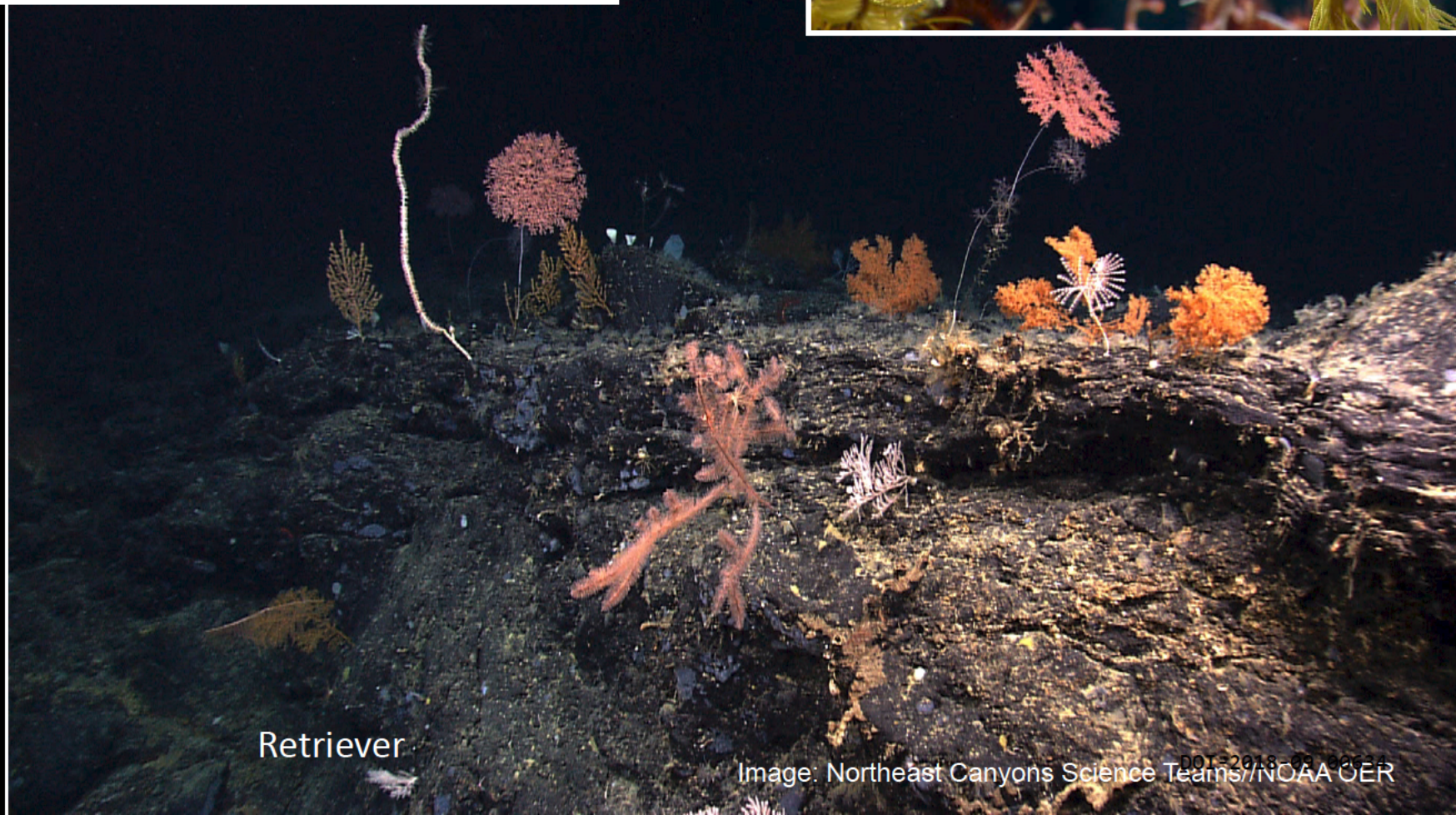
DOI-2018-09 00631





Esri, DeLorme, GEBCO, NOAA/NGDC, and other contributors

DOI-2018-09 00633

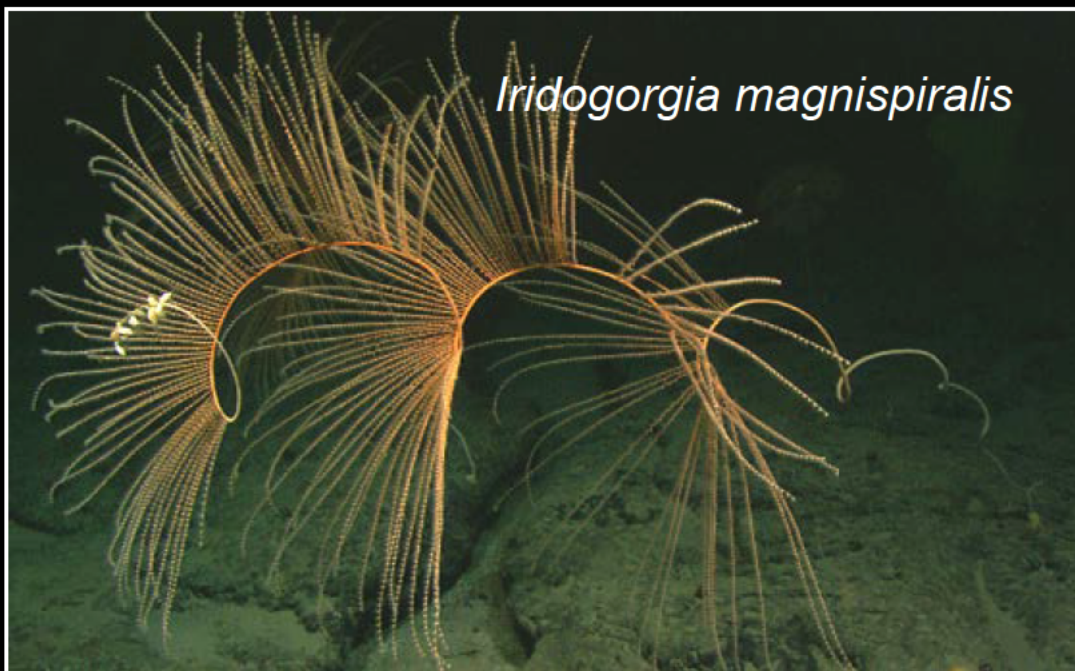


Retriever

Image: Northeast Canyons Science Teams/NOAA OER



New Species of Deep-Sea Octocorals



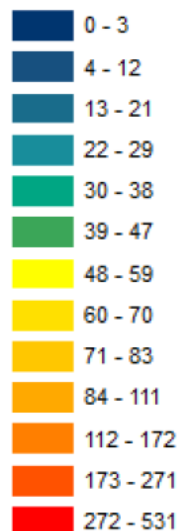
Deep Atlantic Stepping
Stones Science Team
/NOAA/IFE/URI

Deep-Sea Corals Provide Essential Fish Habitat



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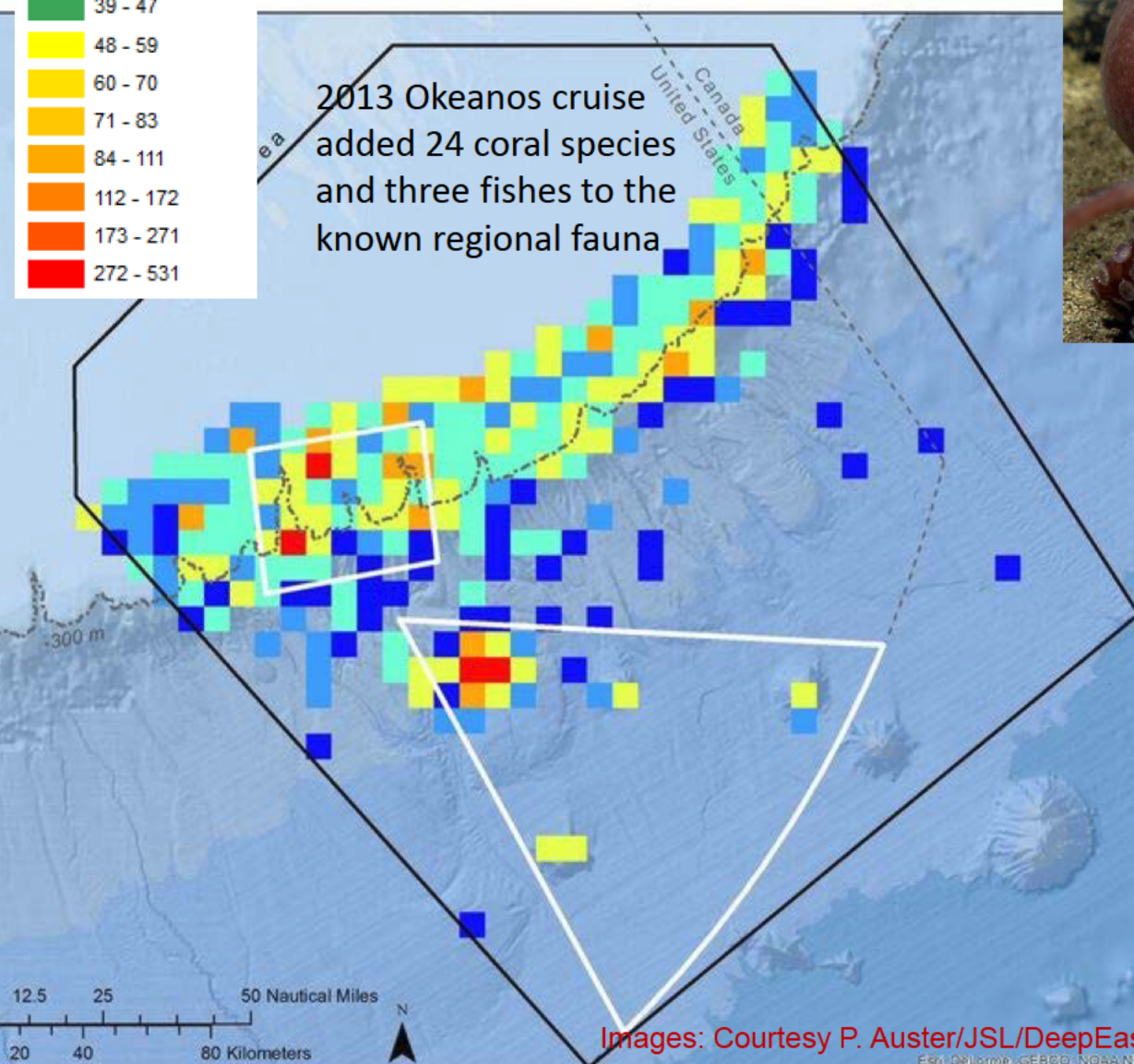
Species Richness



Species rich region - Minimum 73 putative coral taxa from aggregate data sets with 615 coral occurrences in study area. Likely more to come!

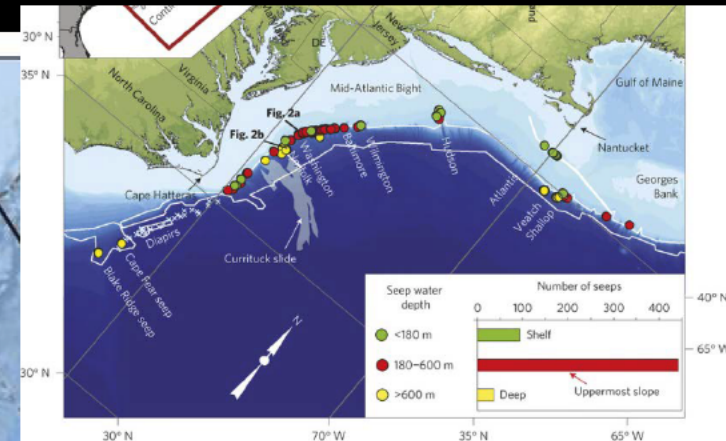
Benthic Species Richness Canyons & Seamounts

2013 Okeanos cruise added 24 coral species and three fishes to the known regional fauna

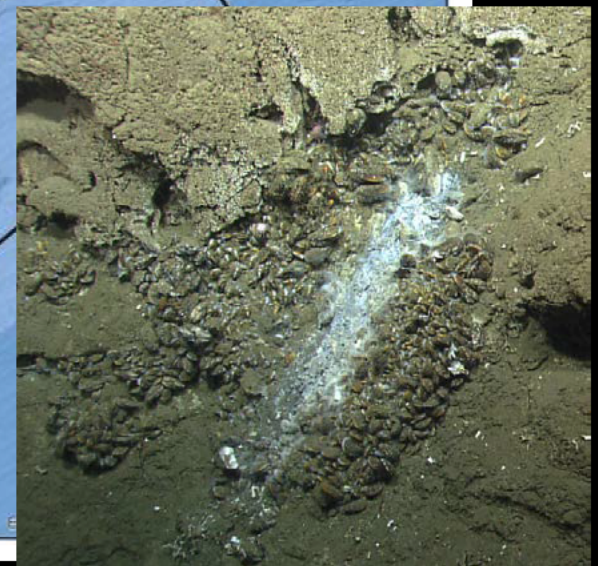


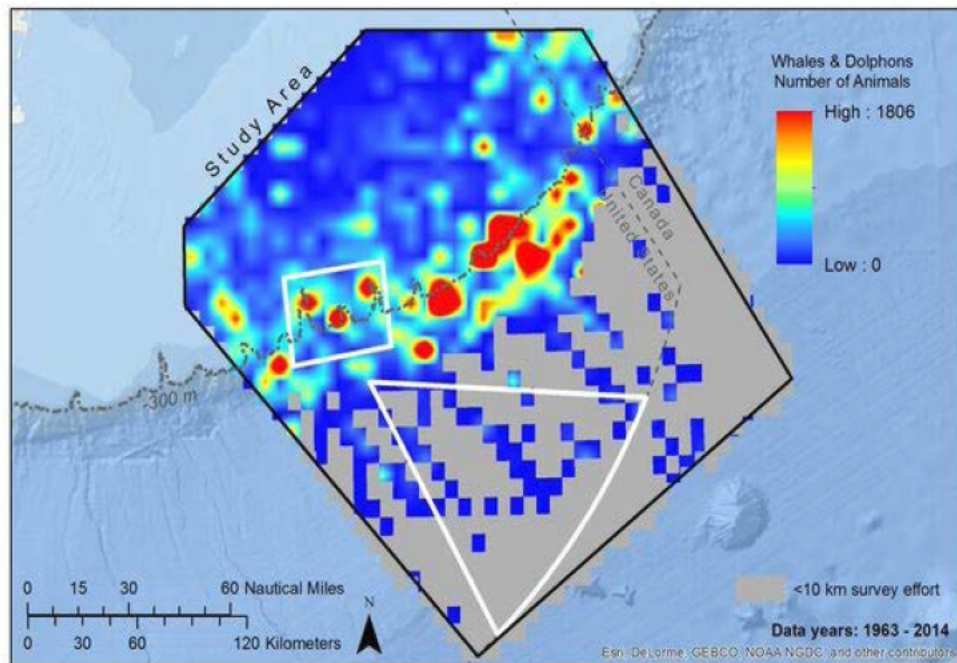
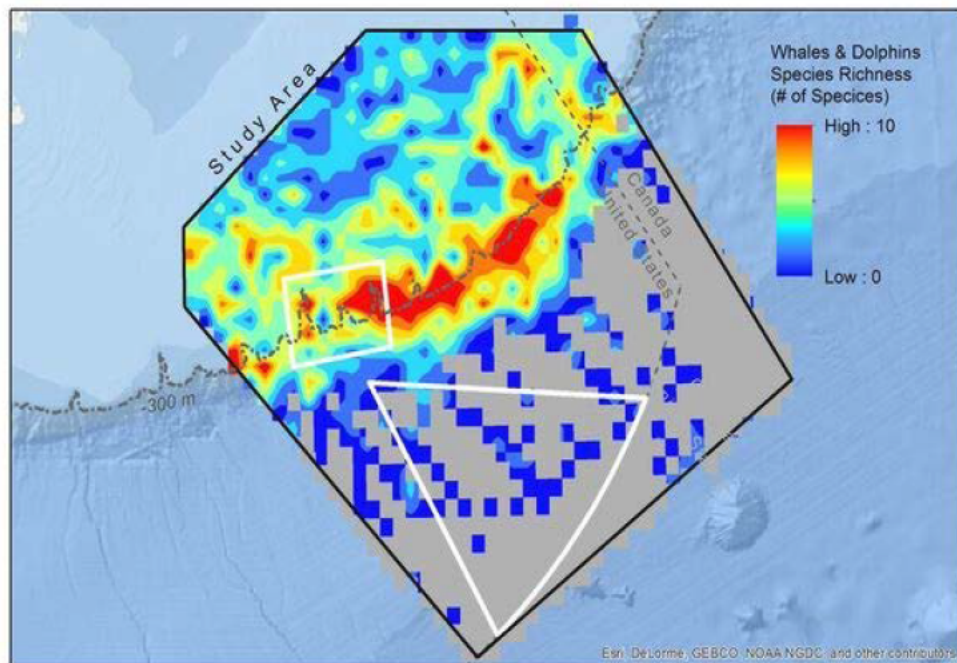
Images: Courtesy P. Auster/JSL/DeepEast & MITS Science Team/Alvin/WHOI/FE/NOAA

Cold seeps & chemosynthetic communities



Skarke et al. 2014. Nature Geoscience (9): 657–661.



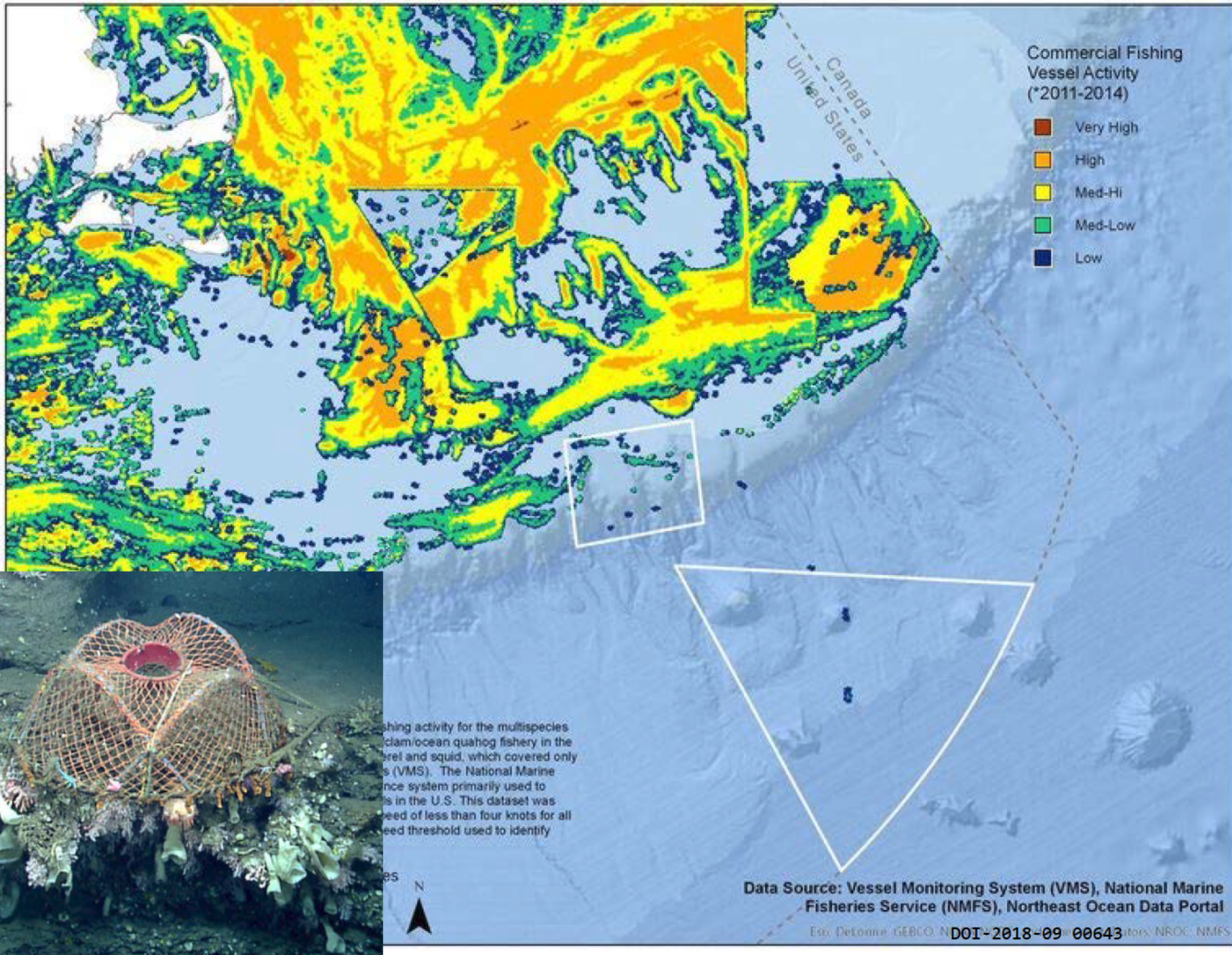


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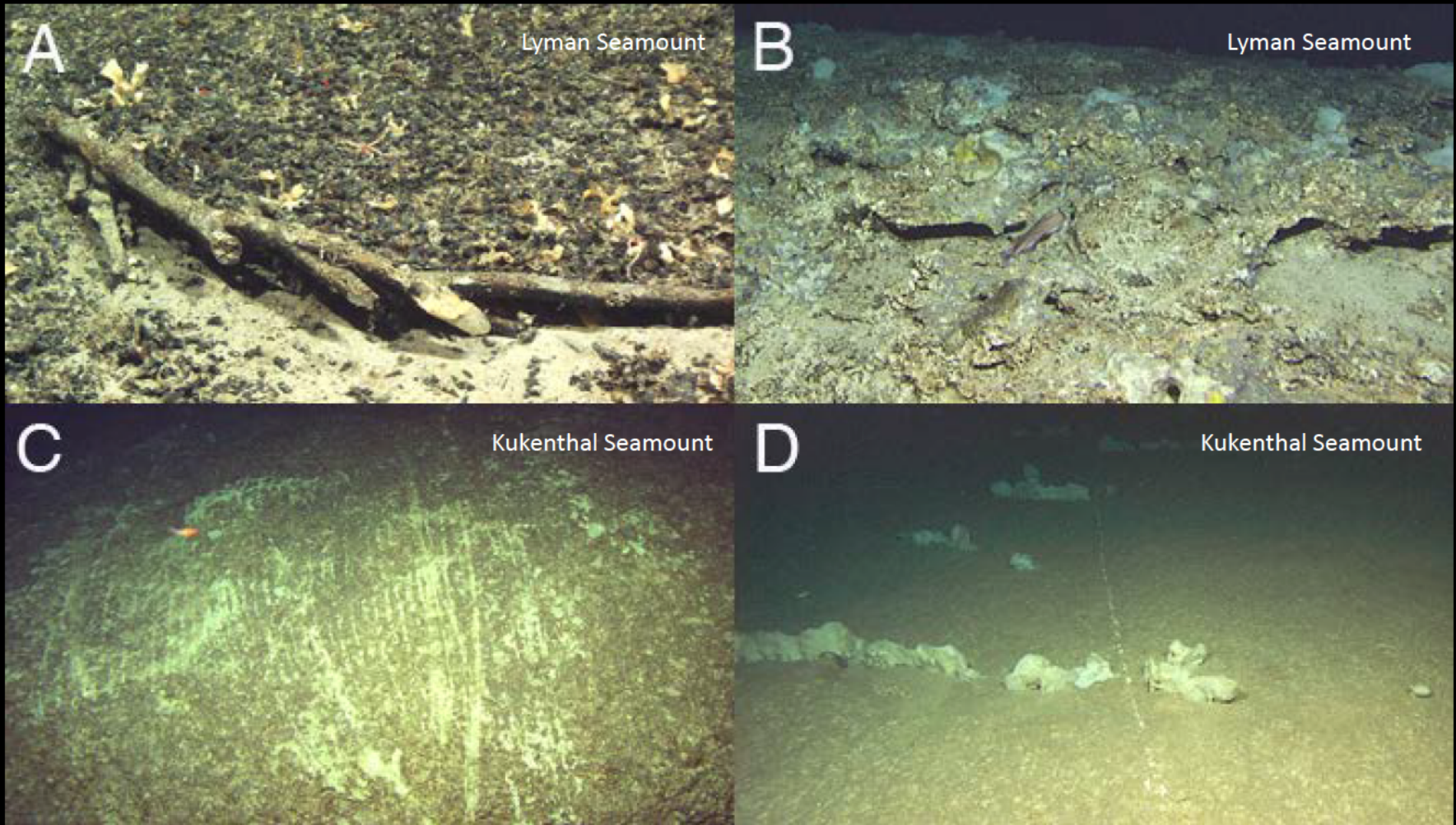




All Photos New England Aquarium



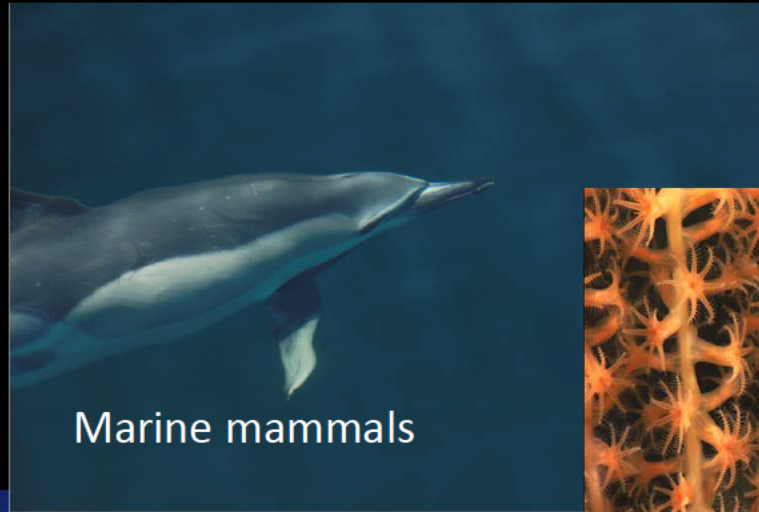
Fisheries-related habitat damage on North Atlantic Seamounts



- Russian bottom trawling activities from 1976-1996 (19,780 tons of fish; no invertebrate records)

Characteristics of the Monument Area

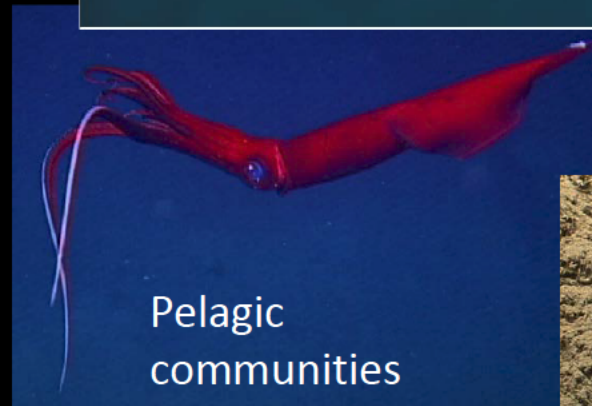
- High landscape & habitat diversity
- High species richness
- High animal abundance
- Long recovery times if damaged (Low ecological resilience)
- Relatively undisturbed ecosystems
- Exemplars of Atlantic ocean wildlife habitats



Marine mammals



Deep sea corals



Pelagic communities



Chemosynthetic communities



Rare-unique species, habitats and communities