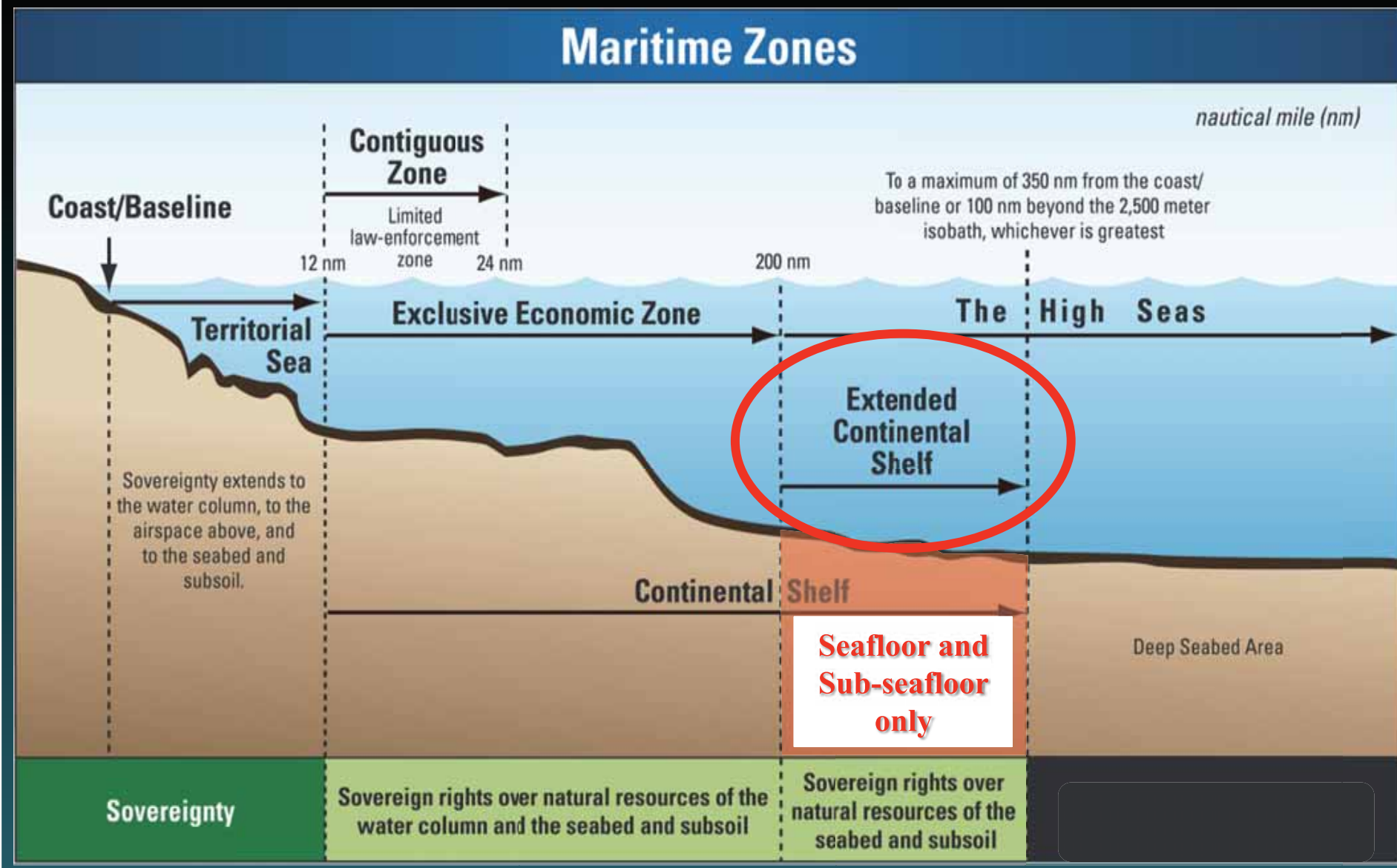


USGS Update



Why are we doing this work?

(1) To identify the U.S. Extended Continental Shelf



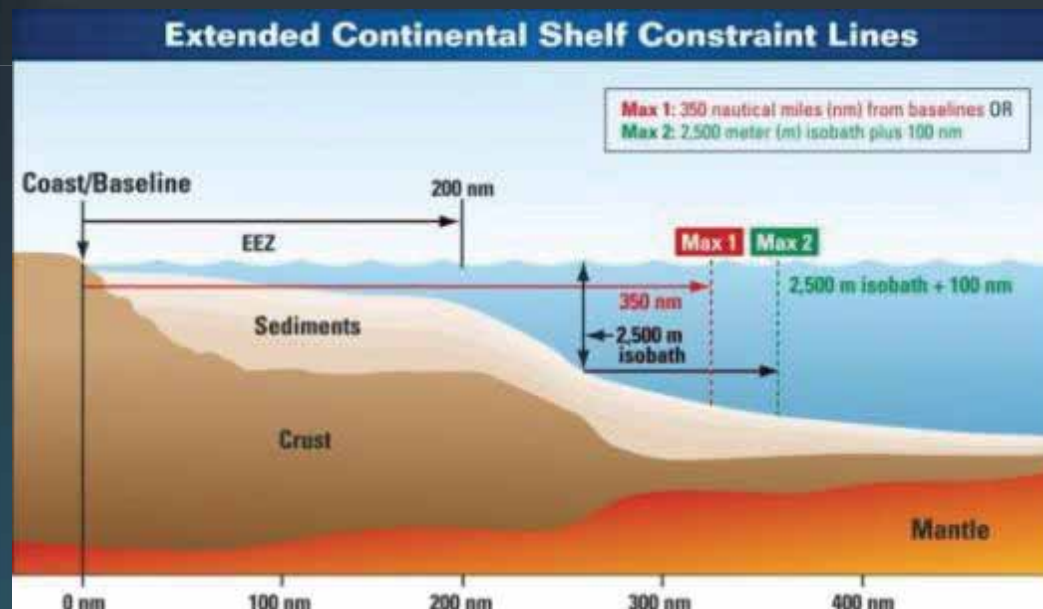
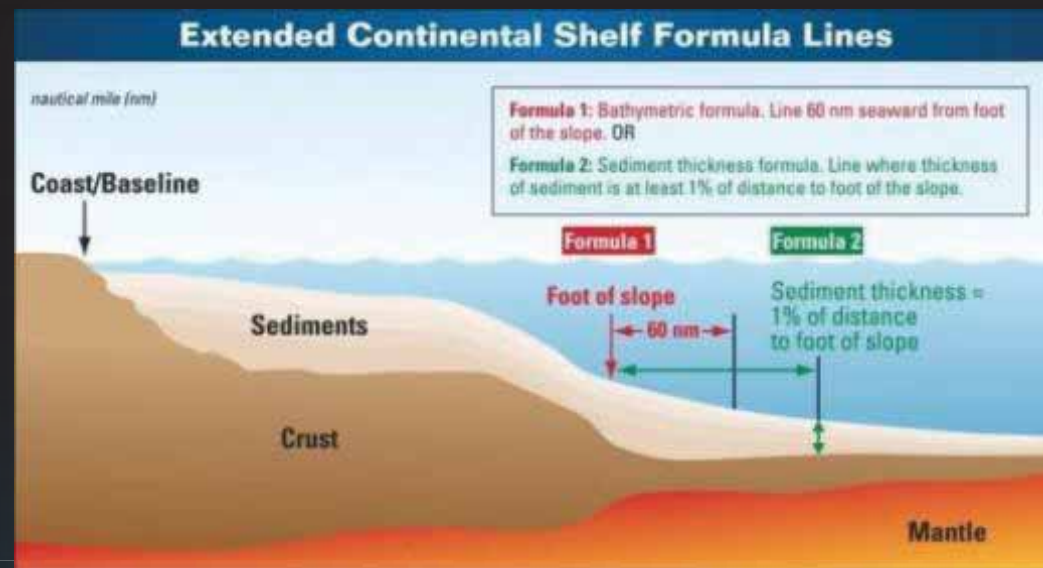
How is the extent of an ECS determined?

Two formula lines

- One based entirely on morphology of sea floor
- Another based on morphology of sea floor and thickness of sediments
- Can use either one

Two constraint lines

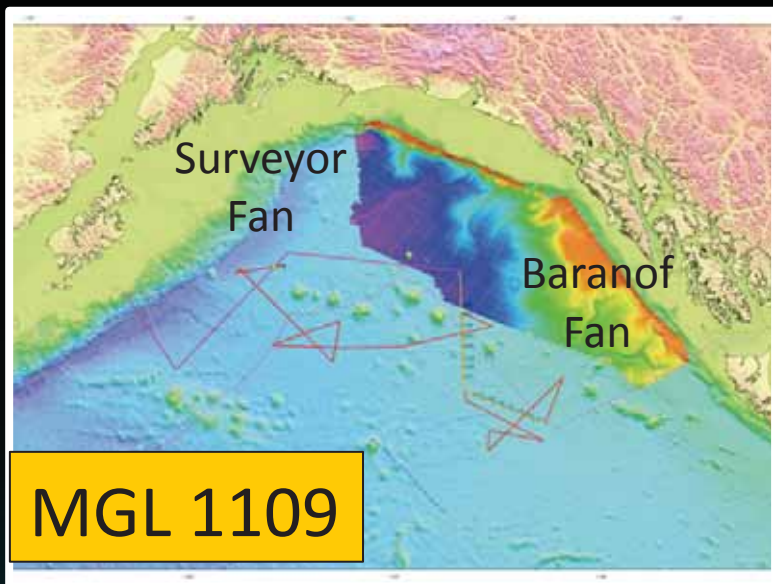
- One is 350 nautical miles from coast (baselines)
- Another is based on finding the 2,500 meter contour and adding 100 nautical miles
- Can use either one



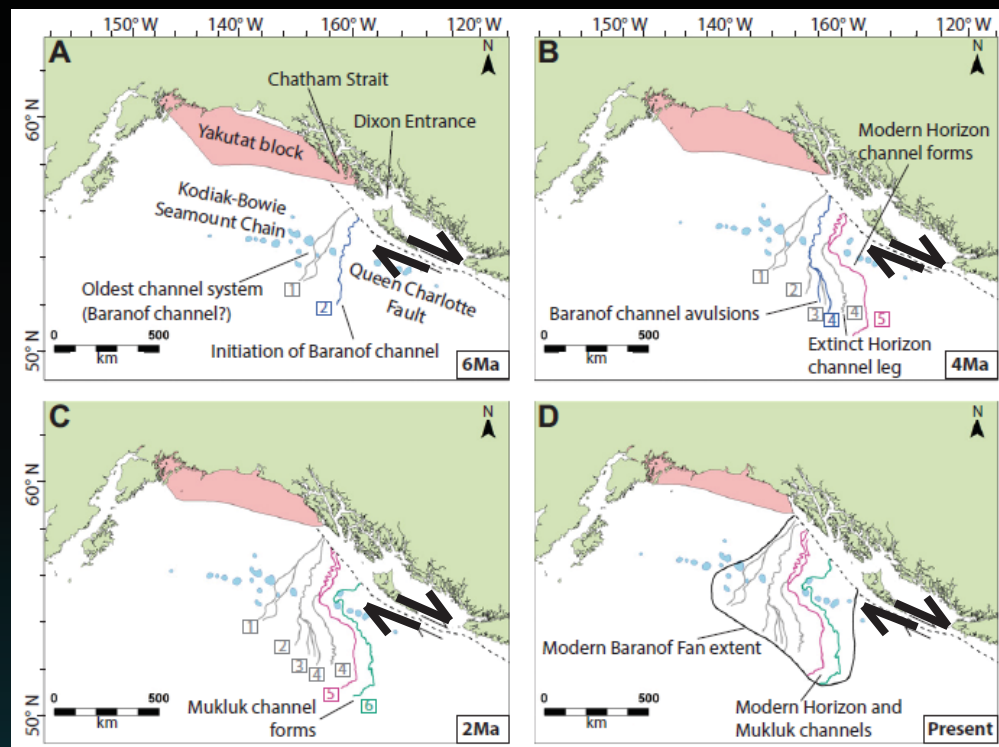
(2) To Leverage Additional Science



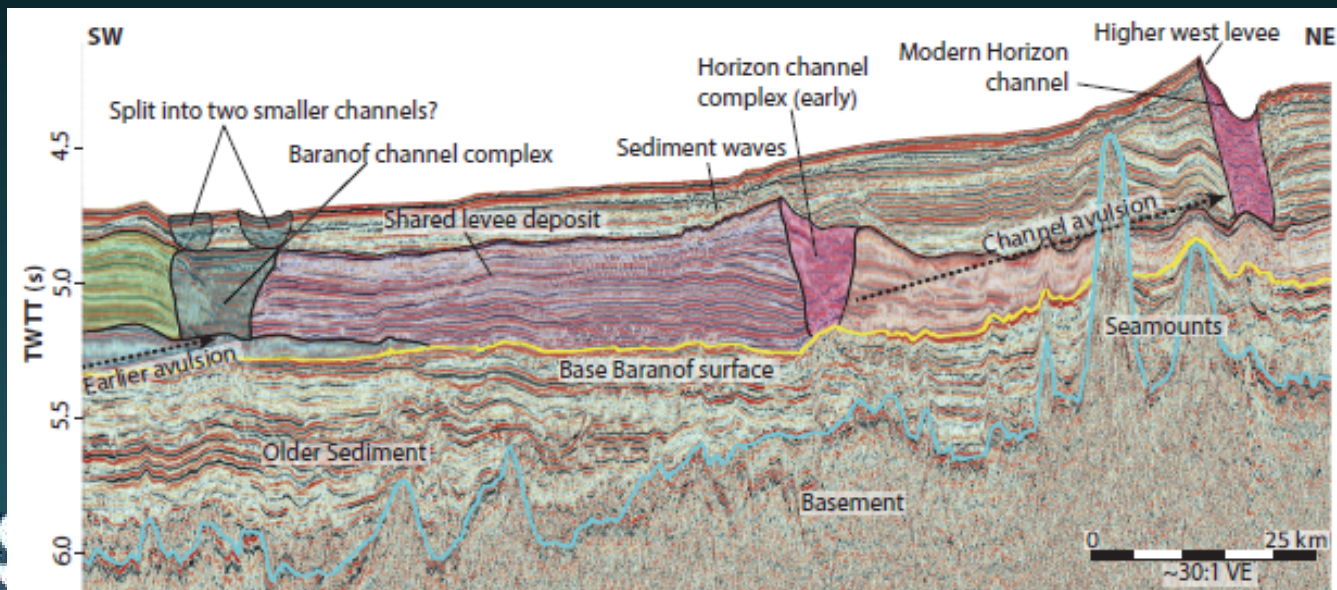
*Big ships are expensive
and we need to think
outside the box and
maximize non-
interference science
opportunities at sea*



Gulf of Alaska

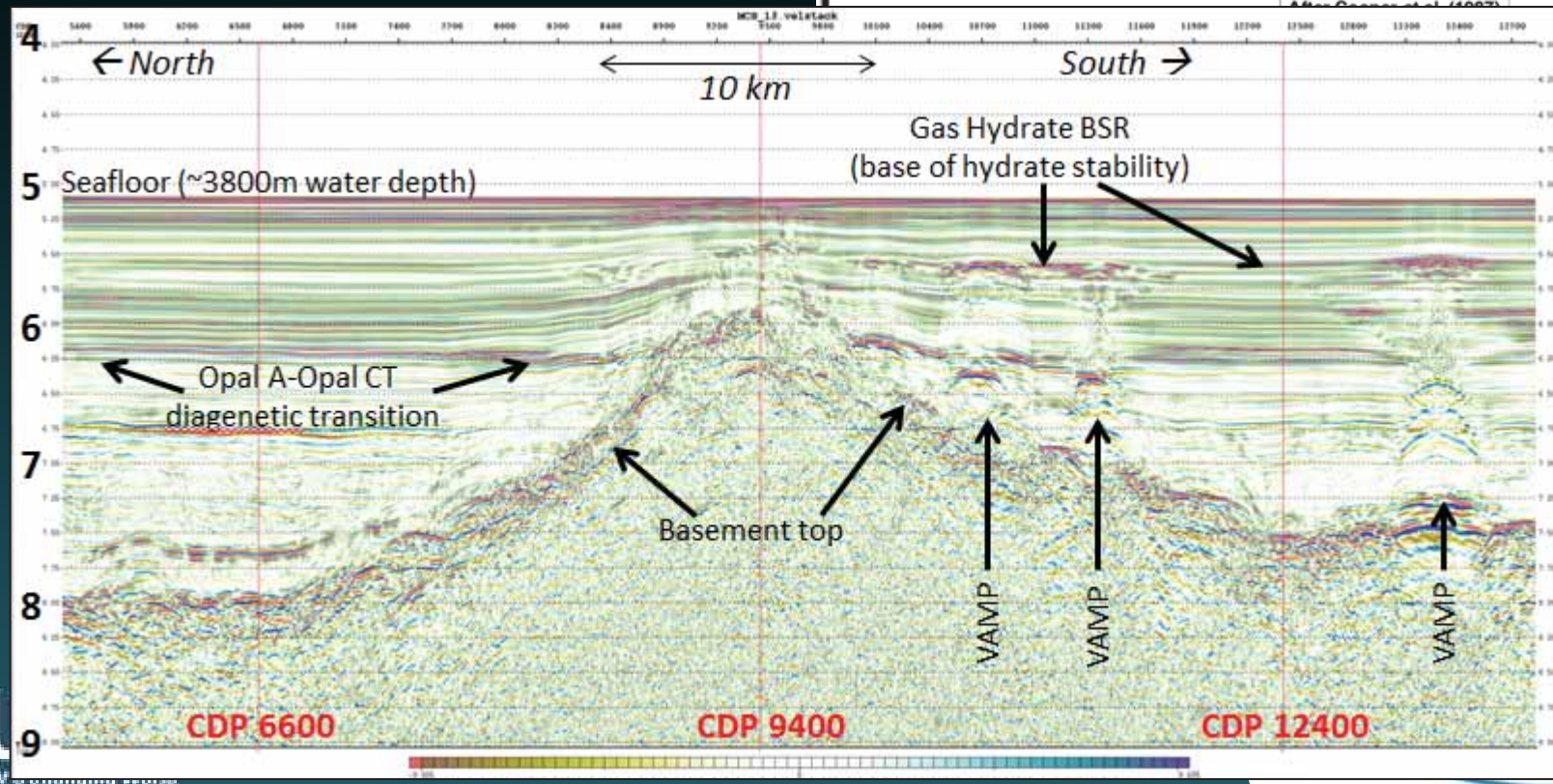
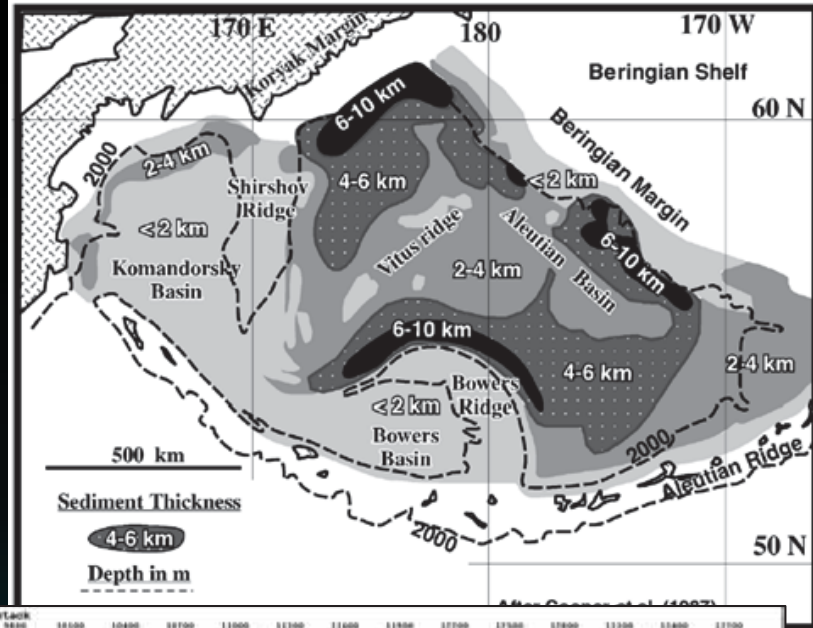


Walton et al., 2013

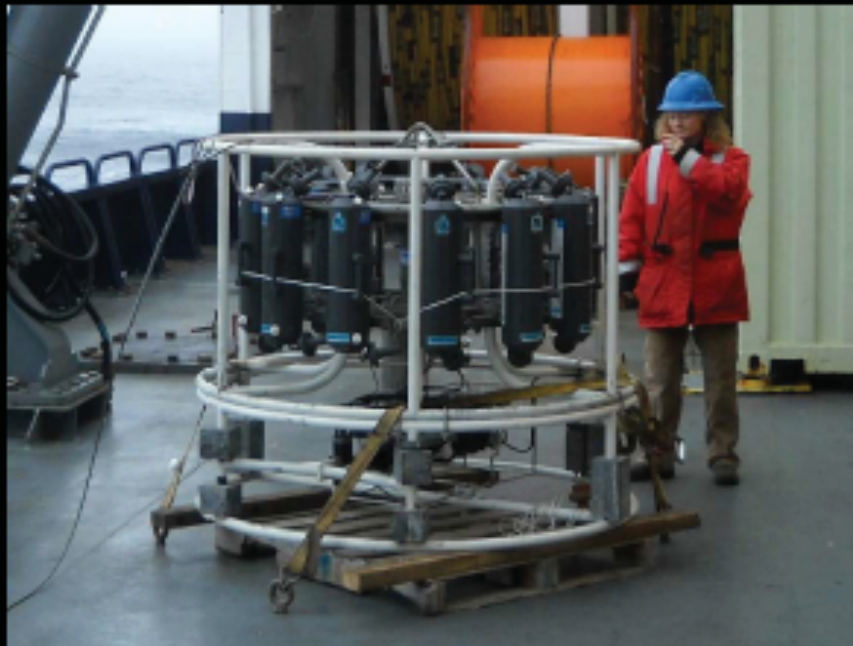
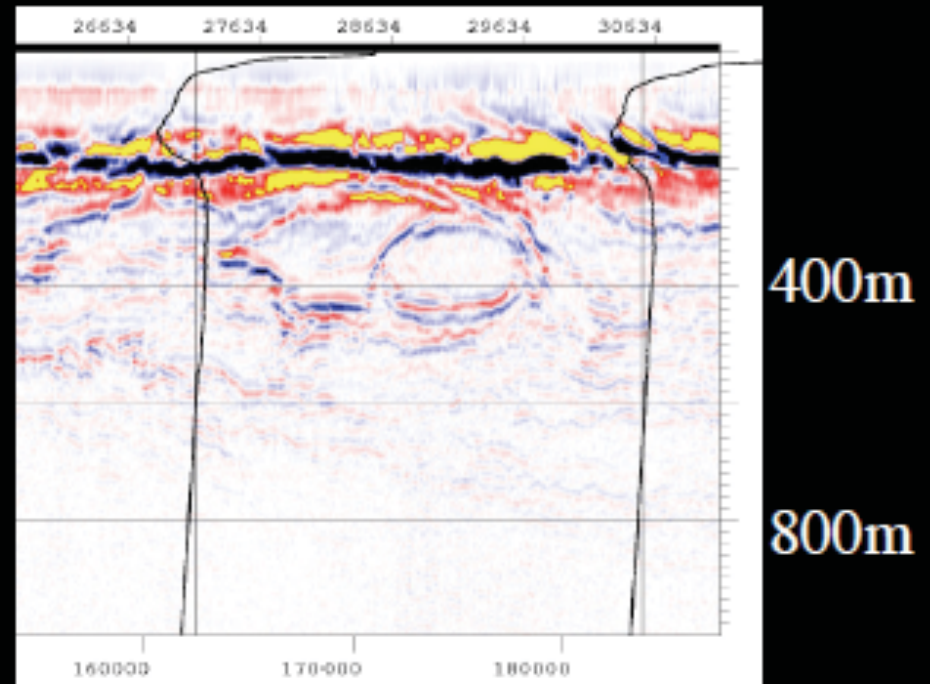
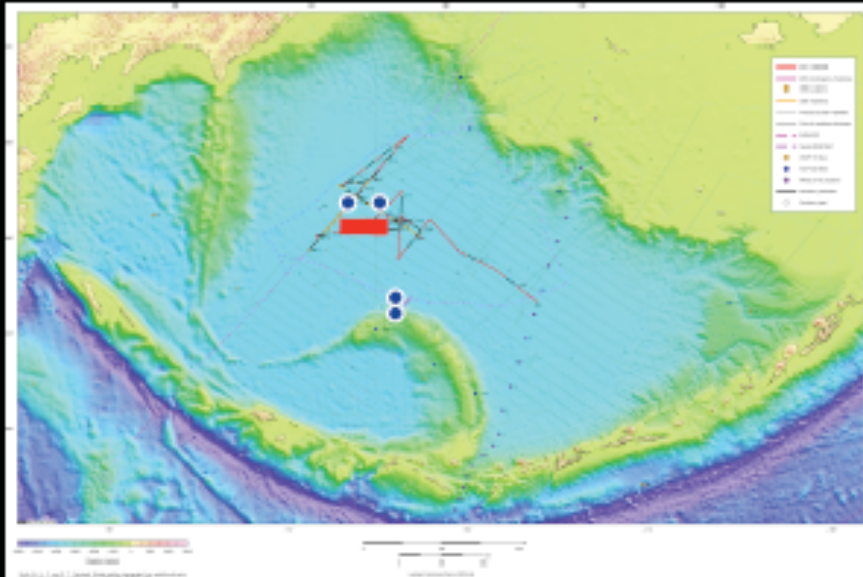


MGL 1111

Bering Sea



Oceanographic Contributions



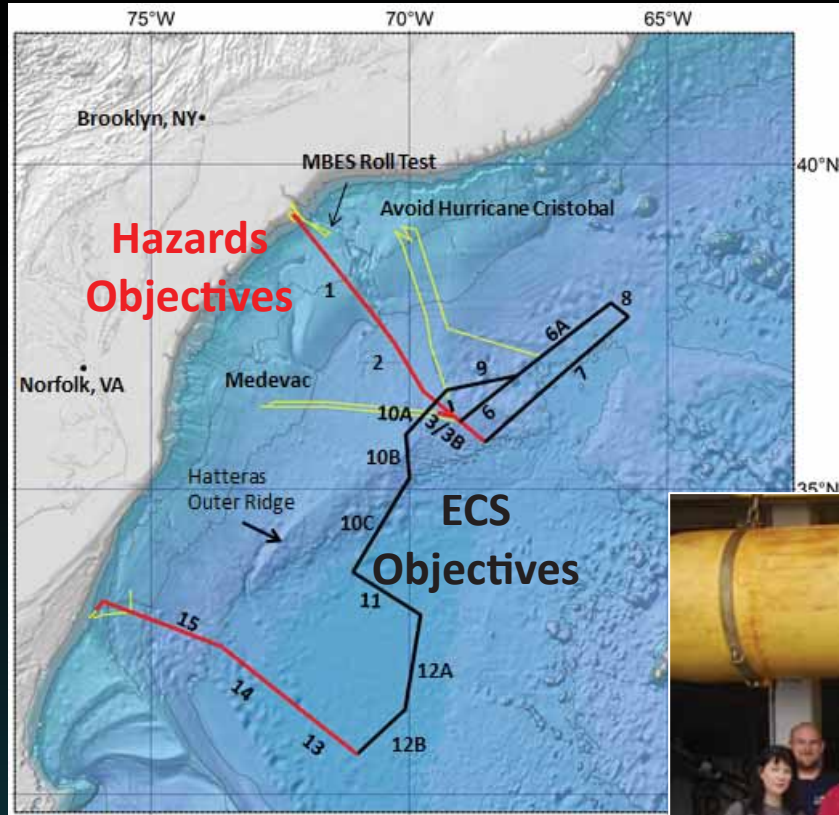
Seismic reflection image of
the upper 1 km of the water
column along line MCS 5

CTD and
sampling rosette

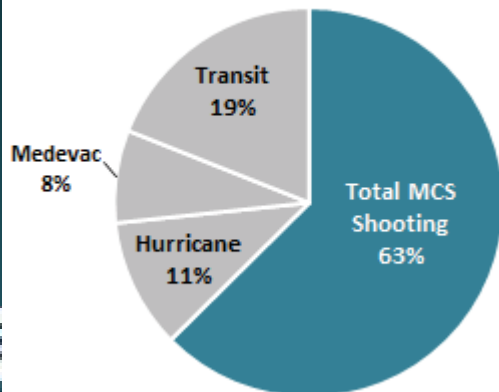
LANGSETH

MGL1407

Atlantic Continental Margin



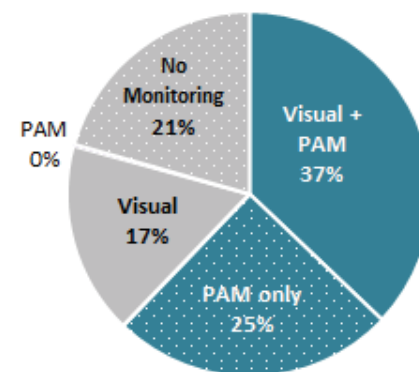
MGL1407 - All Hours

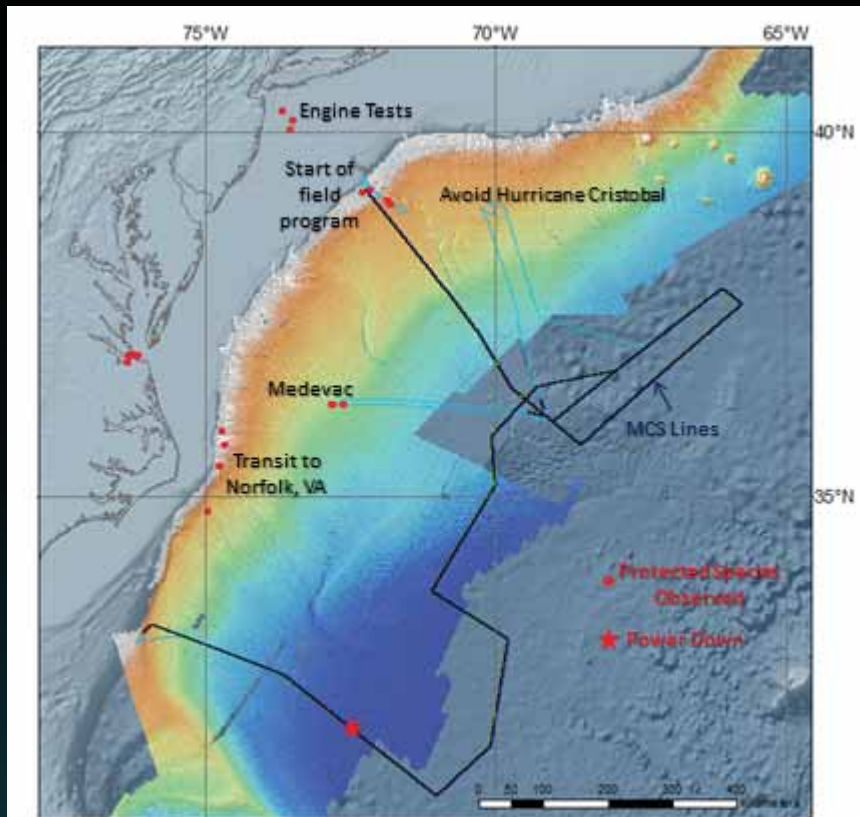


24 days at sea
2760 km mcs
60 % time = mcs

Protected Species Observers & Permitting

MGL1407 - PSO Monitoring

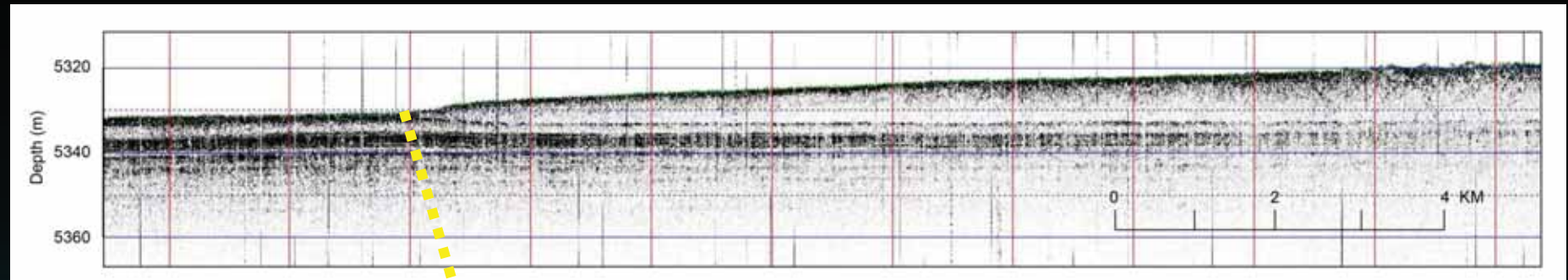




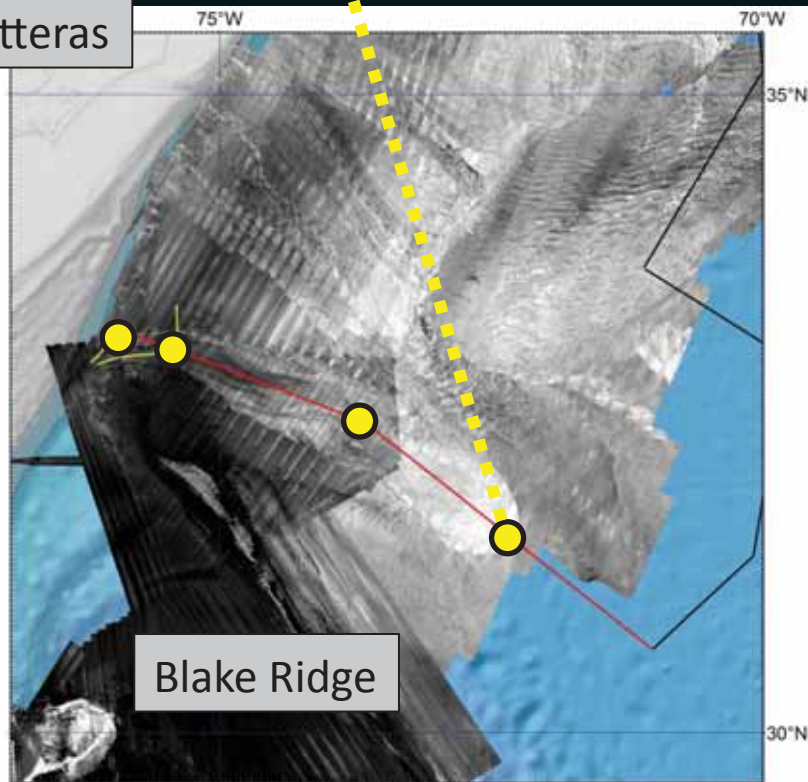
~12,000 Protected Animals authorized for IHA
 20 Detections, 129 Protected Animals
 1 Detection during airgun ops
 3 unidentified dolphins
 12 min power down



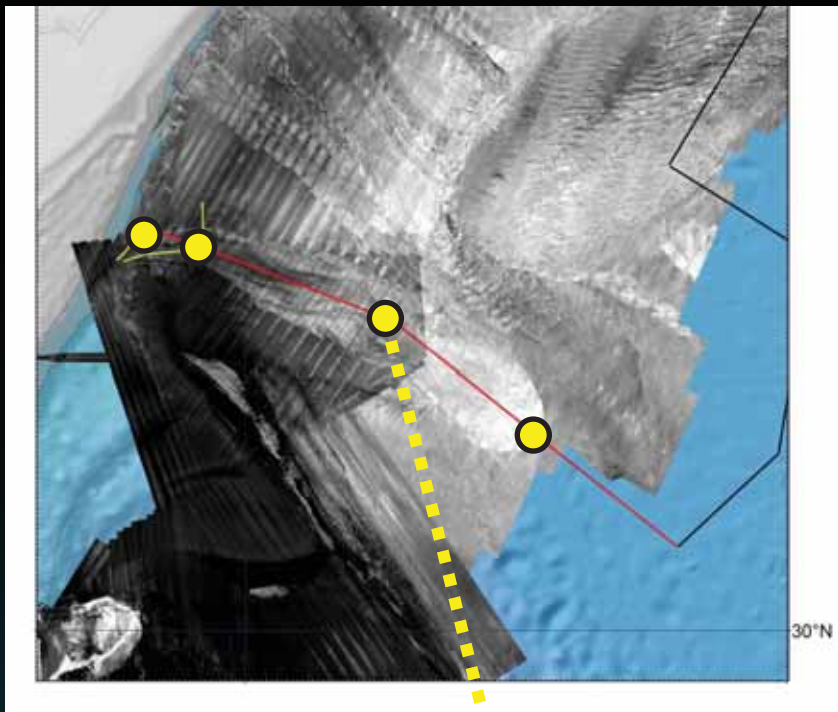
Landslide Hazards: Cape Fear Slide



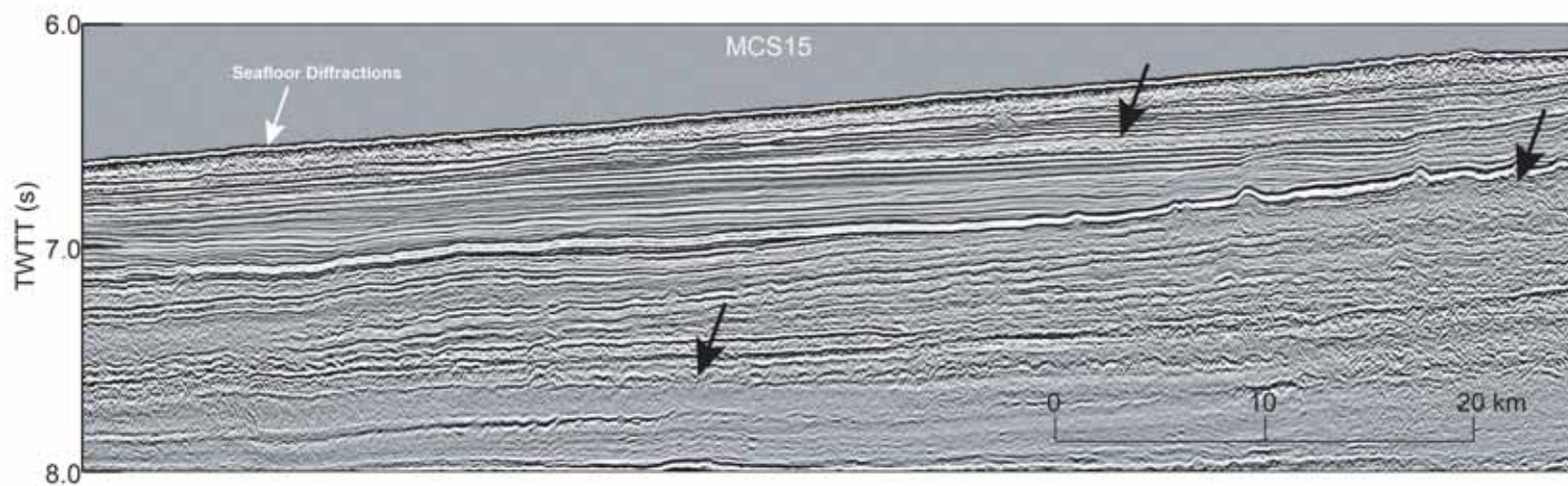
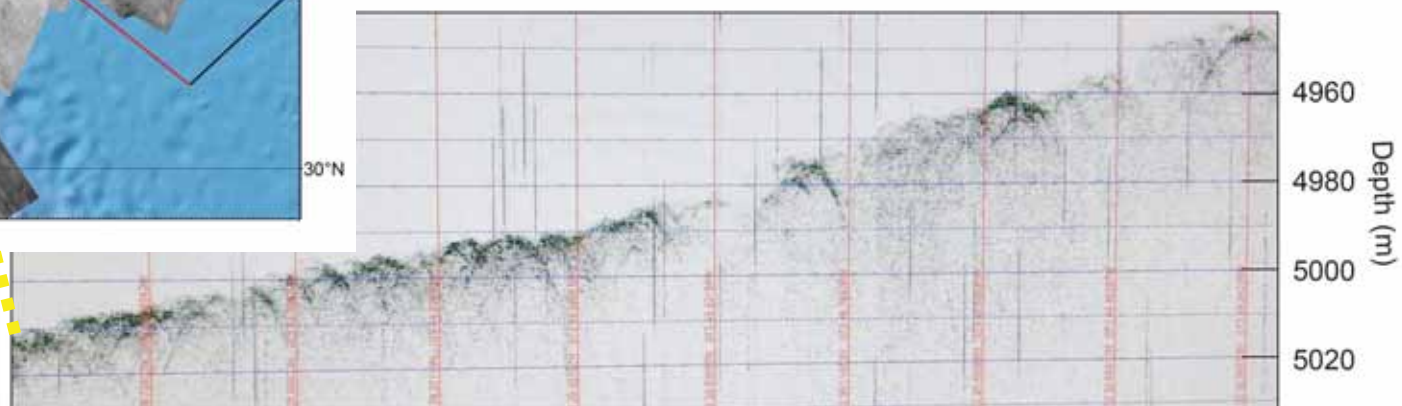
Cape Hatteras

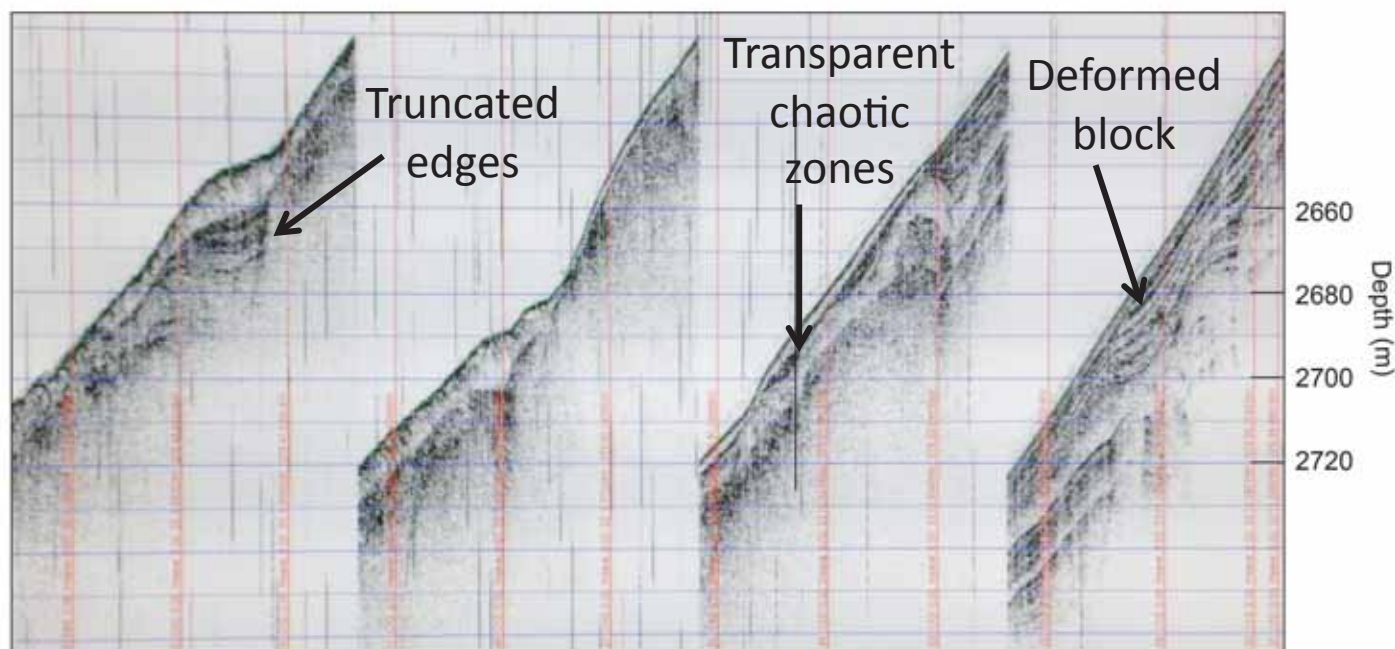
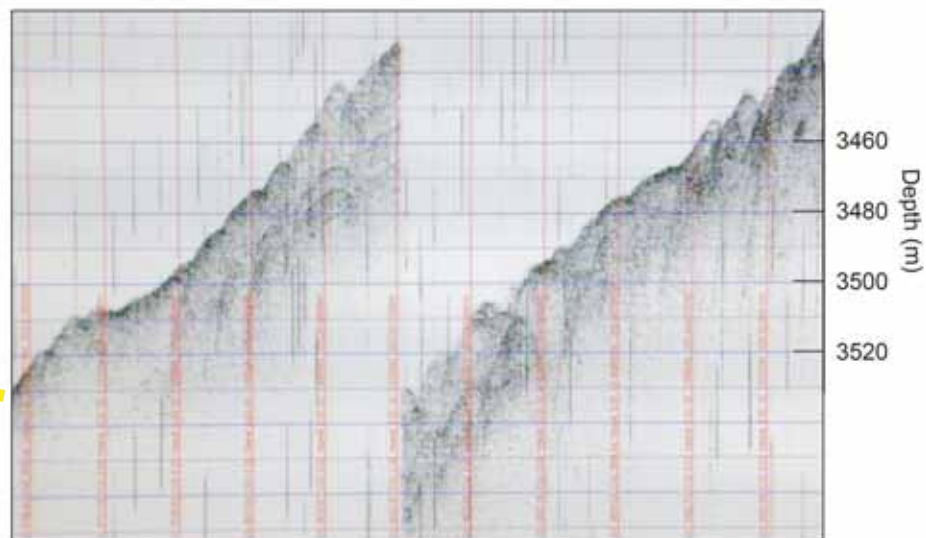
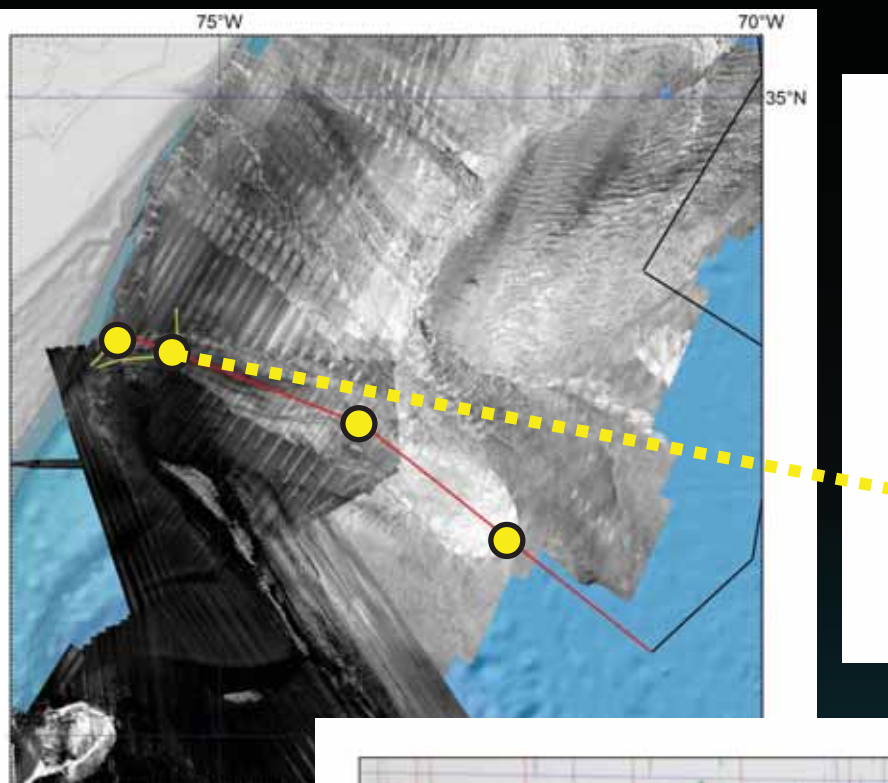


- *Post-slide deposition ?*
- *Clear edges*

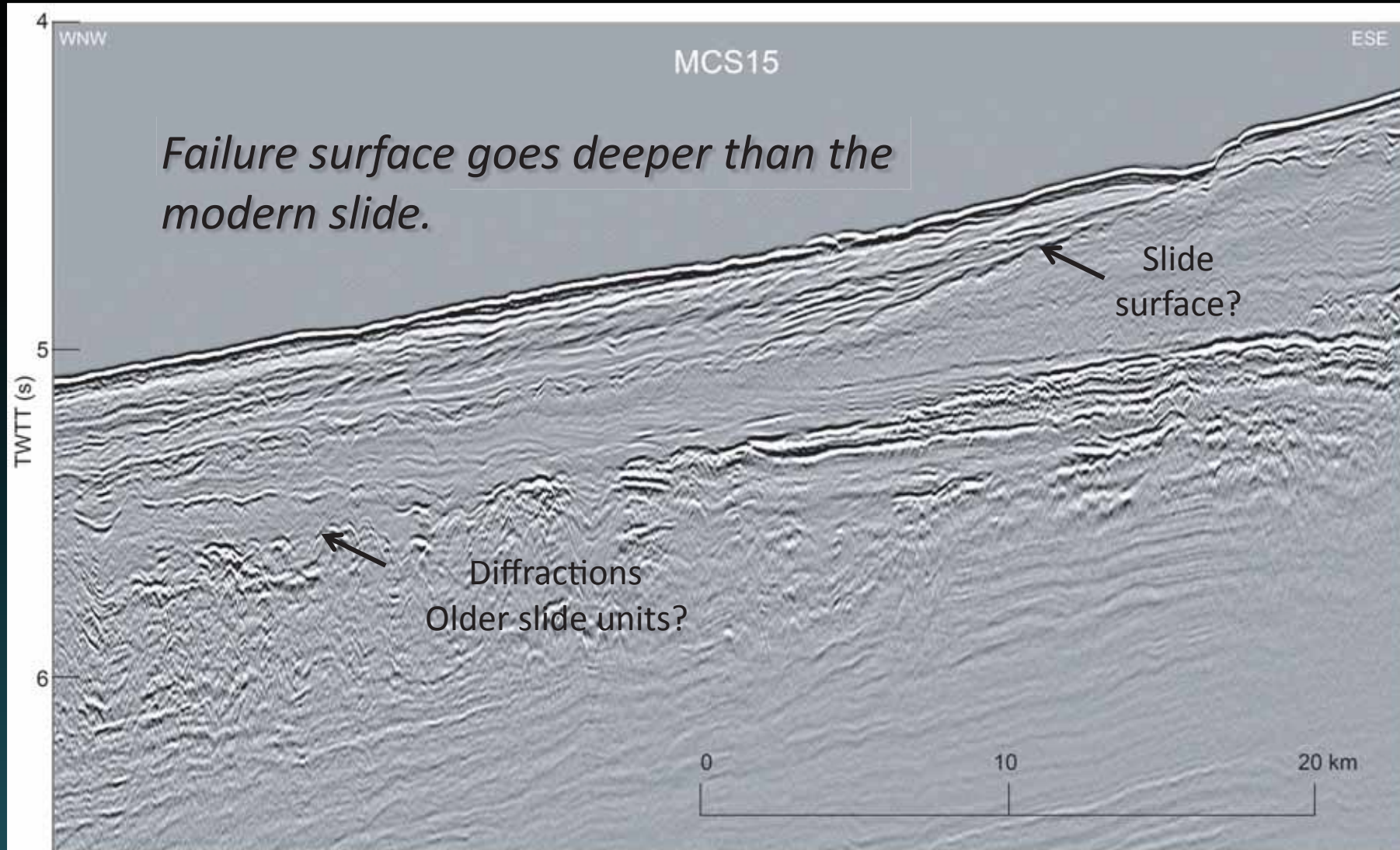


- *Post-slide deposition is unresolvable*
- *Multiple deeper slides?*

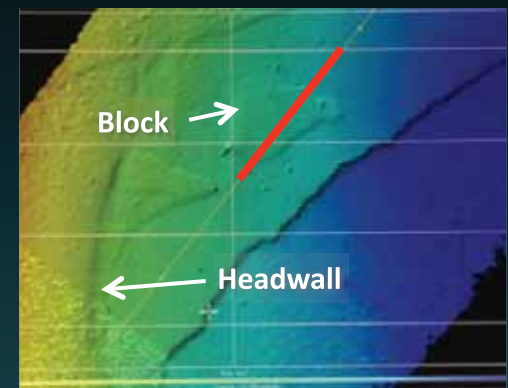
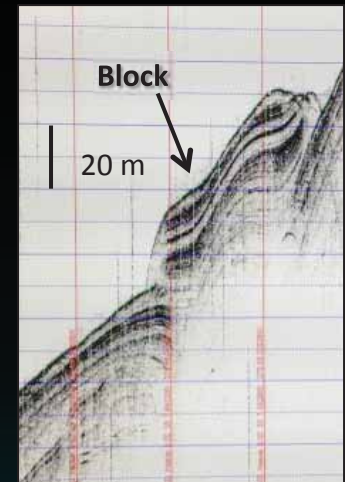
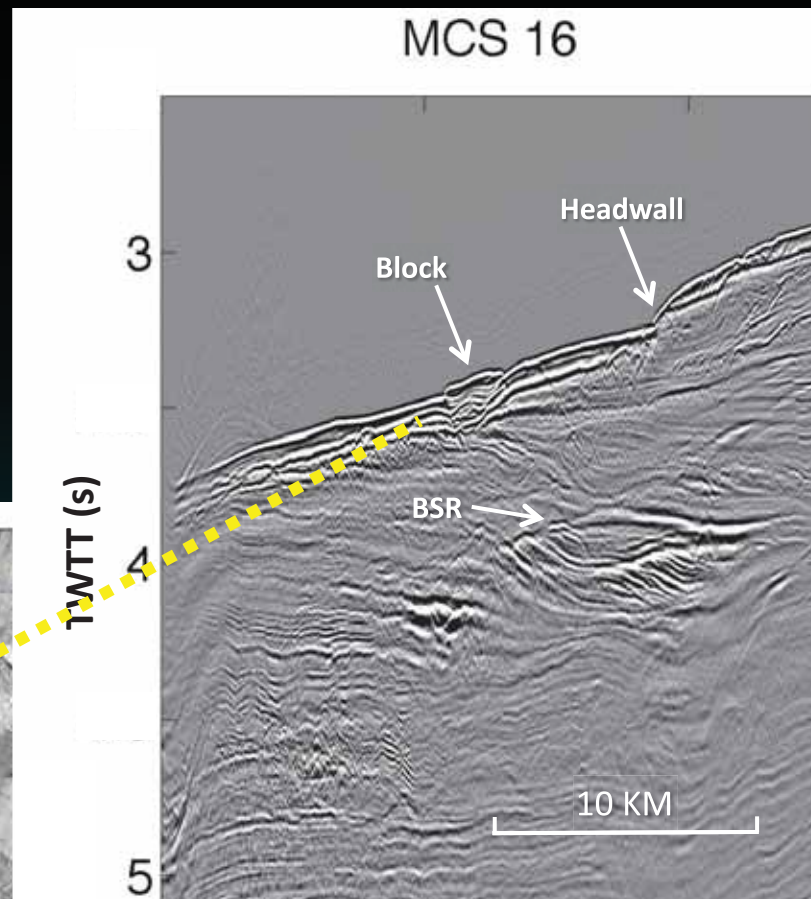
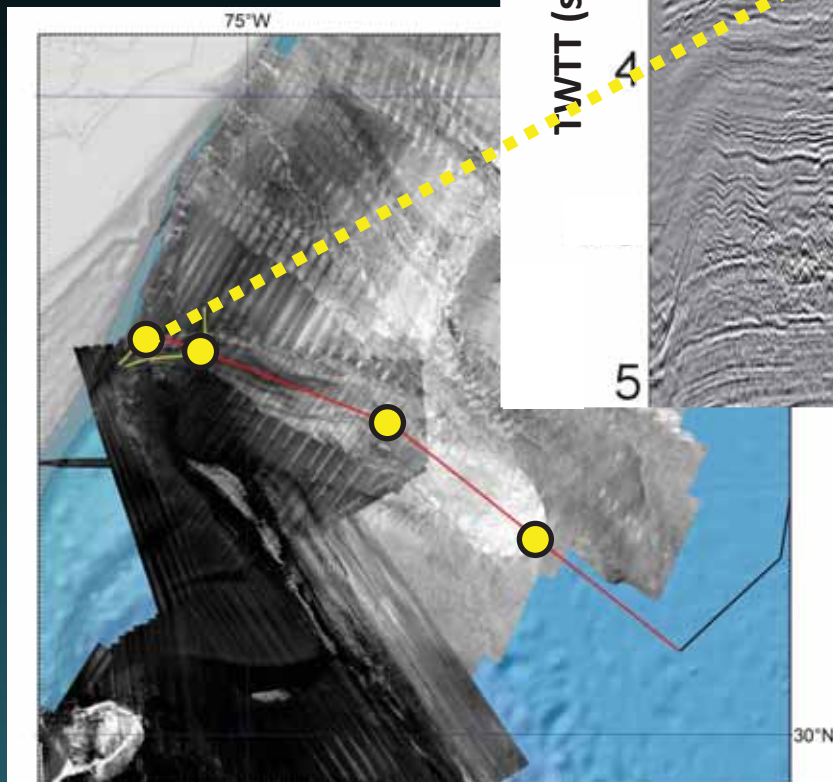




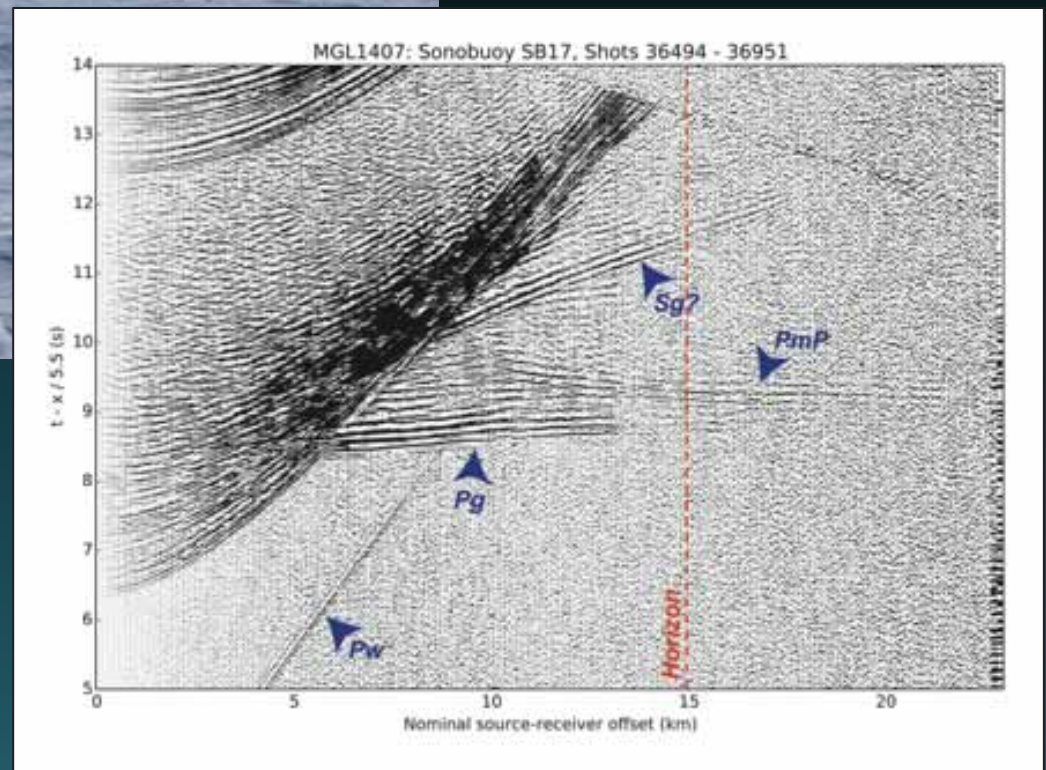
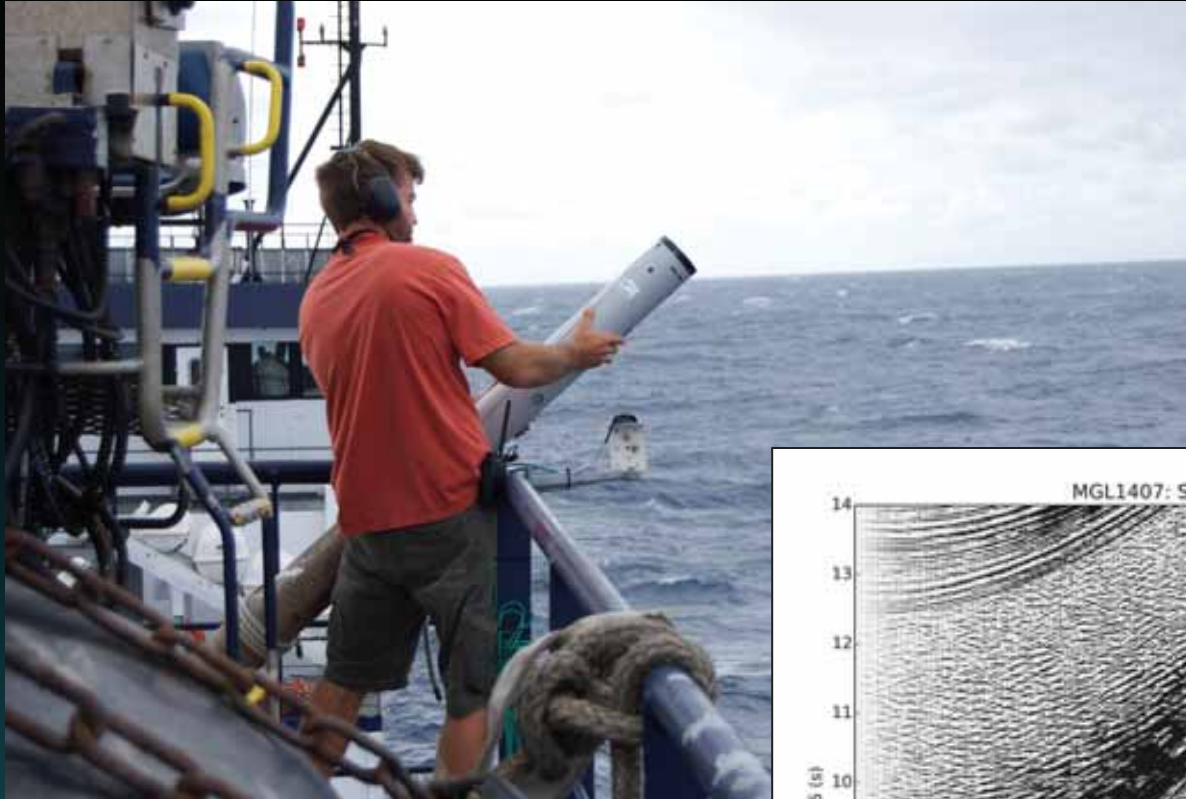
Upper Slide



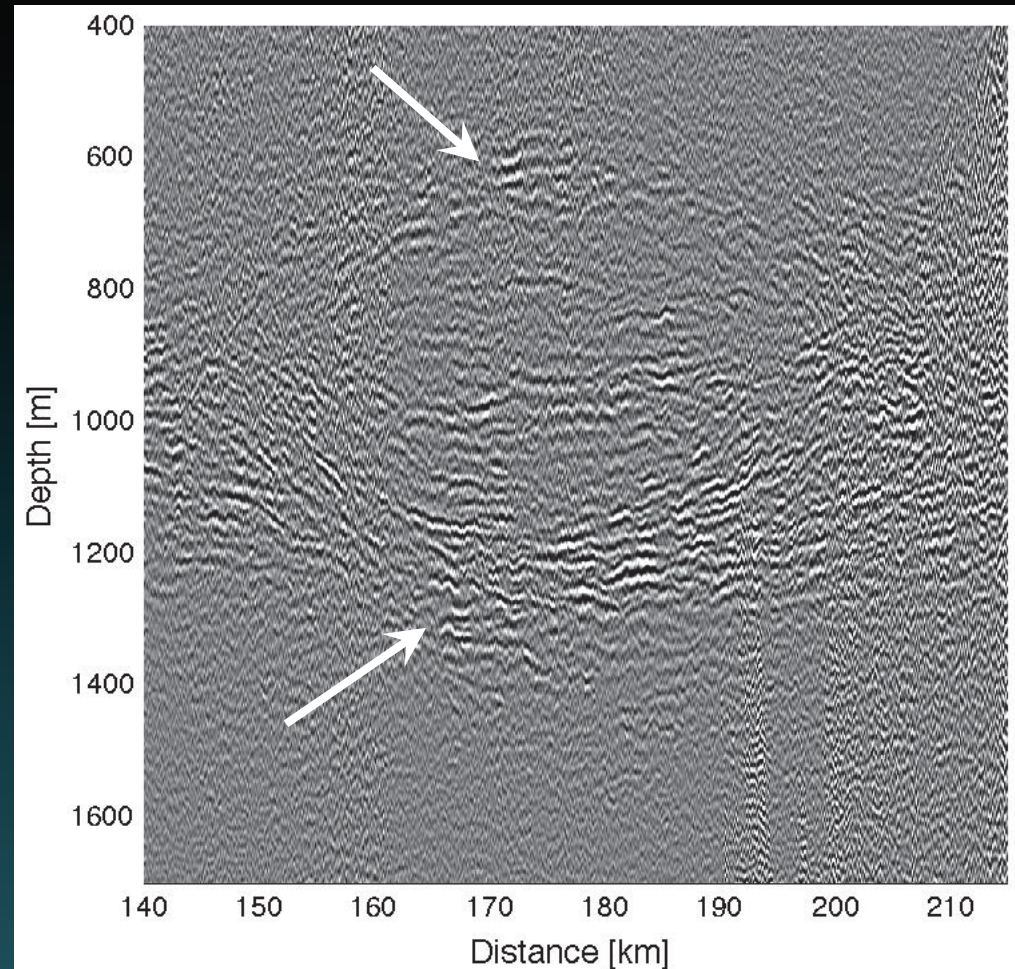
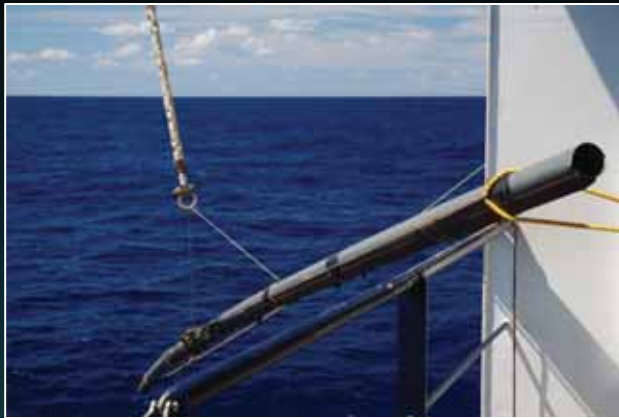
Complex Headwall Failure



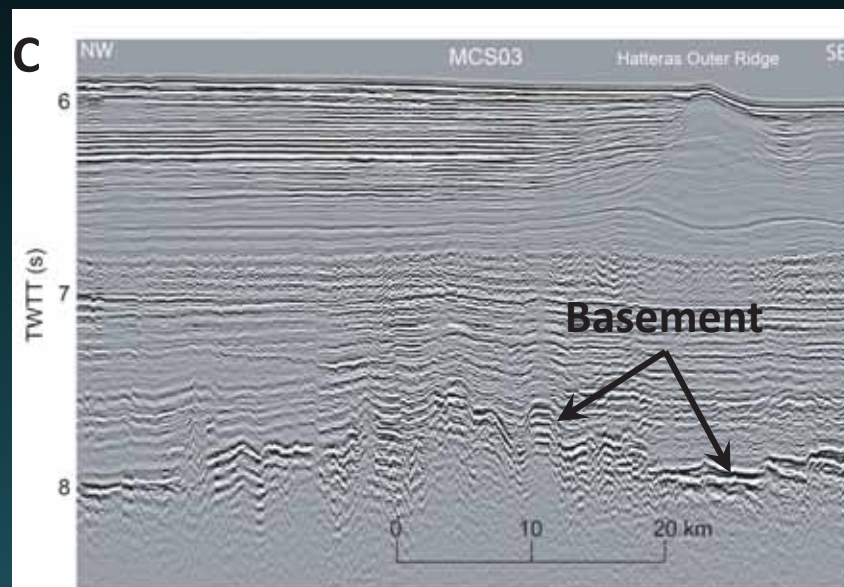
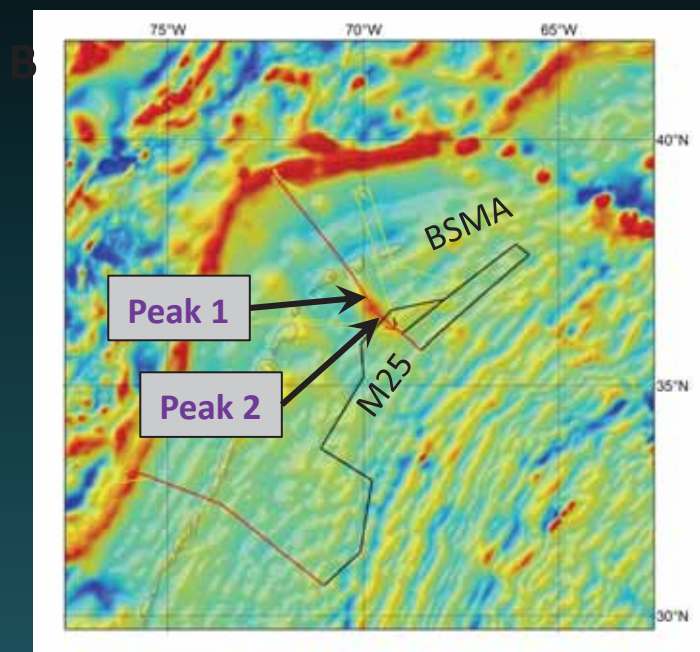
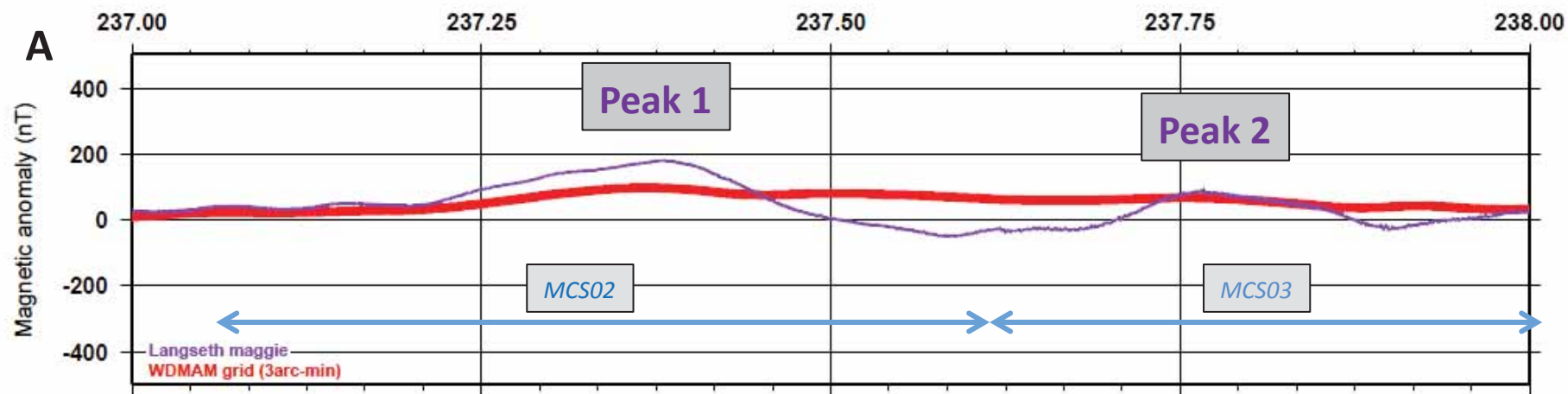
Crust and Basement



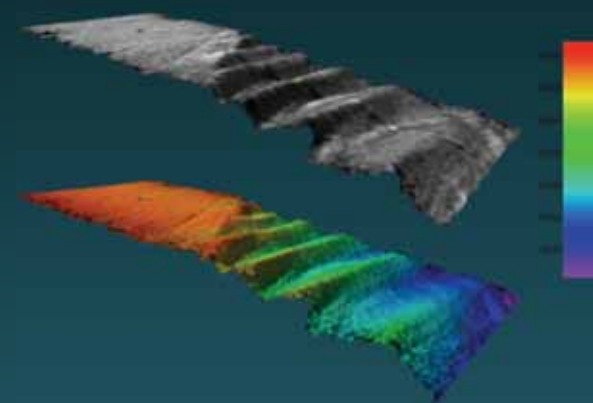
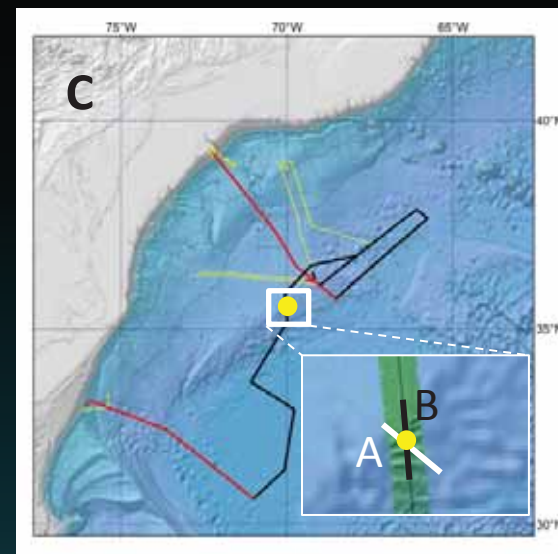
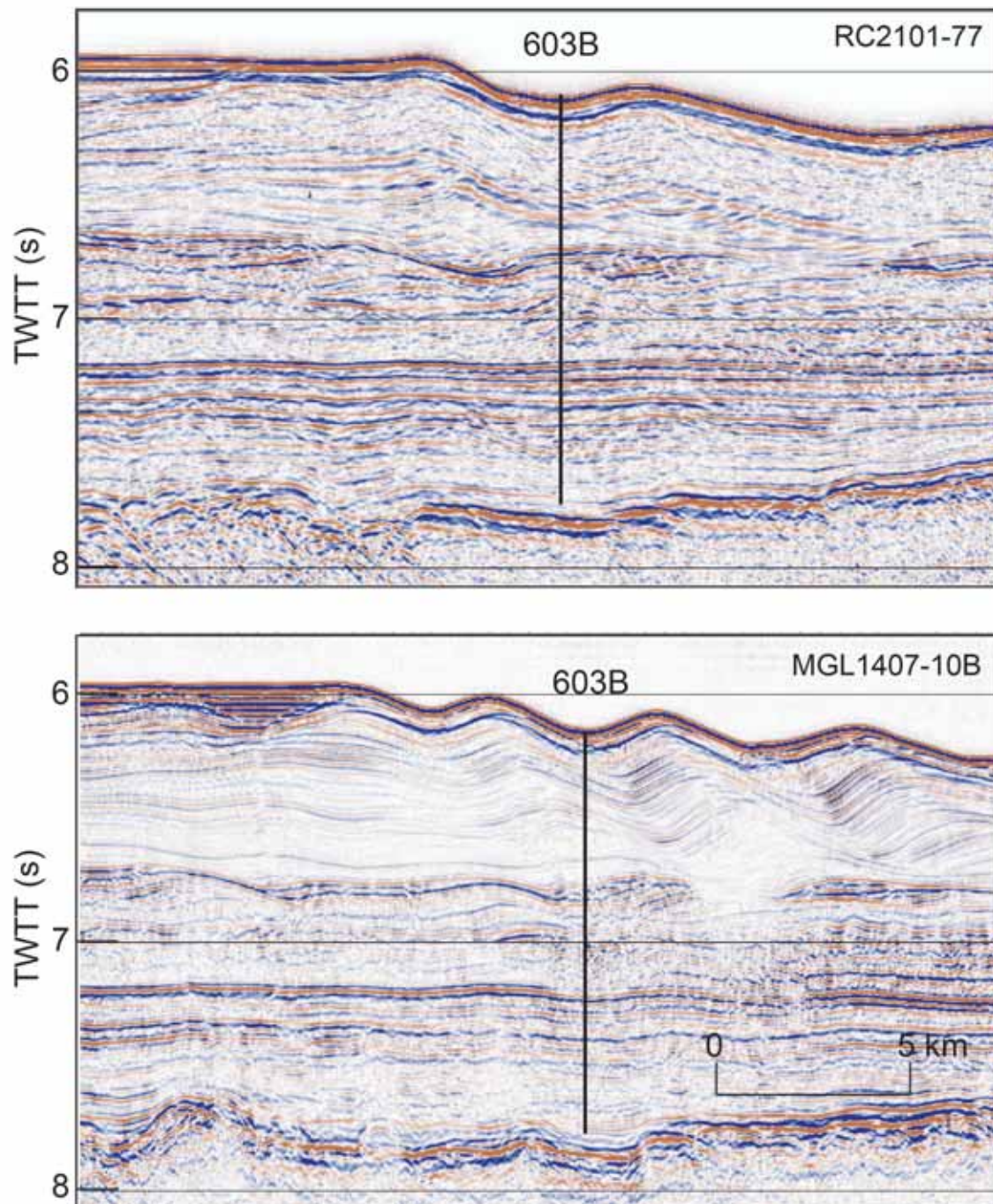
Seismic Oceanography: Water column structure



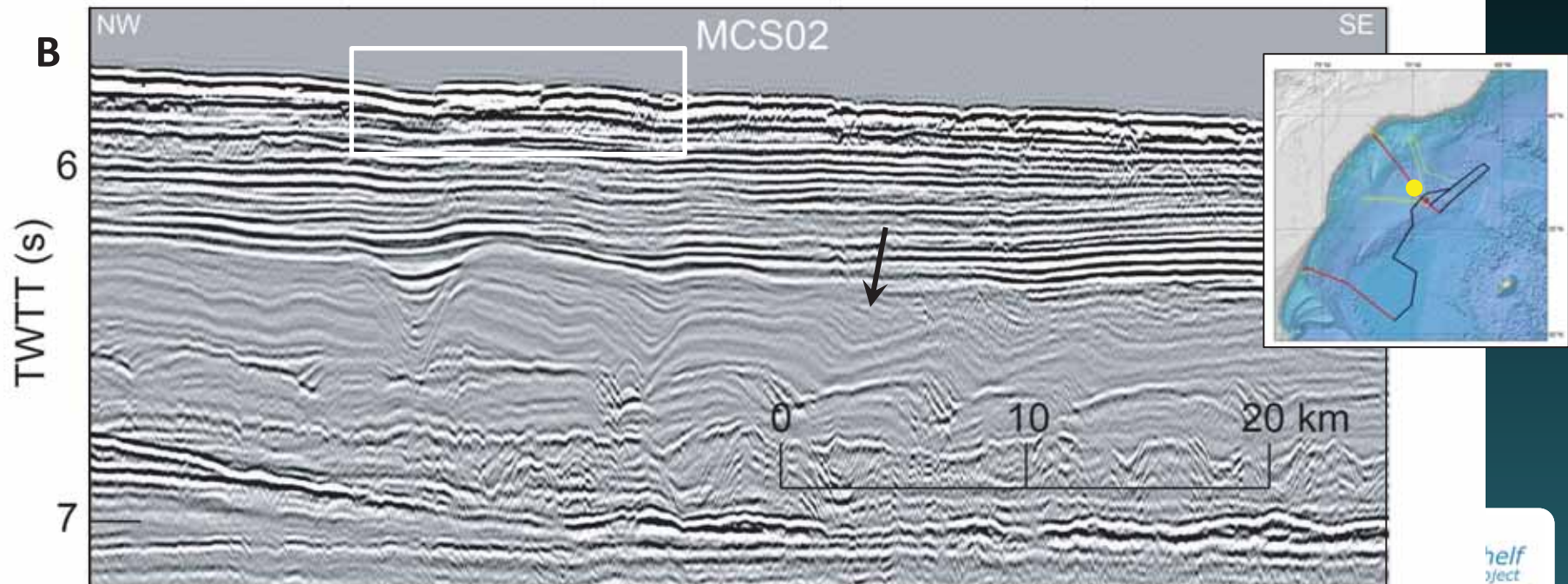
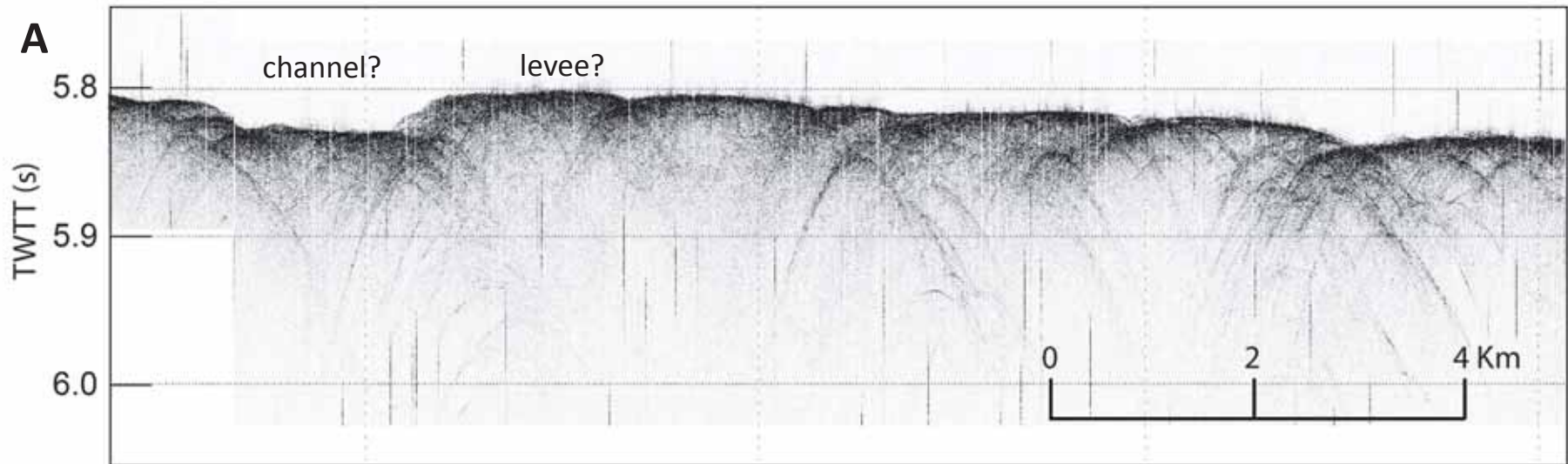
Jurassic Crust and Magnetic Anomalies



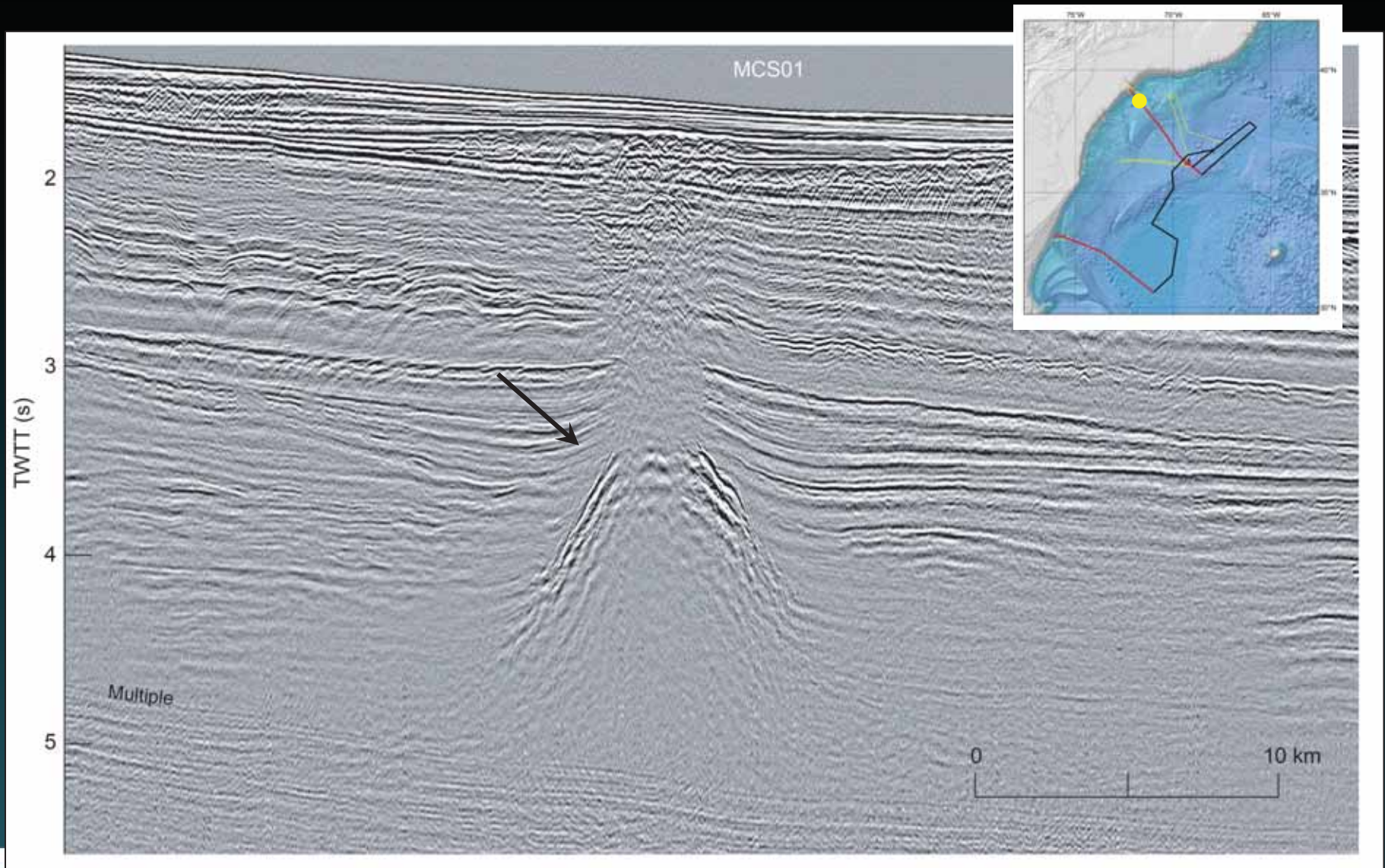
Deep Water Stratigraphy



Deep Water Fan Systems



Fluids on the Continental Margin



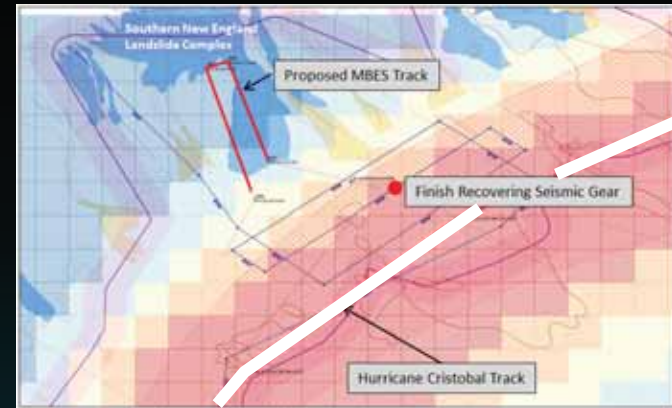
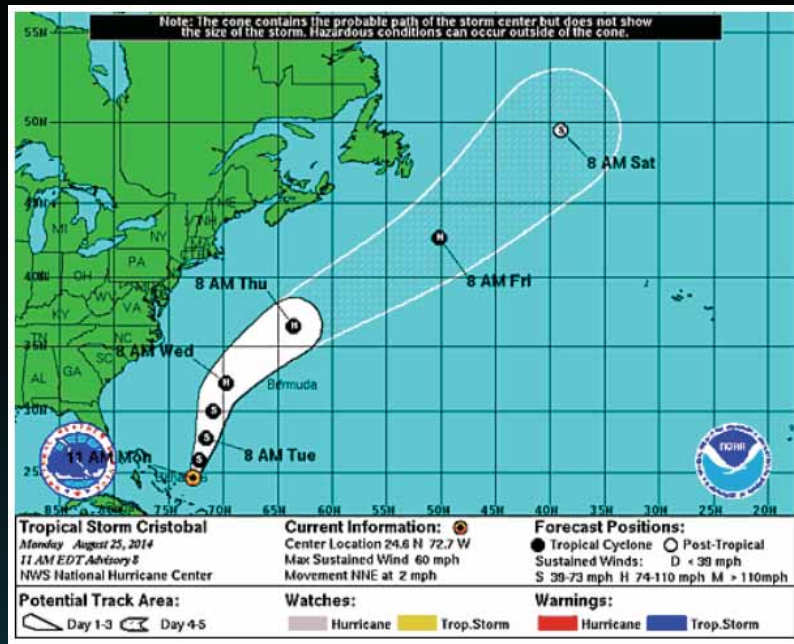
But we did have some challenges

IHA and BO/ITS delayed 1 week



*Waiting for the IHA in the NY Bight
2+ days*

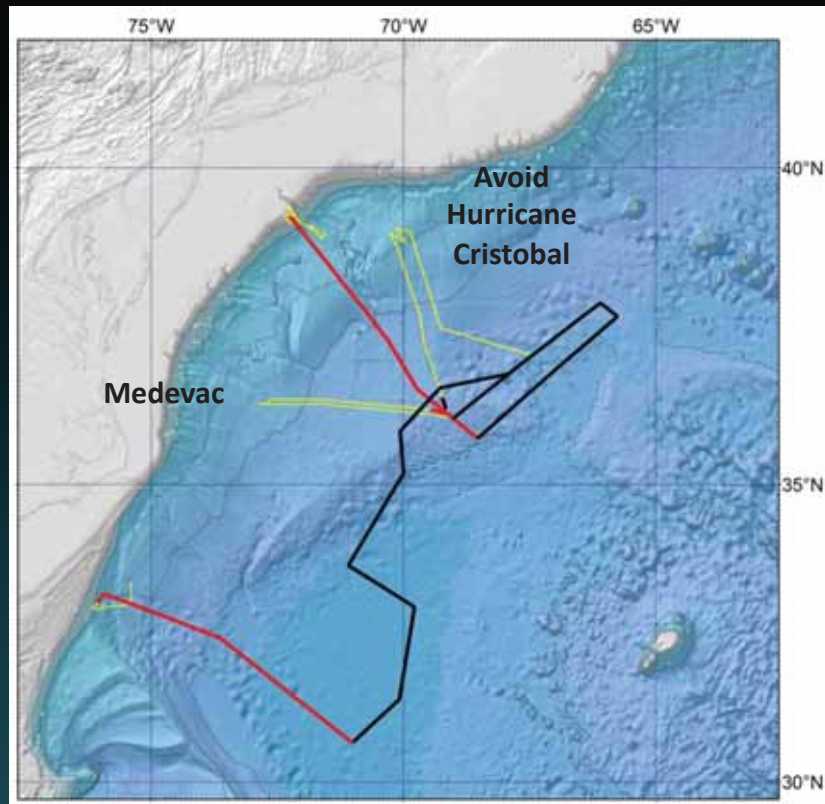
Hurricane Cristobal



2.5 days

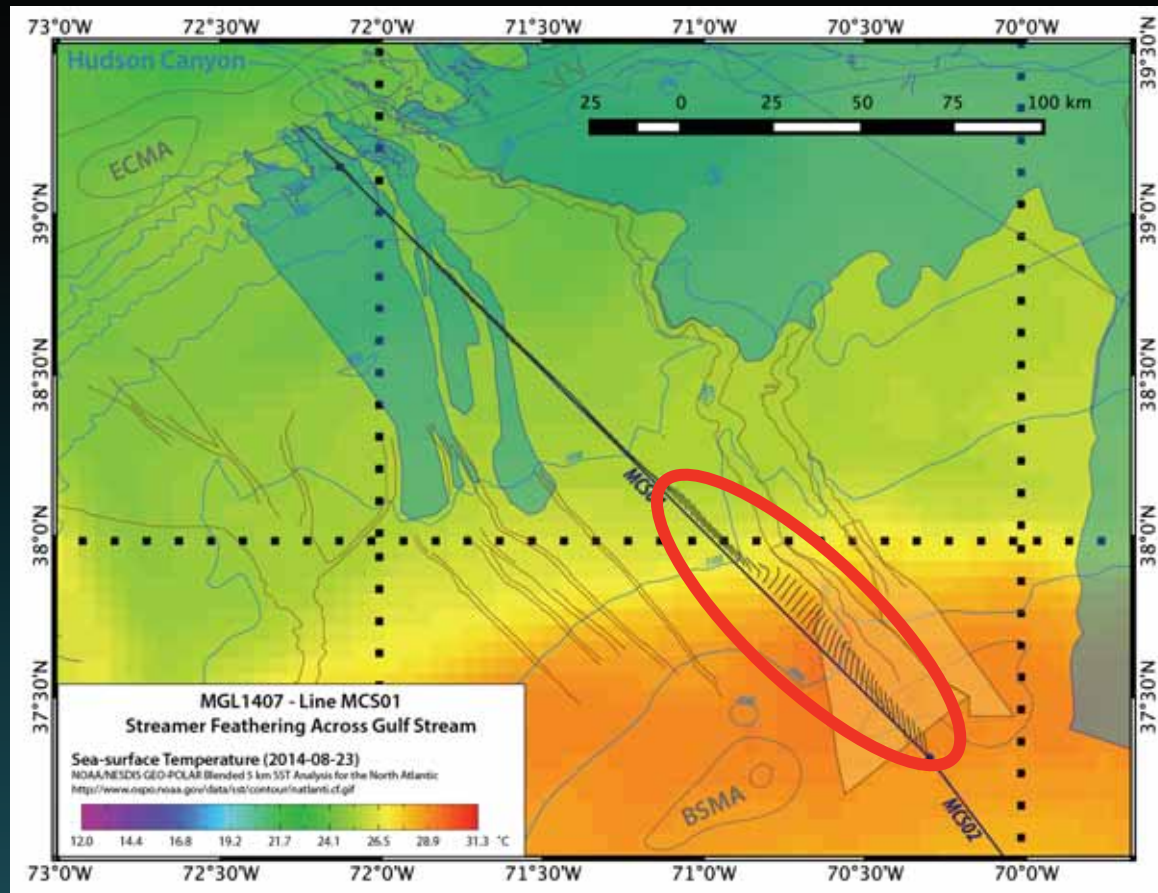


Medevac

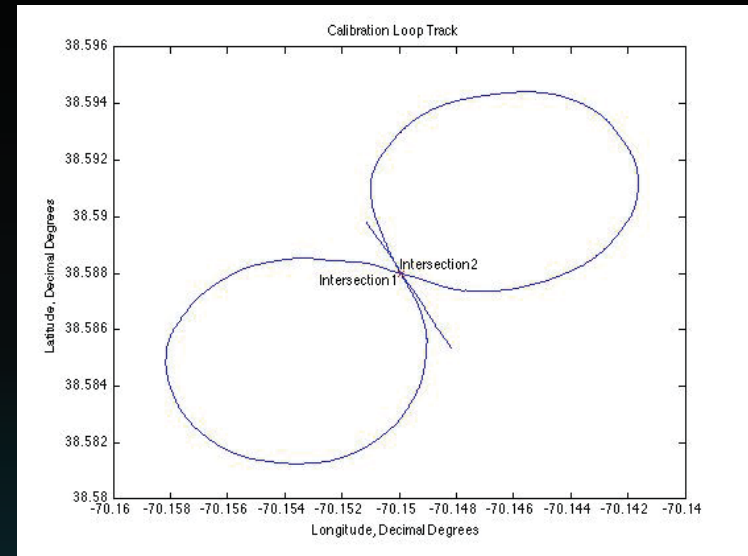
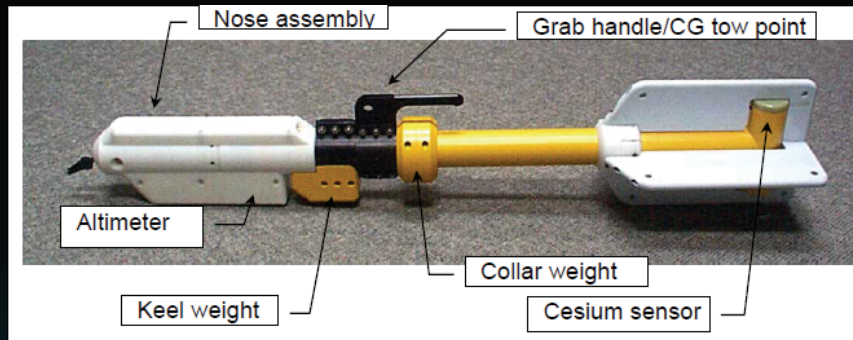


2 days

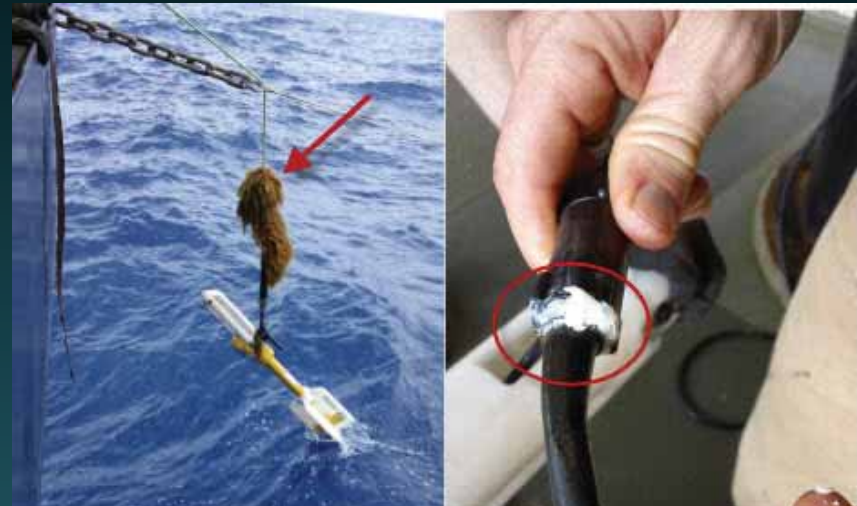
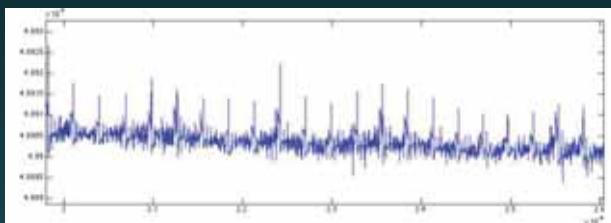
The Gulf Stream: Feathering of the Streamer

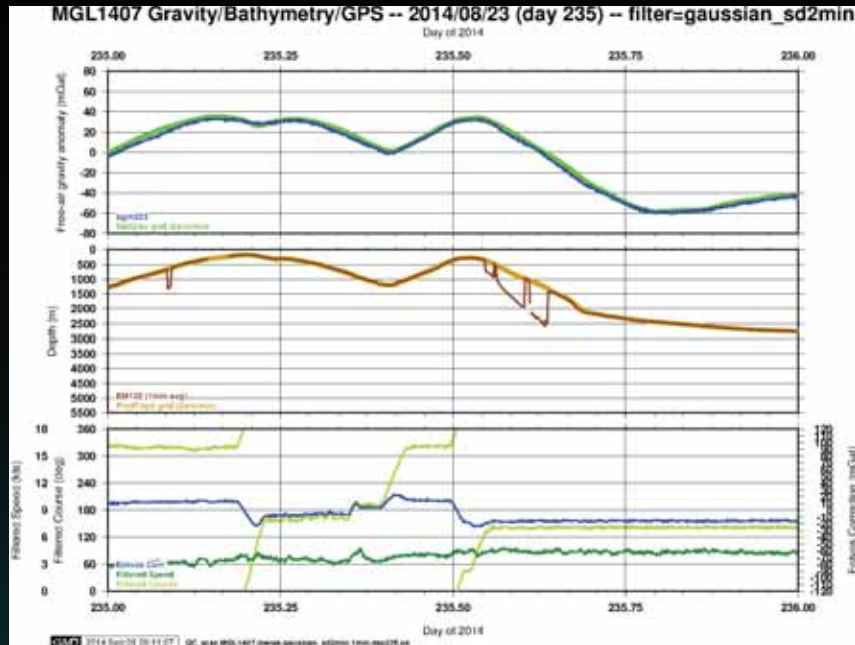


Magnetometer: Connector Corrosion



Daily Plots





Gravimeter Missing Cable

Daily Plots



RV MARCUS LANGSETH GRAVIMETER

Data Buffer #DB-4

Control Power Supply (CPS) SN # 325

BGM-3 Bell Gravimeter Sensor SN #223

Battery Packs





Onward to 2015

Questions?

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508-457-2263