

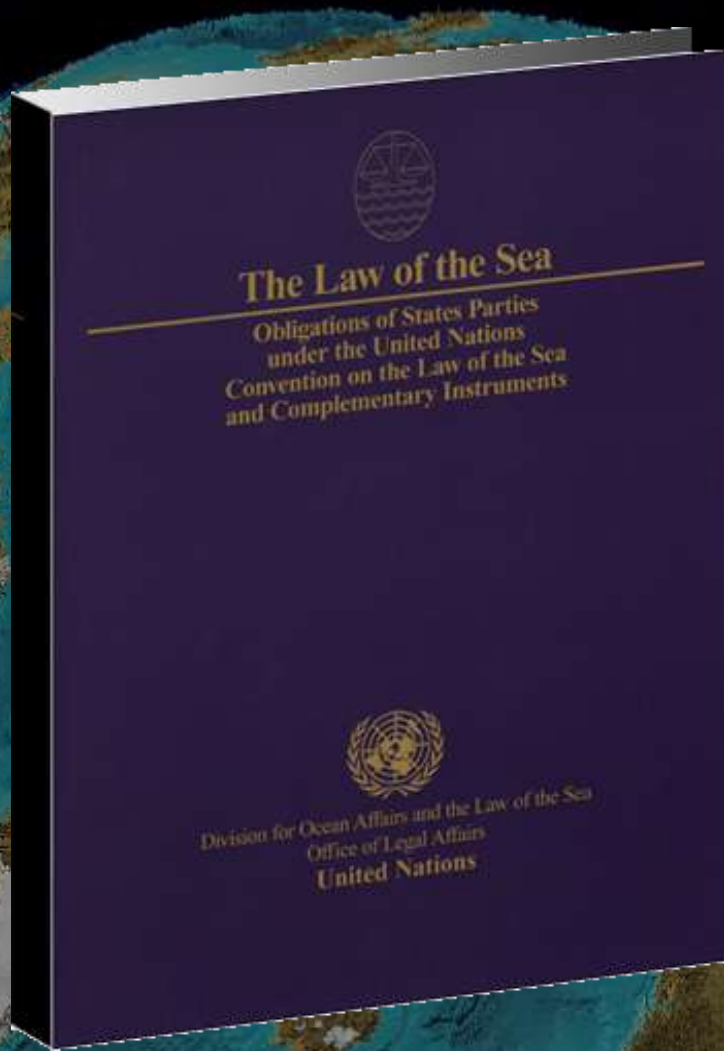


Mapping in the Arctic Ocean in Support of a Potential U.S. Extended Continental Shelf

Larry Mayer, Andy Armstrong and
Jim Gardner

Center for Coastal and Ocean Mapping / NOAA-
UNH Joint Hydrographic Center University of
New Hampshire, USA

THE CONVENTION ON THE LAW OF THE SEA

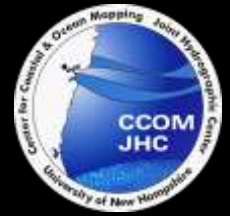


Data Required

- To establish an extended continental shelf a coastal state must demonstrate that region is “natural prolongation” of continental landmass – limits are then determined by
 - depth and shape of the seafloor (FOS and 2500m contour)
 - the thickness of the underlying sediments (1% line)
 - distances from the territorial sea baselines (350 nm line)

Need to map the seafloor

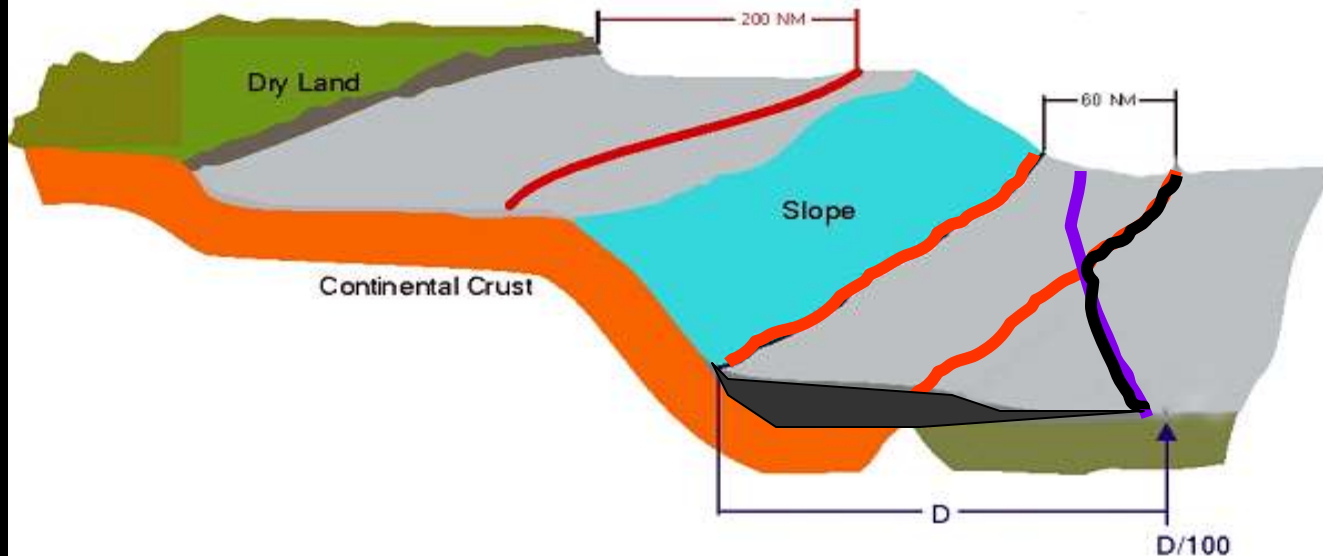
Formulae Lines:



Foot of Slope + 60 nmi - bathy

Gardiner line - sediment thickness less than
1% of distance back to FOS - seismic and bathy

Determining the Outer Limit of the Continental Shelf



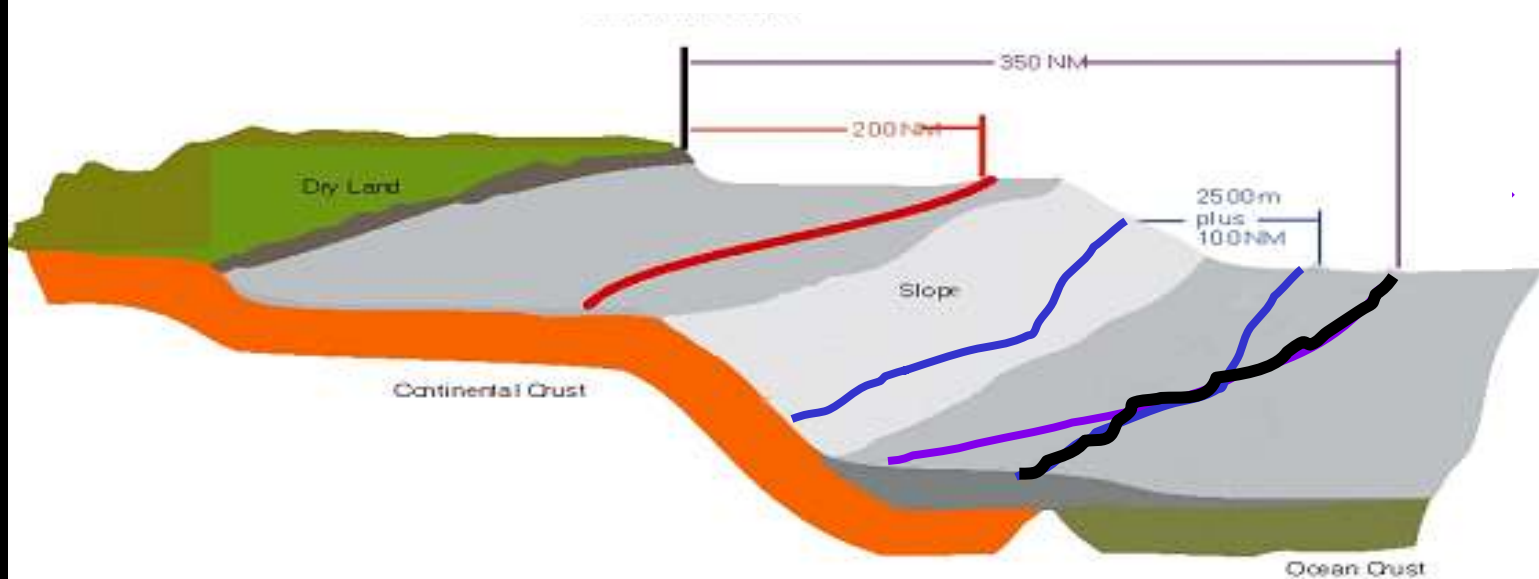
Cutoff Lines:



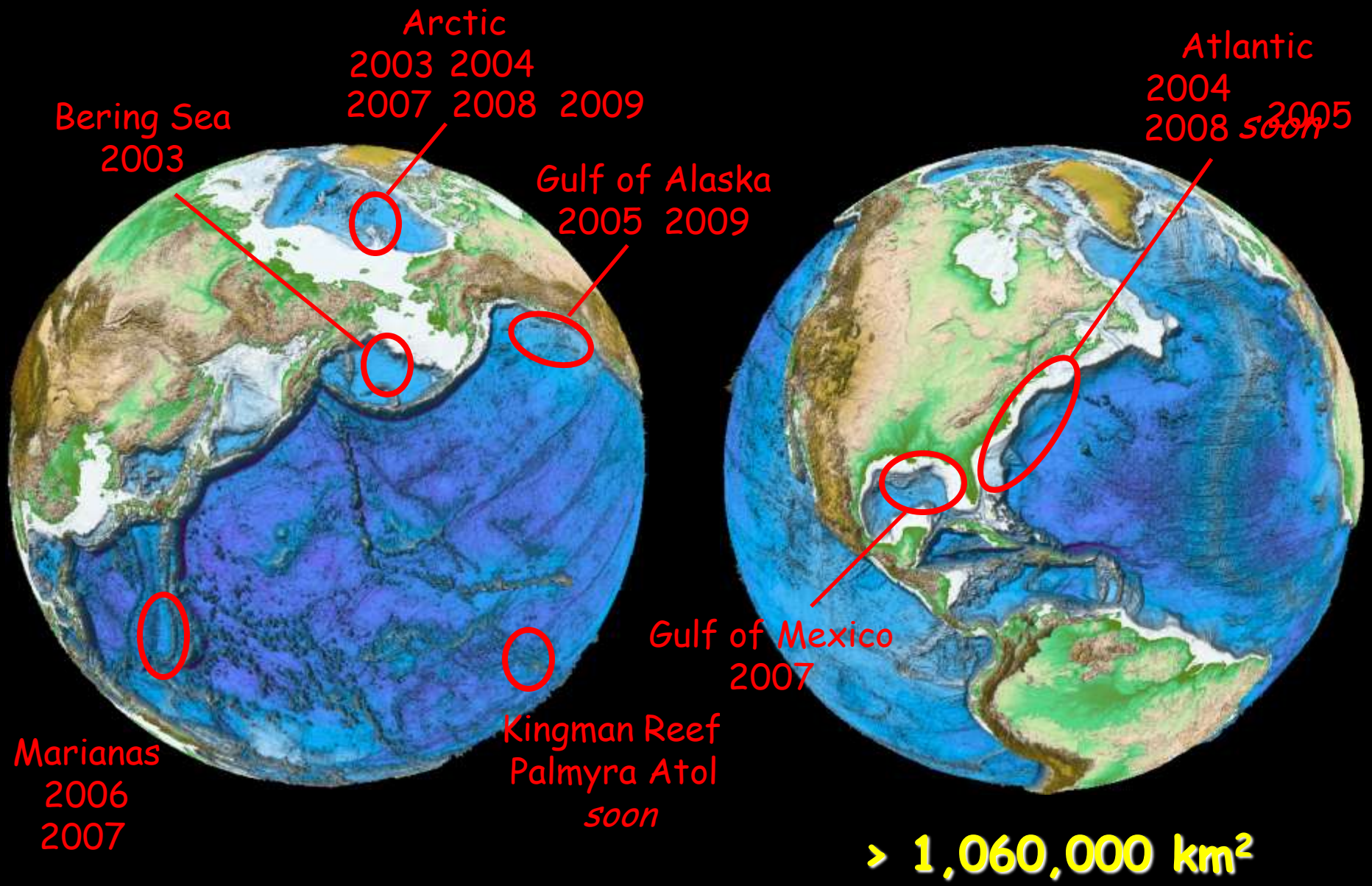
2500 m contour+100 nmi - bathy

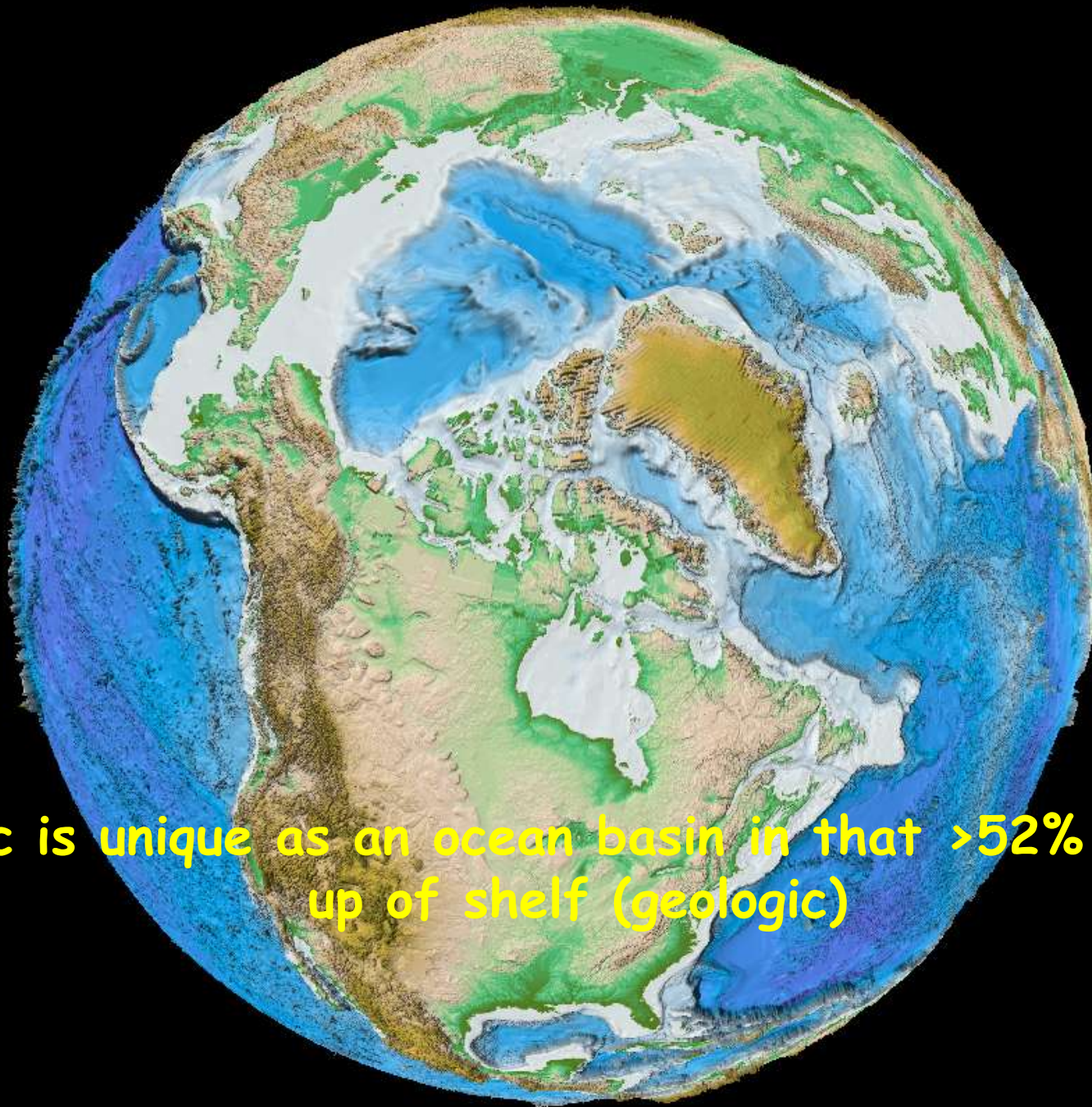
350 nmi from baseline - distance

Constraining the Outer Limit of the Continental Shelf



UNH CCOM-JHC U.S. Law-of-the-Sea Bathymetric Mapping to Date

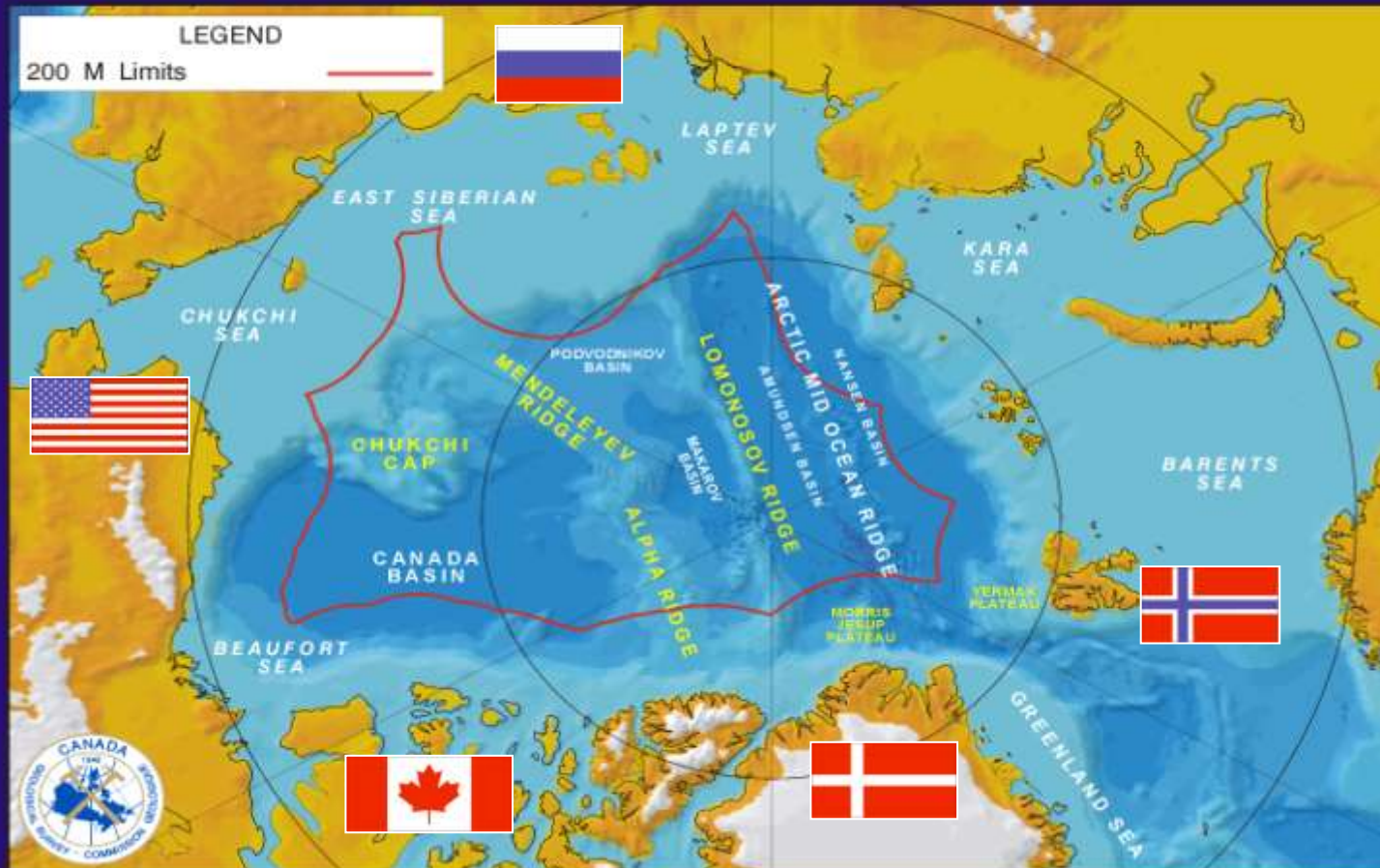




Arctic is unique as an ocean basin in that >52% is made up of shelf (geologic)

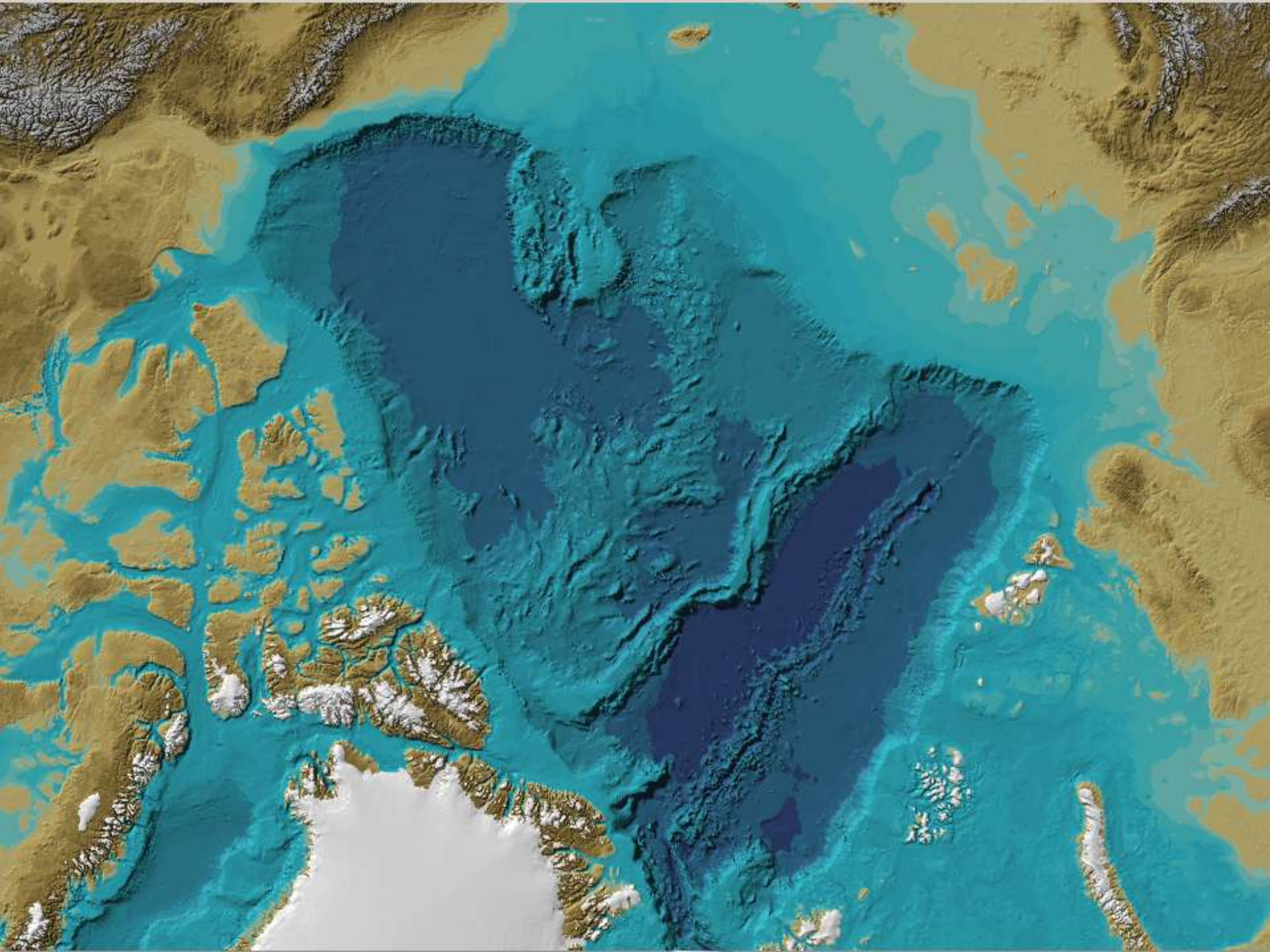
Five nations having potential extended shelves

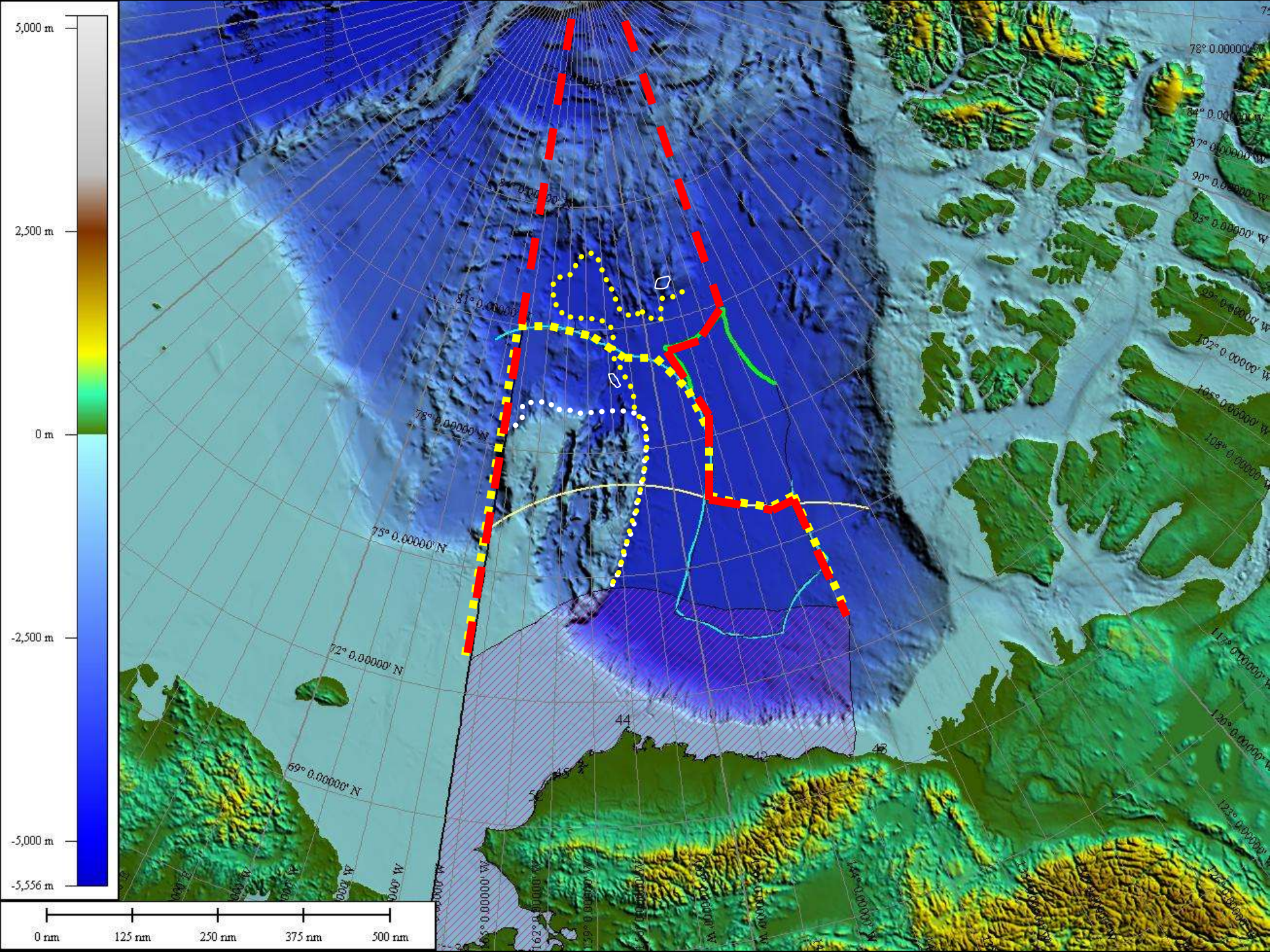
PRINCIPAL PHYSIOGRAPHIC FEATURES OF THE ARCTIC OCEAN

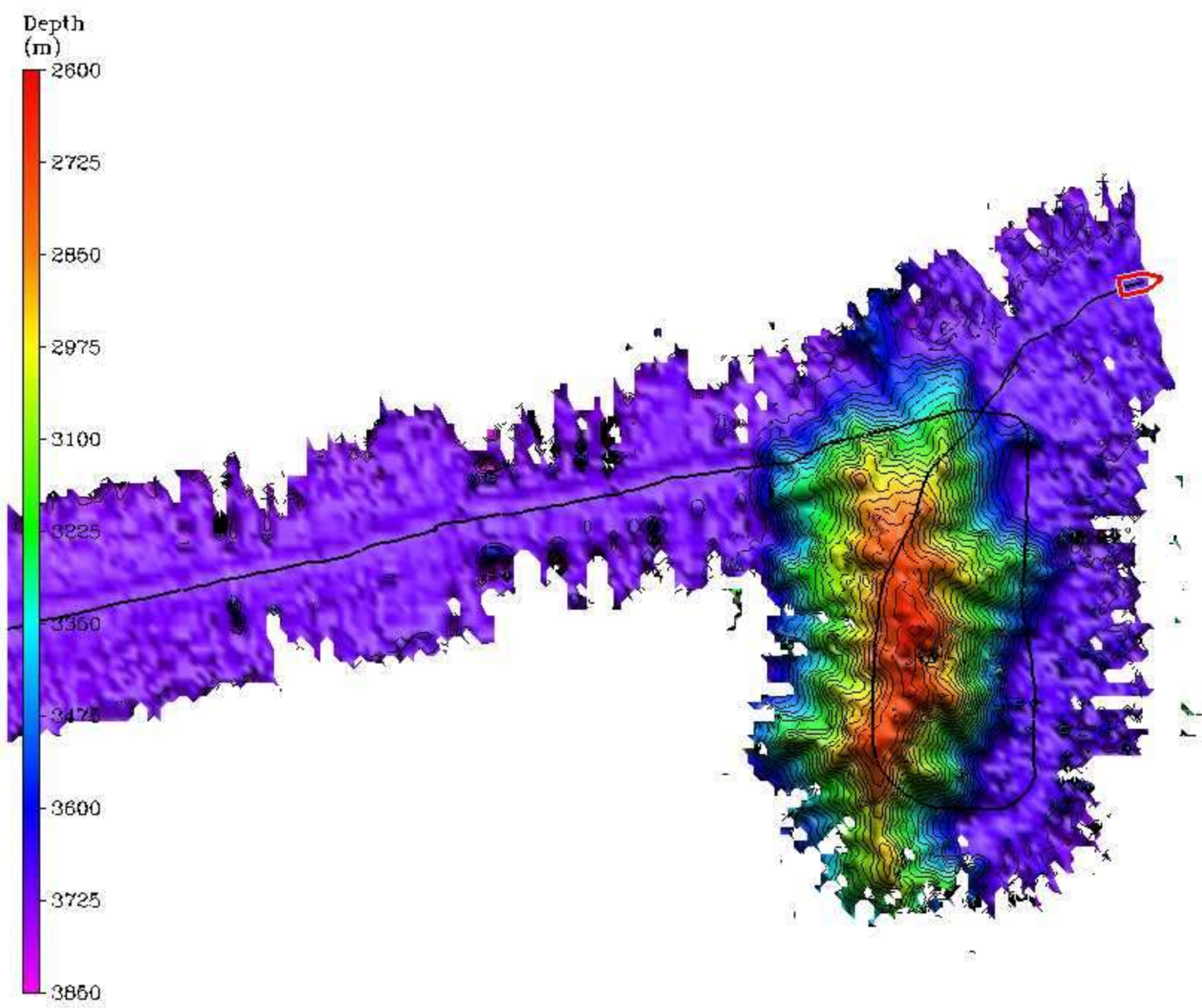


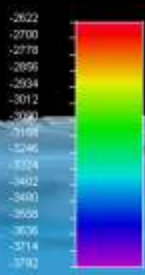
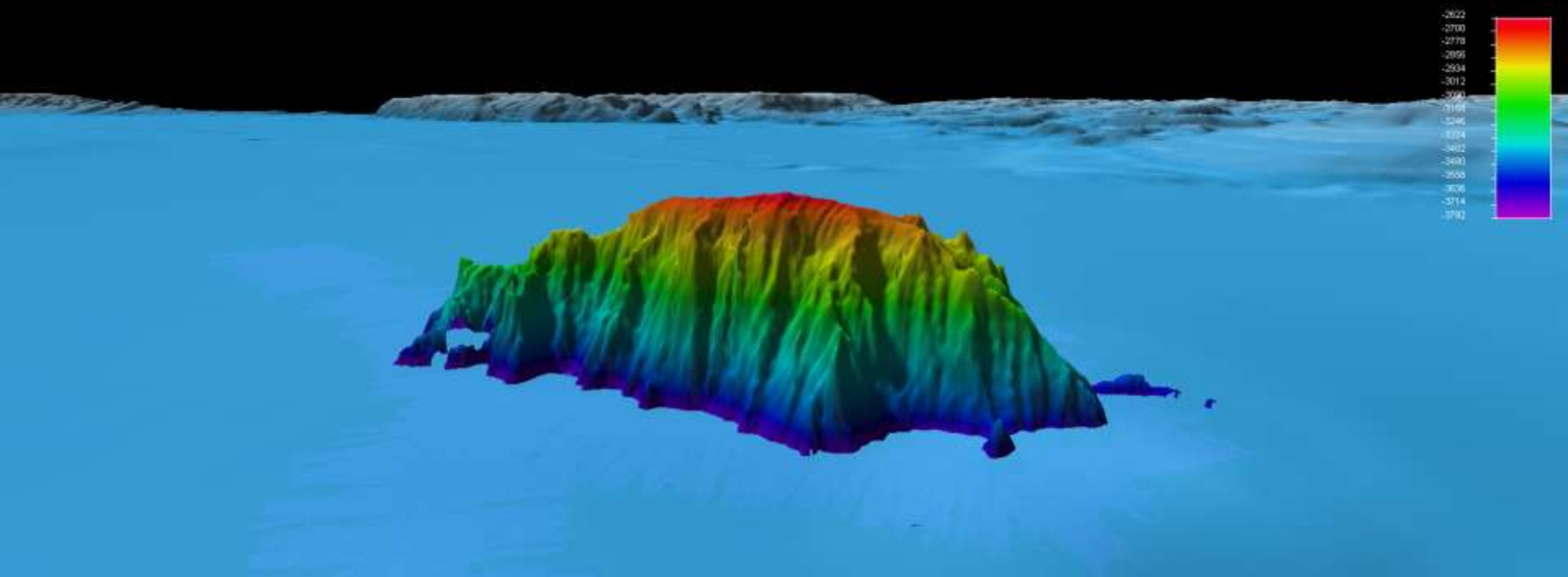
DV, RM & GC GSC Atlantic June 1997 (Revised)

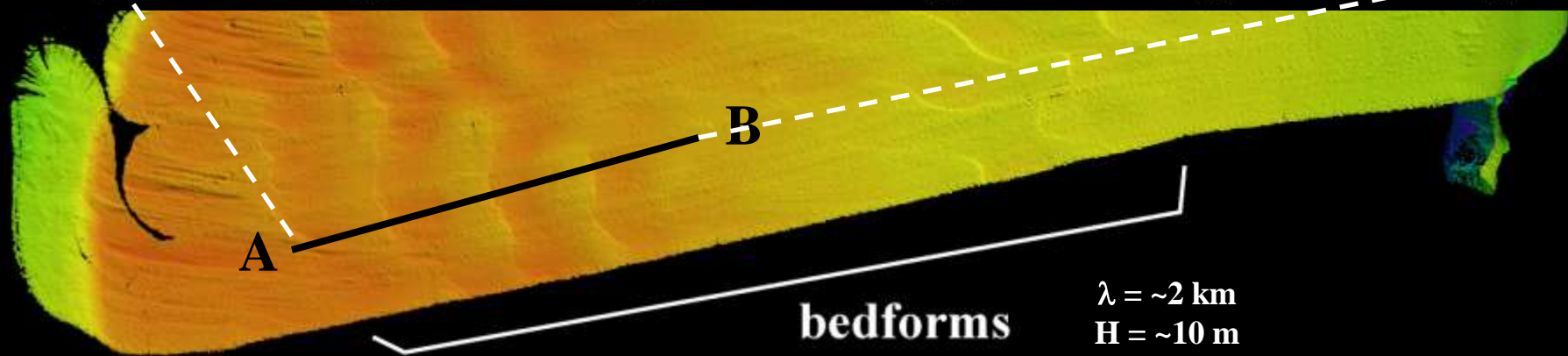
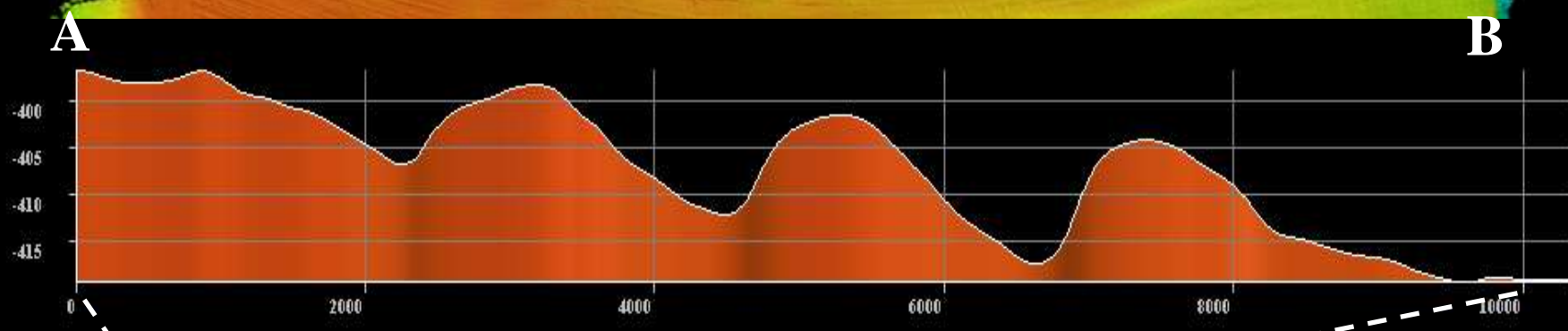
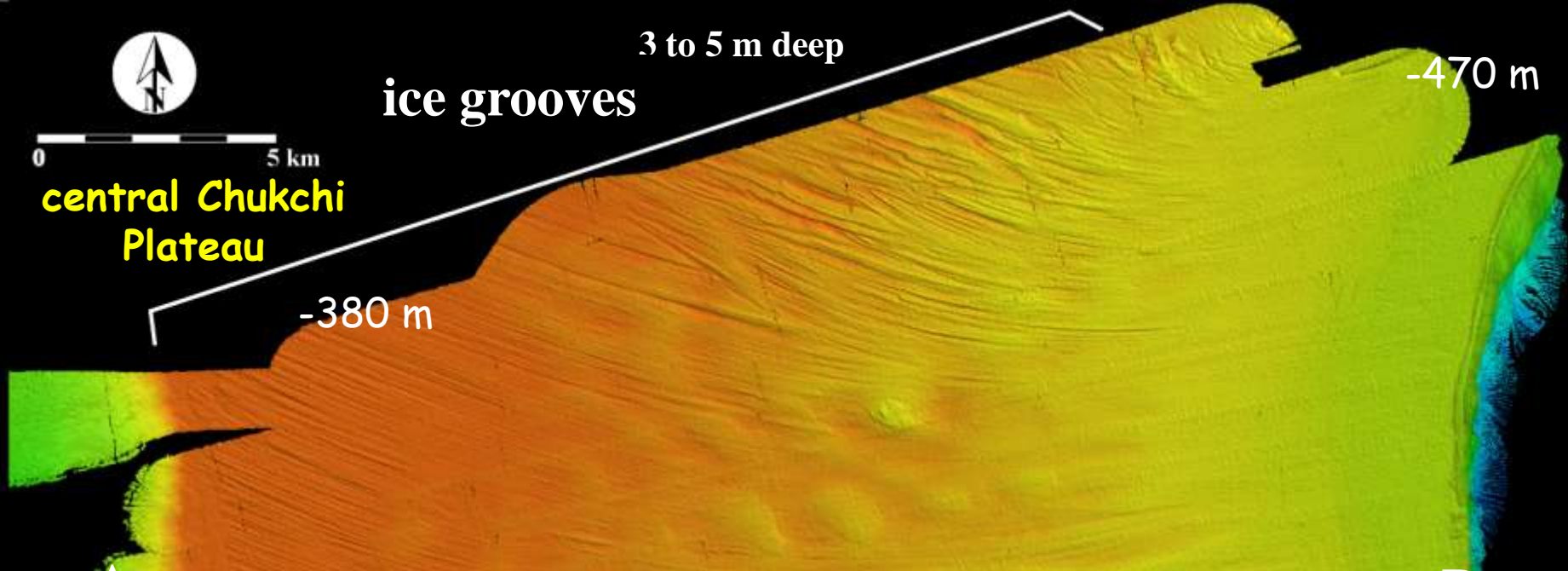
From Ron McNab



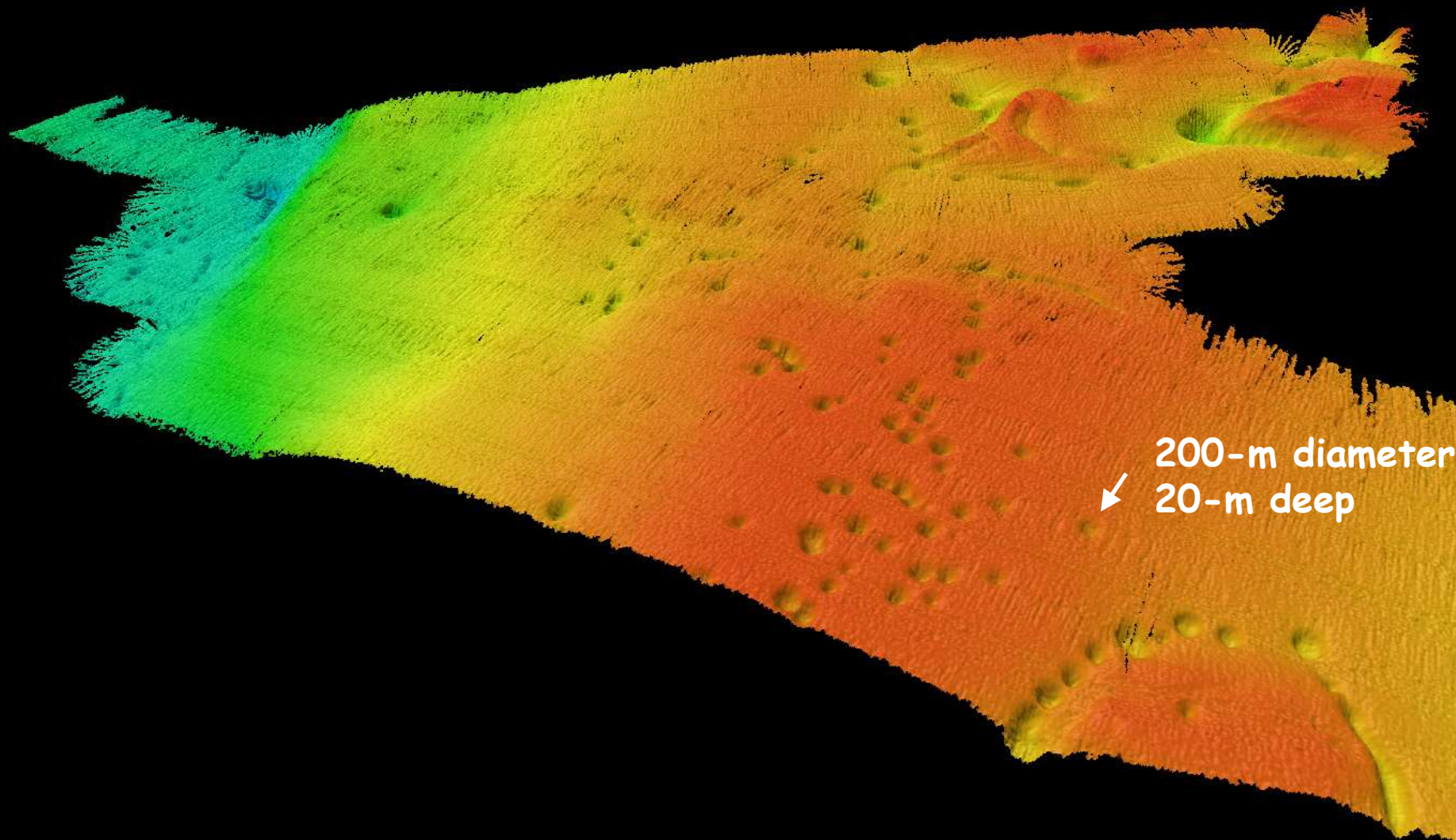








central Chukchi Plateau pockmarks



200-m diameter
20-m deep

VE = 10x
looking SW