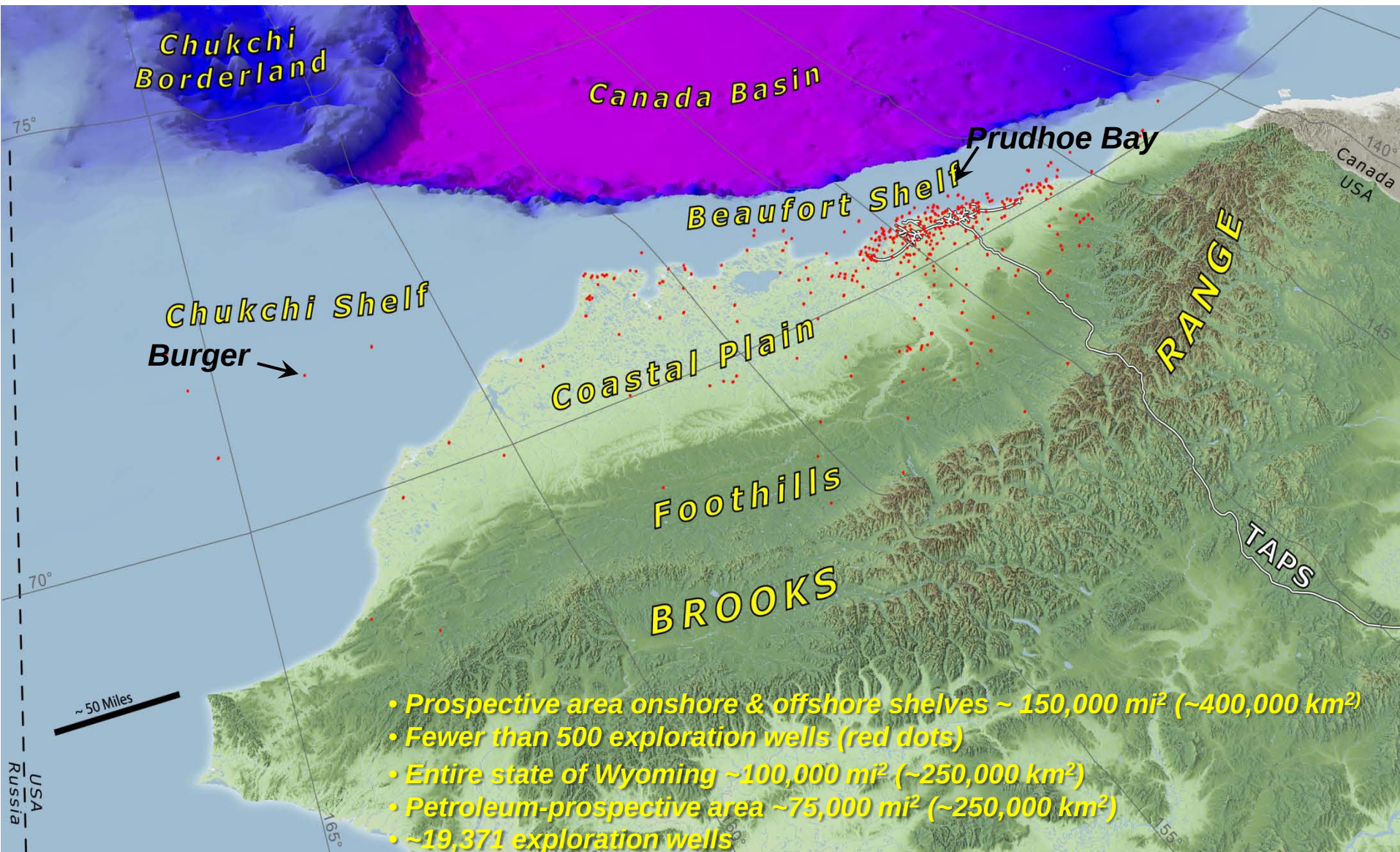
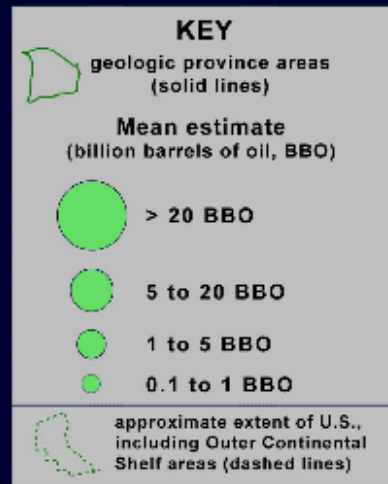
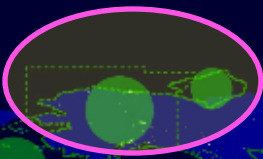


Arctic Alaska Conventional Oil & Gas Exploration Potential



Global Conventional Oil Resources



Global Conventional Oil Resources - Undiscovered, Technically Recoverable

Data sources:

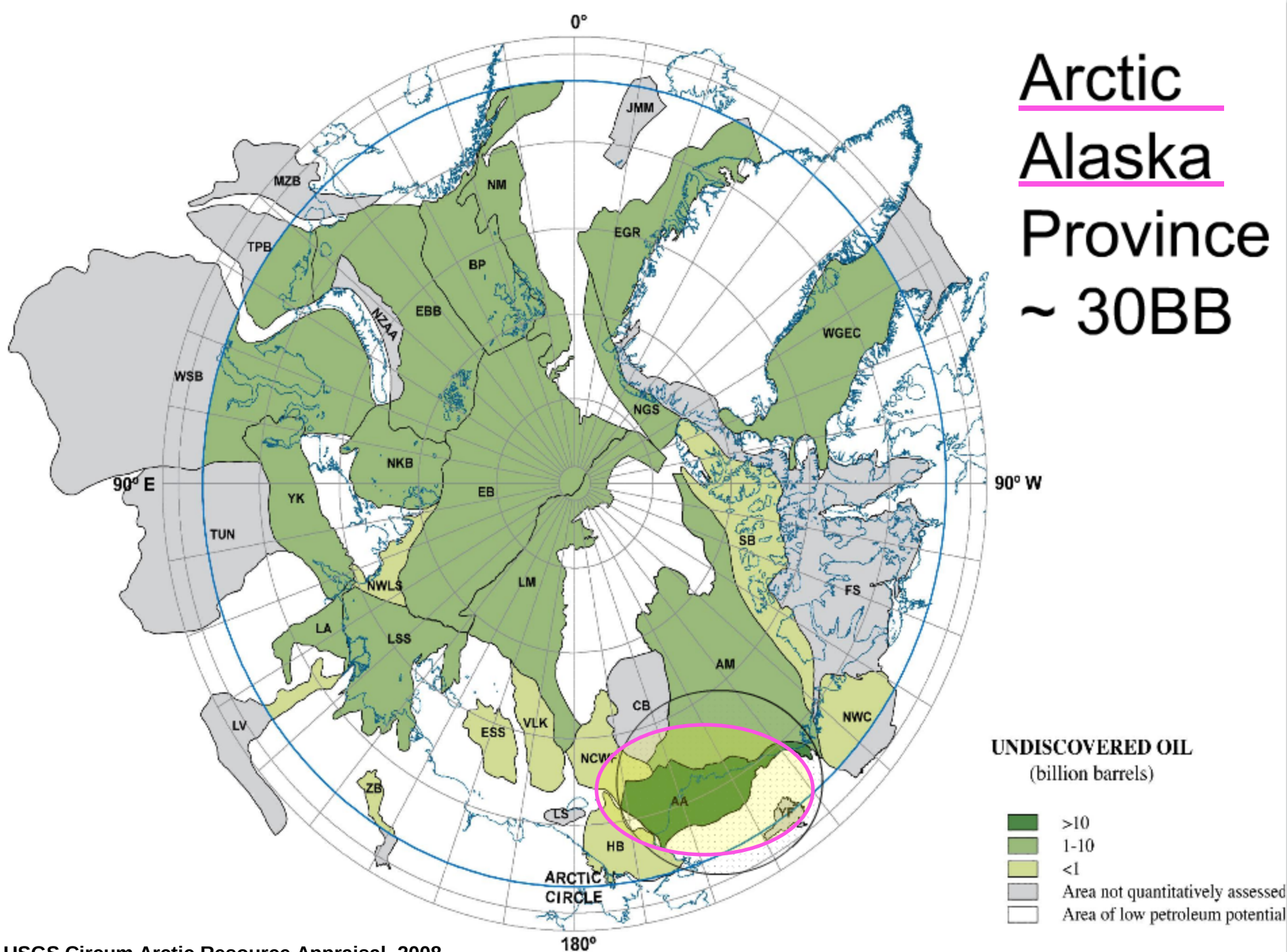
- USGS World Petroleum Assessment 2000 and updates
- USGS National Oil and Gas Assessment, 2006 update
- MMS 2006 National OCS Assessment
- Earth At Night Image courtesy of NASA/GSFC, NOAA/NGDC DMSP Digital Archive

Note: Map does not include results from USGS Circum-Arctic Resource Appraisal

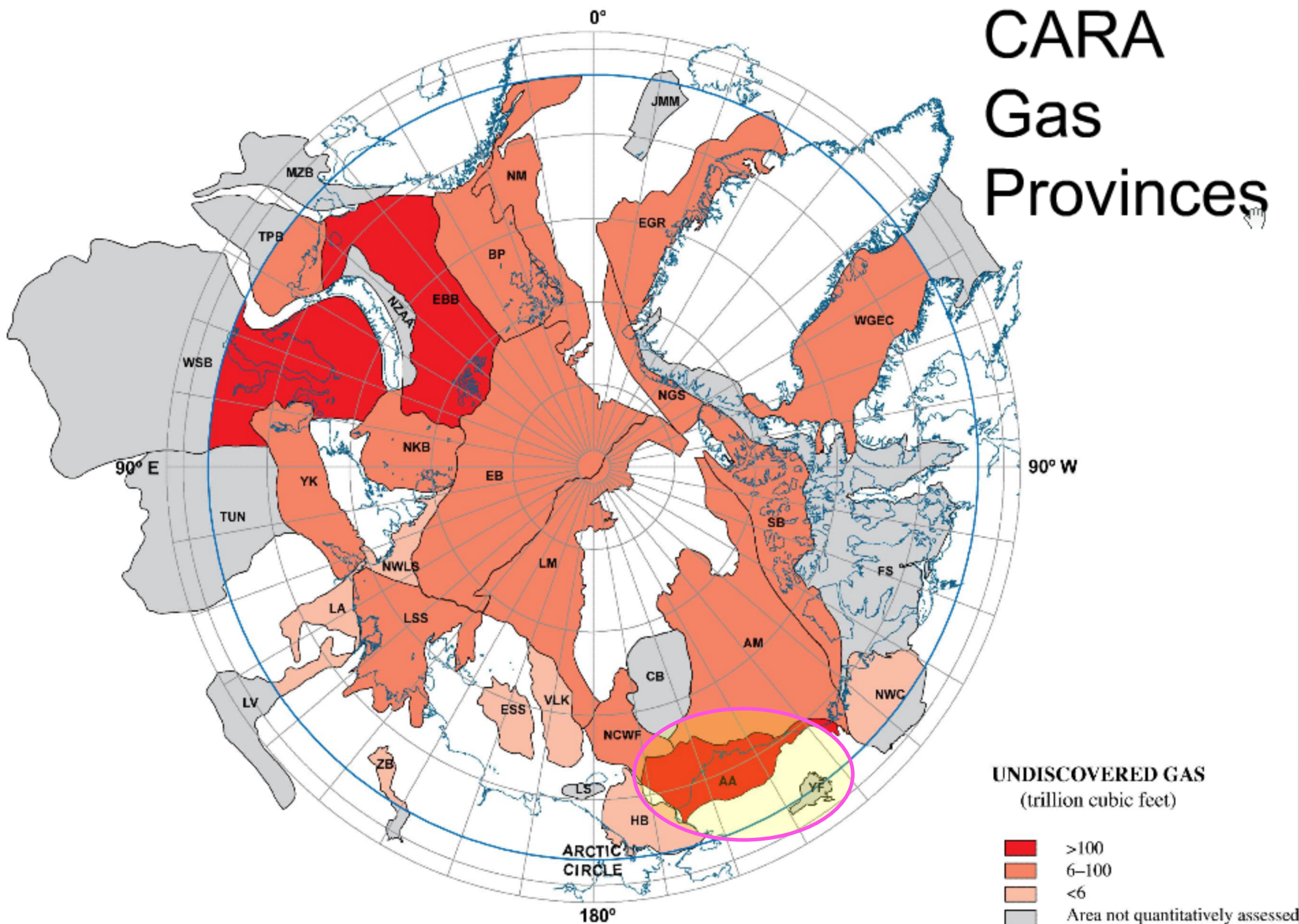


Note: Does not include results from USGS Circum-Arctic Oil and Gas Resource Appraisal study.

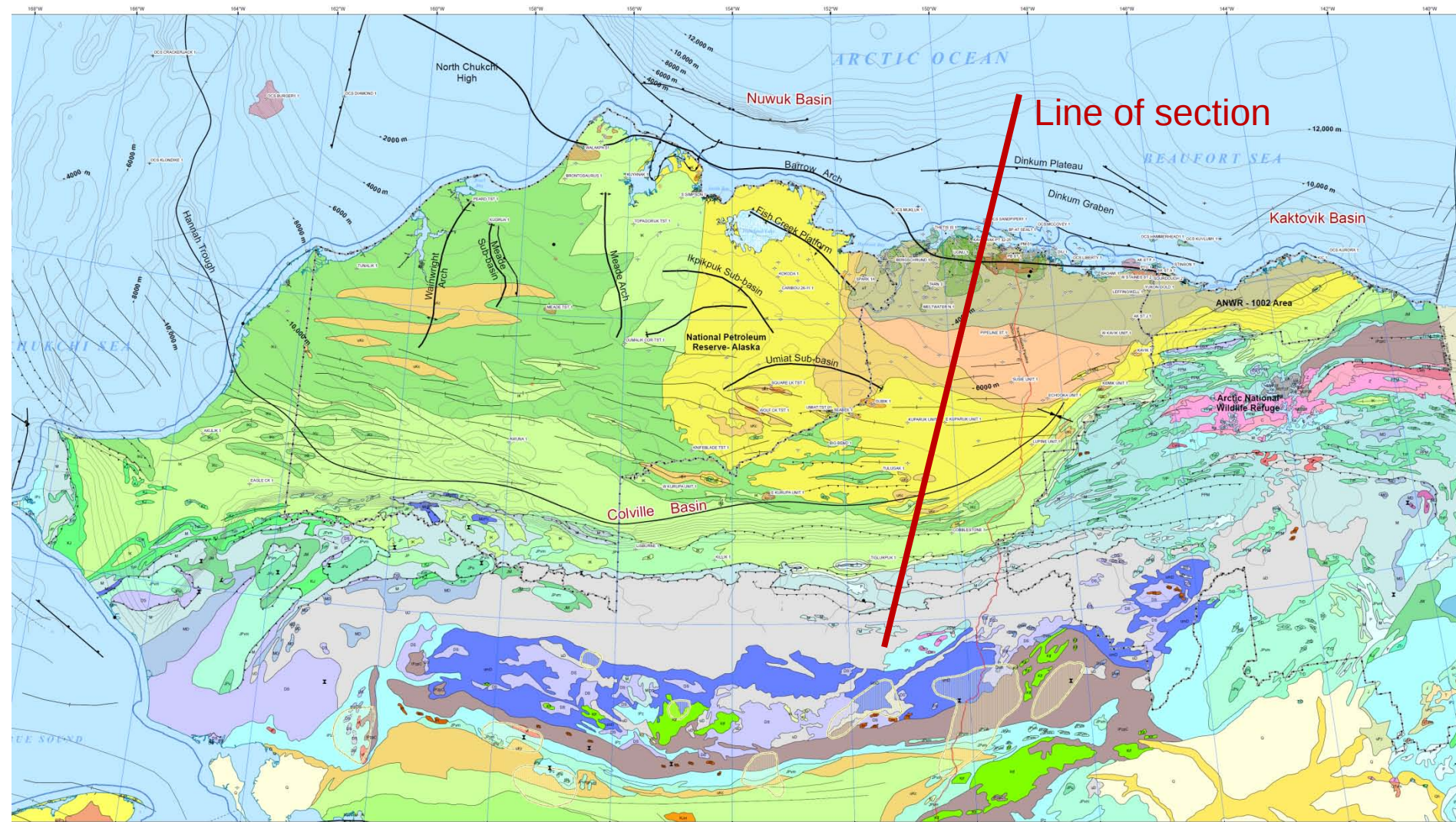
Arctic Alaska Province ~ 30BB



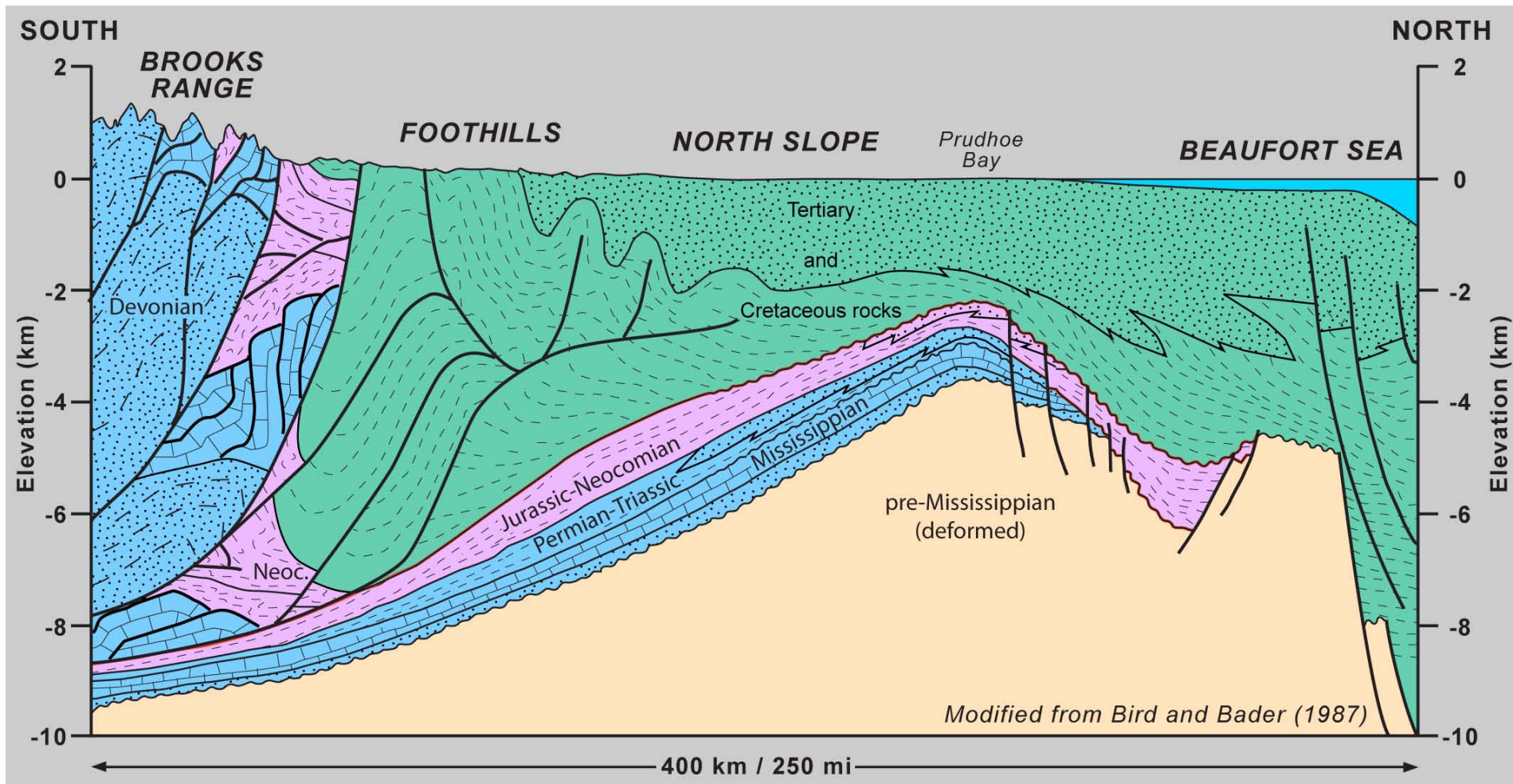
CARA Gas Provinces



North Slope Regional Geology

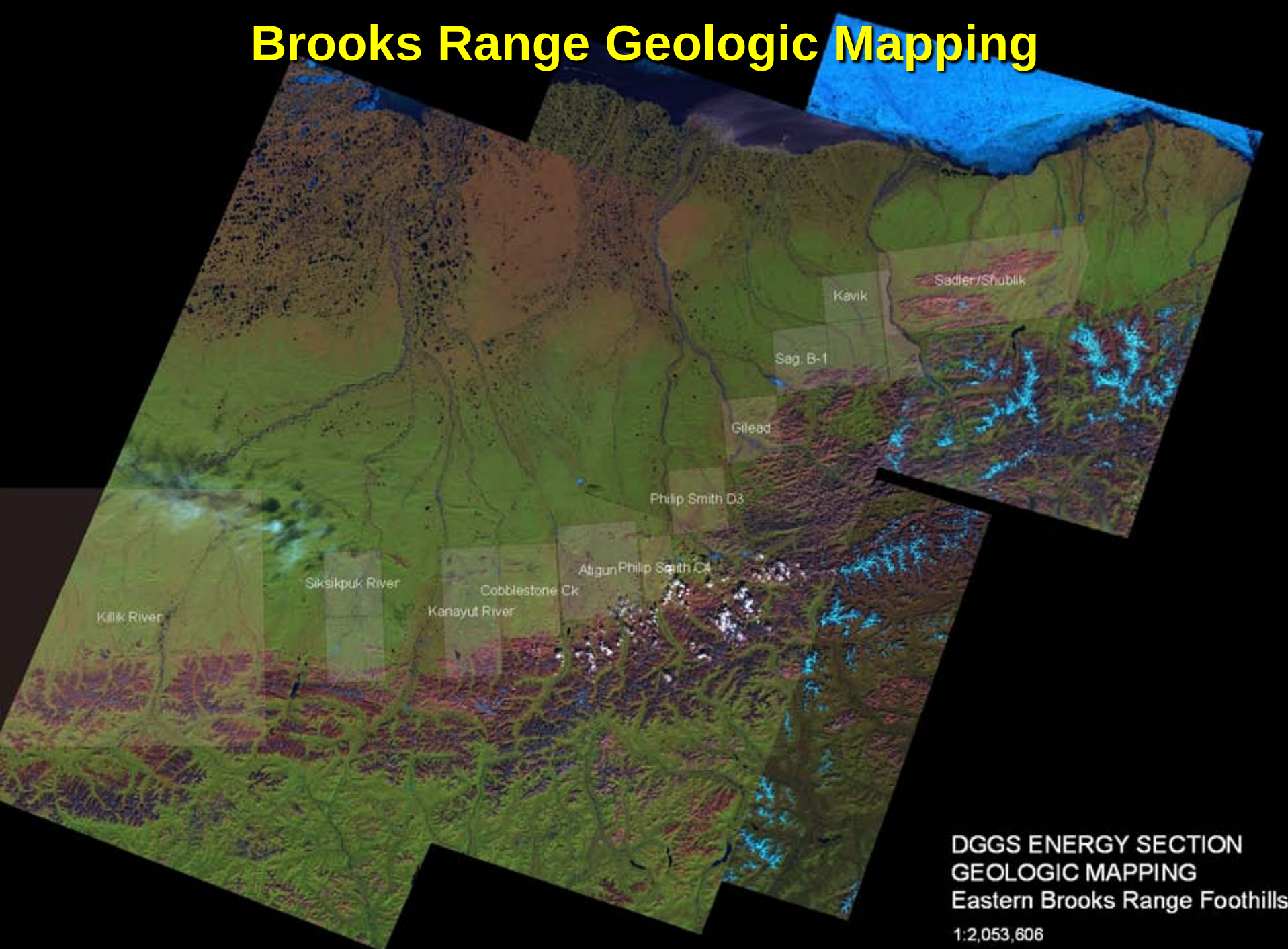


Simplified and Generalized Regional Cross-section

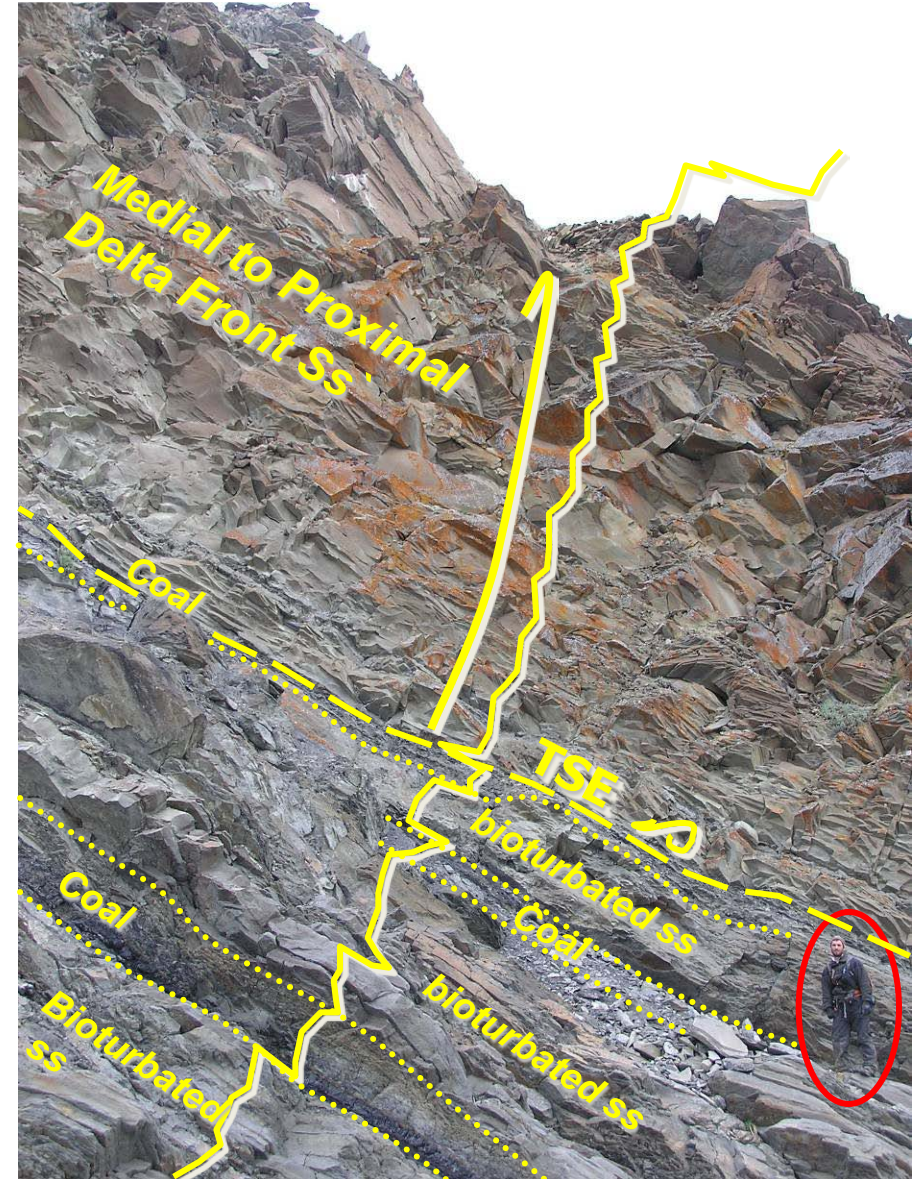
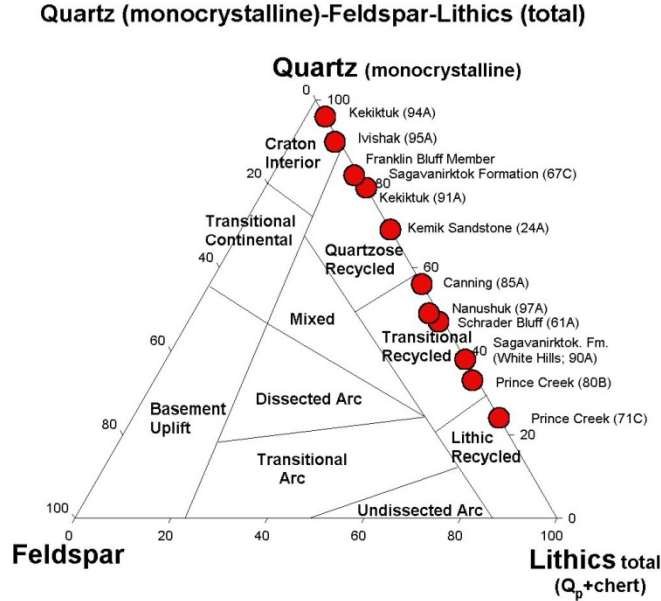


USGS

Brooks Range Geologic Mapping

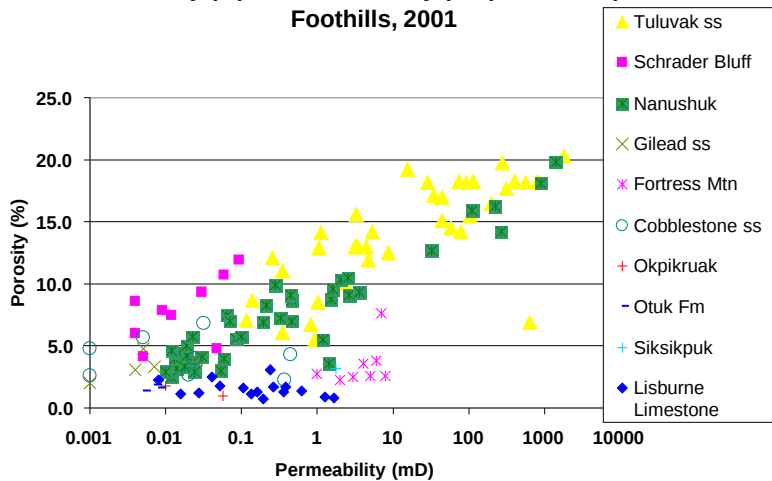


Topical Petroleum-related Studies

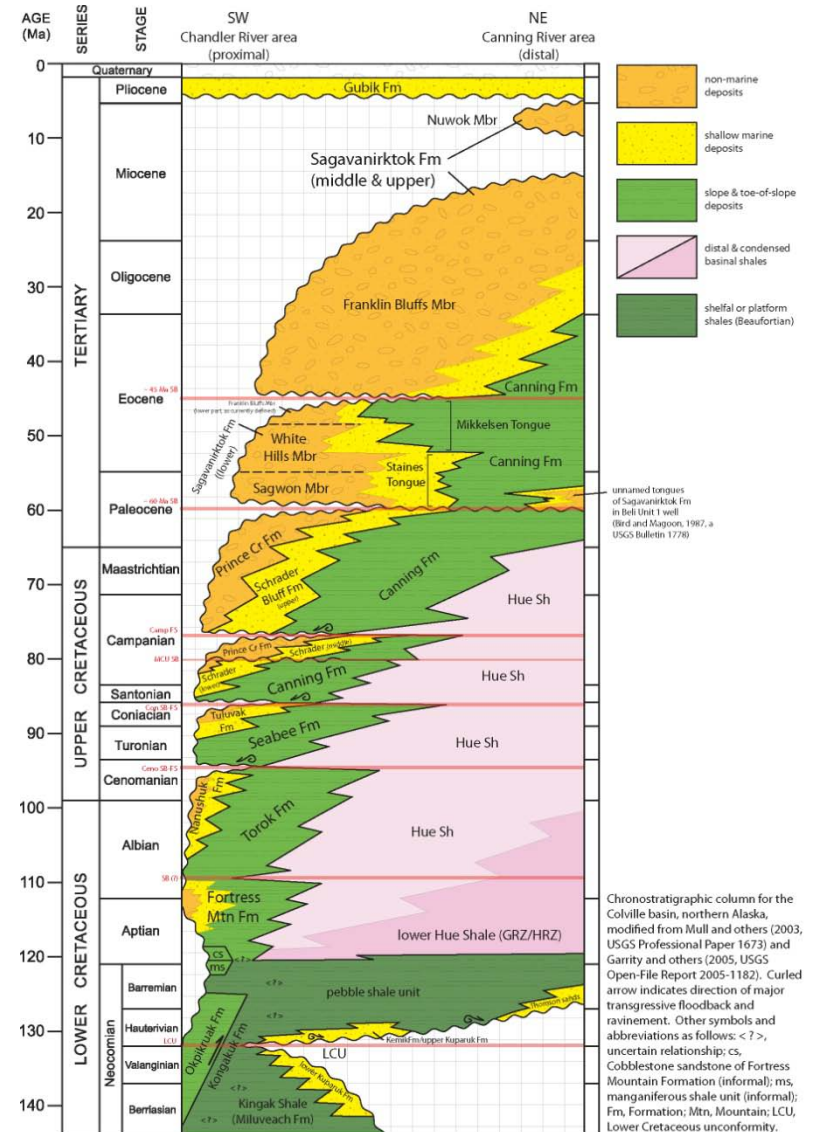
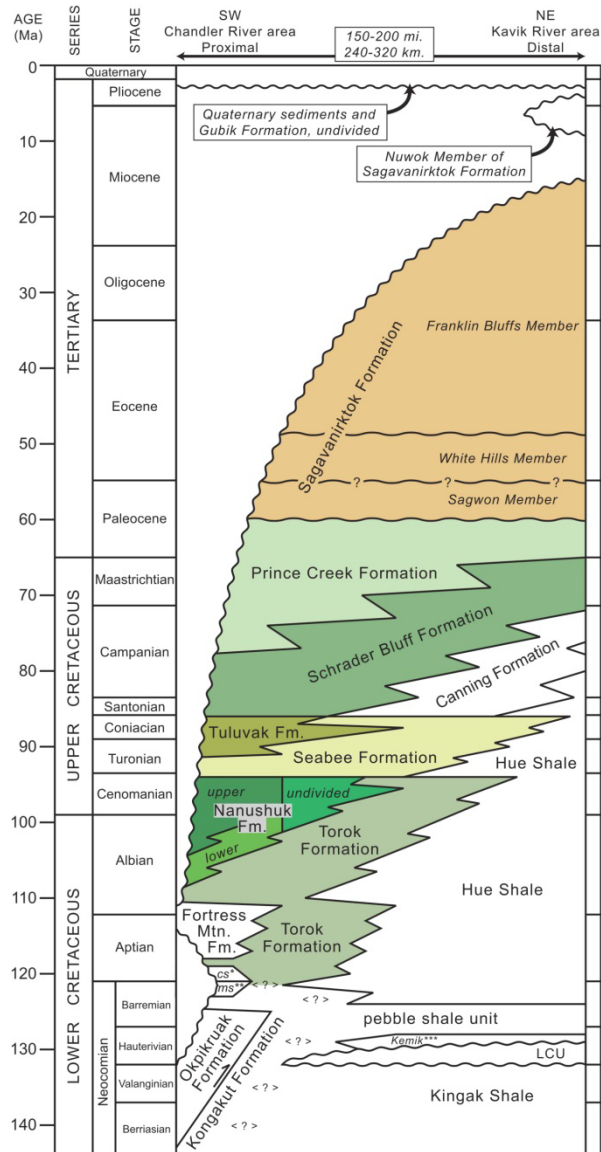


Killik Bend non-marine to deltaic succession, highstand aggradational system tract

Porosity (%) vs. Permeability (mD) North Slope Foothills, 2001



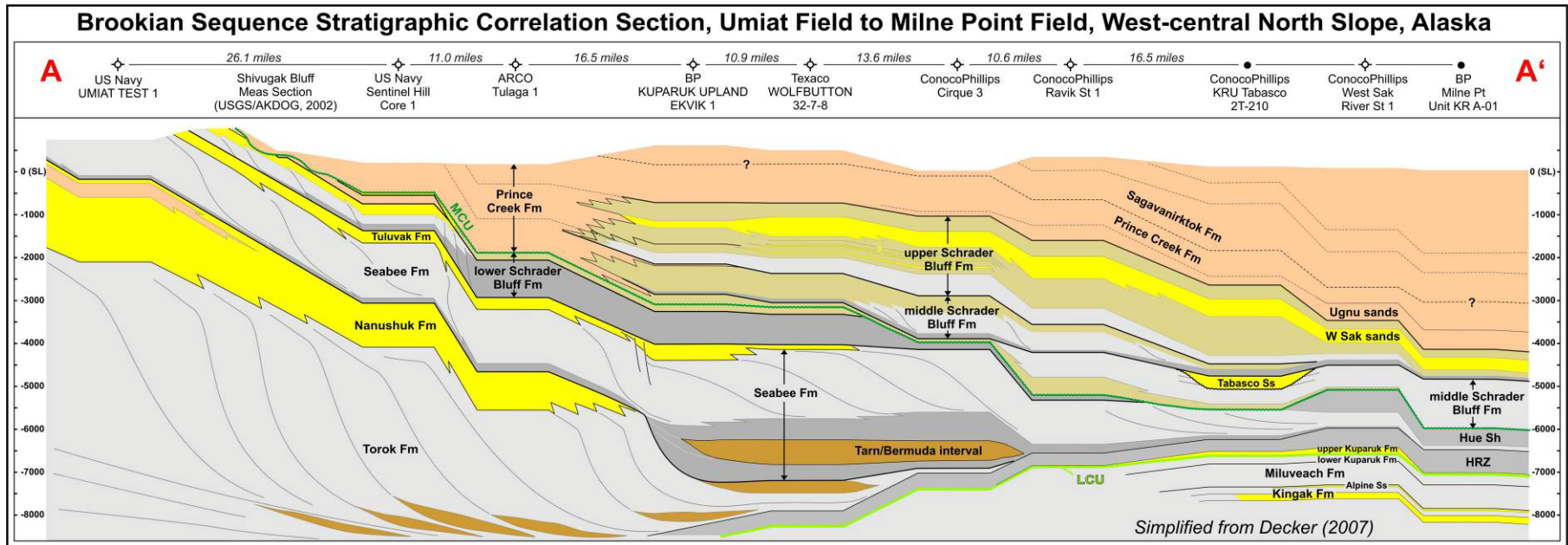
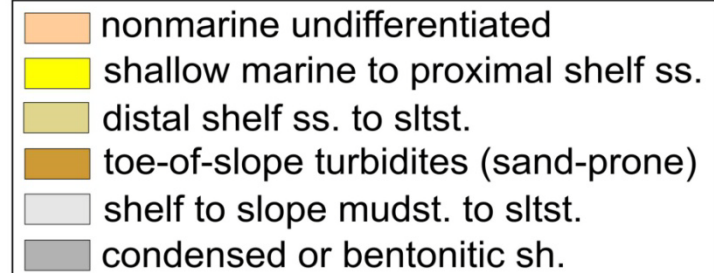
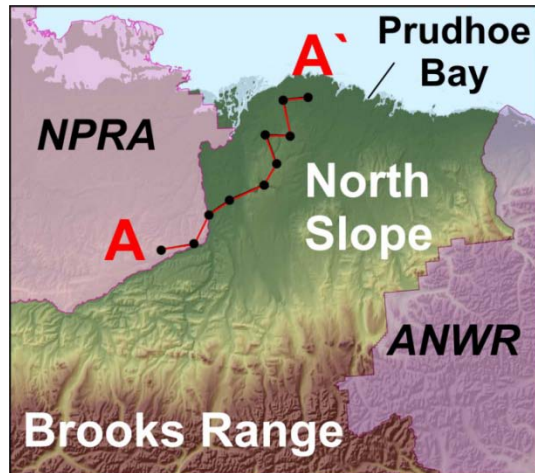
Revising and Codifying Stratigraphic Nomenclature



Red lines and text indicate key sequence stratigraphic surfaces, abbreviated as follows: SB, sequence boundary; FS, transgressive flooding and/or ravinement surface; Camp, Campanian; Ceno, Cenomanian; MCU, mid-Campanian unconformity.

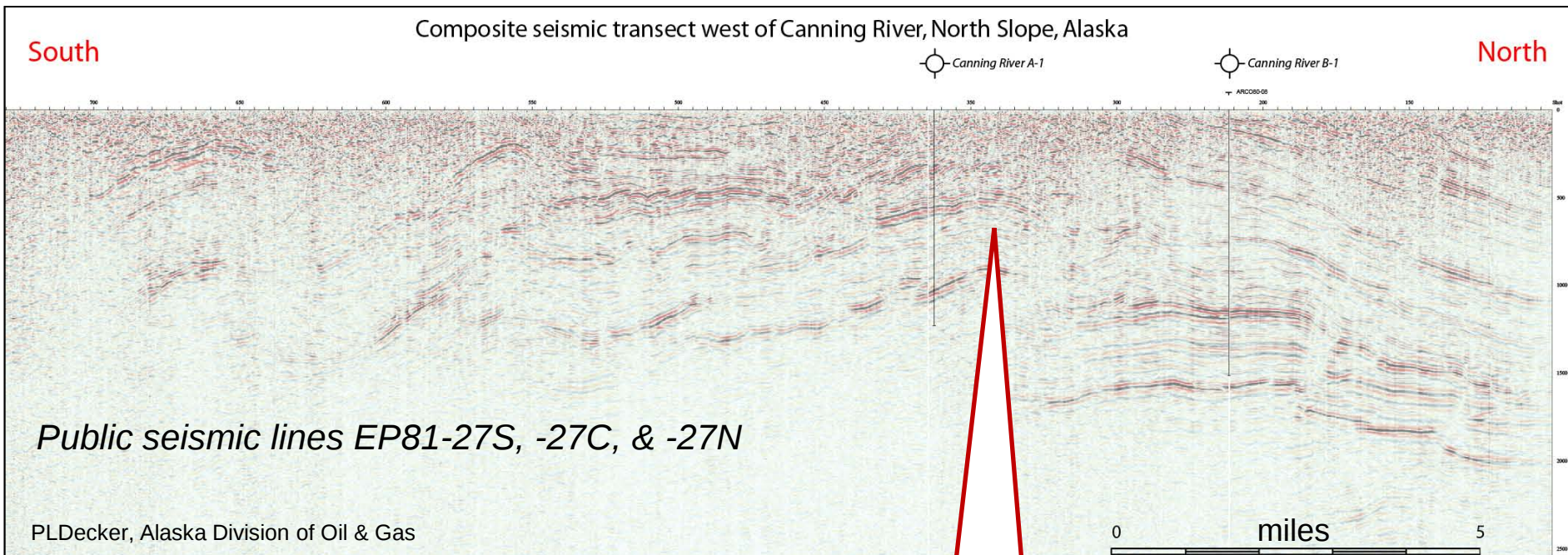
Chronostratigraphic column for the Colville basin, northern Alaska, modified from Mull and others (2003, USGS Professional Paper 1673) and Garrity and others (2005, USGS Open-File Report 2005-1182). Curled arrow indicates direction of major transgressive floodback and ravinement. Other symbols and abbreviations as follows: < ? >, uncertain relationship; cs, Cobblestone sandstone of Fortress Mountain Formation (informal); ms, manganese shale unit (informal); Fm, Formation; Mtn, Mountain; LCU, Lower Cretaceous unconformity.

Merging Surface and Subsurface Data



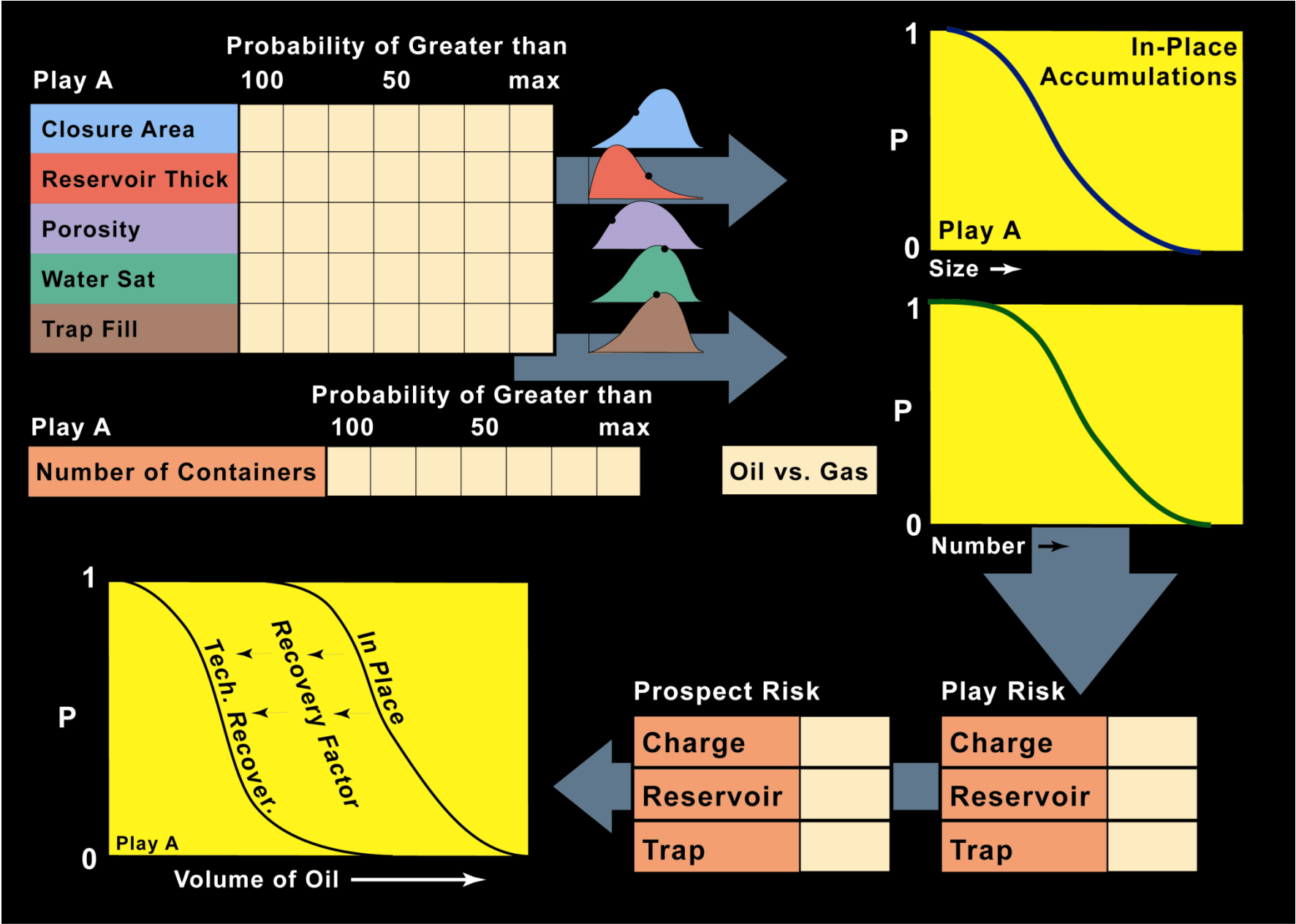
Foothills Structural Plays

Seismic Interpretation



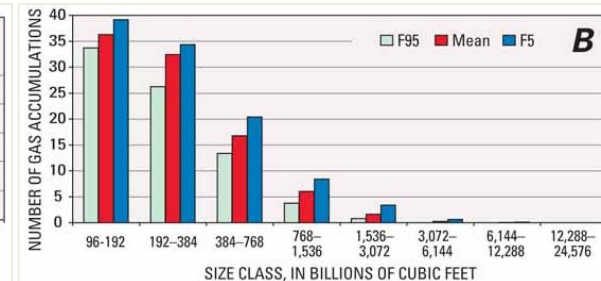
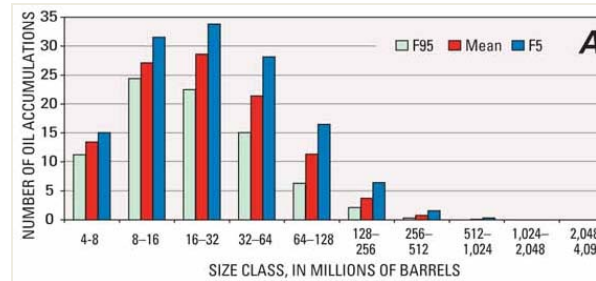
Kavik structure

USGS Assessment Methodology – Geologic Basis

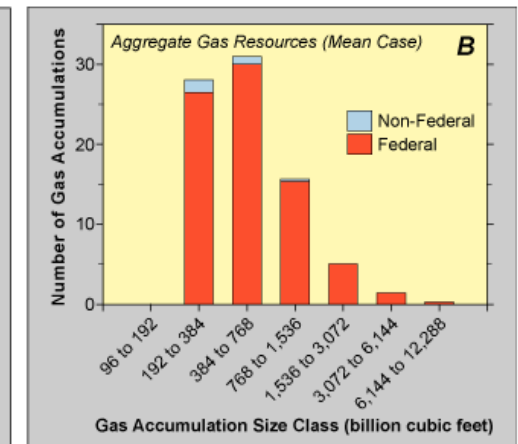
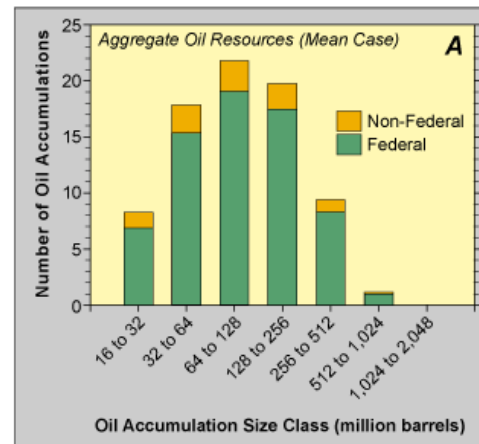


Undiscovered Mean Field Size Distributions - USGS

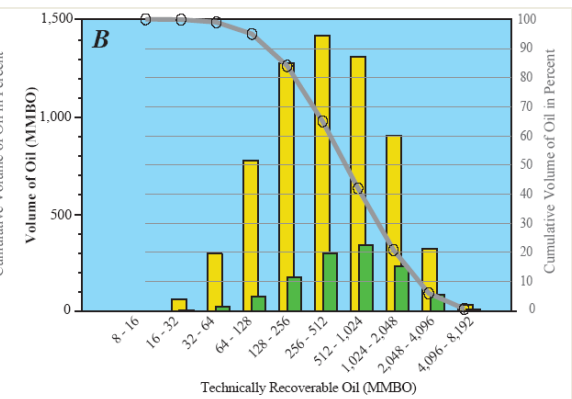
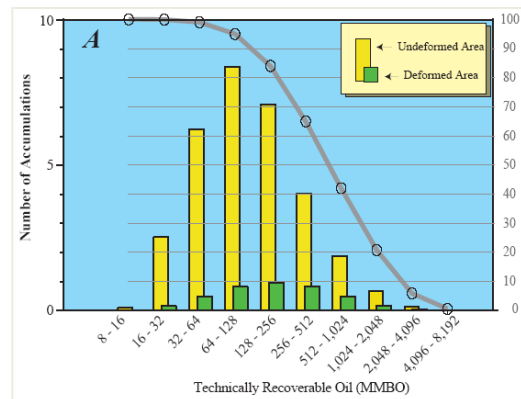
State Lands: ~1 undiscovered oil accumulation > 250 MMBO recoverable. ~ 2 undiscovered gas accumulations > 1.5 TCF recoverable.



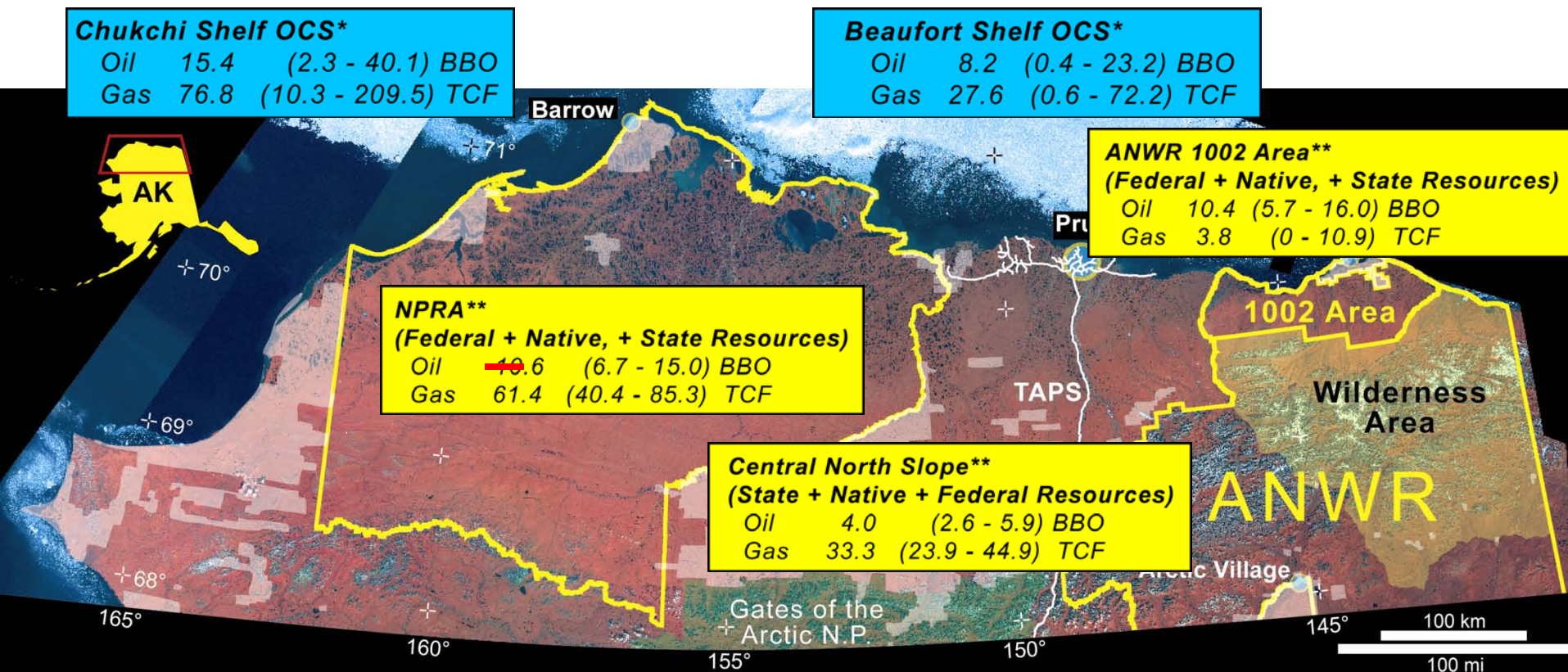
NPRA: ~11 undiscovered oil accumulations > 250 MMBO recoverable. ~7 undiscovered gas accumulations > 1.5 TCF recoverable.



ANWR 1002: ~9 undiscovered oil accumulations > 250 MMBO recoverable (~65% of estimated total recoverable oil volume); gas resource not shown.



USGS Potential for Undiscovered Petroleum in Arctic Alaska



* Oil includes crude oil + natural gas liquids
Gas includes nonassociated + associated gas

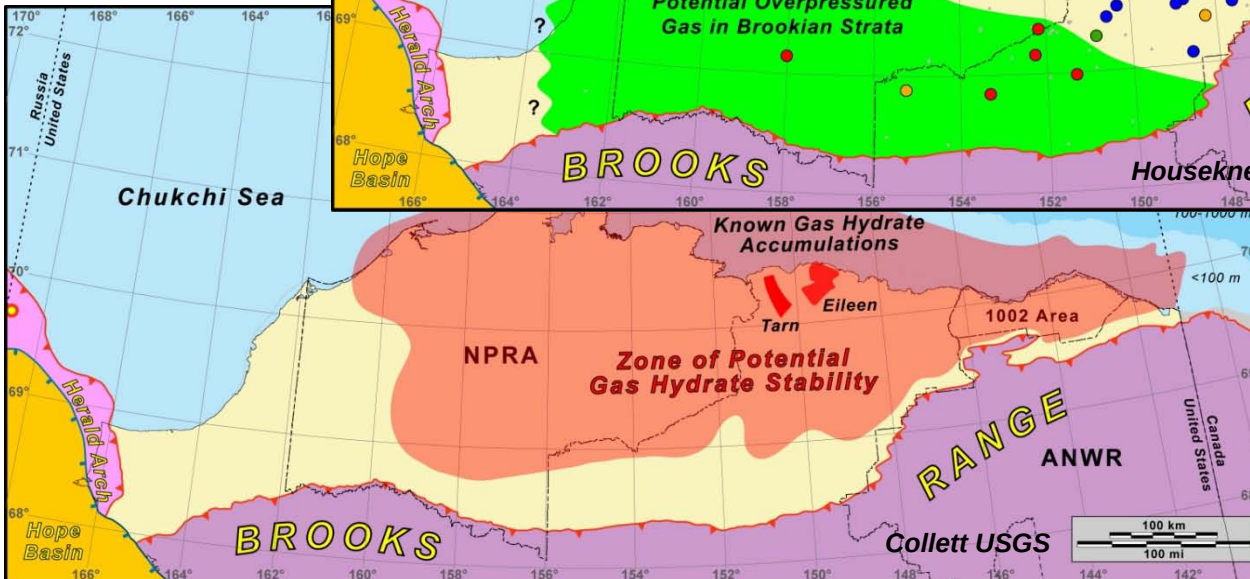
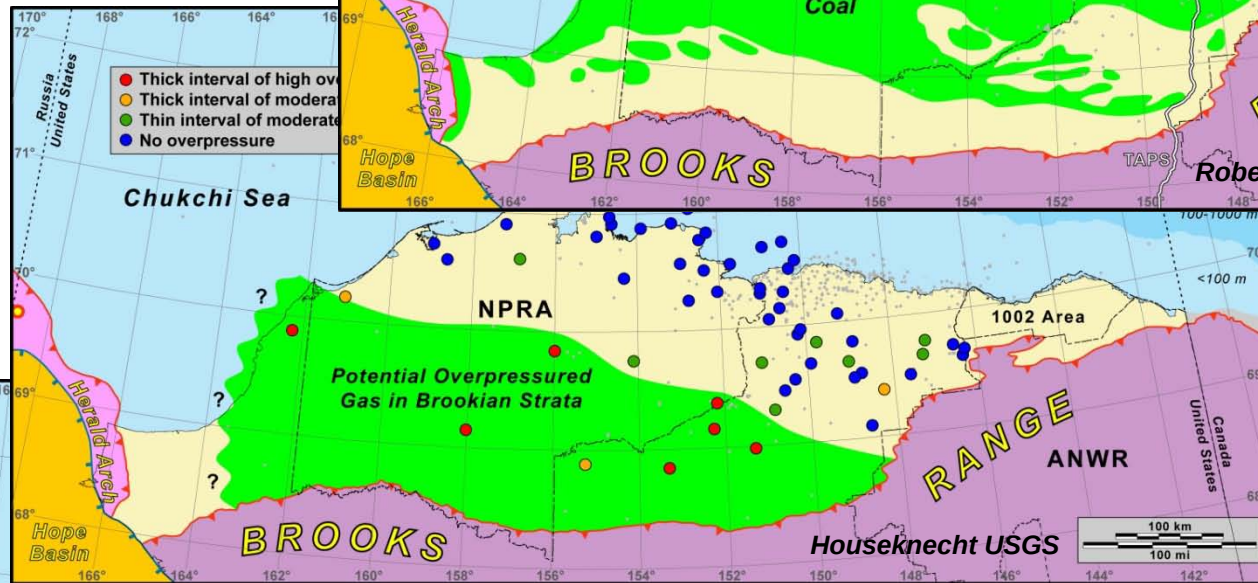
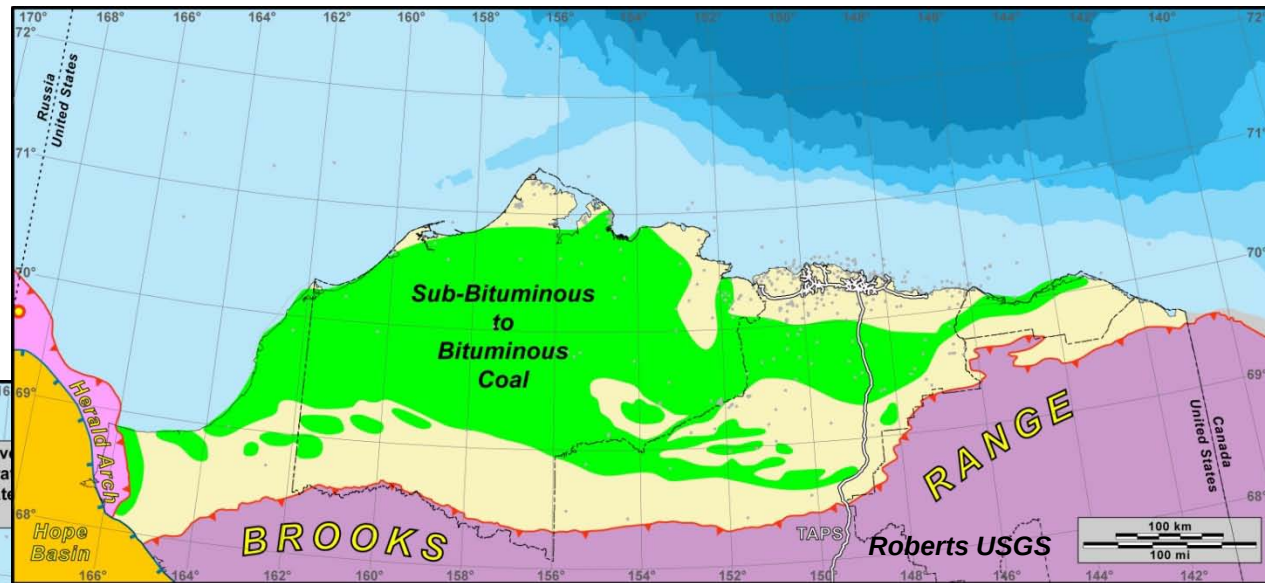
** Oil includes crude oil only
Gas includes nonassociated gas only

“Unconventional” Gas Resources (continuous resources)

**Coalbed
Gas**

**Overpressured,
Basin-centered Gas**

**Gas
Hydrates**



Evaluation in Progress