

Oil and Gas Activities in the Arctic

From an Assessment of the Arctic Council

Oil and Gas Activities in the Arctic—Effects and Potential Effects

Co-Chairs

Hein Rune Skjoldal, Institute of Marine Research, Bergen, Norway
hein.rune.skjoldal@imr.no

Dennis K. Thurston, Bureau of Ocean Energy Management,
Regulation and Enforcement, Anchorage, Alaska, USA
dennis.thurston@boemre.gov

www.amap.no/oga

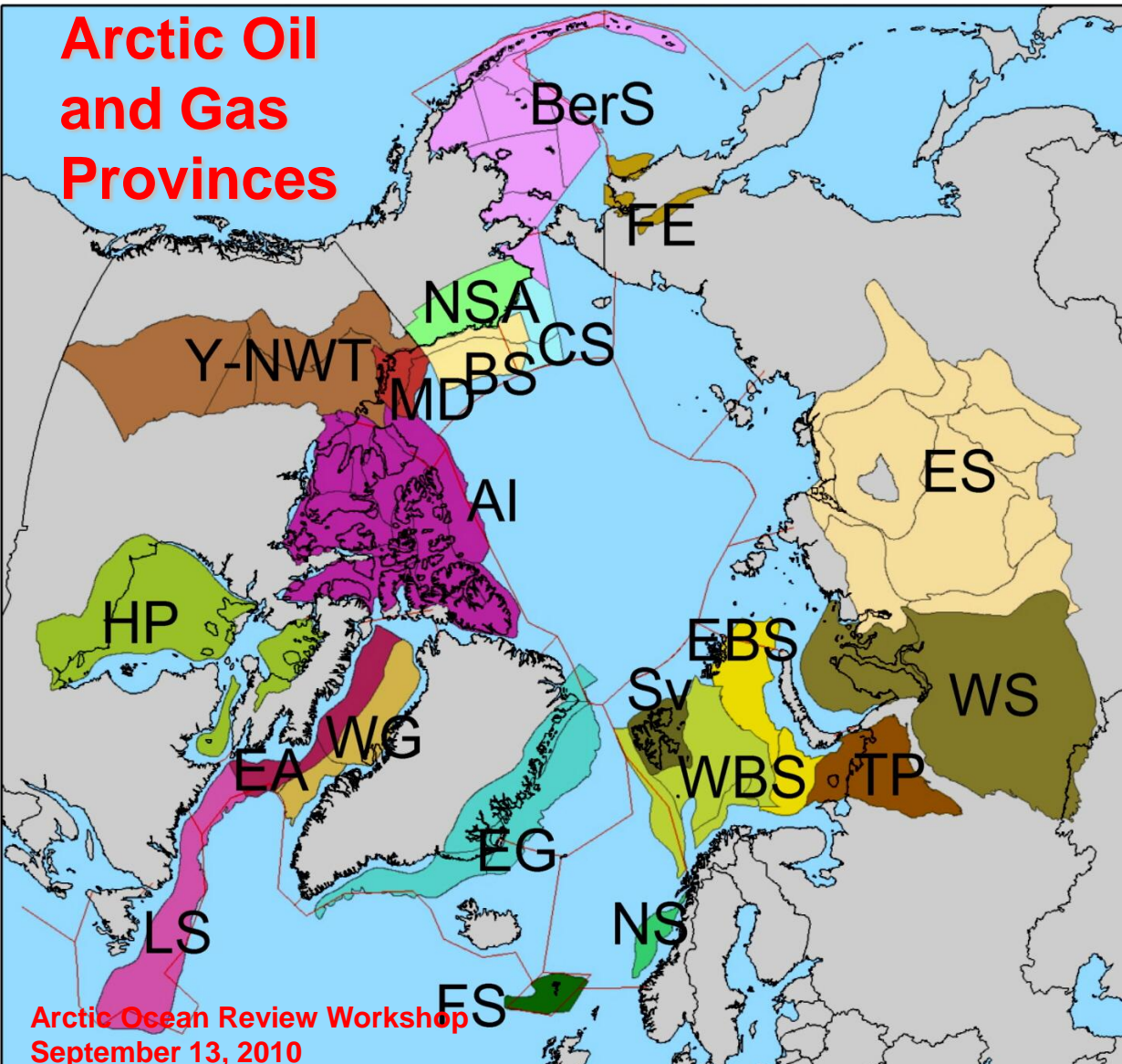
Scope of the Assessment

- **Detailed evaluation of activities**
- **Social and economic effects**
- **Environmental effects from pollution**
- **Environmental effects from physical disturbances**
- **Effects on human health**
- **Status and Vulnerability of Ecosystems**

Oil and Gas Activities

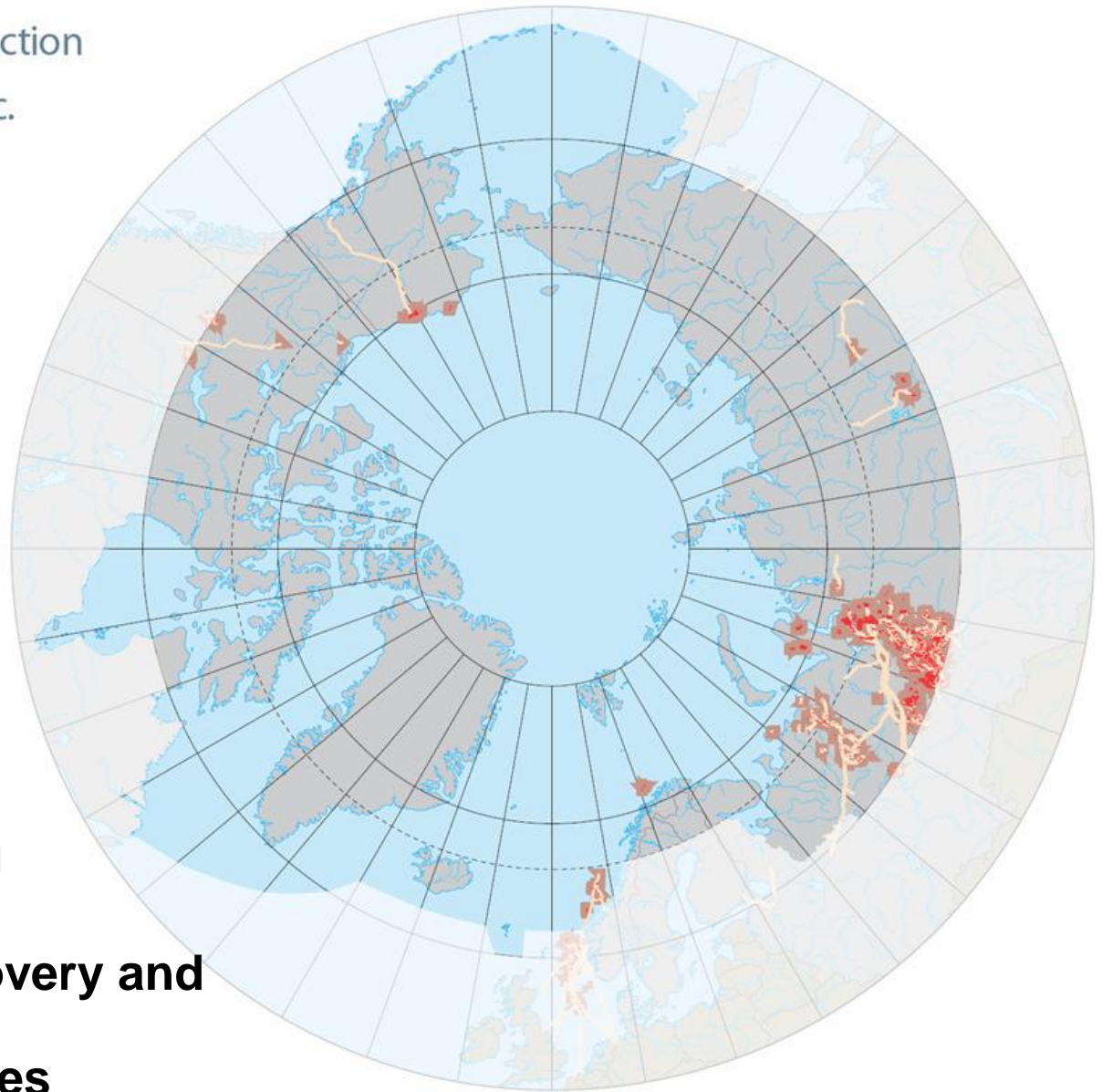
Robert P. Crandall, State of Alaska AOGCC (retired)
Dennis K. Thurston, BOEMRE

Arctic Oil and Gas Provinces



FE	Far East Russia
ES	East Siberia
WS	West Siberia
TP	Timan-Pechora
EBS	East Barents Sea
WBS	West Barents Sea
Sv	Svalbard
NS	Norwegian Sea
FS	Faroes Shelf
EG	East Greenland
WG	West Greenland
EA	Eastern Arctic Canada
LS	Labrador Shelf
AI	Arctic Islands
HP	Hudson Platform
MD	Mackenzie Delta
Y-NWT	Yukon-Northwest Territories
BS	Beaufort Sea
CS	Chukchi Sea
NSA	North Slope Alaska
BerS	Bering Sea

► Oil/gas production areas in the Arctic.

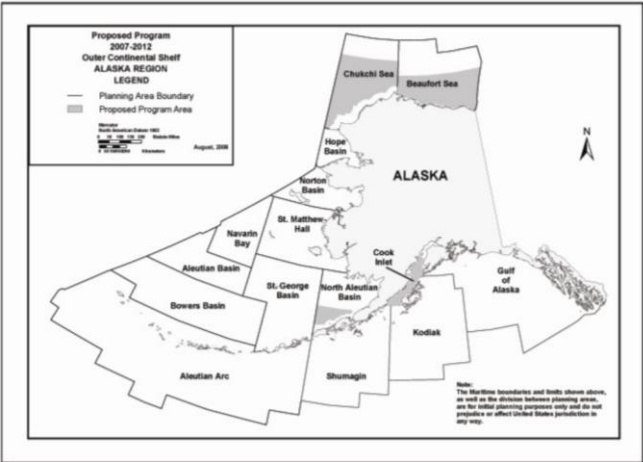
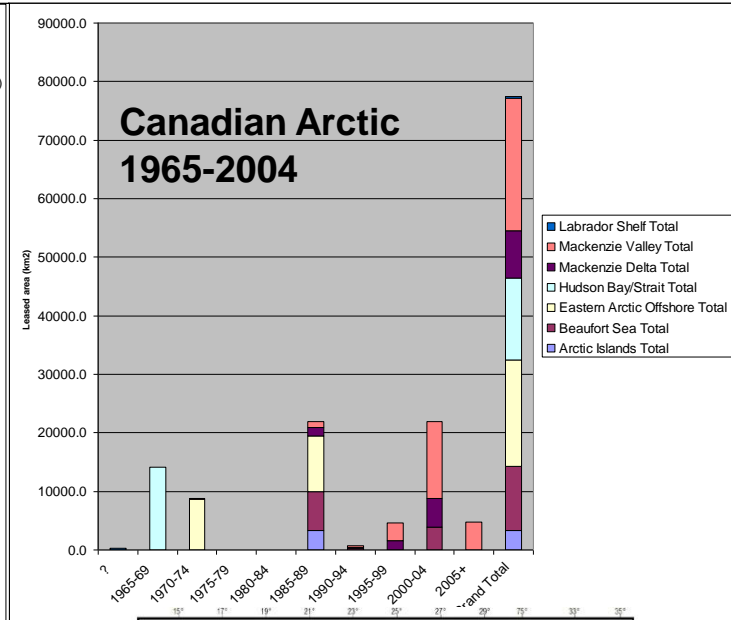
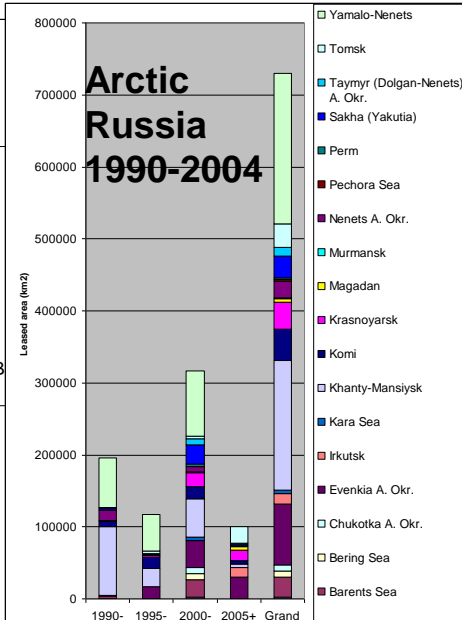
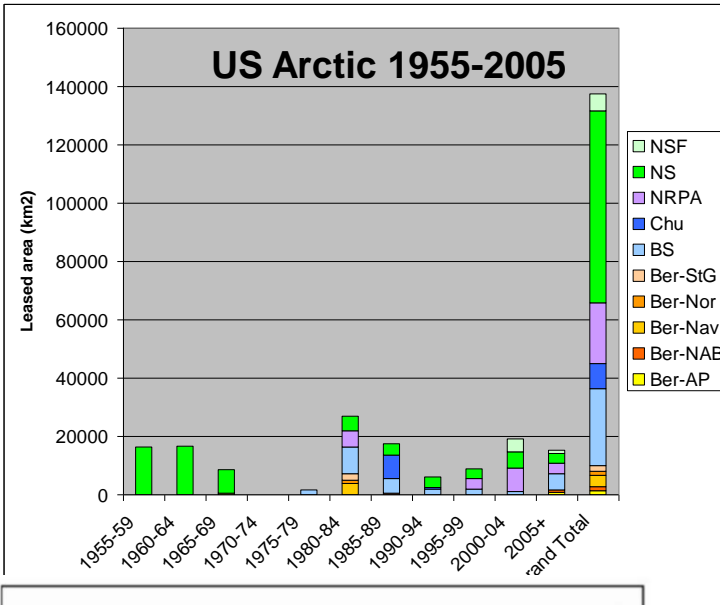


Activity Indices

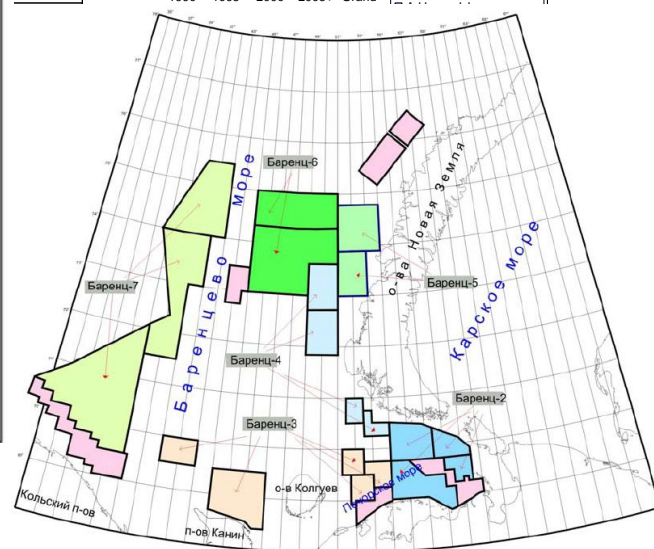
- Leasing/Licensing
- Seismic
- Exploration, Discovery and Production Wells
- Production Volumes
- Reserves



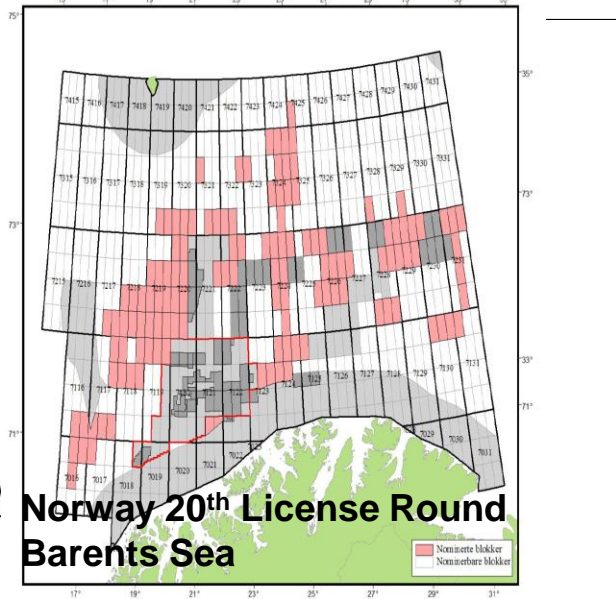
Leasing and Licensing



Offshore Alaska Lease Areas 2007-2012
Arctic Ocean Review Workshop
September 13, 2010



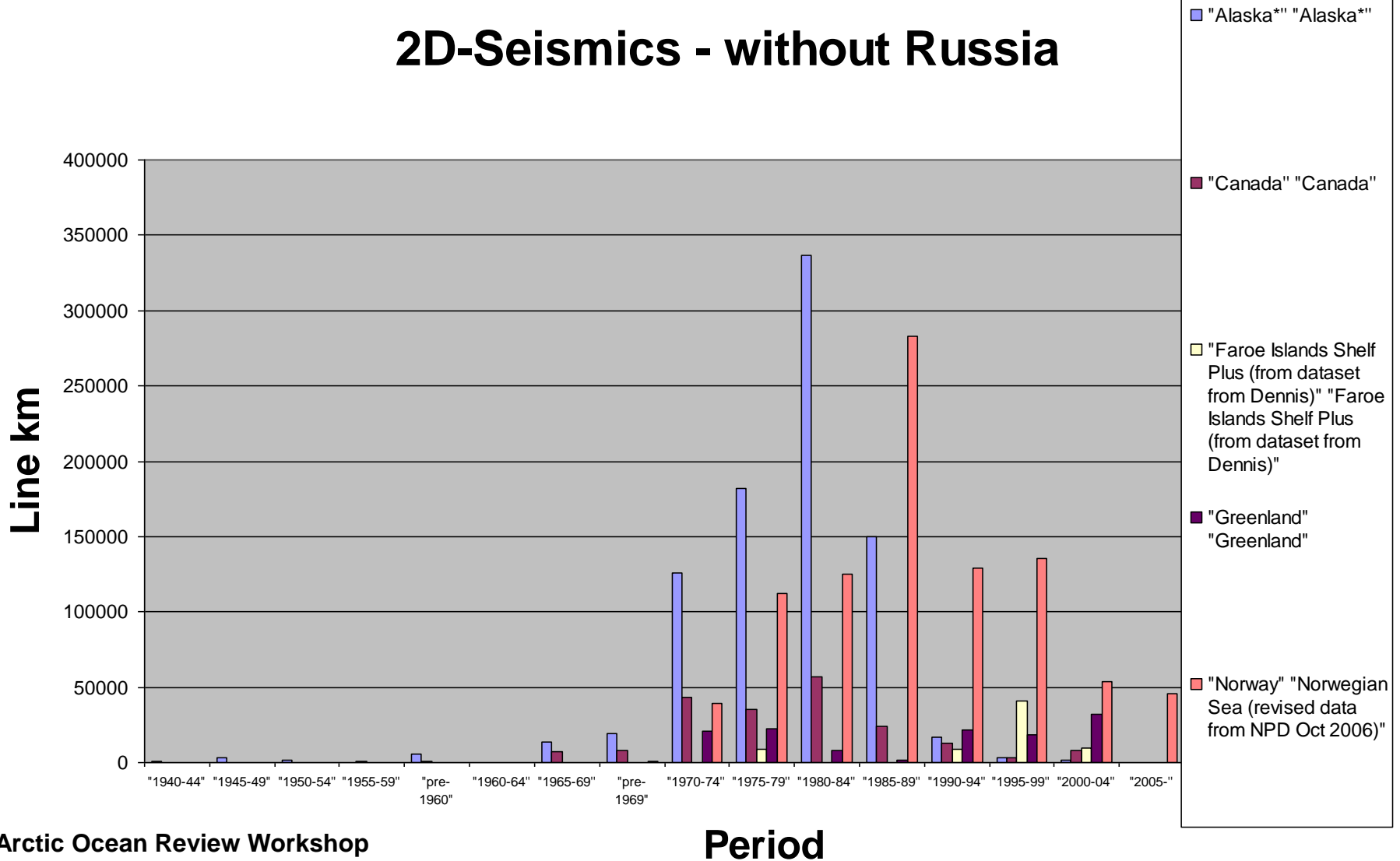
Russian Barents Sea Area Tenders



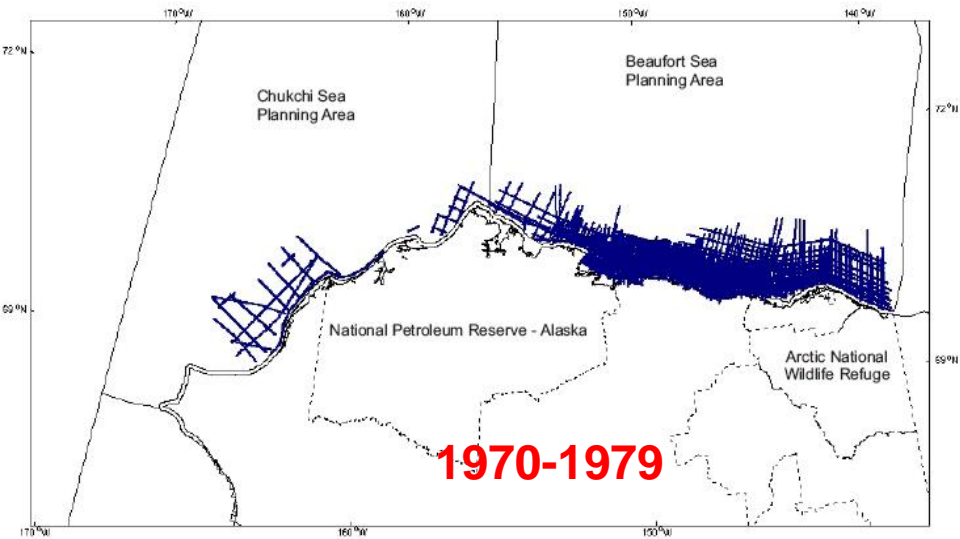
Norway 20th License Round Barents Sea

Seismic Data Acquisition

2D-Seismics - without Russia



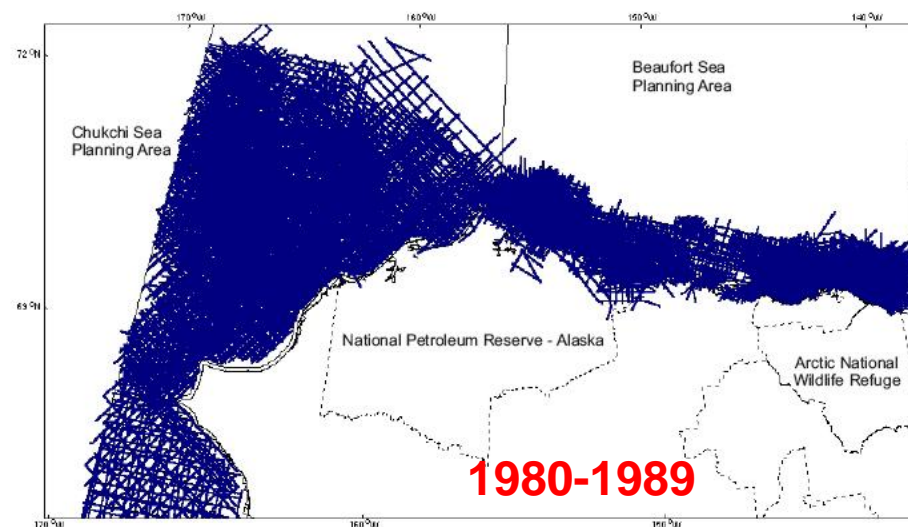
Seismic Acquisition Alaska



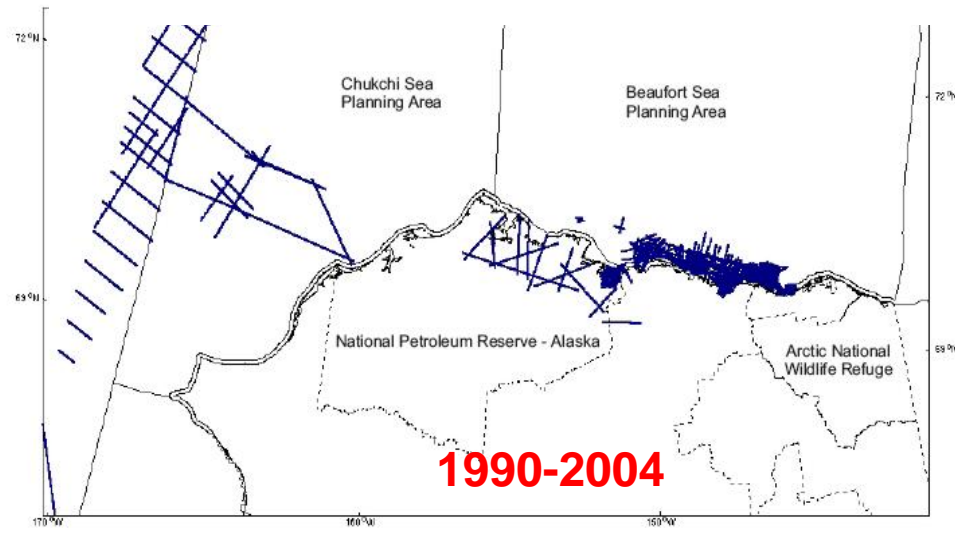
1970-1979

Offshore and over ice seismic
Surveys from 1970-2004

Arctic Ocean Outer Continental Shelf 2D Seismic Data Collected from 1970 through 1979 (Source: MMS-AK OCS, Anchorage, Alaska).



1980-1989

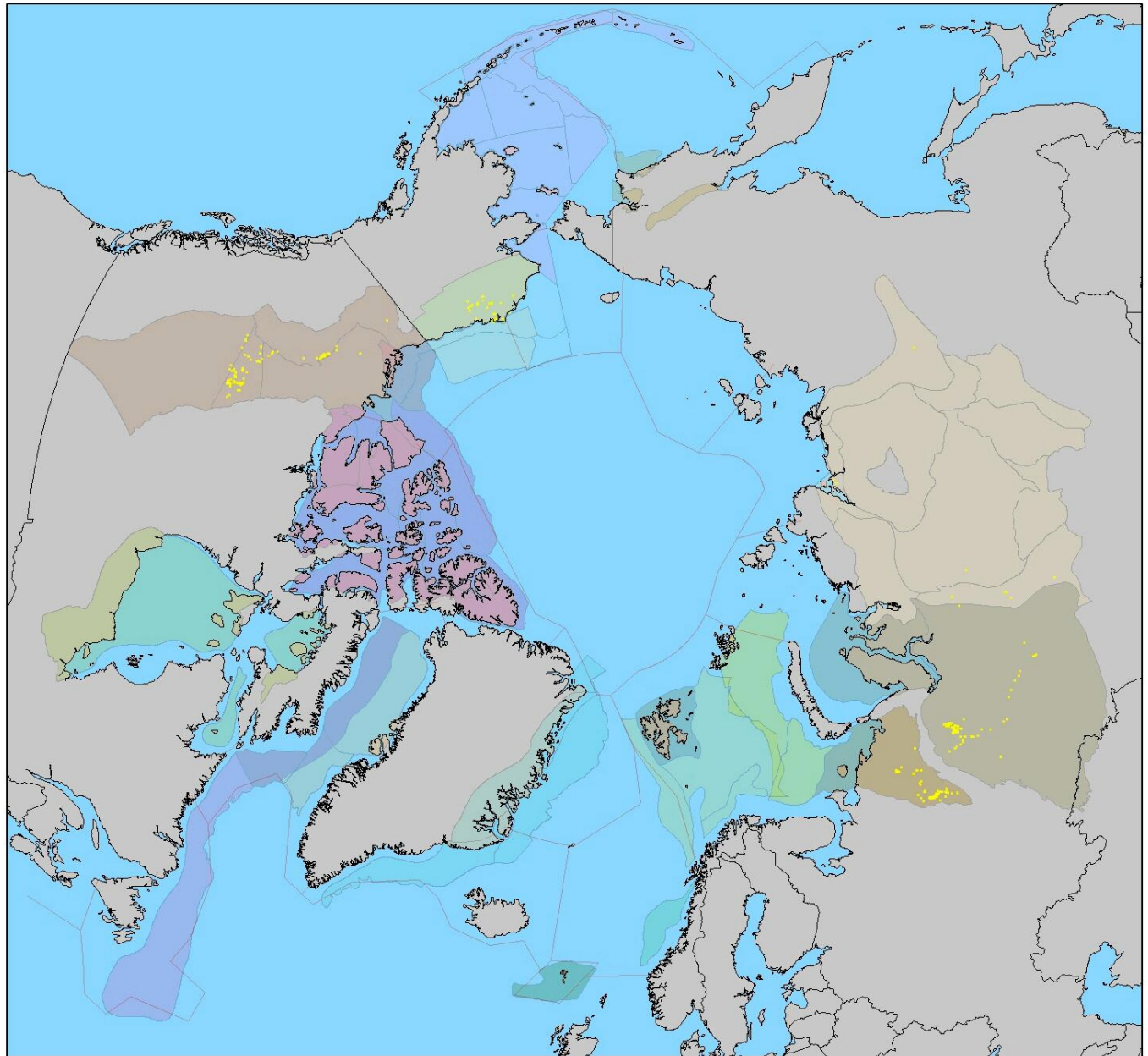


1990-2004

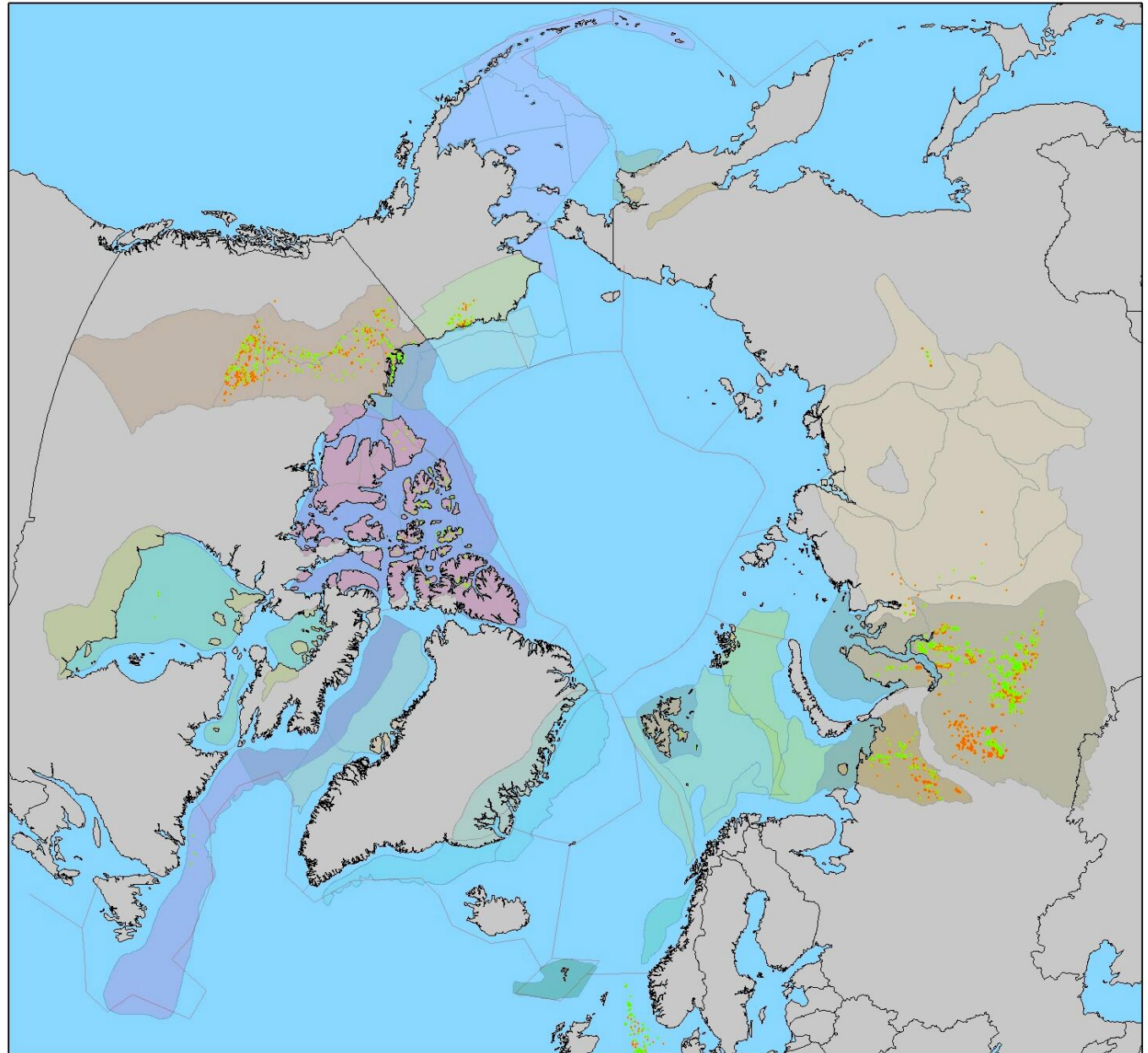
Arctic Ocean Outer Continental Shelf 2D Seismic Data Collected from 1980 through 1989 (Source: MMS-AK OCS, Anchorage, Alaska).

Arctic Ocean Outer Continental Shelf 2D Seismic Data Collected from 1990 through 2004 (Source: MMS-AK OCS, Anchorage, Alaska).

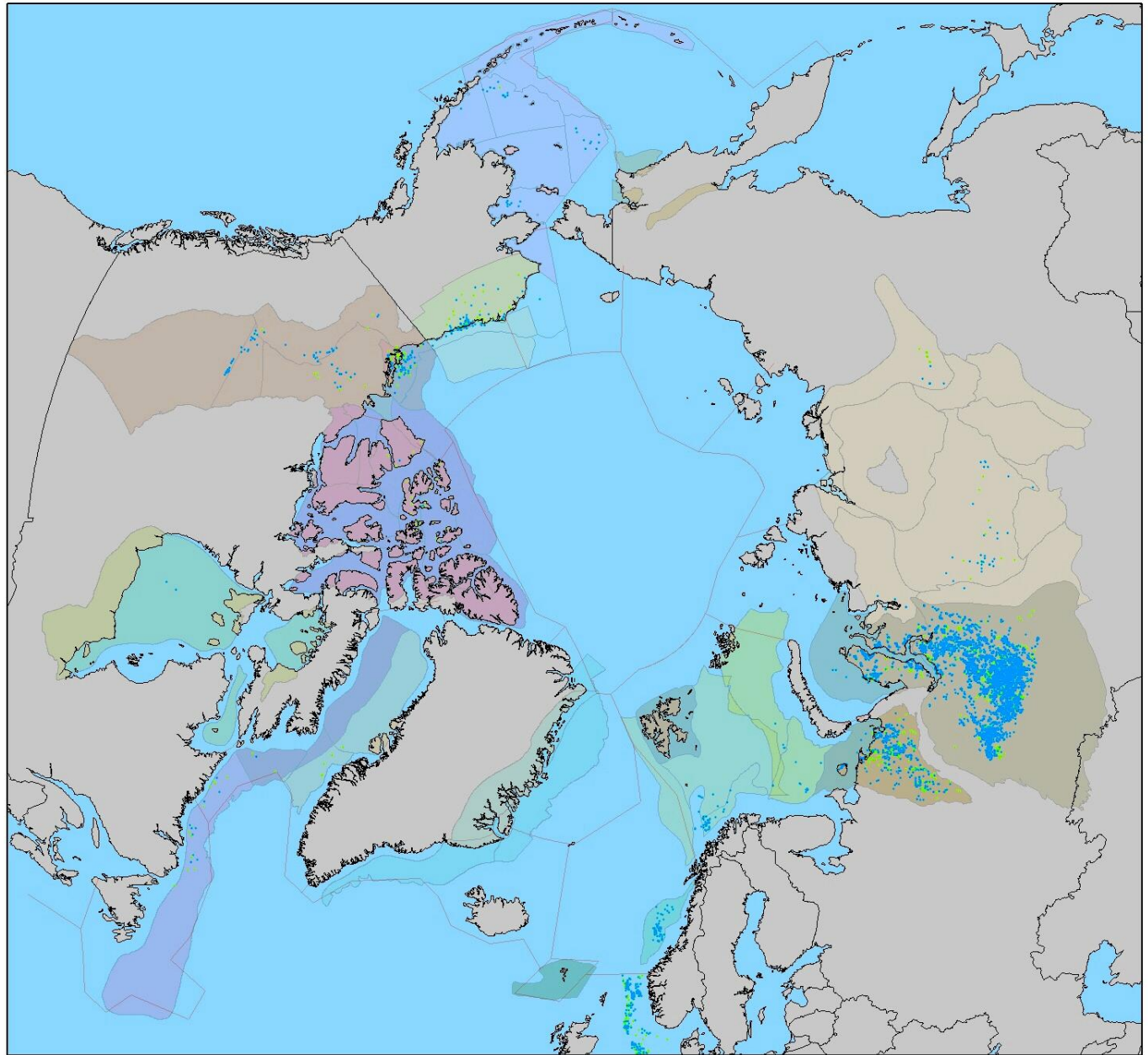
**Arctic Wells
drilled
pre-1960**



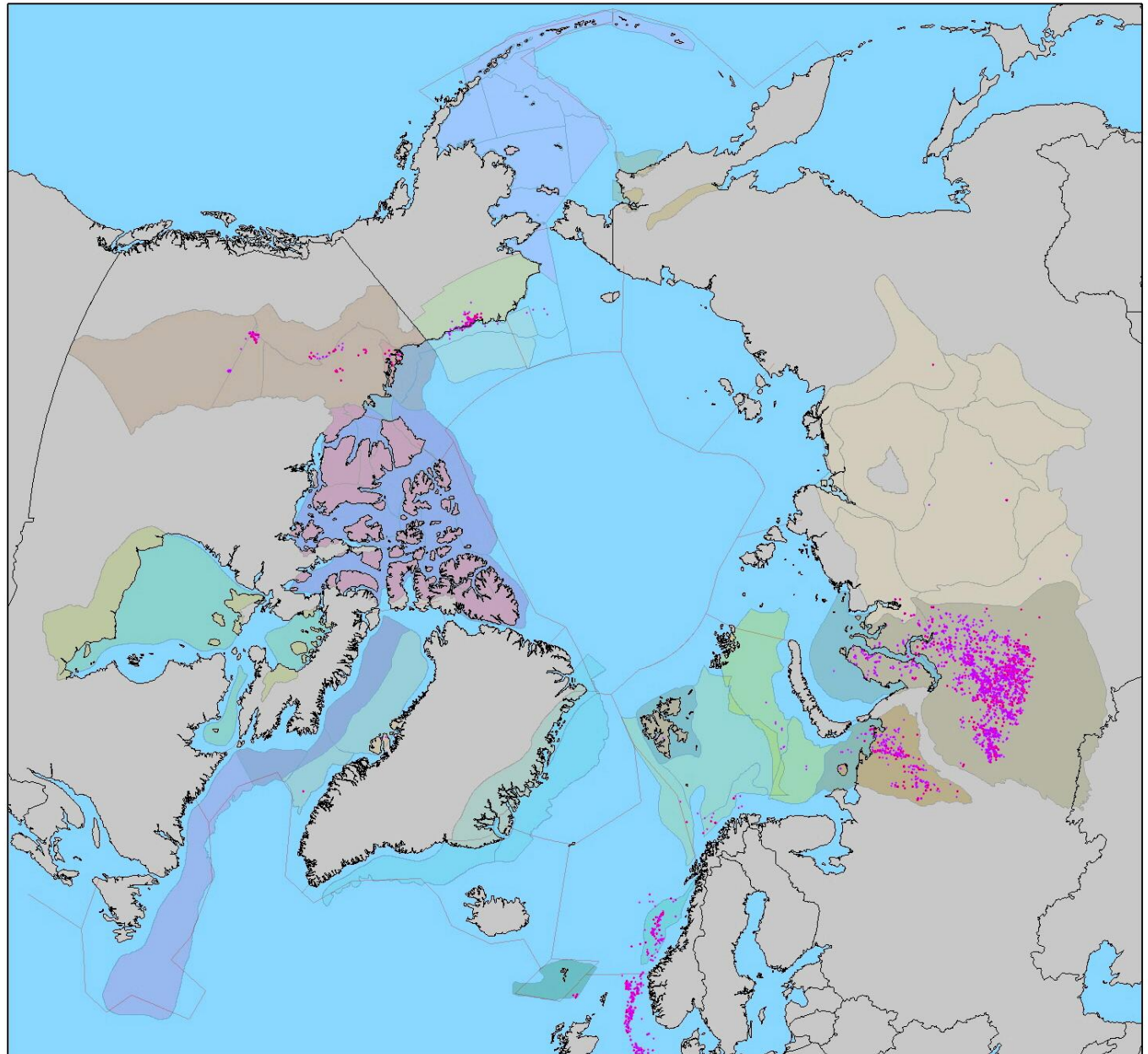
**Arctic Wells
drilled
1960-1975**



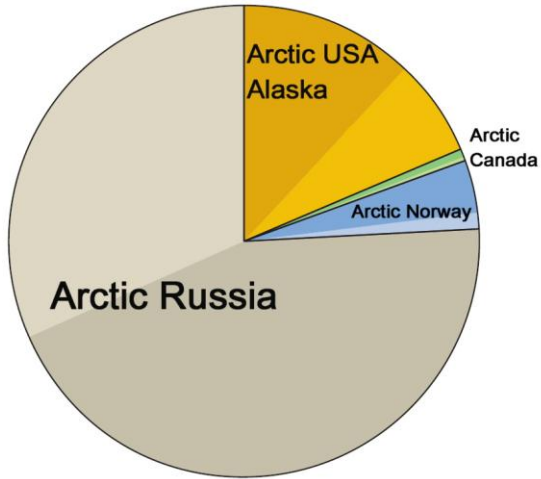
**Arctic Wells
drilled
1976-1989**



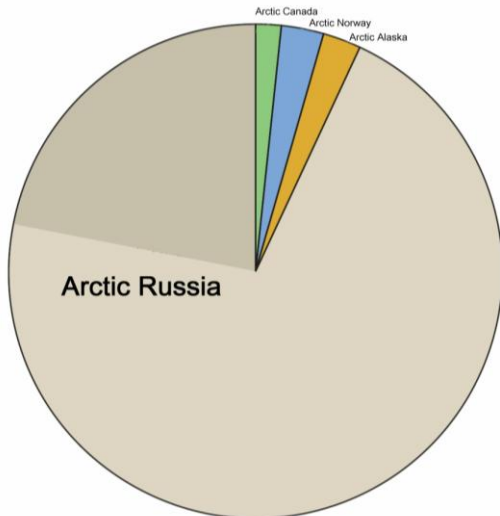
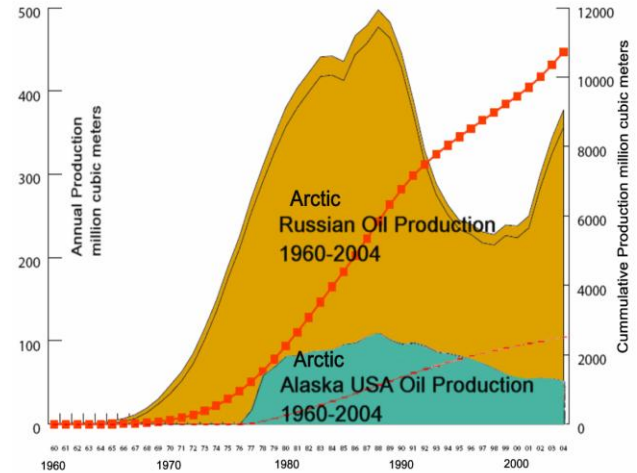
**Arctic Wells
drilled
1990-2004**



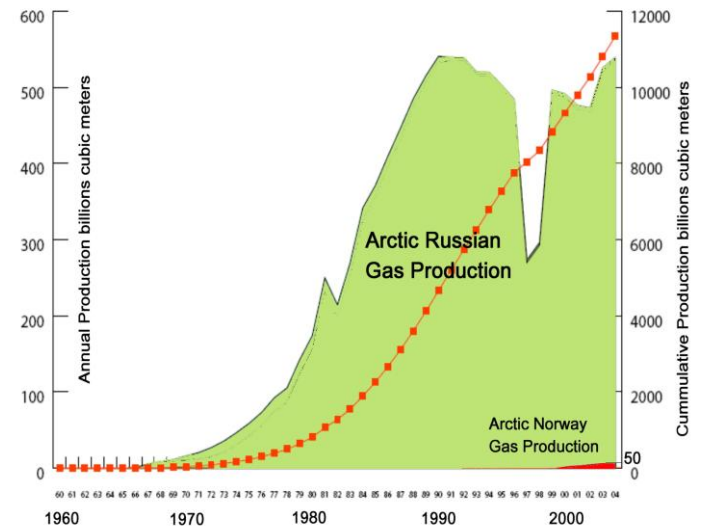
Arctic Oil and Gas Production



Oil



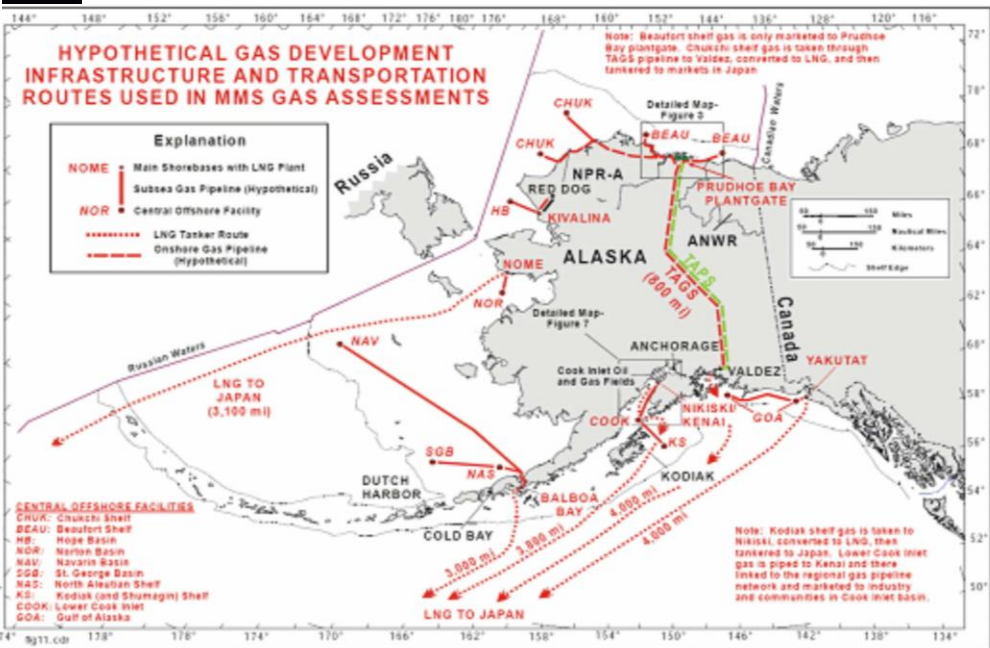
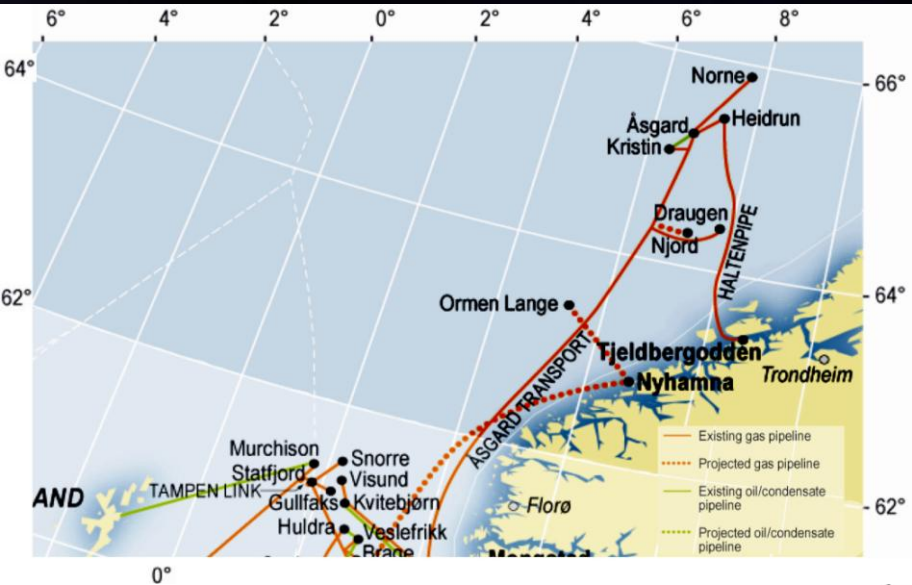
Gas



Oil and Gas activity is likely to expand into new Arctic areas

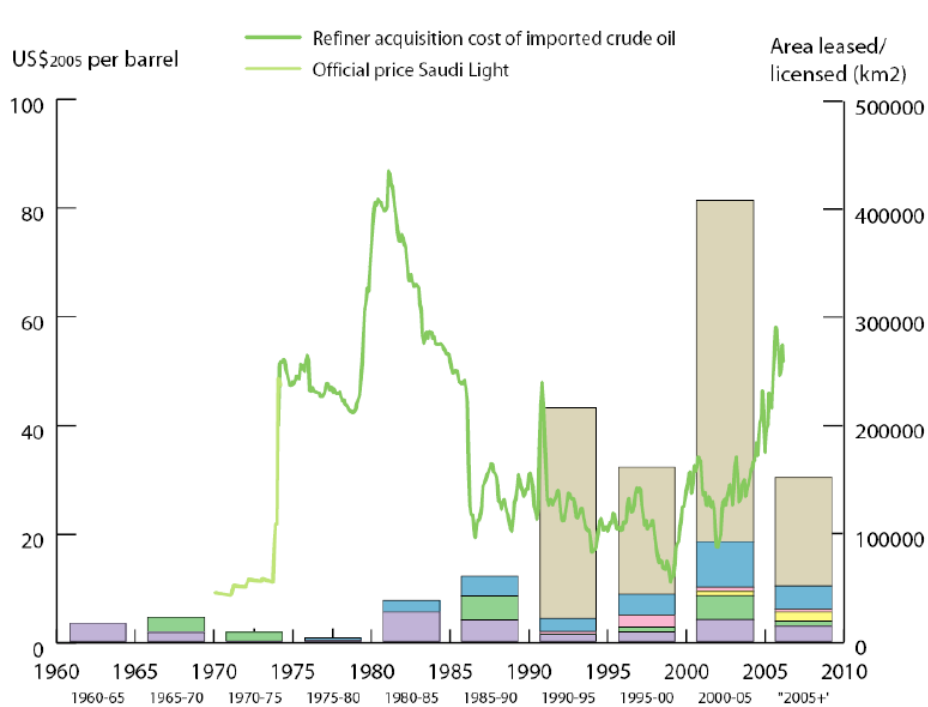


Arctic oil and gas transportation systems will expand

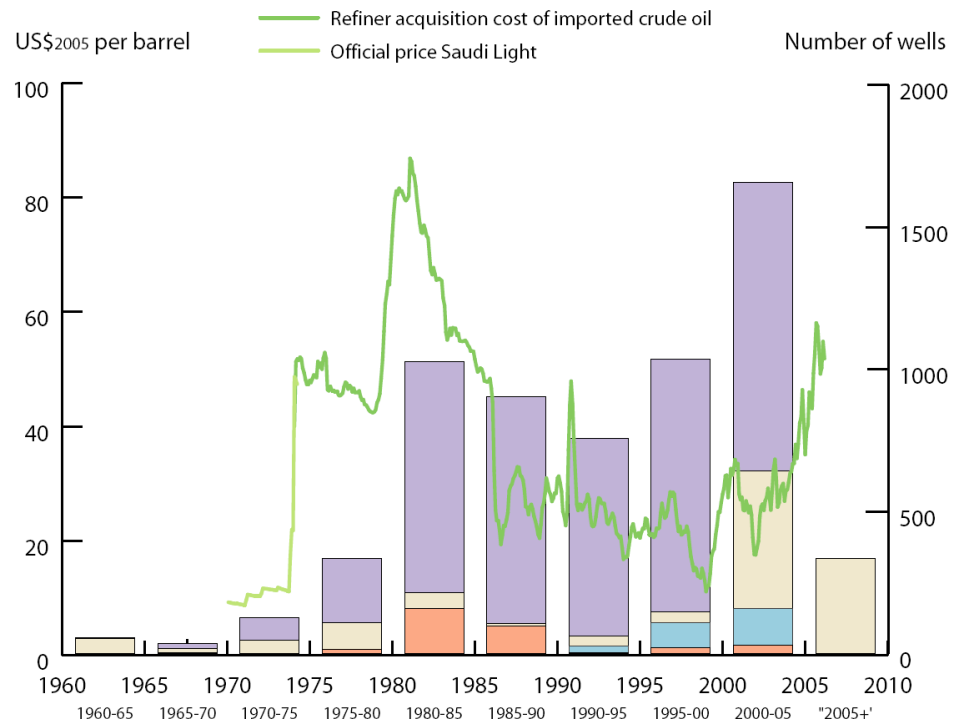


Levels of activities in the Arctic are affected by many factors

Areas Leased or Licensed for Petroleum



Production wells drilled



Conclusions

- Many of the potential future offshore fields have already been found
- New offshore development will be on the shelf close to existing infrastructure
- Newly ice free areas will see basic research and frontier exploration efforts

Recommendation

Prevent oil spills

- It's harder to clean it up than it is to prevent it from happening.
- 
- An aerial photograph of an offshore oil rig platform, likely the Deepwater Horizon, situated in the middle of a dark blue ocean. The platform is a complex of red and white structures, including a tall derrick and various support buildings. The sky is overcast with grey clouds.
- It's easier to get money to clean it up than it is to fund prevention measures

Thank You!

Dennis K. Thurston
Bureau of Ocean Energy Management,
Regulation and Enforcement, Anchorage,
Alaska, USA dennis.thurston@boemre.gov

