

## List of Figures

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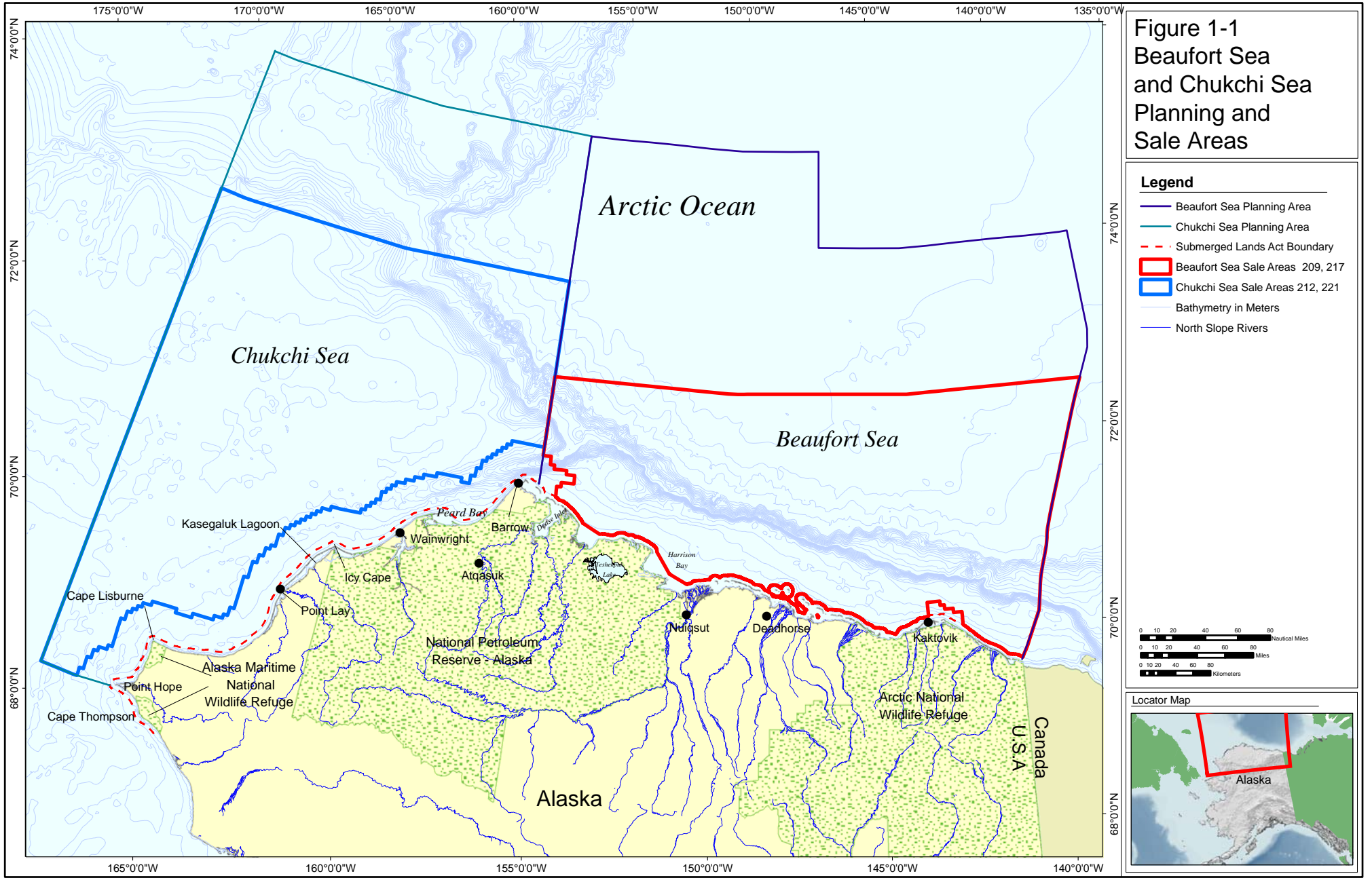
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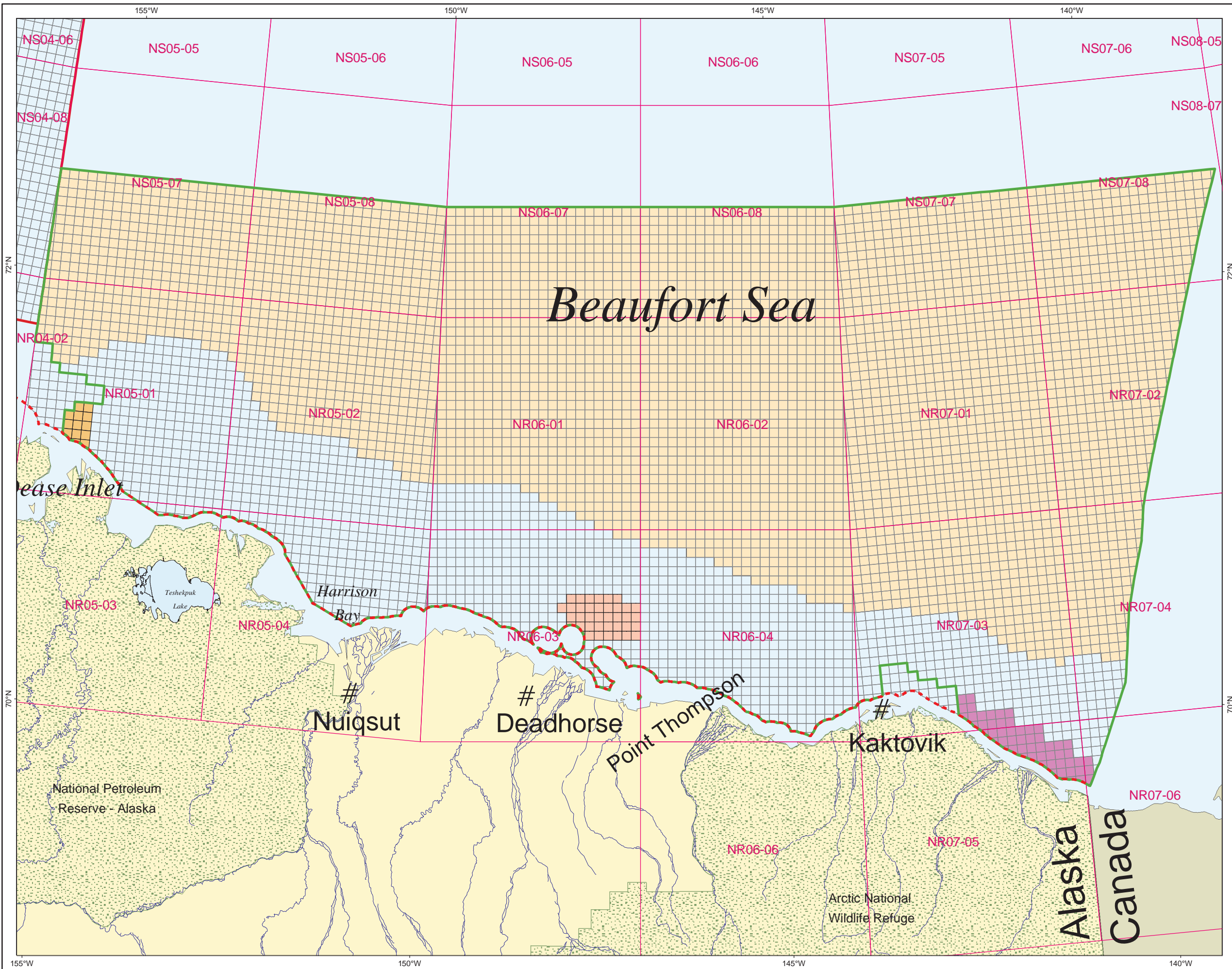
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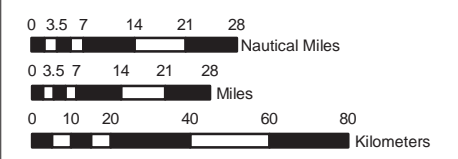




**Figure 2-1**  
Beaufort Sea  
Program Area

**Legend**

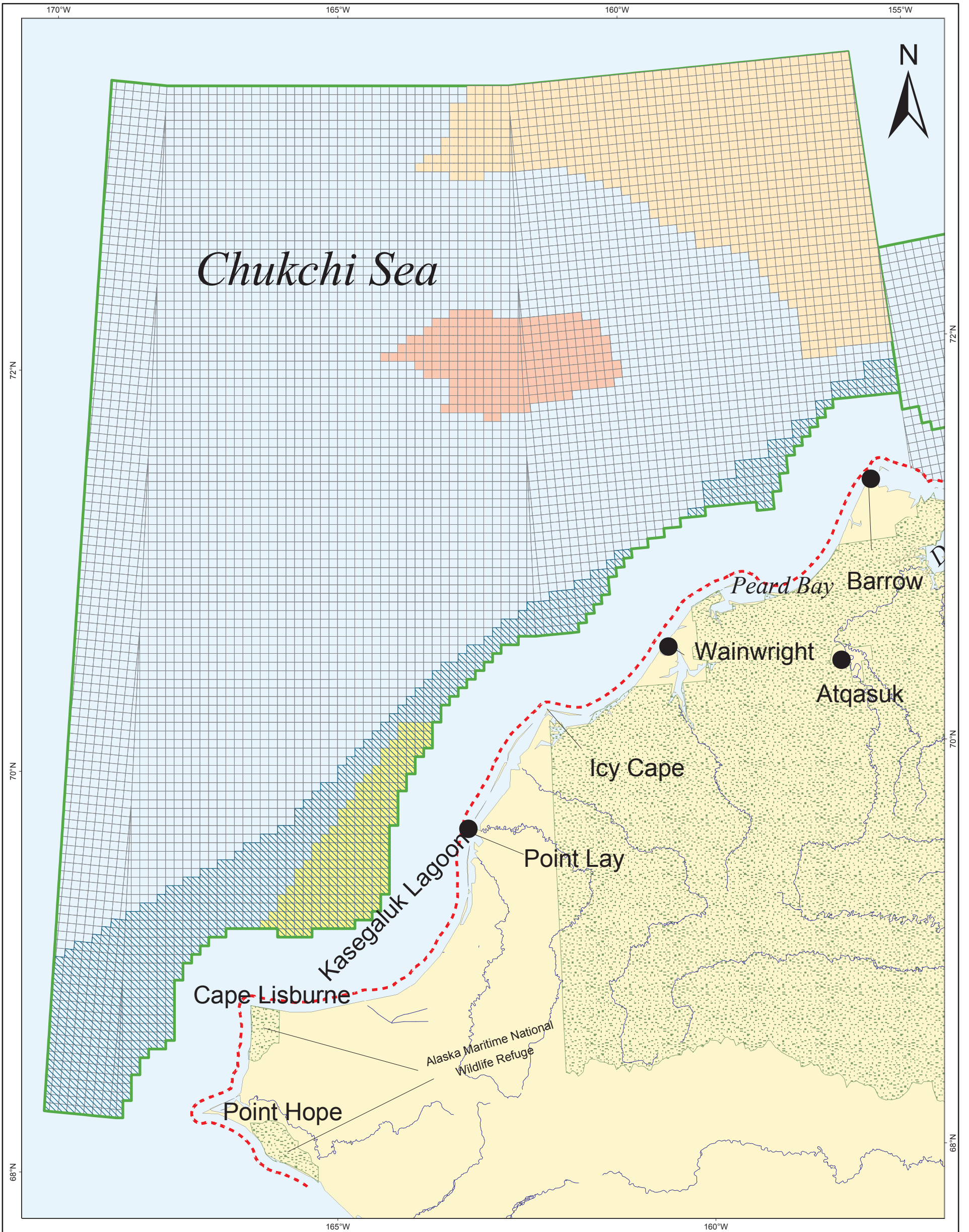
- Cross Island Deferral Alternative
- Program Area Boundary
- East of Kaktovic Deferral Alternative
- Barrow Deferral Alternative
- Deep Water Deferral Alternative
- Rivers Greater Than 100 Km in Length
- Submerged Lands Act Boundary
- Official Protraction Diagram



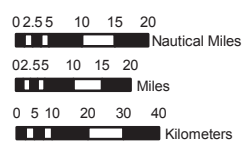
**Locator Map**







**Figure 2-2**  
**Deferral Areas**  
**Chukchi Sea**  
**Program Area**

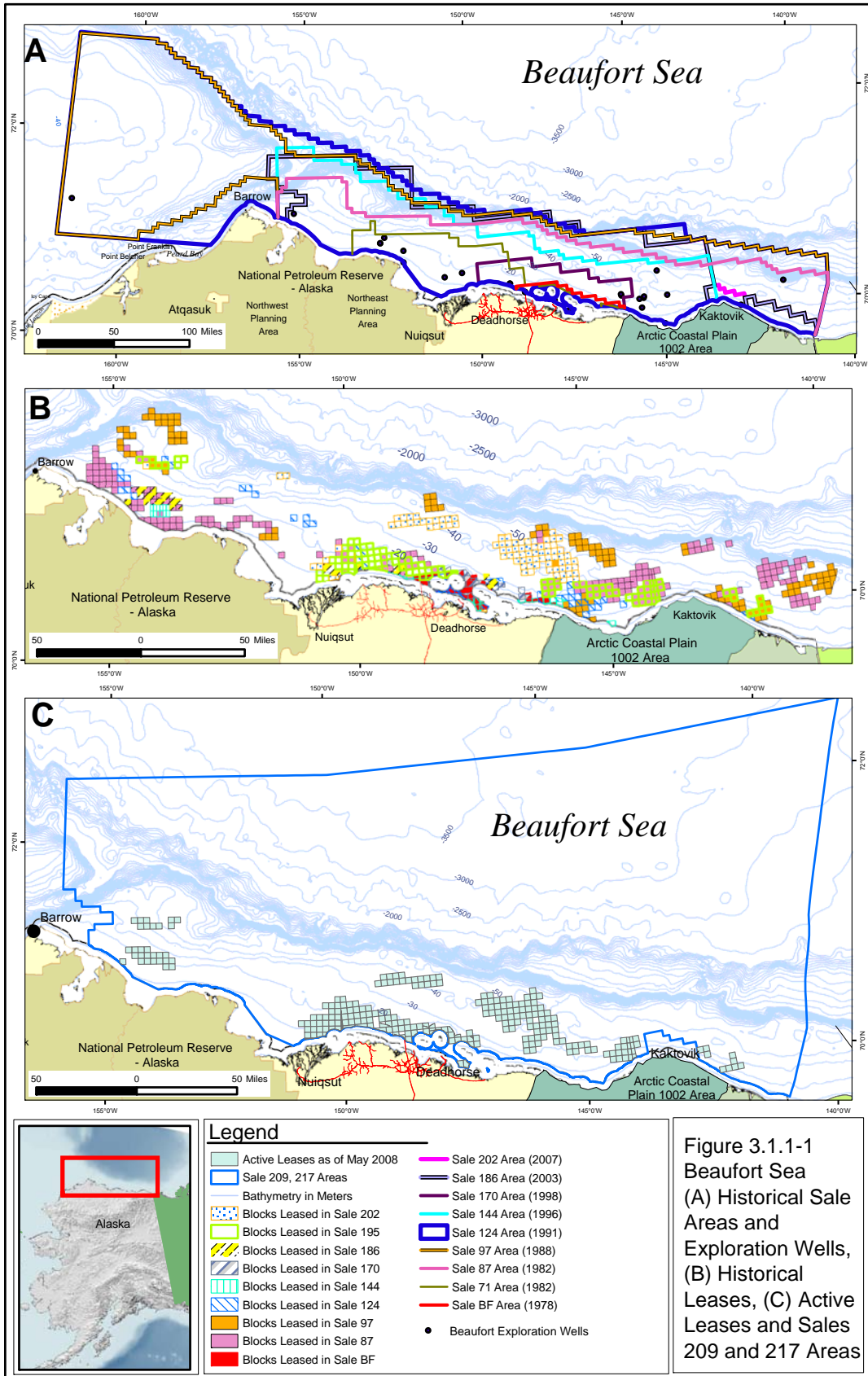


**Legend**

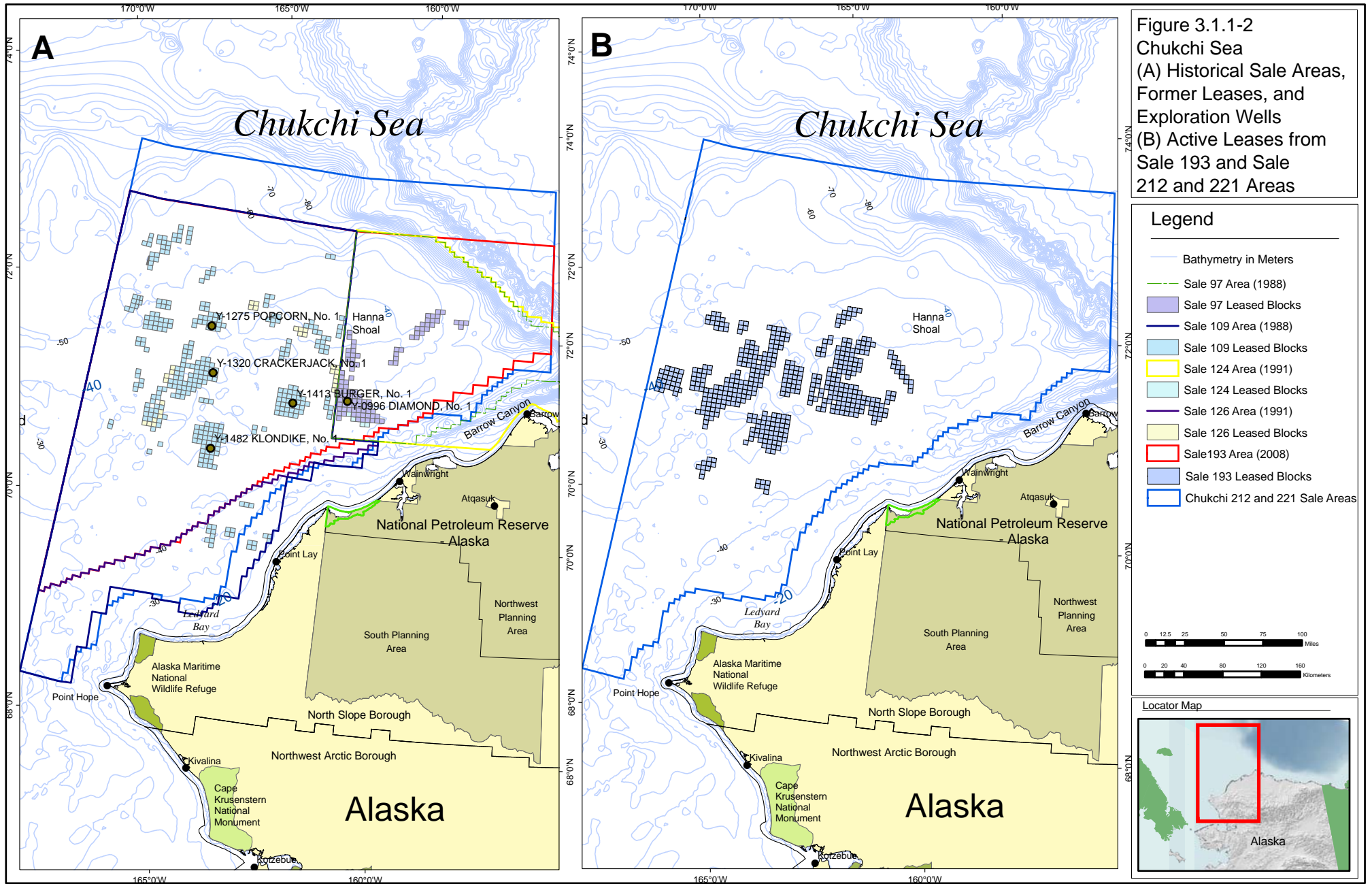
- Program Area Boundary
- Submerged Lands Act Boundary
- Coastal Deferral Alternative
- Deep Water Deferral Alternative
- Hanna Shoal Deferral Alternative
- Ledyard Bay Deferral Alternative

**Locator Map**









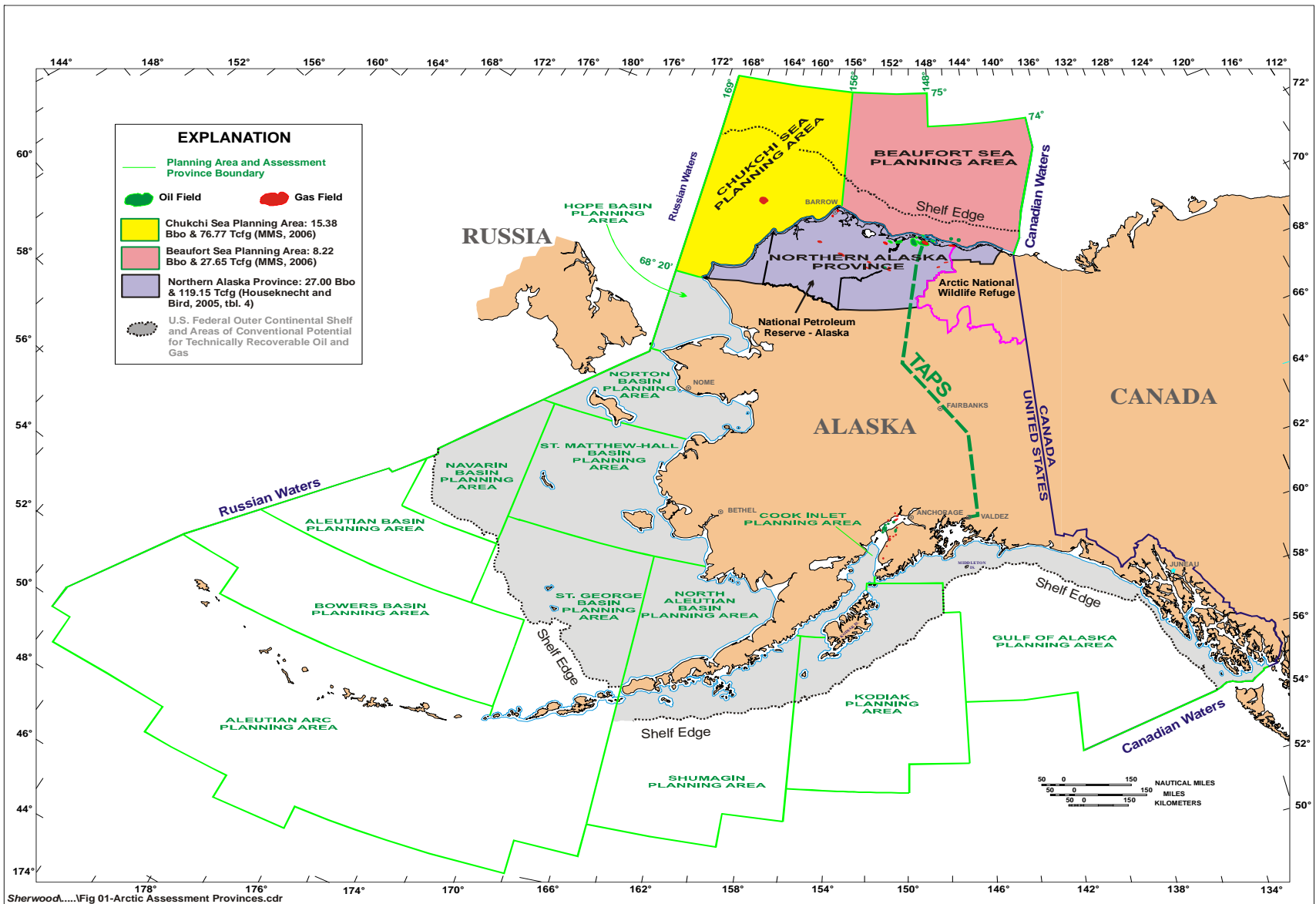


Figure 3.2.1-1 The Three Components of the Arctic Alaska Petroleum Province: (1) the Northern Alaska (onshore) Province; (2) the Chukchi Sea Planning Area; and (3) the Beaufort Sea Planning Area. The Alaska Federal OCS Planning Areas Also Are Shown.

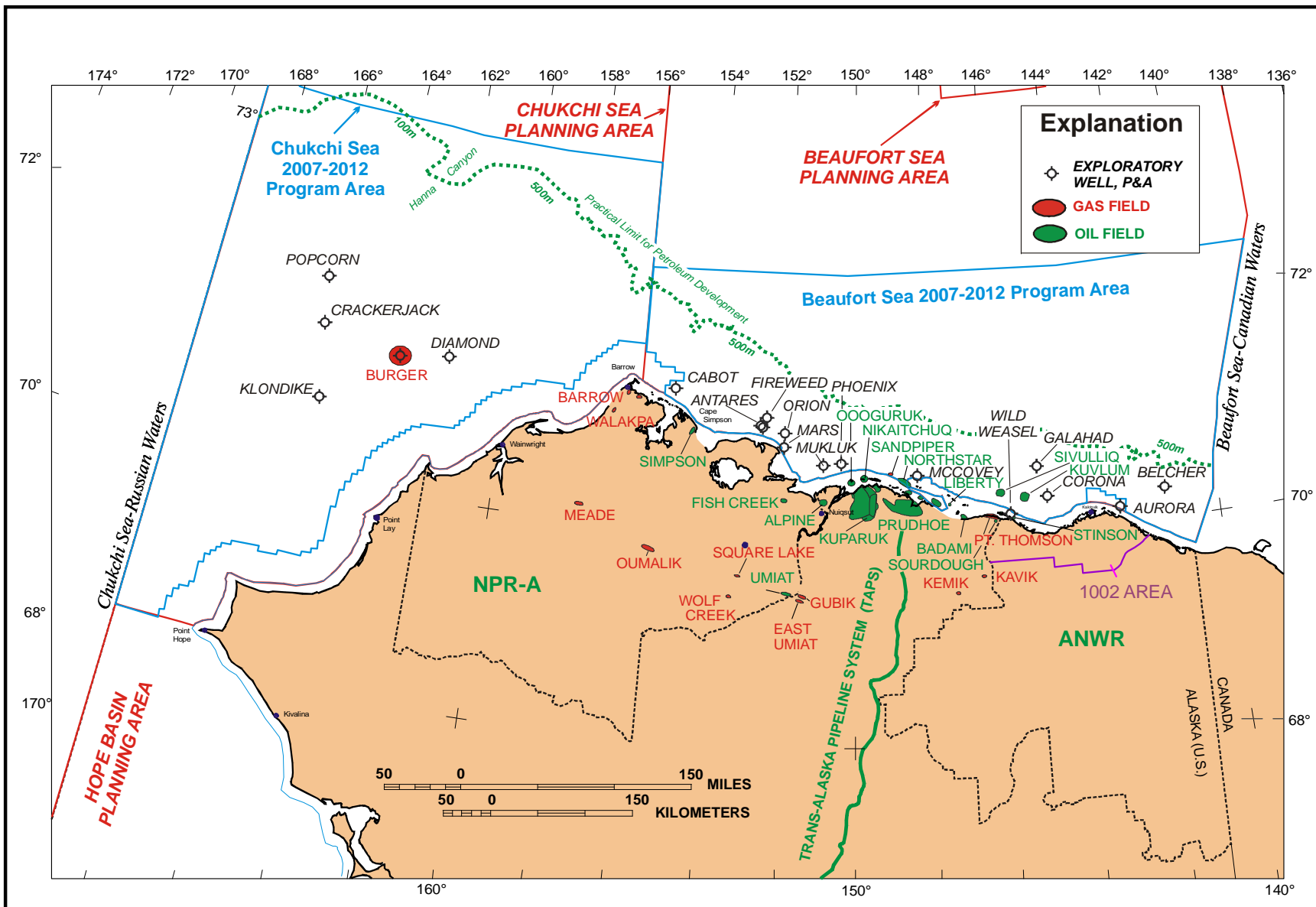


Figure 3.2.1-2 Oil and Gas Fields and Offshore Wells in the Beaufort Sea and Chukchi Sea Planning Areas. The 2007-2012 Five-Year Program Areas Are Subareas Within the Larger Planning Areas.

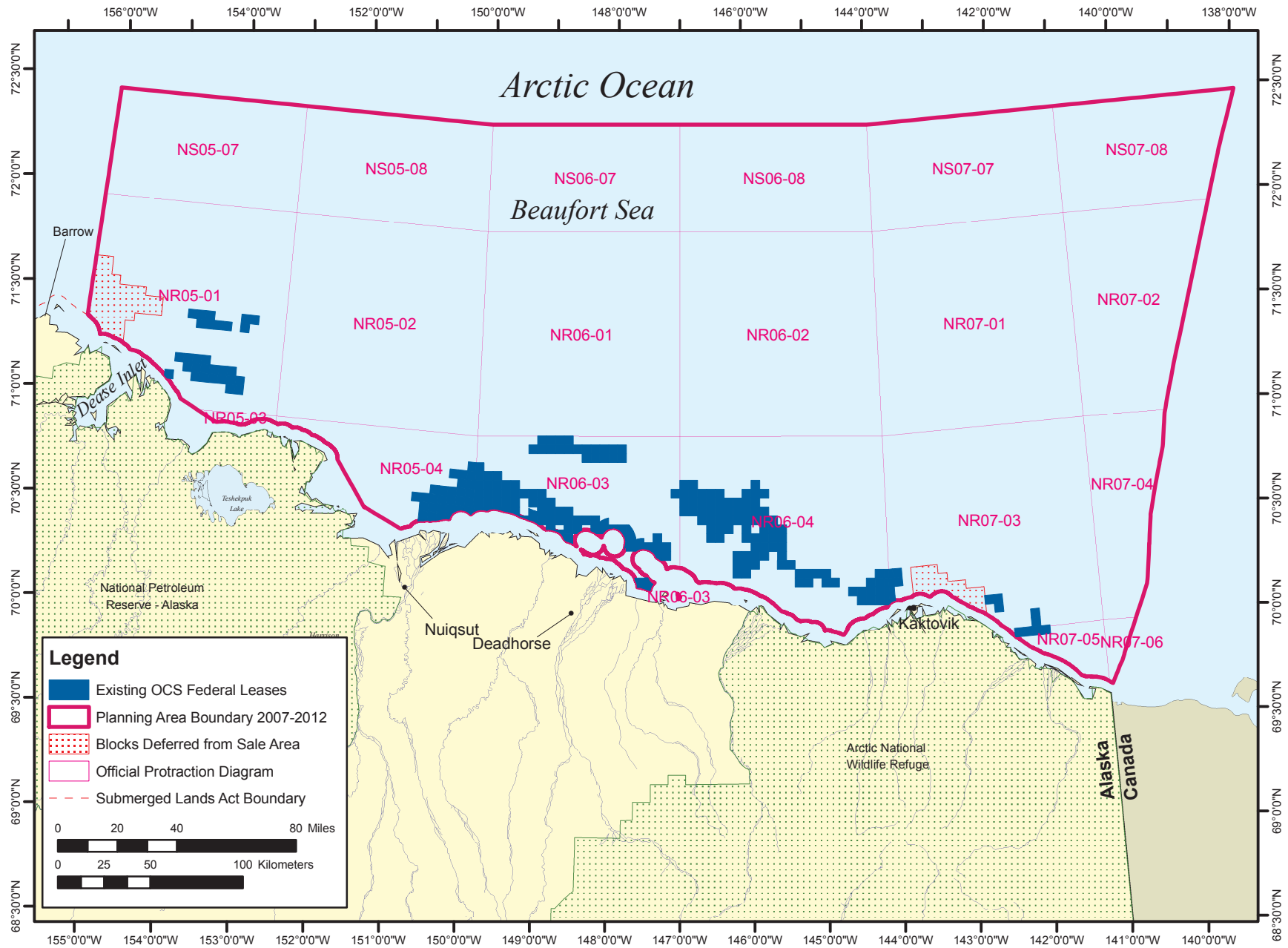


Figure 3.2.1-3 The 261 Active Leases in the Beaufort Sea Planning Area (as of November 2007). The original file of this map is available for download in pdf format at [http://www.mms.gov/alaska/Maps/bf\\_leases.pdf](http://www.mms.gov/alaska/Maps/bf_leases.pdf).



## Seismic Data Coverage - Arctic Outer Continental Shelf (Alaska)

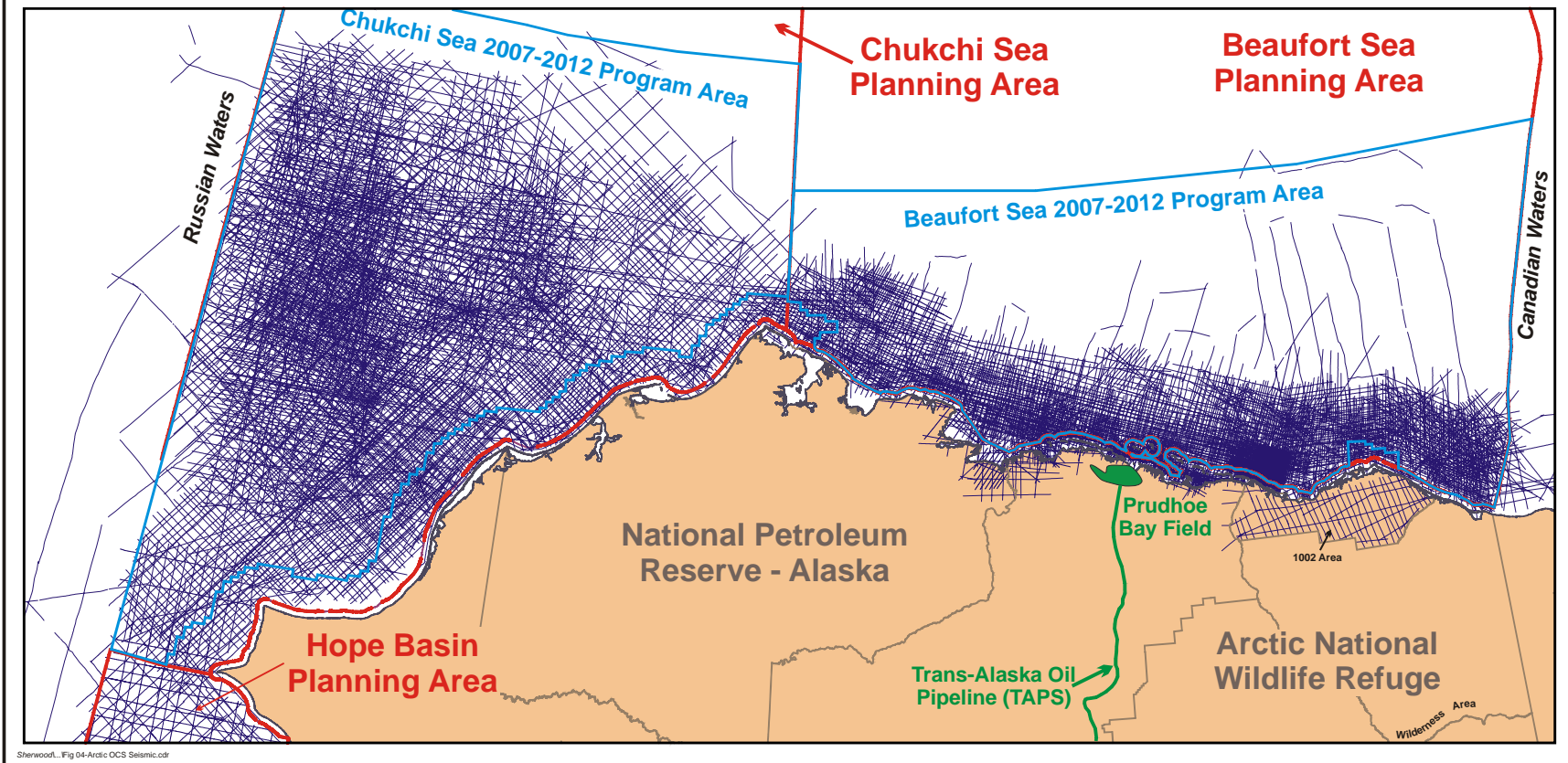


Figure 3.2.1-4 Coverage of 2D Seismic Data in the Beaufort Sea and Chukchi Sea Planning Areas. Only “speculative” (shot by geophysical companies and then offered on the open market) surveys are shown. The locations of 3D seismic surveys conducted in both planning areas are not shown.

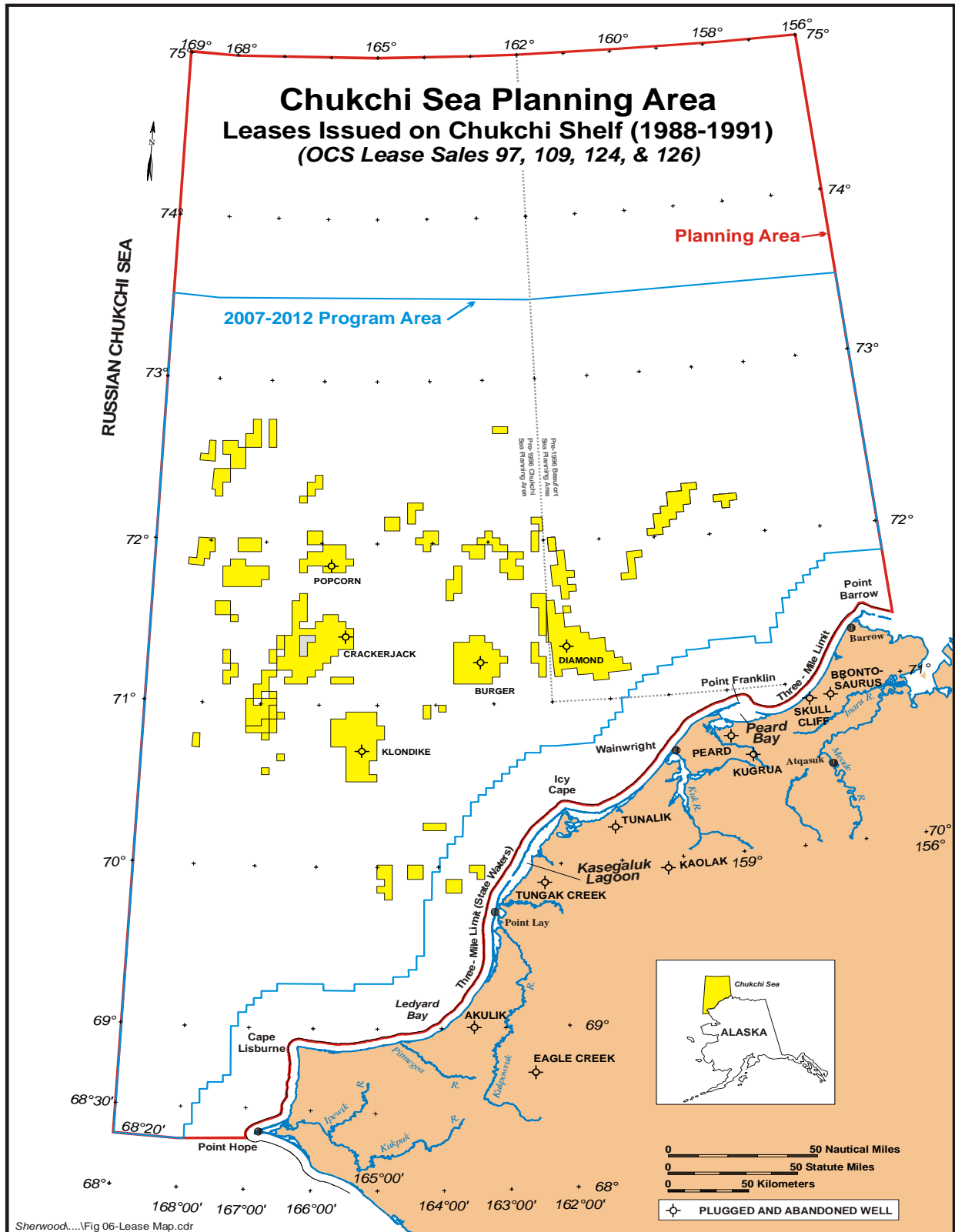


Figure 3.2.1-5 Chukchi Sea Planning Area, Leases Issued on Chukchi Shelf, 1988-1991, OCS Lease Sales 97, 109, 124, and 126. Locations of 483 leases issued (total high bids 512 million dollars) in 1988 and 1991 lease sales in modern Chukchi Sea Planning Area. The pre-1996 boundary between the Beaufort and Chukchi Sea Planning Areas is shown as a dotted line. No lease were active (all relinquished) as of November 2007.

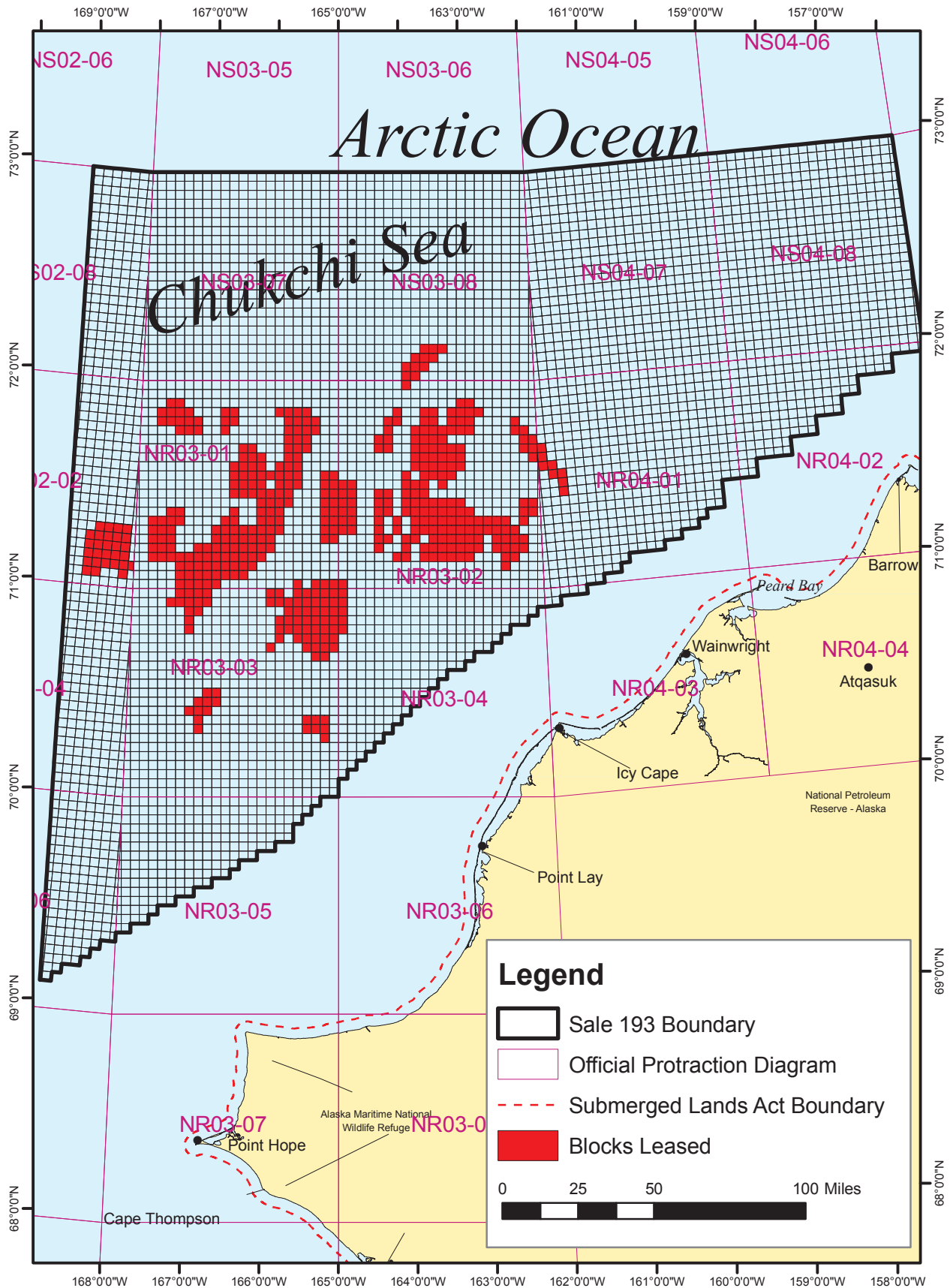


Figure 3.2.1-6 Blocks Leased in Chukchi Sea Sale 193 (February 6, 2008). Adaped from original file of map available for download in pdf format at [http://www.mms.gov/alaska/cproject/Chukchi193/193Saleday/Sale\\_193\\_blx.pdf](http://www.mms.gov/alaska/cproject/Chukchi193/193Saleday/Sale_193_blx.pdf)

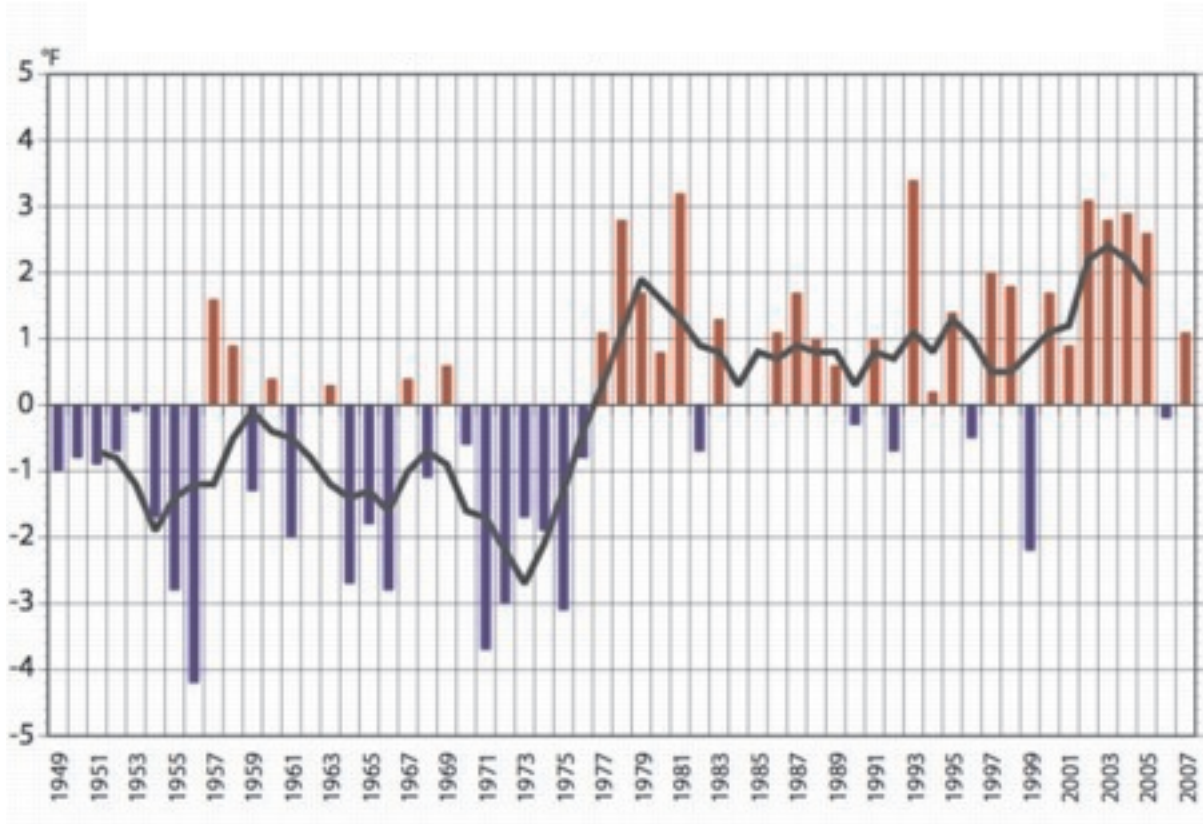


Figure 3.2.2-1 Mean Annual Temperature Departure for Alaska (°F), 1949-2007

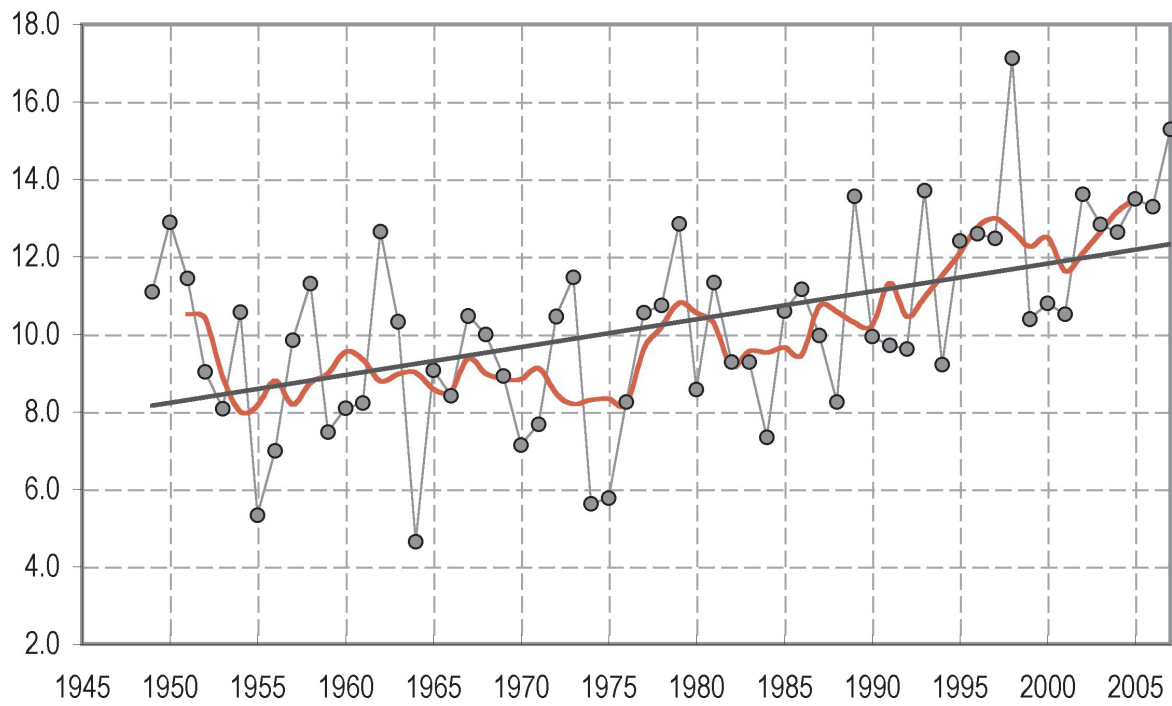


Figure 3.2.2-2 Barrow Mean Annual Temperature (°F)

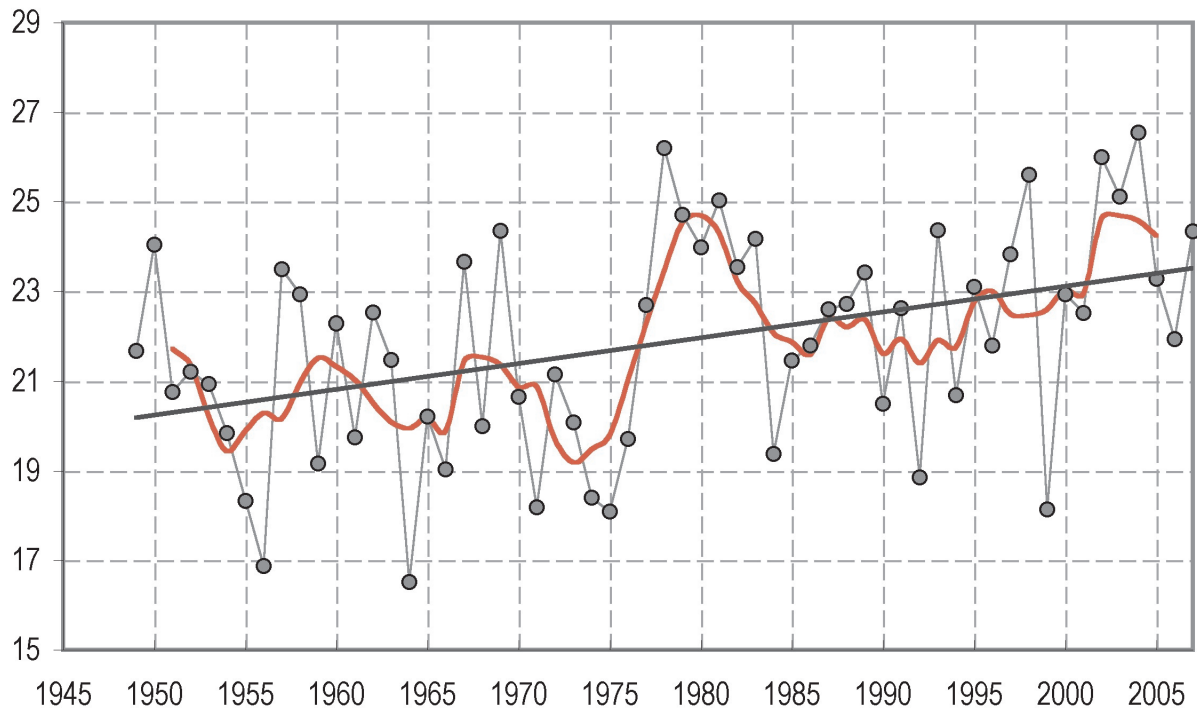


Figure 3.2.2-3 Kotzebue Mean Annual Temperature (°F)



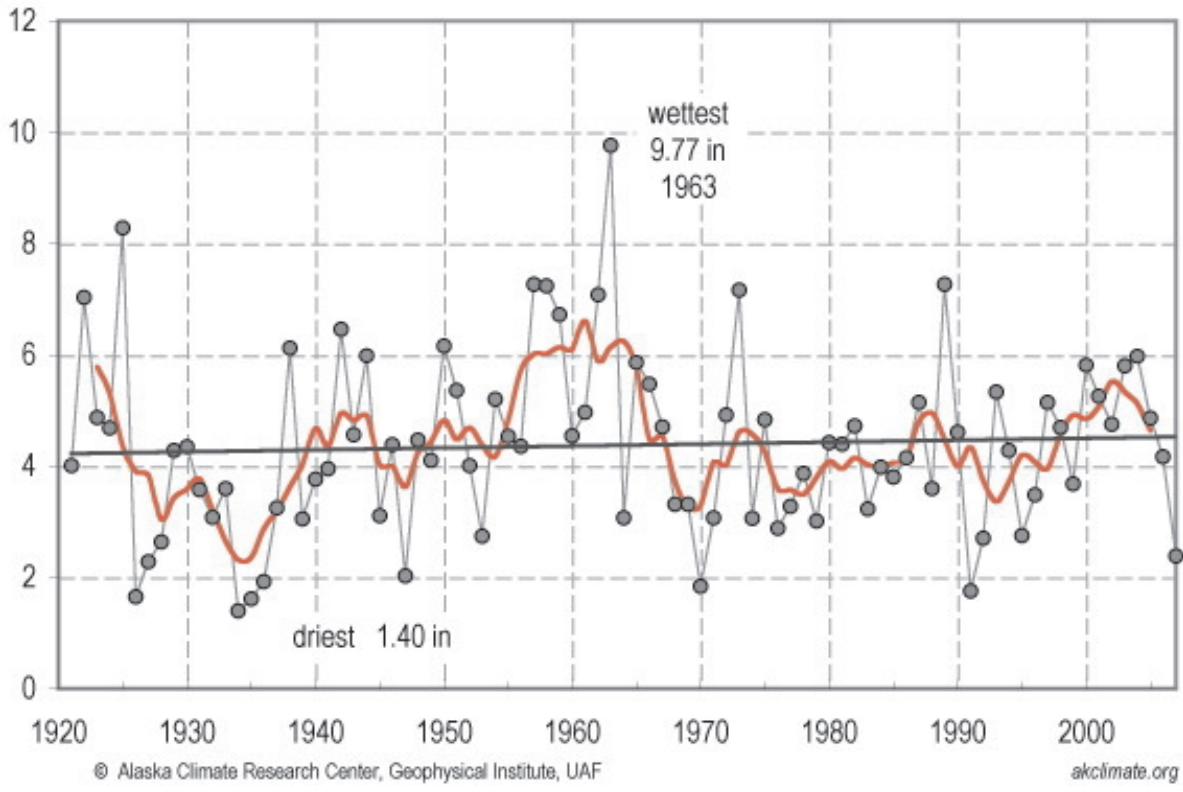


Figure 3.2.2-4 Barrow Total Annual Precipitation (inches)

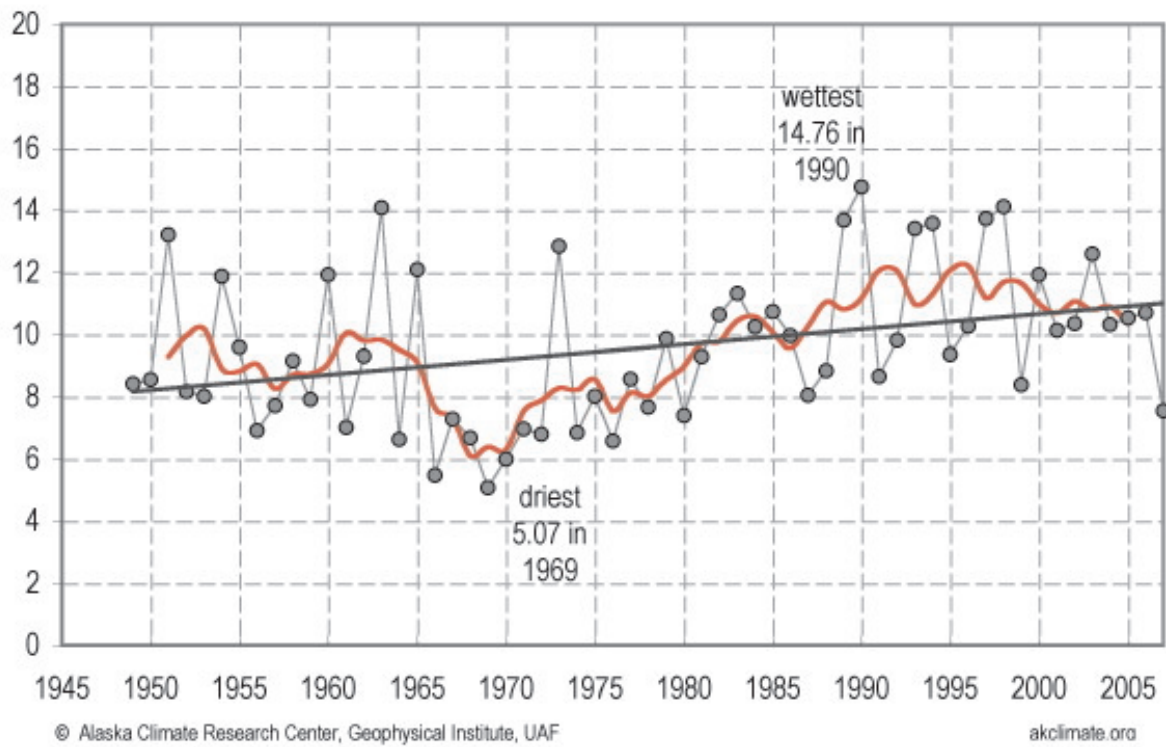
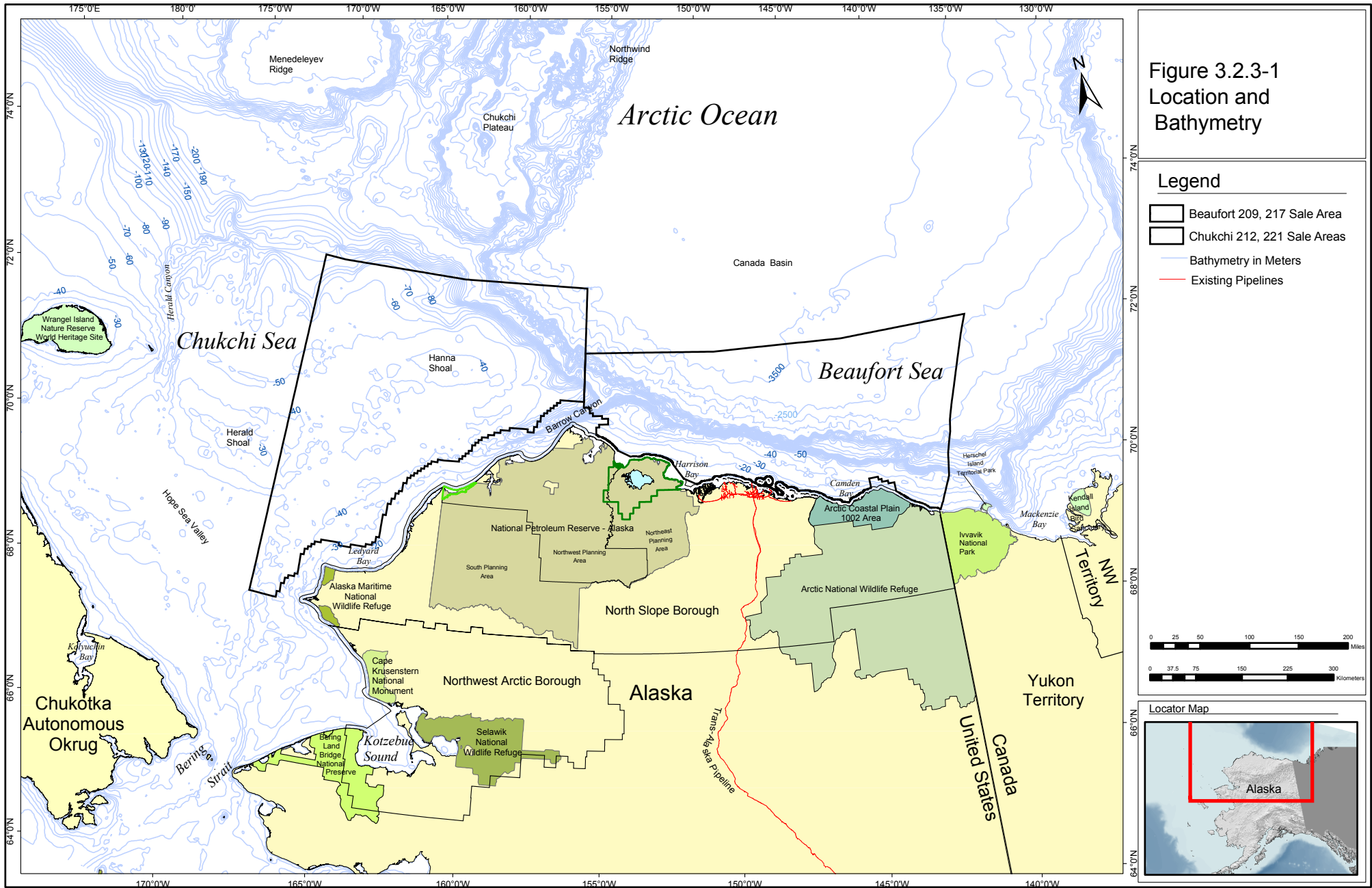


Figure 3.2.2-5 Kotzebue Total Annual Precipitation (inches)





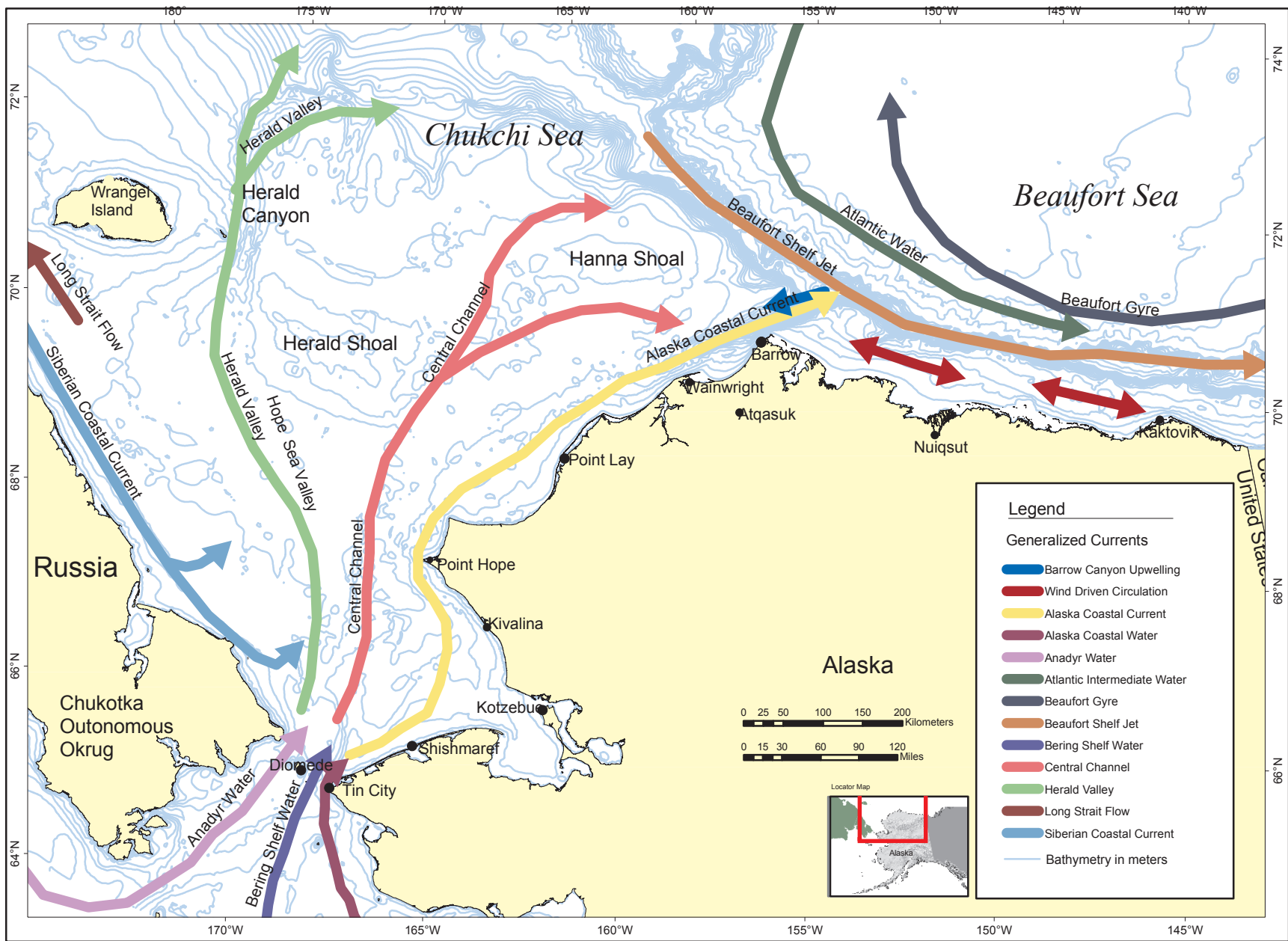
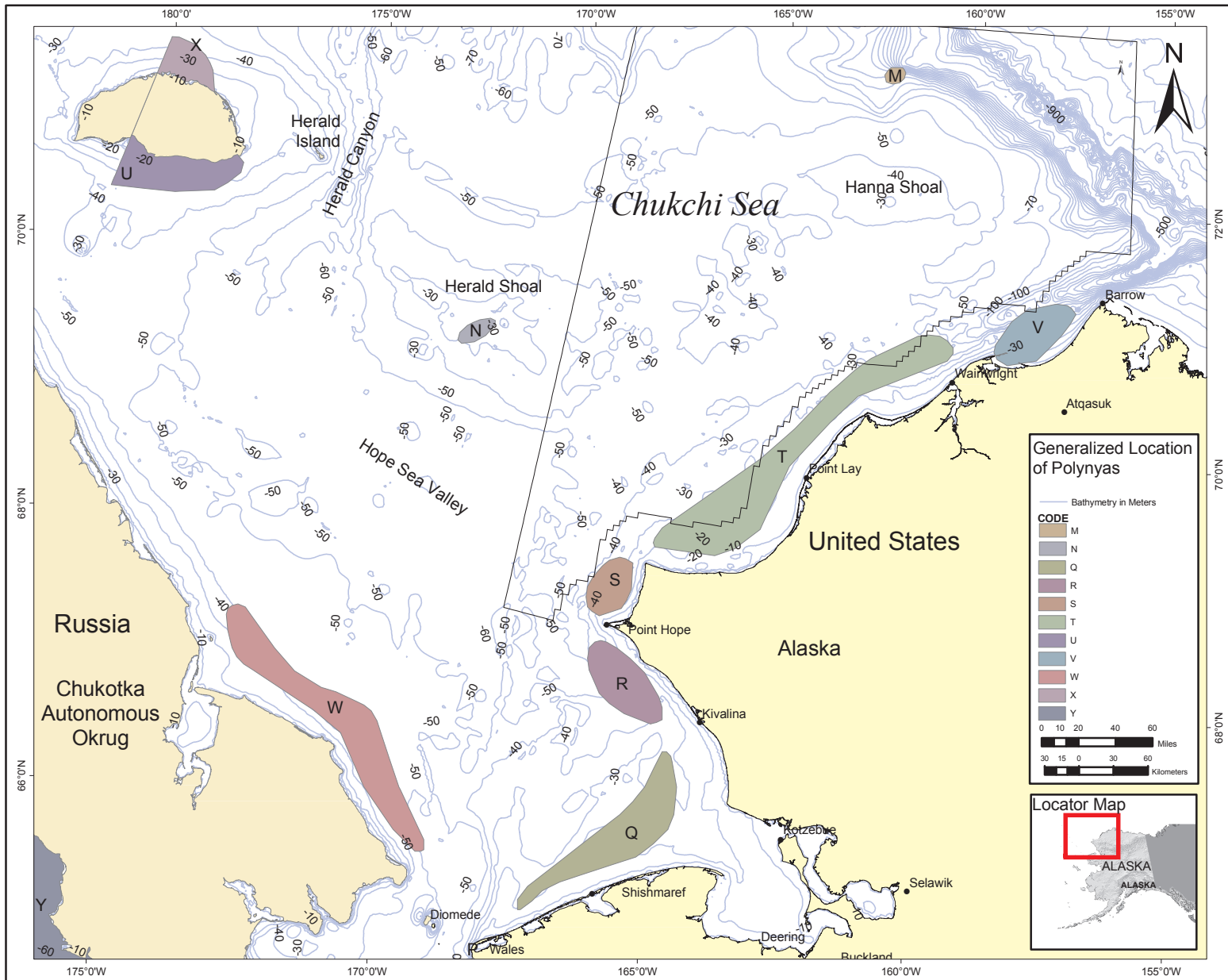
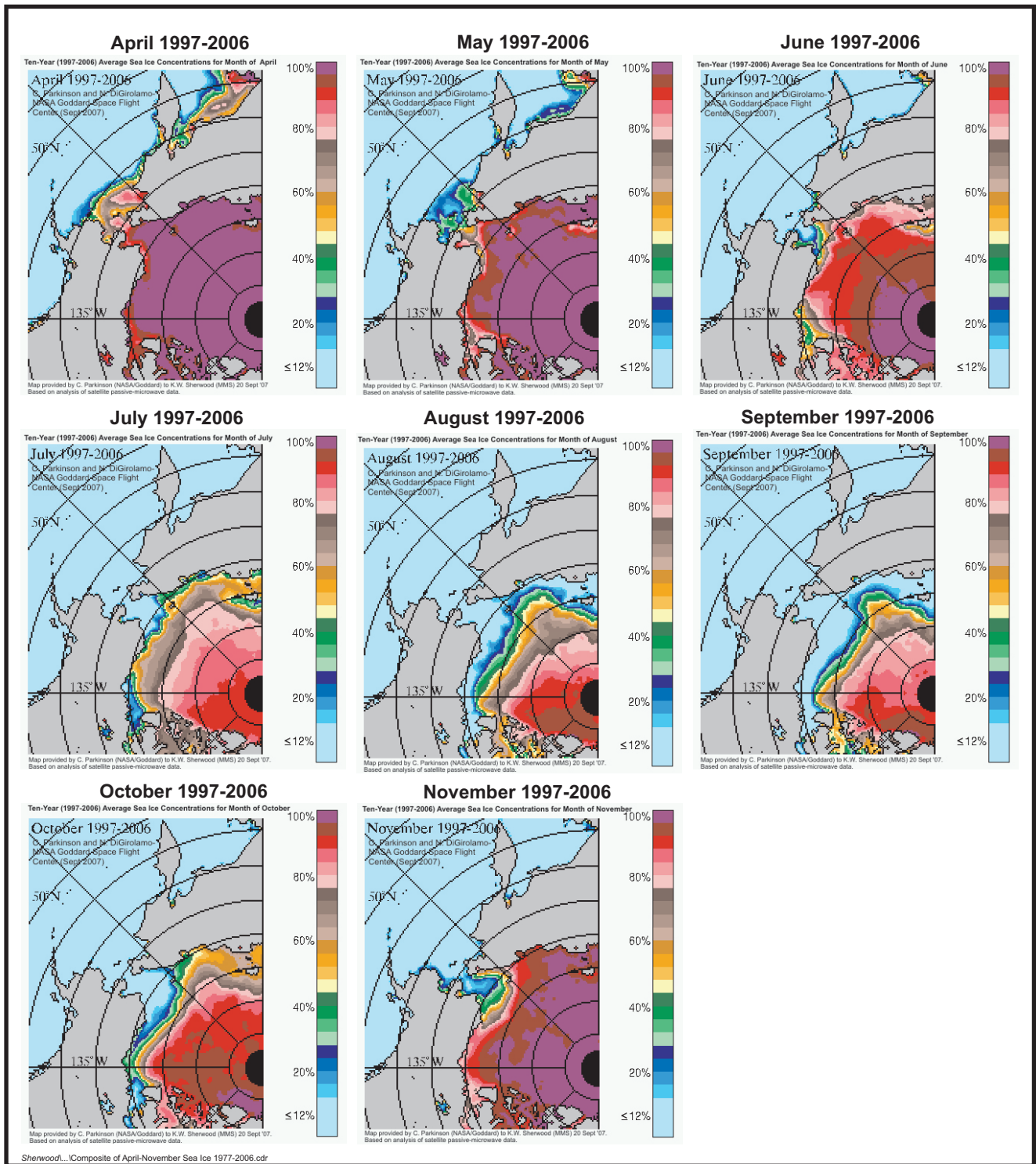


Figure 3.2.3-2 Generalized Circulation over the Chukchi and Beaufort Seas.



Source: Stringer et al. 1991.

Figure 3.2.4-1. Generalized Location of Chukchi Polynyas



Source: Parkinson, 2007

Figure 3.2.4-2 Ten-Year (1997-2006) Average Sea Ice Concentration for the Months April - November



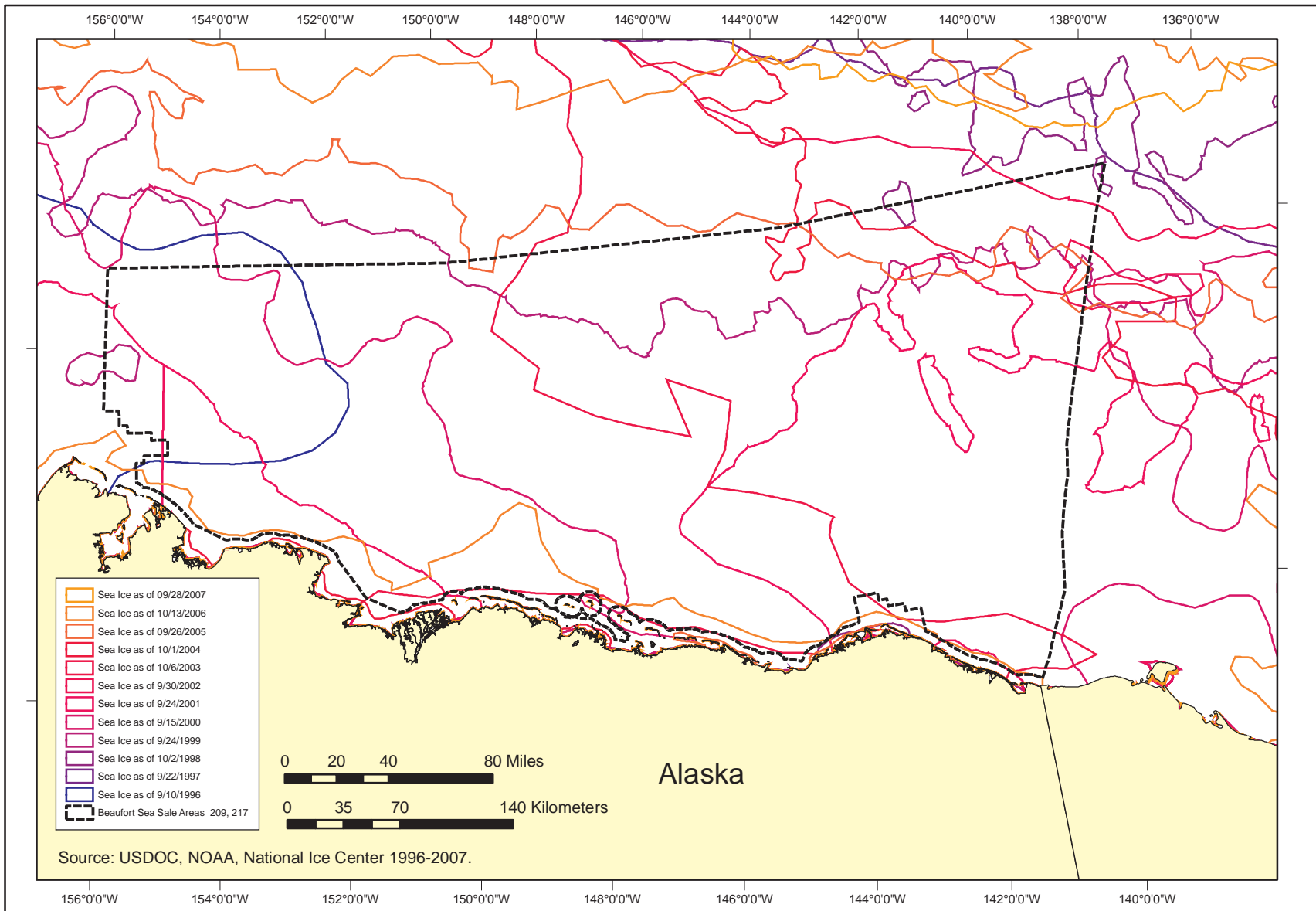


Figure 3.2.4-3. Beaufort Sea Generalized Maximum Retreat of Sea Ice 1996-2007.

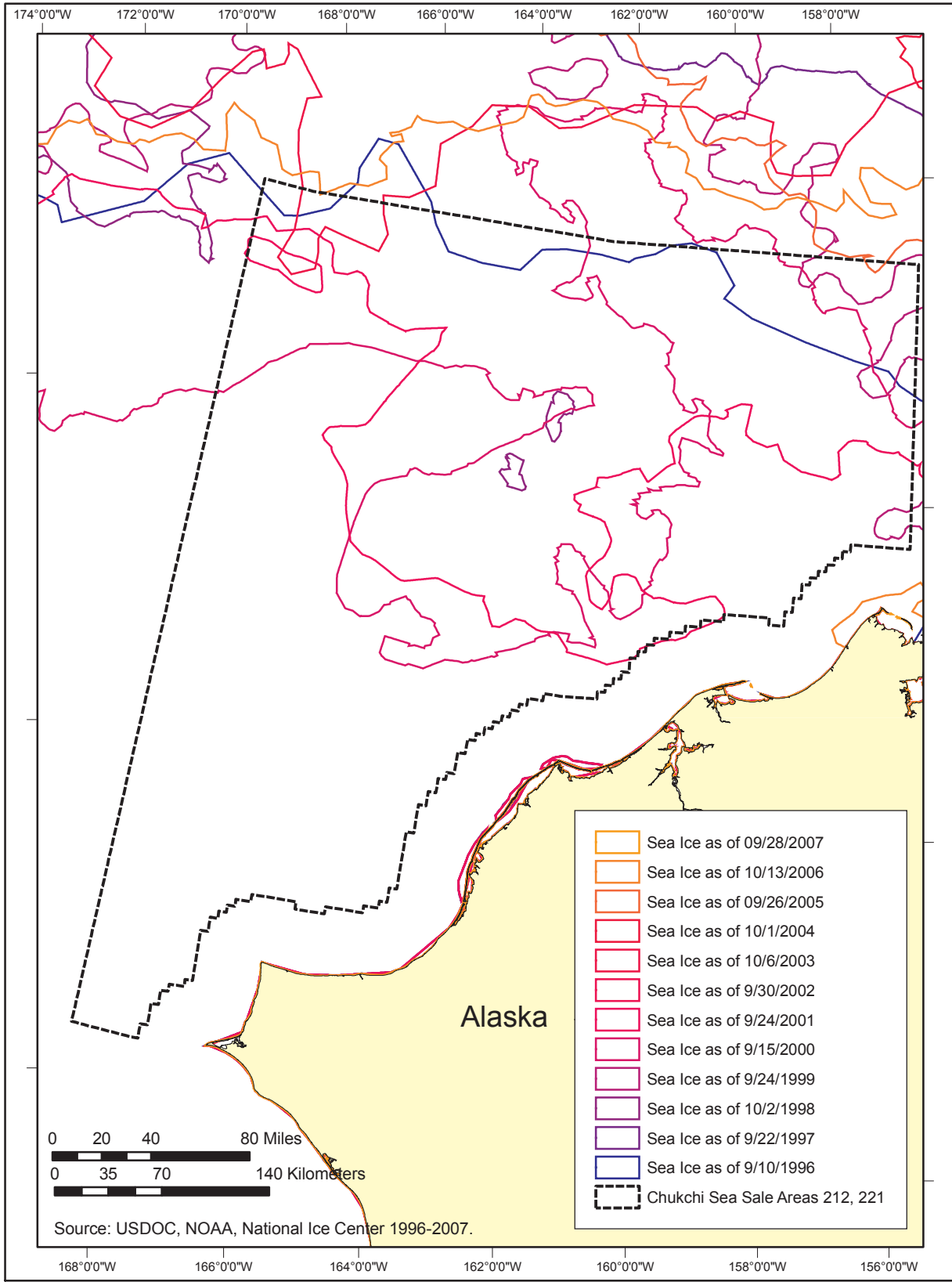


Figure 3.2.4-4. Chukchi Sea Generalized Maximum Retreat of Sea Ice 1996-2007.

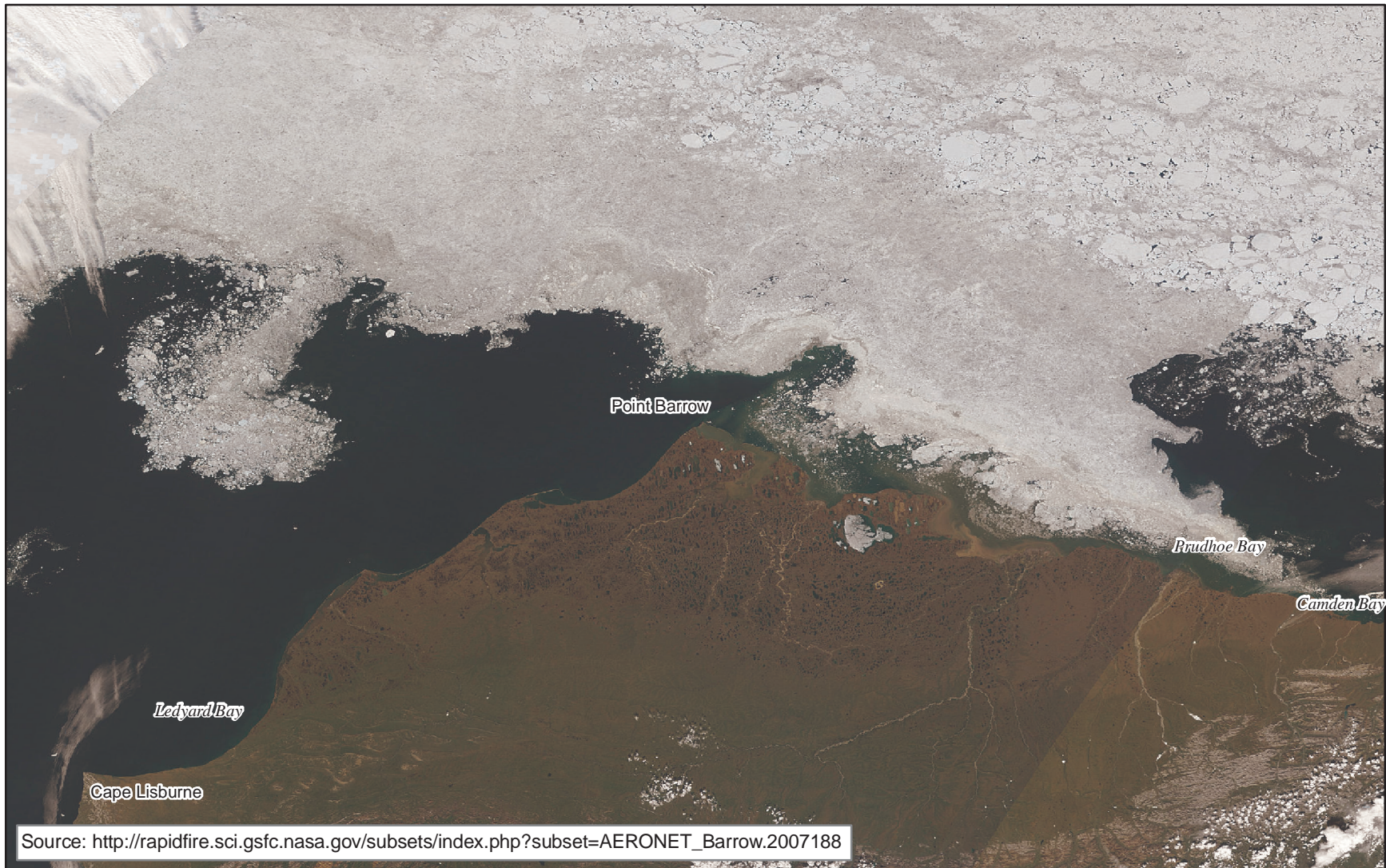


Figure 3.3.1-1 Early summer sea ice and coastal production in part of the proposed lease areas. Some locations in the satellite photograph are Cape Lisburne and Ledyard Bay in the Chukchi Sea on the left, Point Barrow in the center, and Camden Bay in the Beaufort Sea on the right edge. The apparent line of color on shore in the lower right is the result of merging adjacent satellite paths, but the line intersects the coast at Prudhoe Bay. This image, taken on July 7, 2007, reflects the slight reduction in the sea-ice cover during Spring, although climate warming has diminished it greatly during Autumn. An intense phytoplankton bloom has turned the surface water slightly green between the ice cover and shore just to the east of Pt. Barrow.



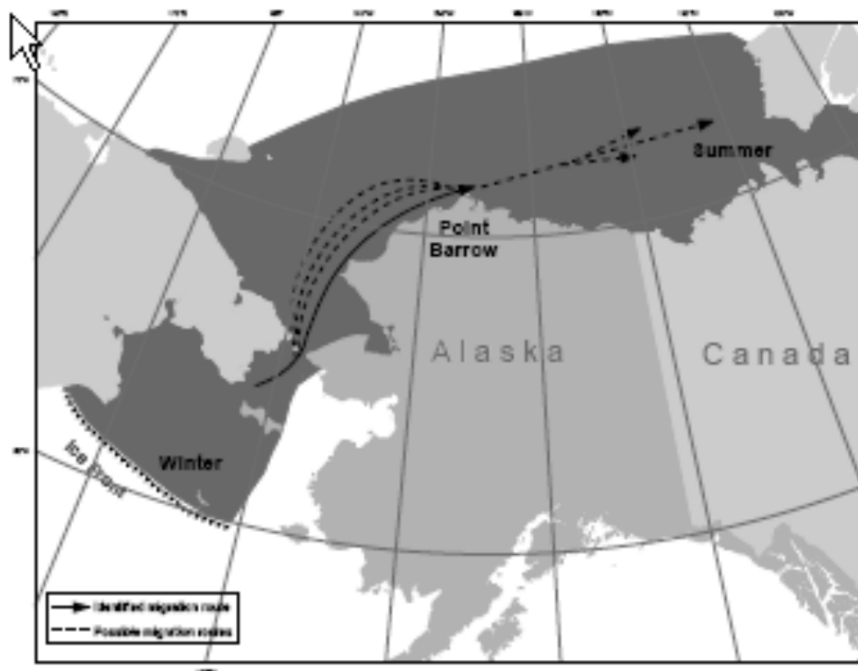


Figure 3.3.4.1-1. Bowhead Whale Distribution and Spring Migration Routes, Shaded area depicts the approximate distribution of Arctic stock bowhead whales. Spring migration is noted by lines and arrows following a route from the Bering Sea wintering areas to the Beaufort Sea summering area. Reproduced from Figure 42 of Angliss and Outlaw Rev. 03/03/07.

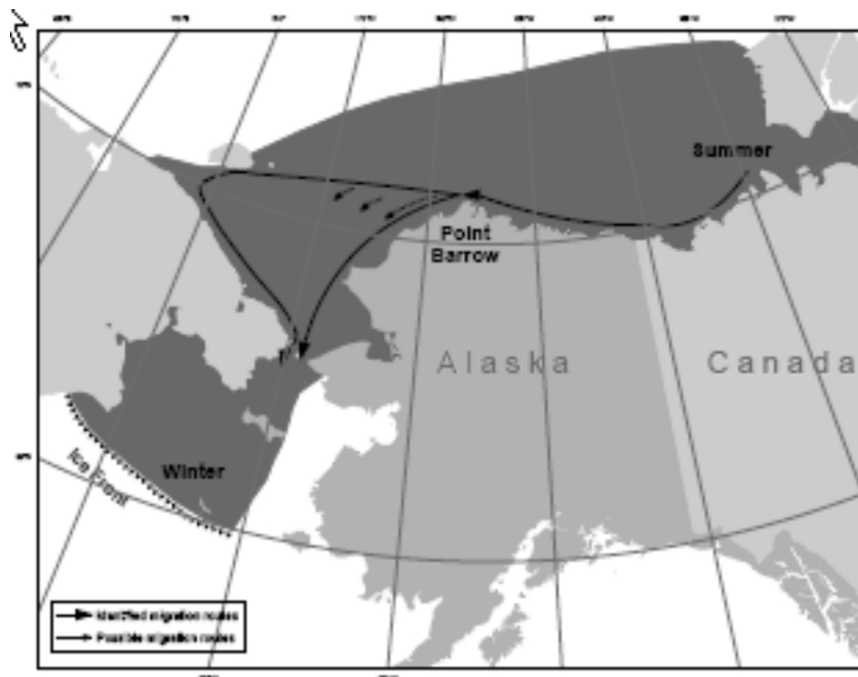


Figure 3.3.4.1-2. Bowhead Whale Distribution and Fall Migration Routes, Shaded area depicts the approximate distribution of Arctic stock bowhead whales. Fall migration is noted by lines and arrows following a route from the Beaufort Sea summering areas to the Bering Sea wintering areas. Reproduced from Figure 40 of Angliss and Outlaw Rev. 03/03/07.



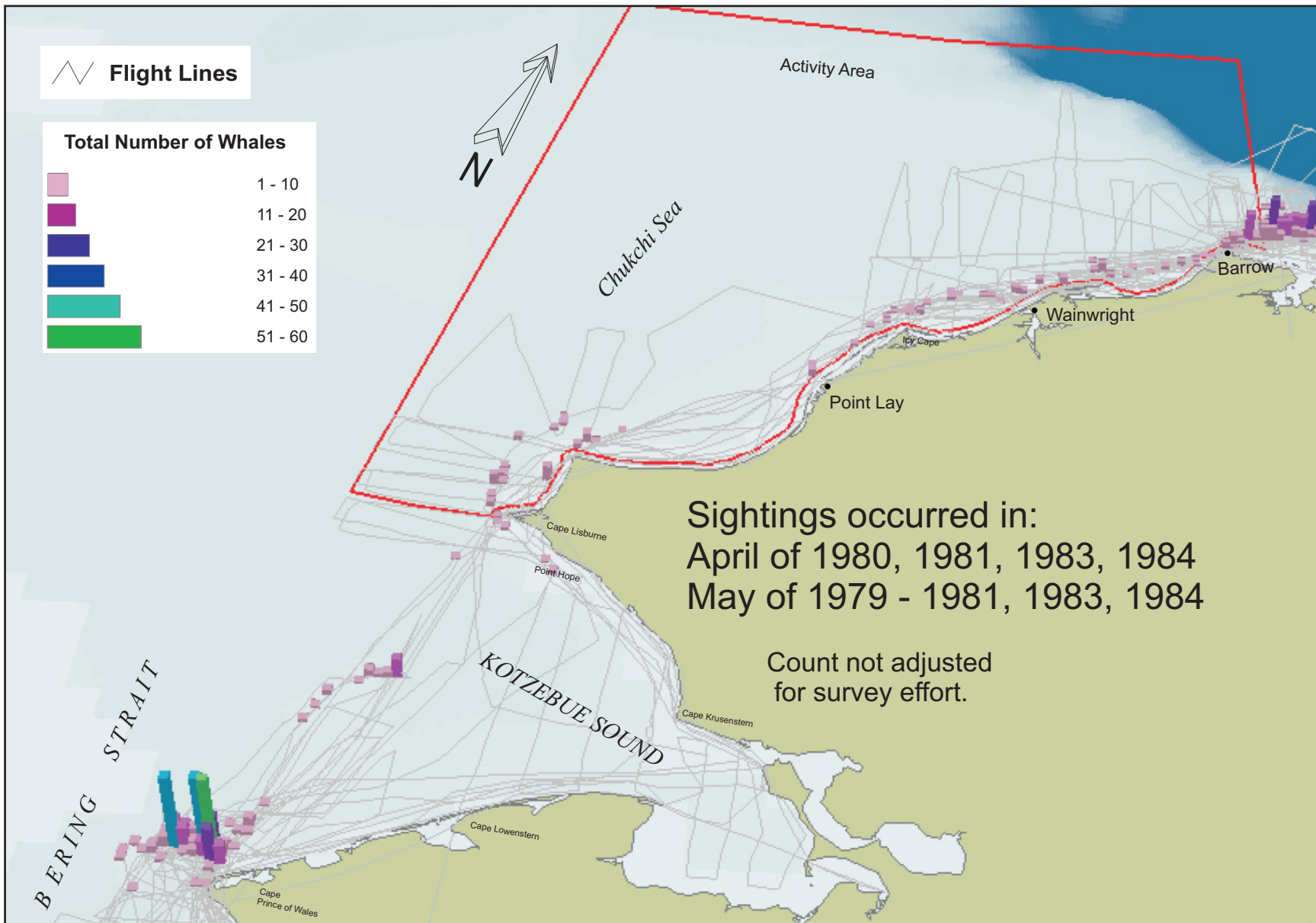


Figure 3.3.4.1-3 Counts of Bowhead Whales in April -May in the Chukchi Sea taken by the MMS (Alaska OCS Region) Bowhead Whale Aerial Survey Project. (Counts are aggregated on a 5-km grid).

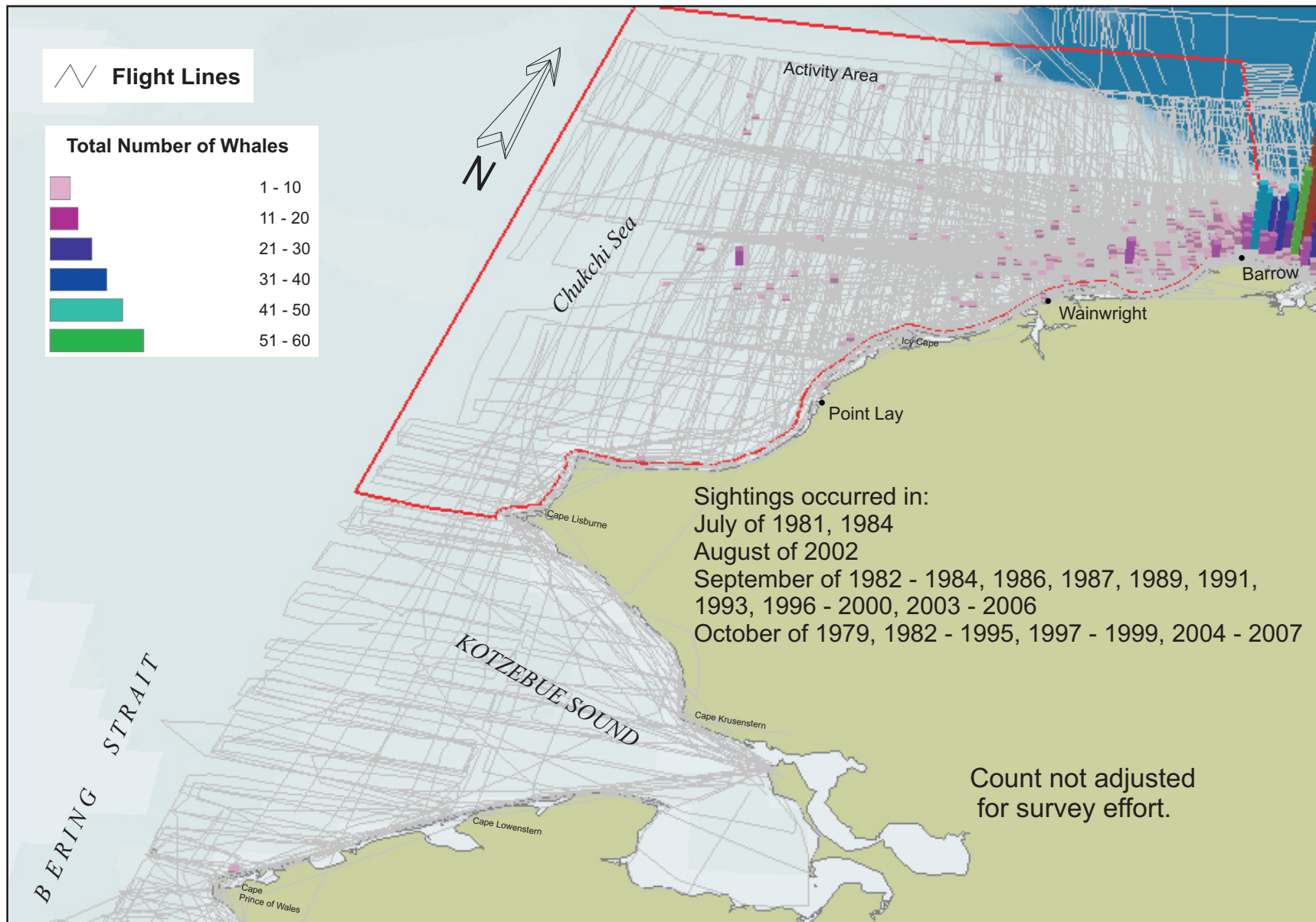


Figure 3.3.4.1-4 Counts of Bowhead Whales in July - November in the Chukchi Sea taken by the MMS (Alaska OCS Region) Bowhead Whale Aerial Survey Project. (Counts are aggregated on a 5-km grid).

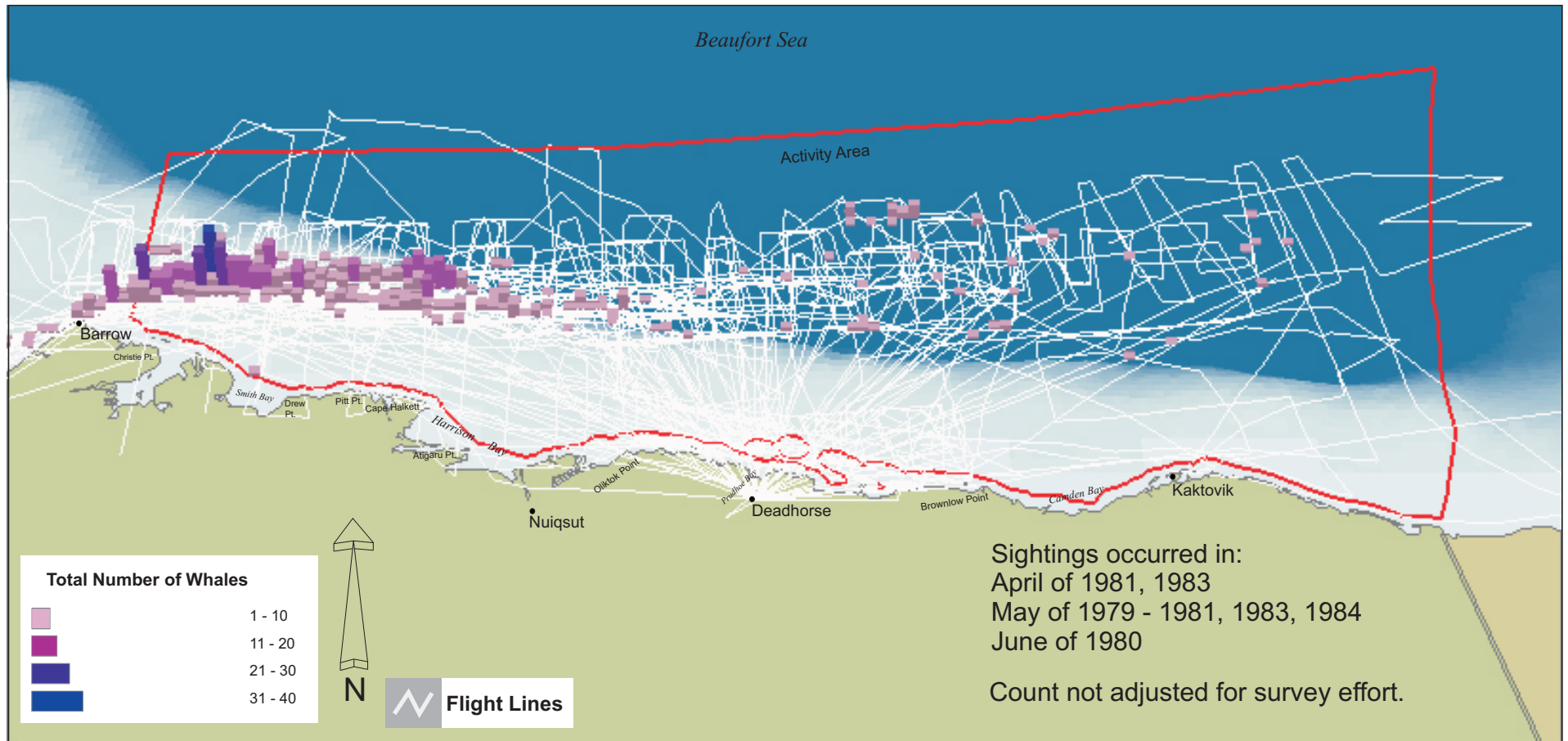


Figure 3.3.4.1-5 Counts of Bowhead Whales in April - June in the Beaufort Sea taken by the MMS (Alaska OCS Region) Bowhead Whale Aerial Survey Project. (Counts are aggregated on a 5-km grid).

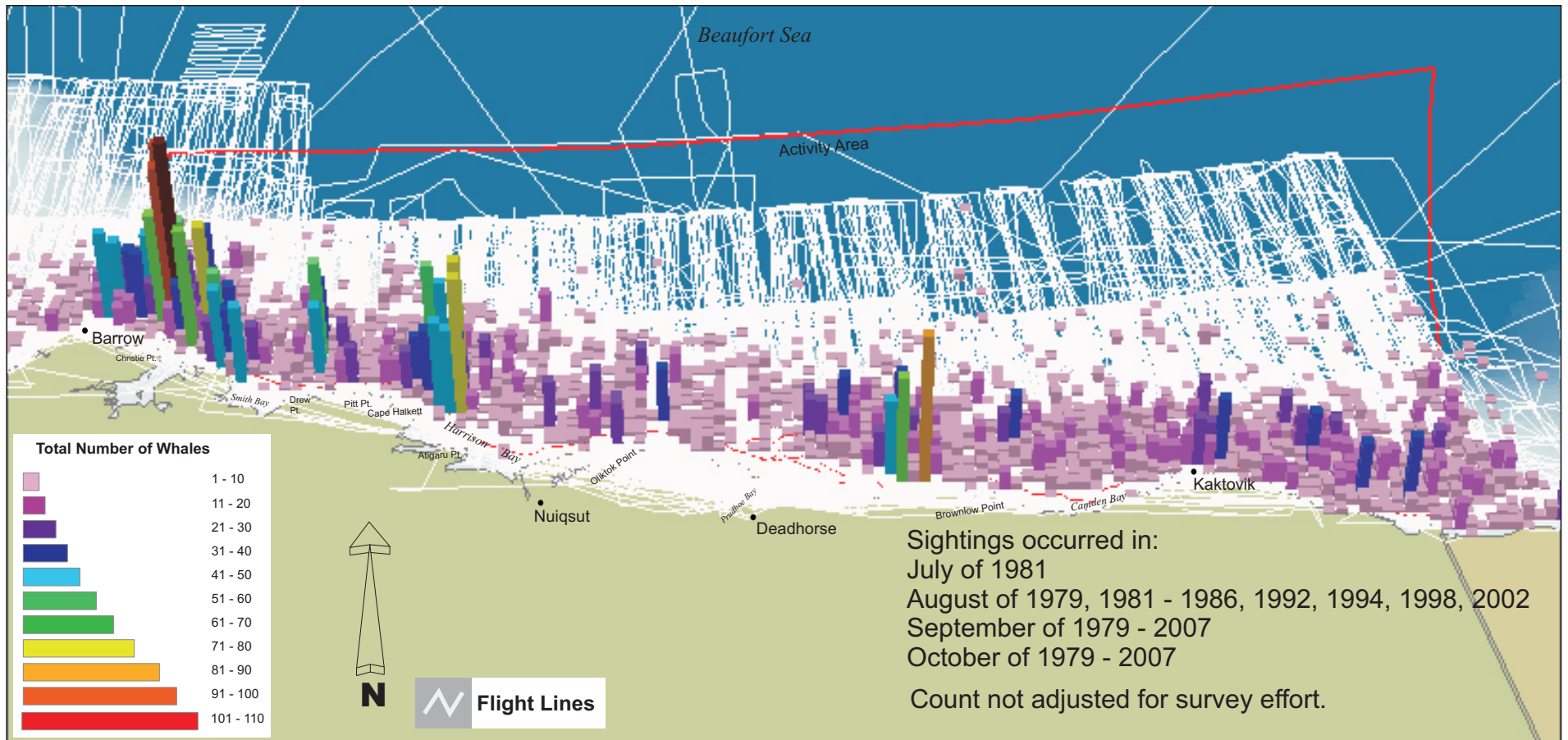


Figure 3.3.4.1-6 Counts of Bowhead Whales in July -October in the Beaufort Sea taken by the MMS (Alaska OCS Region) Bowhead Whale Aerial Survey Project. (Counts are aggregated on a 5-km grid).



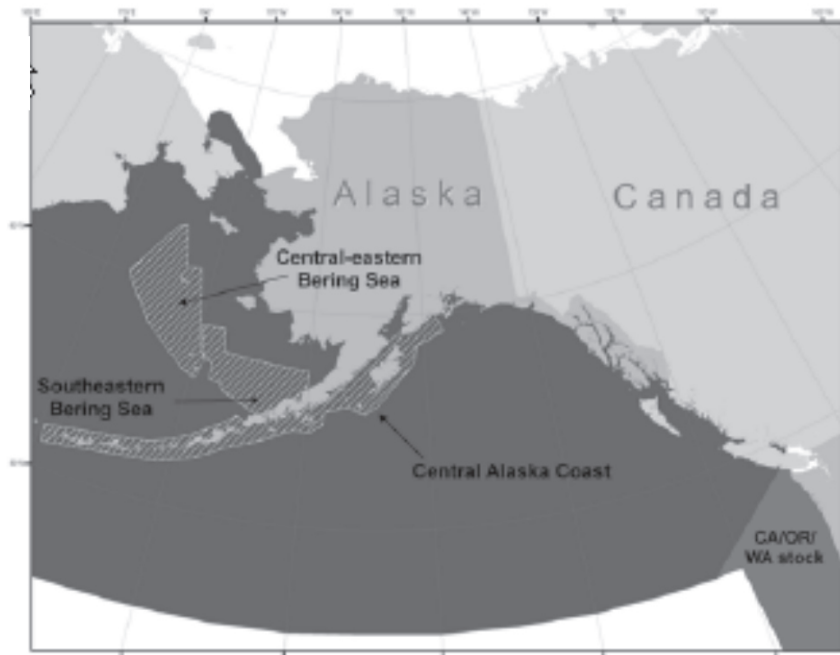


Figure 3.3.4.1-7. Approximate Distribution of Fin Whales in the Eastern North Pacific (shaded area). Striped areas indicate where vessel surveys occurred in 1999-2000 (Moore et al. 2002) and 2001-2003 (Zebrini et al. 2006). Reproduced from Figure 40 of Angliss and Outlaw Rev. 03/03/07.

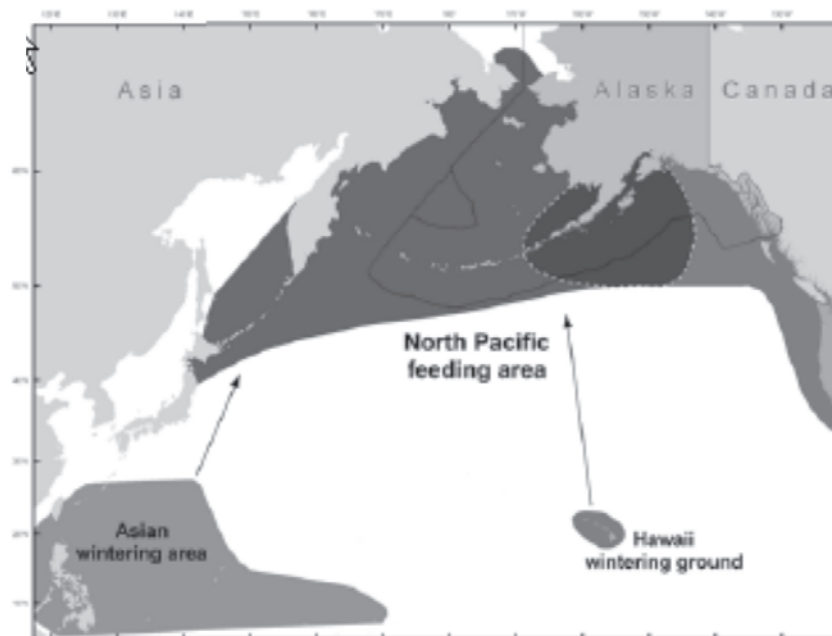
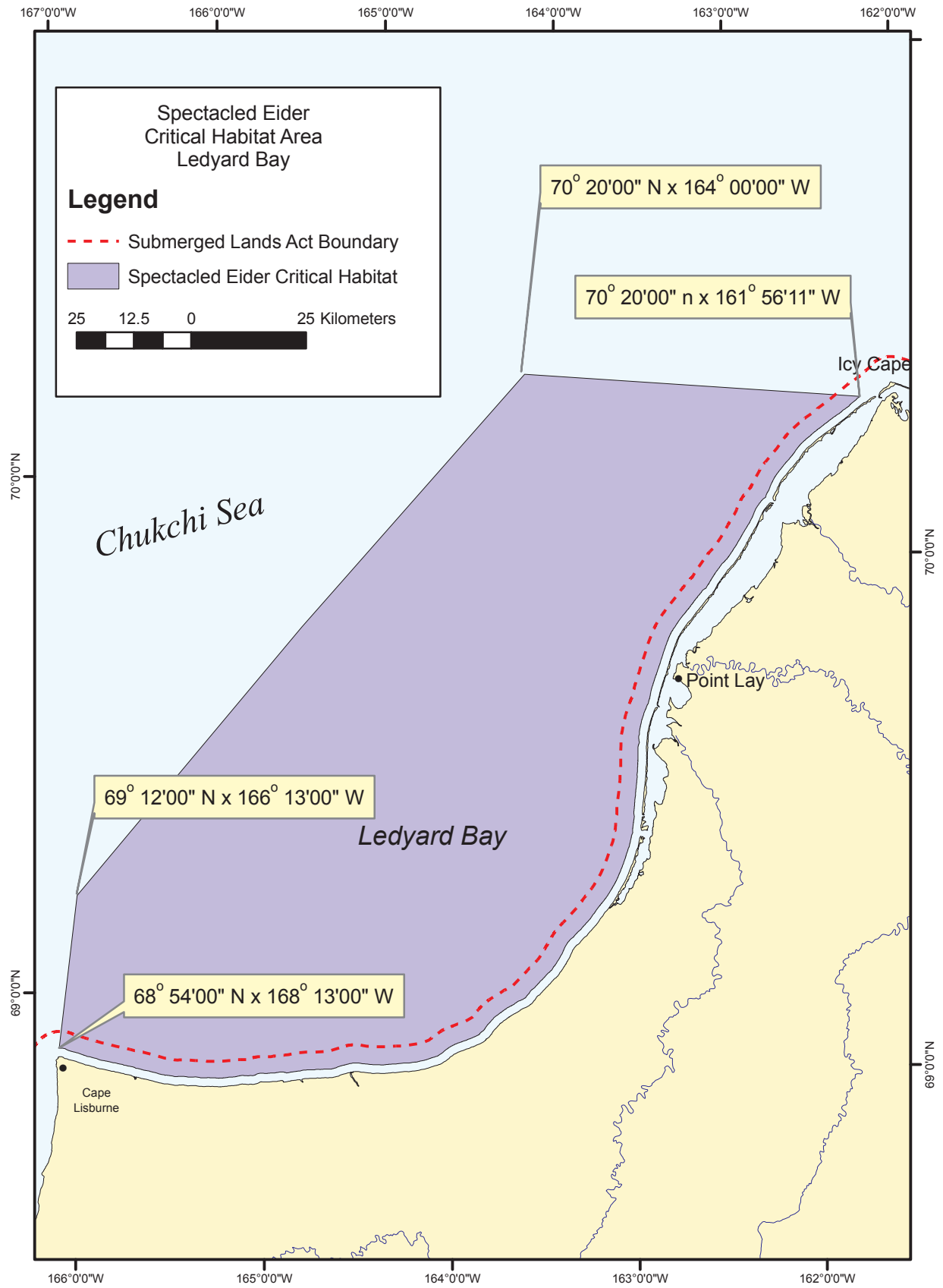


Figure 3.3.4.1-8. Approximate distribution of humpback whales in the Western North Pacific (shaded areas). Feeding and wintering grounds are presented. The dark shading within the dotted line is known to be an area of overlap of the Central North Pacific stock. Reproduced from Figure 38 of Angliss and Outlaw Rev. 03/03/07.



Source: USDOI, FWS (2001b)

Figure 3.3.4.2-1 Location of Ledyard Bay Spectacled Eider Critical Habitat Area

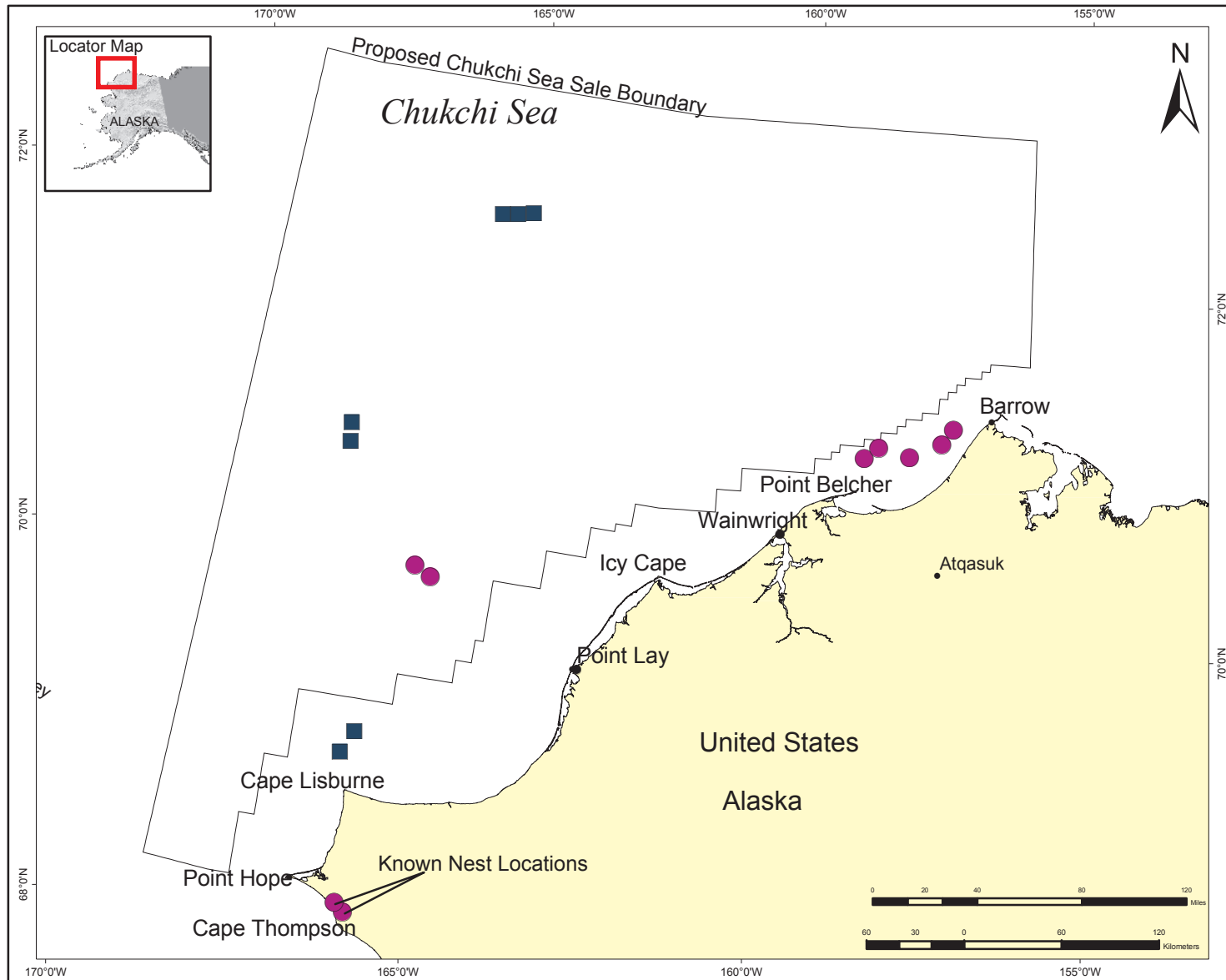
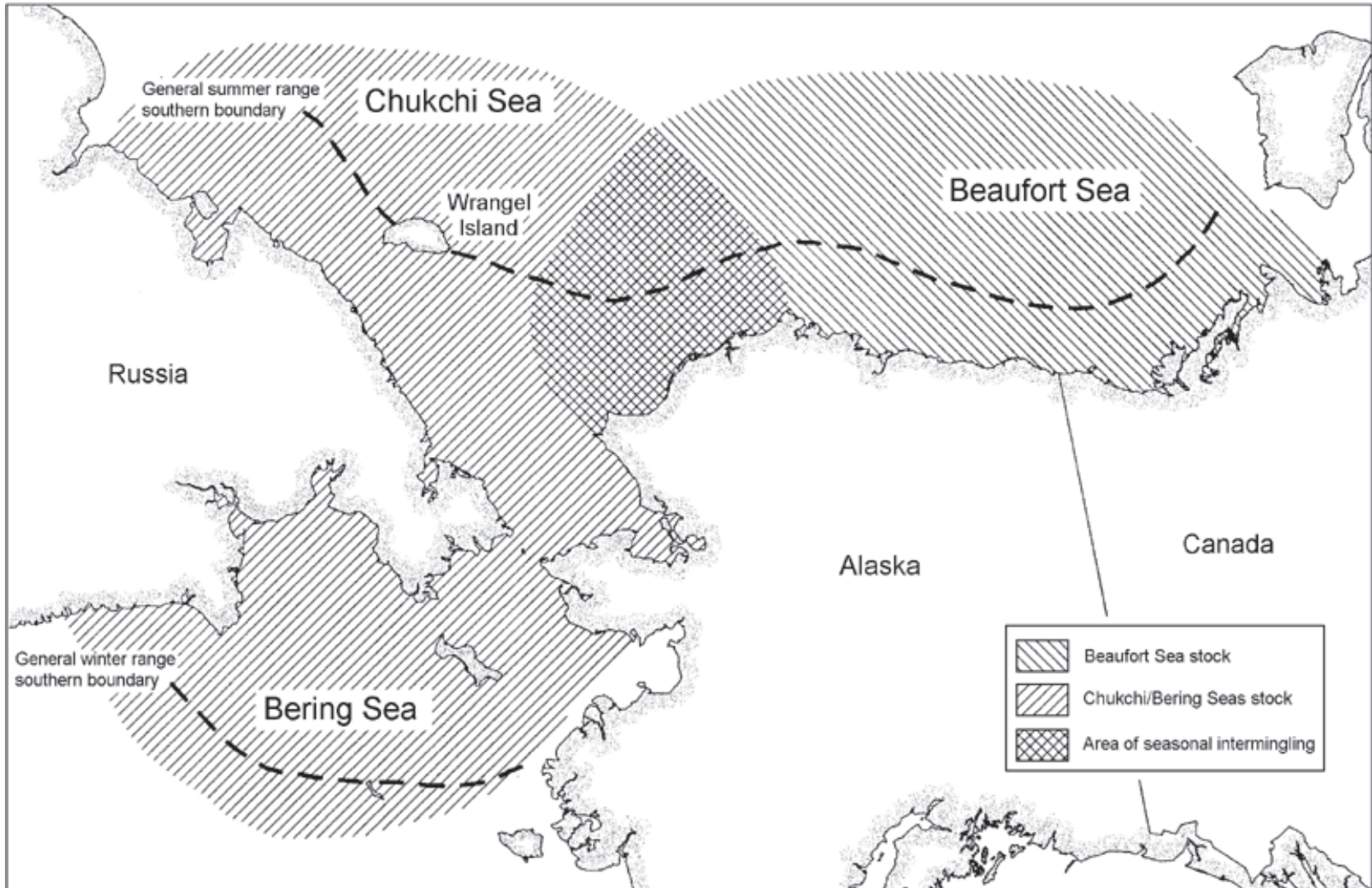


Figure 3.3.4.2-2 Kittlitz's Murrelet Offshore Observations and Nesting Information. Potential nesting area based on Day et al. (1990). Nest locations based on USDOI (2004). Offshore observations are designated as blocks (24 Aug-22 September) and dots (22 September-17 October) (Divoky 1987).



Source: USDOI, FWS, Region 7 ([www.r7.fws.gov/fisheries/mmm/polarbear](http://www.r7.fws.gov/fisheries/mmm/polarbear))

Figure 3.3.4.3-1 Distribution of the Chukchi/Bering Sea and Southern Beaufort Sea stocks of polar bear, from USFWS 2008.