



U.S. Department of the Interior
Bureau of Land Management
U.S. Fish and Wildlife Service

August 2023

Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement

DRAFT

Volume 2: Appendix A (Maps and Figures)

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Bureau of Land Management
U.S. Fish and Wildlife Service

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APPENDIX

A Maps and Figures

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Appendix A

Maps and Figures

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APPENDIX A

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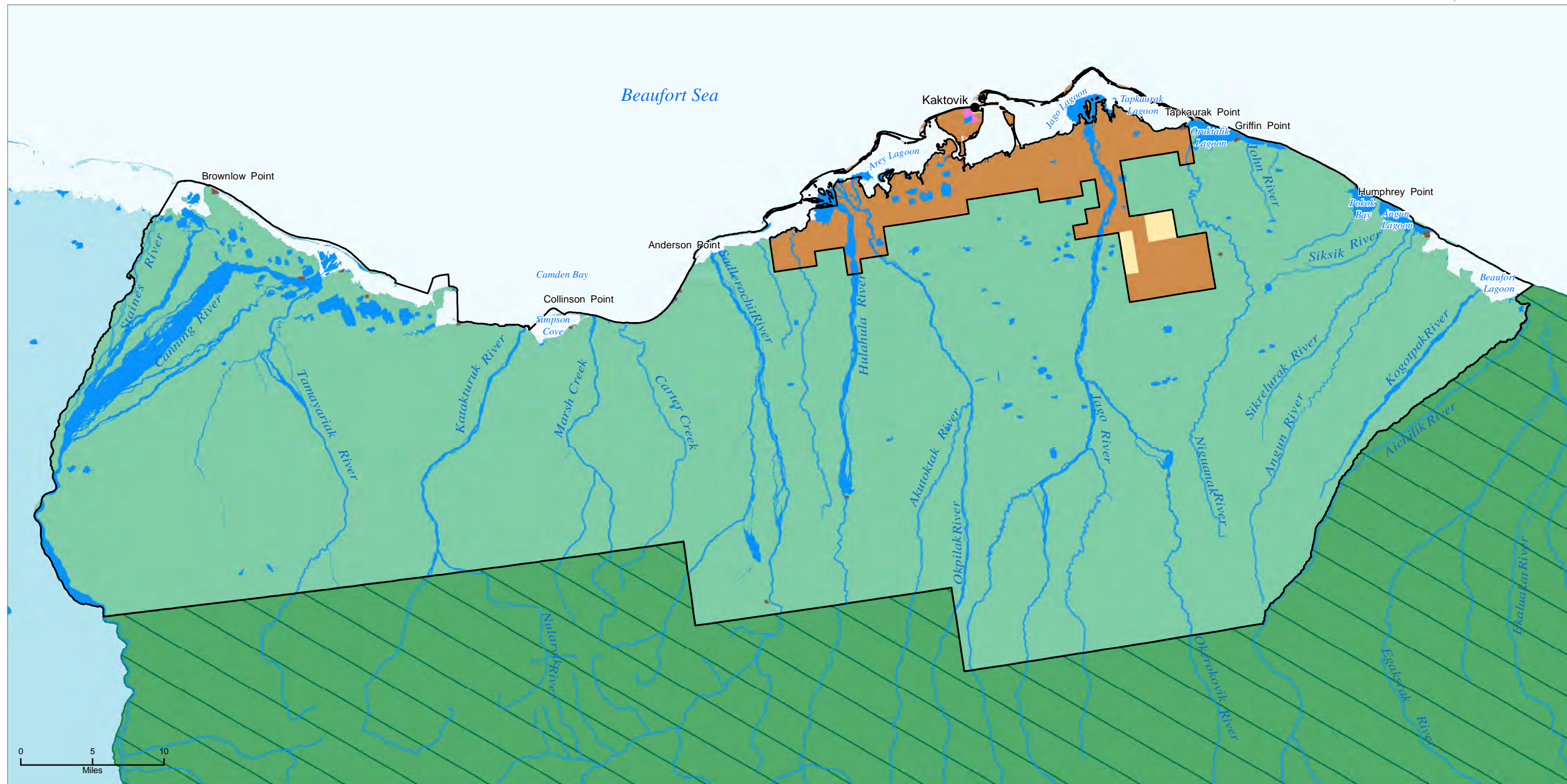
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BLM adjusted the Public Law 115-97 boundary to align with the State of Alaska administrative lease line after reviewing tracts and legal descriptions for the 2021 lease sale (Source: Alaska Land Information System [ALIS]).

Data from geographic information systems (GIS) have been used in developing acreage calculations and for generating the maps in this appendix. Calculations are dependent upon the quality and availability of data and most calculations in this EIS are rounded to the nearest one hundred acres. Given the scale of the analysis, the compatibility constraints between datasets, and lack of data for some resources, all calculations are approximate and serve for comparison and analytic purposes only. Likewise, the maps in this appendix are provided for illustrative purposes and subject to the limitations discussed above. BLM may receive additional GIS data; therefore, acreages may be recalculated and revised later.

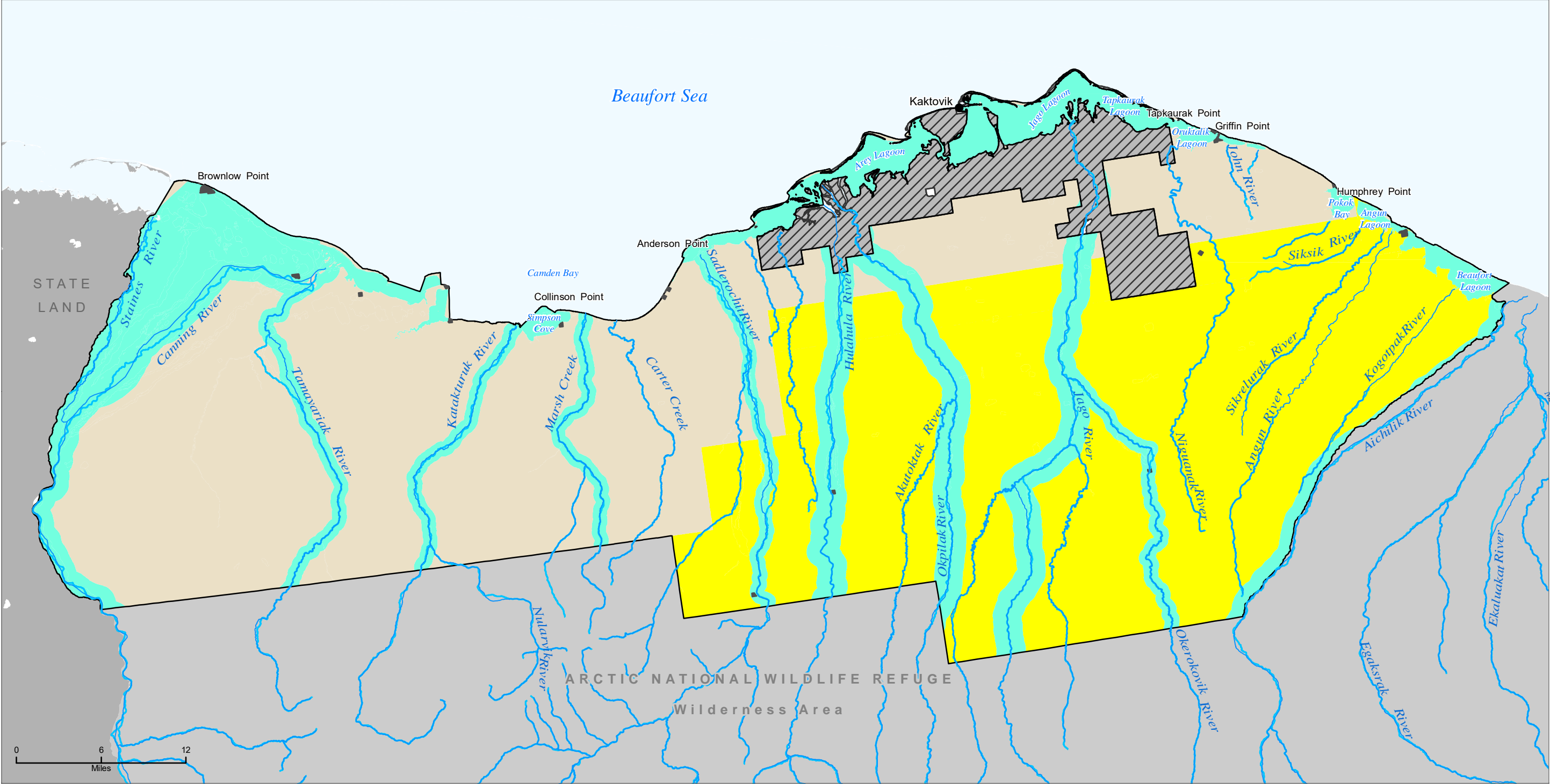


- U.S. Fish and Wildlife Service
- U.S. Fish and Wildlife Service, wilderness area
- Native-conveyed
- Native-selected
- State
- Native allotment
- Air Force
- Coastal Plain Supplemental EIS Boundary



Data source: BLM GIS 2022,
USFWS GIS 2022
Print date: 07/14/2023

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- Not available for lease sale (none)

Available for lease sale

Subject to no surface occupancy

Subject to controlled surface use (none)

Subject to timing limitations

Subject to only standard terms and conditions
- Coastal Plain Supplemental EIS boundary

Native Allotment

Excluded from Public Law 115-97

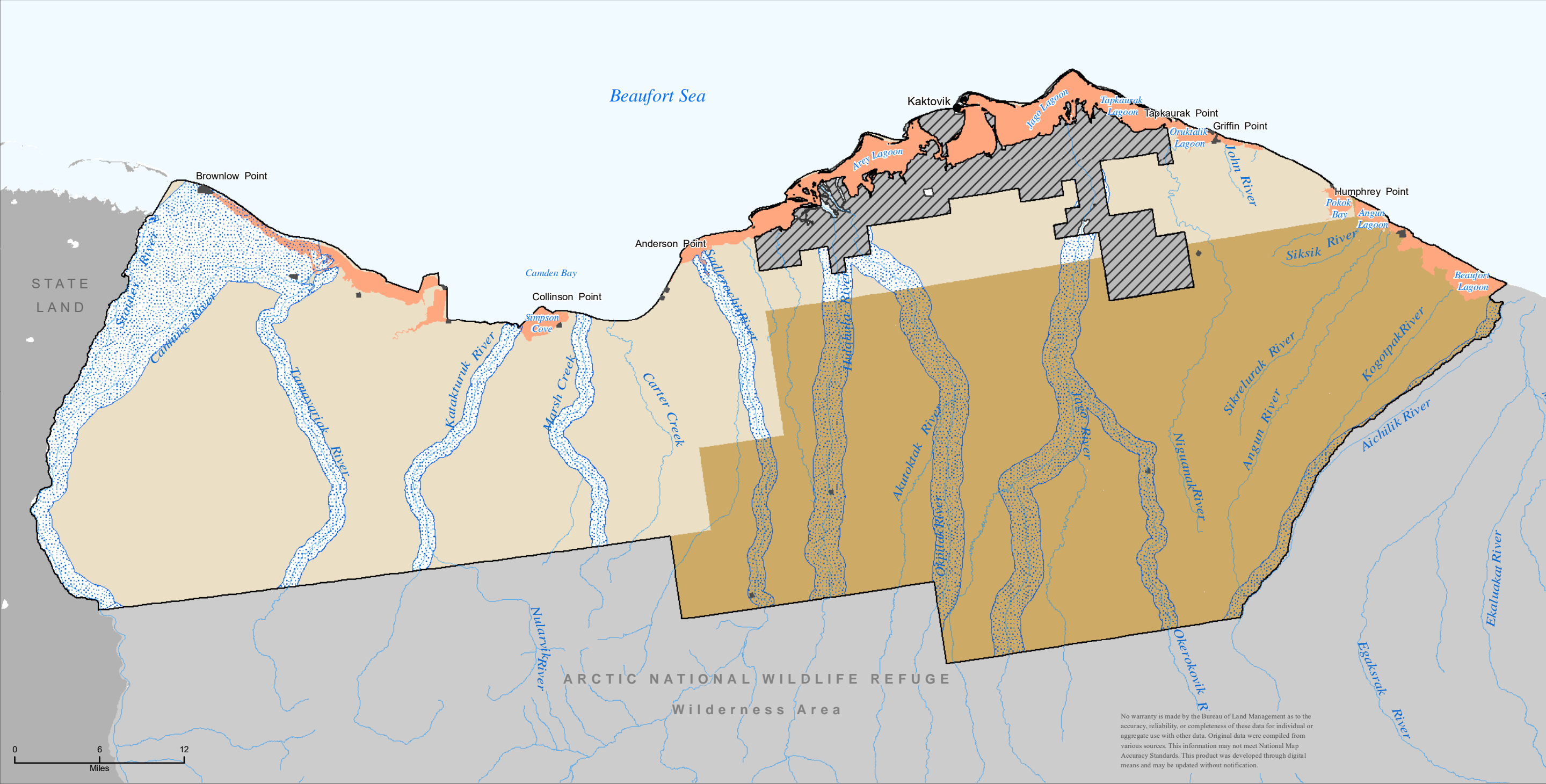
Coastal Plain or outside the BLM's oil and gas leasing authority



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Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/15/2023

Map 2-1



Available for lease sale, subject to no surface occupancy

Lease stipulation 1—rivers and streams

Lease stipulation 4—nearshore marine, lagoon, and barrier island habitat, exploration

Available for lease sale, subject to timing limitations

Lease stipulation 7— Porcupine Caribou calving habitat

Available for lease sale:

Subject to only standard terms and conditions

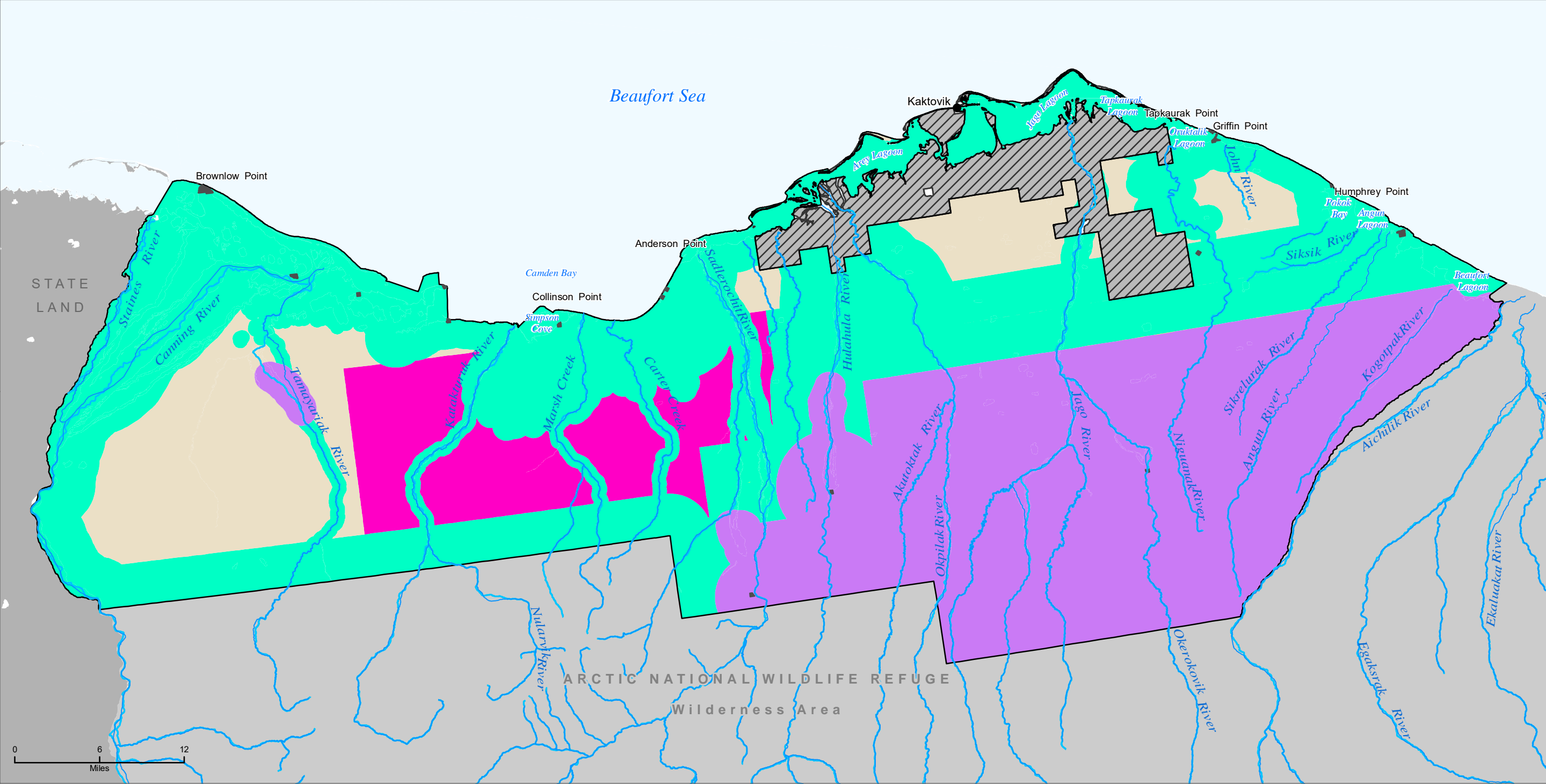
Coastal Plain Supplemental EIS boundary

Native Allotment

Excluded from Public Law 115-97 Coastal Plain or outside the BLM's oil and gas leasing authority

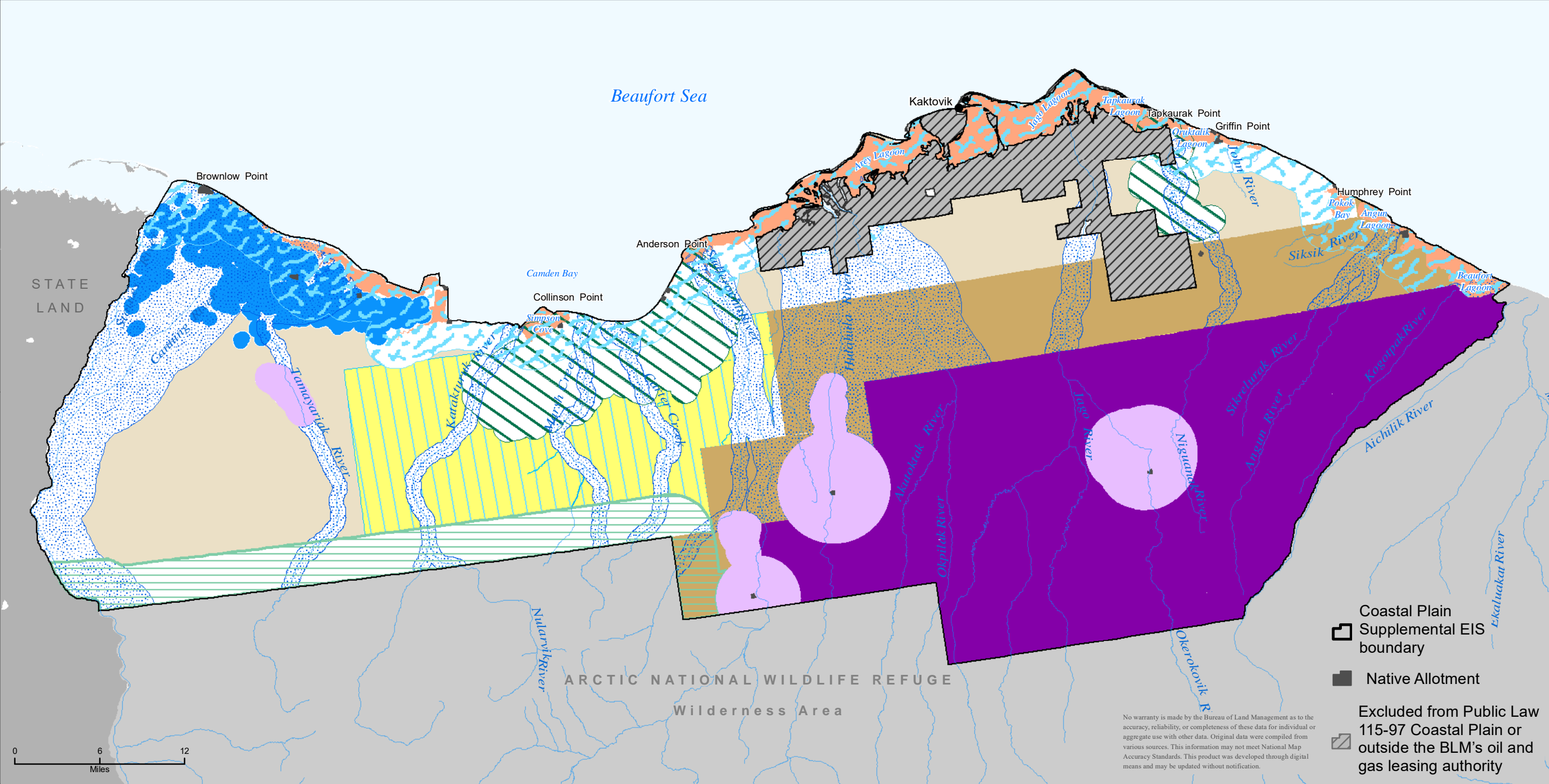


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Not available for lease sale and not available for surface occupancy

- Lease stipulation 3—springs/aufeis
- Lease stipulation 7—Porcupine caribou calving habitat

Available for lease sale, subject to no surface occupancy

- Lease stipulation 1—rivers and streams
- Lease stipulation 2—Canning River delta and lakes
- Lease stipulation 4—nearshore marine, lagoon, and barrier island habitat, exploration
- Lease stipulation 5—coastal polar bear river denning habitat

- Lease stipulation 9—coastal area
- Lease stipulation 10—Wilderness boundary

Available for lease sale, subject to controlled surface use

- Lease stipulation 8—Porcupine Caribou post-calving habitat

Available for lease sale, subject to timing limitations

- Lease stipulation 4—nearshore marine, lagoon, and barrier island habitat

Available for lease sale, subject to timing limitations

- Lease stipulation 8—Porcupine Caribou post-calving habitat

Available for lease sale:

- Subject to only standard terms and conditions

Coastal Plain Supplemental EIS boundary

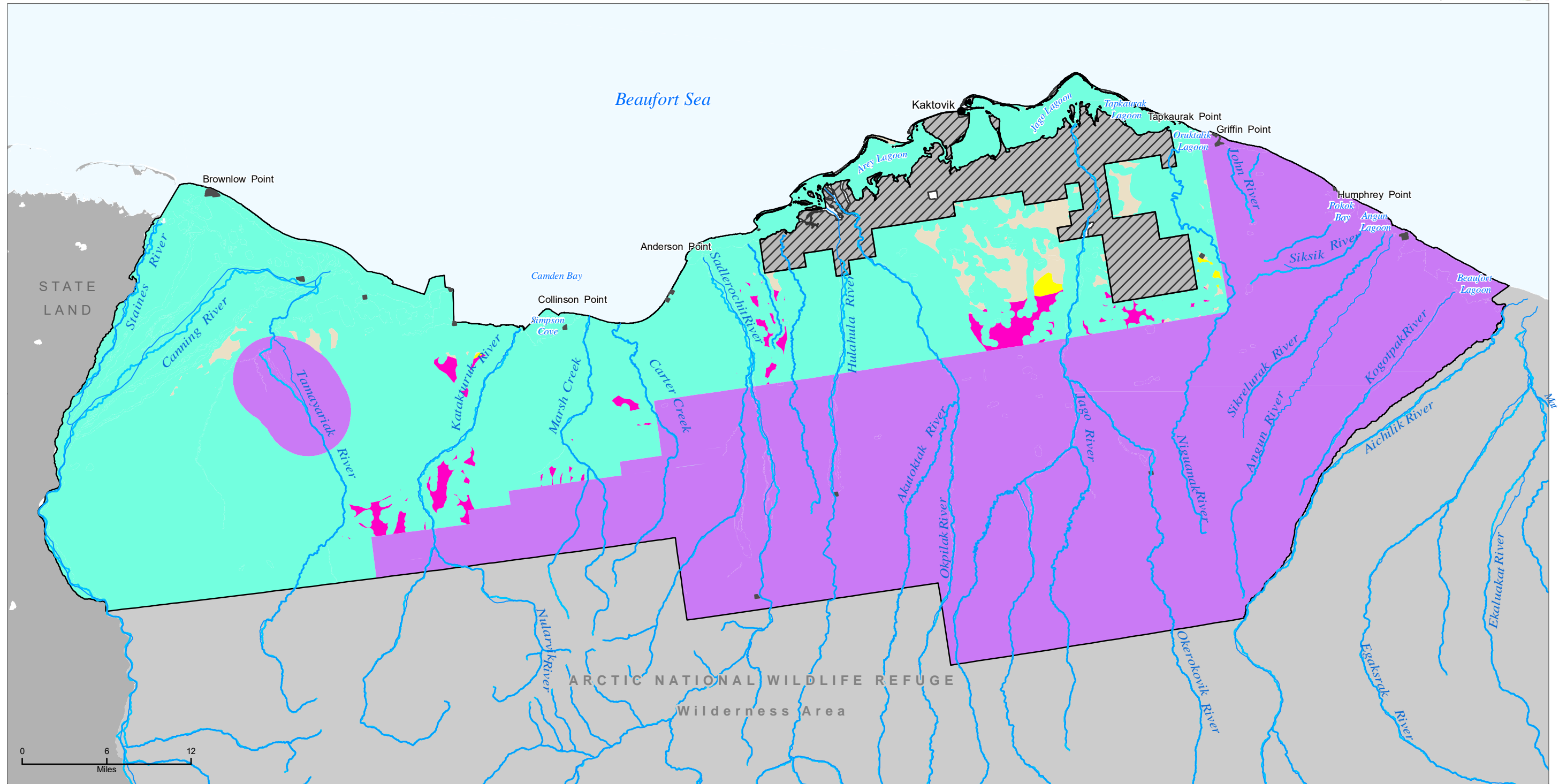
Native Allotment

Excluded from Public Law 115-97 Coastal Plain or outside the BLM's oil and gas leasing authority

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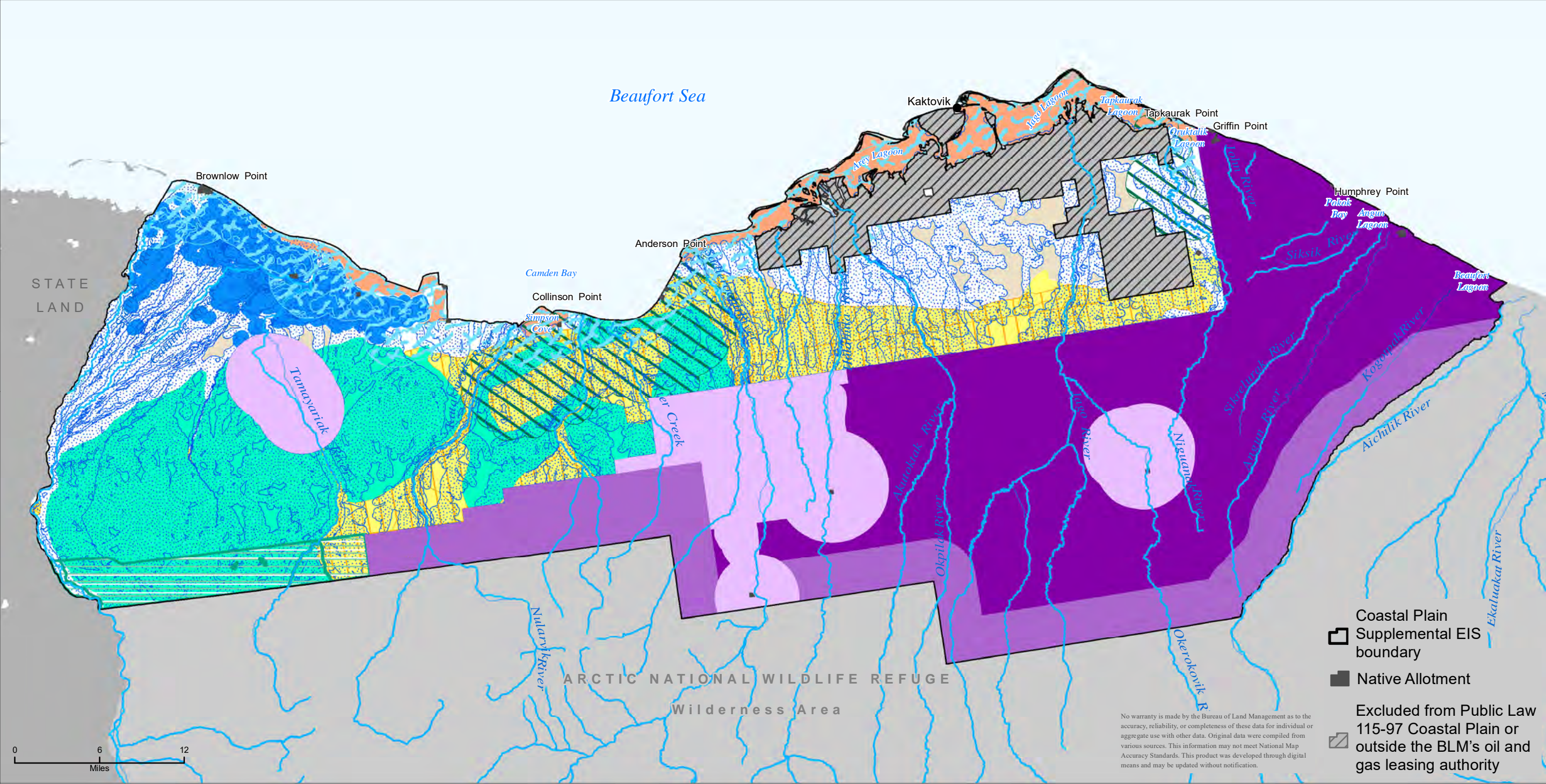


- | | | |
|--|--|--|
| Not available for lease sale | Available for lease sale | Coastal Plain Supplemental EIS boundary |
| Subject to controlled surface use | Subject to timing limitations | Native Allotment |
| Subject to only standard terms and conditions | | Excluded from Public Law 115-97 |
| | | Coastal Plain or outside the BLM's oil and gas leasing authority |



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Not available for lease sale and not available for surface occupancy

- Lease stipulation 3—springs/aufeis
- Lease stipulation 10—Wilderness boundary
- Lease stipulation 6—Porcupine caribou calving habitat

Available for lease sale, subject to no surface occupancy

- Lease stipulation 1—rivers and streams
- Lease stipulation 2—Canning River delta and lakes
- Lease stipulation 4—nearshore marine, lagoon, and barrier island habitat, exploration
- Lease stipulation 5—coastal polar bear river denning habitat
- Lease stipulation 9—coastal area
- Lease stipulation 10—Wilderness boundary
- Lease stipulation 12—ice-rich soils and yedoma deposits

Available for lease sale, subject to controlled surface use

- Lease stipulation 6—caribou summer habitat, 2050 projected PCH post-calving

Available for lease sale, subject to timing limitations

- Lease stipulation 4—nearshore marine, lagoon, and barrier island habitat

Available for lease sale, subject to timing limitations

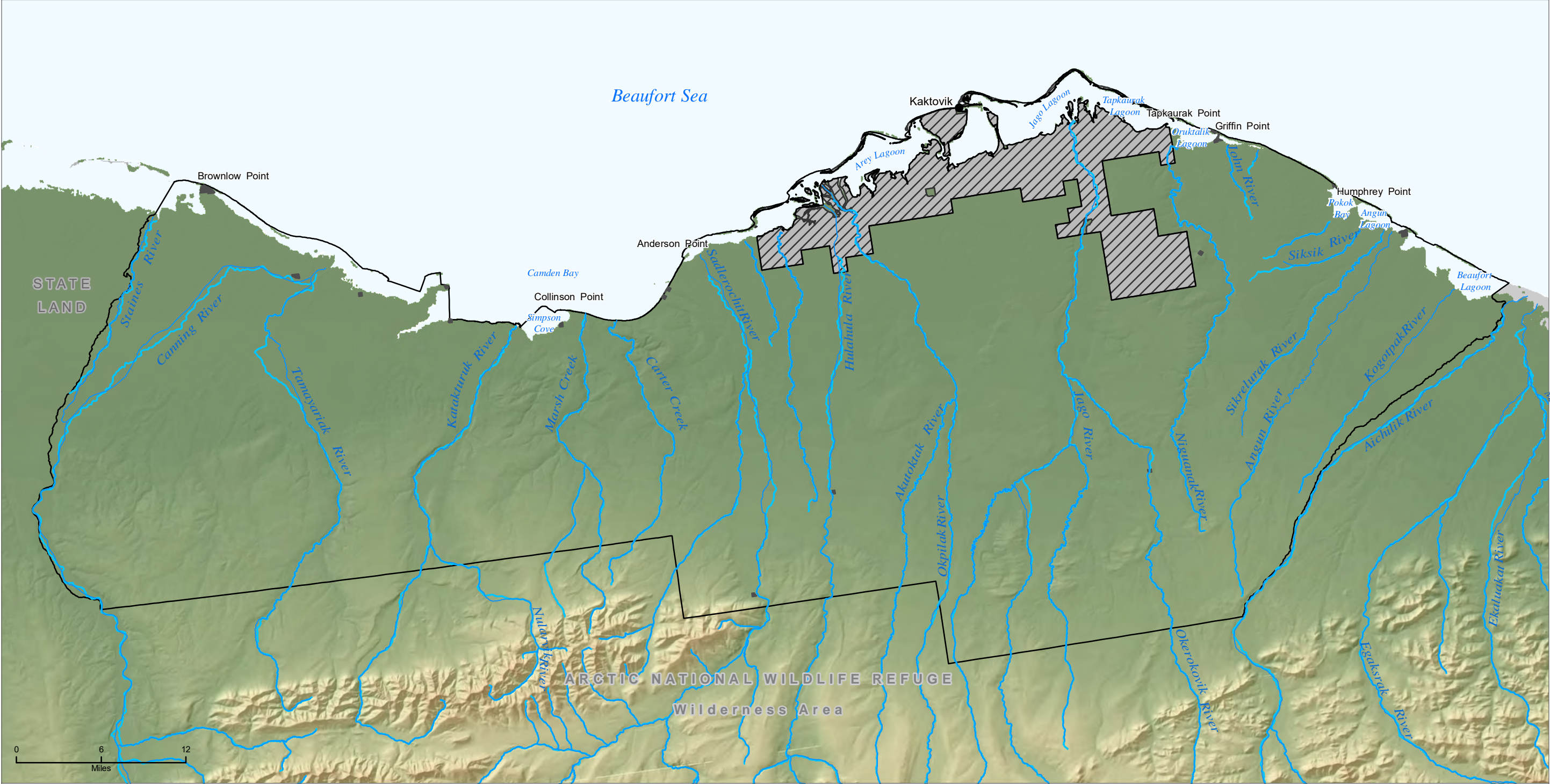
- Lease stipulation 6—caribou summer habitat, 2050 projected PCH calving and post-calving

Available for lease sale:

- Subject to only standard terms and conditions




Data source: BLM GIS 2022, USFWS GIS 2022
Print date: 07/28/2023




Elevation


High

Low

 Coastal Plain Supplemental EIS boundary

 Native Allotment

Excluded from Public Law 115-97

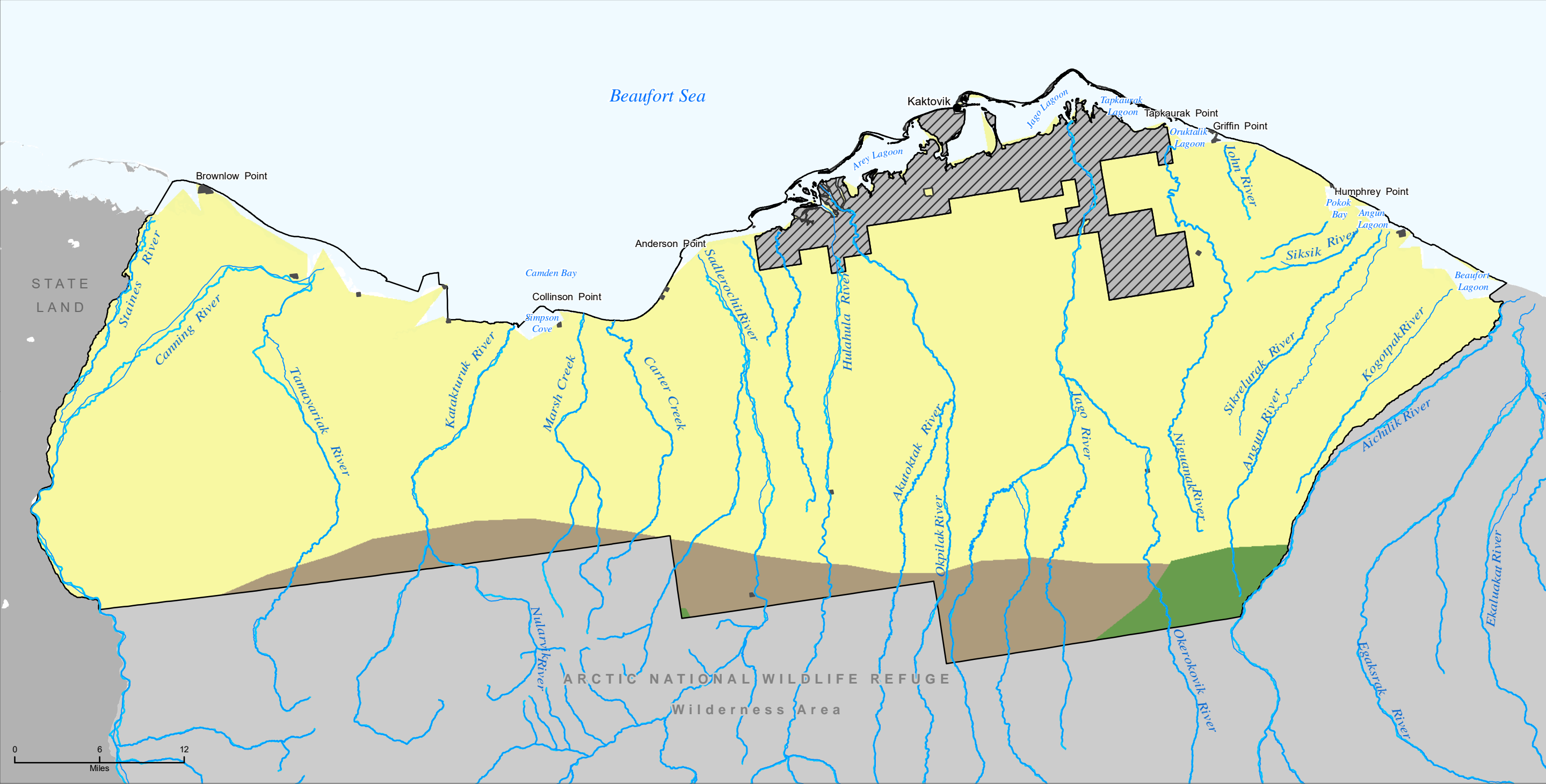
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Data Source: BLM GIS 2022,
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Map 3-1



- Arctic Coastal Plain
- Arctic Foothills
- Arctic Mountains
- (Ambler-Chandalar Ridge and Lowland)

- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

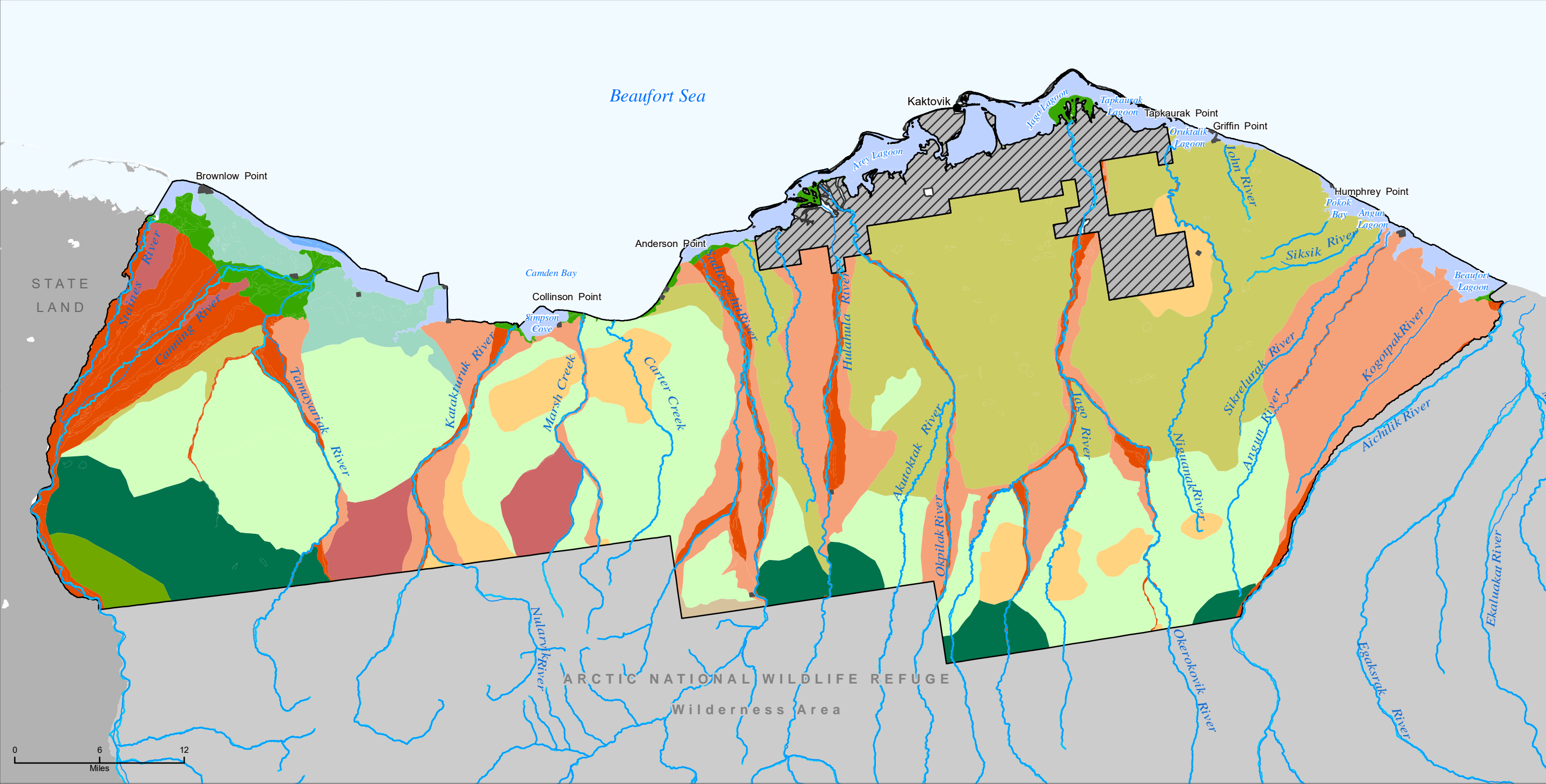


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Data Source: BLM GIS 2022,
USFWS GIS 2022
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Generalized Geology from the Ecological Landscape Map of Northern Alaska

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Marine water
- Coastal water
- Marine, young
- Coastal plain
- Fluvial, young
- Fluvial, old
- Colluvium, upland

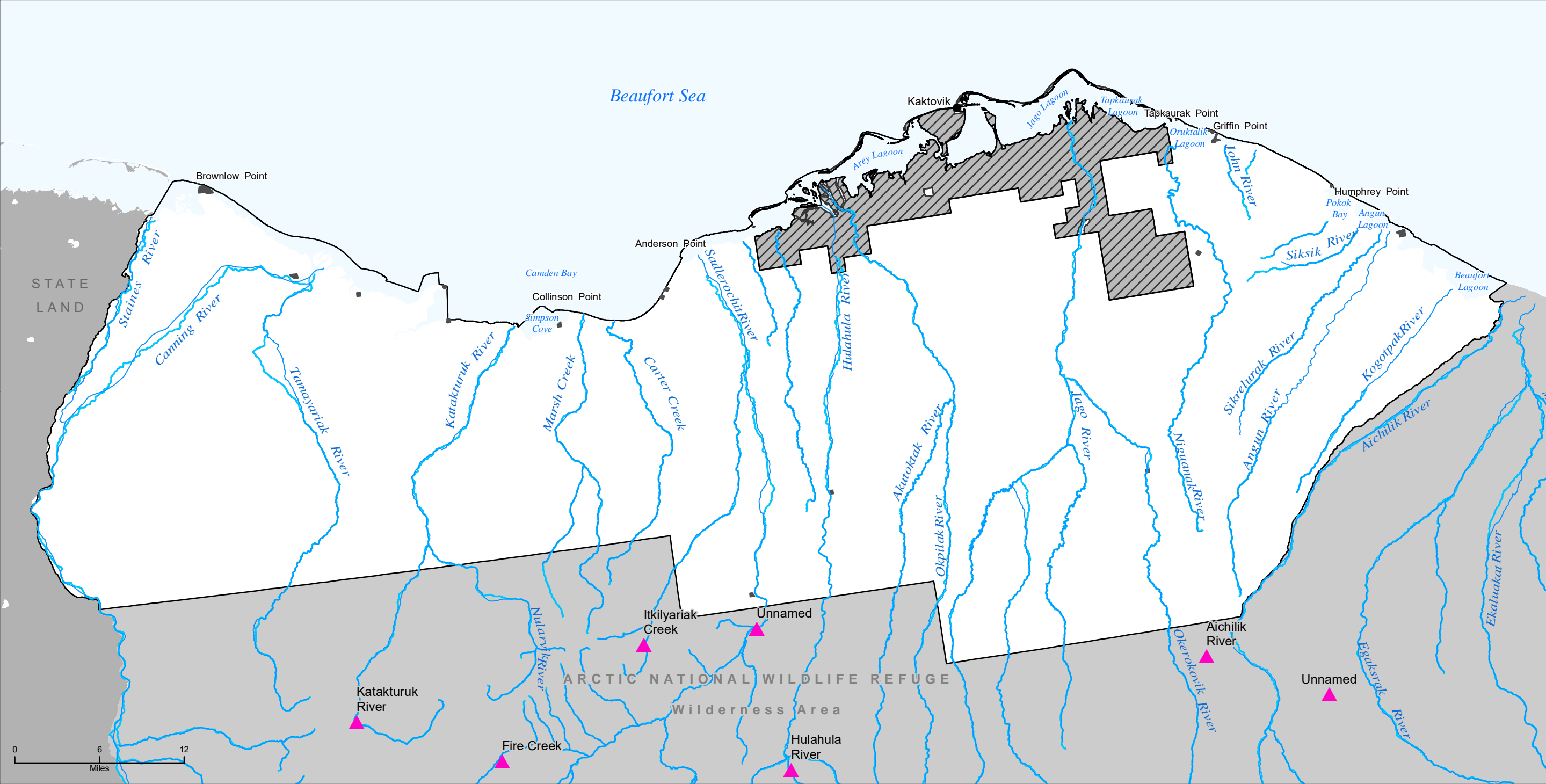
- Eolian silt
- Glacial, young
- Glacial, old
- Glaciofluvial, old
- Glaciomarine
- Sedimentary, noncarbonate

- Coastal Plain Supplemental EIS boundary
- Native Allotment
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Data Source: BLM GIS 2022, USFWS GIS 2022
Print Date: 07/17/2023

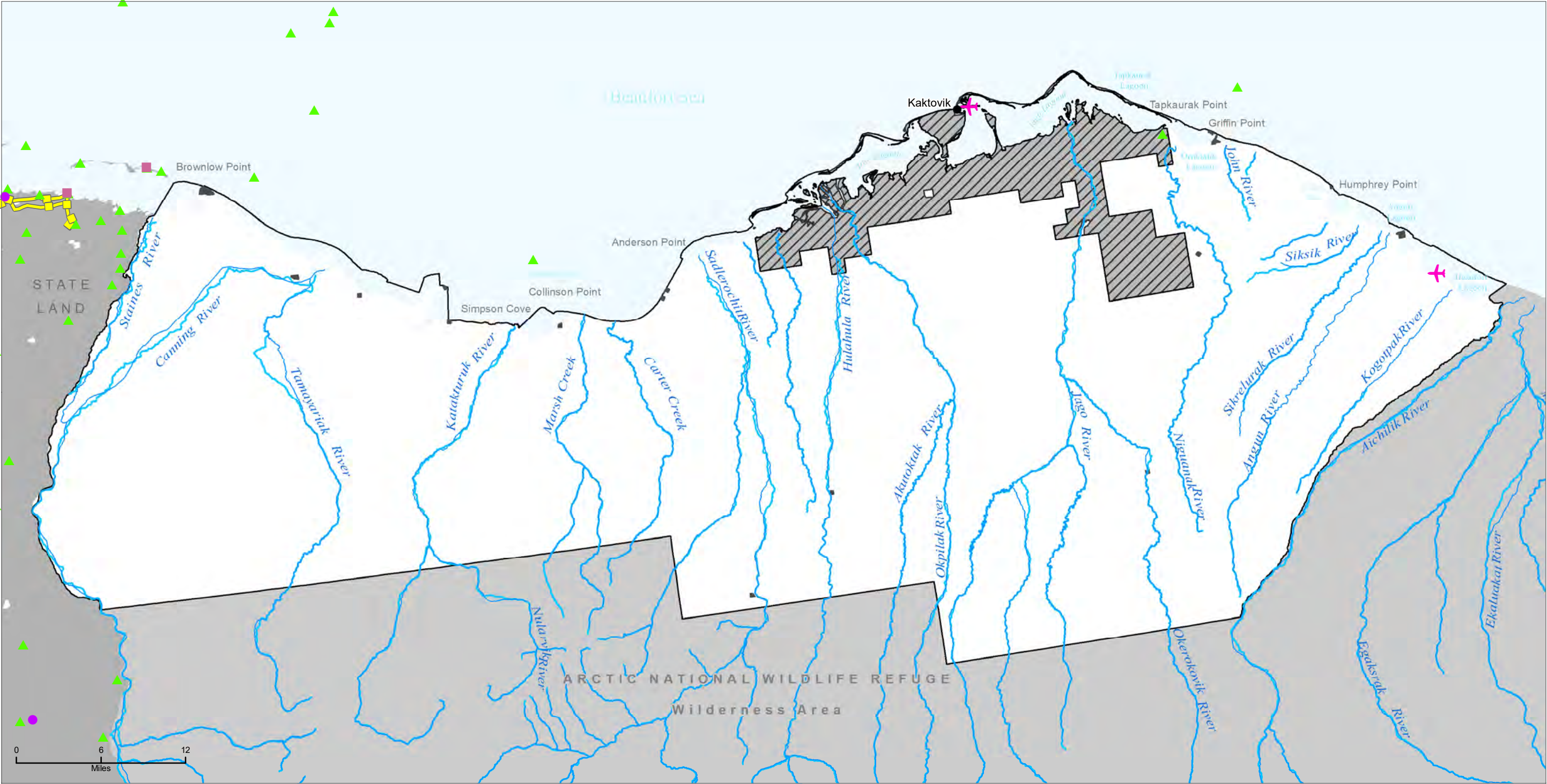


- ▲ Prospects or mineral occurrences
- ▭ Coastal Plain Supplemental EIS boundary
- Native Allotment
- ▨ Excluded from Public Law 115-97
- ▧ Coastal Plain or outside the BLM's oil and gas leasing authority



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Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/17/2023



Wellheads

- Development
- Service
- Exploratory

Airstrip

Above-ground pipeline

Coastal Plain Supplemental EIS boundary

Native Allotment

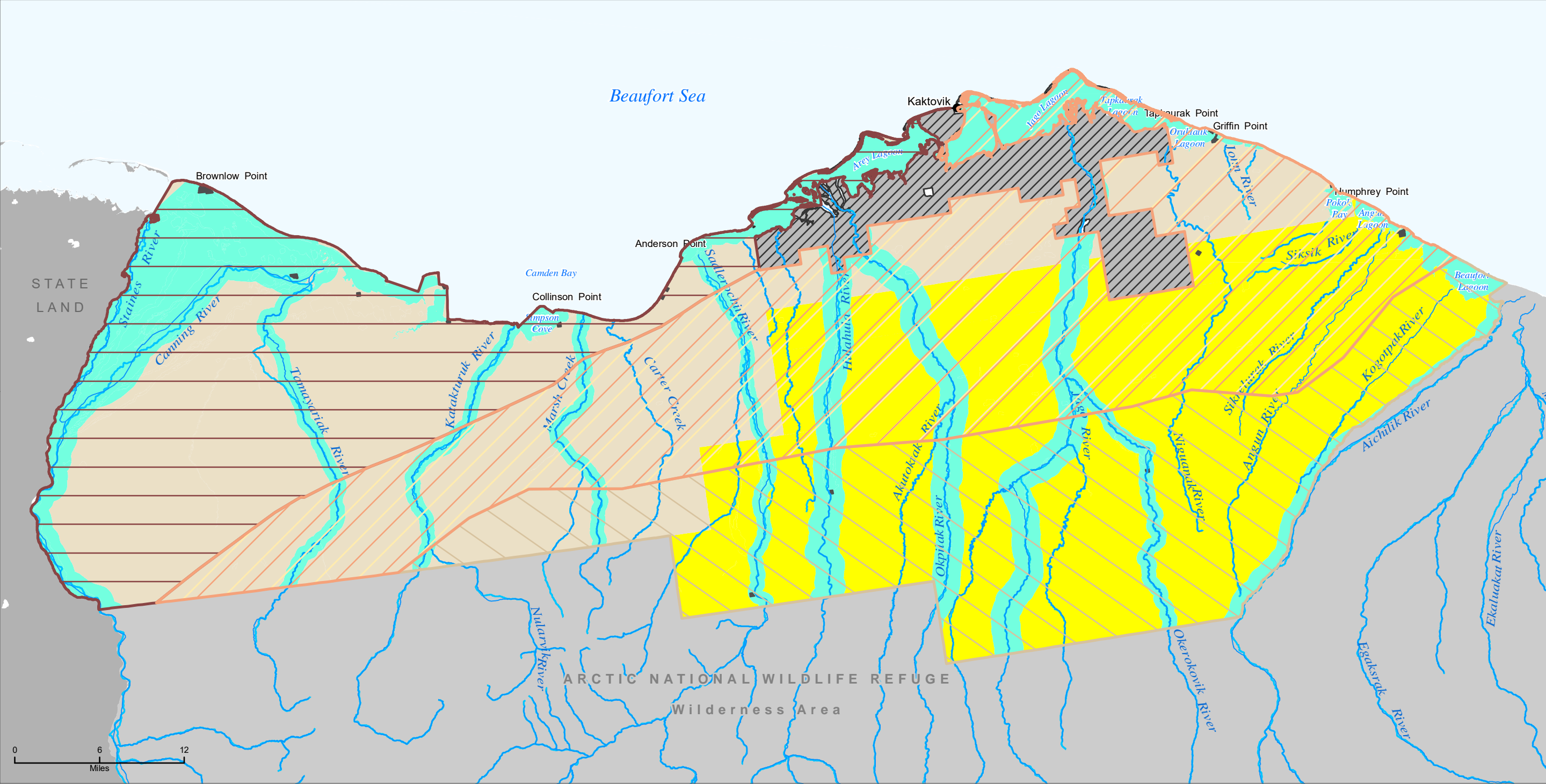
Excluded from Public Law 115-97

Coastal Plain or outside the BLM's oil and gas leasing authority



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Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/18/2023



Hydrocarbon potential

- High
- Medium
- Low

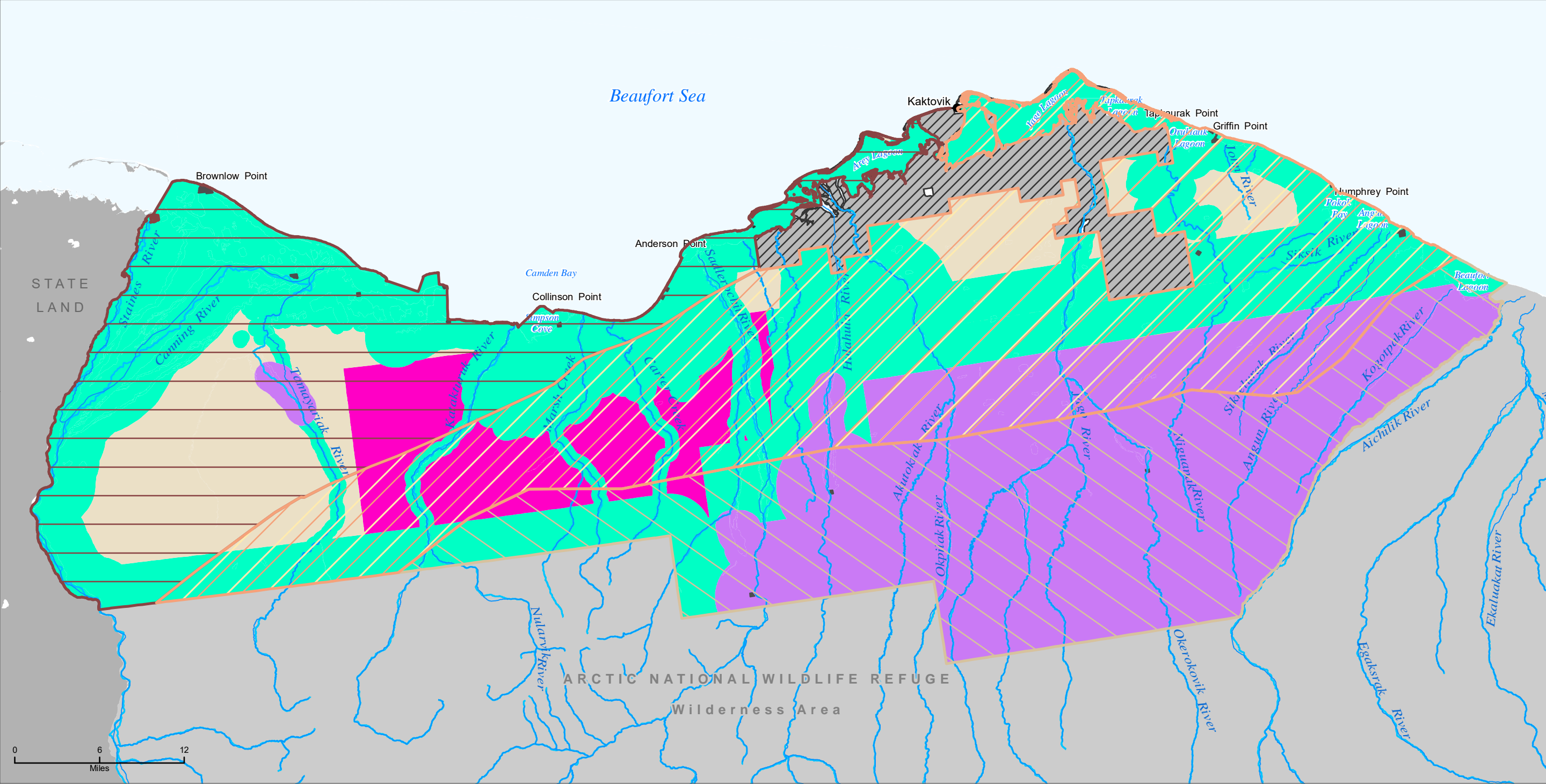
- Not offered for lease sale (none)
- Available for lease sale
 - Subject to no surface occupancy
 - Subject to controlled surface use (none)
 - Subject to timing limitations
 - Subject to only standard terms and conditions

- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority



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Data Source: BLM GIS 2022,
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Print Date: 07/17/2023



- Hydrocarbon potential

 - High
 - Medium
 - Low
- Available for lease sale

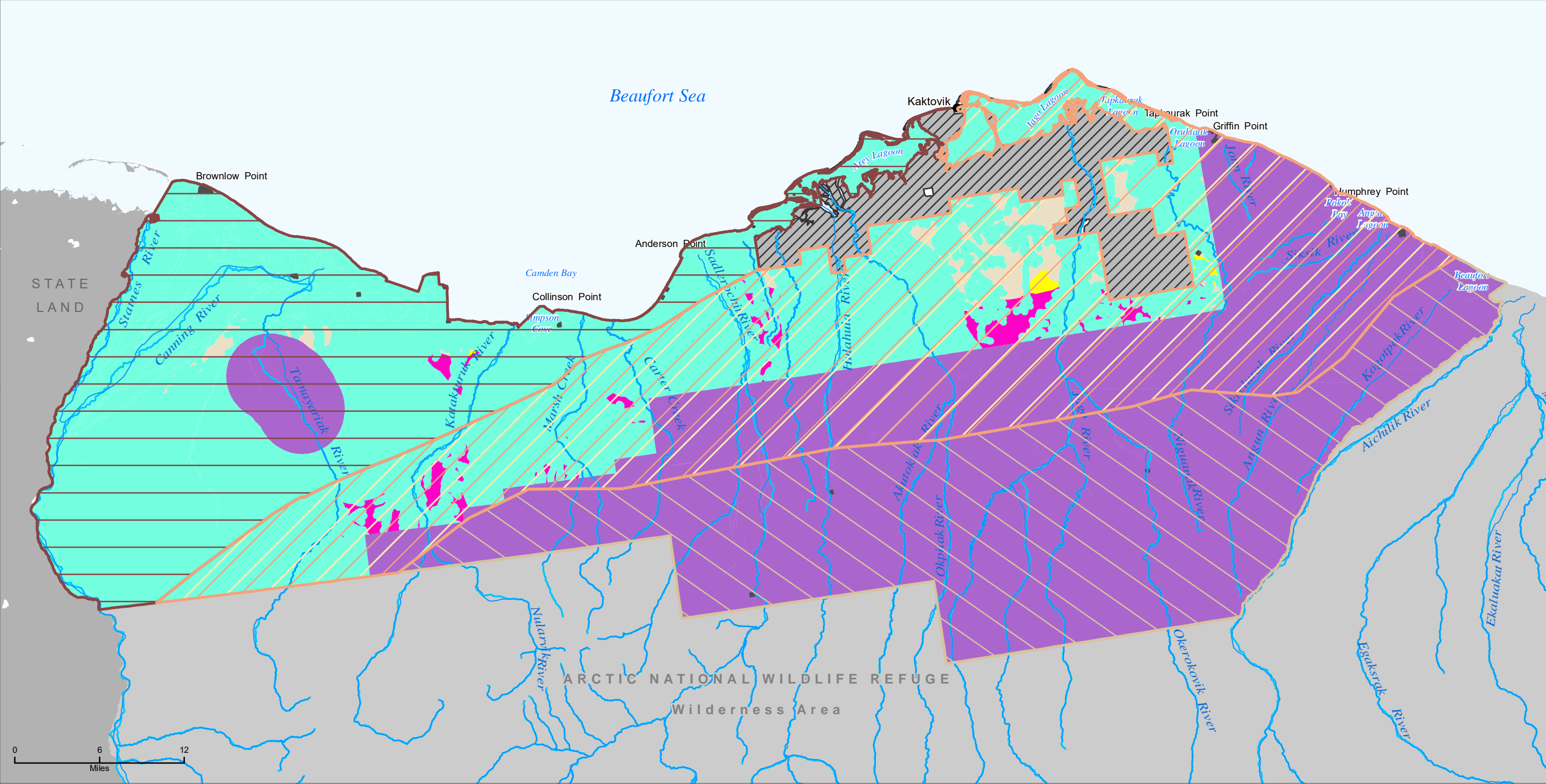
 - Not offered for lease sale
 - Subject to no surface occupancy
 - Subject to controlled surface use
 - Subject to timing limitations
 - Subject to only standard terms and conditions

- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority



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Hydrocarbon potential

- High
- Medium
- Low

Not available for lease sale

Available for lease sale

- Subject to no surface occupancy
- Subject to controlled surface use
- Subject to timing limitations
- Subject to only standard terms and conditions

Coastal Plain Supplemental EIS boundary

Native Allotment

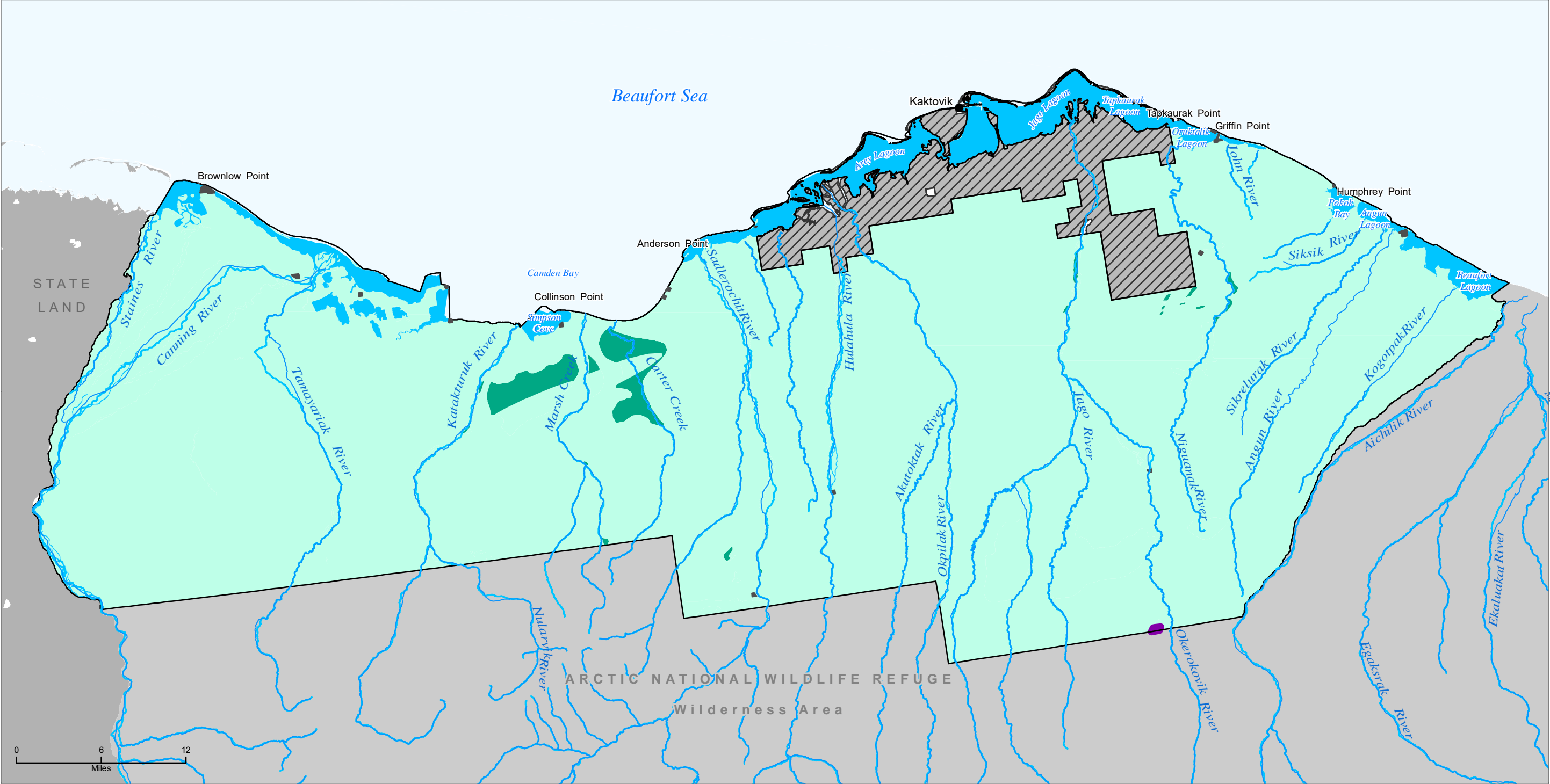
Excluded from Public Law 115-97

Coastal Plain or outside the BLM's oil and gas leasing authority



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Potential fossil yield classification

3

4

5

Water

Coastal Plain Supplemental EIS boundary

Native Allotment

Excluded from Public Law 115-97

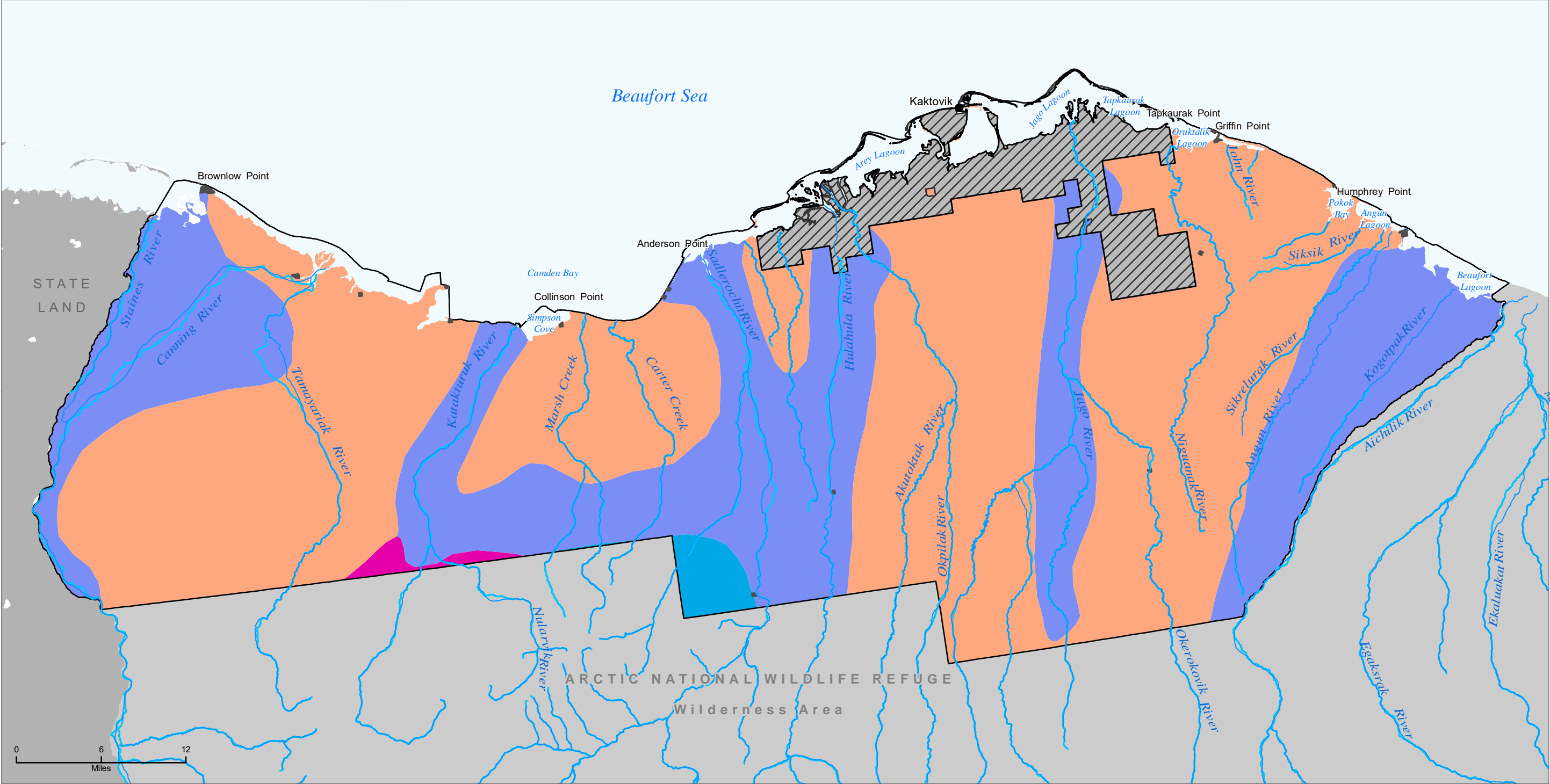
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Map 3-9



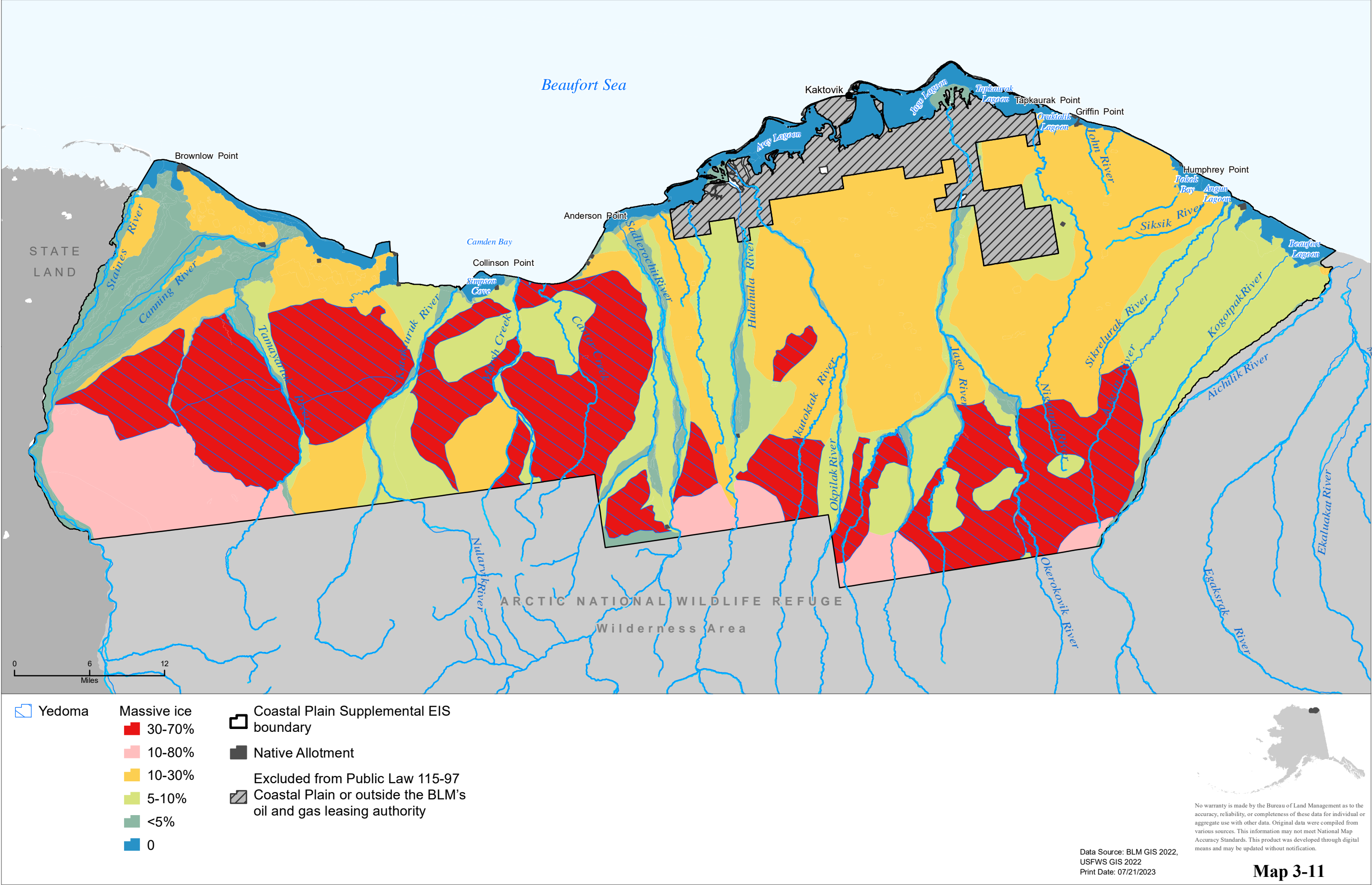
- Typic Haploturbels-Typic Aquiturbels (s9323)
- Typic Histoturbels-Typic Aquiturbels (s9256)
- Typic Histoturbels-Typic Haploturbels-Typic Fibristels-Typic Aquiturbels-Ruptic histic aquiturbels (s9389)
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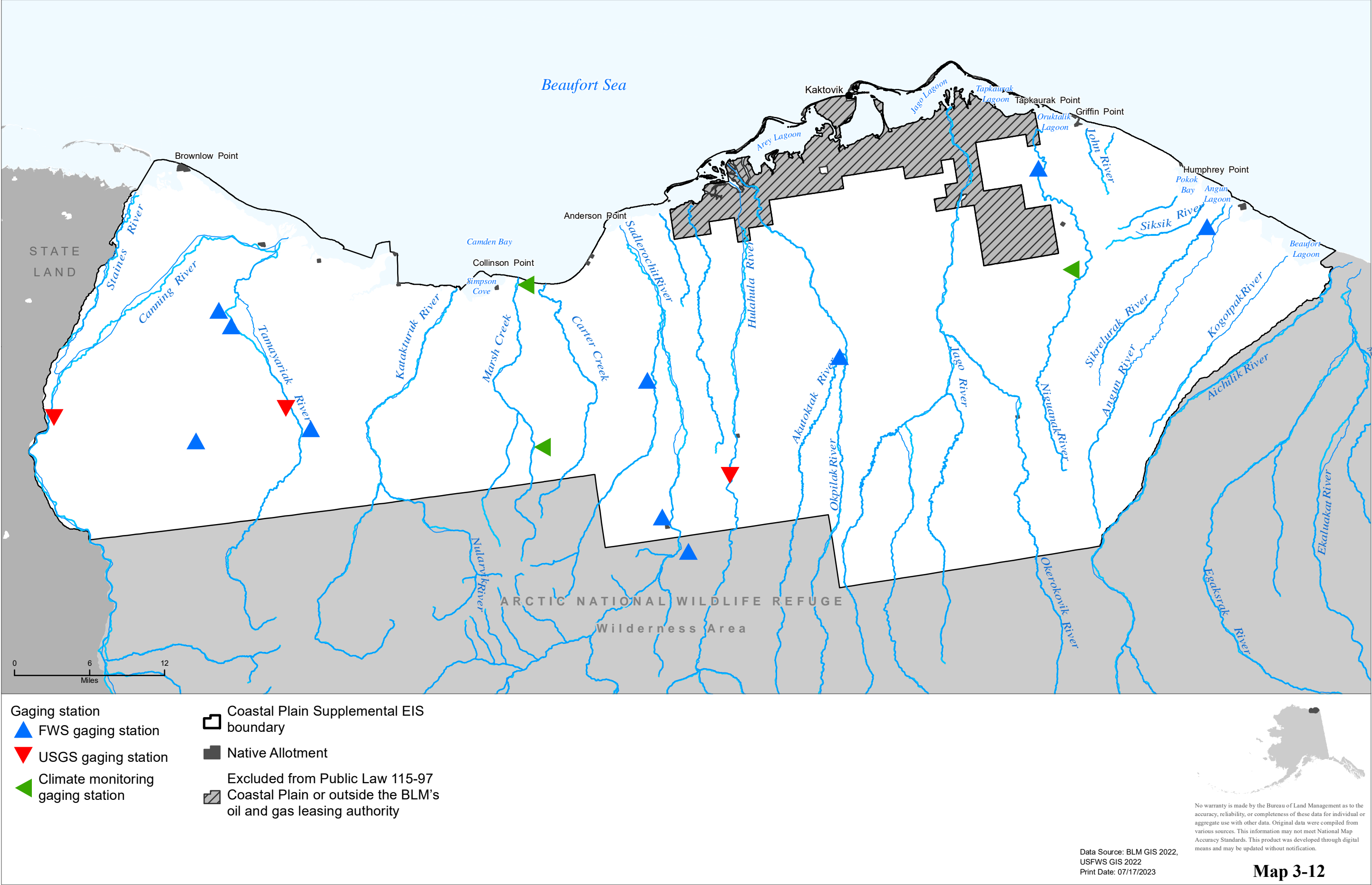
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

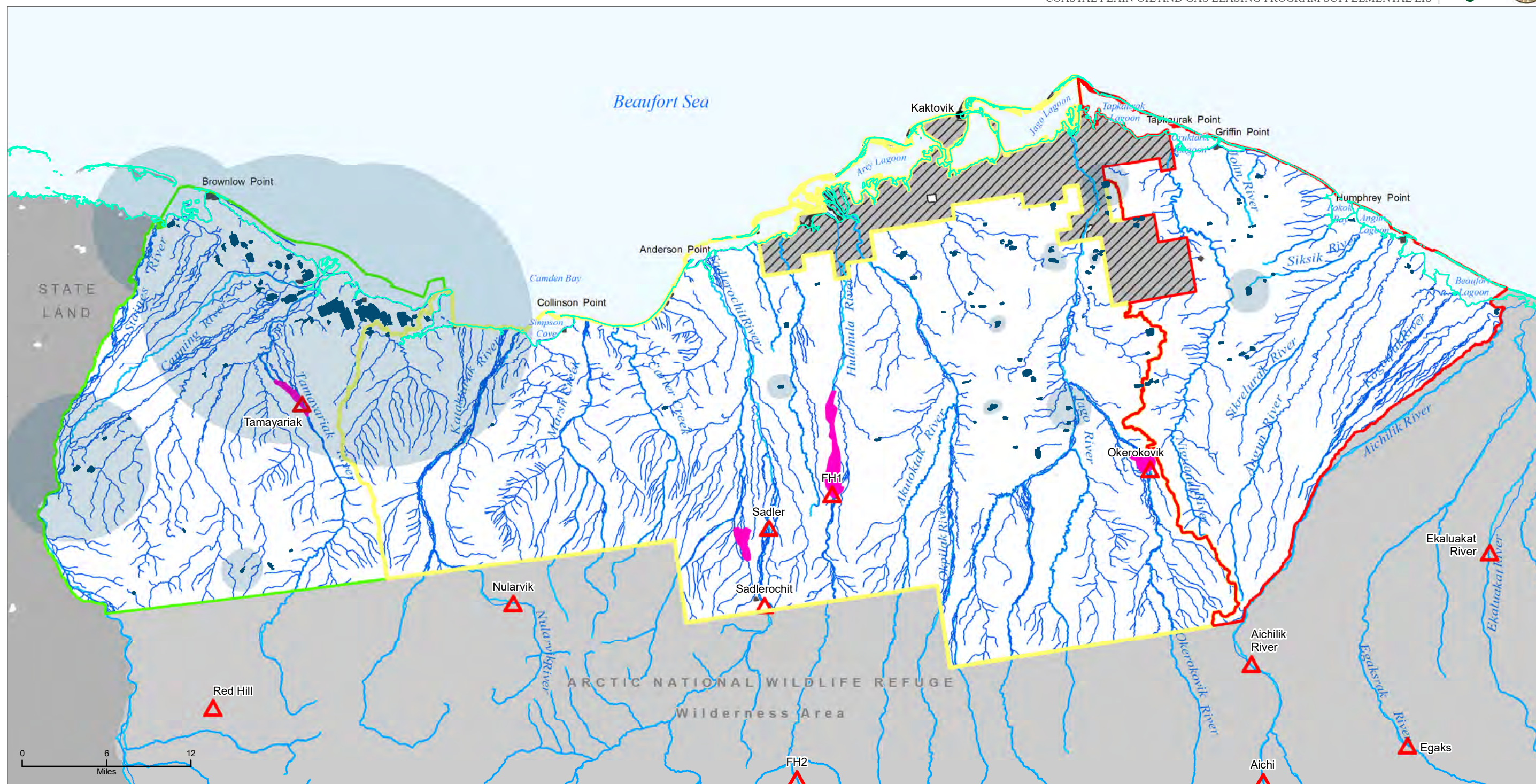


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Print Date: 07/17/2023







- Surveyed lake that meets criteria for ice road construction
- Outer limit of ice road from source lake

- ▲ Spring
- ▲ Aufeis
- Stream
- ~ Coastline

- Hydrological unit code 8 watershed
- Camden Bay
- Canning River
- Kongakut River-Beaufort Lagoon

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USFWS GIS 2022
Print Date: 07/17/2023



- Surveyed lake that meets criteria for ice road construction
- Outer limit of ice road from source lake

Alternative B

- Subject to no surface occupancy
- Subject to timing limitation
- Subject to only standard terms and conditions
- Coastal Plain Supplemental EIS boundary
- Excluded from Public Law 115-97 Coastal Plain or outside the BLM's oil and gas leasing authority

- Surveyed lake that meets criteria for ice road construction
- Outer limit of ice road from source lake

Alternative C

- Not available for lease sale
- Available for lease sale
 - Subject to no surface occupancy
 - Subject to controlled surface use
 - Subject to timing limitations
 - Subject to only standard terms and conditions

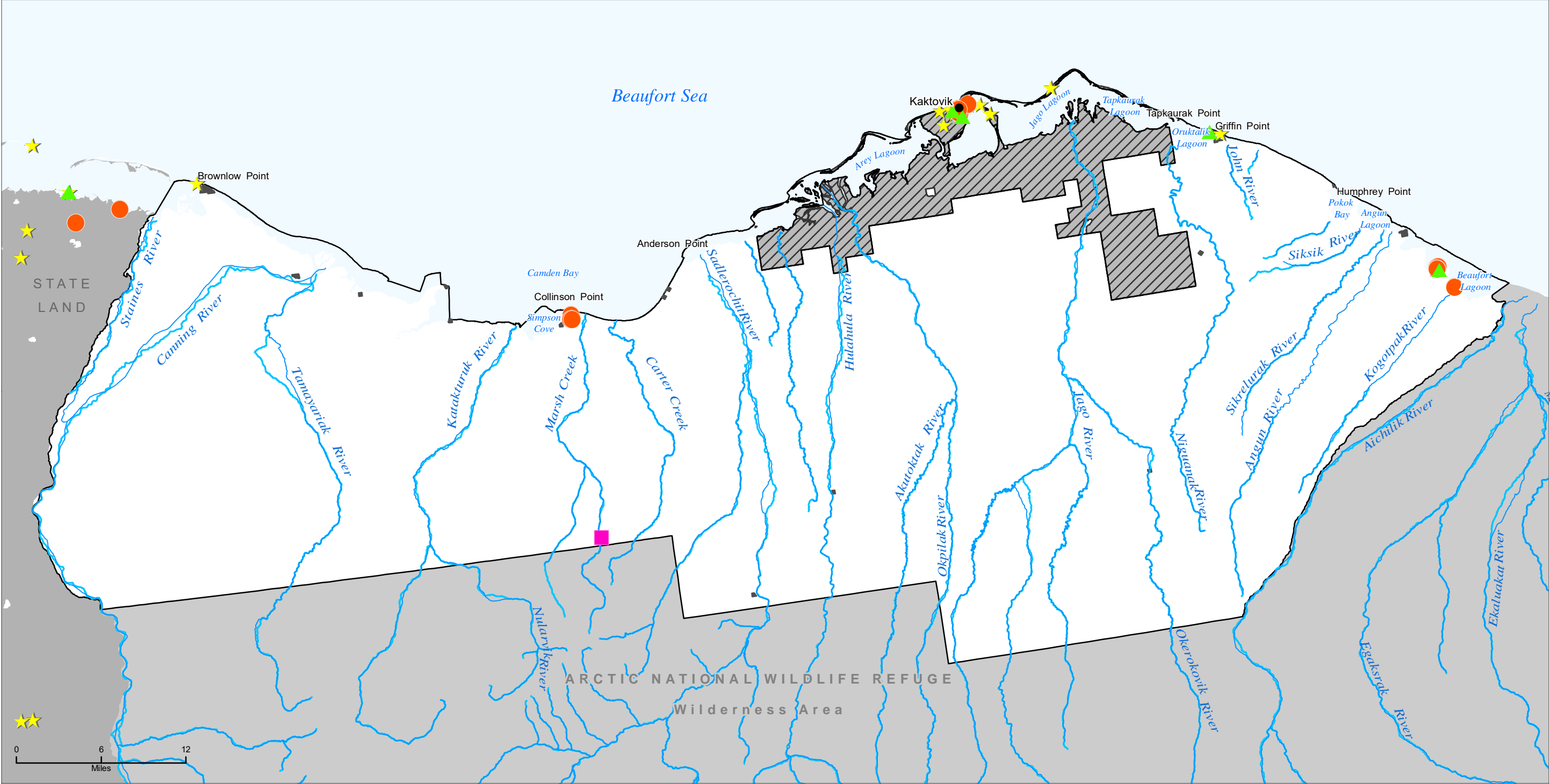
- Surveyed lake that meets criteria for ice road construction
- Outer limit of ice road from source lake

Alternative D

- Not available for lease sale
- Available for lease sale
 - Subject to no surface occupancy
 - Subject to controlled surface use
 - Subject to timing limitations
 - Subject to only standard terms and conditions

Data Source: BLM GIS 2022, USFWS GIS 2022
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Alaska Department of Environmental Conservation—contaminated site

● Active

★ Clean-up complete

■ Informational


▲ Resource Conservation and Recovery Act site

▭ Coastal Plain Supplemental EIS boundary

■ Native Allotment

▨ Excluded from Public Law 115-97

▩ Coastal Plain or outside the BLM's oil and gas leasing authority

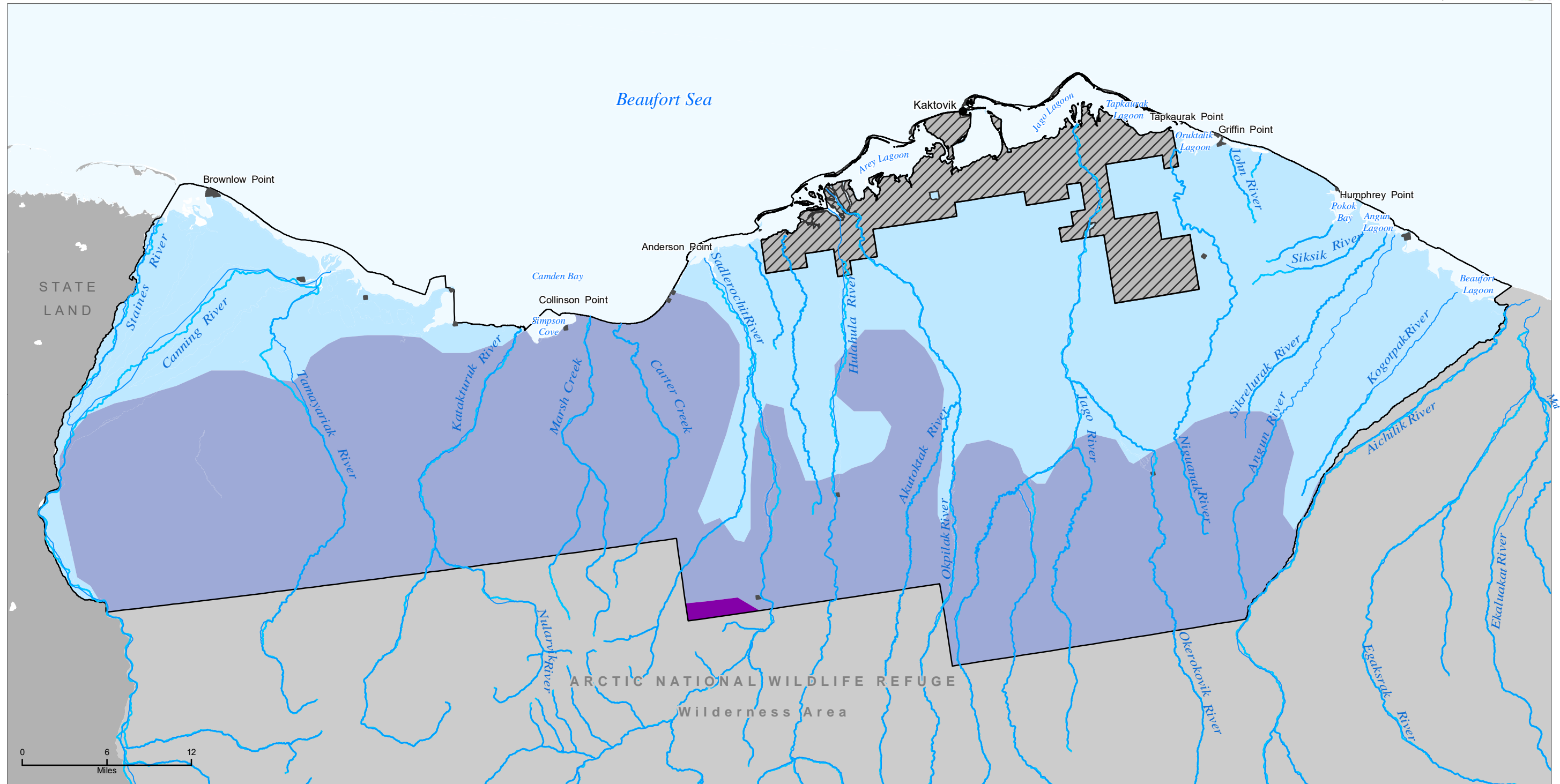


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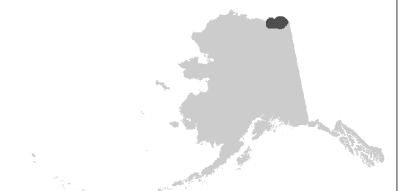
Data Source: BLM GIS 2022, USFWS GIS 2022

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Map 3-15

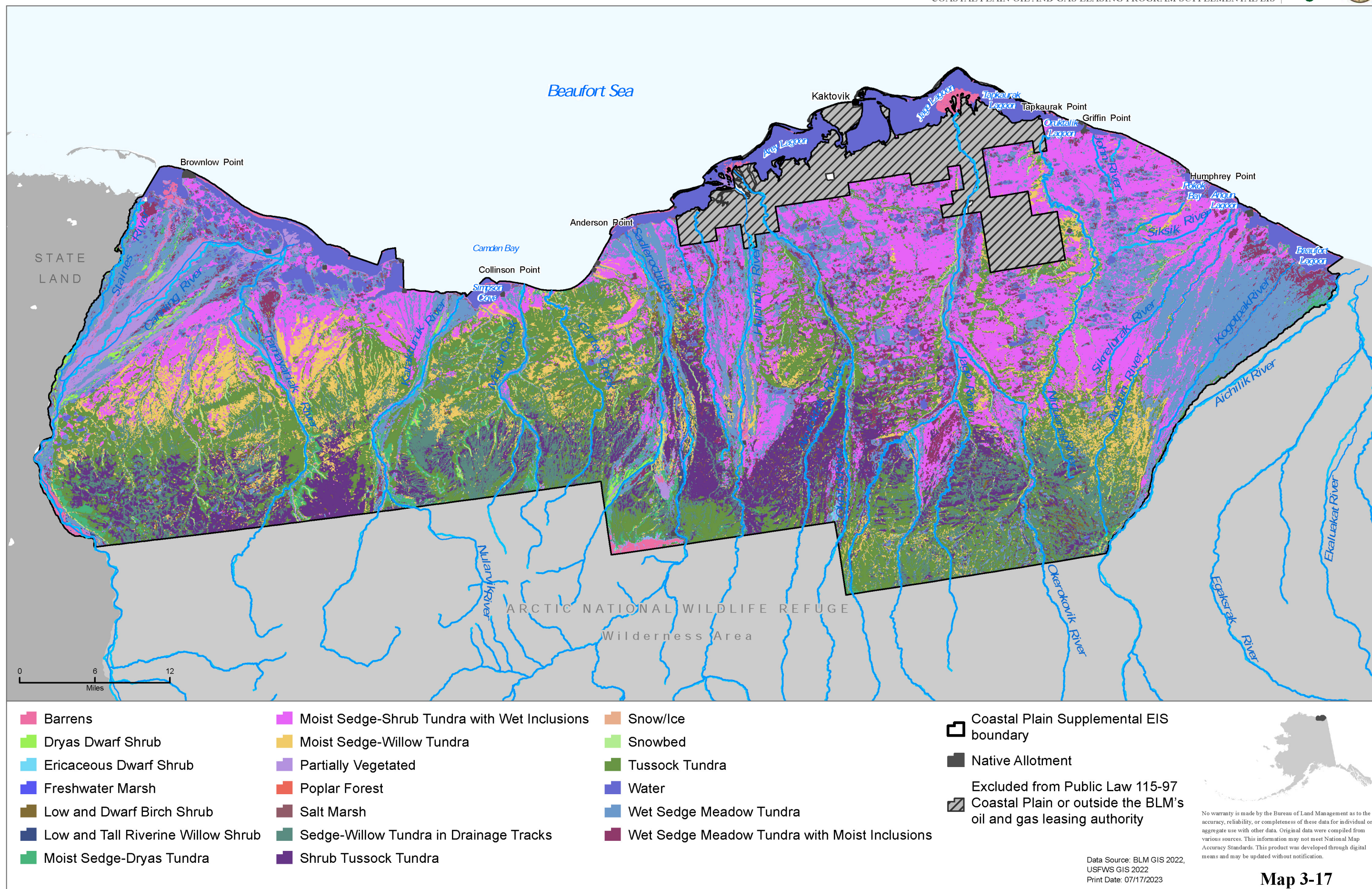


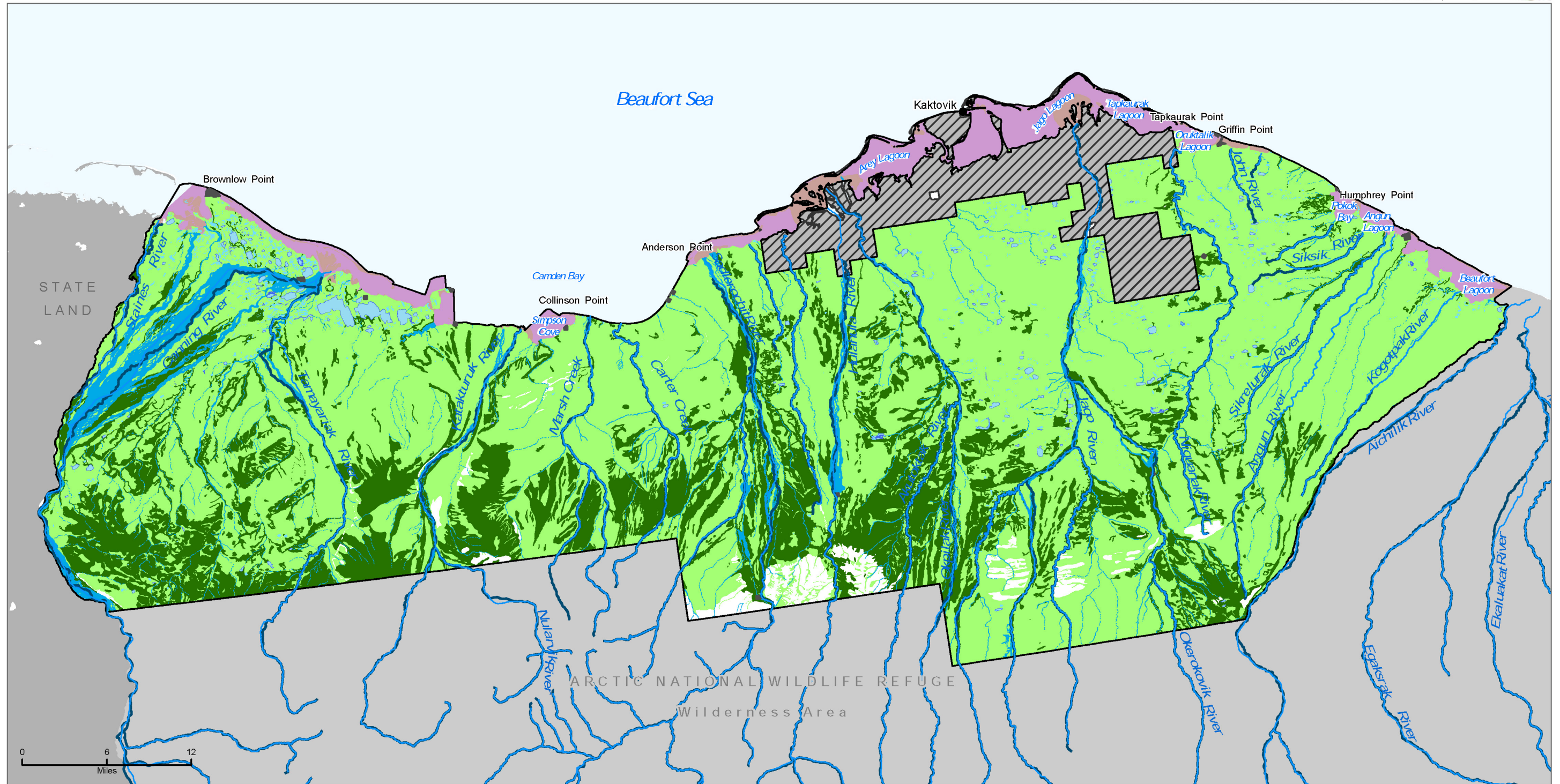
- Beaufort Coastal Plain
- Brooks Foothills
- Brooks Range
- Coastal Plain Supplemental EIS boundary
- Native Allotment
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USFWS GIS 2022
Print Date: 07/17/2023



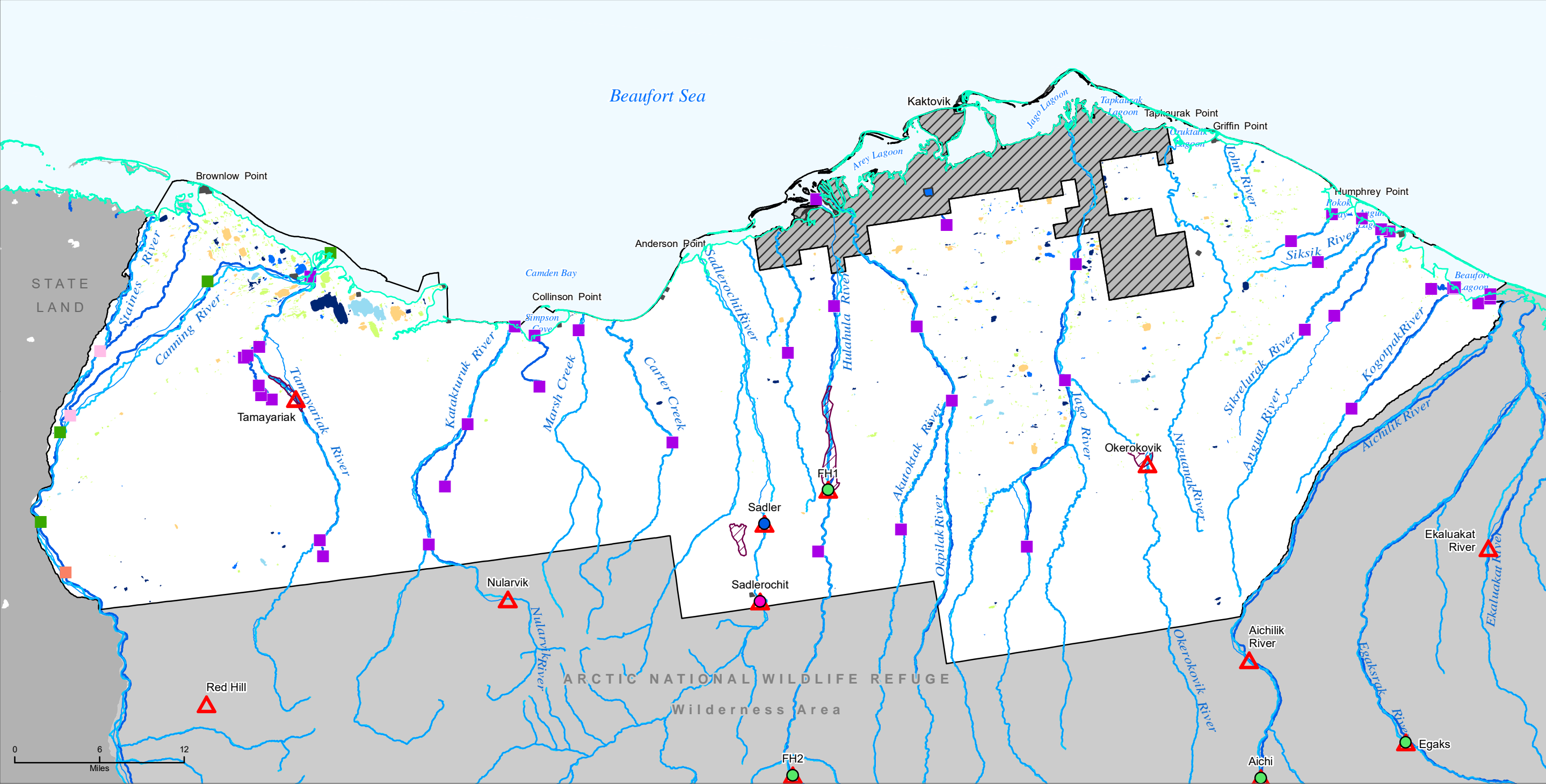


- | | | |
|-----------------------------|-----------------------------------|--|
| Major river | Estuarine and marine deepwater | Coastal Plain Supplemental EIS boundary |
| Lake | Freshwater pond | Native Allotment |
| Riverine | Estuarine and marine wetland | Excluded from Public Law 115-97 |
| Freshwater emergent wetland | Freshwater forested/shrub wetland | Coastal Plain or outside the BLM's oil and gas leasing authority |
| Missing data | | |



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/17/2023



Fish Presence—ADFG Anadromous Waters Catalog

- Dolly Varden
- Pink Salmon, Dolly Varden and Whitefish
- Chum Salmon, Pink Salmon, Dolly Varden and Whitefish
- Pink Salmon and Whitefish

Fish overwintering in springs

- Anadromous Dolly Varden and Arctic Grayling
- Resident Dolly Varden and juvenile Arctic Grayling
- Arctic Grayling

Unfrozen lake (%)

- 0
- 1-25
- 26-49
- 50-74
- 75-96

Spring

Aufeis

Anadromous waters catalog (AWC) stream

Coastline

Coastal Plain Supplemental EIS boundary

Native Allotment

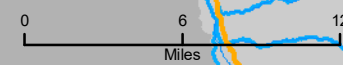
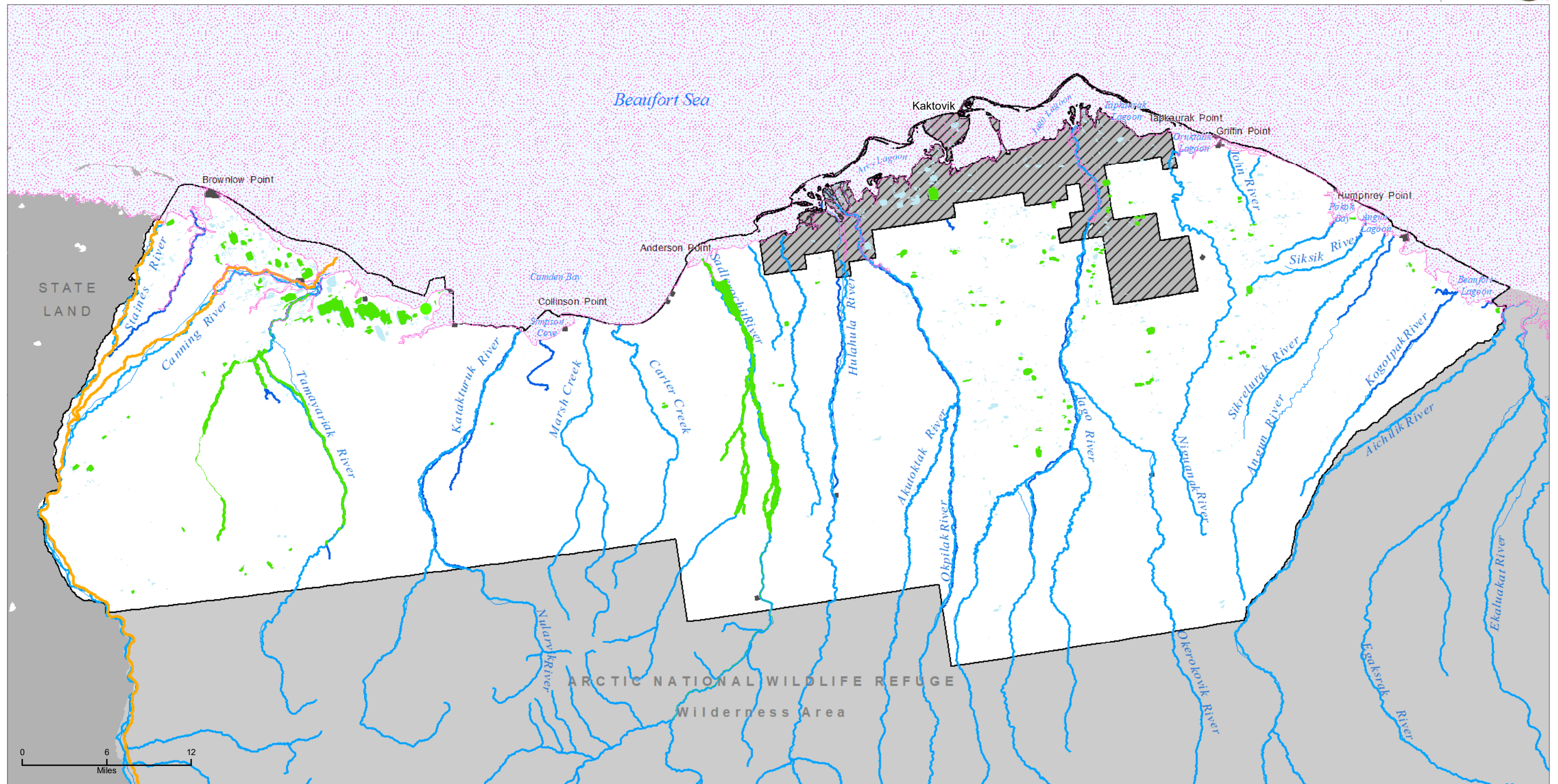
Excluded from Public Law 115-97

Coastal Plain or outside the BLM's oil and gas leasing authority

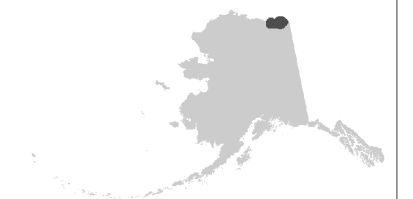


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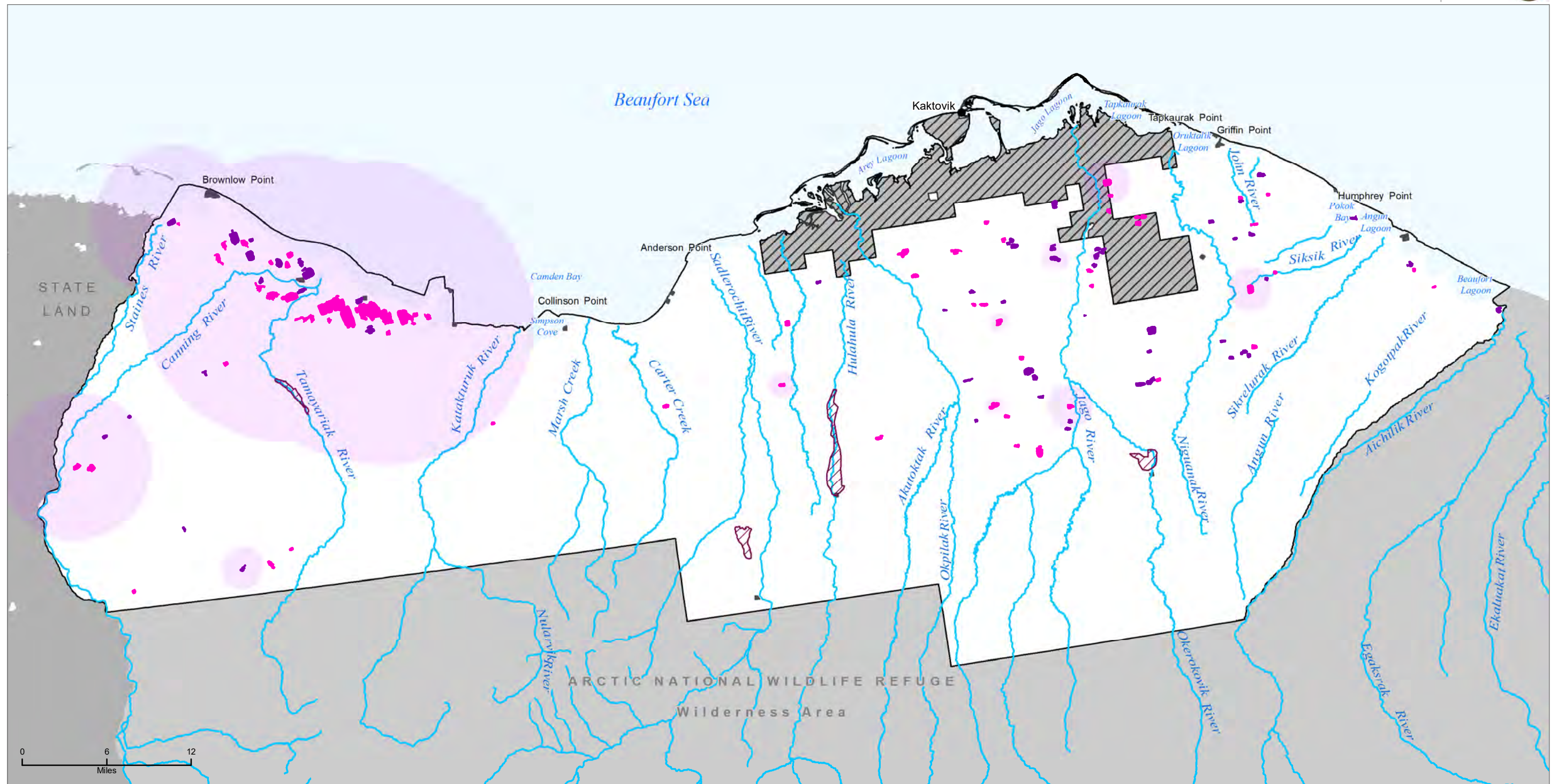


- | | |
|---|--|
| Reservation of water for instream use | Coastal Plain Supplemental EIS boundary |
| Essential fish habitat—Arctic Cod | Native Allotment |
| Essential fish habitat—Pink and Chum Salmon | Excluded from Public Law 115-97 Coastal Plain or outside the BLM's oil and gas leasing authority |



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Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/17/2023



0 6 12
Miles

- Lake less than 7 feet deep
- Lake greater than 7 feet deep
- Outer limit of ice road from source lake



Aufeis

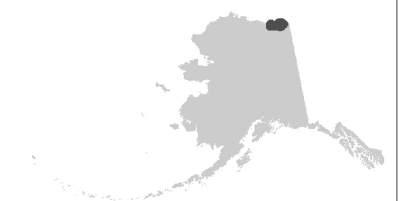


Coastal Plain Supplemental EIS boundary



Native Allotment

Excluded from Public Law 115-97
 Coastal Plain or outside the BLM's oil and gas leasing authority

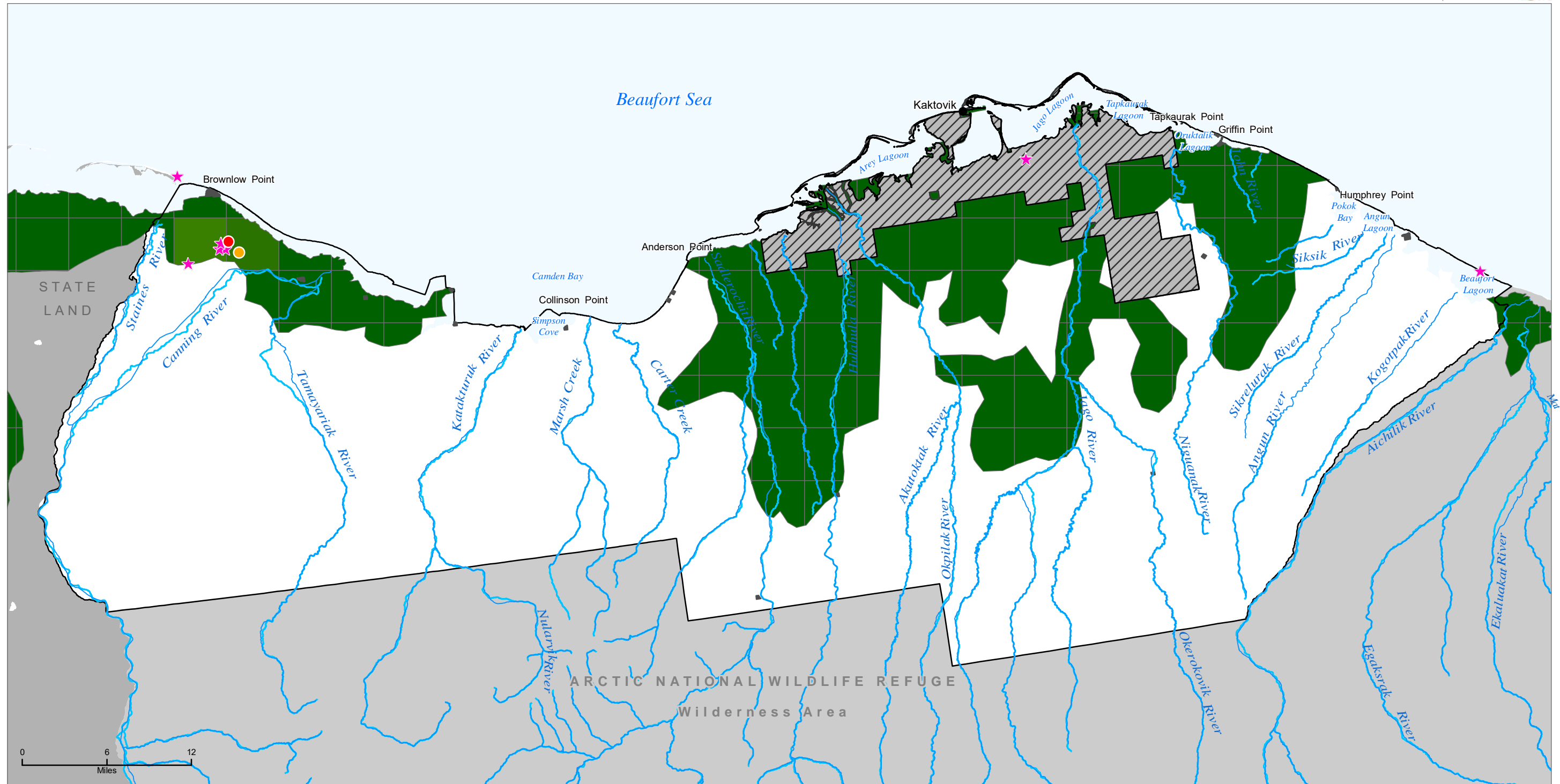


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Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/17/2023

Nest Sites, Observations, and Density of Pre-Nesting Spectacled Eider

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA |
COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



Spectacled Eider nest site

● 2005

● 2014, 2017

All spectacled eider observations from the North Slope Eider aerial survey, 1992-2006, and the Arctic Coastal Plain breeding waterbird aerial survey, 1992-2014, aerial survey sightings 1999-2007

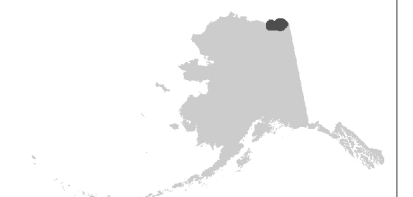


Higher density
Low density

Coastal Plain Supplemental EIS boundary

Native Allotment

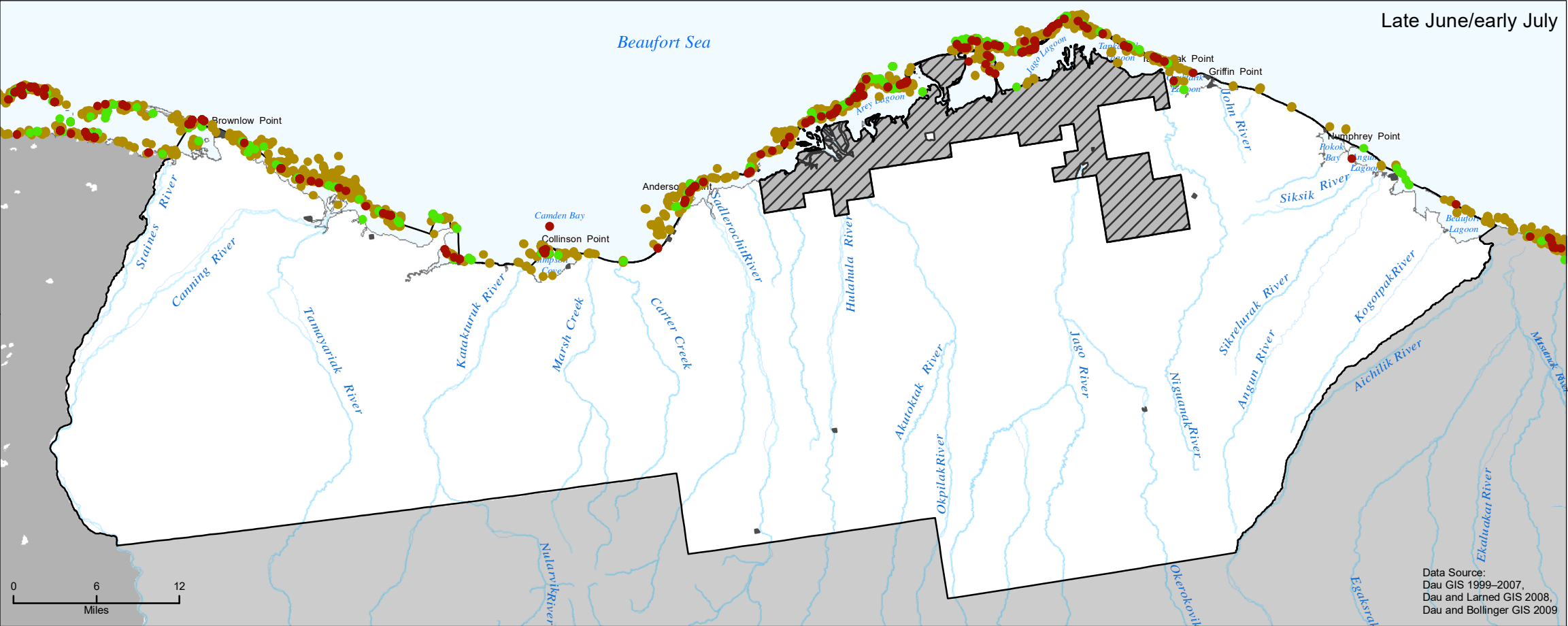
Excluded from Public Law 115-97
Coastal Plain or outside the BLM's oil and gas leasing authority



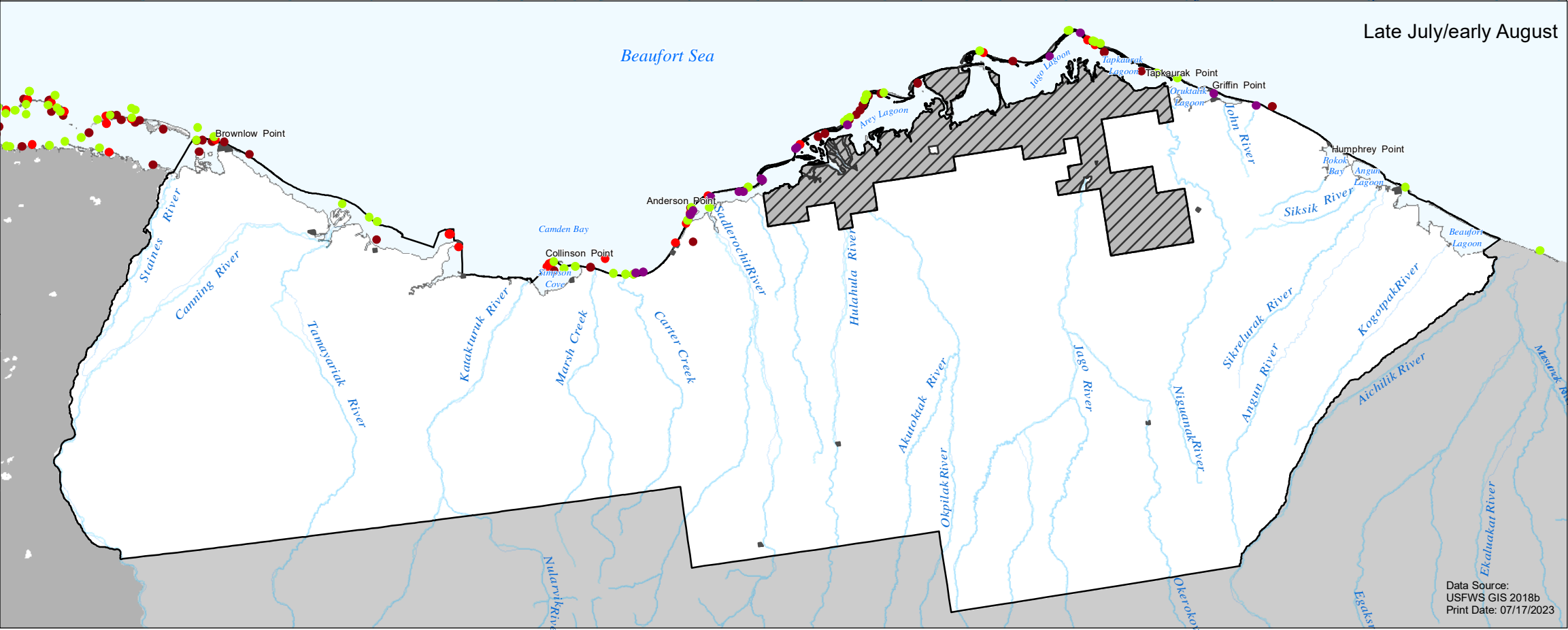
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Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/17/2023

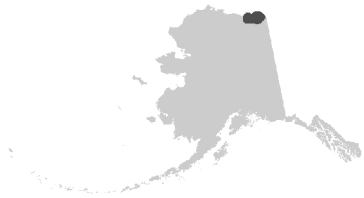
Map 3-22



- 2008
- 2009
- 1999–2007
- Native Allotment
- Coastal Plain Supplemental EIS boundary
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

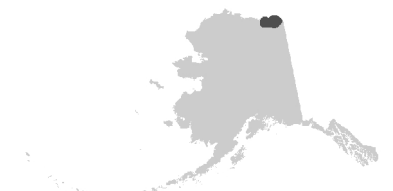
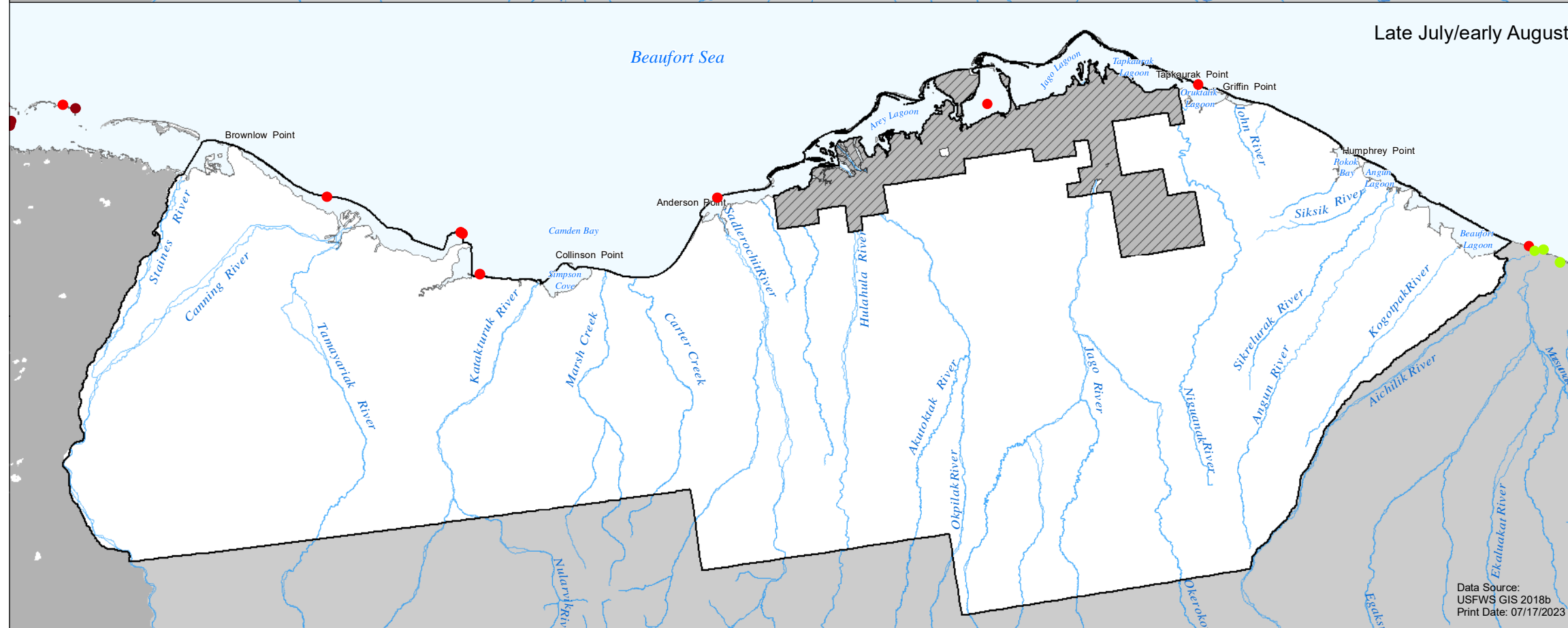
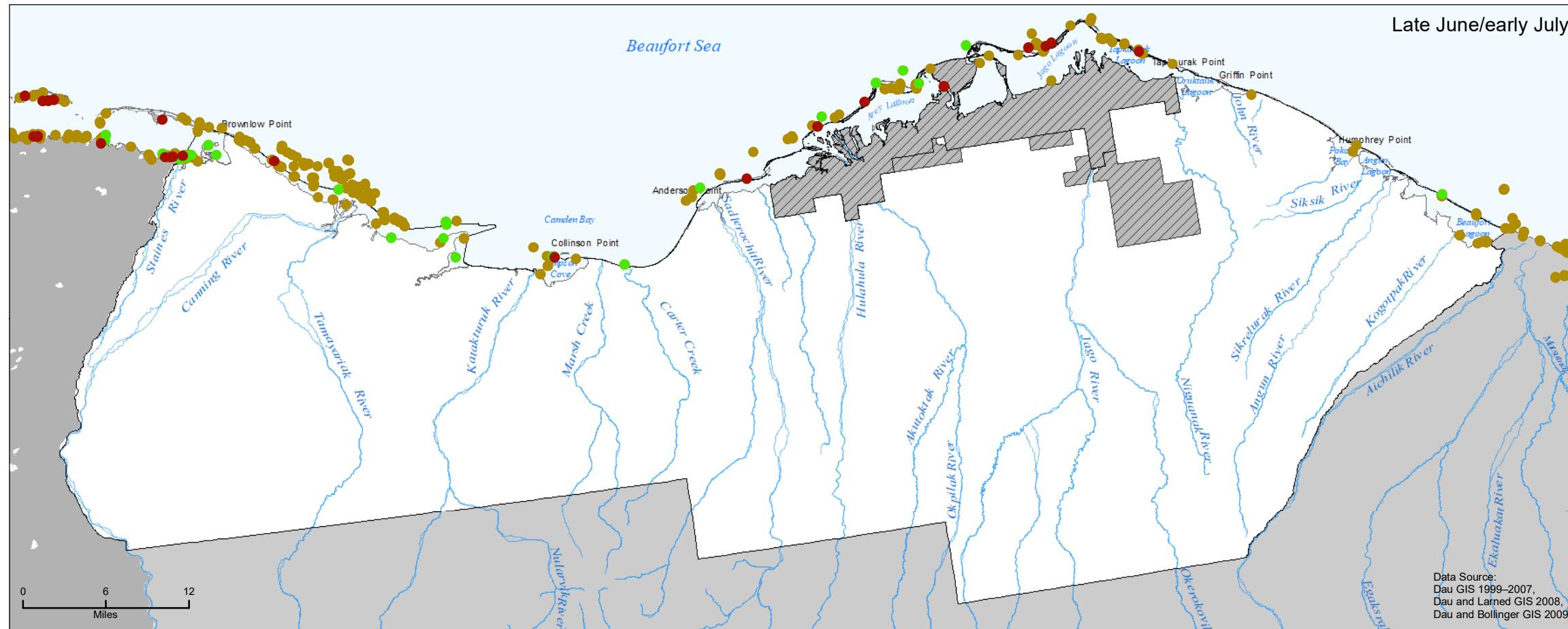


- 1999
- 2001
- 2002
- 2003

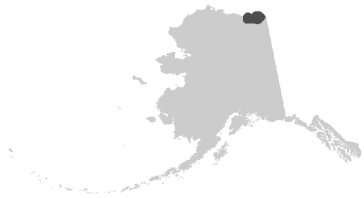
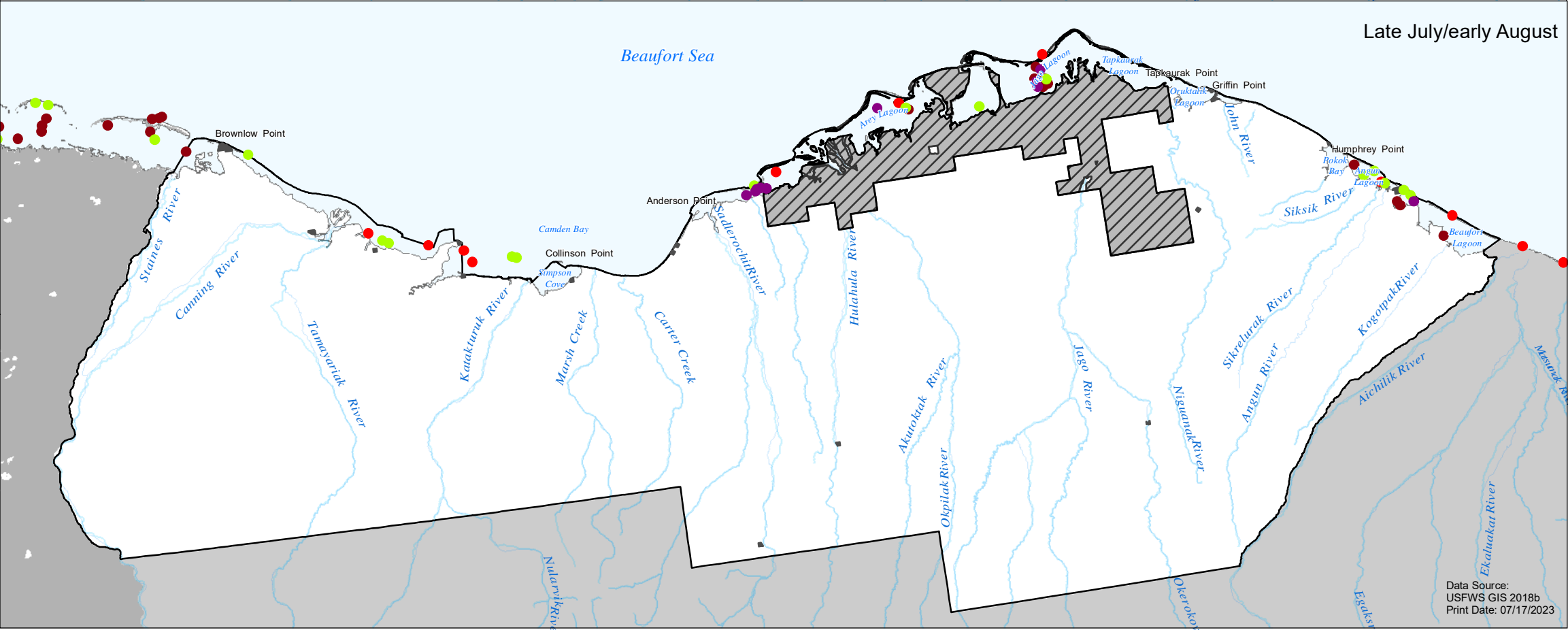
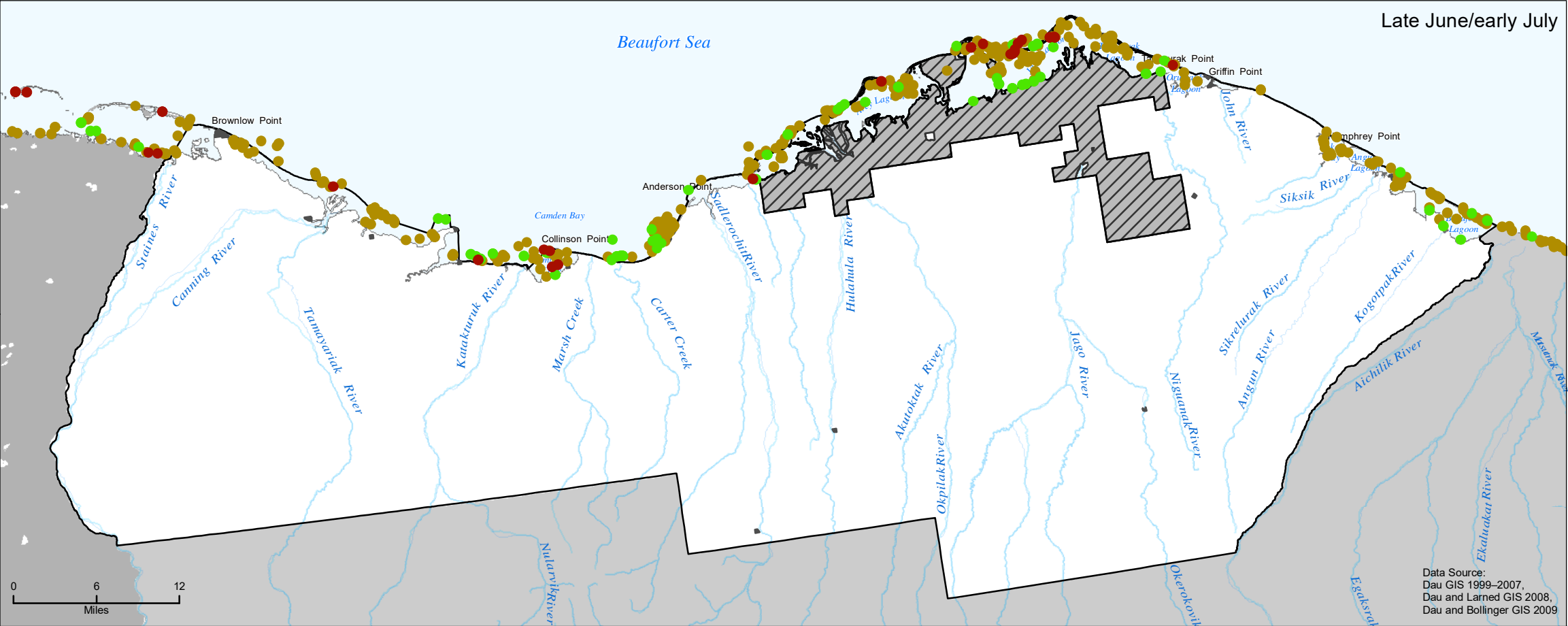


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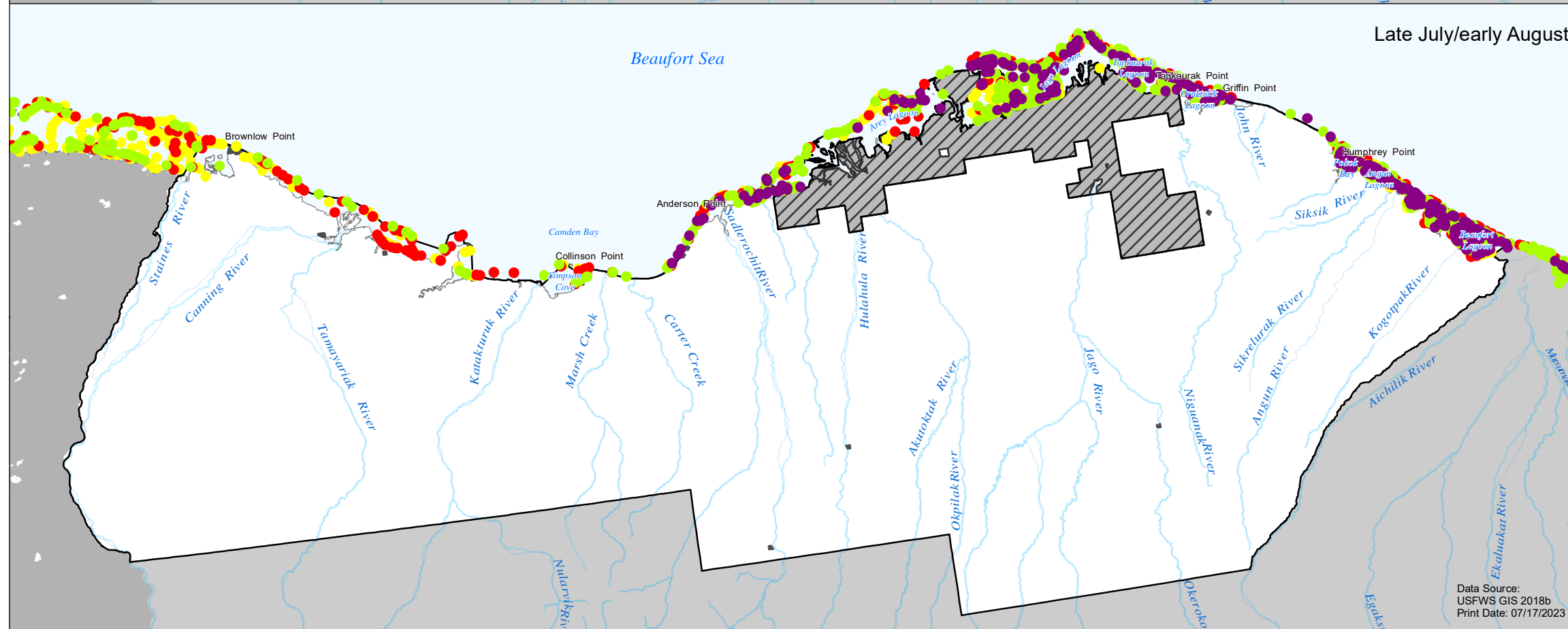
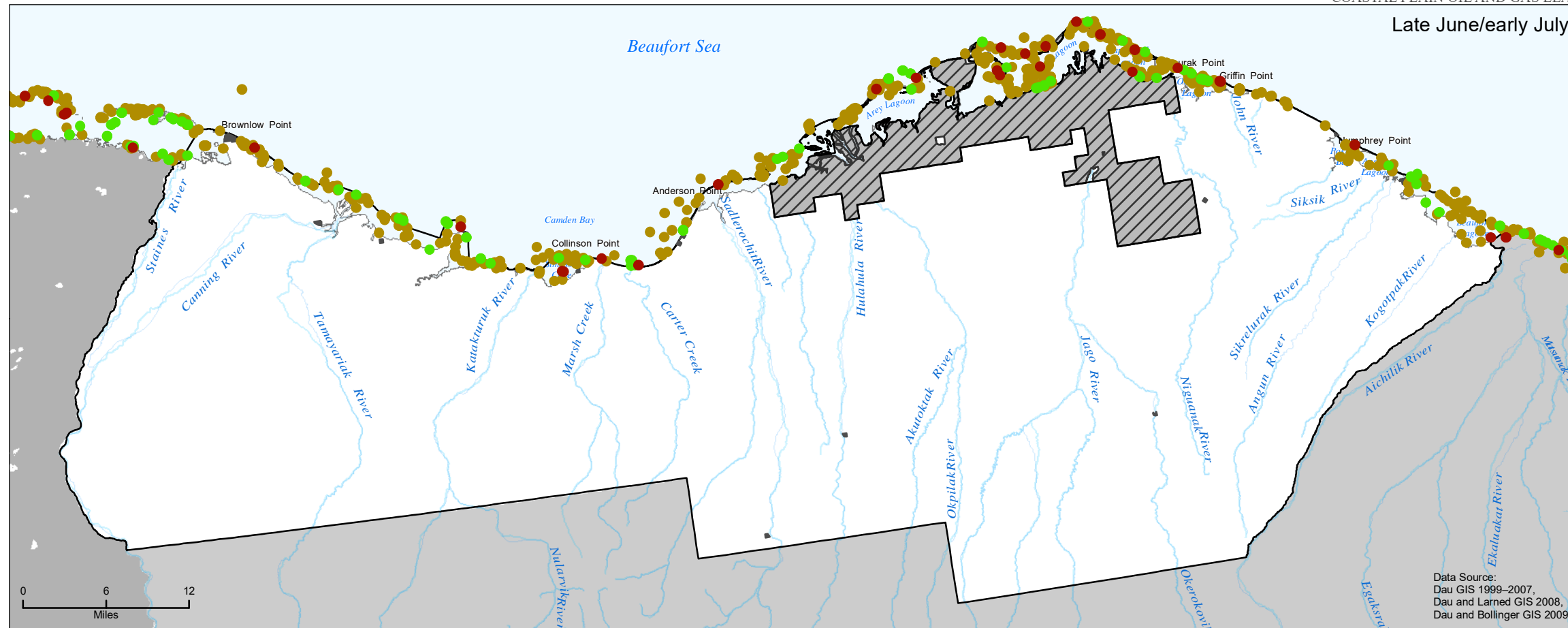
Map 3-23



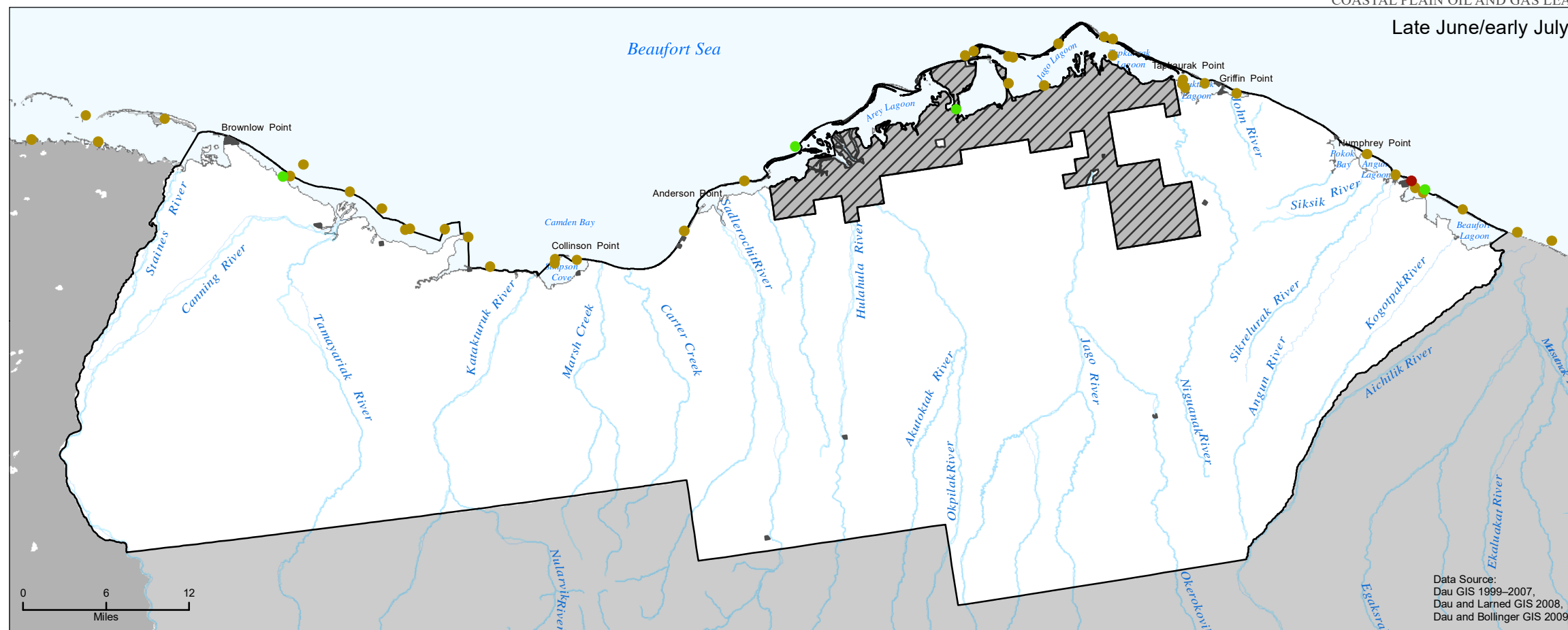
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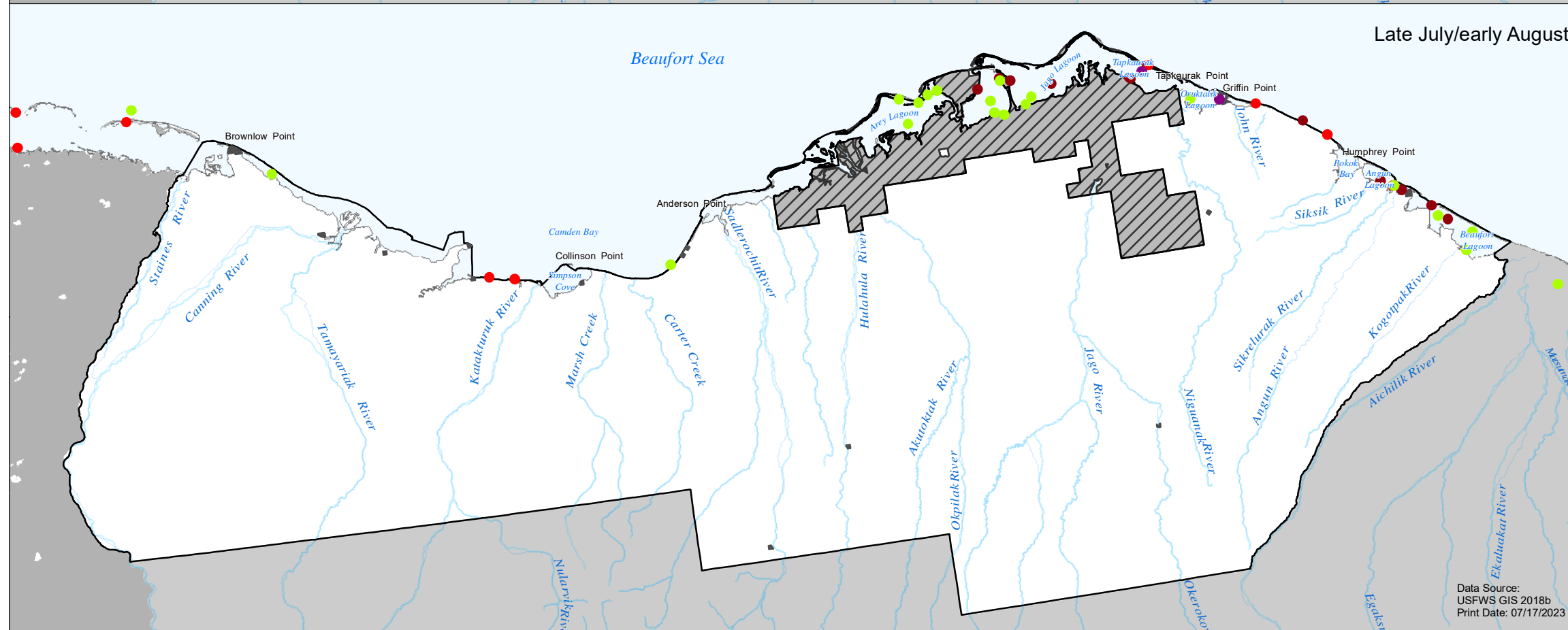
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- 2008
- 2009
- 1999–2007
- Native Allotment
- Coastal Plain Supplemental EIS boundary
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority



- 1999
- 2001
- 2002
- 2003



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148° W

146° W

144° W

142° W

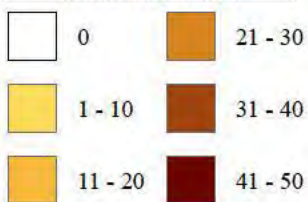


Map 4-6

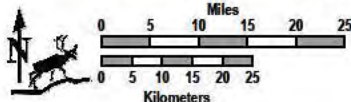
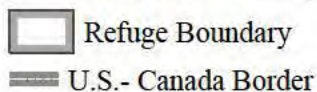
Arctic National Wildlife Refuge

Frequency of Occurrence of Snow Goose
Flocks with >500 birds Observed During
Aerial Surveys, 1982-2004

Number Flocks



Other Features



Alaska Albers Equal Area Conic Projection, 1983 North American Datum.

Aerial surveys were conducted between 1982 and 2004 to census the number of snow geese staging on the Arctic Refuge coastal plain prior to their fall migration. The figure shows the numbers of flocks with greater >500 birds observed within 5 km x 5 km grid cells covering the survey area. Surveys were conducted in 1982, 1984-89, 1992-93, 1997-99, 2000-01, and 2003-04.



148° W

146° W

144° W

142° W

70° N

68° N

70° N

68° N

Kaktovik

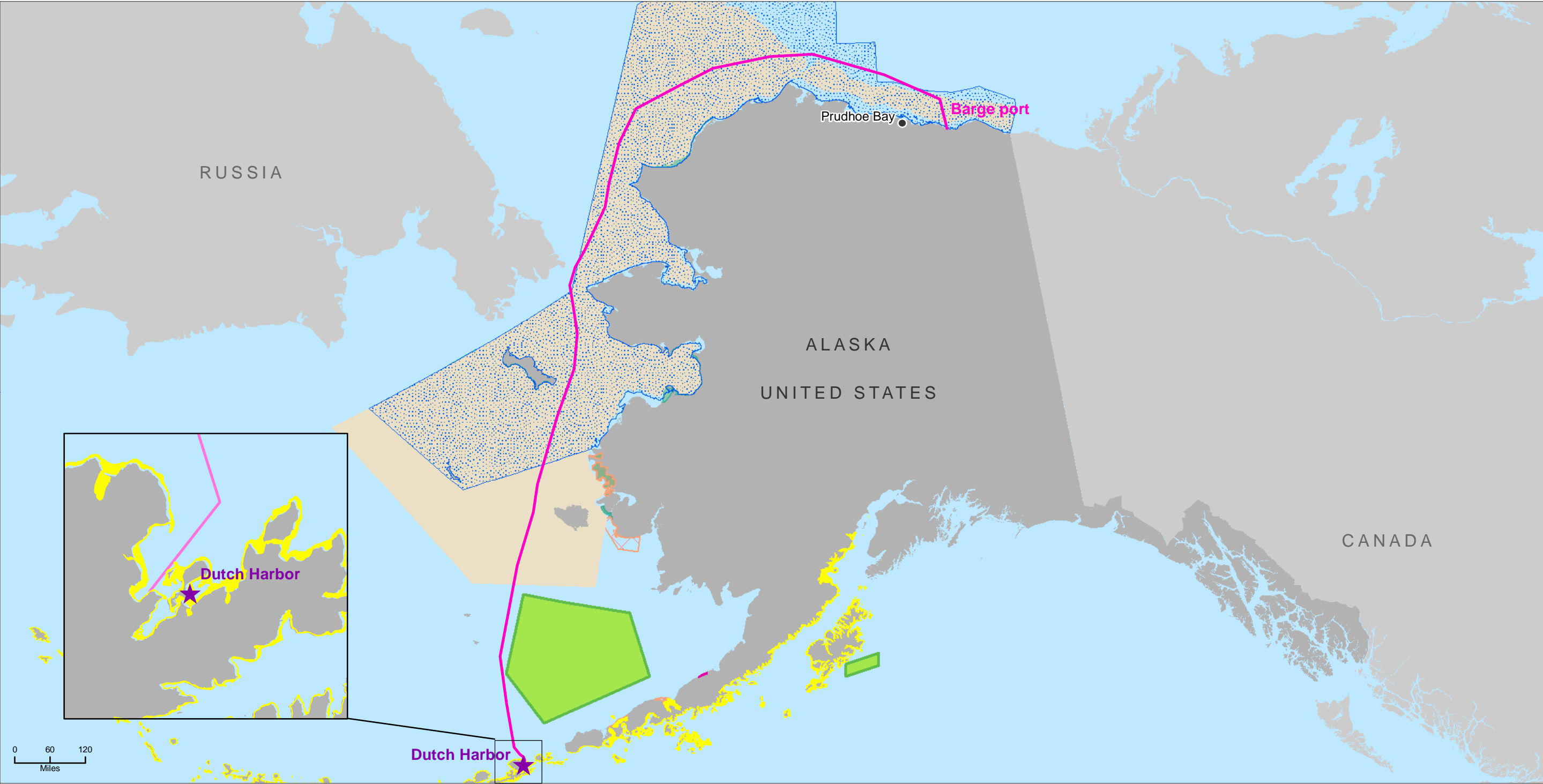
Camden Bay

Beaufort Sea

Map 3-28

Critical Habitat along the Potential Marine Vessel Transportation Route

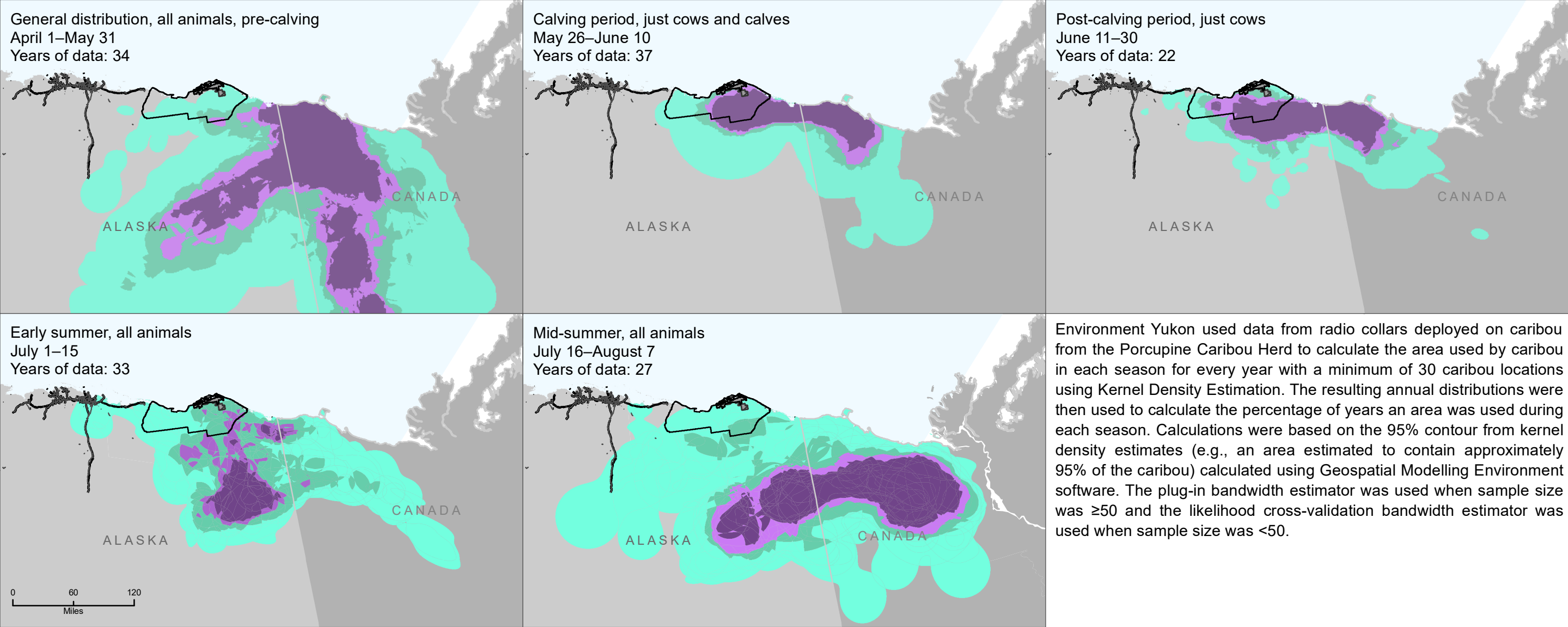
U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



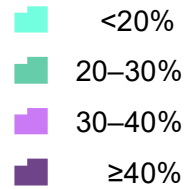
- Potential marine vessel transportation route
- Sea otter critical habitat
- Steller's sea lion critical habitat (foraging area and 20 nautical mile aquatic zone)
- North Pacific right whale critical habitat
- Steller's eider critical habitat
- Spectacled eider critical habitat
- Arctic ringed seal critical habitat
- Beringia distinct population segment of bearded seal
- Coastal Plain Supplemental EIS boundary

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Data Source: BLM GIS 2022, USFWS GIS 2022
Print Date: 07/17/2023



Percent of years that caribou are present

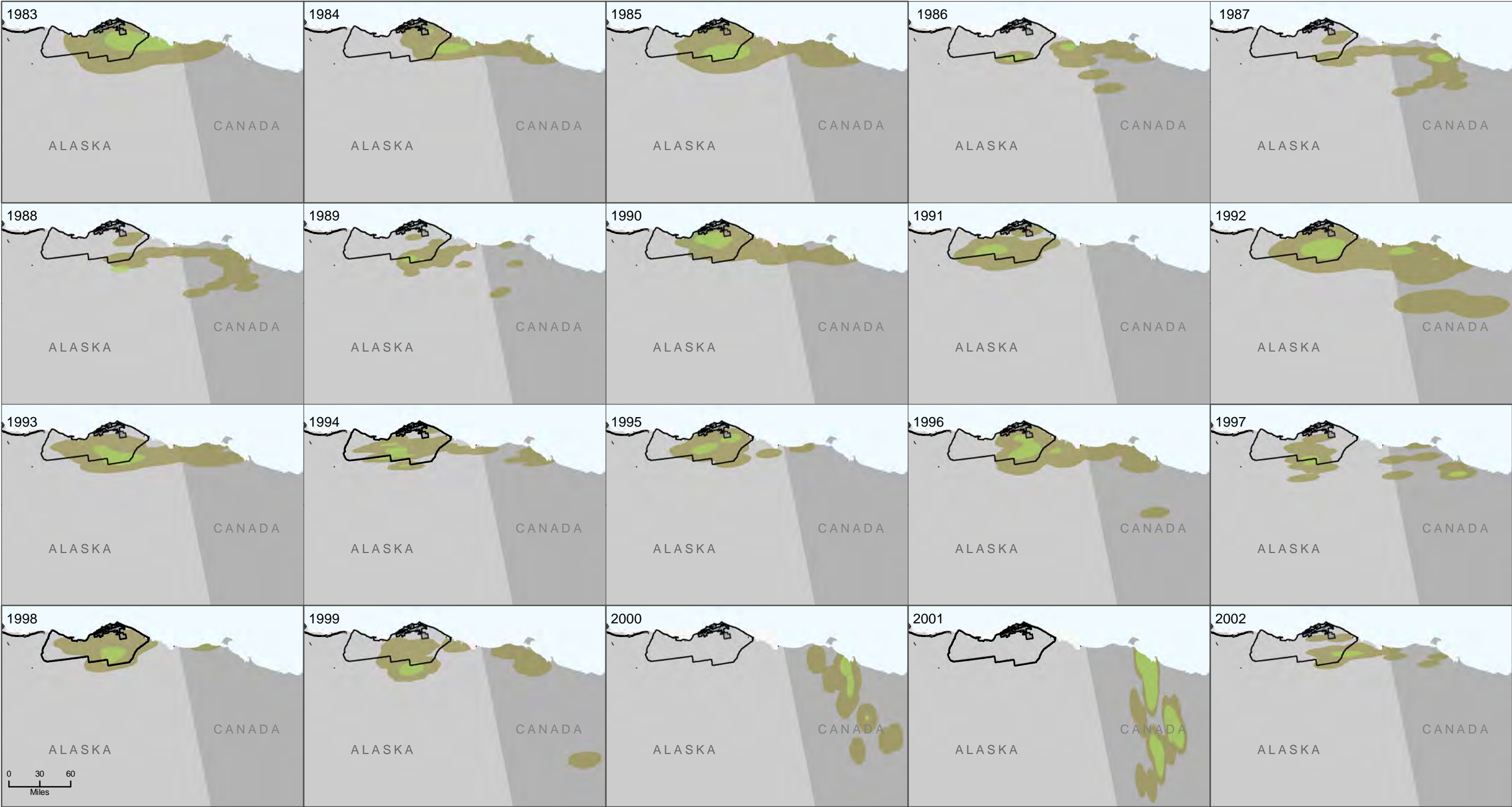


- Existing oil and gas roads or pipelines
- Coastal Plain Supplemental EIS boundary
- Excluded from Public Law 115-97 Coastal Plain or outside the BLM's oil and gas leasing authority



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Data Source: BLM GIS 2022, USFWS GIS 2022, Environment Yukon GIS 2018
Print Date: 07/17/2023



- Concentrated calving area
- Annual calving ground
- Existing oil and gas roads or pipelines
- Public Law 115-97 Coastal Plain

Concentrated calving areas were defined as the annual kernel density contour that included areas with greater than average calving density and annual calving grounds were defined as the 99% kernel density utilization distributions obtained from annual calving sites (Griffith et al. 2002, USFWS 2015). GIS layers were created by Alaska Department of Fish and Game following methods of Griffith et al. (2002). No concentrated calving area data for 2014, 2015, 2016. Annual calving ground data for 2010, 2012, 2013, 2014, 2015, 2016, 2017 were calculated as 95% kernel density utilization distributions of female caribou by Environment Yukon.

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Data Source: BLM GIS 2022, USFWS GIS 2022, ADFG GIS 2019, and Environment Yukon GIS 2019
Print Date: 07/21/2023





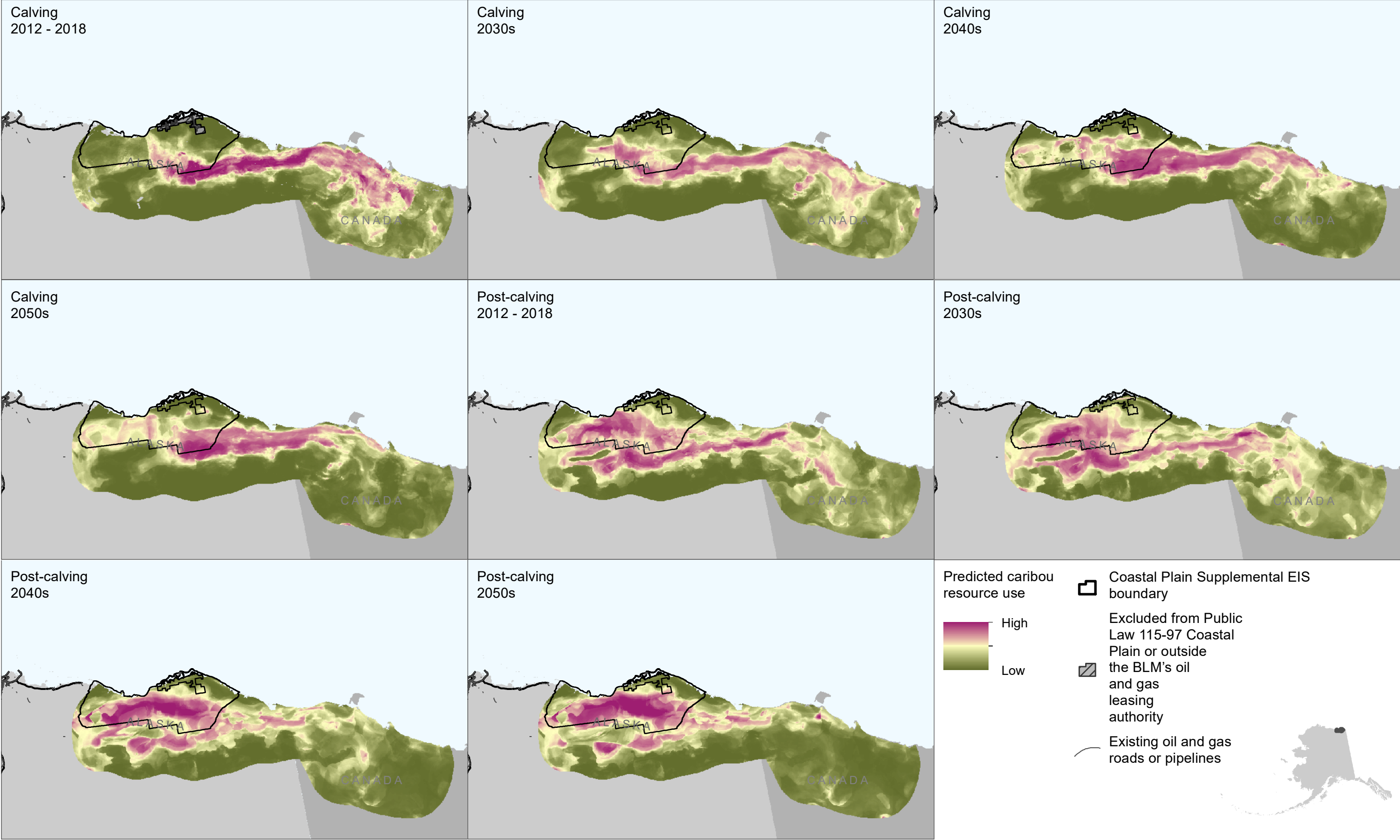
- Concentrated calving area
- Annual calving ground
- Existing oil and gas roads or pipelines
- Public Law 115-97 Coastal Plain

Concentrated calving areas were defined as the annual kernel density contour that included areas with greater than average calving density and annual calving grounds were defined as the 99% kernel density utilization distributions obtained from annual calving sites (Griffith et al. 2002, USFWS 2015). GIS layers were created by Alaska Department of Fish and Game following methods of Griffith et al. (2002). No concentrated calving area data for 2014, 2015, 2016. Annual calving ground data for 2010, 2012, 2013, 2014, 2015, 2016, 2017 were calculated as 95% kernel density utilization distributions of female caribou by Environment Yukon.

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Print Date: 07/21/2023

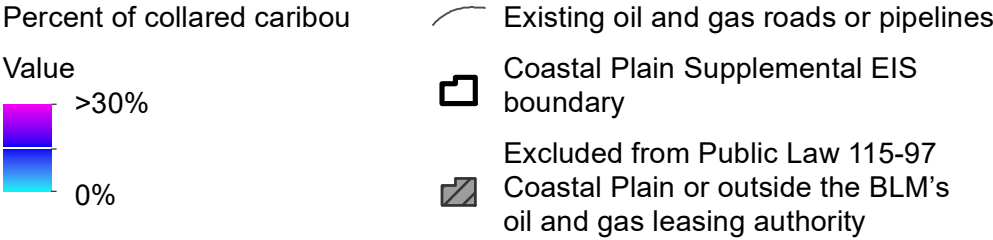
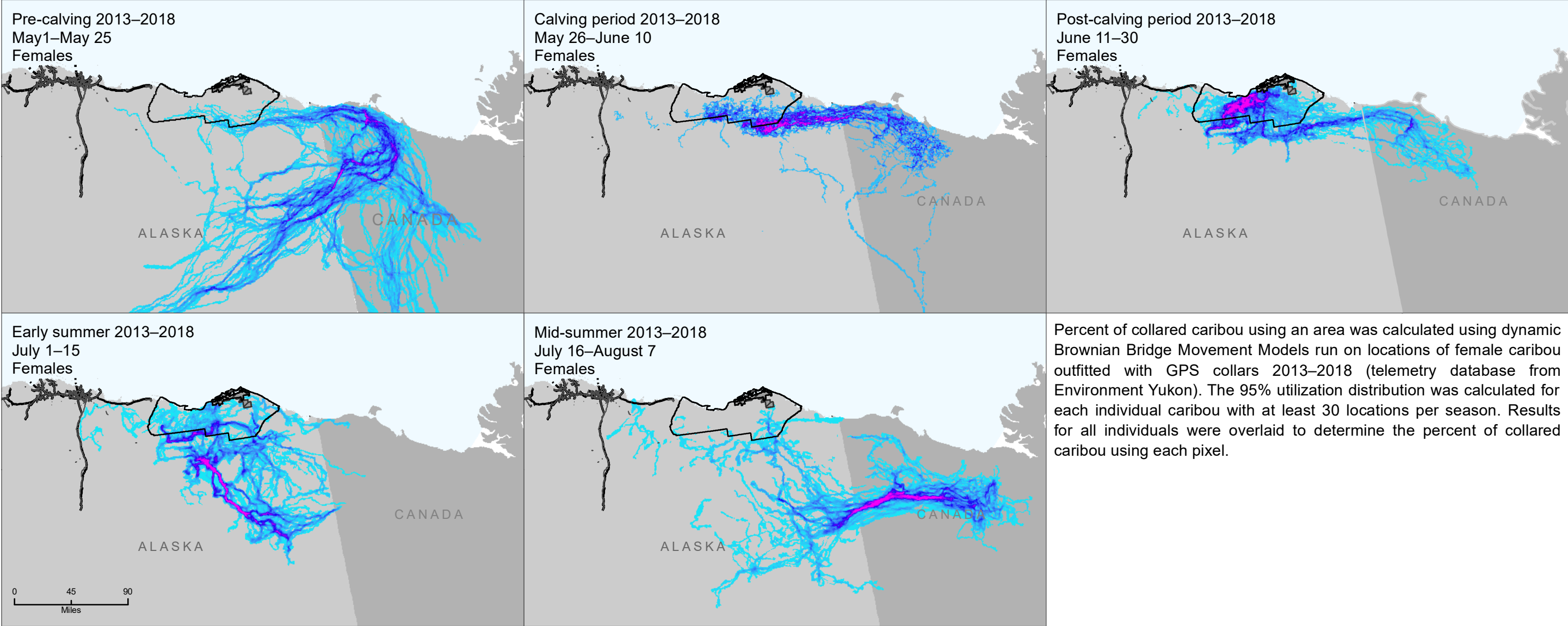




Data Source: BLM GIS 2022, USFWS GIS 2022, ADFG GIS 2019, and Environment Yukon GIS 2019

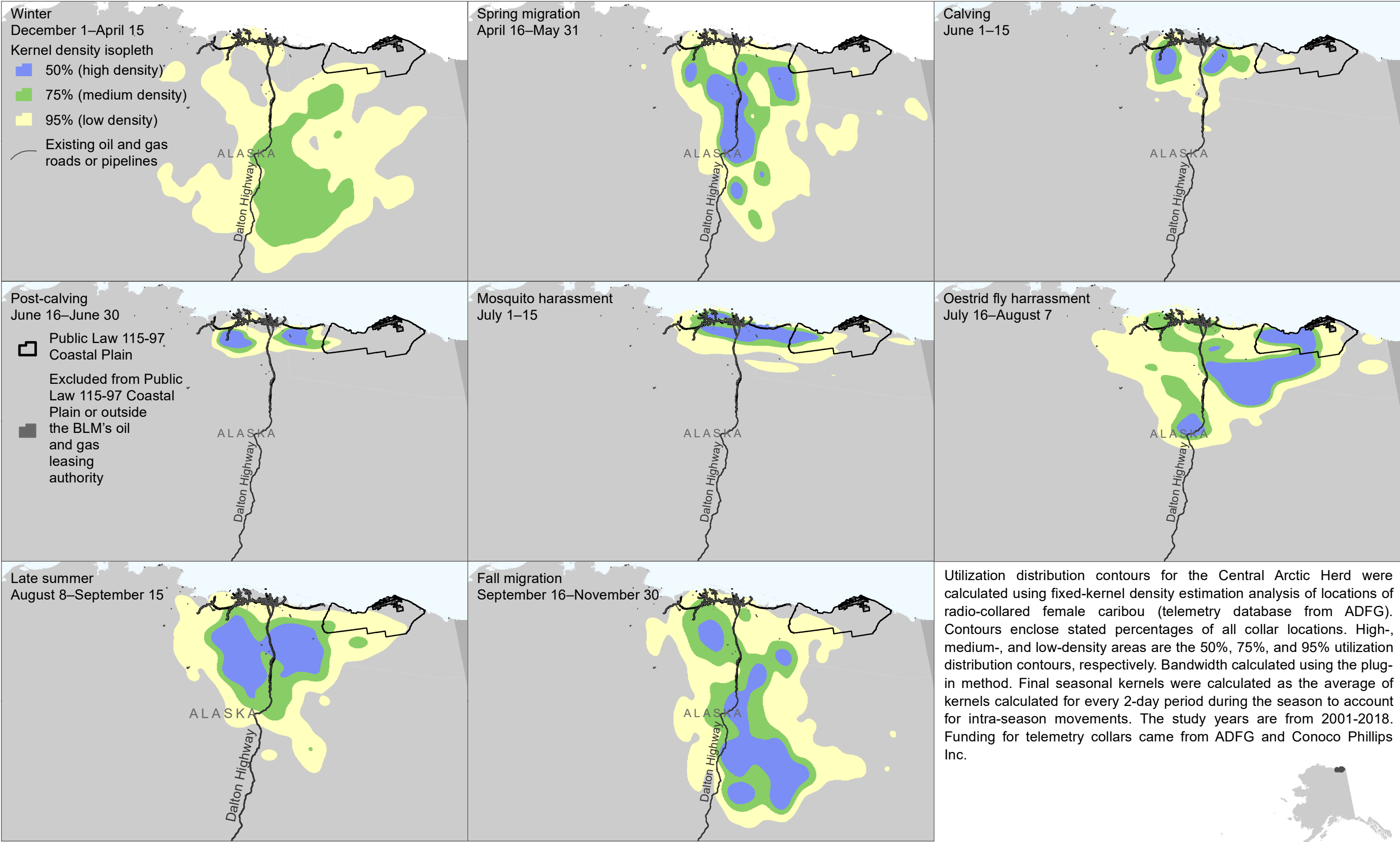
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0 10 20
Miles



Data Source: BLM GIS 2022,
USFWS GIS 2022,
Environment Yukon GIS 2018
Print Date: 07/17/2023

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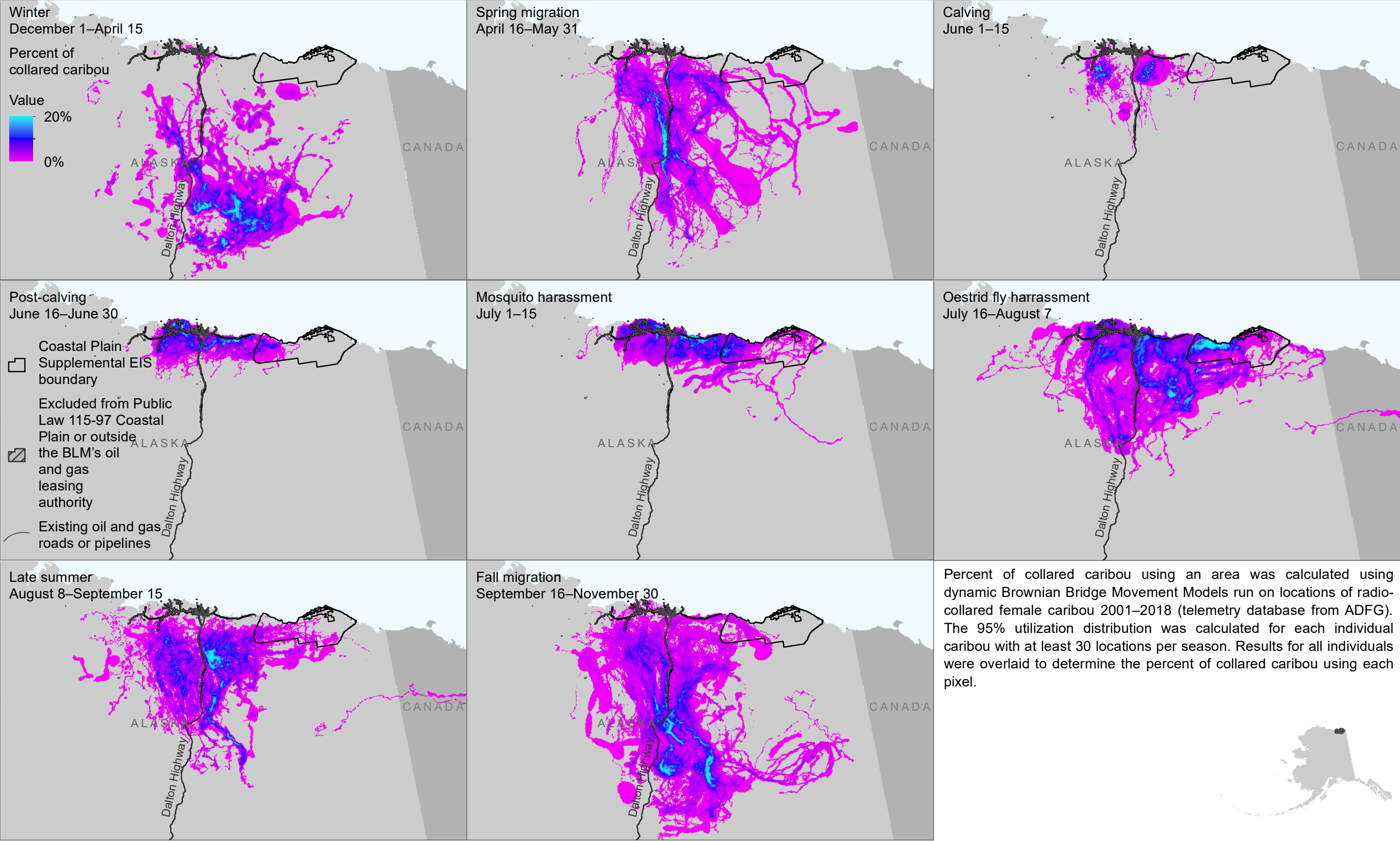


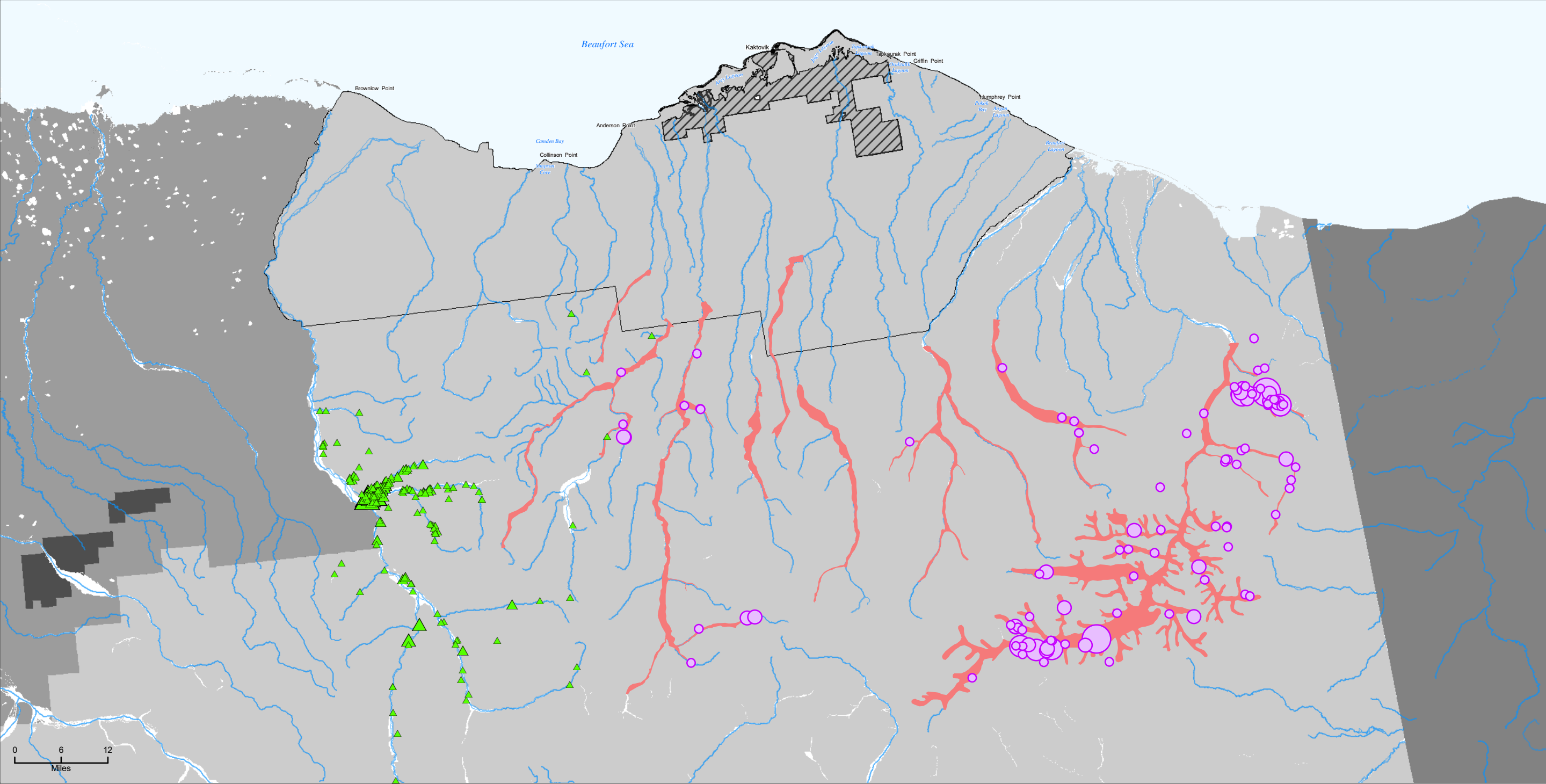
Utilization distribution contours for the Central Arctic Herd were calculated using fixed-kernel density estimation analysis of locations of radio-collared female caribou (telemetry database from ADFG). Contours enclose stated percentages of all collar locations. High-, medium-, and low-density areas are the 50%, 75%, and 95% utilization distribution contours, respectively. Bandwidth calculated using the plug-in method. Final seasonal kernels were calculated as the average of kernels calculated for every 2-day period during the season to account for intra-season movements. The study years are from 2001-2018. Funding for telemetry collars came from ADFG and Conoco Phillips Inc.

0 30 60
Miles

Data Source: BLM GIS 2022,
USFWS GIS 2022 ADFG GIS
2019

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USFWS observations, April (2014-2018), number of individuals

- 1 - 2
- 3 - 5
- 6 - 8
- 9 - 13

USFWS moose survey area

Moose winter habitat

ADFG observations, March-May (2002-2019), number of individuals

- 1 - 4
- 5 - 9
- 10 - 17
- 18 - 33

Land ownership outside of Public Law 115-97 Coastal Plain

- Bureau of Land Management
- State
- Fish and Wildlife Service

Coastal Plain Supplemental EIS boundary

Excluded from Public Law 115-97

- Coastal Plain or outside the BLM's oil and gas leasing authority

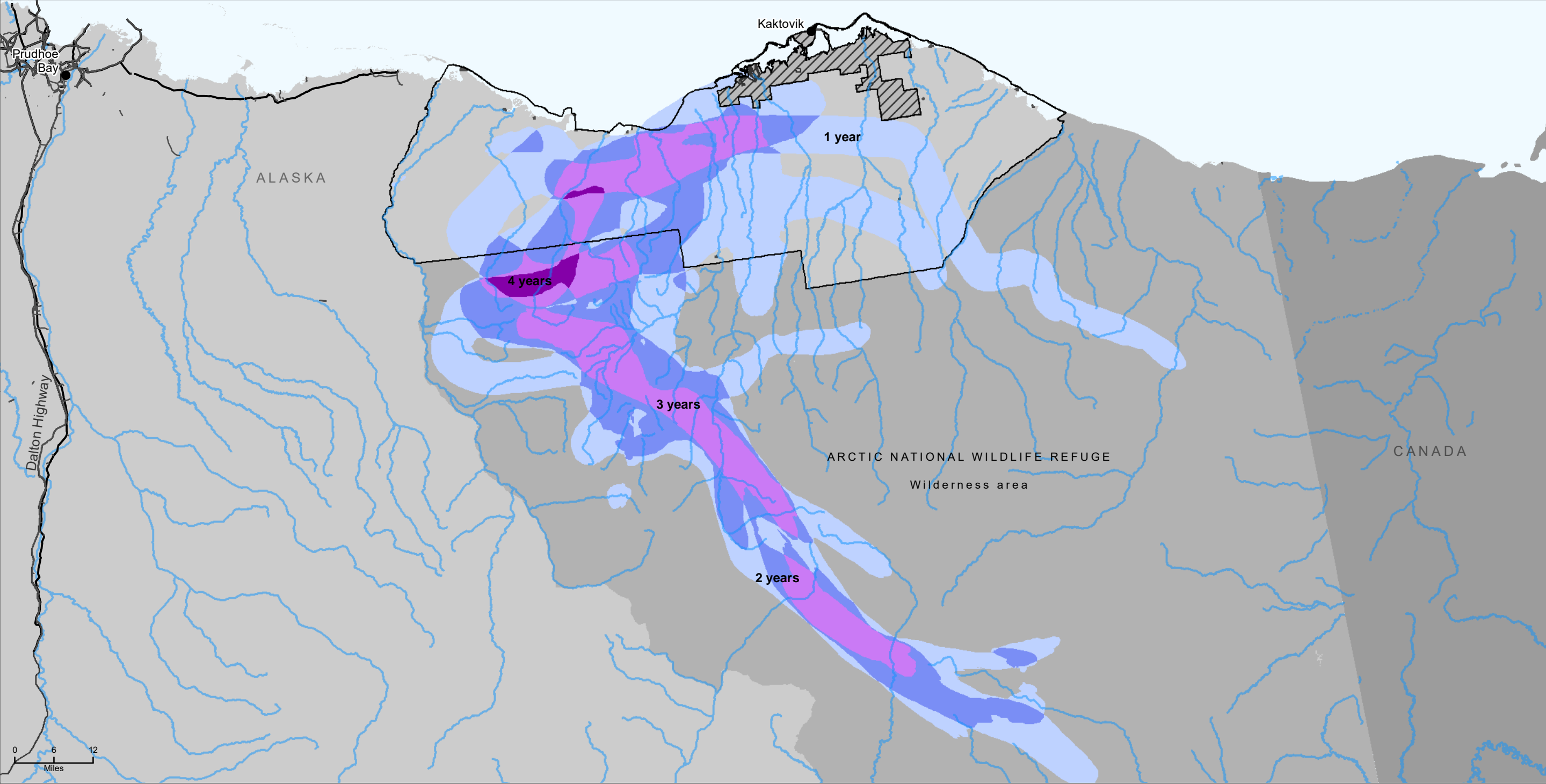


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Data Source: BLM GIS 2022, USFWS GIS 2022, USFWS GIS 2019, ADFG GIS

Movement of Large Post-Calving Groups of Porcupine Caribou

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



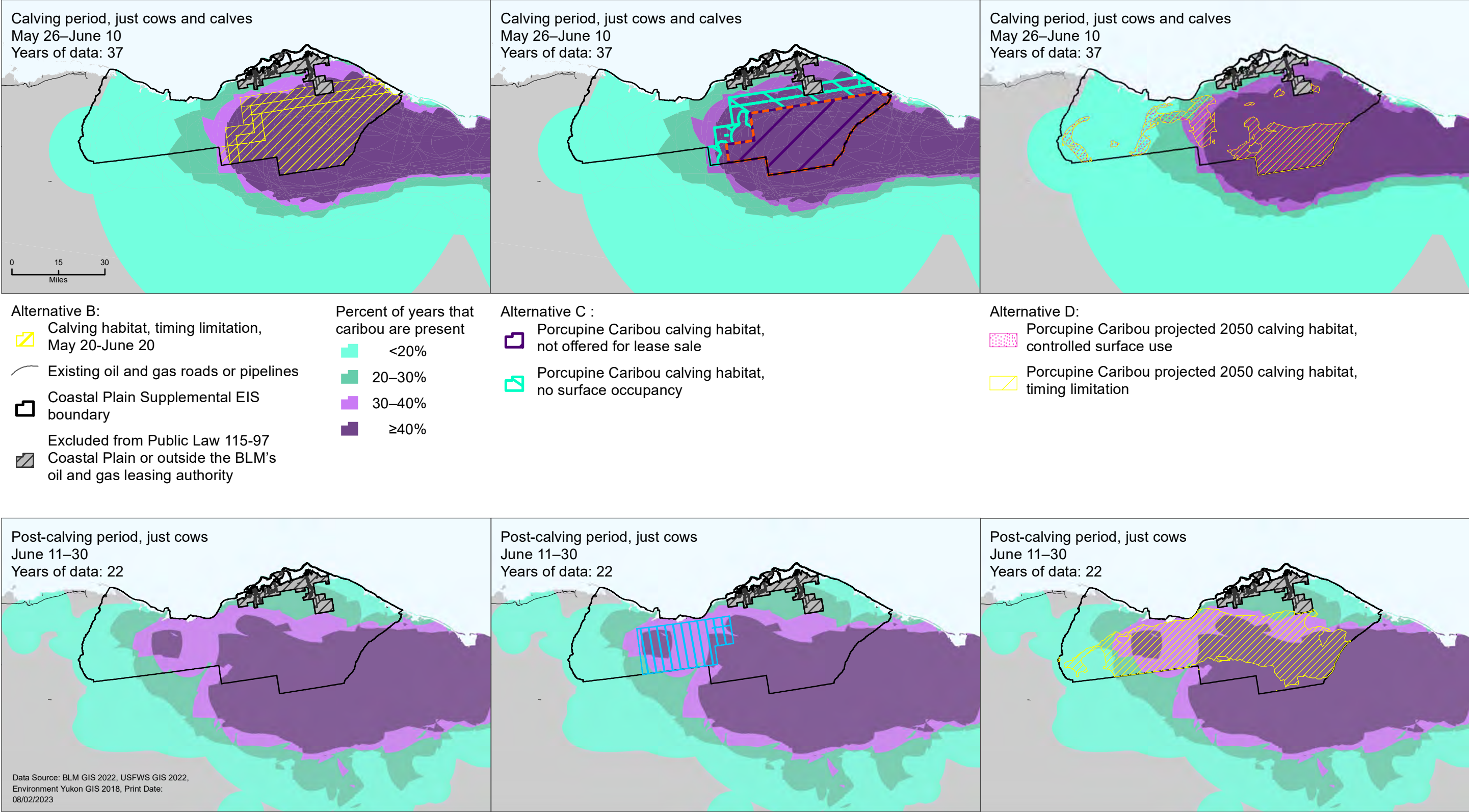
Location of large post-calving aggregations of Porcupine Caribou (estimated to be between 21,000 and 121,000 animals) during 2014–2017 on a scale of 1-4, where 4 indicates large groups were present in all 4 years (remade from Russell and Gunn 2019).

- 1
 - 2
 - 3
 - 4
- Existing oil and gas roads or pipelines
 - Public Law 115-97 Coastal Plain
 - Excluded from Public Law 115-97
 - Coastal Plain or outside the BLM's oil and gas leasing authority

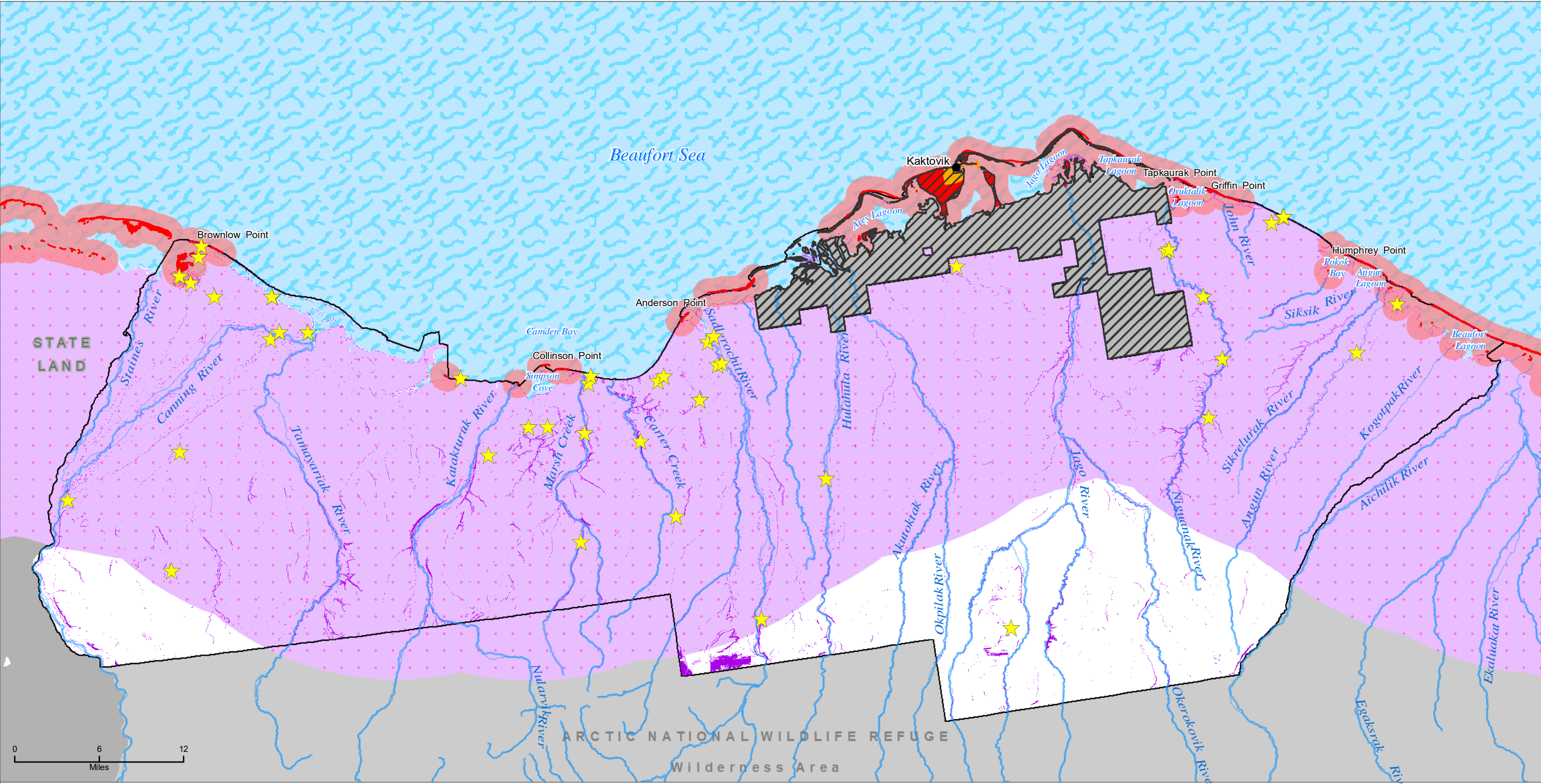


Data Source: BLM GIS 2022, USFWS GIS 2022, Russell, D. and A. Gunn. 2019
Print Date: 07/17/2023

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- ★ Polar bear maternal dens (Durner et al. 2010; Durner, personal communication)

■ Polar bear maternal den habitat (Durner and Atwood 2018)
- Polar bear critical habitat

 - Sea ice unit
 - Barrier island no disturbance zone
 - Barrier island unit
 - Terrestrial denning unit
- Kaktovik: an exclusion under Section 4(b)(2) of the Endangered Species Act

■ Coastal Plain Supplemental EIS boundary

■ Excluded from Public Law 115-97

■ Coastal Plain or outside the BLM's oil and gas leasing authority

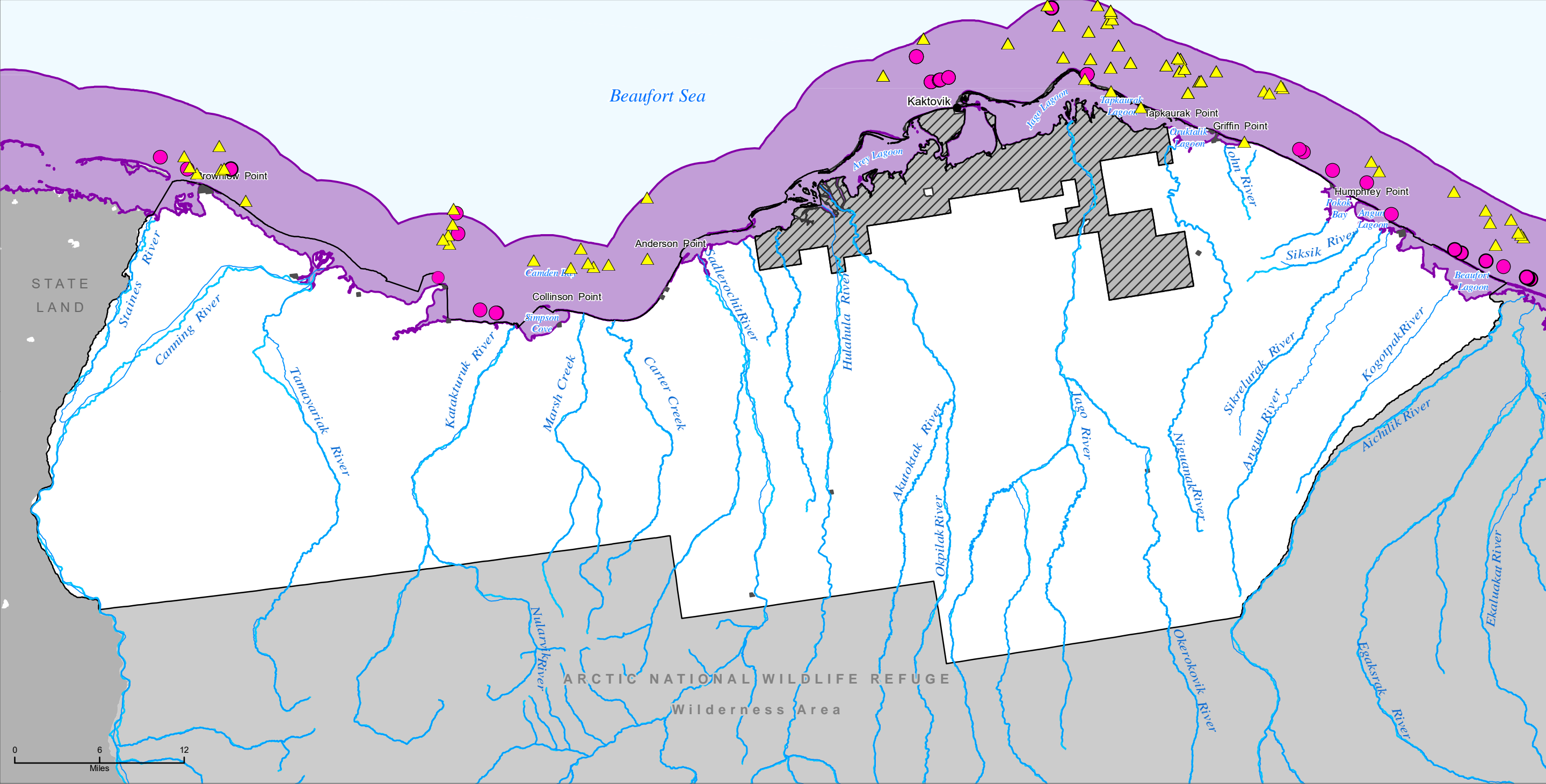


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Data Source: BLM GIS 2022,
USFWS GIS 2022,
USFWS GIS 2010, USGS
GIS 2018

Bowhead and Beluga Whale Sightings

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |

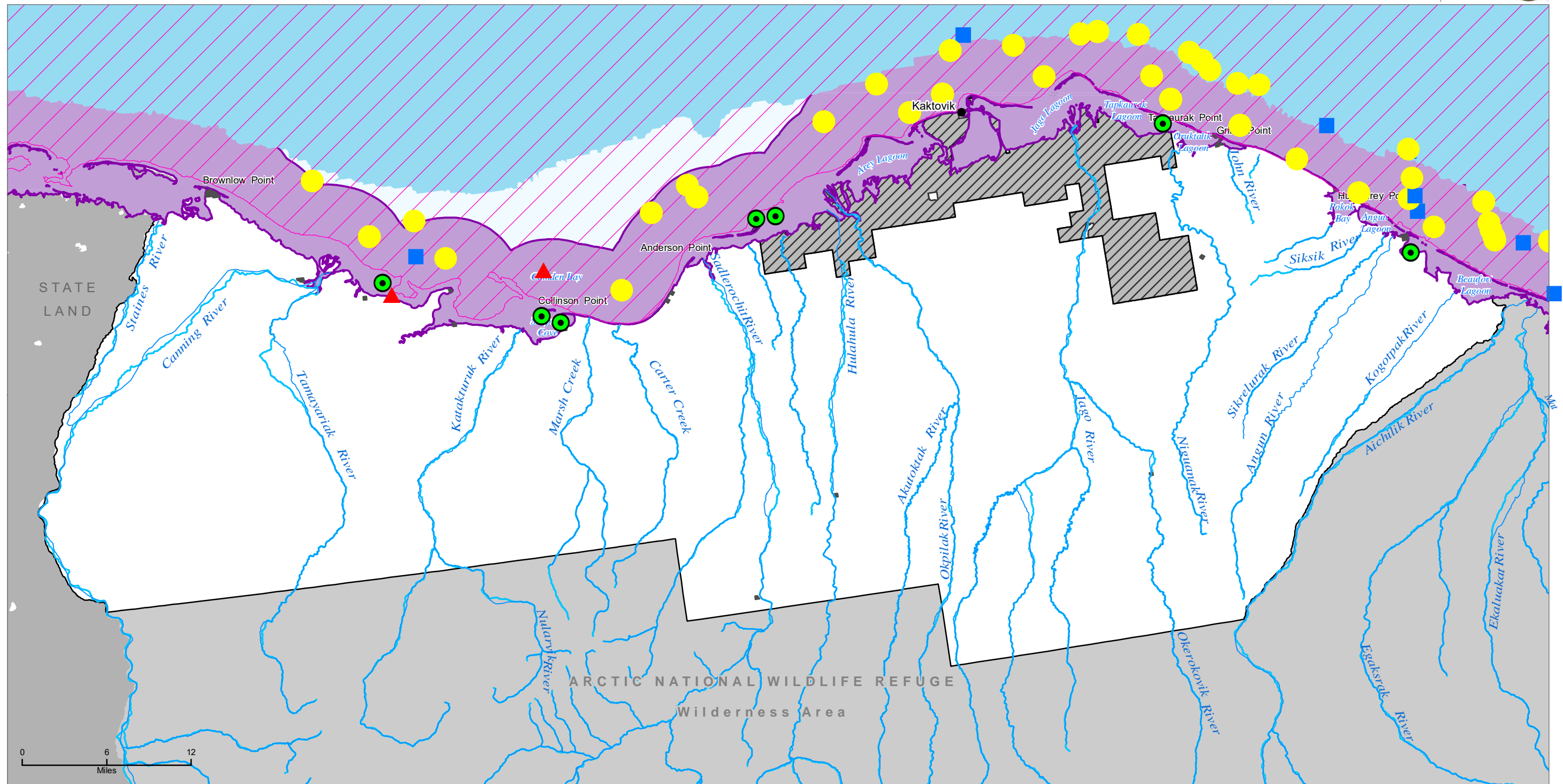


- beluga
- bowhead whale
- 5-mile coastal buffer
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority



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Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/17/2023



- | | | |
|-----------------------------|-------------------------------|--|
| Ringed seal | Bearded seal critical habitat | Coastal Plain Supplemental EIS boundary |
| Bearded seal | Ringed seal critical habitat | Native Allotment |
| Small unidentified pinniped | | Excluded from Public Law 115-97 |
| Unidentified pinniped | | Coastal Plain or outside the BLM's oil and gas leasing authority |
| 5-mile coastal buffer | | |



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Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/17/2023



0 0.5 1
Miles

- Native allotment
- U.S. Fish and Wildlife Service
- Water

Coastal Plain Supplemental EIS boundary

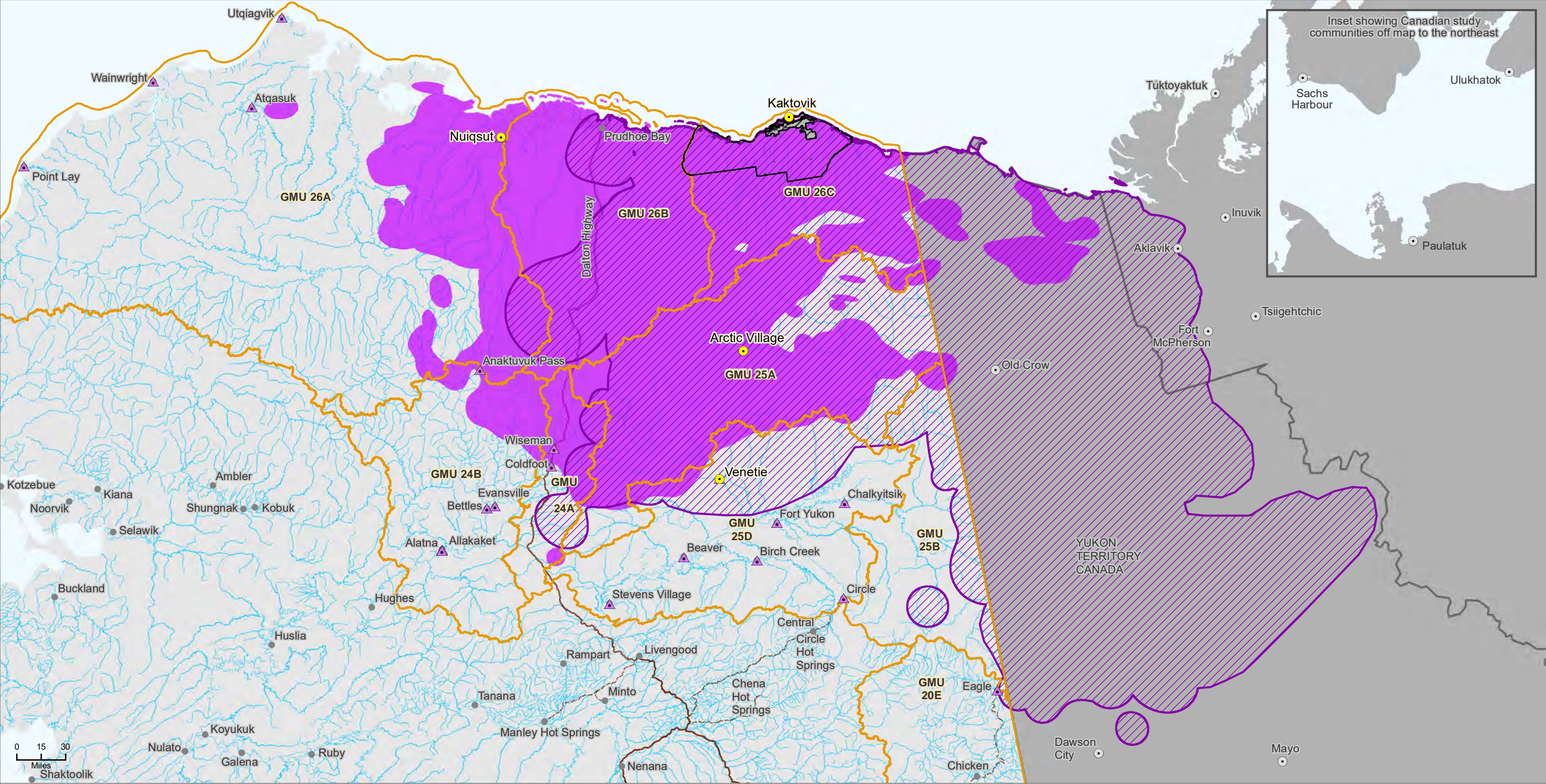
Excluded from Public Law 115-97
Coastal Plain or outside the BLM's oil and gas leasing authority



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USFWS GIS 2022
Print Date: 07/17/2023

Map 3-44, Iñupiaq and Gwich'in Place Names in the Program Area, contained culturally sensitive information that was removed after it came to the attention of FWS and BLM that there was a lack of informed consent by all parties to display such information. FWS and BLM commit to consulting with the Tribes and ensuring informed consent prior to making decisions regarding any such a map or maps in the Final SEIS.



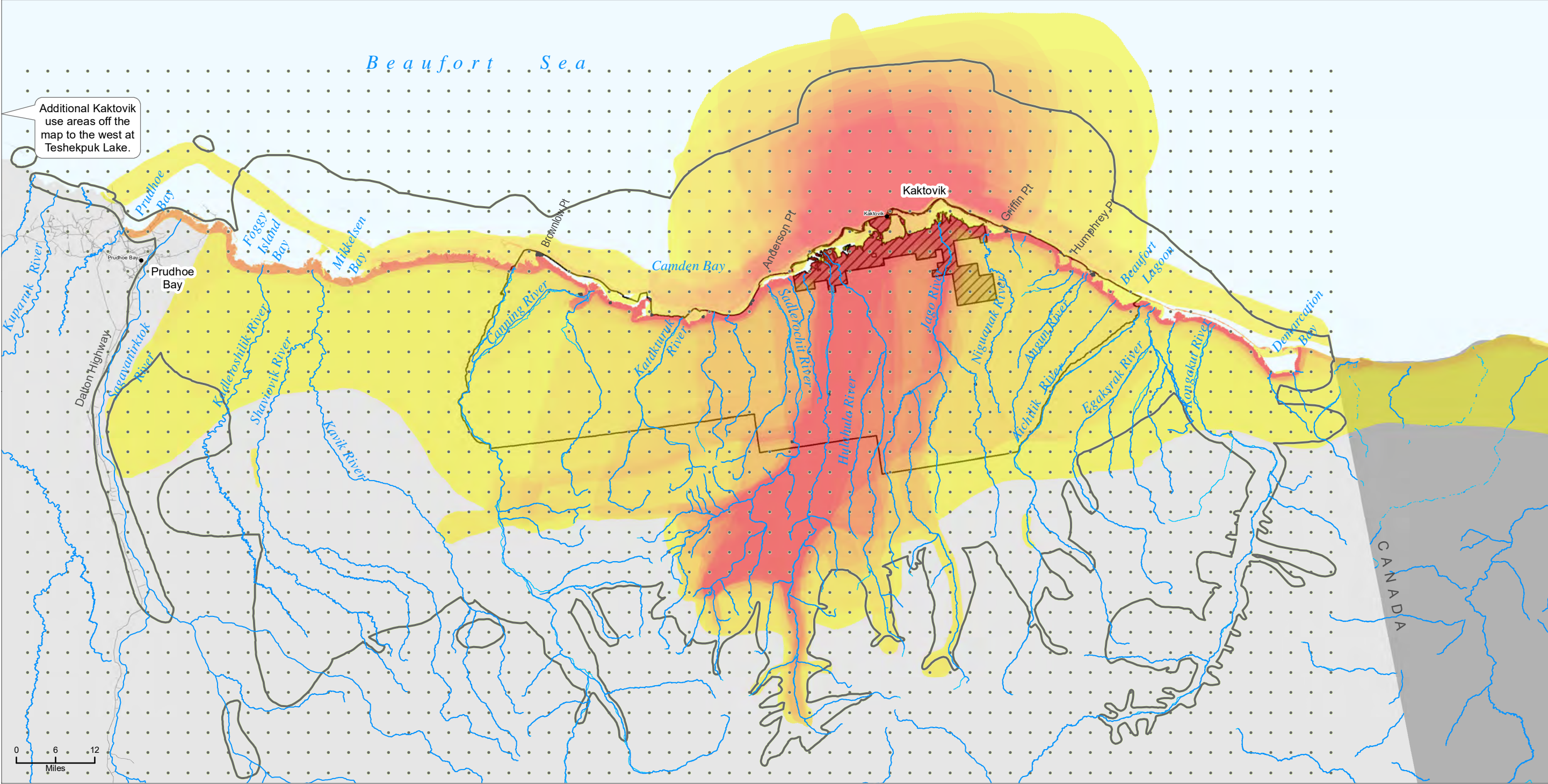
- Subsistence study community
- Canadian study community
- ▲ Caribou study community
- Other community
- Game management unit (Alaska Department of Fish and Game)
- Central Arctic Herd range
- Porcupine Herd range

- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority



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Data Source: BLM GIS 2022, USFWS GIS 2022
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023



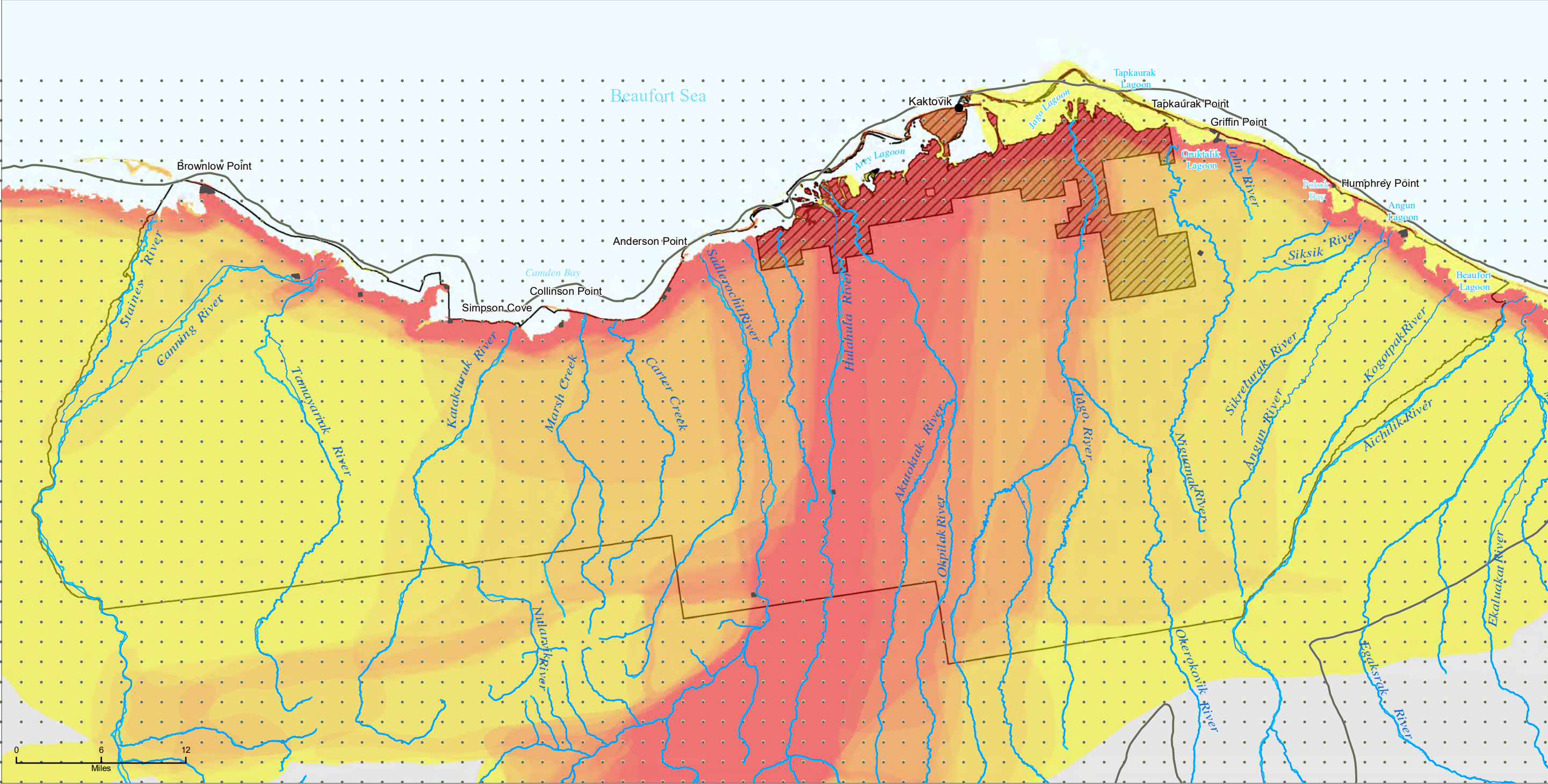
- All resources, lifetime prior to 1979¹
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority
- Overlapping² subsistence use areas
High
Low
all resources, 1996–2006

Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979 2) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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Kaktovik Caribou Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Caribou, lifetime prior to 1979¹
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority
- High use areas
- Low use areas
- Overlapping² subsistence use areas
- Caribou, 1996–2006

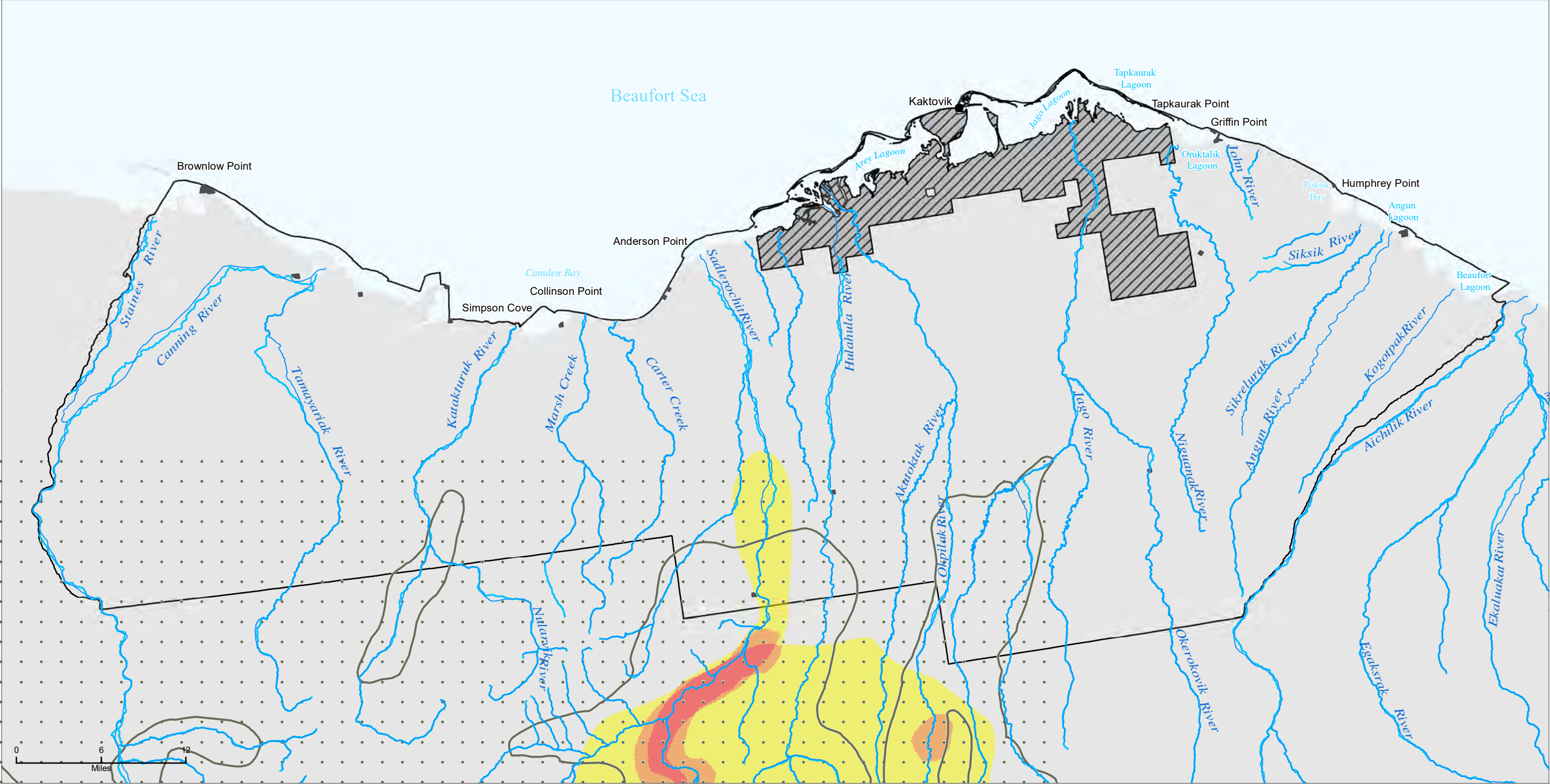


Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979 2) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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Kaktovik Moose Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Moose, lifetime prior to 1979¹
- Overlapping² subsistence use areas moose, 1996–2006
- High
- Low
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

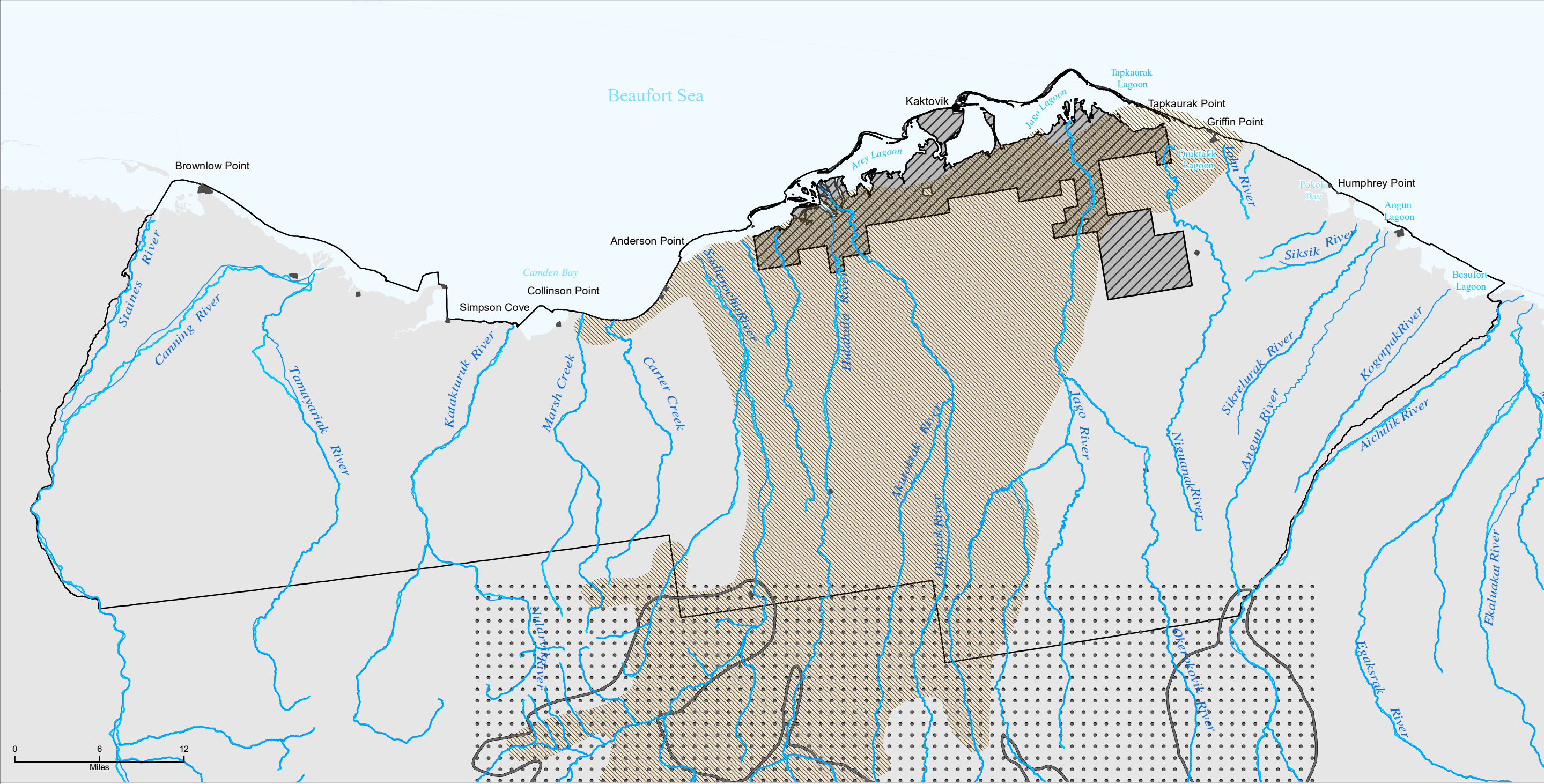


Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979 2) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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Kaktovik Grizzly and Sheep Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Sheep, lifetime prior to 1979¹
- Grizzly, lifetime prior to 1979¹
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

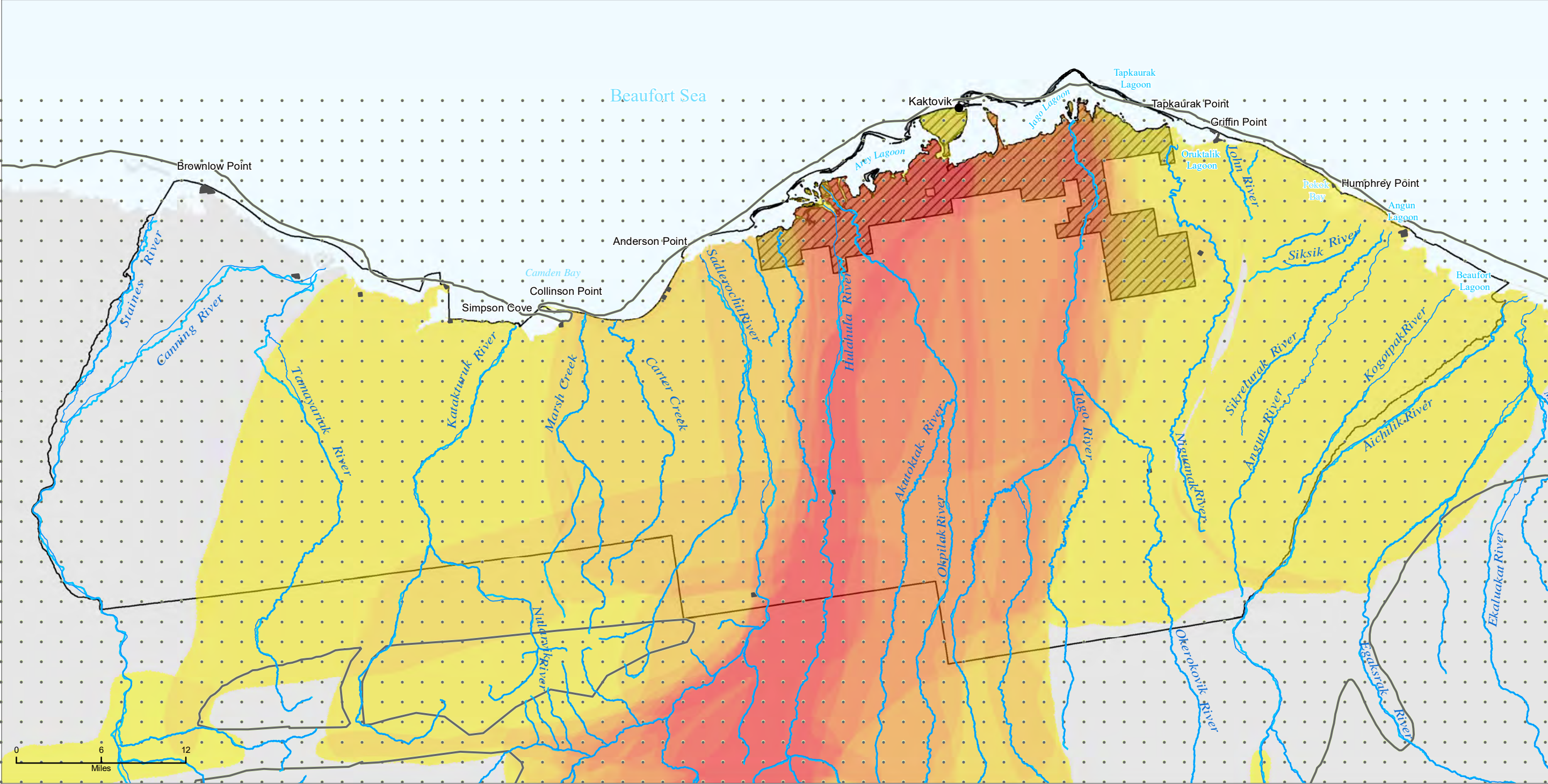


Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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Kaktovik Furbearer Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



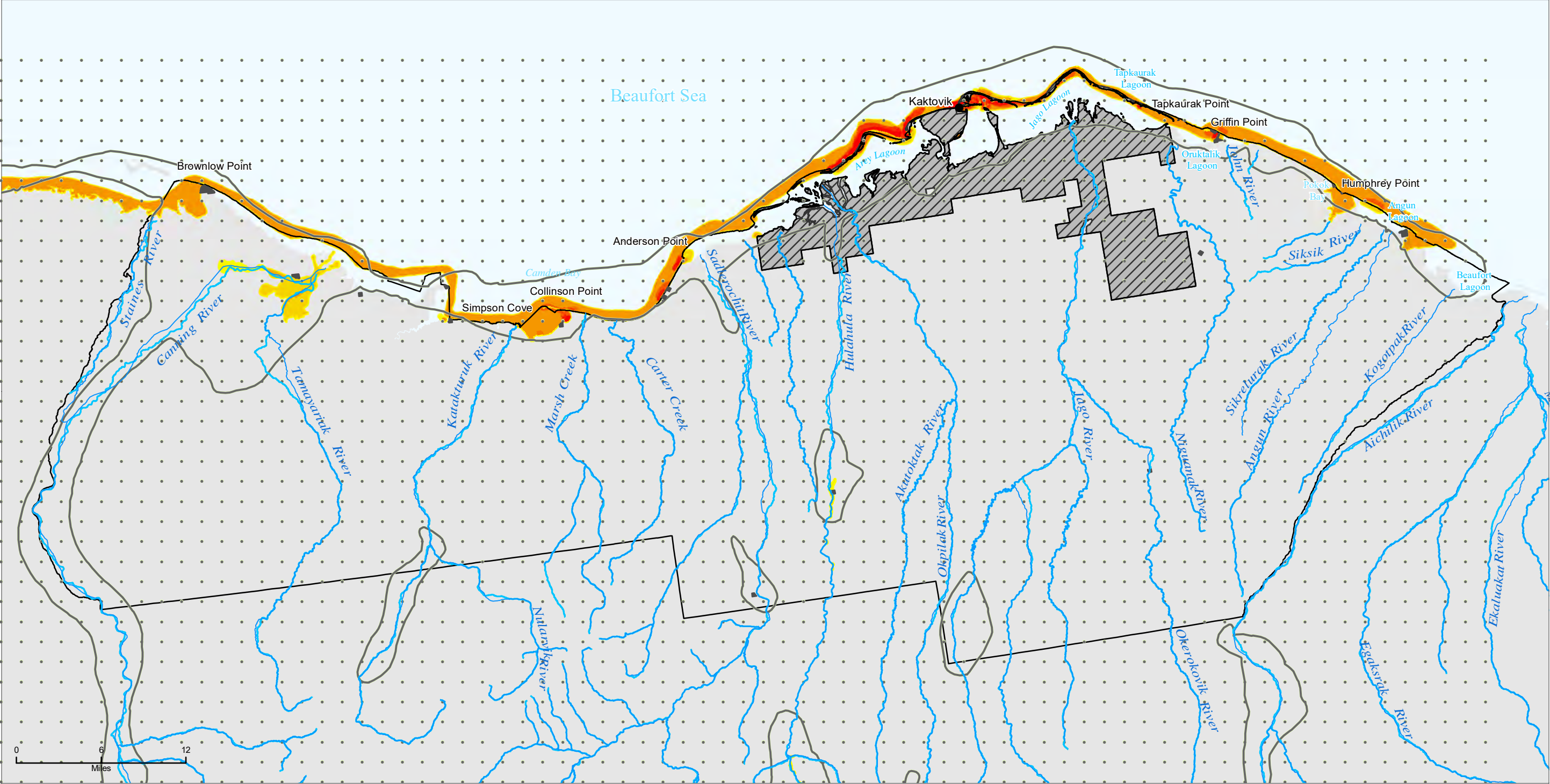
- Furbearer Hunting, Circa 1923-1983¹
 - Coastal Plain Supplemental EIS boundary
 - Native Allotment
 - Excluded from Public Law 115-97
 - Coastal Plain or outside the BLM's oil and gas leasing authority
- Overlapping² subsistence use areas
High
Low
wolf and wolverine, 1996-2006







Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979 2) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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Kaktovik Fish Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



-  Fishing, lifetime prior to 1979¹
-  Coastal Plain Supplemental EIS boundary
-  Native Allotment
-  Excluded from Public Law 115-97
-  Coastal Plain or outside the BLM's oil and gas leasing authority
-  Overlapping² subsistence use areas fish, 1996–2006

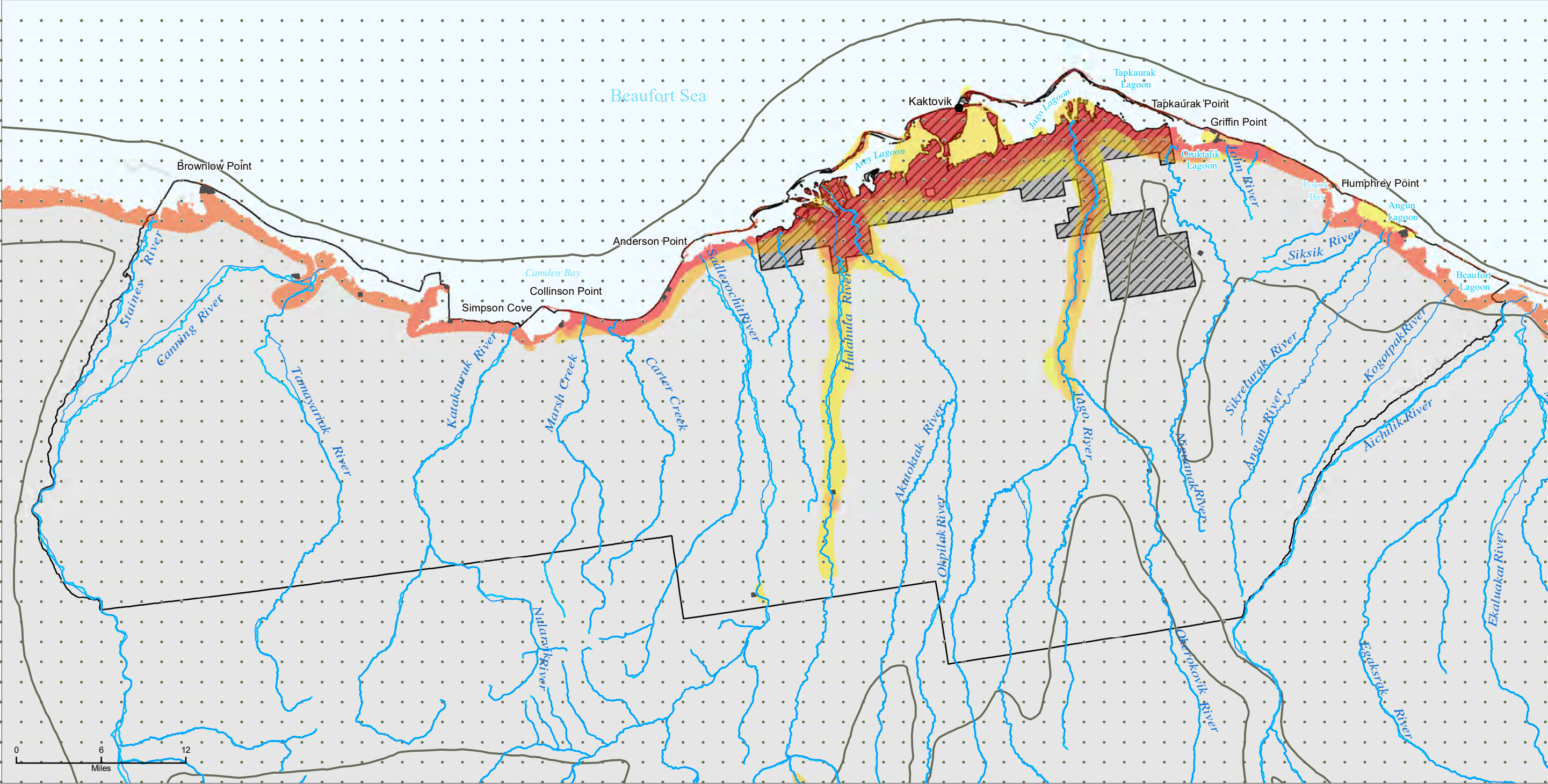
Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979 2) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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Kaktovik Bird Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Wildfowl, lifetime prior to 1979¹
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

Overlapping²
subsistence
use areas
High
Low
eider and goose,
1996–2006

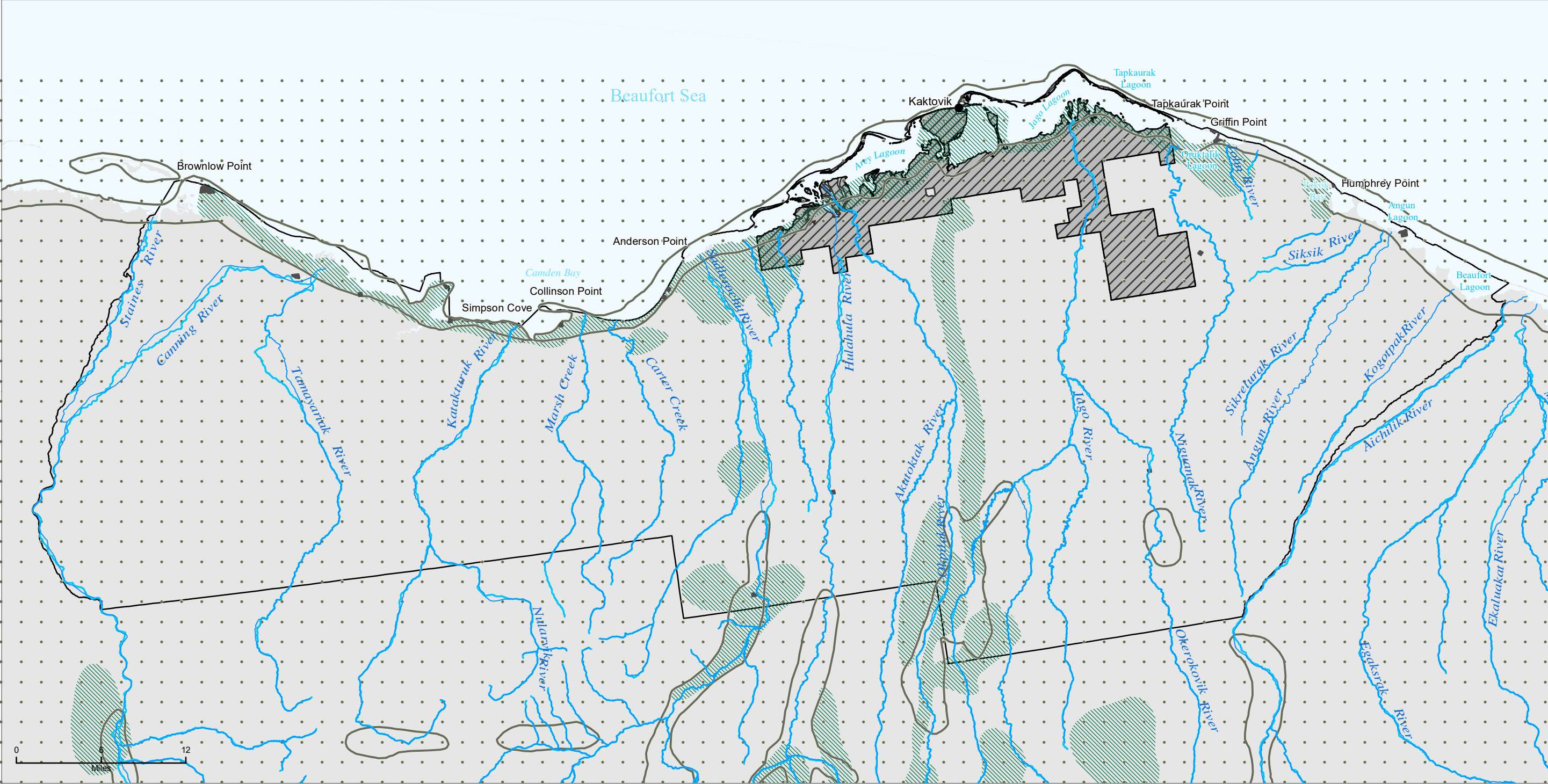


Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979 2) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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Kaktovik Vegetation and Wood Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Wood, lifetime prior to 1979¹
- Vegetation, lifetime prior to 1979¹
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

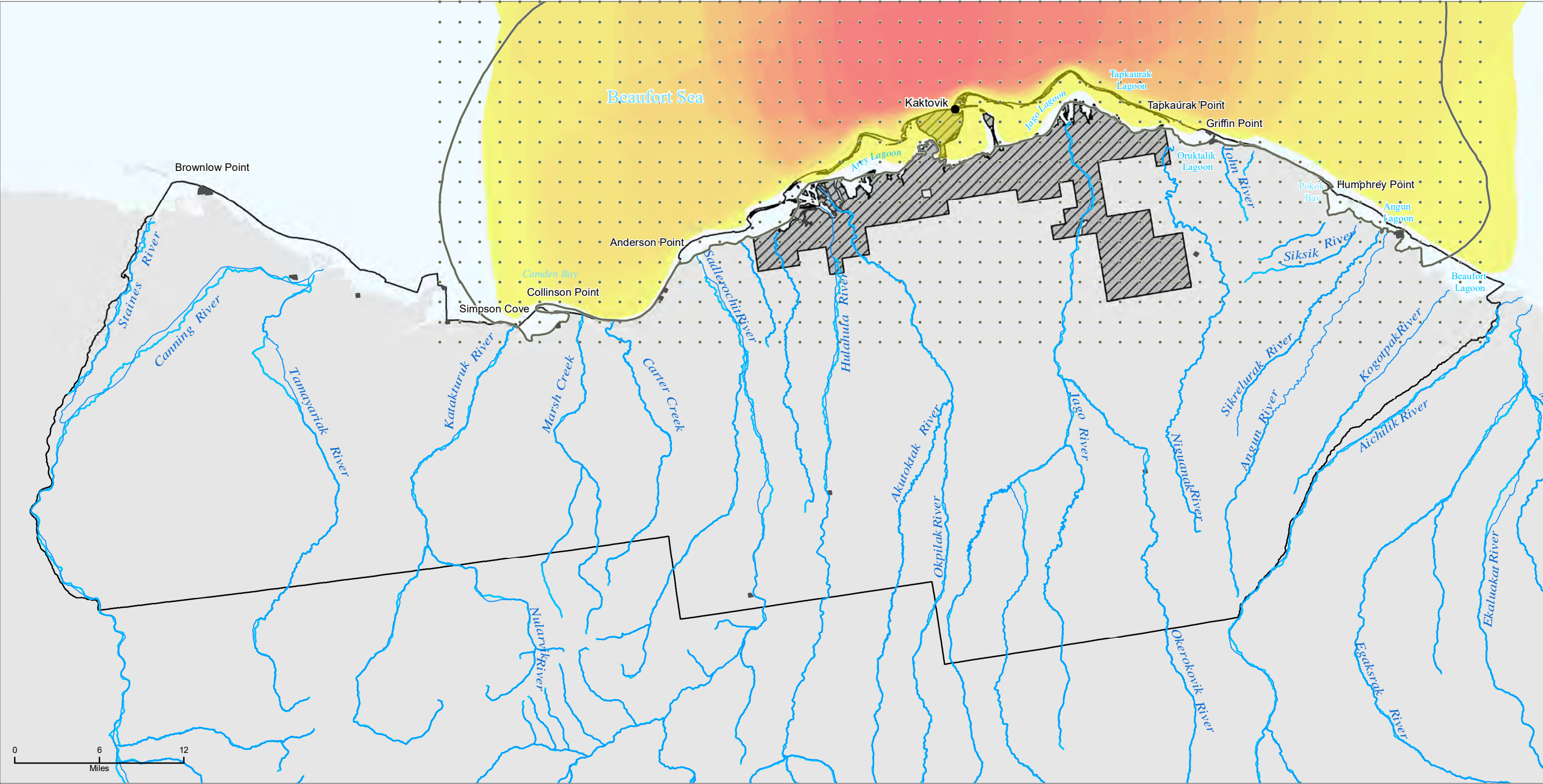


Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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Kaktovik Whale Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Whale, lifetime prior to 1979¹
- Coastal Plain Supplemental EIS boundary
- Overlapping² subsistence use areas bowhead, 1996–2006
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

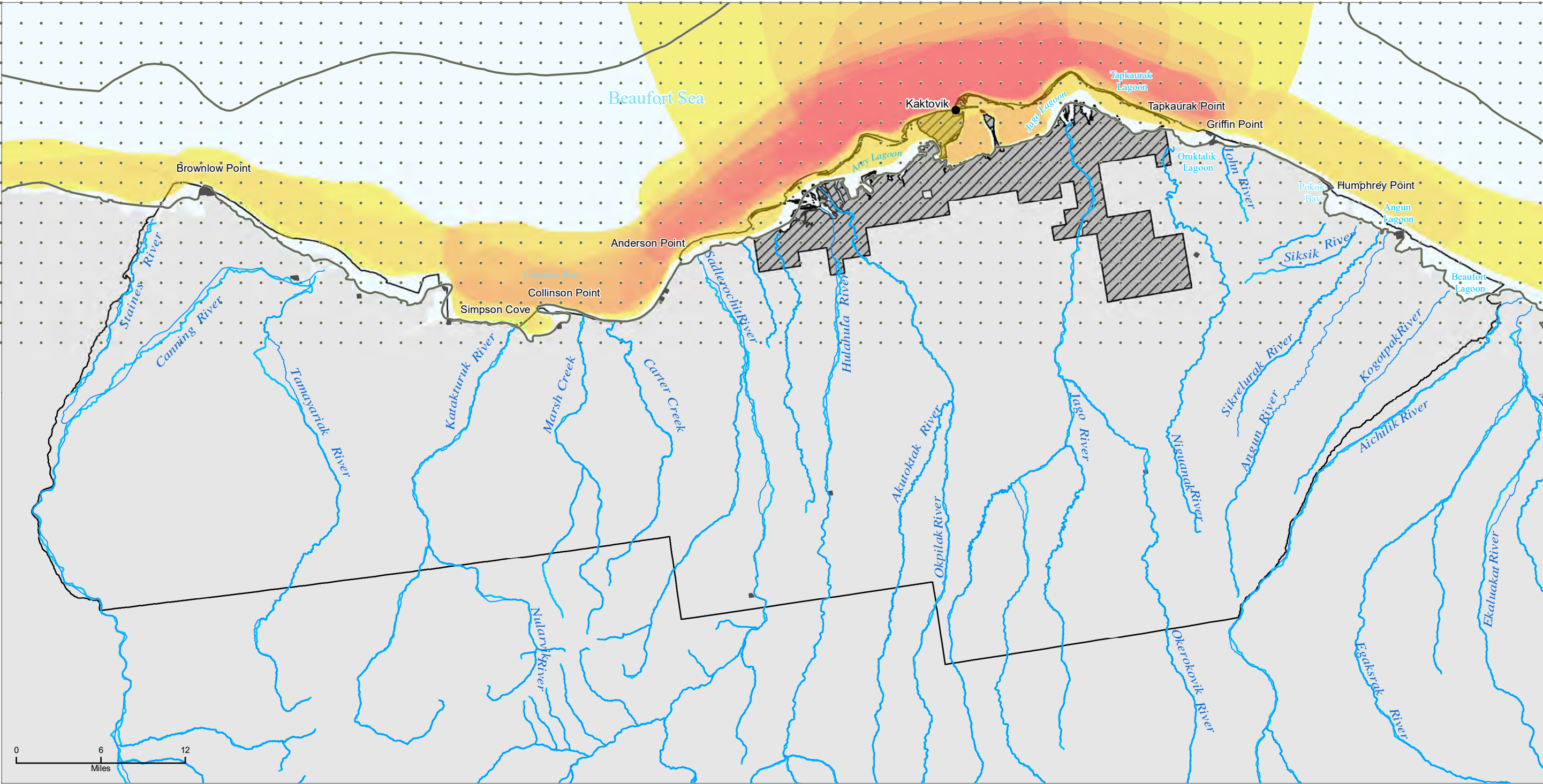
Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979 2) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023



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Kaktovik Seal Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Seal, lifetime prior to 1979¹

High

Low

Overlapping² subsistence use areas seal, 1996–2006
- Coastal Plain Supplemental EIS boundary

Native Allotment

Excluded from Public Law 115-97

Coastal Plain or outside the BLM's oil and gas leasing authority

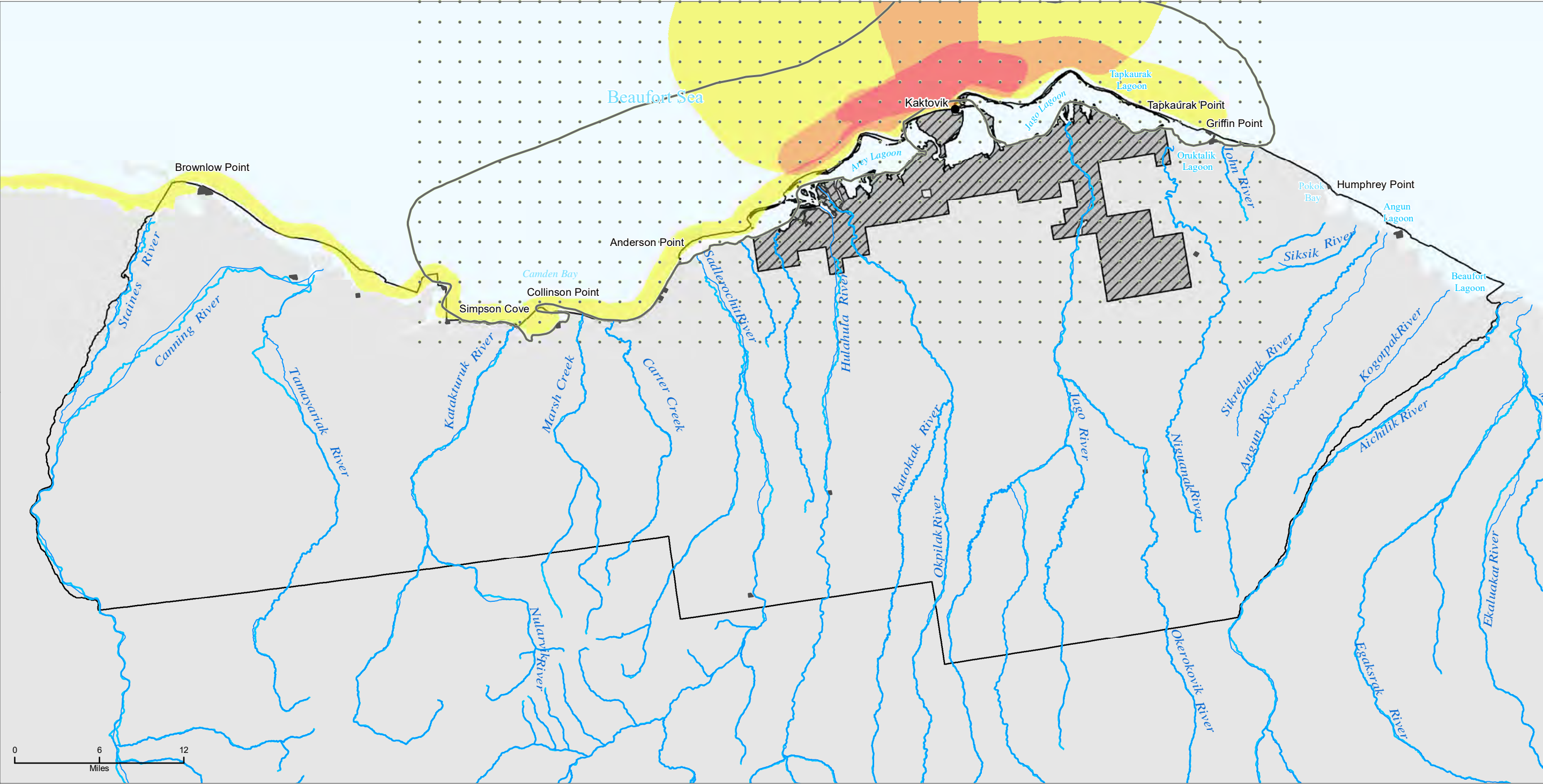
Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979 2) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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Map 3-55

Kaktovik Walrus Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Walrus, lifetime prior to 1979¹

High

Low

Overlapping² subsistence use areas walrus, 1996–2006

Coastal Plain Supplemental EIS boundary

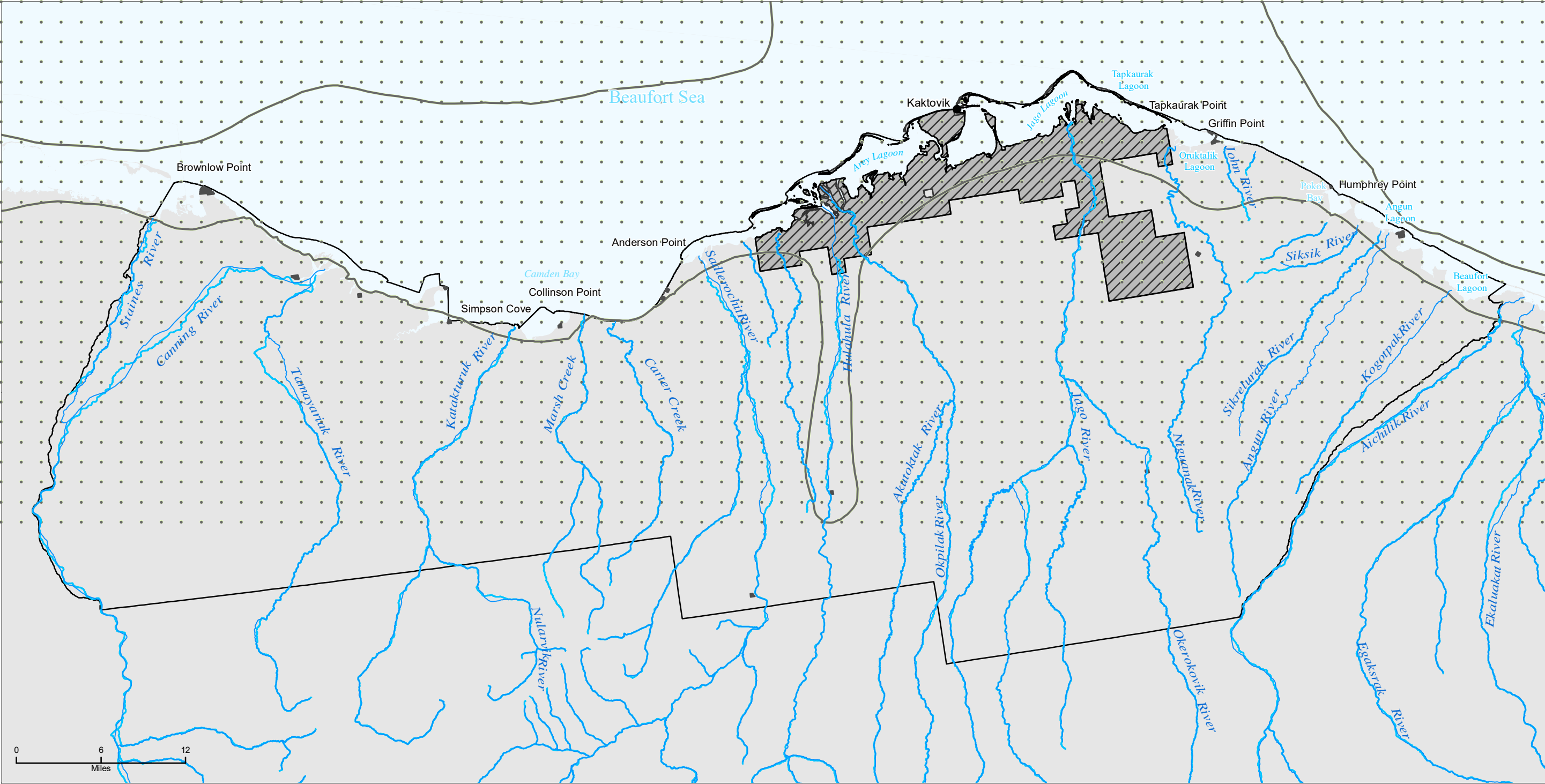
Native Allotment

Excluded from Public Law 115-97

Coastal Plain or outside the BLM's oil and gas leasing authority
-
- Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1979 2) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023
- No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
- Map 3-56

Kaktovik Polar Bear Subsistence Use Areas in Coastal Plain

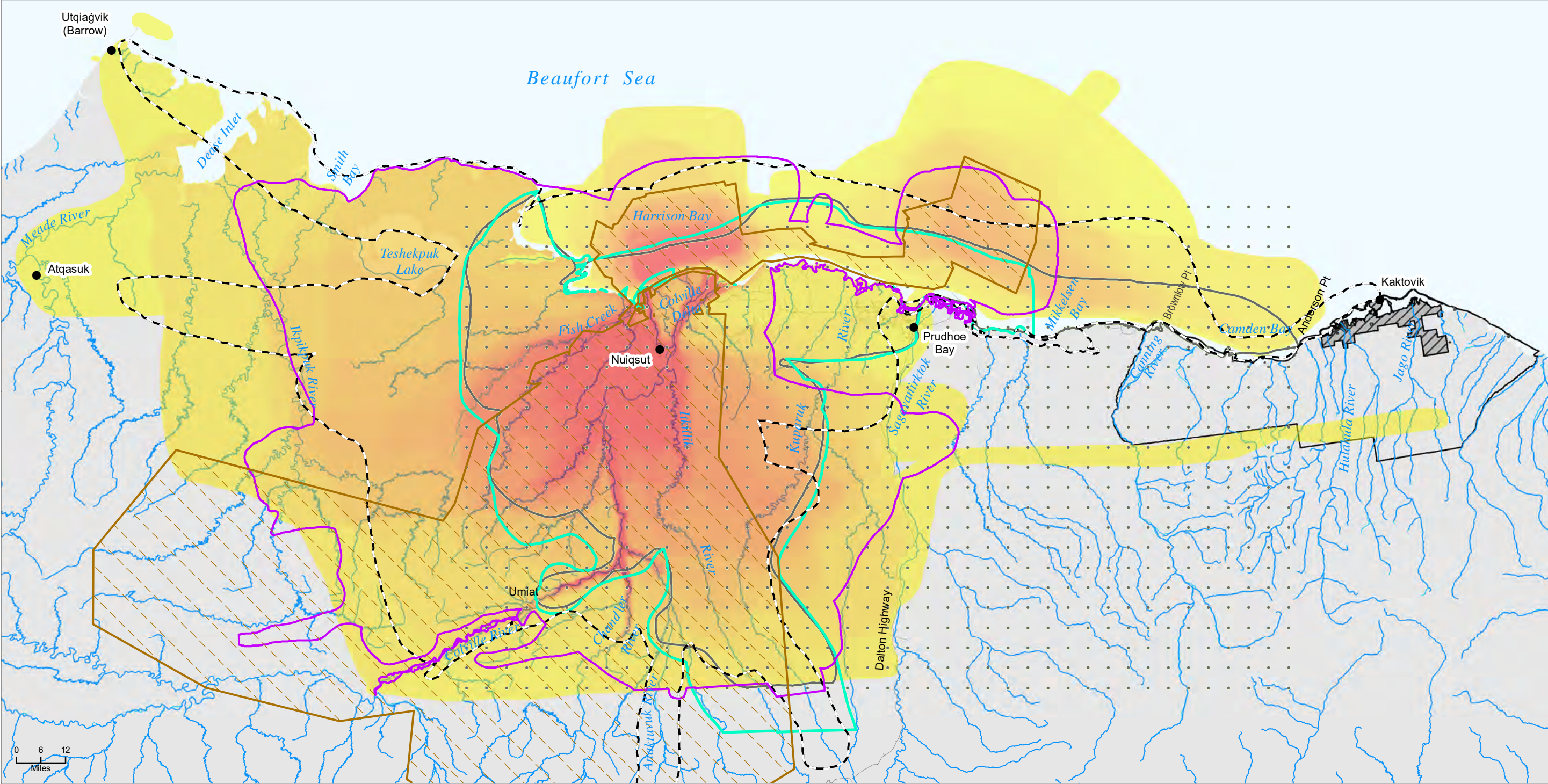
U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



- Polar bear, lifetime prior to 1979¹
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

Data Source: BLM GIS 2022,
USFWS GIS 2022
1) Pedersen 1979
Map prepared by: Stephen R.
Braund & Associates
Print Date: 07/14/2023

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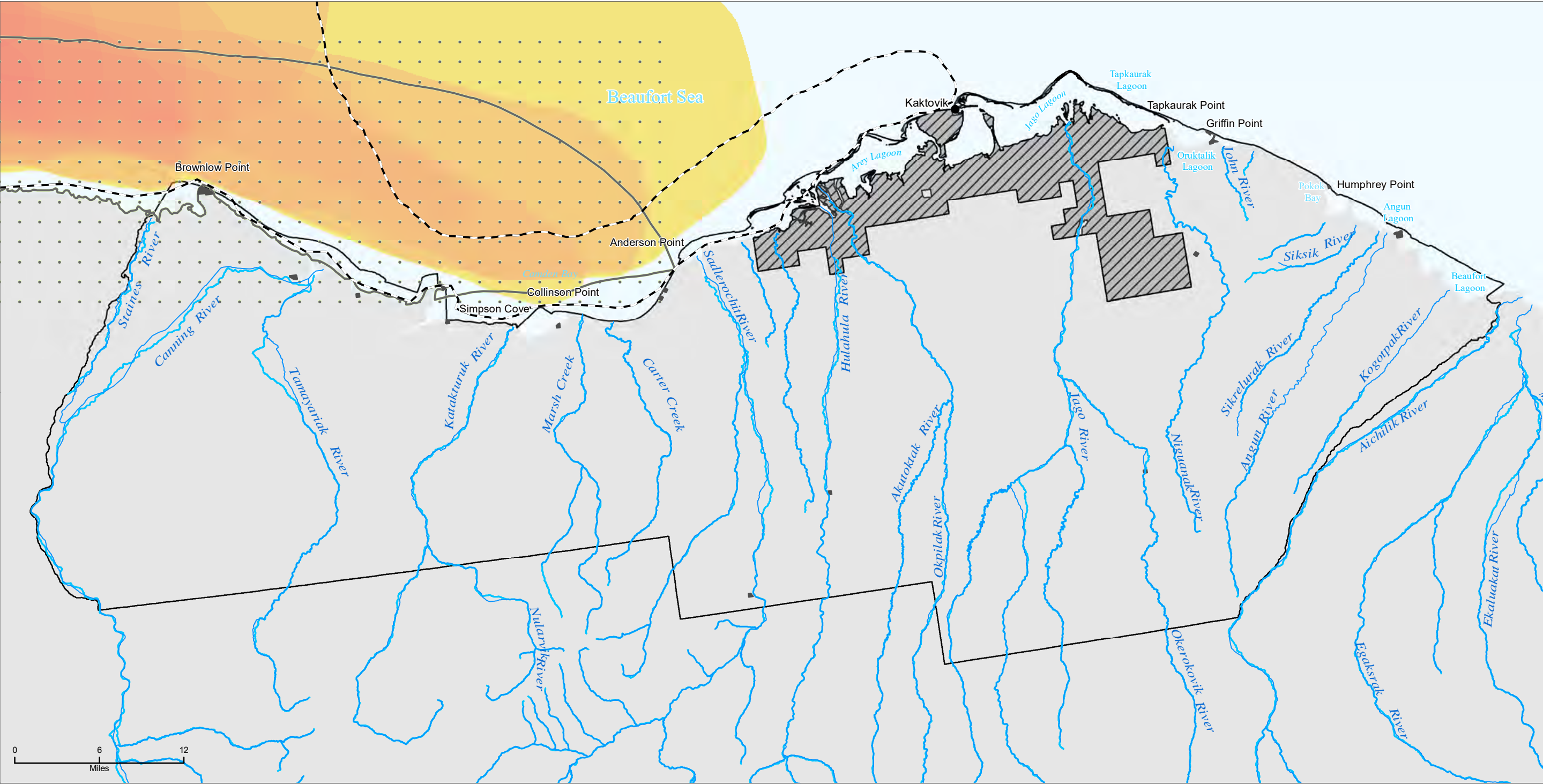


- All resources, 2014¹
- All resources, 1994–2003²
- All resources, 1973–1986³
- All resources, early 1970s⁴
- All resources, lifetime prior to 1979⁵
- Overlapping subsistence use areas all resources, 1995–2006⁶
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

Data Source: BLM GIS 2022, USFWS GIS 2022 1) Brown et al. 2016 2) BLM 2004 3) Pedersen 1986 4) Brown 1979 5) Pedersen 1979 6) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023



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- Whaling, 1973–1986¹
- Whales, lifetime prior to 1979²
- Overlapping³ subsistence use areas bowhead, 1995–2006
- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority

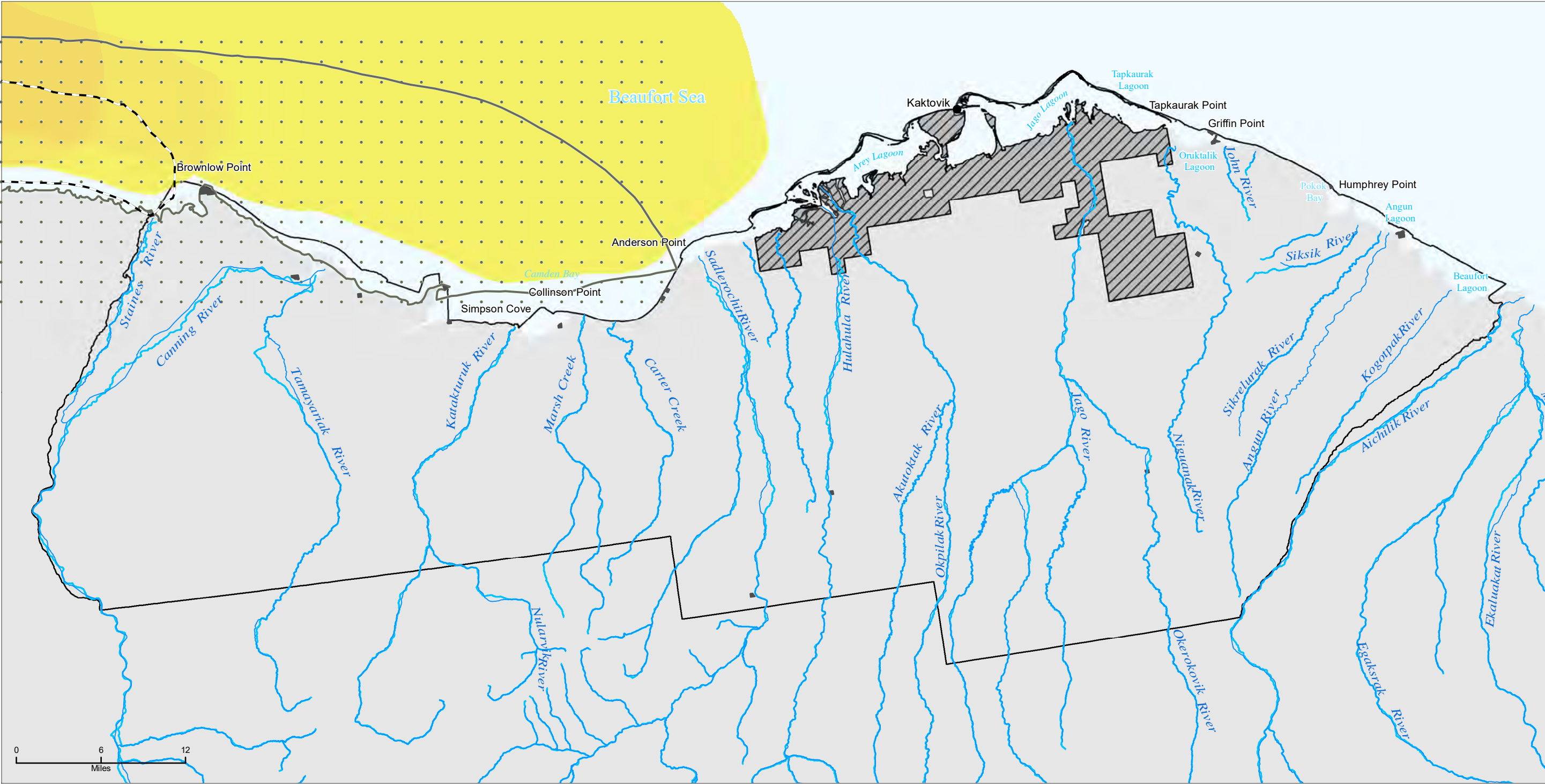



Data Source: BLM GIS 2022, USFWS GIS 2022
1) Pedersen 1986 2) Pedersen 1979 3) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023


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Nuiqsut Seal Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |




-  Seal, 1973–1986¹


 Seal, lifetime prior to 1979²

Overlapping³
subsistence
use areas
seal,
1995–2006


High

Low

 Coastal Plain Supplemental EIS boundary

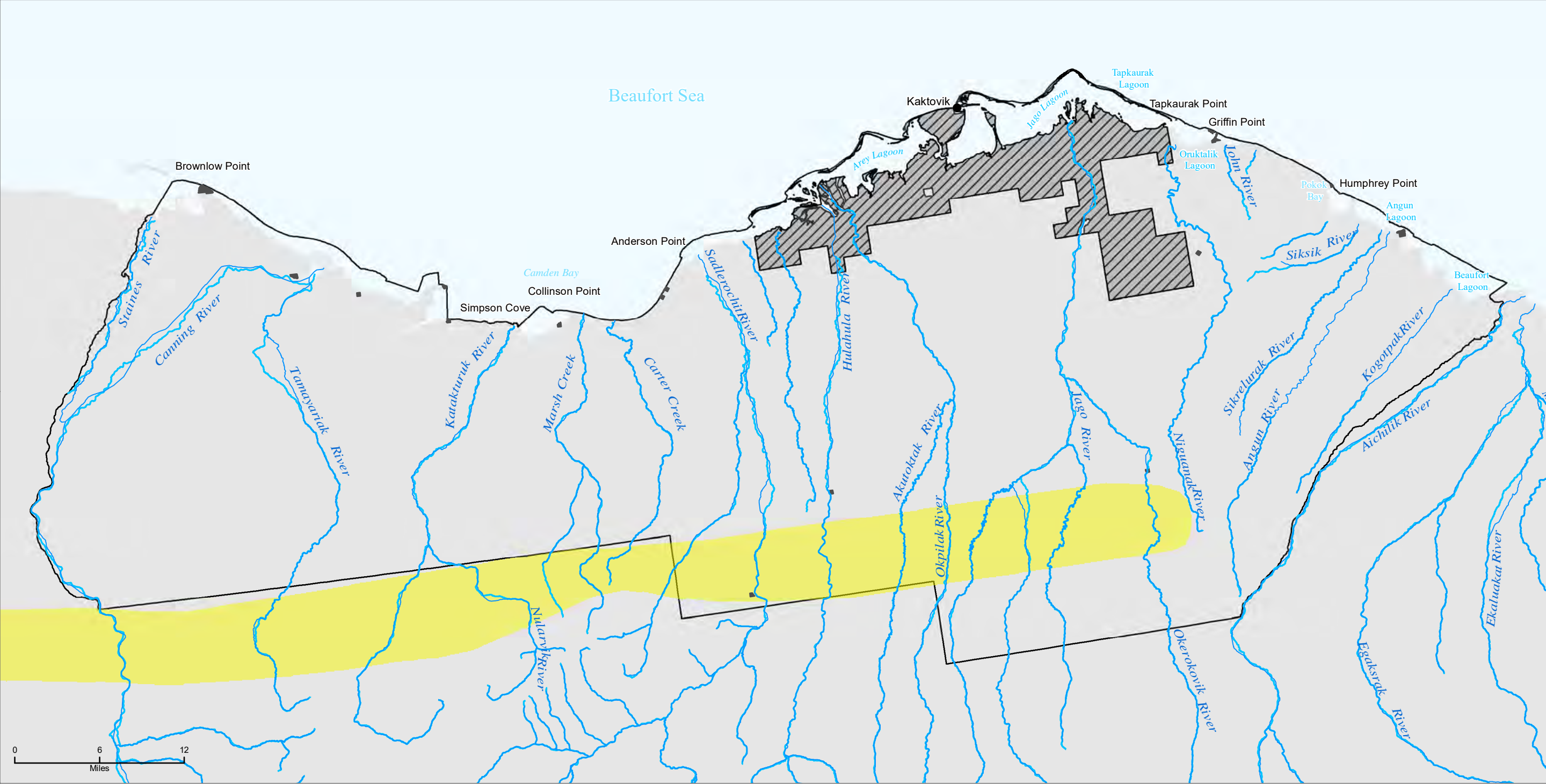
 Native Allotment

Excluded from Public Law 115-97

 Coastal Plain or outside the BLM's oil and gas leasing authority
- Data Source: BLM GIS 2022,
USFWS GIS 2022
1) Pedersen 1986 2)
Pedersen 1979 3) SRB&A
2010
Map prepared by: Stephen R.
Braund & Associates
Print Date: 07/14/2023
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- Map 3-60

Nuiqsut Wolf and Wolverine Subsistence Use Areas in Coastal Plain

U.S. DEPARTMENT OF THE INTERIOR | BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE | ALASKA | COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL EIS |



Overlapping¹
subsistence
use areas
wolf and wolverine,
1995–2006

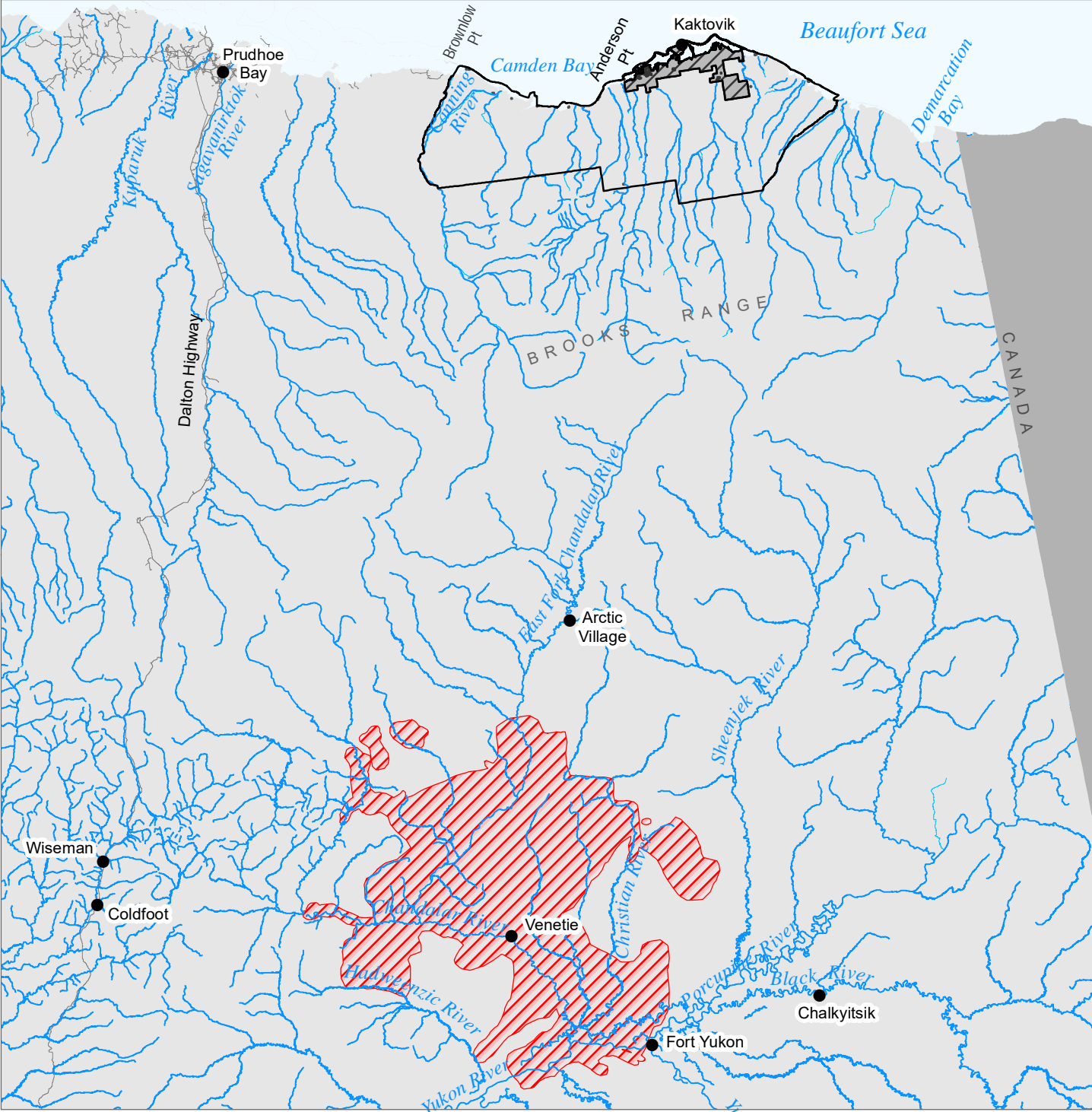
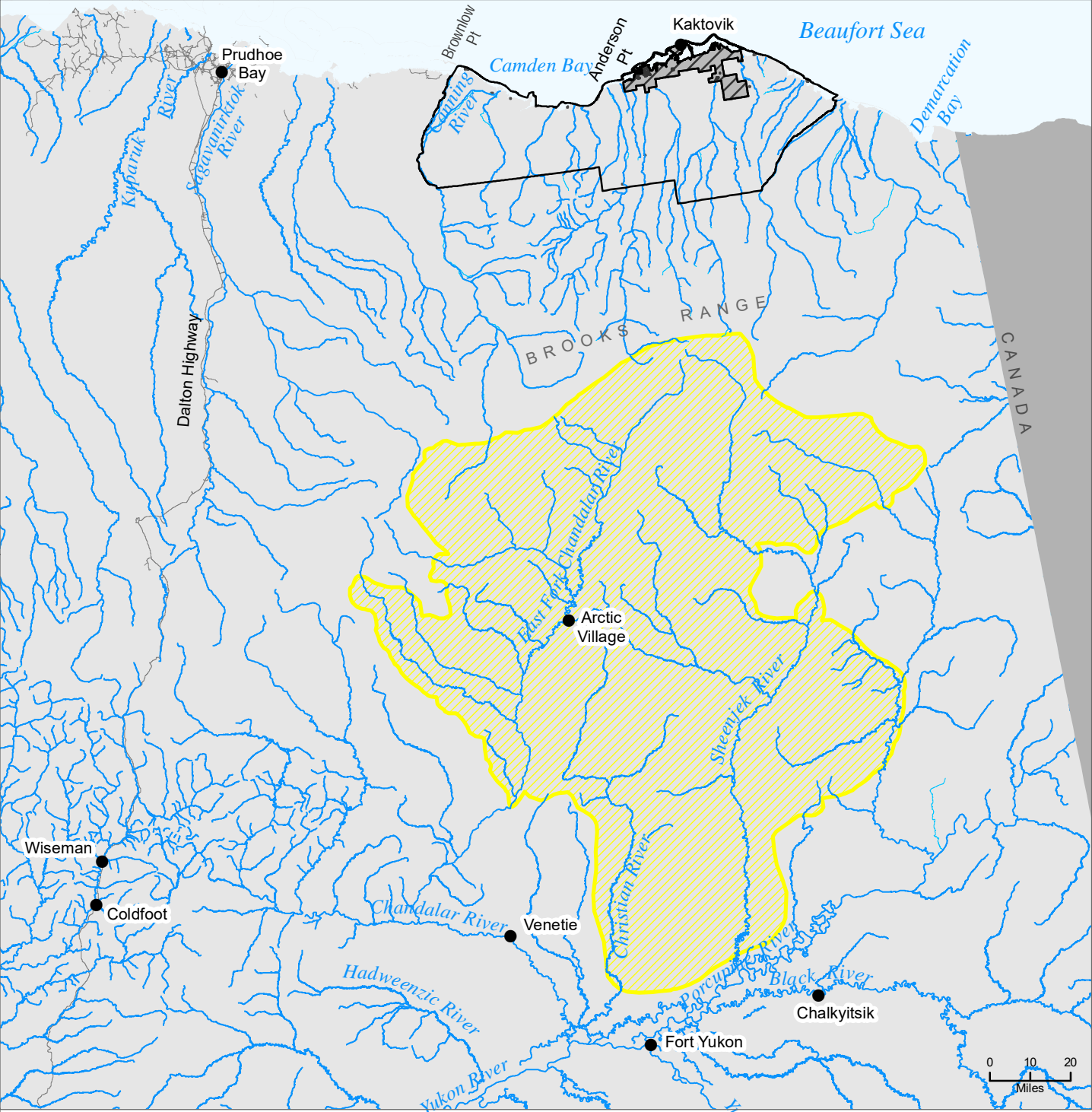
High
Low


- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority





Data Source: BLM GIS 2022,
USFWS GIS 2022
1) SRB&A 2010
Map prepared by: Stephen R.
Braund & Associates
Print Date: 07/14/2023


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- 

Arctic Village, all resources, lifetime prior to 1980¹
- 

Venetie, all resources, lifetime prior to 1981¹
- 

Coastal Plain Supplemental EIS boundary
- 

Native Allotment
- 

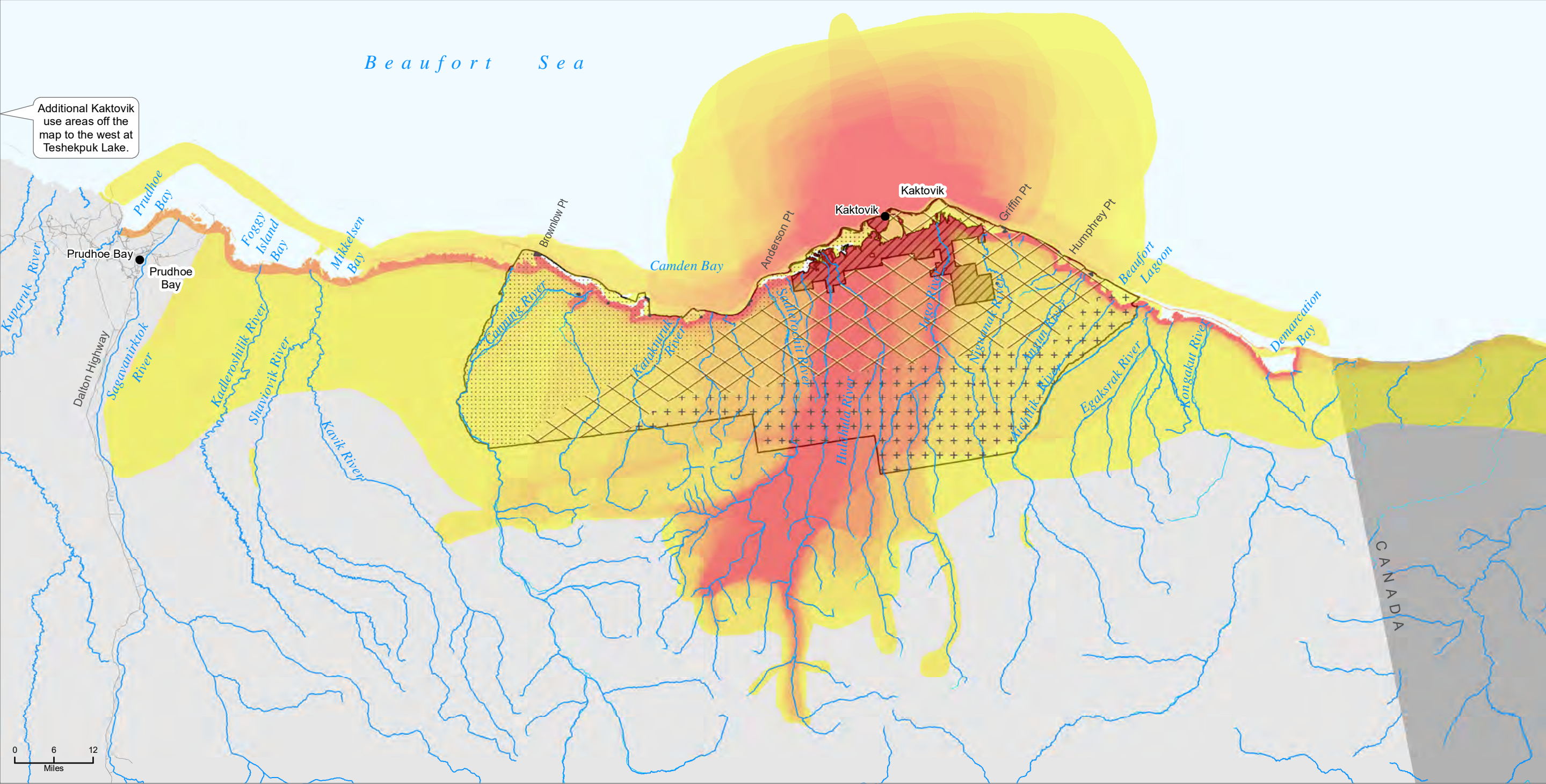
Excluded from Public Law 115-97
- 

Coastal Plain or outside the BLM's oil and gas leasing authority



Data Source: BLM GIS 2022,
USFWS GIS 2022
1) Caulfield 1983
Map prepared by: Stephen R.
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Print Date: 07/14/2023

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- High

Low

Overlapping¹ subsistence use areas all resources, 1996–2006
- Coastal Plain Supplemental EIS boundary

Native Allotment

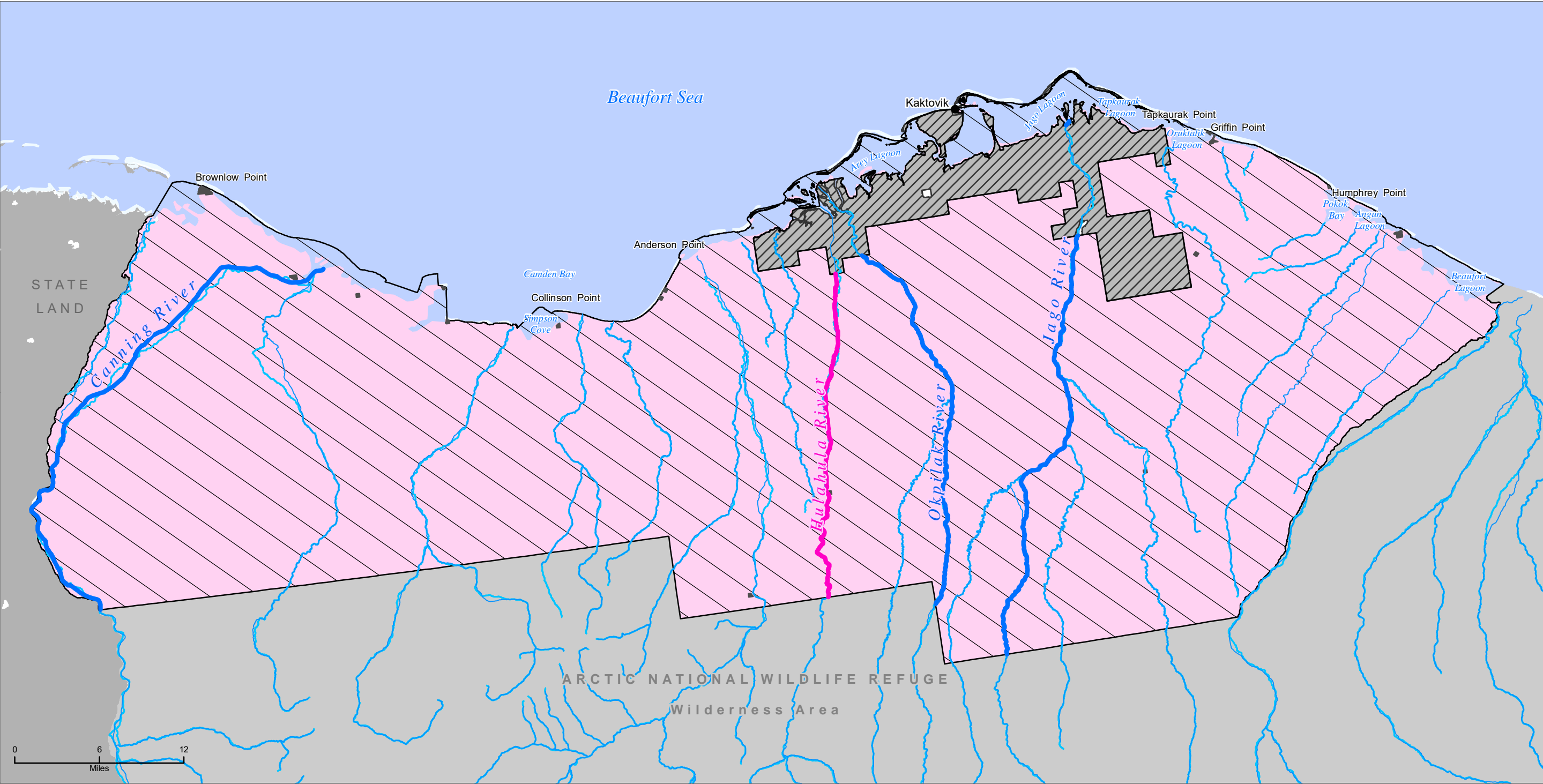
Excluded from Public Law 115-97

Coastal Plain or outside the BLM's oil and gas leasing authority
- High hydrocarbon potential
- Medium hydrocarbon potential
- Low hydrocarbon potential



Data Source: BLM GIS 2022, USFWS GIS 2022
1) SRB&A 2010
Map prepared by: Stephen R. Braund & Associates
Print Date: 07/14/2023

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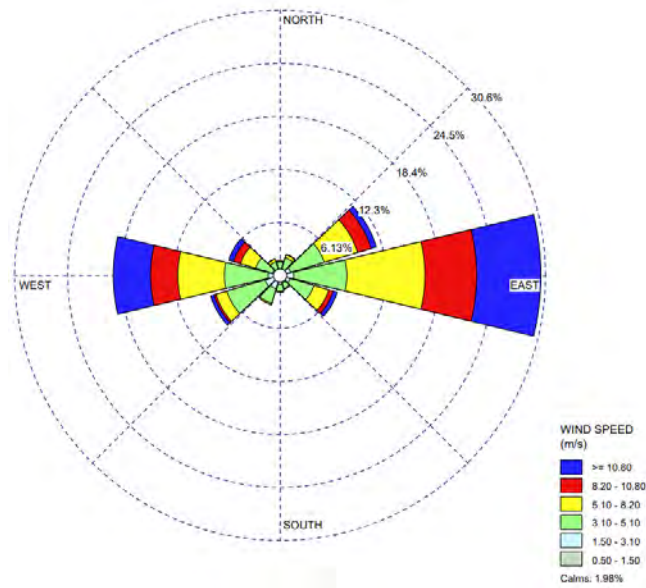
- Wild and scenic river, suitable
- Wild and scenic river, eligible
- Minimal management
- Marine protected area
- Marine protected area, interface

- Coastal Plain Supplemental EIS boundary
- Native Allotment
- Excluded from Public Law 115-97
- Coastal Plain or outside the BLM's oil and gas leasing authority



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Data Source: BLM GIS 2022,
USFWS GIS 2022
Print Date: 07/17/2023



Source: Iowa State University (copyright: used with permission), Iowa Environmental Mesonet (IEM)
website: <http://mesonet.agron.iastate.edu/>

Figure 3-1: Wind Rose Plot for Barter Island, Kaktovik, Alaska

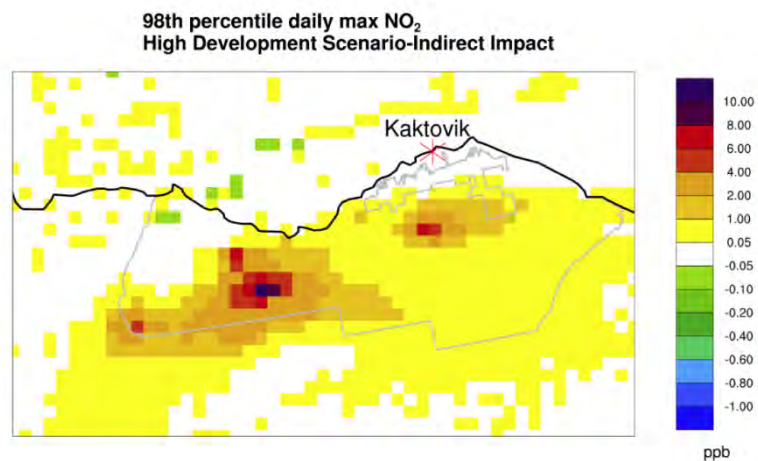


Figure 3-2. Modeled Spatial Distribution of NO₂ impacts Due to the Hypothetical Oil and Gas Development under Alternative B.

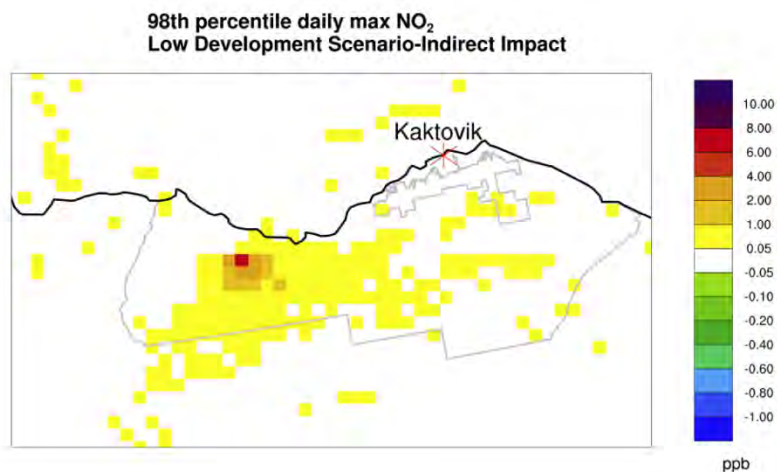
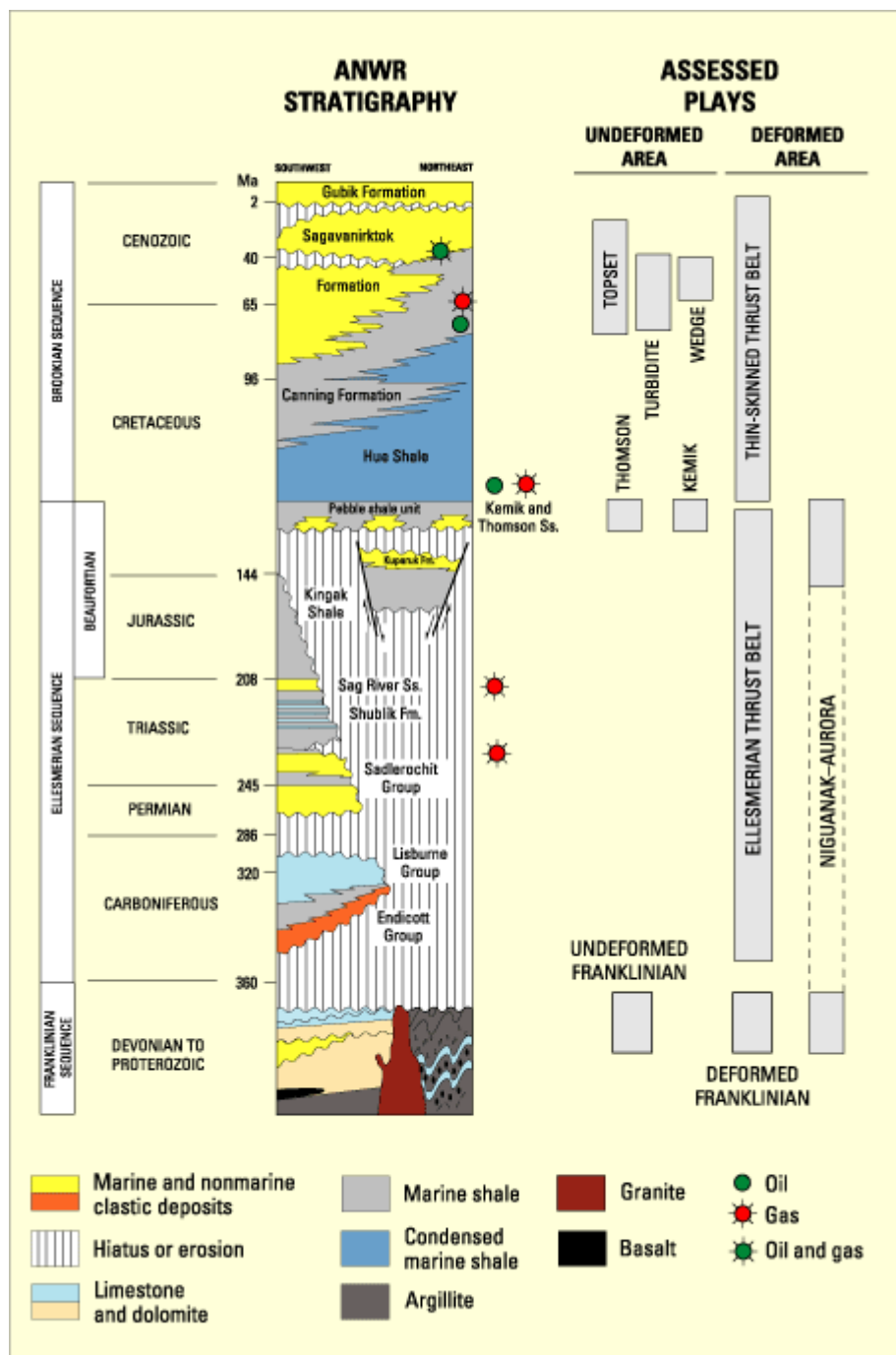
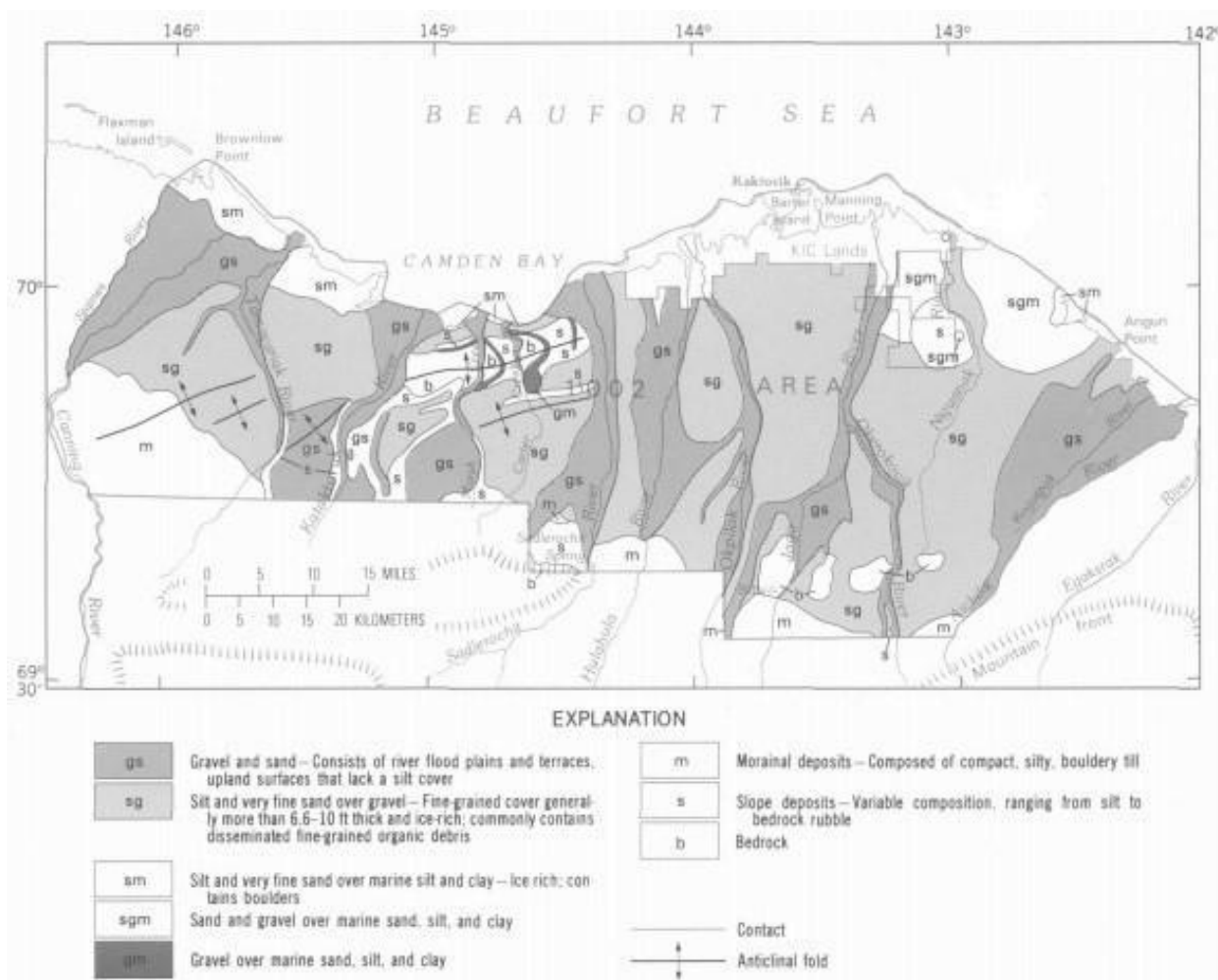


Figure 3-3. Modeled Spatial Distribution of NO₂ impacts due to the Hypothetical Oil and Gas Development under Alternative D.



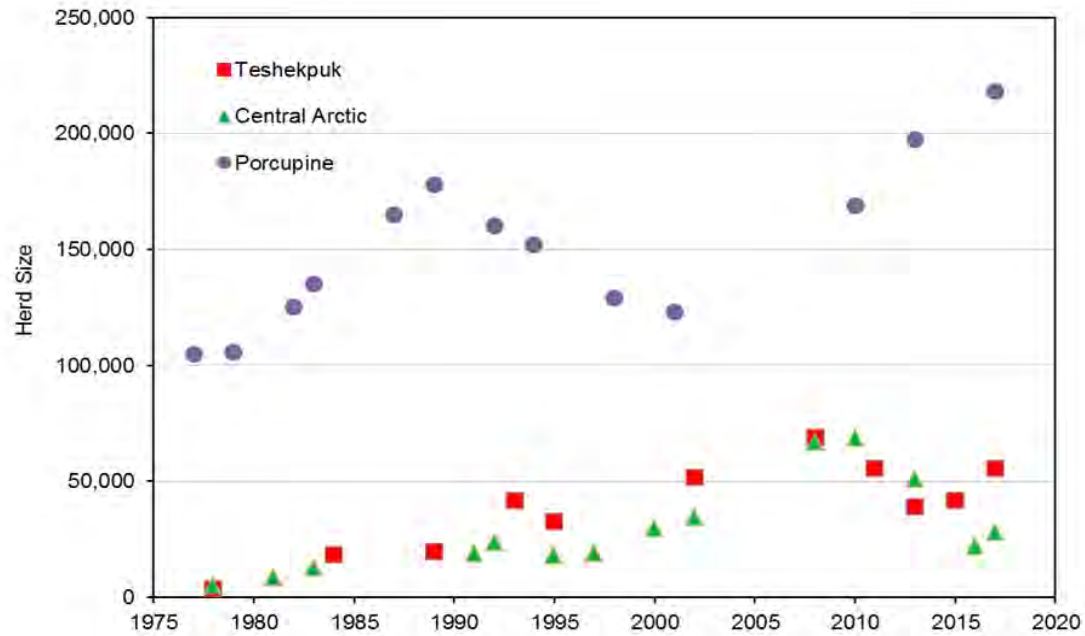
Source: US Geological Survey (USGS 1998b) Fact Sheet 0028-02 Figure 3

Figure 3-4: Stratigraphy of the Coastal Plain



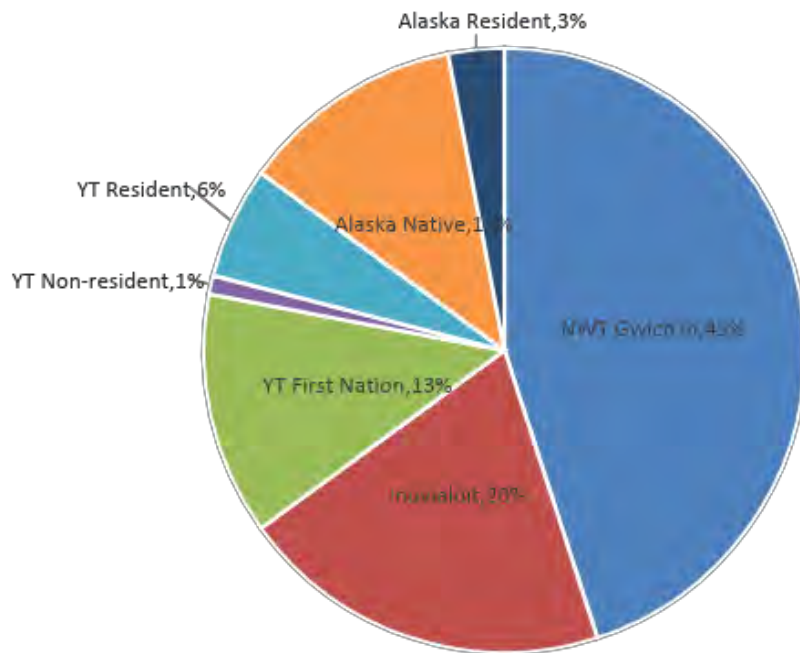
Source: Clough et al. 1987

Figure 3-5: Generalized Surficial Deposits of the Coastal Plain Area



Source: Lenart 2018

Figure 3-6: Population Size of Three Caribou Herds in Arctic Alaska, 1977-2017



Source: Porcupine Caribou Management Board 2010

Figure 3-7: Average Portion of Harvest of Porcupine Caribou Herd Between the US and Canada (1992-1994)



Figure 3-8: Visual Resources Photo 1

Typical layout for central processing facility with airstrip and pipeline (Alpine CPF on State land).



Figure 3-9: Visual Resources Photo 2

Typical layout for exploration well with ice pad and ice road (Stony Hill well site in NPR-A).