Assumable Waters Challenges in Alaska*

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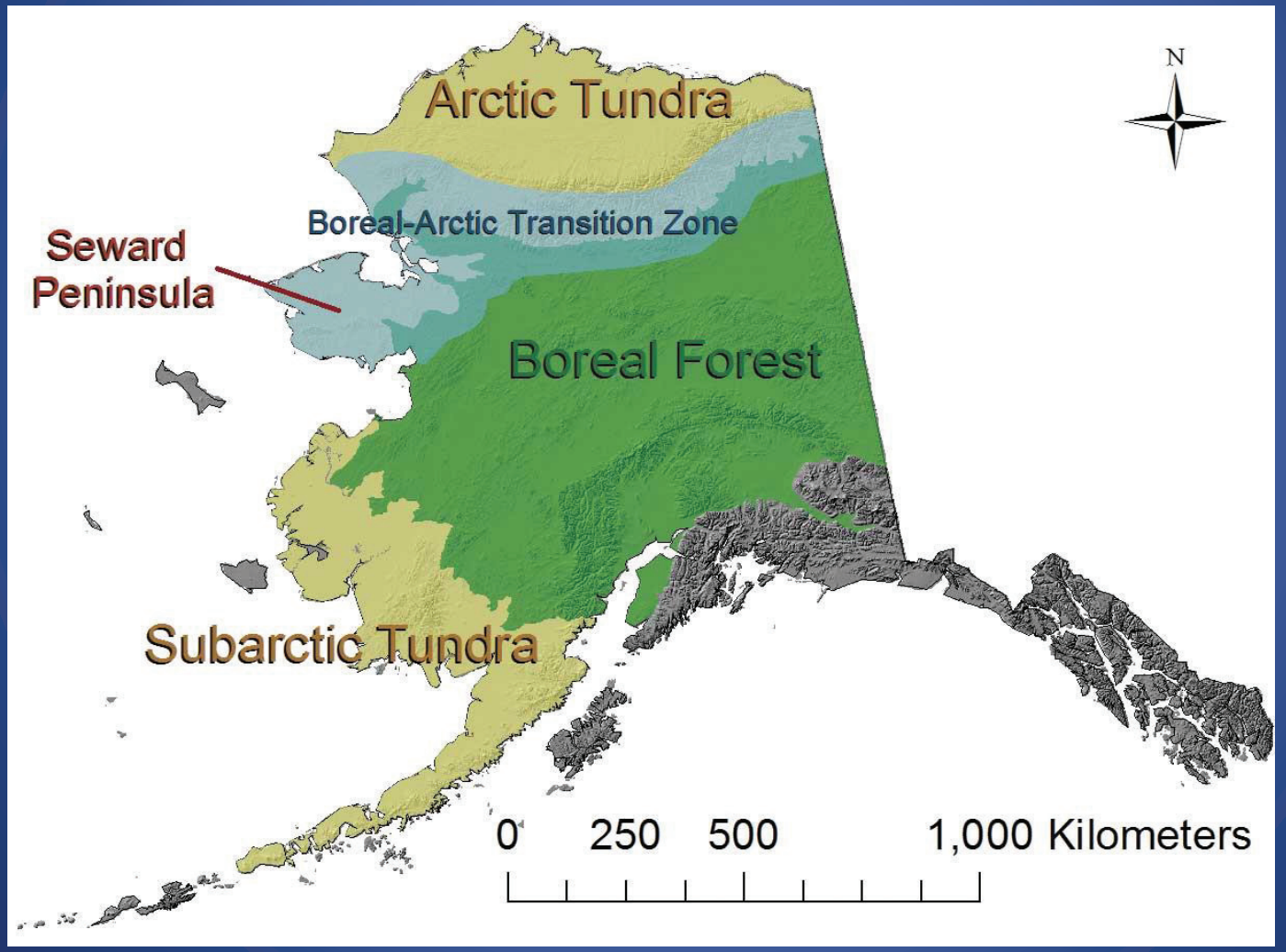
*(*This presentation does not represent the final position of the State of Alaska)*

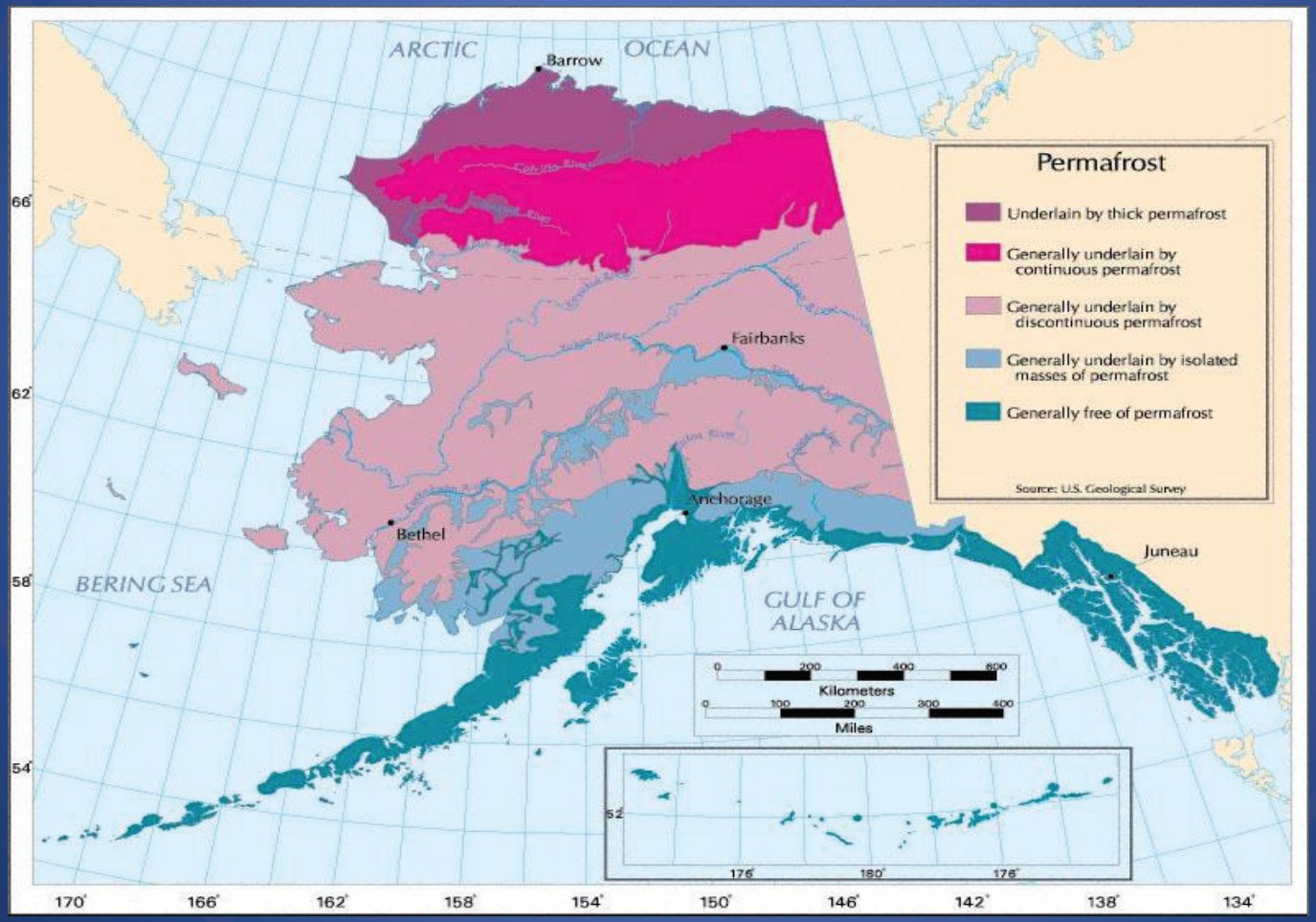
Photo: Eric Metz, Auke Lake, Juneau, Alaska 11/08/2013

Attu Island in California--Ketchikan in Florida; Kodiak Island in Texas and Barrow on US/Canadian Border

Alaska Ecoregions

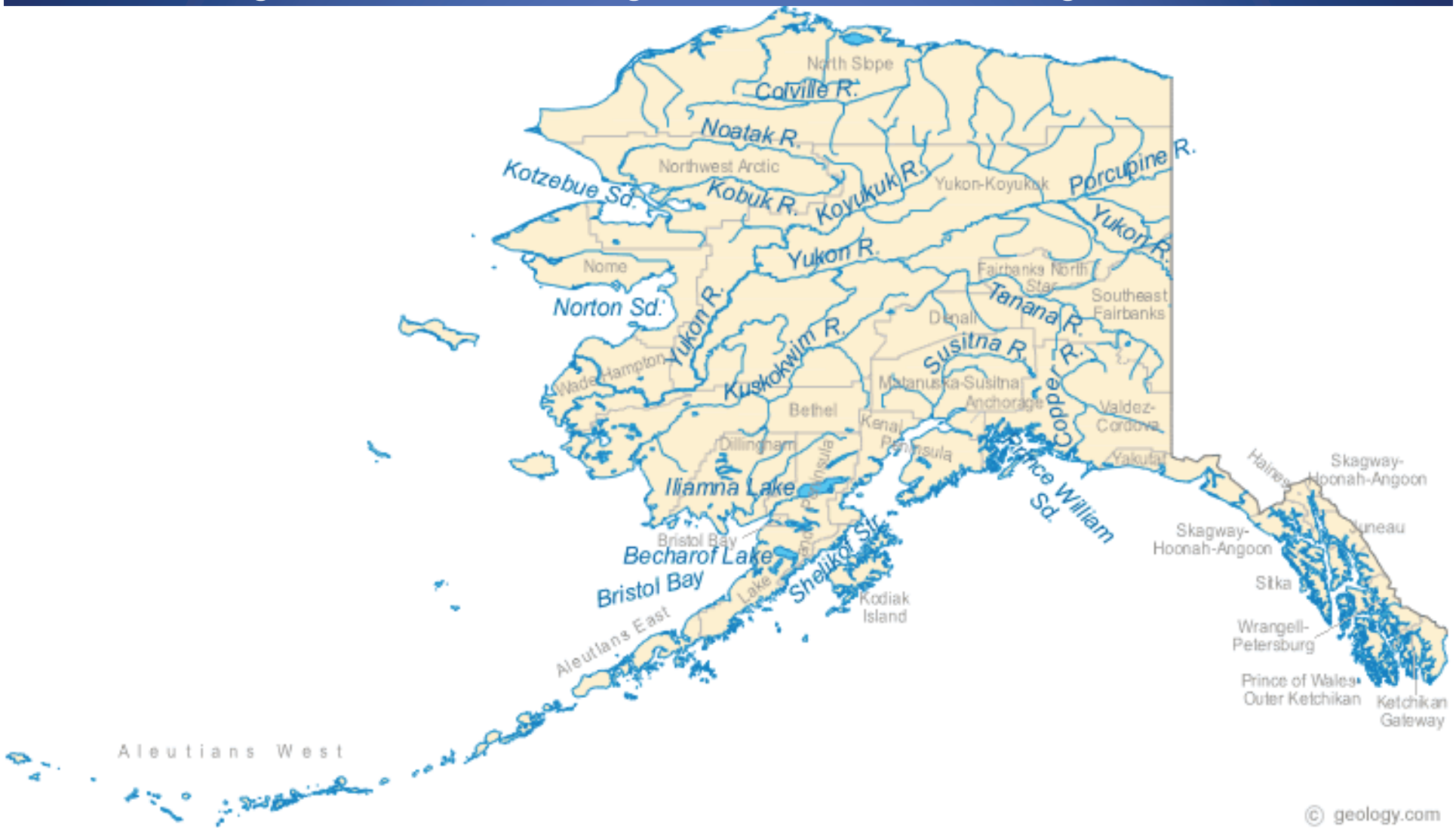


Permafrost


ARCTIC OCEAN
Barrow
Fairbanks
Anchorage
Bethel
Juneau
BERING SEA
GULF OF ALASKA
Permafrost
Underlain by thick permafrost
Generally underlain by continuous permafrost
Generally underlain by discontinuous permafrost
Generally underlain by isolated masses of permafrost
Generally free of permafrost
Source: U.S. Geological Survey
Kilometers
Miles
66°
62°
58°
54°
170°
166°
162°
158°
154°
150°
146°
142°
138°
134°

PART I WATERS

60 million acres of water area statewide. Alaska Corps lists 47 navigable lakes and rivers, e.g., the Yukon River is navigable its entire 1,432 mile length in AK

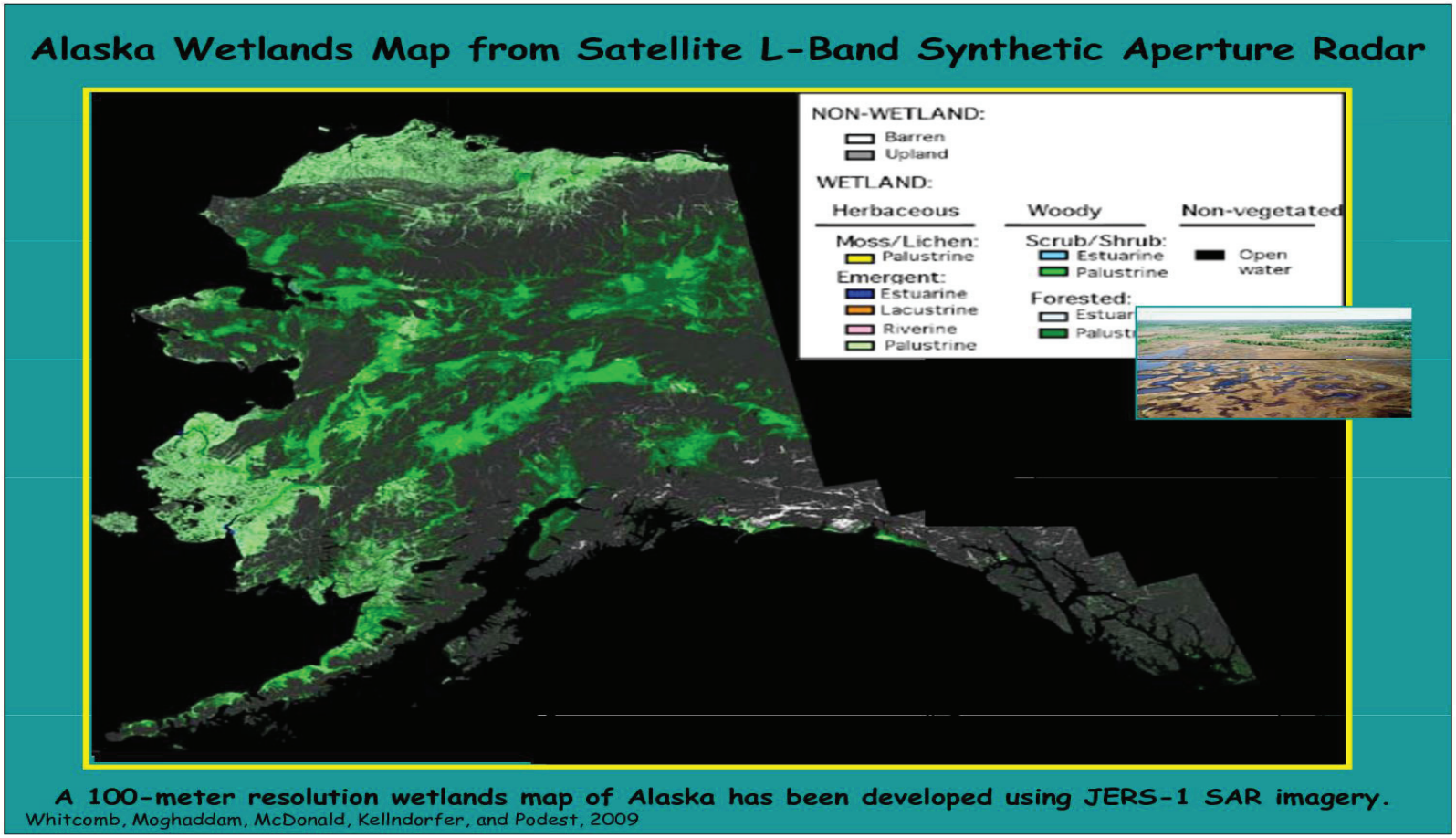


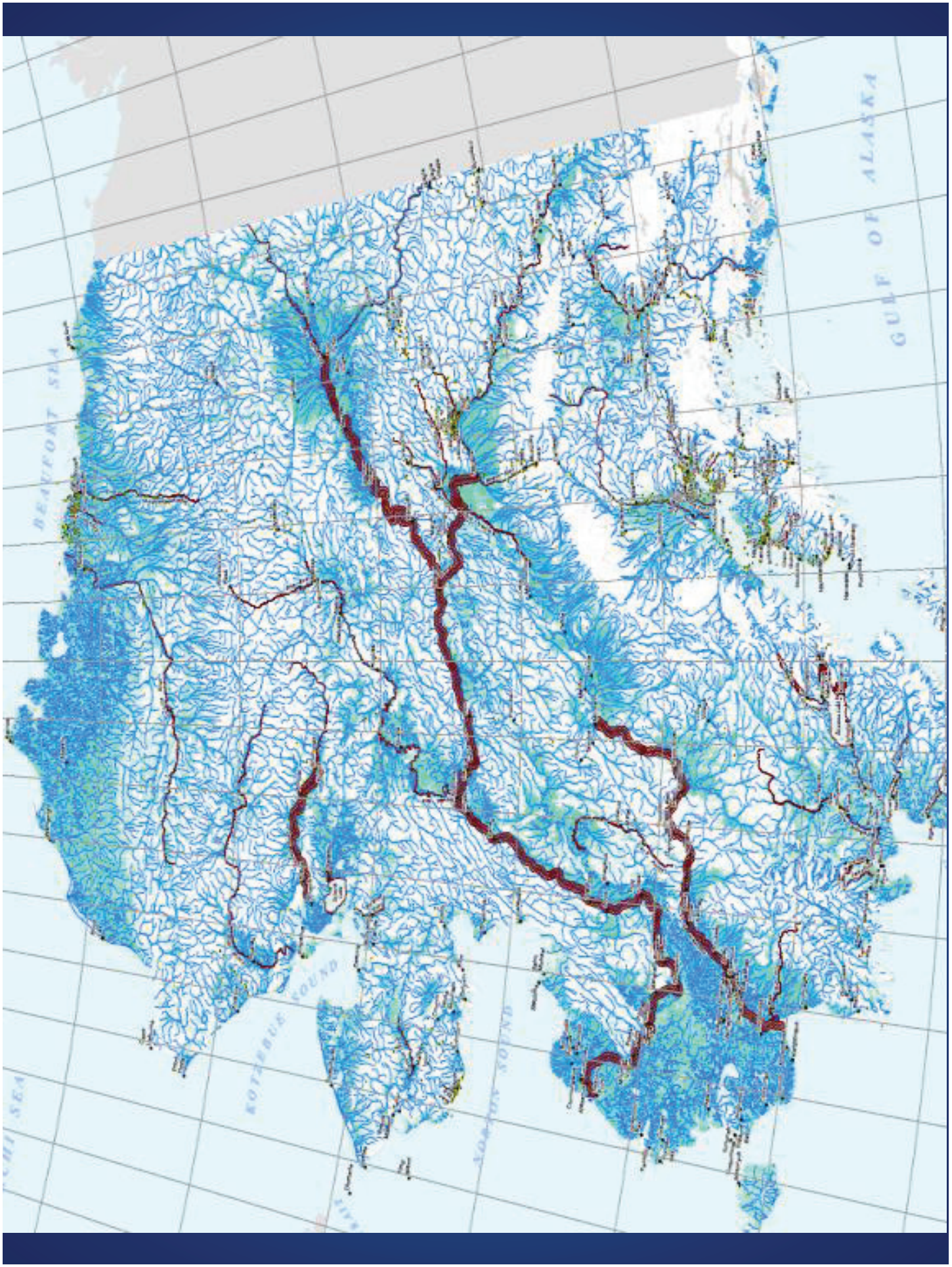
Alaska Regions

Far North, Interior, Southwest, Southcentral and Inside Passage

Alaska Wetlands

130 million acres of wetlands/375 million acres total land area
35% of land area is wetlands/population 731,449



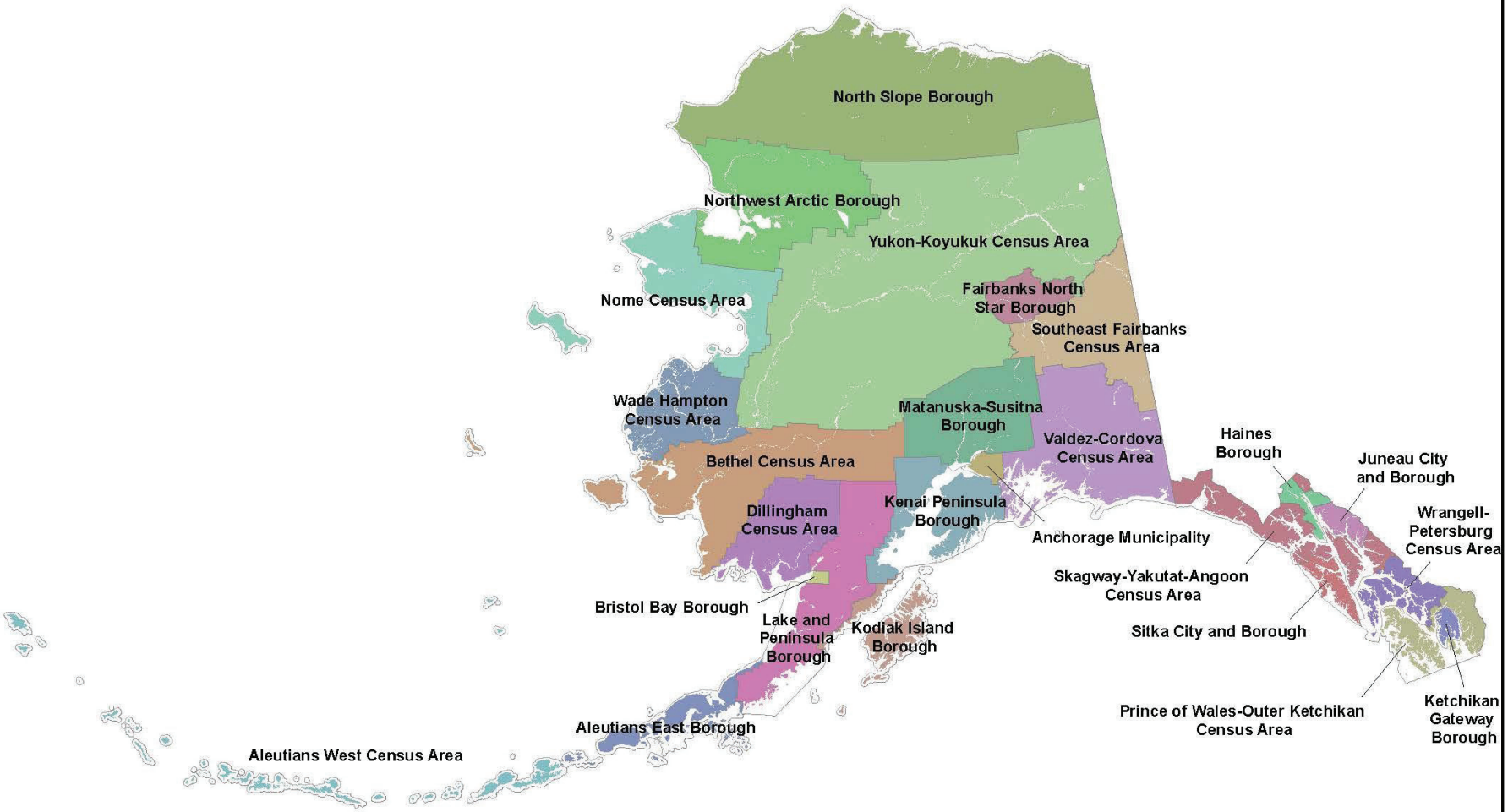

BEAUFORT SEA
GULF OF ALASKA
KOTZEBUE SOUND

Alaska Wetlands and Waters Statistics

• Section 10 Rivers/Streams	8,000 miles
• All Rivers/Streams	900,000 miles
• Section 10 Lakes	1.5 million ac.
• All Lakes	15 million ac.
• Tidal Shoreline*	34,000 miles
• Wetlands	130 million ac.
• Total Land Area	375 million ac.

* Ocean coastline more than all US states combined

Alaska Boroughs/Census Areas - 1990



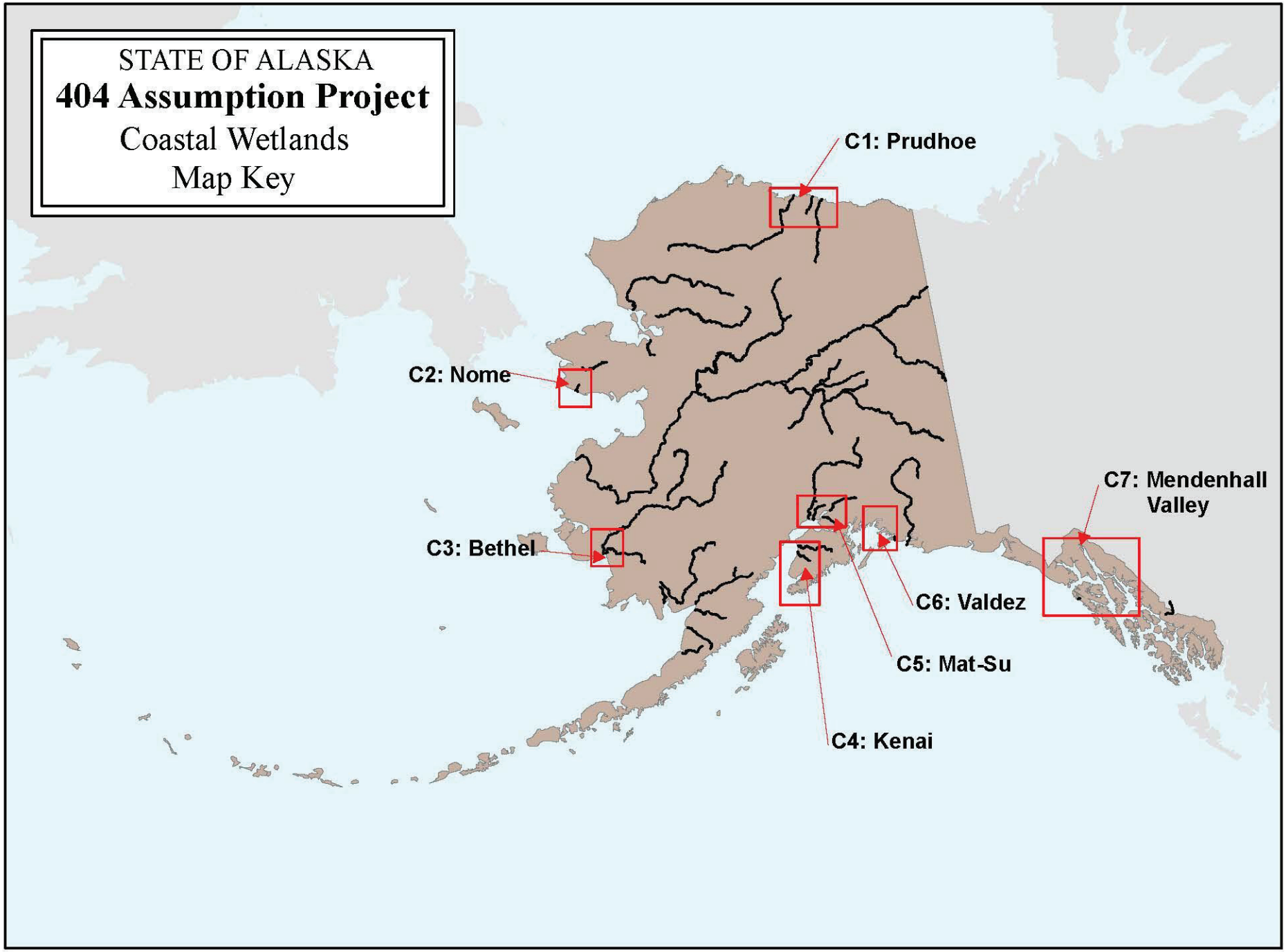
Produced by: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Source: National Historical Geographic Information System

Alaska District Permit Workload Concentrations by Borough

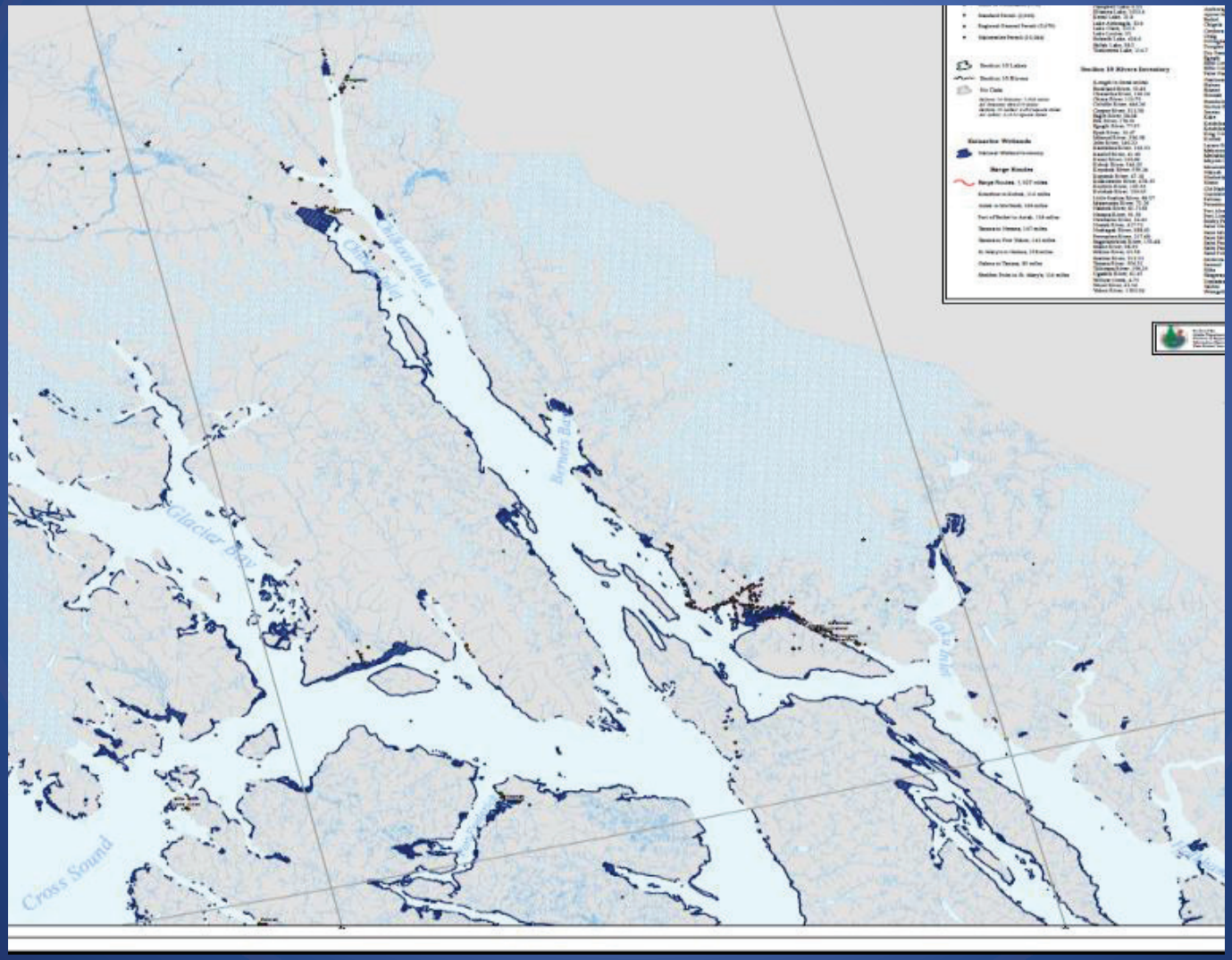
Alaska Boroughs	Total Permits Issued 2005-2013
1. Kenai	1,218
2. Matanuska-Susitna	515
3. North Slope	464
4. Anchorage	464
5. Fairbanks North Star	400
6. Juneau	288
7. Valdez-Cordova	286
8. Yukon-Koyukuk	285
9. Prince of Wales	280
10. Nome	257
11. Bethel	254
12. Ketchikan Gateway	248
13. Wrangle-Petersburg	218
14. Southeast Fairbanks	184
15. NW Arctic	161
16. Sitka	160
17. Kodiak Island	112
18. Lake and Peninsula	90
19. Skagway-Hoonah-Angoon	87
20. Denali	86
21. Wade Hampton	74
22. Haines	58
23. Aleutians West	44
24. Aleutians East	39
25. Dillingham	39
26. Yakutat	27
27. Bristol Bay	14

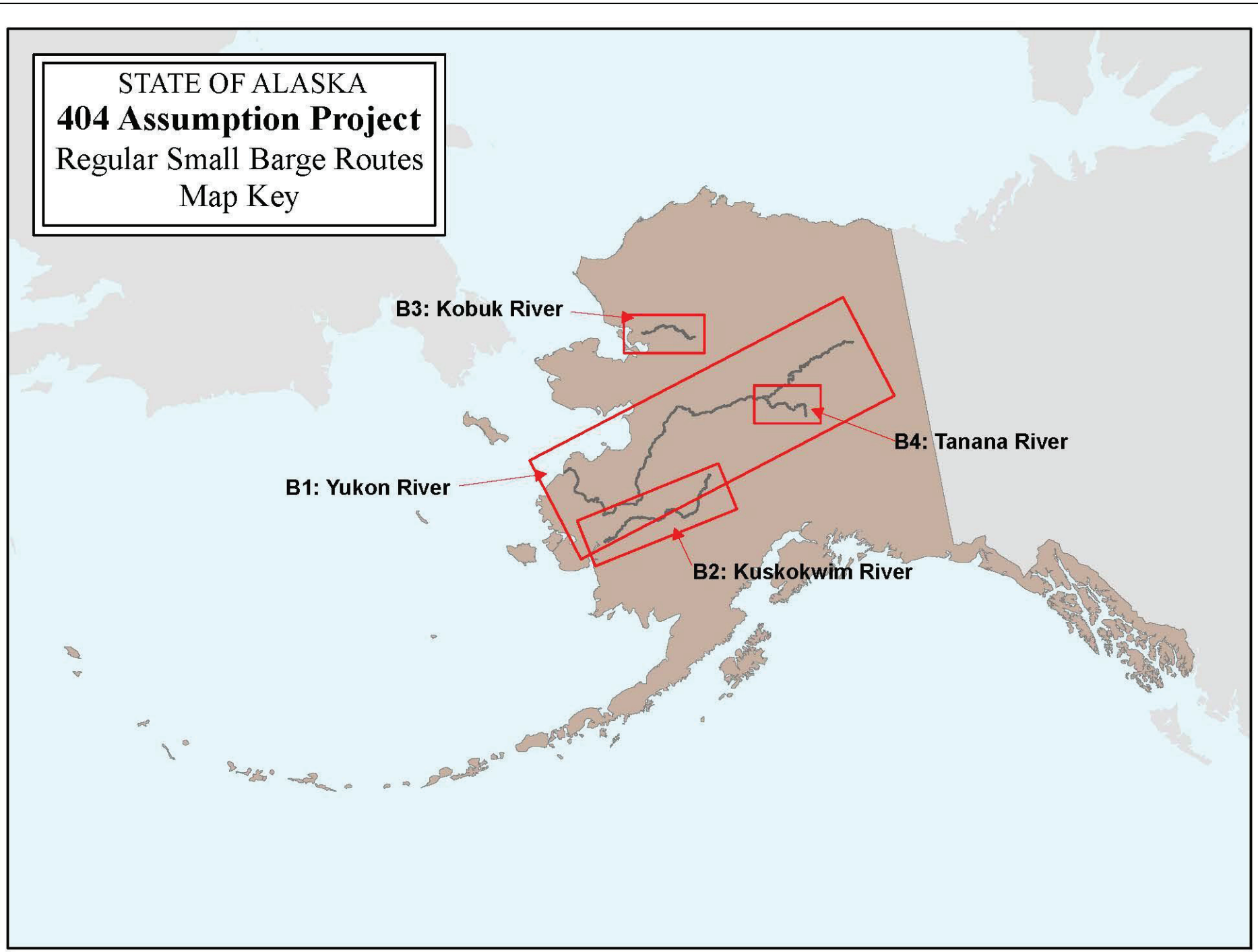
Tidally Influenced Areas (Cowardin Estuarine)

Project maps produced by Erin Palmer, Alaska DNR, GIS Services

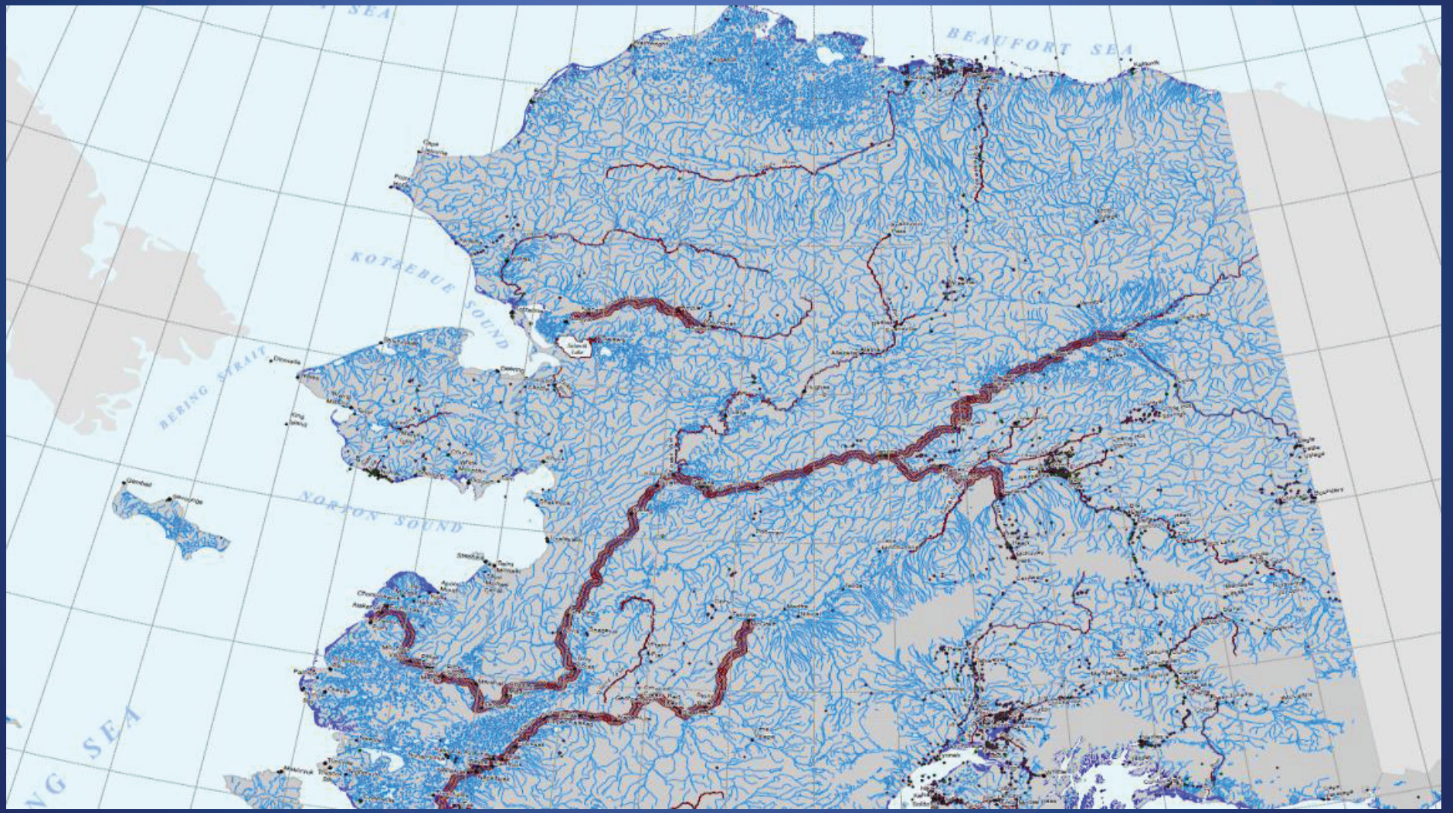

STATE OF ALASKA
404 Assumption Project
Coastal Wetlands
Map Key
C1: Prudhoe
C2: Nome
C3: Bethel
C4: Kenai
C5: Mat-Su
C6: Valdez
C7: Mendenhall Valley

Northern SE Alaska Tidal Waters



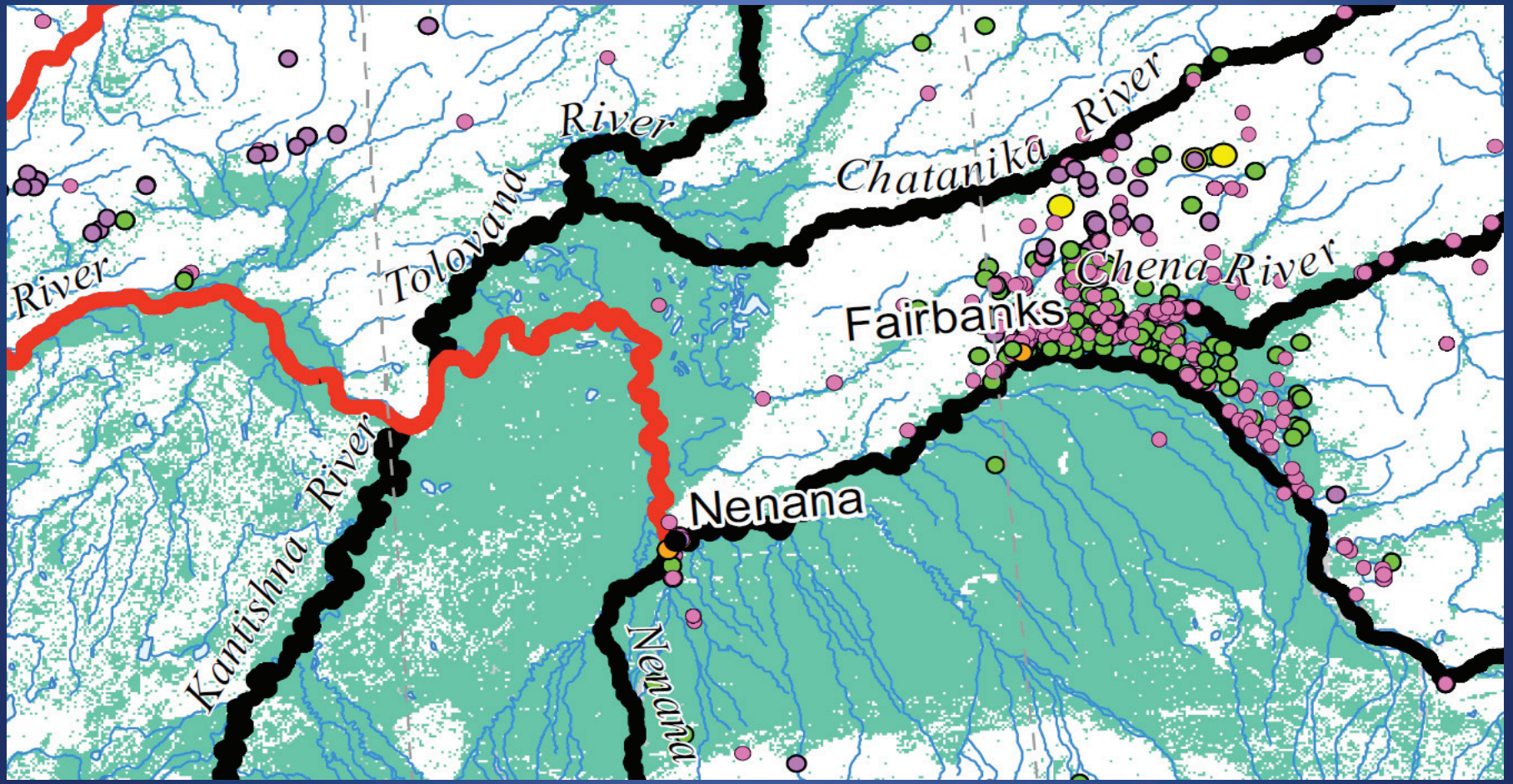

STATE OF ALASKA
404 Assumption Project
Regular Small Barge Routes
Map Key
B3: Kobuk River
B4: Tanana River
B1: Yukon River
B2: Kuskokwim River

Far North Region—Section 10 Rivers and Barge Routes



PART II ADJACENCY

Fairbanks North Star (permit locations illustrative)



Chena River Vulnerability Assessment

Figure 1-1a Base Map with Aerial Photo

Source: Fairbanks North Star Borough GIS; Pictometry imagery dated 2012.
Figure Prepared by Ecology and Environment, Inc. Anchorage, AK May 16, 2014

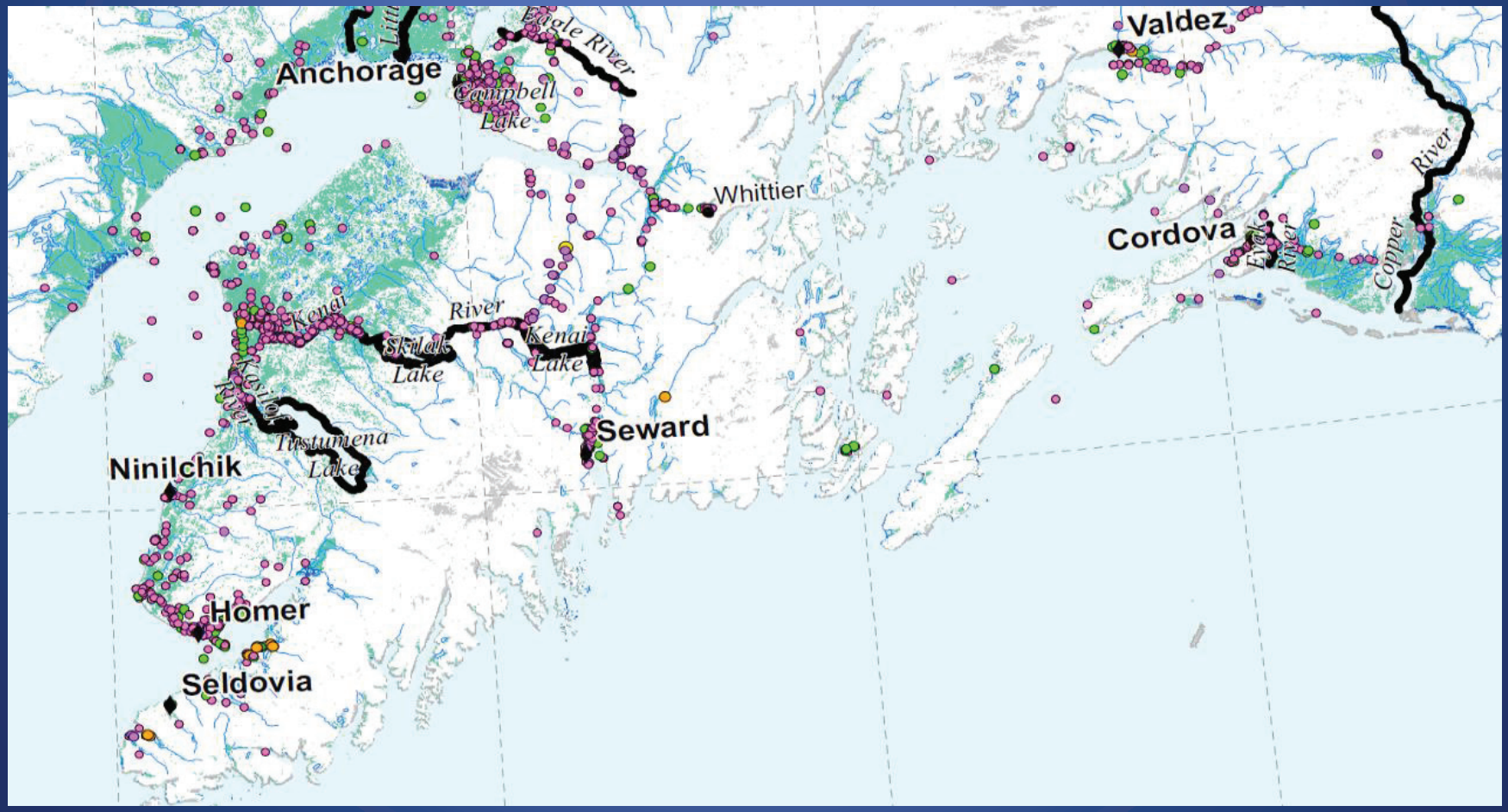
Legend

- Chena River
- Other Rivers and Lakes
- Major Roads
- Railroad
- Pipeline

Tanana & Yukon Confluence East of Fairbanks

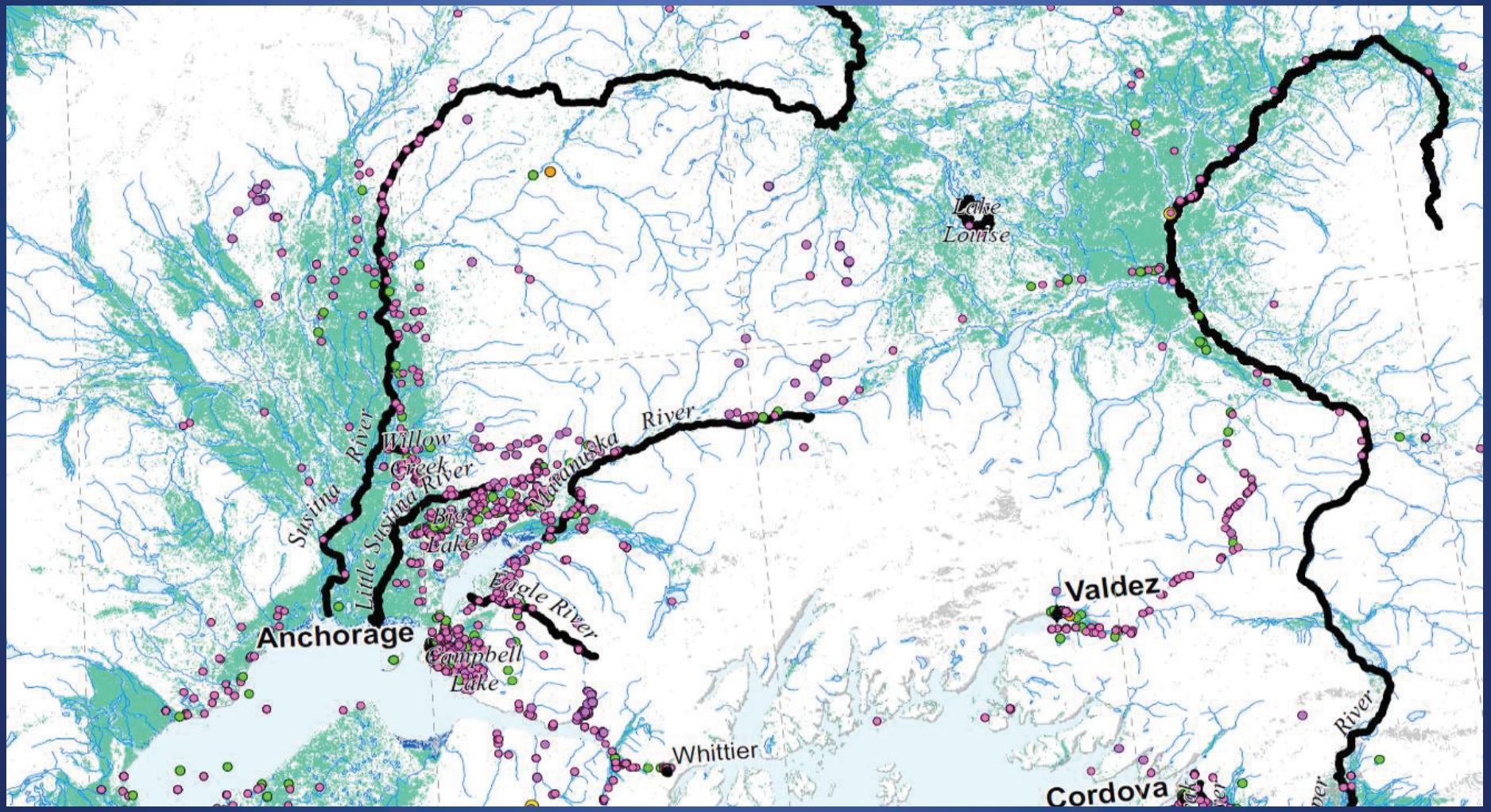
Kenai

(permit locations illustrative only)



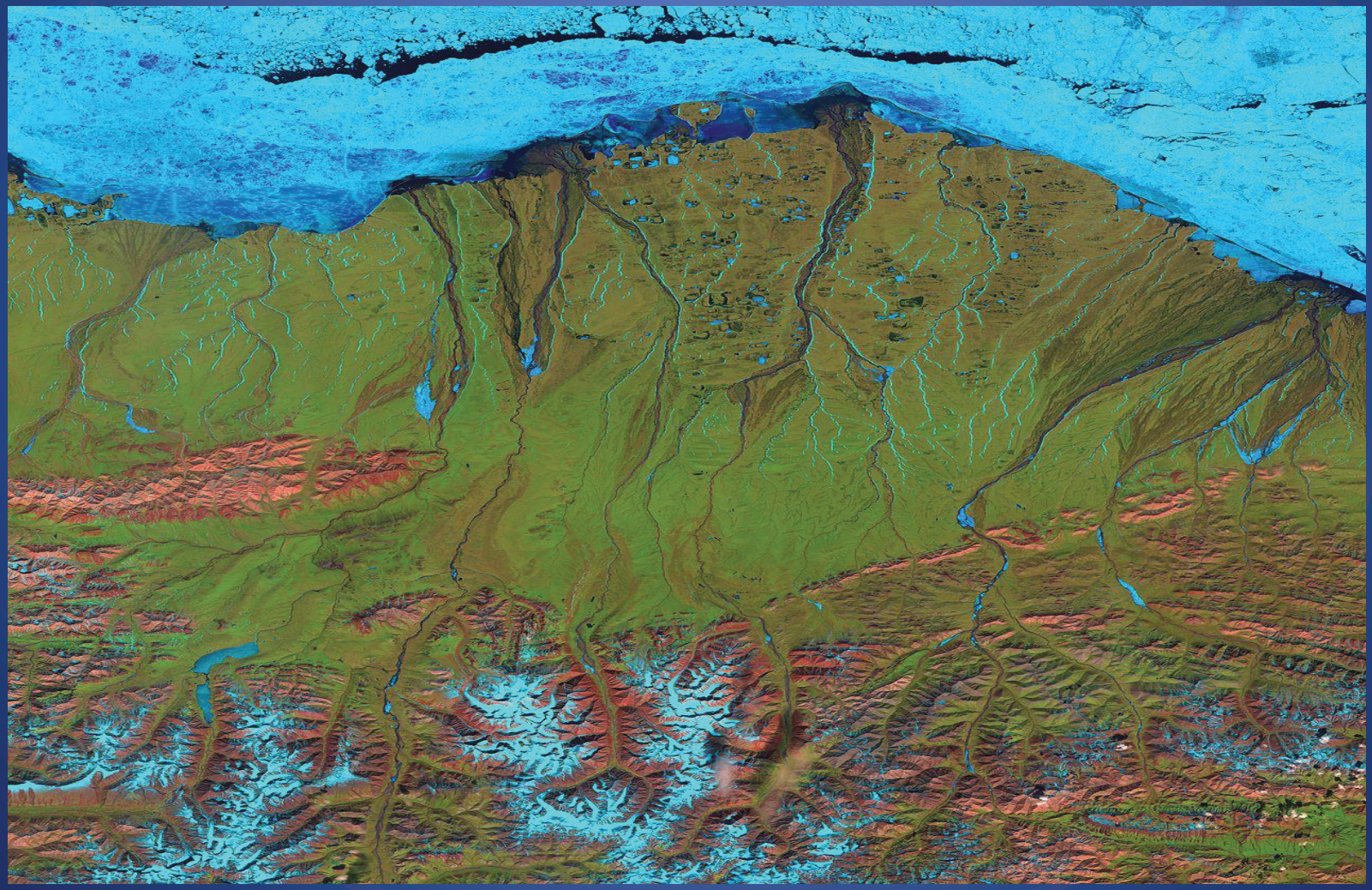
Anchorage and Matanuska-Susitna

(permit locations illustrative only)



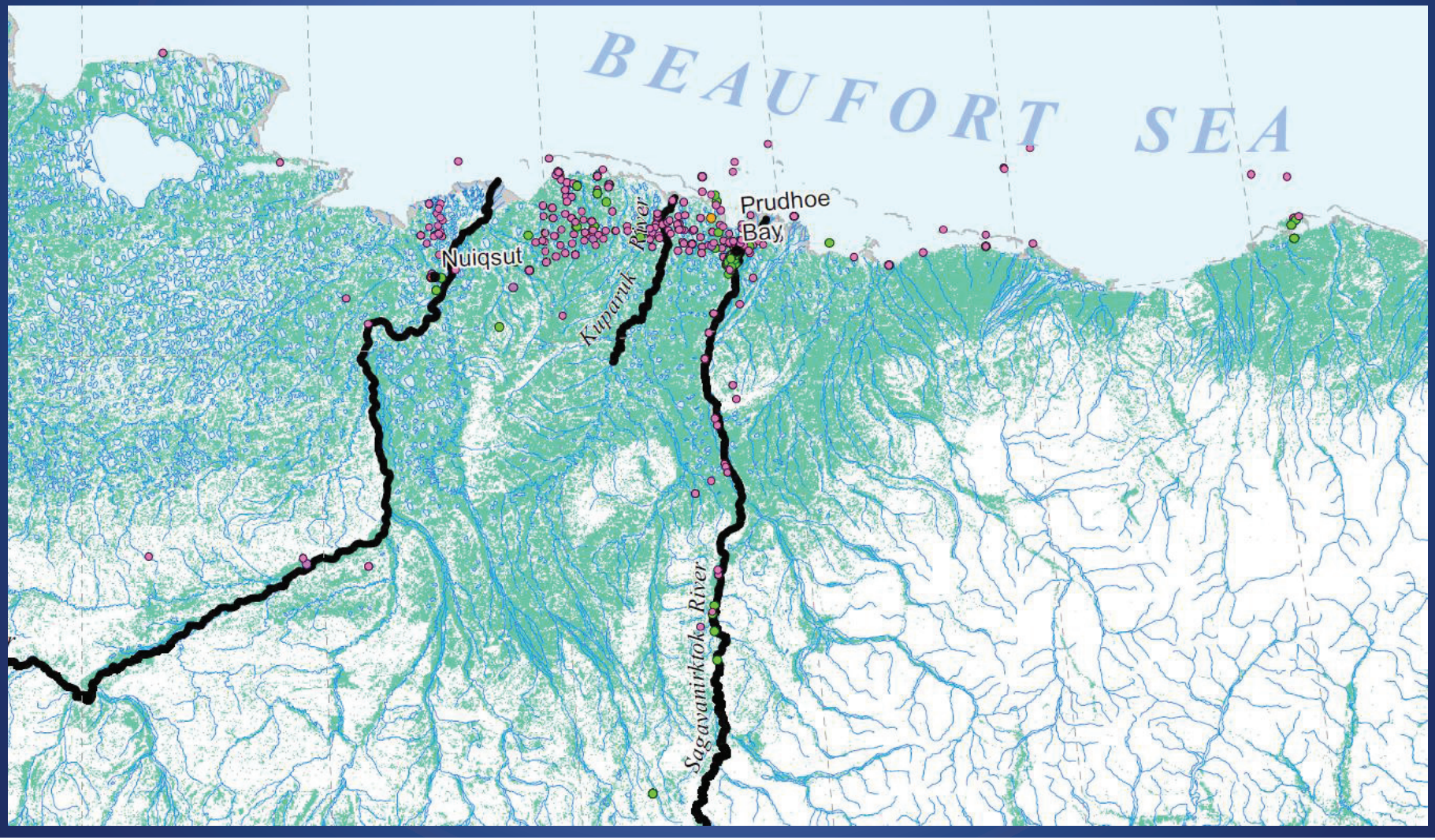
Landsat 7 False Color Image of North Slope Coastal Tundra

At the top of the scene is the drifting sea ice in Beaufort Sea. A dark blue strip of open water, known as a flaw lead, separates the fast ice from the drifting sea ice. The Brooks Range is visible at the bottom. Date: 16 June 2001 Author: NASA

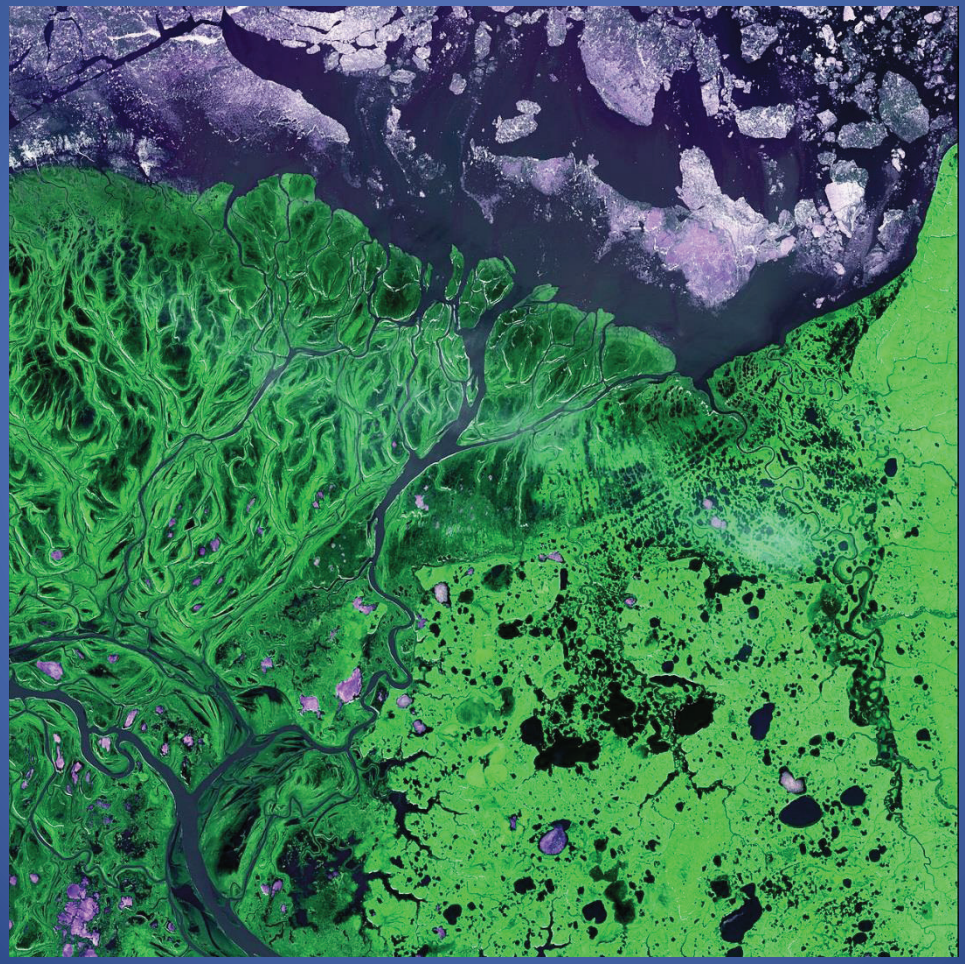


North Slope

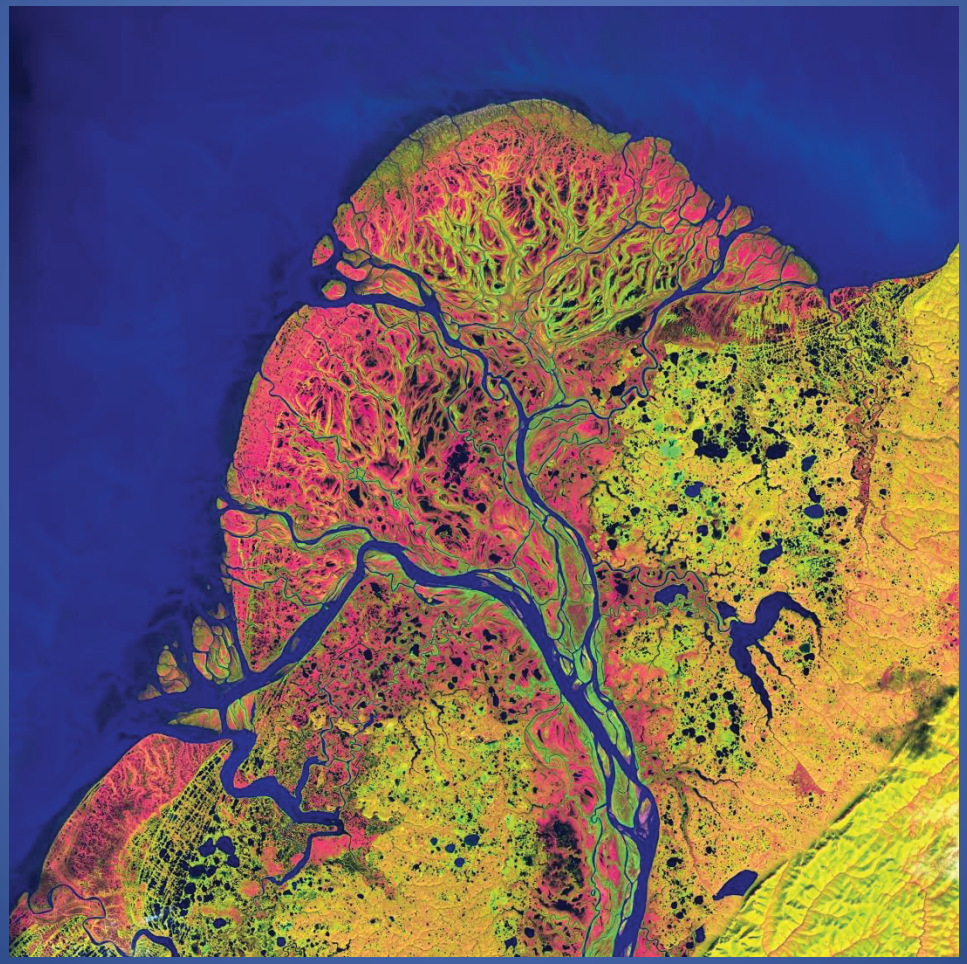
(permit locations illustrative only)



Yukon River Delta Showing Ice Flows in the Bering Sea

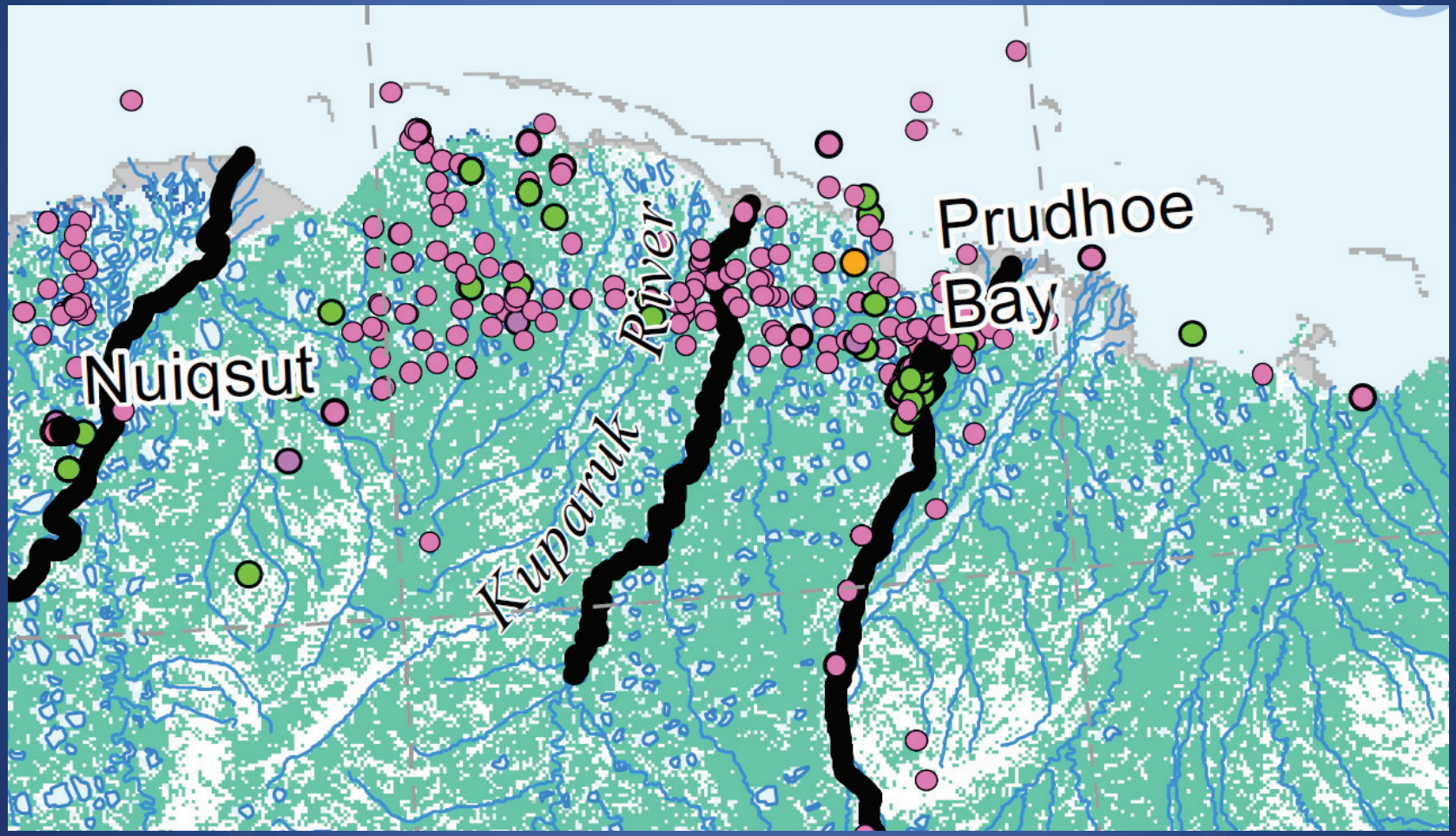


Yukon River Delta



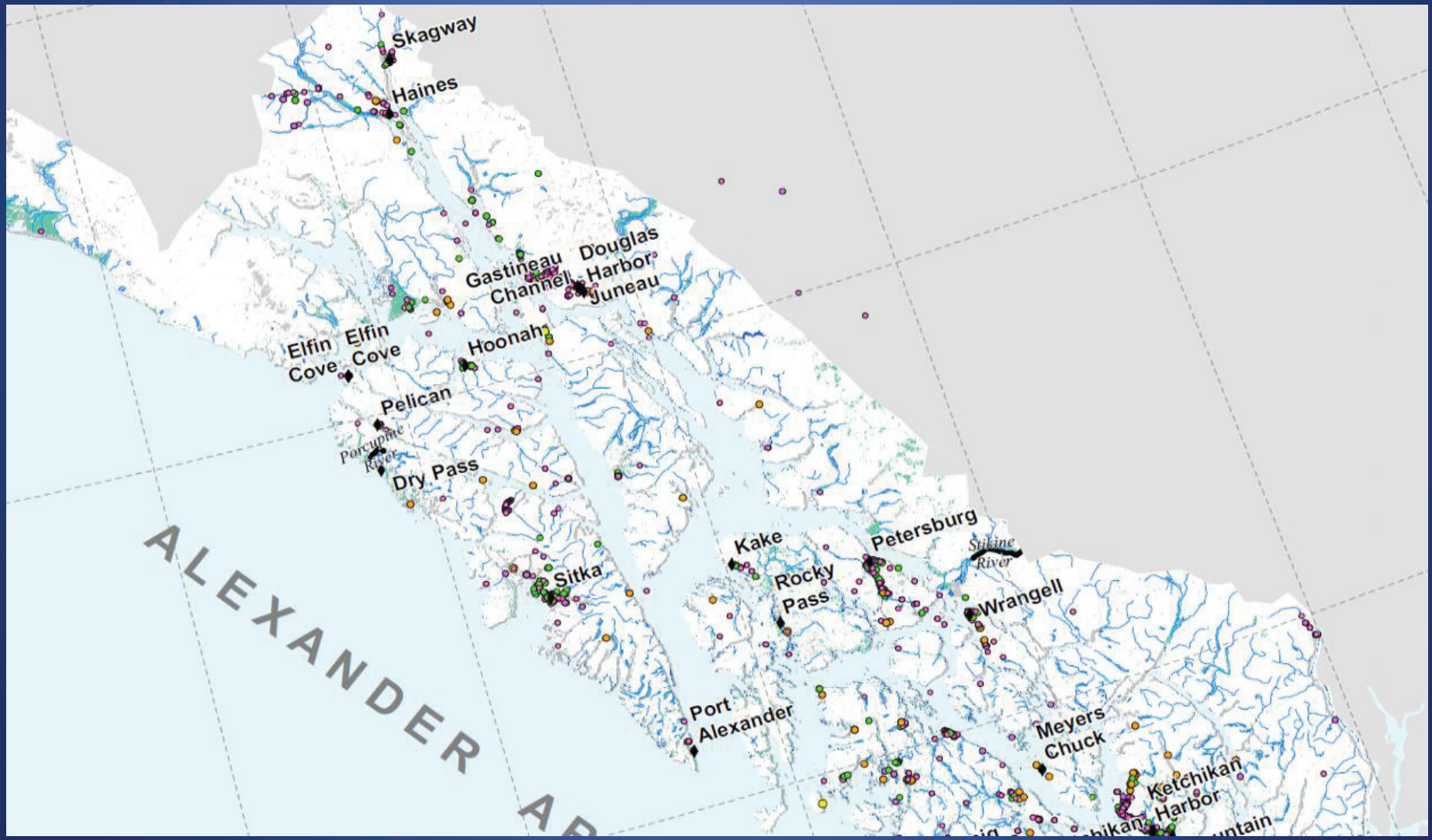
Prudhoe Bay

(permit locations illustrative only)



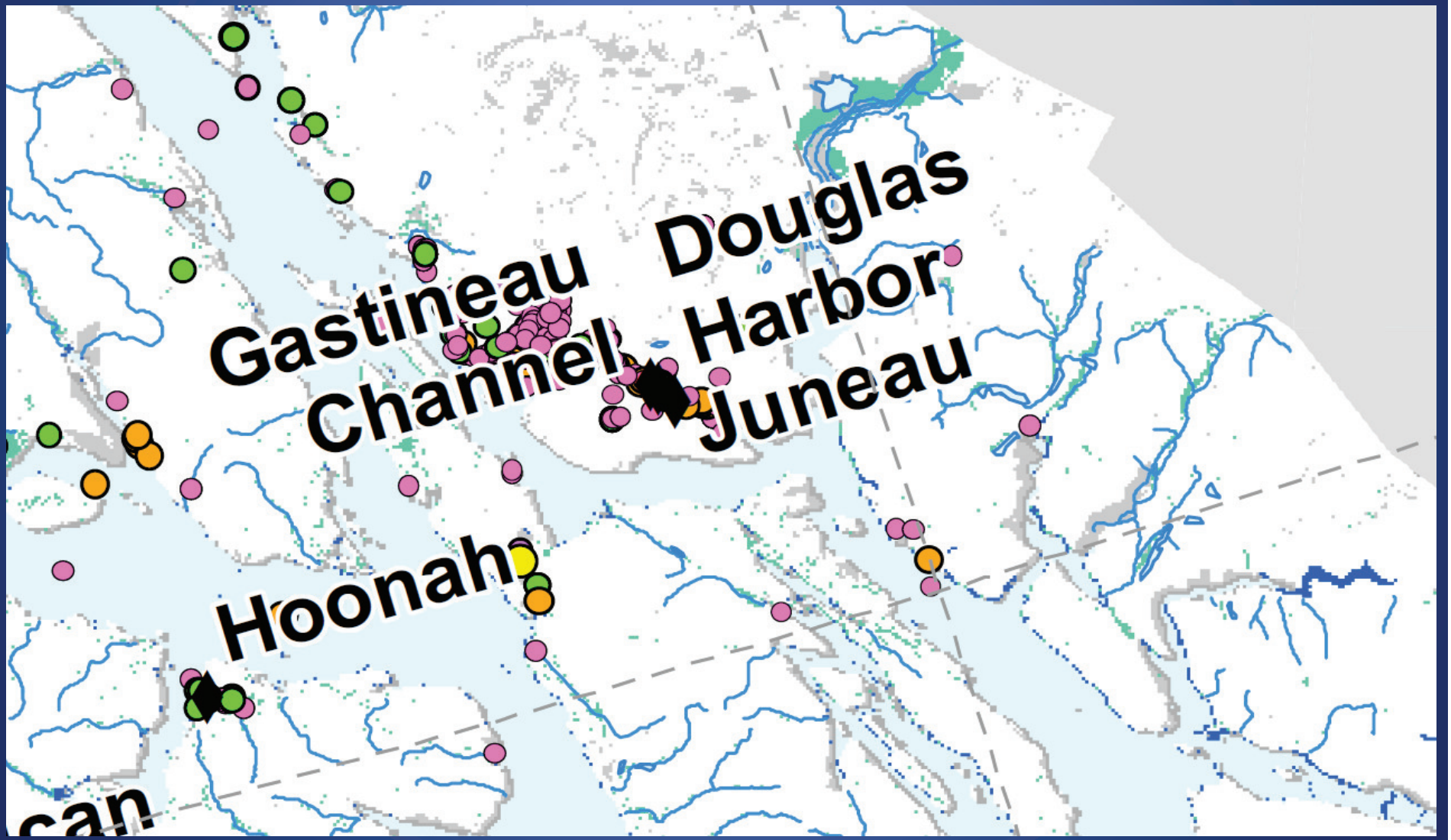
Juneau and Inside Passage

(permit locations illustrative only)



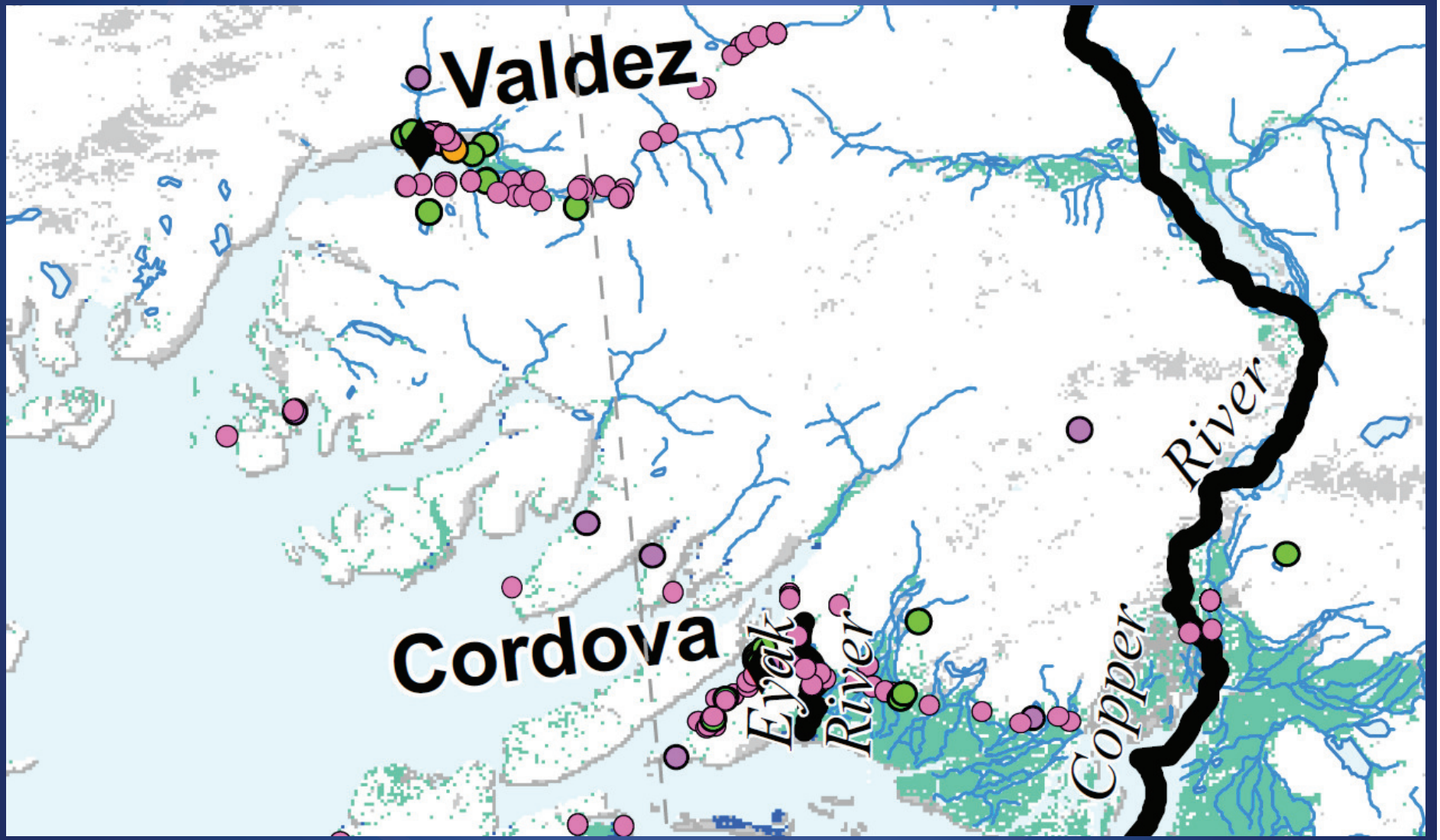
Juneau

(permit locations illustrative only)



Valdez-Cordova

(permit locations illustrative only)

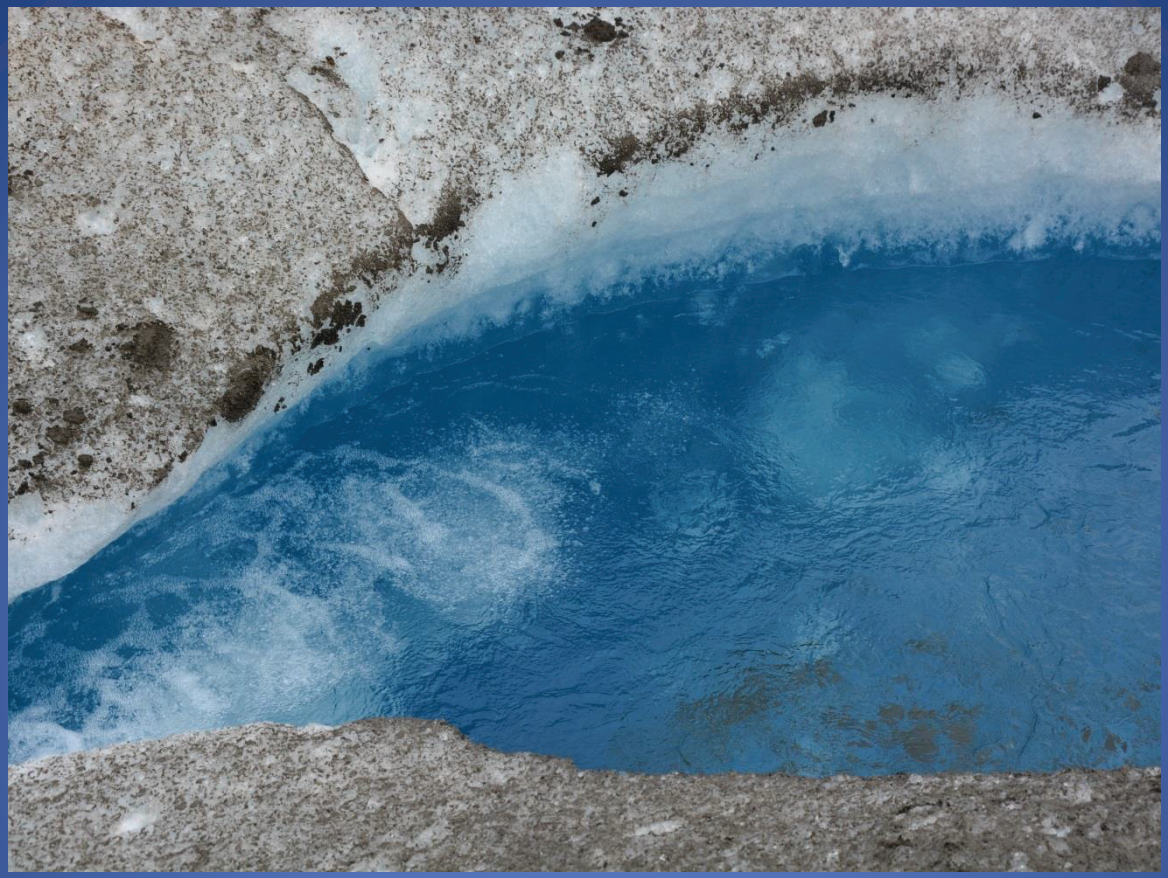


Summary

- Waters presently used for interstate and foreign commerce are limited to the barge routes.
- In some parts of Alaska, wetlands are virtually continuous (e.g., the Alaska North Slope Coastal Tundra).
- When the tundra thaws a bit in the summer, streams, lakes and wetlands emerge, blurring the boundaries.

Summary Continued

- Distinguishing between waters and adjacent wetlands is also very challenging for Alaska's numerous, massive rivers and river deltas (similar to Oregon's Willamette Valley, but on a much larger scale).
- The best available data for tidal boundaries is an incomplete set of NWI wetland maps, using the Estuarine System classification as a crude indicator of tidal influence (i.e., "coastal" because subtidal and intertidal are lumped together).



Juneau Icefield

Photo: Eric Metz, Juneau, Alaska 6/28/2014