Dolphin and Union Caribou Population Status

Building Nunavut Together
Nunavuliuqatigiingniq
Bâtir le Nunavut ensemble

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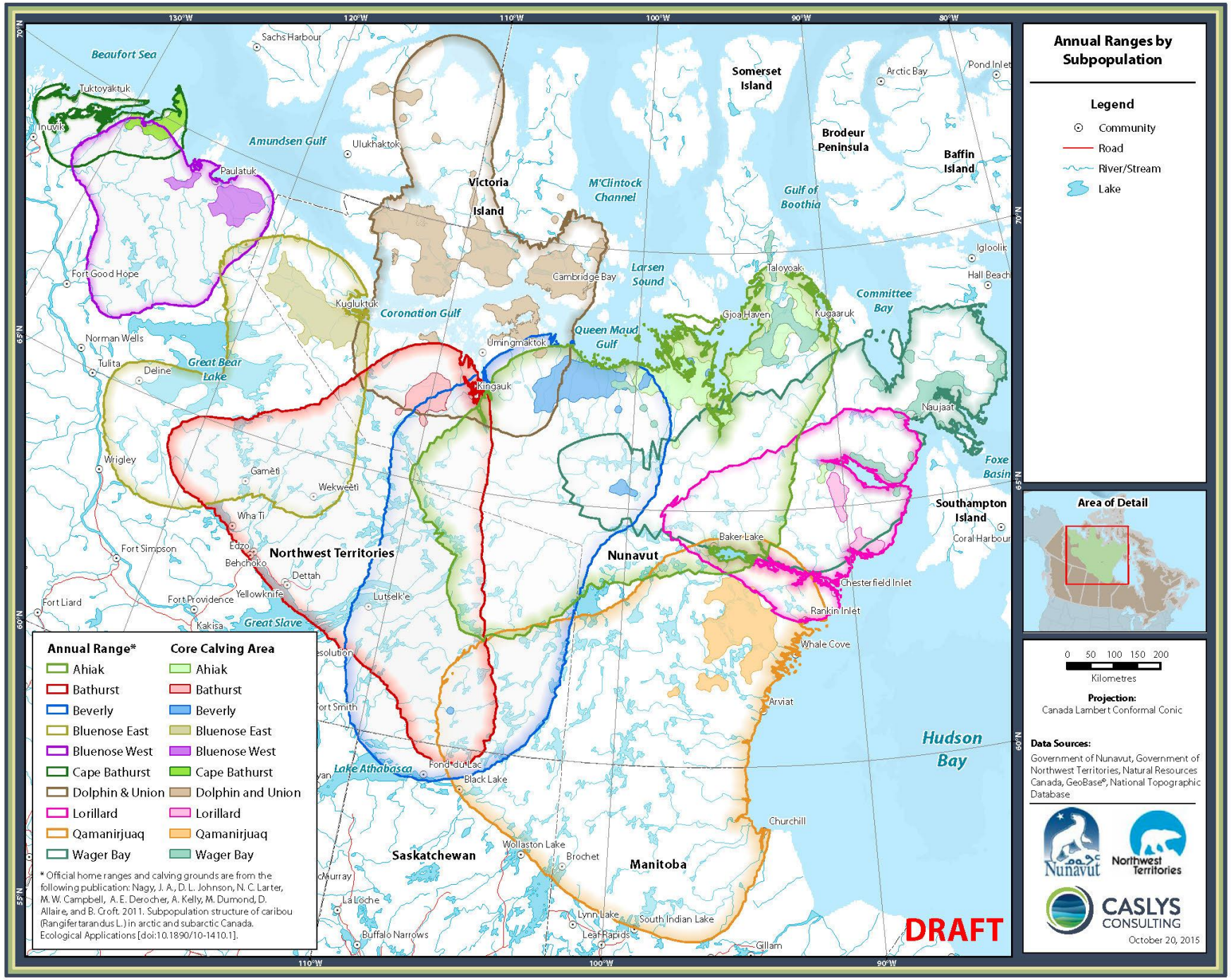
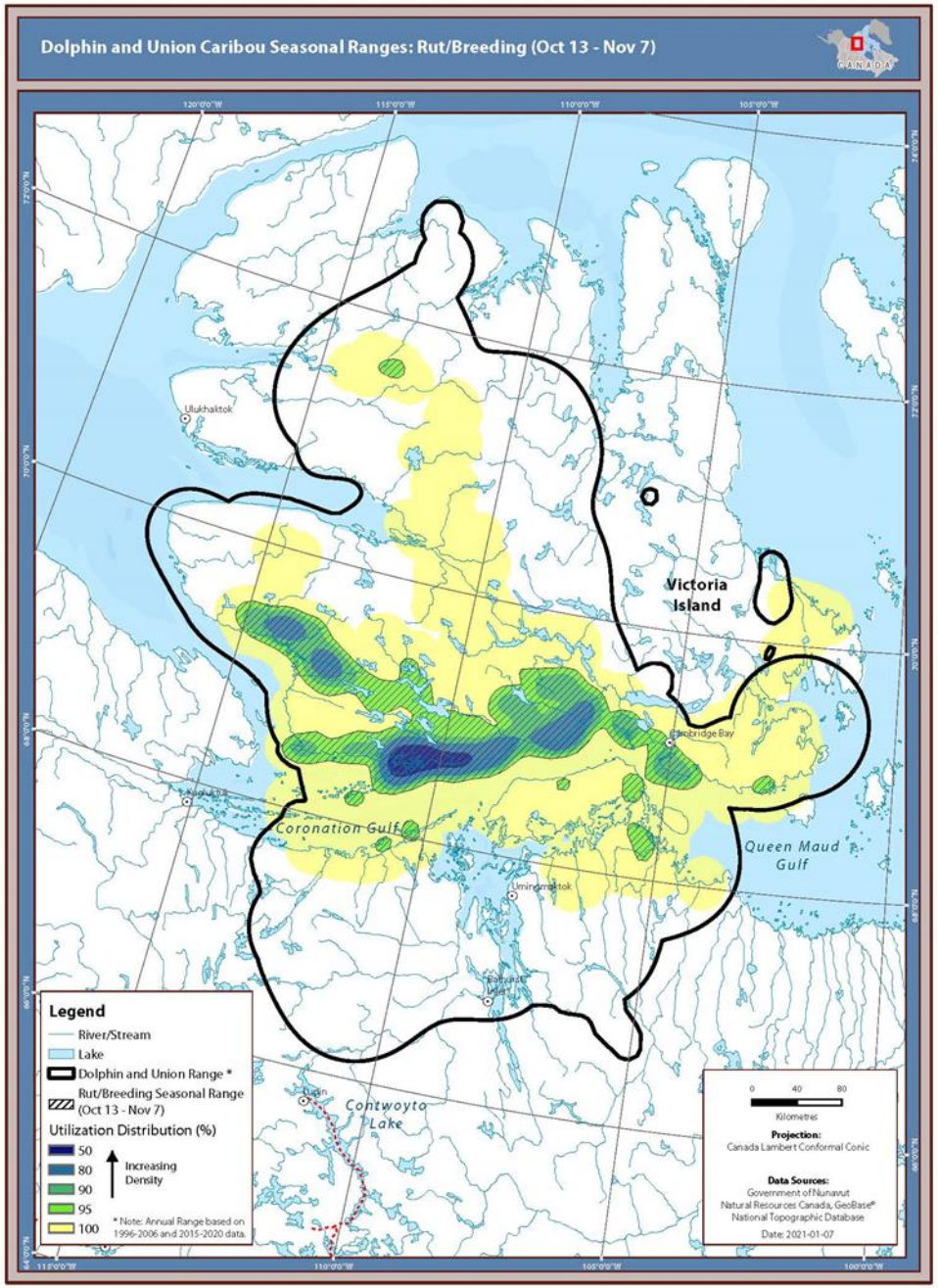
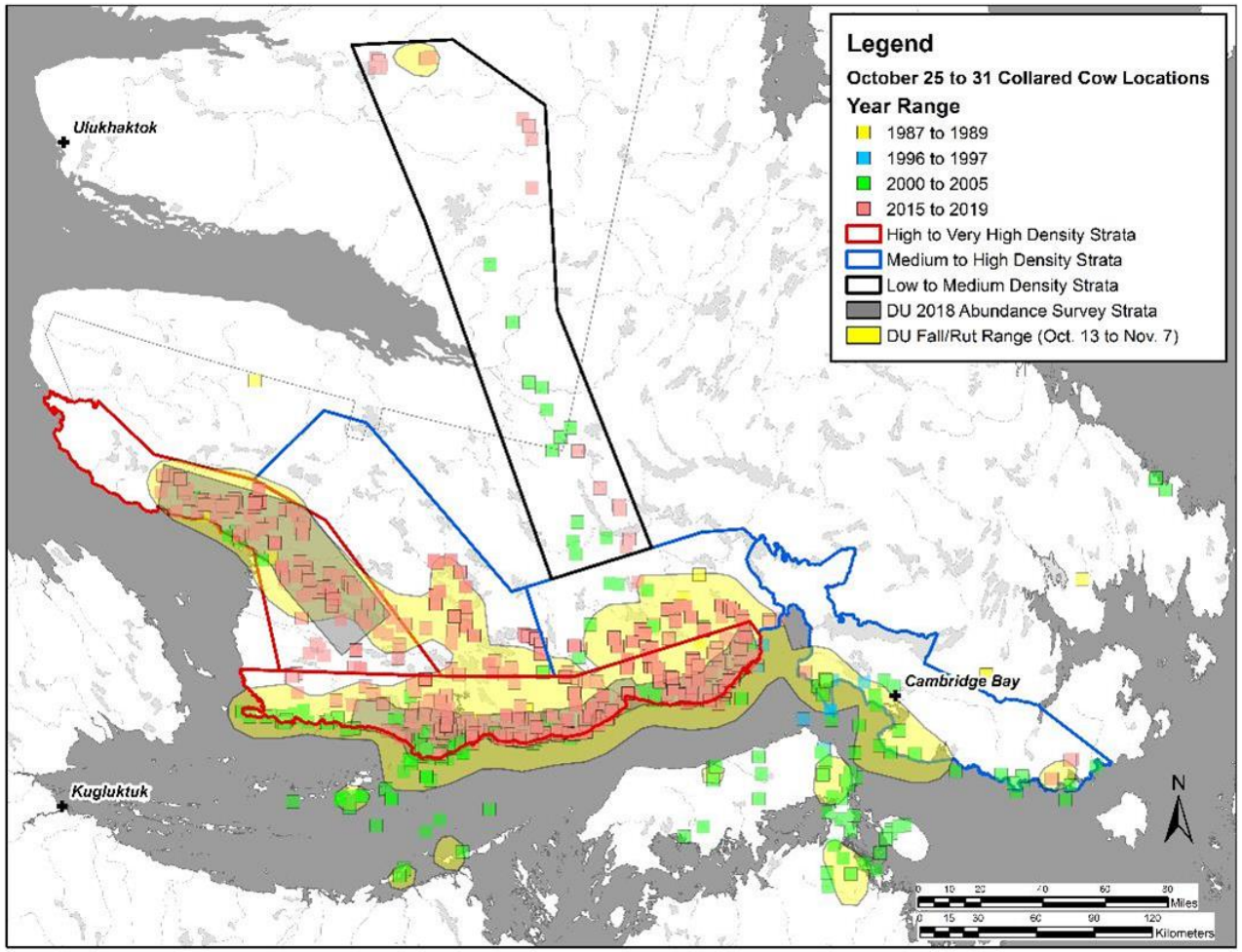

Annual Ranges by Subpopulation
Legend
Community
Road
River/Stream
Lake
Area of Detail
Annual Range*
Ahiak
Bathurst
Beverly
Bluenose East
Bluenose West
Cape Bathurst
Dolphin & Union
Lorillard
Qamanirjuaq
Wager Bay
Core Calving Area
Ahiak
Bathurst
Beverly
Bluenose East
Bluenose West
Cape Bathurst
Dolphin and Union
Lorillard
Qamanirjuaq
Wager Bay
* Official home ranges and calving grounds are from the following publication: Nagy, J. A., D. L. Johnson, N. C. Larter, M. W. Campbell, A. E. Derocher, A. Kelly, M. Dumond, D. Allaire, and B. Croft. 2011. Subpopulation structure of caribou (Rangifer tarandus L.) in arctic and subarctic Canada. Ecological Applications [doi:10.1890/10-1410.1].
0 50 100 150 200
Kilometres
Projection:
Canada Lambert Conformal Conic
Data Sources:
Government of Nunavut, Government of Northwest Territories, Natural Resources Canada, GeoBase®, National Topographic Database
Nunavut
Northwest Territories
CASLYS CONSULTING
October 20, 2015
DRAFT
Beaufort Sea
Amundsen Gulf
Victoria Island
Somerset Island
Brodeur Peninsula
Baffin Island
M'Clintock Channel
Gulf of Boothia
Larsen Sound
Committee Bay
Coronation Gulf
Queen Maud Gulf
Great Bear Lake
Great Slave
Foxe Basin
Hudson Bay
Lake Athabasca
Northwest Territories
Nunavut
Saskatchewan
Manitoba
Sachs Harbour
Tuktoyaktuk
Inuvik
Paulatuk
Ulukhaktok
Arctic Bay
Pond Inlet
Igloolik
Hall Beach
Taloyoak
Gjoa Haven
Kugaaruk
Cambridge Bay
Kugluktuk
Umingmaktok
Kingauk
Naujaat
Fort Good Hope
Norman Wells
Tulita
Deline
Wrigley
Gamèti
Wekweèti
Wha Ti
Edzo
Behchokǫ̀
Fort Simpson
Dettah
Yellowknife
Fort Providence
Fort Liard
Kakisa
Lutselk'e
Fort Smith
Fond-du-Lac
Black Lake
Wollaston Lake
Brochet
La Loche
Buffalo Narrows
Lynn Lake
South Indian Lake
Leaf Rapids
Gillam
Churchill
Whale Cove
Rankin Inlet
Chesterfield Inlet
Arviat
Baker Lake
Southampton Island
Coral Harbour
130°W
120°W
110°W
100°W
90°W
80°W
70°N
65°N
60°N
55°N

- The Dolphin and Union (DU) caribou annual and fall/rutting (Oct. 13 to Nov. 7) range; 1997-2006 and 2015-2020.

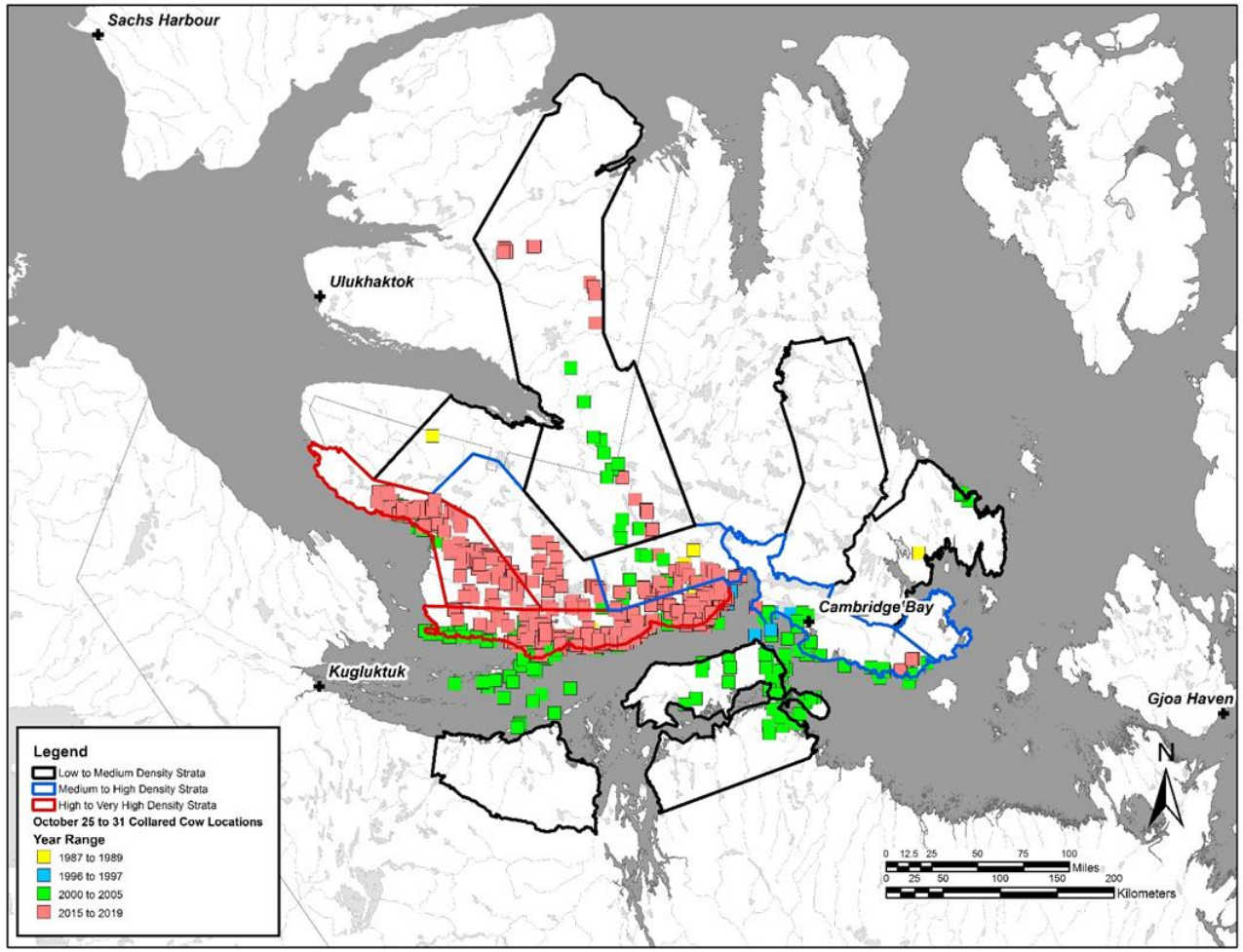


Methods

- The initial DU fall 2020 survey stratification based solely on DU caribou telemetry data and past DU abundance survey strata.

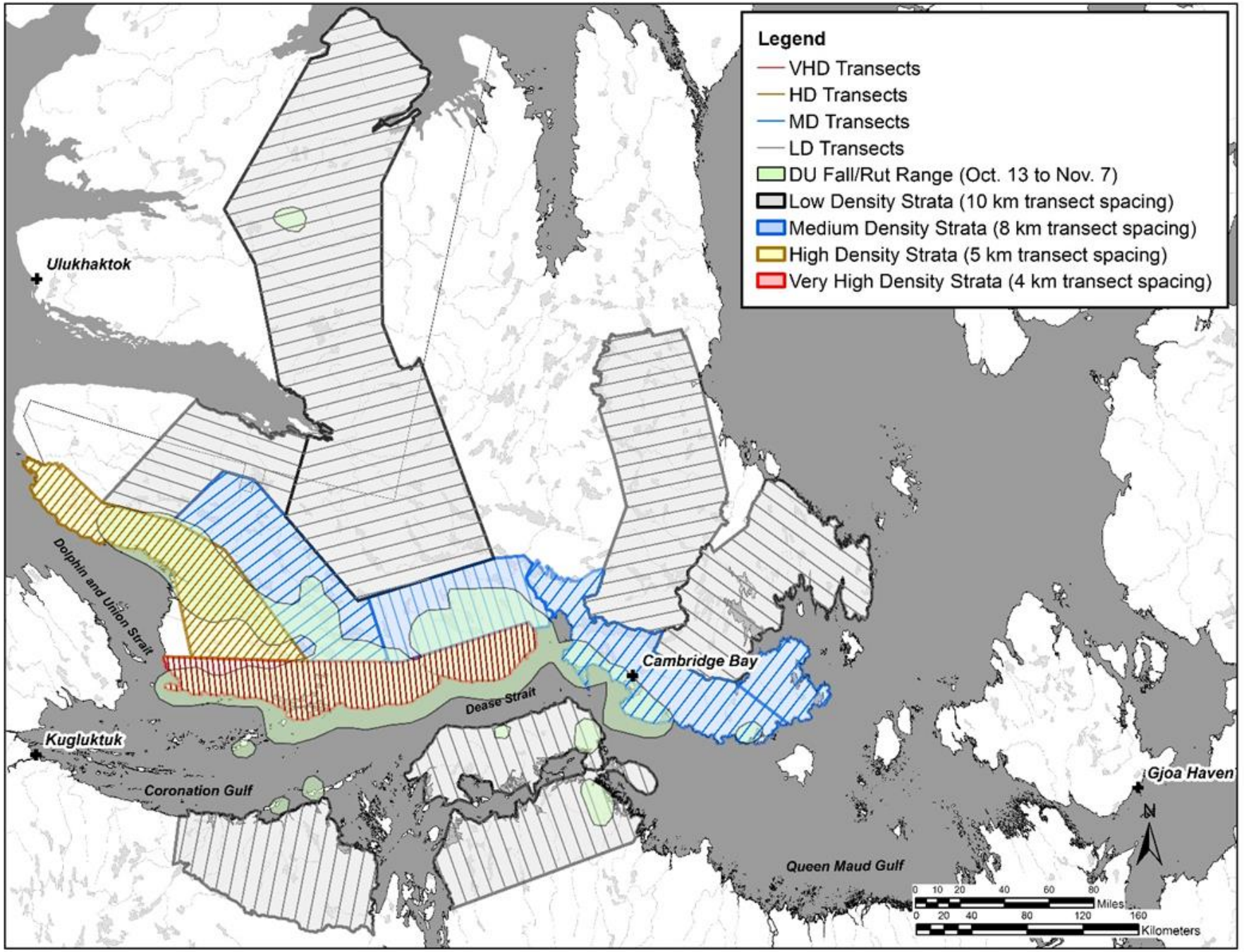


- Final strata selection with the inclusion of community-based IQ collected during the pre-survey consultation process.

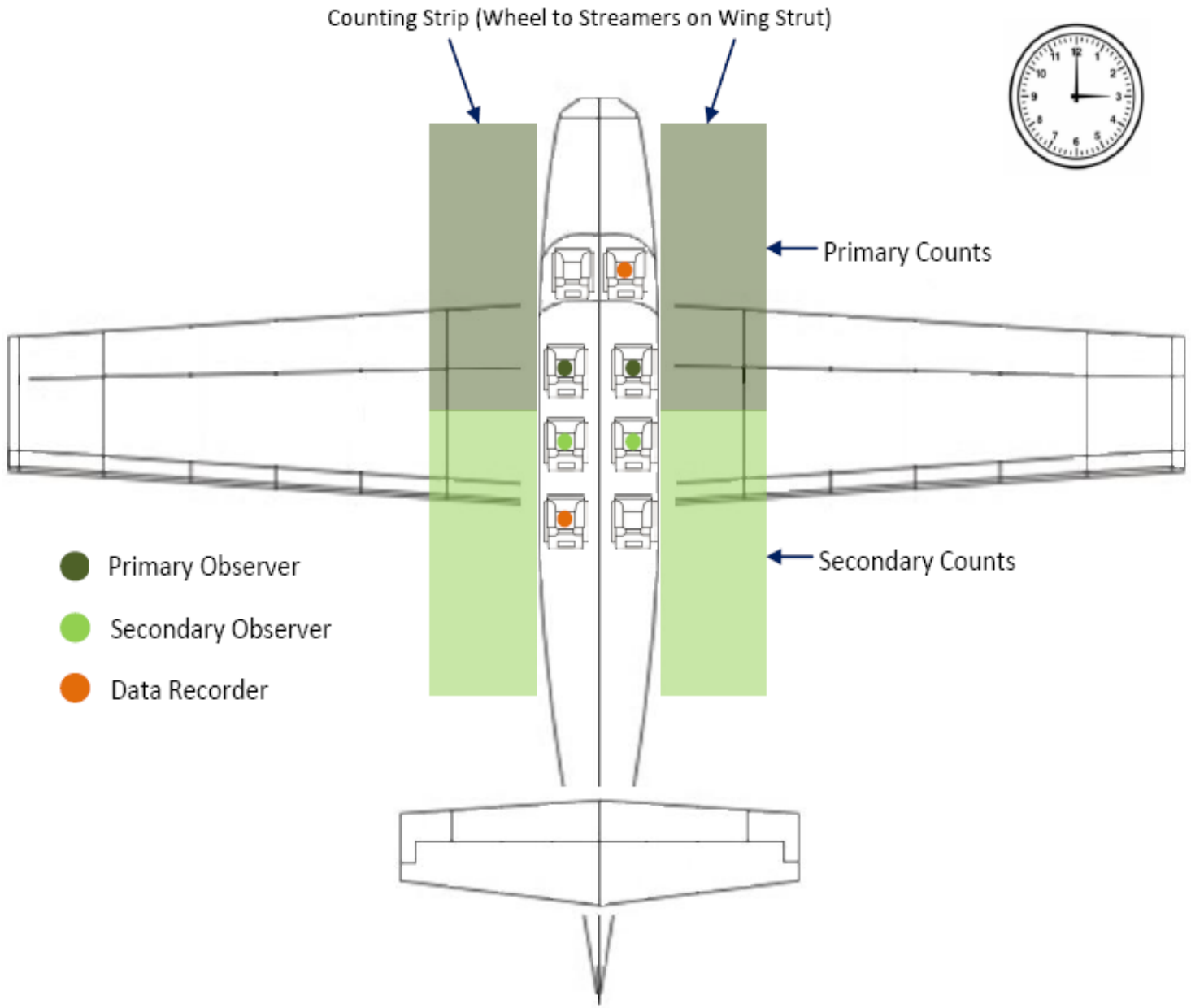


-DU fall 2020 survey strata placement and transect effort relative to DU late fall range (green shading).

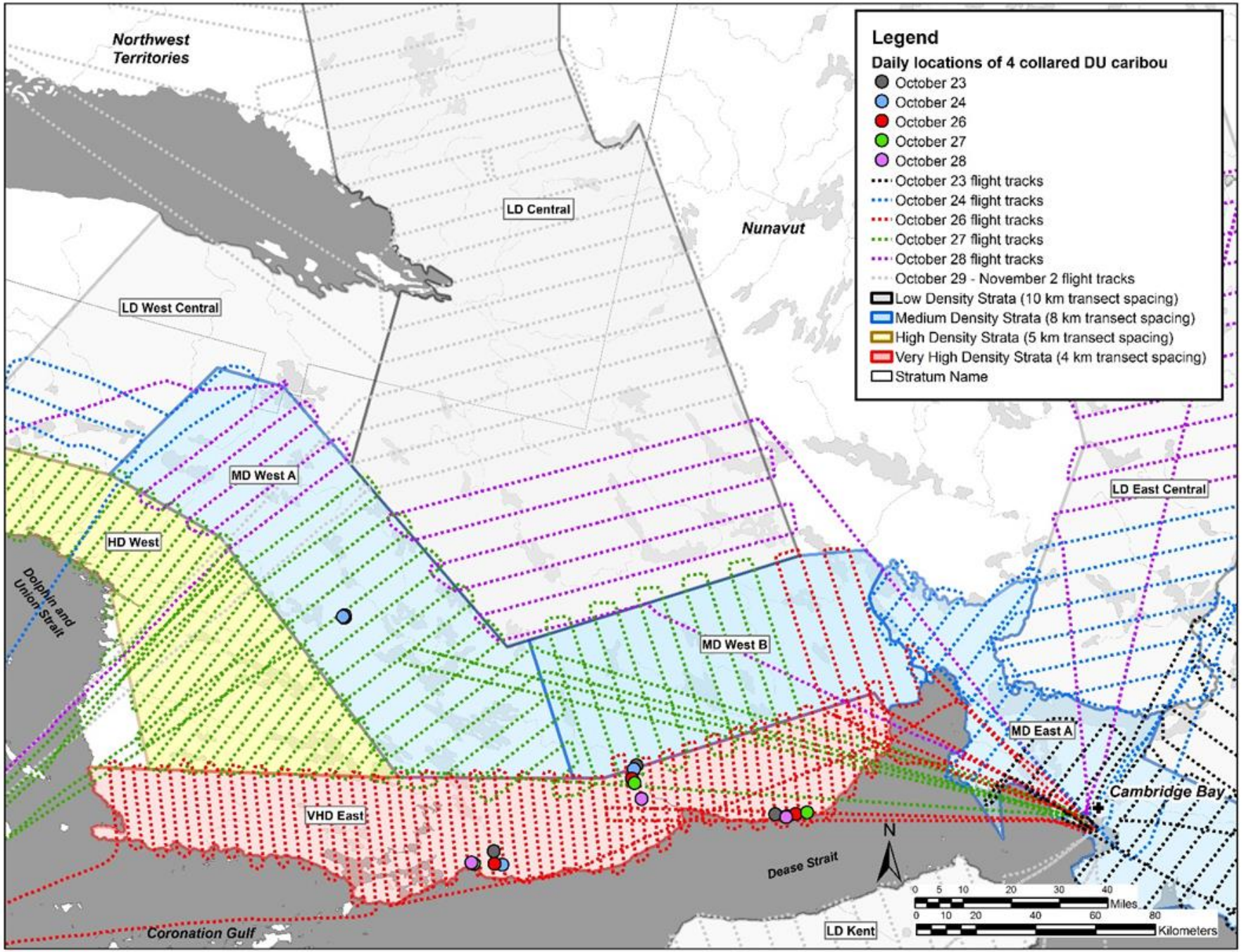
- Strata and transect effort based on historic survey observations, cumulative caribou telemetry data, IQ from the communities of Cambridge Bay, Kugluktuk, and Ulukhaktok, predicted weather windows and budgetary constraints.

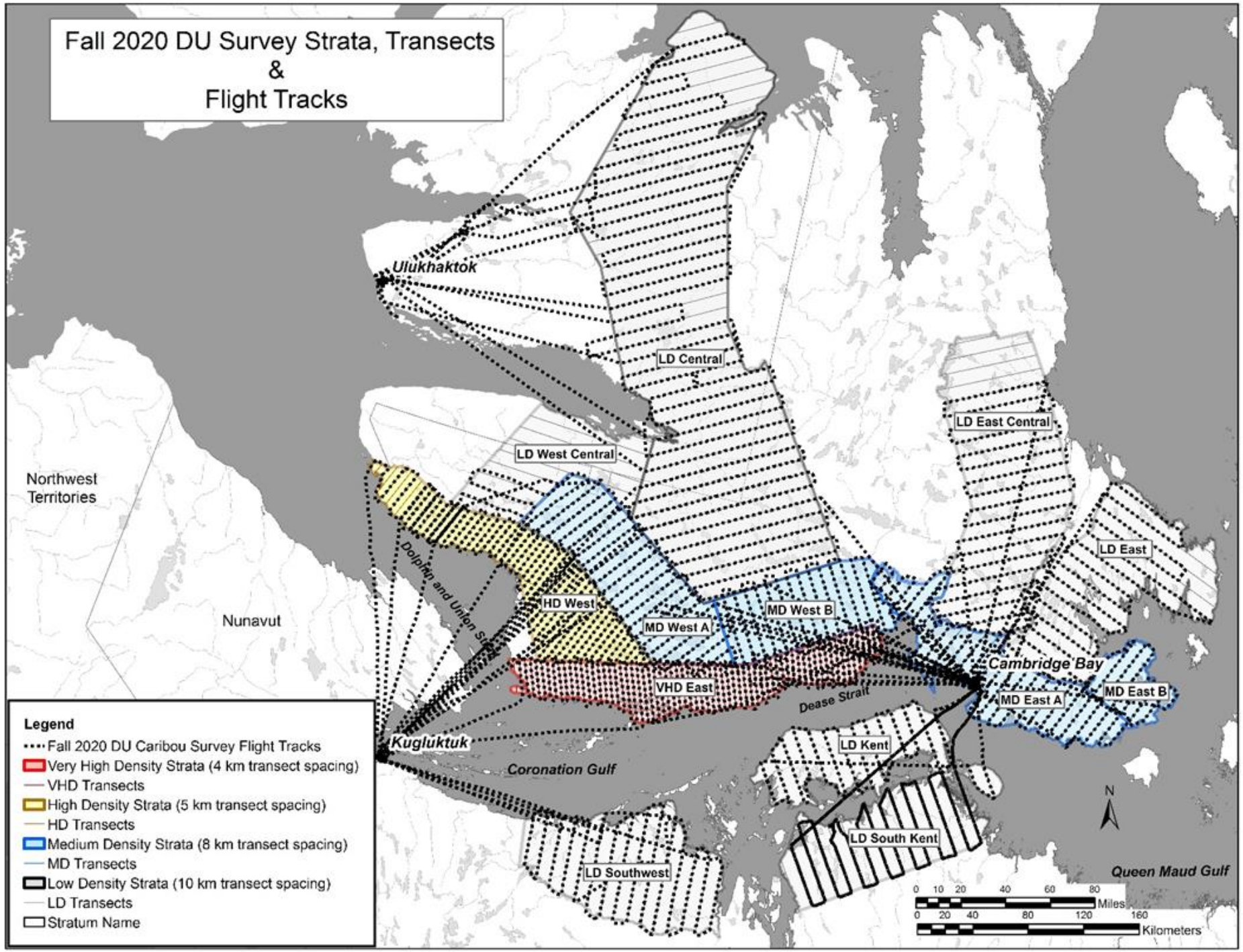


- The Double Observer Pair/distance sampling Method.



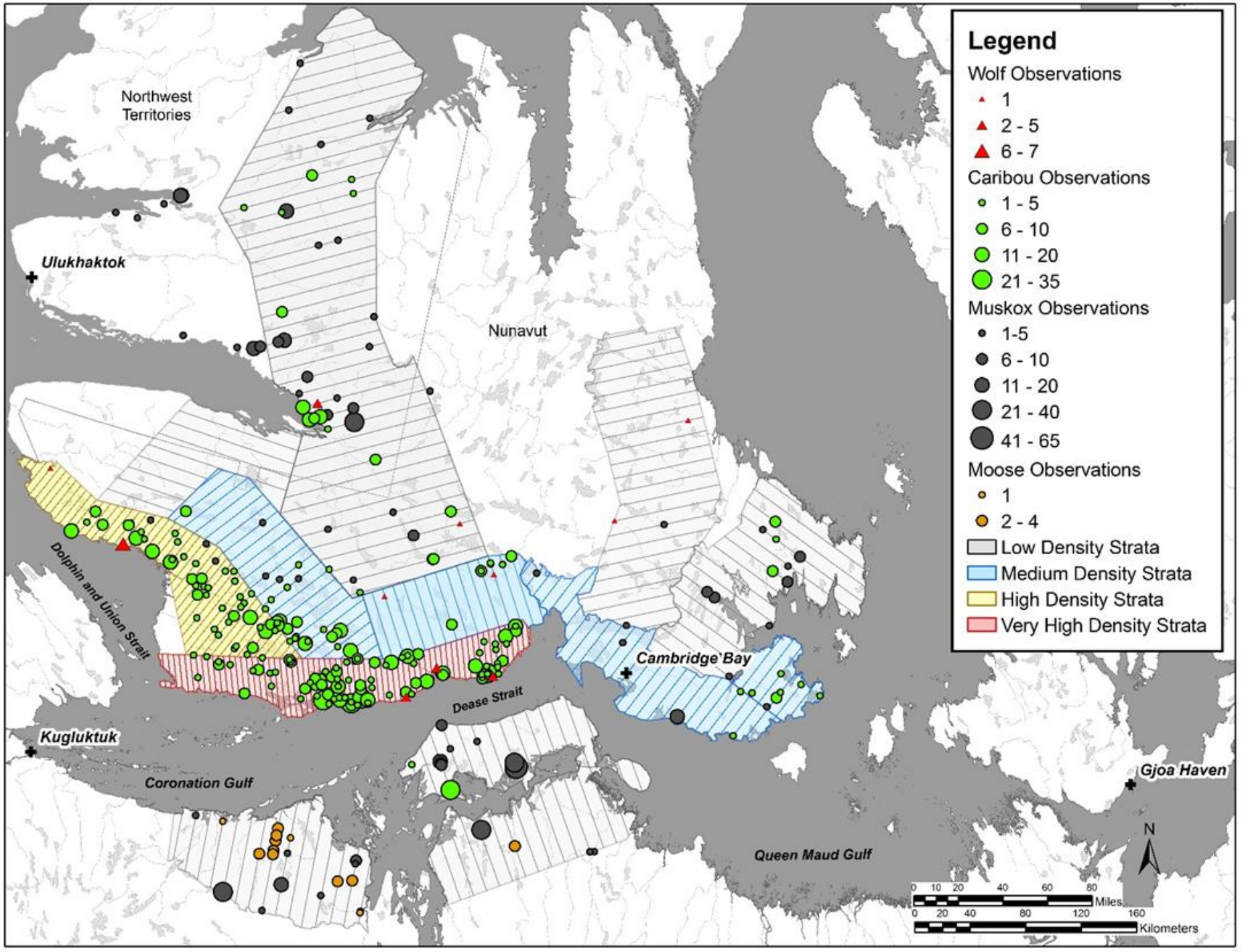
- Daily flight tracks compared to daily collared caribou locations throughout the first 6 days of the fall 2020 DU abundance survey.




Fall 2020 DU Survey Strata, Transects
&
Flight Tracks
Ulukhaktok
LD Central
LD West Central
LD East Central
LD East
Northwest
Territories
Nunavut
Dolphin and Union Strait
HD West
MD West A
MD West B
VHD East
Cambridge Bay
MD East A
MD East B
Dease Strait
Kugluktuk
Coronation Gulf
LD Kent
LD South Kent
LD Southwest
Queen Maud Gulf
N
0 10 20 40 60 80
Miles
0 20 40 80 120 160
Kilometers
Legend
Fall 2020 DU Caribou Survey Flight Tracks
Very High Density Strata (4 km transect spacing)
VHD Transects
High Density Strata (5 km transect spacing)
HD Transects
Medium Density Strata (8 km transect spacing)
MD Transects
Low Density Strata (10 km transect spacing)
LD Transects
Stratum Name

Results

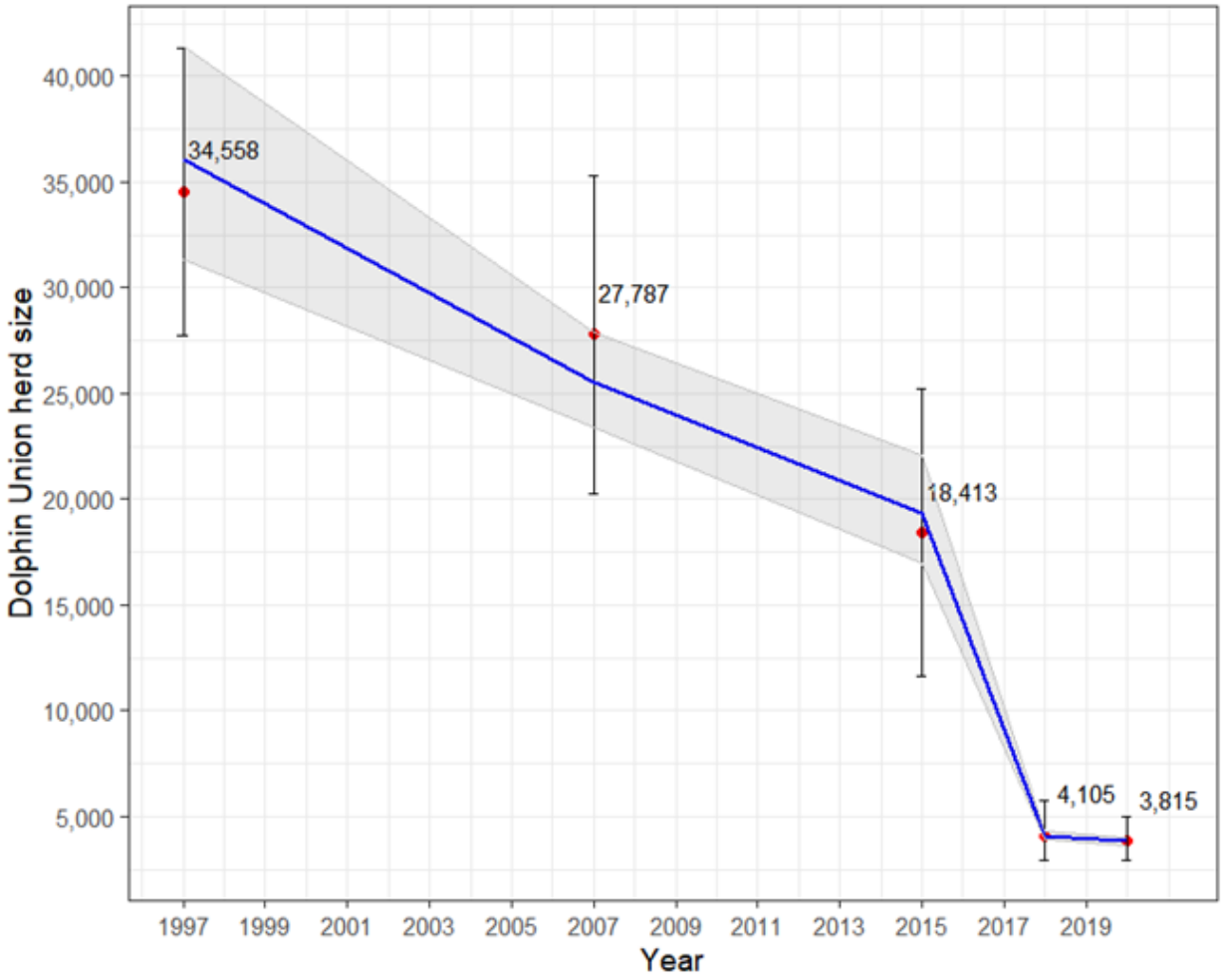
- DU 2020 survey observations.

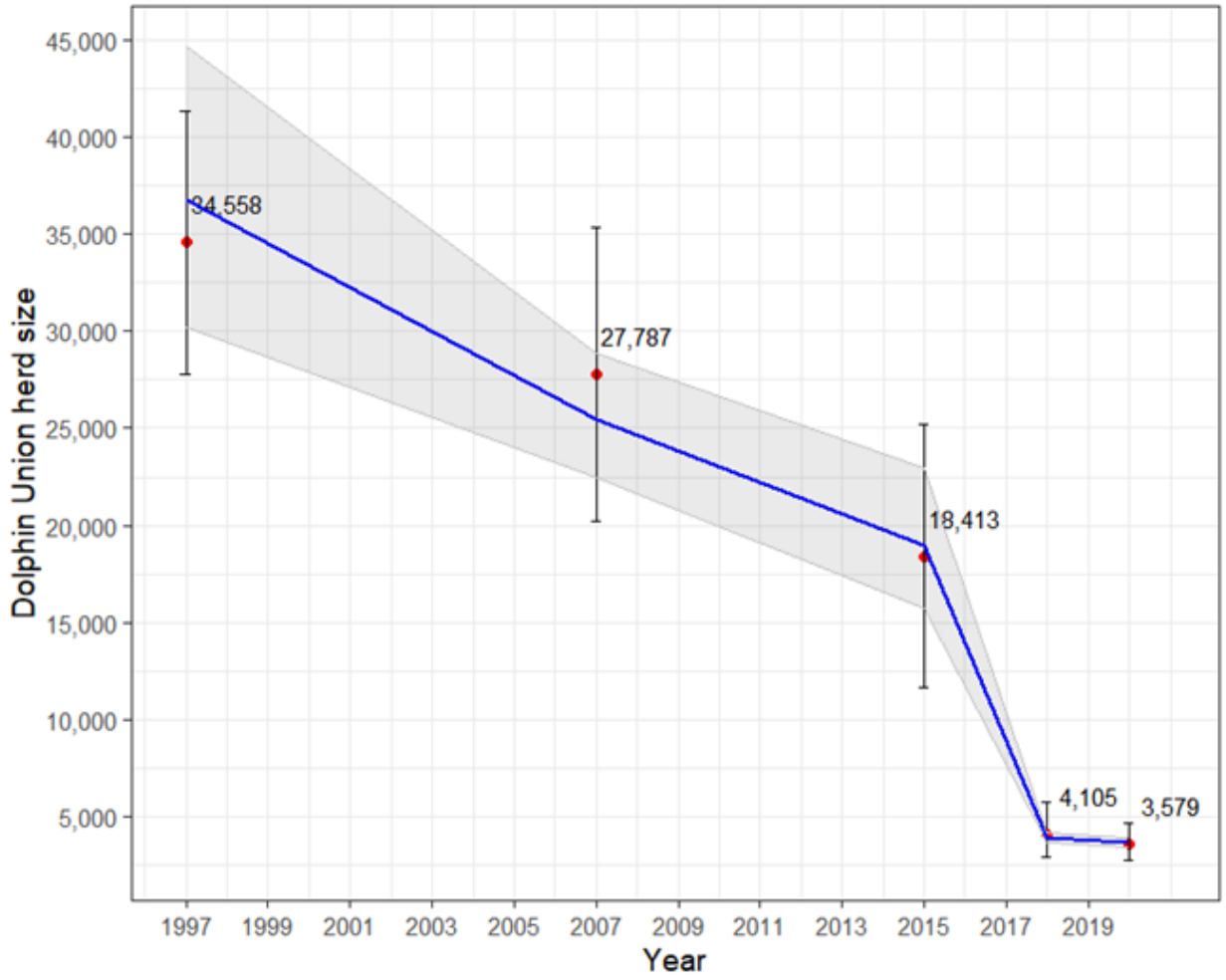


Strata	Strata_Name	Caribou counted	Abundance (N)	SE	Confidence Interval		CV
Victoria Island strata							
VHDE	High_Density_East	665	1,487	275.3	1,034	2,139	0.19
HDW	High_Density_West	262	821	164.4	554	1,217	0.20
MDEa	Medium_Density_East_A	1	5	5.9	1	33	1.08
MDEb	Medium_Density_East_B	22	130	48.7	58	290	0.37
MDWa	Medium_Density_West_A	150	470	121.3	281	784	0.26
MDWb	Medium_Density_West_B	26	89	37.3	38	207	0.42
LDC	Low_Density_Central	124	511	140.5	297	879	0.27
LDE	Low_Density_East	14	65	41.5	19	225	0.63
LDWC	Low_Density_West_Central	0	0				0.00
LDEC	Low_Density_East_Central	0	0				0.00
	Total	**1,264**	**3,579**	**476.5**	**2,758**	**4,644**	**0.13**
Mainland strata							
LDKP	Low_Density_Kent_Penninsula	66	236	174.9	57	980	0.74
LDSK	Low_Density_South_Kent	0	0				0.00
LDSW	Low_Density_South_West	0	0				0.00
Victoria Island + Mainland							
Total	Victoria Island + Mainland	**1,330**	**3,815**	**513.7**	**2,930**	**4,966**	**0.13**

- Abundance estimates

- Population estimates and estimated trends for the Dolphin Union caribou herd between 1997 and 2020.





- DU 2020 Caribou survey observers.

RWO, HTO, and Interjurisdictional Participation

In total, 20 individuals representing the communities of Cambridge Bay, Kugluktuk, and Ulukhaktok took part as observers in the survey effort. Our most sincere thanks go out to the Cambridge Bay observers including **Mable Angohiaktok**, **Richard Ekpakohak**, **George Hakongak**, **Jimmy Haniliak**, **Allen Kapolak**, **Peter Kapolak**, and **Gary Maksagak**; the Kugluktuk Observers including **Regan Adjun**, **Albert Anavilok**, **OJ Bernhardt**, **Darian Evyagotalilak**, **Jeffery Niptanatiak**, **Jonathan Niptanatiak**, and **Antoin Nivingalok**; and the Ulukhaktok Observers including **Patrick Akhiaktak**, **Tiffani Akhiaktak**, **Tom Harvey**, **Jack Kataoyak**, **Susie Memogana**, and **Allen Pogotak**. We would also like to thank **Amanda Dumond** (Kugluktuk Angoniatit Association), and **Larry Adjun** (Kugluktuk Angoniatit Association), **Bobby Greenley**, and **Beverly Maksagak** (Ekaluktutiak HTO), **Connie Kapolak** (Bathurst Inlet HTO), **Bessie Inuktalik** (Olokhatomiut HTC), **Rosemin Nathoo** and (WMAC), and **Marsha Branigan** (GNWT).

Conclusions

- Results of the 2020 DU caribou survey are consistent with the significant declines detected between the 2015 and 2018 abundance surveys.
- The 2020 survey findings are consistent with IQ and suggest that future surveys should be expanded beyond the coastal survey method, and include both inland & mainland strata.
- Future research should include a more complete, effective, and meaningful inclusion of IQ in planning to insure higher quality results, as proven during the 2020 survey effort.
- Population abundance should be carefully monitored, and the frequency of surveys should remain high while numbers are low.
- Monitoring predator and human harvest rates and other forms of anthropogenic mortality are important for effective long-term co-management.
- Telemetry is important for effective abundance survey stratification and the monitoring of changes in movement, behavior, and seasonal range use.
- Future research should look into the identification mechanisms for the observed declines.

Questions?