Distribution and movements of Teshekpuk Herd caribou 1990-2005

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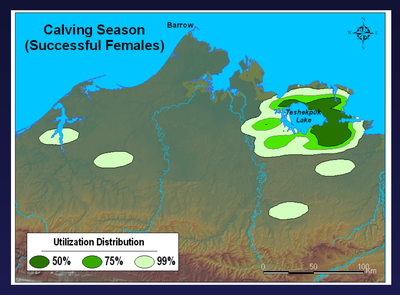
Overview

Prior to 1990 little was known about the distribution of the Teshekpuk Caribou Herd (TCH).

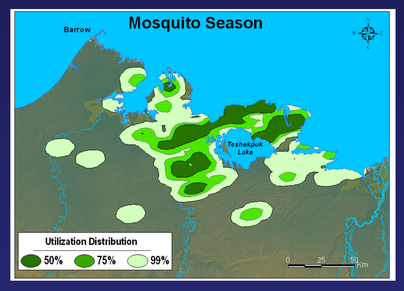
We present a 15-year data baseline of TCH caribou movements and distribution collected when little or no industrial infrastructure existed within their range. We present results from 72 satellite- and 10 GPS-collared caribou between 1990 and 2005.

Our objectives were to accomplish the following tasks prior to resource development within the annual range of the TCH: (1) determine calving, insect relief, late summer, and winter home ranges of the TCH, (2) determine spring and fall migratory routes and the proportion of collared caribou moving through critical areas near Teshekpuk Lake, and (3) estimate the distance traveled annually and seasonally based on GPS collar locations collected every three hours.



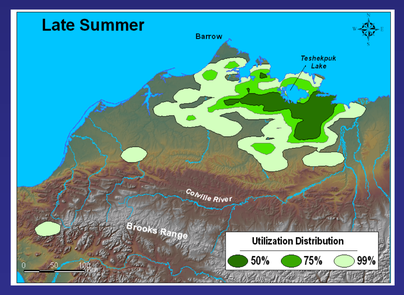
Calving season: 1-15 June

50% UD = 1,380 km² | 99% UD = 7,201 km²



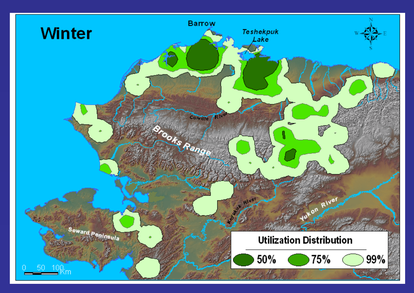
Mosquito season: 1-15 July

50% UD = 1,748 km² | 99% UD = 8,560 km²



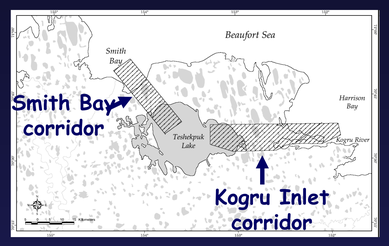
Late summer-early fall: 8 August – 15 September

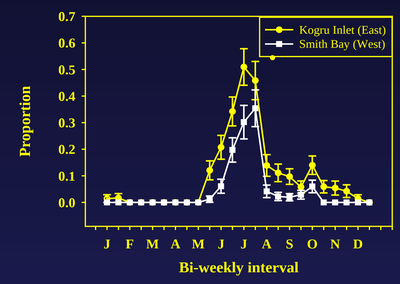
50% UD = 5,662 km² | 99% UD = 31,996 km²



Winter: 1 December – 15 April

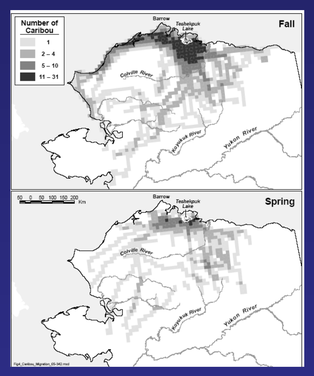
50% UD = 16,903 km² | 99% UD = 153,711 km²



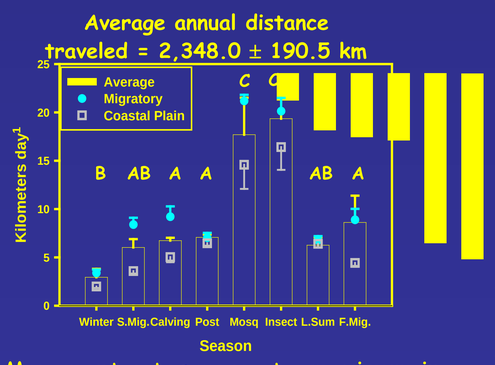


To reach the coast, 86 % of the collared caribou moved through the Kogru Inlet and Smith Bay corridors within 2 weeks of calving, which typically peaks near June 9. Roads and pipelines in the oil fields that overlay the Central Arctic Herd calving grounds displace cows with calves by 2 – 4 km for two weeks post calving. It would be difficult to mitigate disruption within these corridors.

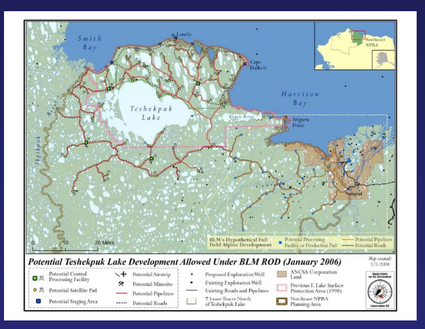
Fall migratory routes are most pronounced between the Teshekpuk Lake area and Atqasuk. Another conspicuous route extends to the west along the Chukchi Sea coast past the villages of Wainwright, Point Lay, and Point Hope.



The spring route used by the highest density of collared caribou is between Atqasuk and the southern shores of Teshekpuk Lake. Other routes reflect those used during the fall migration.



Movement rates were at a maximum in mid-summer, lowest in winter, and intermediate during spring and fall migrations. Distance traveled peaked in mid-July when both oestrid flies and mosquitoes are active.



Previous federal administrations protected crucial TCH calving and insect relief areas with no surface structure occupancy restrictions but these mitigative measures are likely to be removed. This is one potential development scenario being proposed.

Summary

The TCH demonstrates a high degree of fidelity to the calving grounds with 92 % of collared females using the area around Teshekpuk Lake during the first 2 weeks of June. Fifty-one and 35 % of satellite and GPS collared animals utilized the narrow eastern and western corridors, respectively, around the lake to access insect relief areas between 1990 and 2005. Additionally, 65 % of collared TCH caribou over-wintered on the central coastal plain [illegible] is unique when compared to the other 3 herds [illegible] typically winter south of the North Slope of Alaska or in Canada.

We suggest that land managers proceed with caution when permitting development and exploration in the TCH range because: 1) This herd has not been exposed to oil and gas development, 2) 65 % of the herd will be in contact with oil and gas development during all seasons, 3) the result of displacing TCH caribou from calving and insect relief areas is not understood, 4) it would be difficult to mitigate disruption within the migration corridors to the east and west of Teshekpuk Lake, and 5) displacement of TCH caribou could result in negative impacts to North Slope hunters.

[1] North Slope Borough, Department of Wildlife Management; [2] ABR Inc.; [3] Alaska Department of Fish and Game; [4] U.S. Bureau of Land Management