SUBMISSION TO THE

NUNAVUT WILDLIFE MANAGEMENT BOARD

FOR

Information: X **Decision:**

Issue: Dolphin and Union Caribou Herd

Background:
The Dolphin and Union (DU) caribou (*Rangifer tarandus groenlandicus*) is differentiated from other Barren Ground caribou by local Inuit hunters for its phenotype and distinct behaviors.

After a period of very low densities reported through observational studies (see Gunn, 1990) and traditional knowledge (M. Angohiatok, unpublished data), the DU caribou herd started to increase in the late 1970s-early 1980s and resumed its migration to the mainland during the late 1980s and early 1990s (Gunn and Fournier, 2000; Gunn and Nishi, 1998). Until 1997, the herd was increasing with a conservative estimate of 27 948 ± 3367 (± Standard Error) animals (Nishi and Gunn, 2004).
Surveys conducted in 1998, 2001 and 2005 on a small portion (< 5%) of the herd in the northwest part of Victoria Island showed a significant increase of caribou in that area from 1998 to 2001 (increase of 250%) and then no significant trend (p > 0.05) between 2001 and 2005 (Nagy et al., 2006).

In the Kitikmeot, the communities of Cambridge Bay and Kugluktuk principally harvest this herd, as well as Kingaut, Umingmaktok and Gjoa Haven. Subsistence harvest levels are unknown and have fluctuated mainly in relation to availability of alternative caribou herds for mainland communities. Kugluktuk HTO has cancelled their caribou community organized hunt on this herd for the past five years (replacing it with a muskox community hunt to reduce pressure on all caribou herds).Local knowledge from hunters is reporting more animals in poor physical condition and with signs of disease (Dumond et al., 2007). Increase of predators on the Island (Dumond et al., 2007) and increase of activities connected with mining are potentially impacting the DU caribou ranges and migratory routes (COSEWIC, 2004, Poole et al., 2010, Dumond et al., *in press*).

Due to the risk of negative cumulative effects on the DU caribou herd and its importance to communities for subsistence, the Department of Environment, Government of Nunavut, conducted an aerial survey to estimate the abundance of the herd. The survey was conducted during the fall staging of caribou on the south coast of Victoria Island (see Dumond and Lee, in press). The herd has remained stable; a herd estimate of 27 787± 7537 (95% confidence interval) in 2007 and ≤ 34 558± 6801 (95%CI) in 1997 (Figure 1).

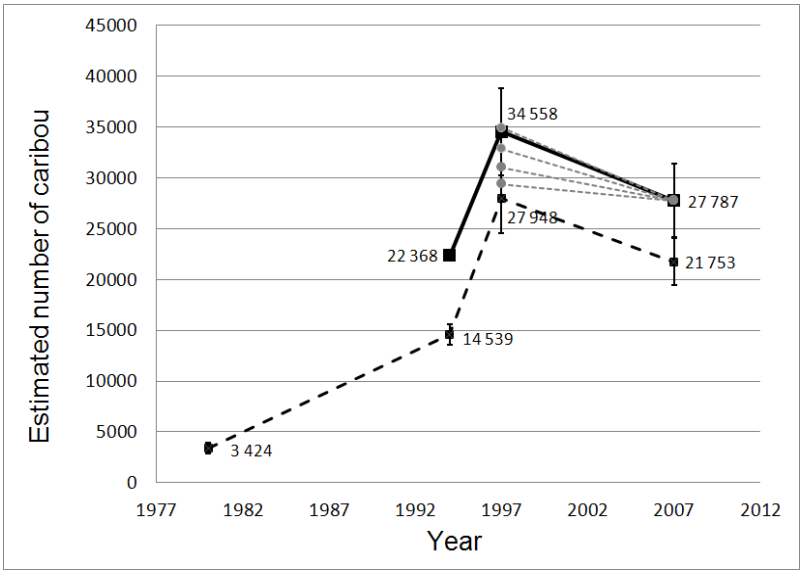

Fig.1: Temporal variations of the DU caribou herd estimates from 1980 to 2007 (Standard Error is shown). The graph shows the estimate in the study area (Dark grey dash line) and the extrapolated estimate for the whole herd (Black solid line). The 1997 herd estimate calculated with values of *P*a ranging from 0.80 to 0.95 and associated trend is presented. Note that the 1980 (Jakimchuk and Carruthers, 1980) and 1994 (Nishi and Buckland, 2000) surveys were conducted at different times of the year and in different areas.

During the 2007 survey, we observed a short-term effect of sea-ice breaking on the DU caribou fall migration movements (see Dumond et al, in press, for details). In fact, this herd relies on the seasonal connectivity of the sea-ice between Victoria Island and the mainland to undertake its fall and spring migration (Poole et al., 2010). The herd calves and mates on the island and spends the winter on the nearby mainland. Climate change associated with sea-ice formation patterns and anthropogenic impacts such as maritime traffic activities may affect the future of this relatively small and vulnerable caribou herd.

In 1997, conservation concerns were raised by the Kitikmeot Hunters and Trappers Association. Consultation to initiate a management plan was undertaken (GNWT-RWED, 1998 unpublished Report), but the management plan was never drafted. Also, due to its vulnerability, this herd was assessed by the COSEWIC (Committee On the Status of Endangered Wildlife In Canada) as species of special concerns (COSEWIC, 2004) and is listed under Schedule 1, Part 4 of the *Species at Risk Act* in Canada.

Consultations:
In 1997 a consultation to initiate a management plan was undertaken (GNWT-RWED, 1998 unpublished Report). It was however never followed through on and finalized. In 2007 herd status was presented at the KRWB AGM and to the communities of Cambridge Bay and Kugluktuk HTOs after the results was finalized. Although it is uncertain at this time what management regime the impacted communities would be open to, affected communities are in the process of organizing a regional workshop to discuss the issue. DoE will provide support for this initiative.

Recommendations: DoE will continue to assist communities in their attempt to discuss management options for this herd, including development of a Management Plan. NWMB financial supports, as a priority for research and monitoring on the DU caribou herd is requested.

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Literature Cited

COSEWIC. 2004. COSEWIC assessment and update status report on the Peary caribou *Rangifer tarandus pearyi* and the barren-ground caribou *Rangifer tarandus groenlandicus* (Dolphin and Union population) in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa.

Dumond, M., Algona, B., Bolt, C., Bolt, M., Ivarluk, J., Klengenberg, S., Taktogon, P., et al. 2007. Western Kitikmeot caribou workshop report. Government of Nunavut, Department of Environment, File Report #19.

Dumond, M. and D.S. Lee. In press. Dolphin and Union Caribou Herd Status and Trend. Arctic XX(XX): XXX-XXX.

Dumond, M., Sather, S., and Harmer, R. In press. Observation of arctic island barren ground caribou (*Rangifer tarandus groenlandicus*) migratory movement delay due to human induced sea ice breaking. Rangifer XX(XX): XXX-XXX.

GNWT-RWED. 1998. Southern Victoria Island (Dolphin and Union) caribou management planning – Summary of user community concerns and action items. Department of Resources, Wildlife, and Economic Development, Kugluktuk, Kitikmeot Region.

Gunn, A., and Fournier, B. 2000. Caribou herd delineation and seasonal movements based on satellite telemetry on Victoria Island 1987-1989. Department of Resources, Wildlife, and Economic Development, GNWT. File Report #125.

Gunn, A., and Nishi, J. 1998. Review of information for Dolphin and Union caribou herd, Victoria Island. *In*: Gunn, A., Seal, U.S., and Miller, P.S., eds. Population and habitat viability assessment workshop for the Peary caribou (*Rangifer tarandus pearyi*)-Briefing Book. Apple Valley, Minnesota, Conservation Breeding Specialist Group (SSC/UCN). 1–22.

Jakimchuk, R.D., and Carruthers, D.R. 1980. Caribou and muskoxen on Victoria Island, N.W.T. Report prepared for Polar Gas Project by R.D. Jakimchuk Management Associates Ltd. Sidney, B.C. 93 pp.

Nagy, J., Gunn, A., and Wright, W. 2006. Population estimates for Peary caribou (Minto Inlet herd), Dolphin & Union caribou and muskox on Northwest Victoria Island, NT, July 2005. Department of Environment and Natural Resources, GNWT Manuscript Report.

Nishi, J., and Buckland, L. 2000. An aerial survey of caribou on western Victoria Island (5-17 June 1994). Department of Resources, Wildlife and Economic Development, GNWT File report No 128.

Nishi, J., and Gunn, A. 2004. An estimate of herd size for the migratory Dolphin and Union caribou herd during the rut (17 - 22 October 1997). Department of Resources, Wildlife and Economic Development, GNWT File report No 131.

Poole, K., Gunn, A., Patterson, B., and Dumond, M. 2010. Sea ice and migration of the Dolphin and Union caribou herd in the Canadian Arctic: an uncertain future. Arctic 63:414-428

Appendix 1: See document “Dumond and Lee DU Caribou Status.pdf” Manuscript accepted for publication in 2013 in *Arctic*

Appendix 2: See document “Dumond et al Caribou Sea Ice Breaking.zip” Manuscript accepted for publication in 2013 in *Rangifer*