Comments of: Dr. David R. Klein, Professor Emeritus, Institute of Arctic Biology, University of Alaska Fairbanks, January 22, 2011

EA proposal to reduce predators to stimulate an increase of the Unimak Island caribou population.

Any effort at this time to stimulate increase of the Unimak Island caribou population is unjustified in the absence of adequate and detailed knowledge of the factors responsible for limiting the present population. It seems incredulous to me that seemingly qualified wildlife managers would propose predator control in the absence of significant information on the seasonal foraging patterns of the caribou, the status and extent of the primary plant communities used by the caribou, and without understanding the unique island ecology of the Unimak Island brown bears and wolves. The National Research Council review of predator management in Alaska (Orions et al. 1997) lays out clear guide lines for managing Alaska's wolves and bears as predators of ungulate populations. The disregard for these guidelines in this proposal reflects poorly on the professional credibility of those managing Alaska's wildlife.

I do have personal relevant experience from ecological investigations on the Southern Alaska Peninsula (SAP) caribou in the the late 1960,s which included a brief visit to Unimak in early spring 1968 to a low lying area north of Shishaldin Volcano. The primary purpose of the visit to Unimak was to collect forages samples to be used in a study of quality of forage used by reindeer and caribou on Aleutian and Bering Sea islands and adjacent portions of mainland Alaska (Klein 1982a). Refuge Manager Jones informed me at the time that this area was one of the areas where he had observed caribou during an aerial survey the previous winter. Caribou numbers on Unimak were low at the time; down from an earlier high of a few thousand animals. Although I saw only two caribou and these were foraging on sedges initiating growth at the edge of a small lake, lichens, although patchy, showed evidence of previous heavy use. Later that day at the refuge headquarters at Cold Bay Jones told me that the natural pattern of caribou fluctuation on Unimak included long periods of low numbers followed by increases to highs of 2,000 to 3,000 of short duration. The increase phase, was believed correlated with movement of animals to the island at a time when the population of the SAP herd was high. In summer 1992 in conjunction with an investigation of the summer range relationships of the SAP herd by PhD student Eric Post (Post and Klein 1996), I did a reconnaissance and assessment of the status of lichens in the Cold Bay-Izembeck Refuge where SPH caribou had been wintering in previous years. Lichens in that area had been severely depleted and largely eliminated where they had previously been major components of the upland plant communities.

The effects of caribou and reindeer on island ecosystem dynamics has been the focus of extensive investigations over more the than fifty years of my research on caribou and reindeer foraging dynamics and related population ecology throughout Alaska and other arctic and sub-arctic regions (Klein1968,1970, 1982b, 1987, 1999). These investigations have shown that lichens, because of their high selectivity by caribou and reindeer as forage, slow growth in relation to green vascular plants, and susceptibility to trampling damage in summer cannot be sustained in the plant communities of insular ecosystems in the presence of continuing moderate to high density of caribou and

reindeer (Klein 1999; Forman et al. 2000; Kishchinskii 1971; Klein and Shulski 2009, 2011; Joly et al. 2010, van der Wal et al. 2001). Climate warming in recent decades in Alaska, with drier summers has been shown to favor green vascular plant growth in tundra areas while inhibiting growth of lichens, accounting for reduction in lichen biomass and ground cover in tundra plant communities (Joly et al. 2007).

On the basis of my own extensive research and experience with caribou and reindeer ecology and management and the numerous relevant technical publications available for review, I can only conclude that, at this time, The No action Alternative A with no predator control is the only rational and "reasonable" alternative provided in the Unimak Island Caribou Herd Environmental Assessment.

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