

IHL, C. (2010), Percentage of Fecal Moss in Arctic Ungulates as an Indicator of Wintering Area Quality. The Journal of Wildlife Management, 74: 690–697.

Abstract: I investigated local and regional differences in percent moss in the feces of muskoxen (*Ovibos moschatus*) and reindeer or caribou (*Rangifer tarandus*) in northwestern Alaska, USA, and related fecal moss to forage availability, snow conditions, animal density, and terrain ruggedness on wintering areas. Reindeer are a partially domesticated form of *Rangifer tarandus* originating from Europe and Asia and differ physiologically and ecologically from caribou. Percent moss in feces of muskoxen differed locally among individual wintering areas. Because of the large local variation in moss content of muskox feces, regional differences between the 2 study areas were difficult to resolve. Percent of moss in the feces of reindeer–caribou did not differ between wintering areas within the same study area but did differ between study areas. On muskox wintering areas, fecal moss correlated negatively with graminoid cover and snow hardness and positively with moss cover and muskox density, but fecal moss did not correlate with snow depth or terrain ruggedness. On reindeer–caribou wintering areas, fecal moss correlated positively with moss availability but not with lichen cover or snow depth or hardness. Because muskox groups in Alaska are isolated from each other in winter, even groups wintering on neighboring hills may face different foraging availability and might, therefore, exhibit differences in growth or productivity. Reindeer–caribou are more mobile than muskoxen in winter, and fecal samples may not be representative of vegetative and snow conditions at the wintering area where I collected them. I conclude that managers can use fecal moss as an indicator of overgrazed ranges, severe snow conditions, or crowded conditions on muskox wintering areas, but that the association between fecal moss and range conditions has to be drawn with caution for the more mobile reindeer–caribou.