

Carmichael, L. E., J. A. Nagy, N. C. Larter, and C. Strobeck. 2001. Prey specialization may influence patterns of gene flow in wolves of the Canadian Northwest. *Molecular Ecology* 10:2787-2798.

This study characterizes population genetic structure among grey wolves (*Canis lupus*) in northwestern Canada, and discusses potential physical and biological determinants of this structure. Four hundred and ninety-one grey wolves, from nine regions in the Yukon, Northwest Territories and British Columbia, were genotyped using nine microsatellite loci. Results indicate that wolf gene flow is reduced significantly across the Mackenzie River, most likely due to the north–south migration patterns of the barren-ground caribou herds that flank it. Furthermore, although Banks and Victoria Island wolves are genetically similar, they are distinct from mainland wolf populations across the Amundsen Gulf. However, low-level island–mainland wolf migration may occur in conjunction with the movements of the Dolphin-Union caribou herd. Whereas previous authors have examined isolation-by-distance in wolves, this study is the first to demonstrate correlations between genetic structure of wolf populations and the presence of topographical barriers between them. Perhaps most interesting is the possibility that these barriers reflect prey specialization by wolves in different regions.

Key words: Banks Island, gene flow, grey wolf, microsatellites, prey specialization, topographic barriers.

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