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Does the basic ecology of woodland caribou (*R.t. caribou*) vary within different environmental settings? A comparison of movement patterns in female caribou inhabiting different ecosystems in north-eastern Canada

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While caribou in Newfoundland and Labrador share the same subspecific status (*R.t. caribou*), they occur in markedly different environments. In Newfoundland they inhabit the Boreal Shield ecozone, a region characterized on the Island by a continental climate, dense fir and spruce forests as well as extensive barrens, peatlands, high moose densities, and no wolves since 1920 (though in recent years a wolf-like predator, the coyote, has established itself). In Labrador, they occur predominantly within the Taiga Shield, a subarctic region characterized by open spruce forests and fens, low moose densities, and both resident and transient wolves associated with large herds of migratory caribou that winter within the sedentary herd ranges. Further, the phylogeography of Newfoundland caribou suggests they evolved from a southern clade while sedentary caribou in Labrador are of mixed northern and southern ancestry. Taken collectively, environmental and evolutionary factors suggest that the basic ecology of caribou living within these areas may differ in spite of their shared taxonomy. We tested the hypothesis that caribou residing within different ecosystems exhibit dissimilar movement patterns and timing of seasonal behaviours. Movement patterns were contrasted between Labrador and Newfoundland caribou and at the local population level. Mean daily displacement (and standard error) of radio-collared caribou from 7 herds in insular Newfoundland (104 animals 2005 to 2007), and 2 herds in Labrador (200 animals, 1985 to 2005) was calculated. Our objectives were to 1) determine the number of phases demarcating changes in rates and variability of movements; 2) characterize the associated degree of displacement and identify possible ecological correlates; and to 3) assess whether variation (if any) in the number, timing, duration of 'biological seasons' could be explained at the ecosystem level or local population level. Results will aid in the characterization of biodiversity within the *caribou* subspecies within north-eastern Canada, and suggest the degree to which environmental variation may lead to ecological divergence.