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Mycophagy in a community of sciurids : Is the role of chipmunks under-valued?

Katherine SIDLAR[1], Dan DURALL[1] and Karl W. LARSEN[2]

[1]University of British Columbia, Okanagan, Kelowna, Canada (ksidlar@interchange.ubc.ca; daniel.durall@ubc.ca) [2]Thompson Rivers University, Kamloops, Canada (klarsen@tru.ca)

Methods: It is commonly assumed that the dispersal of ectomycorrhizal fungi beyond the root zone of trees happens by way of mycophagous animals transporting the spores in their feces. However, the relative importance of particular animal taxa to fungal spore dispersal into disturbed areas has not previously been investigated. Flying squirrels, for example, are commonly considered an important vector of mycorrhizal spores in forest ecosystems, but the relative importance of their role compared to other rodents (including sciurids) has not been well explored. We explored mycophagy and spore dispersal in a forest community of rodents that included the northern flying squirrel (*Glaucomys sabrinus*), the North American red squirrel (*Tamiasciurus hudsonicus*), and the yellow-pine chipmunk (*Tamias amoenus*).

Results: Using fecal samples collected via live-trapping, we detected fungal spores in the feces of all of our targeted species. Individual red squirrels and chipmunks were also commonly detected moving between harvested and unharvested trapping sites, suggesting their potential for spore transmission. However, chipmunks appeared notable for 3 reasons: (1) the were the most abundant

sciurid in this forest system, (2) their feces routinely contained fungi spores, and (3) they showed a strong propensity for movement across the landscape, crossing different seral stage boundaries. To a lesser degree, even deer mice appeared to have an under-appreciated role in this forest system.

Discussion: This study highlights the important of maintaining entire communities of small mammals under altered forest landscapes, as a number of species may contribute to the vectoring of fungal spores across the forested landscape. In this study, chipmunks were shown to play at important, complimentary, and perhaps underappreciated role in mycorrhizal spore transmission.