

Biology Seminar



Western
UNIVERSITY · CANADA

12:30 - 1:30 pm
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BGS 0153



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Can beach debris reveal long distance dispersal events for Oribatid mites on Haida Gwaii?

The fundamental question '*why are species where they are?*' is particularly interesting for islands where habitable land is interspersed in a literal sea of uninhabitable space, yet requiring organisms to disperse across this matrix to establish new populations. Many ecological theories cite dispersal as a key process in species distributions, but empirical evidence suggests that most organisms have low dispersal capabilities. The importance of rare, long-distance dispersal events that occur infrequently is a key process in generating and maintaining patterns in biological diversity and species distributions across space and time. Several lines of evidence suggest that Haida Gwaii, as a remote series of islands on the west coast of Canada, contains species or subspecies endemic to the Islands. I explore whether oceanic, trans-Pacific dispersal via rafting generates long distance dispersal events for small, flightless, terrestrial species such as soil-dwelling Oribatid mites (Acari: Oribatida). In summer 2017 I sampled beach debris associated with known hot-spots of Asian tsunami debris wash-up for oribatid mites. Samples reveal that tide-line oribatid mite communities are significantly different from inland communities, and several individuals collected from beach debris match species descriptions from Japan. Haida Gwaii's proximity to the Beringian land bridge and the accumulated evidences that suggest Haida Gwaii contains areas of glacial refugia during the last glacial period help explain Haida Gwaii's unique flora and fauna. My research also suggests that infrequent, but continuous trans-Pacific rafting events to the west coast of Canada are a significant influence on the biodiversity of the Coastal Temperate Rainforest.

