

Northwest Scientific Association Student 2008 Student Research Grant

## **Influence of crown structure on canopy arthropod communities in Sitka spruce (*Picea sitchensis*) on the Olympic Peninsula, Washington.**

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### **Abstract**

This study will examine arthropod communities in the crowns of Sitka spruce (*Picea sitchensis*, hereafter spruce) along the Queets River in the Olympic National Park, Washington, on permanent sample plots established for ongoing research on Queets River ecology. The trees that will be sampled have been previously surveyed to quantify the structure and biomass of the trees and their epiphyte communities. Following a hierarchical survey method similar to the method used for the biomass survey will allow the arthropod data to be extrapolated to the whole-tree level. The prior knowledge of crown structural complexity allows this research to examine potential linkages between arthropod biomass and diversity and the structural features of spruce, such as limb form and canopy soil. The method of collection will be to climb three trees in spring, summer and fall to sample canopy soil, epiphytes, foliage and branches from points representative of the full range of crown structure. The objectives of this study are to: 1) assess composition and abundance of spruce canopy arthropods; 2) investigate associations of arthropod taxa with specific structural and epiphytic components of spruce crowns.