

Climate change is quickening the pace of glacial retreat which in return is affecting river health by increasing the amount of sediment supplied to rivers. It is likely that the sediments found in the Puyallup River Watershed differ in composition depending on whether or not they come from Mt Rainier or lowlands. In order to understand the sources of sediments in Commencement Bay, we need to analyze the composition of suspended sediments throughout the Puyallup River Watershed. With samples from Emmons glacier, three locations in the Puyallup River, and Commencement Bay, we measured both concentration dependent (magnetic susceptibility) and independent properties (magnetic hysteresis and coercivity) on particle size fractions and bulk samples. Peak magnetic coercivities were similar for the glacier and bay sediments (~20mT) but higher for the river sediments (~30mT). The river bed and suspended samples also had higher Hcr/Hc and Mrs/Ms values than the glacier and bay. The concentration of iron-oxides within sand and silt sized particles were highest at the glacier and lowest in the bay whereas the clay concentrations were relatively the same throughout all sites. These results indicate either dilution or removal of a glacial iron-bearing mineral assemblage as the sediment is transported through the watershed. These results also suggest that the composition of sediments are most similar in the Bay and Glacier. Future studies could compare and contrast the makeup of sediments during different seasons to see if seasonal changes affect the transport of sediment through the watershed.