RESEARCH ABSTRACT

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Study Title: Recovery of net primary production in subalpine meadows of Mount St. Helens

Key Words: terrestrial, plant, upland, biomass, seedling, survival, Tephra, lahar, mudflow, ashfall zone, subalpine, net primary production, archives

Abstract: Study sites that received tephra or mudflow deposits during the May 1980 eruption were examined and compared for effects on vegetation. Deposition of 5-10 cm of tephra resulted in less species diversity and inhibition of seedling establishment but did not significantly decrease net primary production (NPP); the NPP of these areas did fluctuate dramatically with precipitation rates during seven summers from 1980-1986.

Revegetation in mudflow areas has been slower; the NPP at these sites has increased but remains below that of the tephra fall sites.

Species composition at both sites is skewed toward those plants that propagate vegetatively. Resprouts from surviving plants are more successful at recolonization than are invading seedlings.

Type of Measurement(s): Total amount of current year growth/species/quad; number of species/quad; 10 1 meter square quads at Pine Creek; 10 0.1 meter square quads at Lower Butte Camp; 9 0.1 meter square quads at Upper Butte Camp.

Meteorological data: temperature (^{o}C), precipitation (cm), radiation, soil moisture (% moisture, megapascals).

Plant nutrient content: nitrogen and phosphorous for dominant species and litter.

Frequency of Measurement(s): 1980-1986; biomass, nitrogen, and phosphorous once at the end of the growing season each year; meteorological data in July and August.

Data Storage: Field notebooks and hard copies on file at University of Washington, Botany Department.

Long-term plans: Data available for collaborative efforts: No future plans to continue this study. Data are available for collaboration.