RESEARCH ABSTRACT

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Study Title: Natural revegetation of upland portions of the blast zone

Key Words: terrestrial, plant, vegetation, succession, uplands, trees, shrubs, herbs, grasses, blowdown zone, recovery, revegetation, long-term studies

Abstract: Natural revegetation was studied within the northeast sector of the blast zone on Forest Service land. Objectives were: 1) compare revegetation on major disturbance types (pyroclastic flow, debris avalanche, blown down and standing dead forest); 2) examine the effects of pre-eruption plant communities and the presence/absence of snowpack on current vegetation; 3) establish a system of permanent plots to track ecosystem recovery and describe important processes through time.

The basic sampling unit is five, 250 square meter circular plots located at 25 m intervals along a 100 m long transect. Paired transects were installed in adjacent blowdown and pre-eruption clearcut areas (in a few instances transects were also located in adjacent patches of standing dead (scorched) trees).

Results indicate that a number of factors contribute to the composition and abundance of vegetation following the eruption. They include: (1) degree of disturbance as influenced by proximity to the volcano, depth of deposit, orientation to blast direction and presence/absence of snowpack at time of eruption); (2) degree of subsequent erosion or deposition of deposits and (3) pre-eruption community composition (aspect, elevation, seral stage--for clearcuts time of harvest prior to the eruption is important).

Type of Measurement(s):

- Composition and cover to nearest 0.01 meter square for all vascular plant species on whole plot and cover recorded on 8 one meter squared subplots/plot.
- Quantity of large woody debris assessed using line intercept transects in blowdown (1981 only).
- Abundance of small scale surface features (erosion gullies, logs, stumps, rootwads) and plant cover by species recorded for each major surface feature on each 250 meter square plot (1981 only)

Frequency of Measurement(s): Annual measurements at period of peak phytomass (late July to end of August) conducted 1980-1984, 1986 and 1989.

After 1982 plots on transects were sub-sampled and only three of five total plots were read (plots located at endpoints of transects and middle-most plot was sampled (e.g. #1, 3, and 5) while intervening plots (#2 and 4) were skipped).

Data Storage: Field notes are stored at the Forestry Sciences Laboratory, Corvallis; copies are stored at the College of Forest Resources, Univ. Washington.

Electronic data (IBM compatible ASCII files) and accompanying documentation are stored on magnetic tape in the Forest Science Databank at Oregon State University with 5.25" floppy disk copies at Univ. Washington (Dr. J. Franklin) and at the Monument Scientist's office, Mount St. Helens National Volcanic Monument.

Long-term plans: Data available for collaborative efforts: Transects will be resurveyed periodically as resources are available, expect remeasurement program to continue at three to five year intervals with frequency varying with resource availability. Data are available to bona fide investigators for collaborative research.