

RESEARCH ABSTRACT

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**Study Title:** Plant succession and Pacific silver fir (*Abies amabilis*) mortality

**Key Words:** plant                      succession                      revegetation                      soil                      terrestrial  
upland                      recovery                      standing dead                      volcanic ash                      archives                      tree mortality  
ashfall zone

**Abstract:** The post-eruption remeasurement of ecology reconnaissance plots installed before 1980 is comprised of five distinct parts. The most basic information was collected on 76 plots relocated during the summer of 1981. Photo points and reconnaissance level plots identical to the pre-eruption plots were installed.

Mortality monitoring plots of Pacific silver fir were installed on several sites during the 1981 and 1982 pulses conducted by the PNW Forest and Range Experiment Station. All live trees within a 1000 meter square fixed area plot (17 meter radius from plot center) were tagged with tree numbers and species and diameter at breast height in centimeters was recorded. Snags were marked with blue paint.

Additional information was added to the remeasurement effort in 1985. This included the installation of transects with Daubenmire microplots and fixed area seedling count plots on over 40 of the relocated plots. During the 1989 field season, a more complex seedling plot was installed.

The post-eruption plots were relocated as closely as possible to the location of the original reconnaissance classification plots. Often the plots were exactly relocated with the use of pre-eruption plot photography. When the plot was not exactly relocatable, a replacement plot in the same area with identical site characteristics and plant association was installed. This was noted on the plot cards.

**Type of Measurement(s):**

Plant cover - % cover of 42' radius plot by species and vegetation type.

- % cover within a series of Daubenmire microplots

Soil - depth of 1980 ash layer

- soil layer descriptions

Silver fir mortality - health (live/dead/declining) of silver fir trees on plot.

Slope/aspect - % / azimuth

**Frequency of Measurement(s):** About every four years. Last measurement was in 1989.

**Data Storage:** Data will be stored by Monument Scientist at Mount St. Helens National Volcanic Monument Headquarters.

**Long-term plans:** Data available for collaborative efforts: Plans are to continue monitoring at the same frequency. Data are available from Mount St. Helens Science Department.