

RESEARCH ABSTRACT

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Study Title: Fungal and mycorrhizal succession in the Mount St. Helens devastation area

Key Words: terrestrial fungi mycorrhizae succession mudflow
ashfall zone archives

Abstract: Samples of tephra deposits from the May 1980 eruption showed no mycorrhizal fungi in 1980 to 1985. Samples of buried soils and mudflow soil, however, showed that mycorrhizal fungi did survive the volcanic disturbance. Plant succession patterns in areas of tephra deposits reflect the distribution of mycorrhizae in that plants that resprouted or germinated from old soils where mycorrhizal fungi were present were much more successful than seedlings that germinated in the tephra that lacked these fungi. Mudflow soils and old soils that were exposed as when tephra eroded were initially much more conducive to revegetation at least partly because these soils contained the mycorrhizal fungi.

Overall fungal succession proceeded from very little present in tephra in 1980 to large amounts of so-called "fireplace" fungi (those that typically fruit on burned organic matter) present in 1981. As time progressed, wood decay fungi invaded dead trees in the blast zone.

Type of Measurement(s): Samples of pre-eruption soils, tephra, and plant roots were assayed or microscopically examined for presence or absence of fungal mycelia or propagules.

Frequency of Measurement(s): 1980-1985, several times during spring and fall.

Data Storage: Field notes in personal possession.

Long-term plans: Data available for collaborative efforts: Trappe hopes to continue to monitor succession of fungi and factors influencing dispersal of fungi in the disturbance zone. He anticipates a possible project with Joe Ammirati of University of Washington. Trappe is available for collaboration.