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RESEARCH ABSTRACT

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Study Title: Ecosystem recovery on the debris avalanche

Key Words: terrestrial, plant, animal, upland, vegetation, mammals, insects, debris avalanche, ecosystem recovery, archives

Abstract: The object of this study is to monitor ecosystem recovery on the debris avalanche created by the May 1980 eruption of Mount St. Helens. Vegetation was significantly reduced in the blast area. Plant survival and diversity was apparently related to growth form. Plants with underground dormant buds survived best. Plant recovery has been correlated with moisture rather than physical structure of the substrate.

Mammal recovery is related to plant community structure; particularly important may be the presence of dead organic debris. Migration of deer mice (Peromyscus maniculatus) onto the debris avalanche occurred within four years of the May 1980 blast, and significantly more males were sighted than females.

Insect diversity, especially of beetles is largely a result of physical structure of the substrate.

Type of Measurement(s): Vegetation sampling was performed in 12 plots each 25 meters square; number of species and percent cover for vascular plants was estimated. In August 1981 31 plots each 250 meter square were established in which all individual plants were marked and number of stems per species counted and soil texture was assessed.

Greenhouse plantings to determine effects of soil moisture were conducted at University of Washington using soil collected from the North Fork Toutle River. Soil moisture measured in megapascals (MPa); plant height measured in centimeters; fresh weight and dry weight of plants measured in grams.

Small mammal trapping took place in 1984, and individuals and species were counted and sexed.

Insects were identified and individuals counted; diversity was measured as number of families and individual taxa per order.

Frequency of Measurement(s): Annually from 1980; some years several samples were made.

Data Storage: Field notebooks and magnetic computer tapes in personal possession. Data has been published.

Long-term plans, Data available for collaborative efforts: Continuation of monitoring is questionable. Plots are permanent. Adams is available for future collaborative efforts, and data is available in publications.