

RESEARCH ABSTRACT

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**Study Title:** The herpetofauna of Mount St. Helens: survival and colonization following the 1980 eruption.

**Key Words:** terrestrial aquatic amphibian reptile frog  
toad salamander newt snake lizard succession  
ecology ecosystem larvae lake stream archives  
blowdown zone ashfall zone

**Abstract:** This study documents the survival and colonization of reptiles and amphibians in areas impacted by the 1980 eruption of Mount St. Helens. Surveys were conducted at 15 locations, with representative sites in three distinct volcanic impact zones, 1) ashfall, 2) blowdown, and 3) blast, during spring and summer from 1980 through 1991. Twelve species of herptiles (9 amphibians, 3 reptiles) are considered to have survived volcanic influences ranging from the directed blast to the accumulation of ash in otherwise unaltered habitats. These survivors represent most of a hypothetical list of 16 species considered to have occurred in the area before the eruption. Generally, surviving species were characterized by being more aquatic than those not found and this was attributed to the thermal buffering capacity of cool ice and snow covered aquatic systems where individuals were protected from the hot volcanic gases.

Colonization for the most part has been from survivors or their progeny which entered areas where suitable habitat had developed since the eruption. Anurans were the first and most widespread colonists, having established breeding populations in virtually all available habitats by the mid 1980's. Snakes became very abundant in the open environment of the blowdown zone by 1991. The less vagile salamanders continue, for the most part, to be restricted to the sites of initial survival. Certain aquatic pond breeding salamanders have, however, experienced rapid population growth and limited colonization.

**Type of Measurement(s):** Surveys for presence/absence, relative abundance and breeding activity.

**Frequency of Measurement(s):** Schedule of surveys was variable during spring/summer from 1980-1991.

**Data Storage:** Field notebooks on file at Utah State University and at Mount St. Helens National Volcanic Monument Headquarters.

**Long-term plans:** Data available for collaborative efforts: Continue surveys at least into the mid 1990's. Collaborative efforts will be considered on a case specific basis.