RESEARCH ABSTRACT

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Study Title: Microbiology of thermal vents

Key Words: aquatic, animal, plant, stream, bacteria, microbial, thermal springs, bluegreen algae, archives

Abstract: Our objectives are to observe, enrich, isolate, and identify bacteria from hot springs in the Mount St. Helens area. If any previously undescribed isolates are found, we will characterize them. In two trips to the area so far, we have observed the following: Cyanobacterial (blue-green algal) mats containing filamentous forms, some with heterocysts; filaments with the appearance of the sulfur oxidizer Beggiatoa or Thiothrix; and numerous rod shaped and coccus shaped bacteria. From anoxic sediment at 60^{o}C, we obtained an enrichment of methanogenic bacteria that appeared similar to Methanobacterium thermoautotrophicum. We also obtained an enrichment of the green non-sulfur photosynthetic bacterium, Chloroflexus. We observed few organisms in a vent at 85^{o}C.

Type of Measurement(s): Temperature of water and sediments (^{o}C), microscopic observation of samples.

Frequency of Measurement(s): Approximately twice yearly, 1989 to present.

Data Storage: Photographic and written descriptions are in lab and field notebooks of individual investigators.

Long-term plans: Data available for collaborative efforts: Plans are to continue our survey of bacteria in thermal areas. We hope to obtain some new isolates, given the novel habitat of the Mount St. Helens area.

Leigh and his data are available for future collaborative efforts.