

***Pohlia wahlenbergii*–*Philonotis fontana* Seep Plant Association**
Wahlenberg's *Pohlia* Moss-*Philonotis* Moss Seep Plant Association
Southern Alaska

Conservation Status Rank: S3S4 (vulnerable to apparently secure)

Introduction

The *Pohlia wahlenbergii*–*Philonotis fontana* (Wahlenberg's pohlia moss-philonotis moss) Seep Plant Association is dominated by the two nominal mosses and occurs as small patches downgradient from seeps and springs (Figure 1). While this association has only been formally described from the western Alaska Peninsula, its dominant species, are known to be associated with calcareous seeps across western North America (Vitt et al. 1988). Impacts are presumed to be low.



Figure 1. *Pohlia wahlenbergii*–*Philonotis fontana* Seep Plant Association near the Aniakchak Volcano, Alaska.

Distribution

This association occurs as small patches along the Alaska Peninsula (Boucher et al. 2012, Bosworth 1987). While less than 20 occurrences are known from Aniakchak National Monument and Preserve, both moss

species occur throughout the state. It is thought that this association has been undersurveyed and is likely to be more widely distributed along the Aleutian Islands and greater Southern Alaska. Due to a paucity of collection locations and related geospatial data, the distribution of this plant association has not been mapped.

Climate

Southeast Alaska has a cool, wet maritime climate (Gallant et al. 1995, Nowacki et al. 2001). Mean annual total precipitation in the coastal rainforest ranges from 135 to 390 cm, with 80 to 600 cm falling as snow. Average summer temperatures range from 7 to 18 °C; average winter temperatures are between -3 and 3°C. Rainfall and temperature show highly variable patterns dependent upon proximity to mainland ice-fields, the Pacific Ocean, topography and regional weather patterns.

Environmental Characteristics

This association occurs as a small patch type on alpine benches and valleys associated with seeps and springs. Surface water pH is 7.5.

Vegetation

This wet bryophyte association is dominated by the mosses *Pohlia wahlenbergii* and *Philonotis fontana* both of which are associated with calcareous seeps and springs (Boucher et al. 2012, Vitt et al. 1988). Associated vascular plant species include *Epilobium anagallidifolium*, *Cardamine oligosperma* var. *kamtschatica*, *Claytonia sarmentosa*, *Koenigia islandica*, *Saxifraga lyallii* and *S. rivularis*. No vegetation succession studies have been conducted.

Conservation Status

Rarity: This association is documented only from the flanks of the Aniakchak Volcano where it is represented by less than 20 occurrences. However it is presumed to be undersampled and likely occurs at additional locations throughout the Alaska Peninsula.

Threats: Renewed volcanic activity threatens this association in so far that its hydrology could be altered or the entire system could be buried by lava, pumice or ash.

Trend: Short-term declines are not expected but long-term impacts are inevitable. Aniakchak erupted catastrophically 3,500 years ago with at least 12 lesser eruptions since with the most recent occurring in 1931. While the volcano shows no sign of current unrest, eruptions are fully expected to occur in the future (Neal et al. 2001).

Species of Conservation Concern

The plant species listed below are designated critically imperiled or vulnerable either globally (G1-G3) or within Alaska (S1-S3) and are known or suspected to occur in this biophysical setting (Table 1). Please

visit the Alaska Center for Conservation Science website for species descriptions (ACCS 2016). Additional study is required to evaluate whether this plant association supports animal species of conservation concern.

Table 1. Plant species of conservation concern within the *Pohlia wahlenbergii-Philonotis fontana* Seep Plant Association.

Scientific Name	Global Rank	State Rank	Habitat Description
<i>Romanzoffia unalaschcensis</i>	G3	S3S4	Endemic to eastern Aleutians, Alaska Peninsula, Kodiak and scattered locations east to Sitka.
<i>Rumex beringensis</i>	G3	S3	Sandy and gravelly soil, shores, limestone outcrops. Yukon, Alaska and Russian Far East.

Classification Concept Source

This classification concept is based on Bosworth (1987) and Boucher and others (2012).

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