

The Fen Phenomenon

An Elusive Ecosystem

A quick internet search of the word “fen” brings up a few scientific articles before delving off into the black hole that is obscurely searched for words in Google. Much like its existence in the online world, fens receive relative anonymity in the natural world. Often mistaken for meadows or poorly irrigated puddles in grass, this unique ecosystem supports an immense collection of diverse plant species and habitat.

Fens, a type of wetland ecosystem, depend on groundwater sources to wet soil at or just below the soil surface. Fens typically feature plant communities dominated by mosses and sedge-like plant species growing over peat.



Moss *Elodium blanowii* (left) and moss *Tomentypnum nitens* (right),
Lava Lakes fen,
Deschutes National Forest

Fens comprise a very minor part of Oregon and Washington landscapes. In part, because they may resemble the more common surface water-wetted open or shrubby meadows, many fens have yet to be discovered or documented. Most occur in the mountainous region of the Pacific Northwest

between 3,000 feet and 6,000 feet in elevation.

Recognized by continuous soil wetness that lasts through the heat of

summer, fens host a distinct assemblage of plant species. These species thrive on peaty soil, developed as years of dead leaves and roots do not thoroughly decompose. Over centuries, peat may become a few inches to a few feet thick. In many of the fens across Oregon and Washington, it is likely that peat accumulation is roughly an inch per century. Unlike other ecosystems, fens usually exist in the same location for thousands of years. Throughout these long periods of time, the fen's species composition changes very little.



Fens remain locally rare or uncommon throughout much of Oregon and Washington. Distributed throughout the mountains, fens are spatially a small part of the geographic area throughout which they are dispersed. A large portion of this mountainous landscape is included within U.S. Forest Service-managed lands, meaning that the majority of fens occur on public lands.



The Deschutes National Forest, located in the Cascades of Central Oregon, may well be the most thoroughly inventoried and fen-rich forest in Oregon and Washington. Currently, botanists have documented 460 acres of fens across the Forest, an area that covers a mere .03% of the Forest's 1.6 million total acres.

TOP: Insectivorous plant *Drosera rotundifolia* (roundleaf sundew) in a fen on the **Okanogan-Wenatchee National Forest**

MIDDLE: Moss *Meesia triquetra* in a fen on the **Okanogan-Wenatchee National Forest**



BOTTOM: *Pedicularis groenlandica* (elephanthead lousewort) & *Saxifraga* (Oregon saxifrage) in a fen on the **Fremont-Winema National Forest**

While fens cover such a small portion of the landscape, their plant communities contribute to local plant biodiversity in a very large way. Of the rare and uncommon plant species on the Deschutes National Forest, between 15% and 20% are found in fen ecosystems.



Small capsule dung moss, *Splachnum ampullaceum*, in a fen on the **Fremont-Winema National Forest**

Difficulty locating and identifying fens continues to prove challenging for the cultivation of awareness and protection for these unique ecosystems. As many forests across Oregon and Washington undergo revisions to their forest plans, botanists and other specialists are utilizing the opportunity to include direction for fen inventories, condition reports, threat assessments and management guidelines. With an increased awareness of the unique, critical contributions fens make to the environment, perhaps they'll be easier to spot, and protect, both on the ground and on Google.