Bracken Fern and Salal after Restoring the Fire Regime of a Skokomish Savanna

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Figure 1: Olympic National Forest thinned/burned unit in 2003.

- **<u>Background</u>: Prior to European settlement, savannas of the southeastern Olympic Peninsula were primarily managed by anthropogenic (deliberate) burning for plant harvest and hunting.**
- **Bracken fern (*Pteridium aquilinum*) rhizomes, harvested from savannas, long served as one of the major carbohydrate sources for native tribes in the Pacific Northwest.**
- **Salal (*Gaultheria shallon*) berries, very popular fresh or stored for winter, are said to grow more abundant with cutting back.**

- **<u>Restoration Need</u>: Fire management was suppressed and a less diverse Douglas-fir (*Pseudotsuga menziesii*) - salal community established.**
- **<u>Objective:</u> What factors (thinning, burning, environmental) affect the distribution of bracken fern and salal in the entire site and within just the thinned/burned unit?**
- **<u>Methods:</u> Vegetation and environmental data collected in 79 plots between three units (thinned/burned, thinned, woodland). Analyze with PERMANOVA.**

Figure 2: Thinned/burned unit; bracken fern and salal understory.

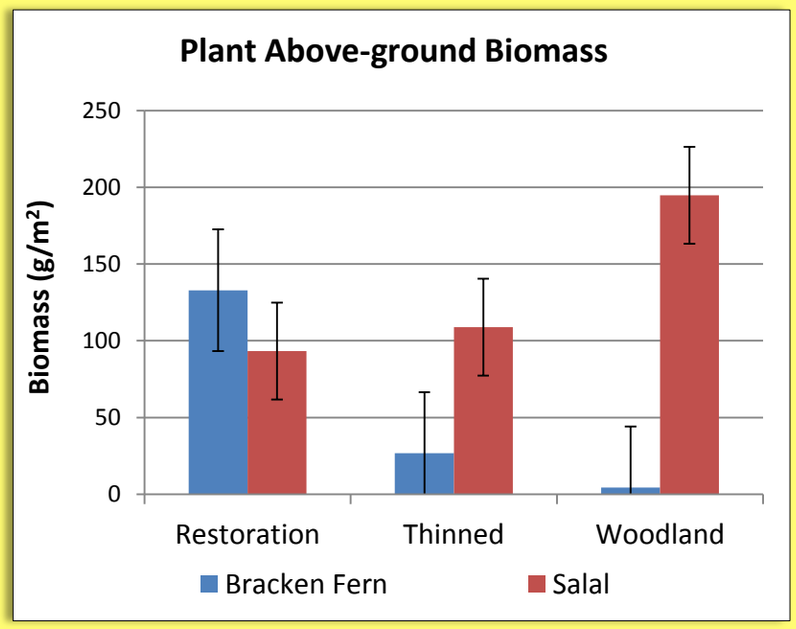

Figure 3: Above-ground biomass in the 3 study units.

Results

Bracken fern

- **Entire Site: Burning is the most significant factor ($p < 0.0001$), followed by LWD ($p < 0.01$) and mid-tree canopy cover ($p < 0.05$).**
- **Thinned/Burned Unit: Soil moisture only significance ($p < 0.05$)**

Salal

- **Entire Site: Thinning is the most significant factor ($p < 0.0001$), followed by moss ($p < 0.05$) and mid-tree canopy cover ($p < 0.05$).**
- **Thinned/Burned Unit: Litter ($p < 0.001$), then soil moisture ($p < 0.05$)**

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