

Forest and Plant Communities of Mt Rainier

Subalpine Meadows of Mount Rainier

- An elevational zone just below timberline but above the reach of more or less continuous tree or shrub cover. Divided into 5 groups (J Henderson 1988):
 - 1) Heather-Bell-heather-Huckleberry Communities
 - 2) Sitka Valarian-Showy Sedge Communities
 - 3) Black Alpine Sedge Communities
 - 4) Low Herbaceous Communities
 - 5) Mountain Bunchgrass Communities



Summerland

Alpine Plants

- Above the last outposts of trees someplace between 6,000 and 7,500 ft
- Plants grow in cushions or mats, leaves are often insulated and protected by hairs and roots dig deeply. Best growth on shallow slopes littered with small rocks.
- A very harsh environment with short growing season.



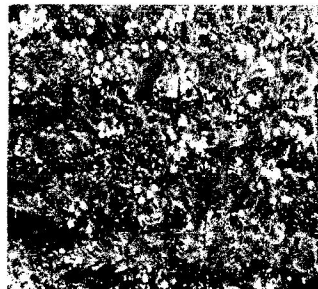
Phlox and Eriogonum pyrolifolium-
Alpine buckwheat –Sunrise area

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Heather-Bell-heather-Huckleberry Communities

- Attractive communities of low shrubs mainly located on the south and west sides of Mt Rainier. Important species include:

- 1) **Heath Family** (Ericaceae)-Pink and Yellow Heathers (Phyllodoce empetriformis and P. glanduliflora); White Mountain Heather (Cassiope mertensiana); Cascade Blueberry (Vaccinium deliciosum)
- 2) **Pea Family** (Fabaceae)-Sub-alpine Lupine (Lupinus arcticus)
- 3) **Aster Family** (Asteraceae)-Woolly Pussytoes (Antennaria lanata)
- 4) **Rose Family** (Rosaceae)- Partridgefoot (Luetkea pectinate)
- 5) **Broomrape Family** (Oroganchaceae, formerly Scrophulariaceae) Magenta Paintbrush (Castilleja parviflora); Bird's Beak Lousewort (Pedicularis ornithorhynchcha)
- 6) **Buckwheat Family** (Polygonaceae)-American Bistort (Polygonum bistortoides)
- 7) **Grass Family** (Poaceae)-Mountain Hairgrass (Vahlodea atropurpurea)



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Sitka Valarian-Showy Sedge Communities

- The lushest stands of wildflowers are found on the south and west sides of the Park. Found around Mr Rainier on moderate to steep, well-drained slopes
- The growth of shrubs, including the heathers and huckleberries, and trees is thought to be suppressed by avalanches. Important species include:
 - 1) **Sedge Family** (Cyperaceae)-Showy Sedge (*Carex spectabilis*)
 - 2) **Pea Family** (Fabaceae)-Sub-alpine lupine (*Lupinus arcticus*)
 - 3) **Buckwheat Family** (Polygonaceae)-American bistort (*Polygonum bistortoides*)
 - 4) **Valerian Family** (Valerianaceae)-Sitka valarian (*Valeriana sitchensis*)
 - 5) **False Hellebore Family** (Melanthiaceae-formerly Lily Family)-Green false hellebore (*Veratrum viride*)
 - 6) **Lily Family** (Liliaceae)-Glacier lily (*Erythronium grandiflorum*); Avalanche lily (*Erythronium montanum*)
 - 7) **Buttercup Family** (Ranunculaceae)-Western pasqueflower (*Anemone occidentalis*)
 - 8) **Broomrape Family** (Orobanchaceae)-Magenta paintbrush (*Castilleja parviflora*)
 - 9) **Aster Family** (Asteraceae)-Subalpine daisy (*Erigeron glacialis*- formerly *Erigeron peregrinus*)
 - 10) **Parsley Family** (Apiaceae)-Cow parsnip (*Heracleum lannatum*); Gray's lovage (*Ligusticum grayi*)
 - 11) **Rose Family** (Rosaceae)-Fan-leaf cinquefoil (*Potentilla flabellifolia*)
- A special group of plants are found on low, wet ground along streams:
 - 1) **Sedge Family** (Cyperaceae)- Black alpine sedge (*Carex nigricans*)
 - 2) **Lopseed Family** (Phrymaceae)-Lewis's monkey-flower(*Erythraanthe lewisii*-formerly *Mimulus lewisii*); Large mountain monkey-flower (*Erythranthe caespitosa*-formerly *Mimulus tilingii*)
 - 3) **Saxifrage Family** (Saxifragaceae)-Fringed grass of parnassus (*Parnassia fimbriata*)
 - 4) **Parsley Family** (Apiaceae)- Sweet coltsfoot (*Petasites frigidus*)
 - 5) **Buttercup Family** (Ranunculaceae)- Marsh-Marigold (*Caltha leptosepala*)

Subalpine Meadows of Mount Rainier

Black Alpine Sedge Communities

- Snow cover persists late into the spring and growing season is short. Sometimes seen at the edges of meltwater ponds. Important species include:
 - 1) **Sedge Family** (Cyperaceae)- Black alpine sedge (*Carex nigricans*) and Showy sedge (*Carex spectabilis*)
 - 2) **Pea Family** (Fabaceae)-Sub-alpine lupine (*Lupinus arcticus*)
 - 3) **Aster Family** (Asteraceae)-Tundra aster (*Oreostemma alpigenum*)
 - 4) **Rose Family** (Rosaceae)-Fan-leaf cinquefoil (*Potentilla flabellifolia*), Partridgefoot (*Luetkea pectinate*)
 - 5) **Evening Primrose Family** (Onagraceae)- Alpine willow-herb (*epilobium anagallidifolium*)
 - 6) **Grass Family** (Poaceae)-Mountain hairgrass (*Vahlodea atropurpurea*)



Showy Sedge (*Carex spectabilis*)

Subalpine Meadows of Mount Rainier

Low Herbaceous Communities

- Dominated by mosses, in areas of disturbance or unstable soil. Vegetation grows in clumps, possibly with patches of bare ground visible. May eventually be succeeded by other community types. Important species include:

- 1) **Sedge Family** (Cyperaceae)- Black alpine sedge (*Carex nigricans*)
- 2) **Saxifrage Family** (Saxifragaceae)-Tolmie's saxifrage (*Micranthes tolmiei*)
- 3) **Aster Family** (Asteraceae)-Slender hawkweed (*Hieracium gracile*)
- 4) **Rose Family** (Rosaceae)-Partridgefoot (*Luetkea pectinata*), Woolly pussytoes (*Antennaria lanata*)
- 5) **Purslane Family** (Portulacaceae)-Pussypaws (*Calyptidium umbellatum*)
- 6) **Valerian Family** (Valerianaceae)-Sitka valerian (*Valeriana sitchensis*)
- 7) **Grass Family** (Poaceae)-Mountain hairgrass (*Vahlodea atropurpurea*)



Sitka Valerian (*Valeriana sitchensis*)

Subalpine Meadows of Mount Rainier

Mountain Brunchgrass Communities

- Where soils are dry and loose, and the prevailing wind has, over the centuries, favored the area with pumice and ash from eruptions (Sunrise timberline).
 - OR where the wind removes snow as it falls, leaving locally drier conditions.
- Important species include:

- 1) **Grass Family** (Poaceae)-Green mountain bunchgrass (*Festuca viridula*)
- 2) **Sedge Family** (Cyperaceae)- Showy sedge (*Carex spec*)
- 3) **Aster Family** (Asteraceae)-Cascade aster (*Eucephalus ledophyllus*)
- 4) **Rose Family** (Rosaceae)- Fan-leaf cinquefoil (*Potentilla flabellifolia*)
- 5) **Purslane Family** (Portulacaceae)-Western springbeauty (*Claytonia lanceolata*)
- 6) **Parsley Family** (Apiaceae)-Gray's lovage (*Ligusticum grayi*)
- 7) **Buttercup Family** (Ranunculaceae)-Western pasqueflower (*Anemone occidentalis*); Snow buttercup (*Ranunculus eschscholtzii* var *suksdorfii*)
- 8) **Buckwheat Family** (Polygonaceae)-American bistort (*Polygonum bistortoides*)
- 9) **Plantain Family** (Plantaginaceae -formerly Scrophulariaceae)-Cusick's veronica (*Veronica cusickii*)

Alpine Meadows of Mount Rainier

- From treeline to the mountain summit. Type and location of vegetation is controlled by length of the growing season, slope, and exposure to the sun
- Permanent snow and ice covers about 50 percent of the zone. Alpine vegetation covers the remainder---divided into four broad vegetation types (Edwards 1980):
 - 1) **Fellfields**-areas where freeze-thaw cycles result in patterns of frost-wedged rocks, usually on a level or gently sloping surface stabilized by vegetation mats.
 - 2) **Talus Slopes and Ridgetops**-ecosystems that are relatively steep, unstable, usually below cliffs or bluffs or ridgelines. Among the first areas to be snow free so have a longer growing season.
 - 3) **Snow beds**-have the shortest growing season. Areas can have meadows with cold wet soil, streams and tarns.
 - 4) **Heather Communities.**

Characteristic wildflowers include: Pussypaws (*Cistanthe umbellata*), Golden draba (*Draba aureola*), Golden daisy (*Erigeron aureus*), Elegant Jacob's Ladder (*Polenonium elegans*), Dwarf lupine (*Lupinus lepidus*), Tolmei's Saxifrage (*Saxifraga tolmiei*), Alpine buckwheat (*Eriogonum pyrolifolium*), Alpine willow-herb (*Epilobium anagallidifolium*), both species of *Smelowskia*, stonecrops---and of course the heathers.

Now we will look a little closer at some of these wildflowers.....