

Sub-Alpine Tall Forb

Description

This type occurs above tree-line or in dispersed pockets surrounded by spruce and sub-alpine fir forest. It is lush and colourful with a high cover of forbs including Sitka valerian, alpine daisy, mountain arnica and a number of dry land sedges as decreaseers. Common Increaseers are false hellebore, Kentucky bluegrass, arrow-leaved groundsel, woolly pussytoes and arctic lupine.

Location

This type occurs commonly on zonal to slightly moist sites on mountain tops in the north Okanagan, the Thompson/Shuswap and some portions of the Nicola and Fraser River watershed, between the forest and true alpine cushion plant communities. In the Okanagan /Shuswap /Thompson areas these can be fairly flat to rolling hills but to the east or west they tend to be on receiving sites on steeper slopes. It occurs as very small patches in the dryer subalpine to the south of the southern interior

Representative Reference Area

Hunters Old, Hunters New, Potato South, Kettle Mountain, Poison Mountain

BEC Correlation

The BEC system does not delineate the type well. There is an Alpine Tundra (AT) zone but it is not mapped, it is not divided into subzones and there are no site series descriptions. It occurs in the upper edge of the ESSF wc2, 3,w, and p, and ESSF dc2 as they grade into the bottom of the AT where they are sometimes assigned a parkland designation.

Site Characteristics

Soils

Orthic Melanic or Sombric Brunisols and Humo Feric Podzols

Elevation range

1700 - 2100 m

Temperature

Short cold summers with frost possible on any day, with occasional very hot days.

Seral Stages

PNC Climax

Sub-alpine tall forb PNC Sitka valerian, sedge, alpine daisy



Sub-Alpine Tall Forb

Species	Canopy cover (%)
Woolly arnica	5%
Alpine daisy	10%
Sitka Valerian	20%
Dry land sedges	20%
Arctic Lupine	10%

Productivity

2500-3000 kg/ha

Range Management Considerations

This type is very sensitive to grazing due to the short growing season and often damp soil that are prone to trampling. Turn-out should be held until the main forbs are starting to bloom. Light use every second year can maintain PNC.

Properly Functioning Condition

This stage will score properly functioning.

Late-Seral

No Picture Available

Plant Community Late-Seral	
Species	Canopy cover (%)
Woolly arnica	2%
Alpine daisy	5%
Sitka Valerian	10%
Dry land sedges	10%
Arctic Lupine	15%

Productivity

2500-3000 kg/ha

Range Management Considerations

This type is very sensitive to grazing due to the short growing season and often damp soil that are prone to trampling. Turnout should be held until the main forbs are starting to bloom.

Properly Functioning Condition

This stage will score properly functioning

Mid-Seral

Sub-Alpine Tall Forb



Sub-alpine tall forb mid-seral false hellebore, arctic lupine, sedge

Plant Community Mid Seral	
Species	Canopy cover (%)
Woolly arnica	1%
Alpine daisy	1%
Sitka Valerian	2%
Dry land sedges	5%
Arctic Lupine	20%
Arrow-leaved groundsel	10
False hellebore	5
Kentucky bluegrass	5

Productivity

1000 -1500 kg/ha

Range Management Considerations

This type is very sensitive to grazing due to the short growing season and often damp soil that are prone to trampling. Turn-out should be held until the main forbs are starting to bloom. Recovery to late-seral will require light use no more than once in two years and preferably once in three years. With the loss of cover and increased bare ground tree encroachment is a threat.

Properly Functioning Condition

Scores will be lower in this stage due to lower litter cover and compacted soil. The thick organic layer in the soil should protect from erosion, but if the site is in this stage for decades that layer may be lost and the risk to erosion will increase.

Early-Seral

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Sub-alpine tall forb earl- seral arctic lupine, western anemone.

Plant Community Early Seral	
Species	Canopy cover (%)
Arctic Lupine	20%
Arrow-leaved groundsel	10-20%
False hellebore	5-50%
Kentucky bluegrass	5-50%
Woolly pussytoes	0-30%

Productivity
500-1000 kg/ha

Range Management Considerations

This type is very sensitive to grazing due to the short growing season and often damp soil that are prone to trampling. Turn out should be held until the main forbs are starting to bloom. Recovery to late seral will require an initial 5 year rest from grazing then light use no more than once in two years and preferably once in three years. With the loss of litter cover and increased bare ground tree encroachment is a threat.

Properly Functioning Condition

Sites dominated by Kentucky bluegrass will score functional at moderate risk due to the lack of litter and tall plant cover, loss of habitat, soil compaction, and loss of deep roots, but risk erosion will be low. Sites dominated by the other increasers will score highly at risk or non- functional.

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Altered States

Spruce forest

Tree encroachment could lead to high cover spruce sub-alpine fir forest with little understorey.
No Picture available

Plant Community	
Species	Canopy cover (%)
Engelmann spruce, sub-alpine fir	100%
Wood rushes	5%
Miterwort	5%

Productivity

100 kg/ha

Range Management Considerations

The tree cover has to be removed but before that is done there needs to be assurance that livestock will be controlled to allow the plant community time to establish. Burning can be used for small trees but if the forest has been established for a long time, logging the larger trees should be done first. Once the trees are removed, range management will depend on the residual species. A rest of 2-5 years will be needed for the residual species to express themselves and regain vigour; then grazing can resume based on the seral stage that is represented.

Properly Functioning Condition

Sites will score properly functioning due to the needle cover and forest canopy.

Kentucky bluegrass -- false hellebore altered state

There are sites with nearly 100% cover of Kentucky bluegrass and 50% cover of false hellebore. They may represent an altered state, but their fate when released from grazing is not known.

No picture available

Plant Community	
Species	Canopy cover (%)
Kentucky bluegrass	100%
False hellebore	50%

Productivity

100 -500 kg/ha

Range Management Considerations

If residual decreaseers are present, then the site should be considered early-seral, not an altered state. In this case long term rest (10-20 years) may allow the decreaseers to recover. The site may need inputs of litter to initiate more rapid recovery.

If no decreaseers are present, then the site will not recover without reintroduction of decrease species. Direct seeding is unlikely to succeed, but hand planting of container grown plants may work. Application of litter may improve survival and growth. The site should be rested from livestock grazing until the plant community reaches late-seral, which could take many decades.

Properly Functioning Condition

The site will score slightly to highly at risk. The Kentucky bluegrass cover will protect against erosion, but there will be soil compaction, loss of habitat, and an unoccupied root zone.

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