

## SUBZONES

Fifteen forested subzones are currently recognized in the ESSF (Table 31 and Figure 56). This large number is due to the very broad latitudinal and elevational range of the zone and to the variability in climate, especially precipitation. The 15 subzones can be grouped into three broad climatic types: dry, moist, and wet.

The four dry climate subzones (ESSFxc, ESSFdc, ESSFdk, ESSFdv) occur in the southern third of the province in the rainshadow of the Coast and Columbia mountains. They occur primarily above the Montane Spruce zone and are characterized by abundant *Vaccinium scoparium* (grouseberry) and sparse herb cover in the undergrowth.

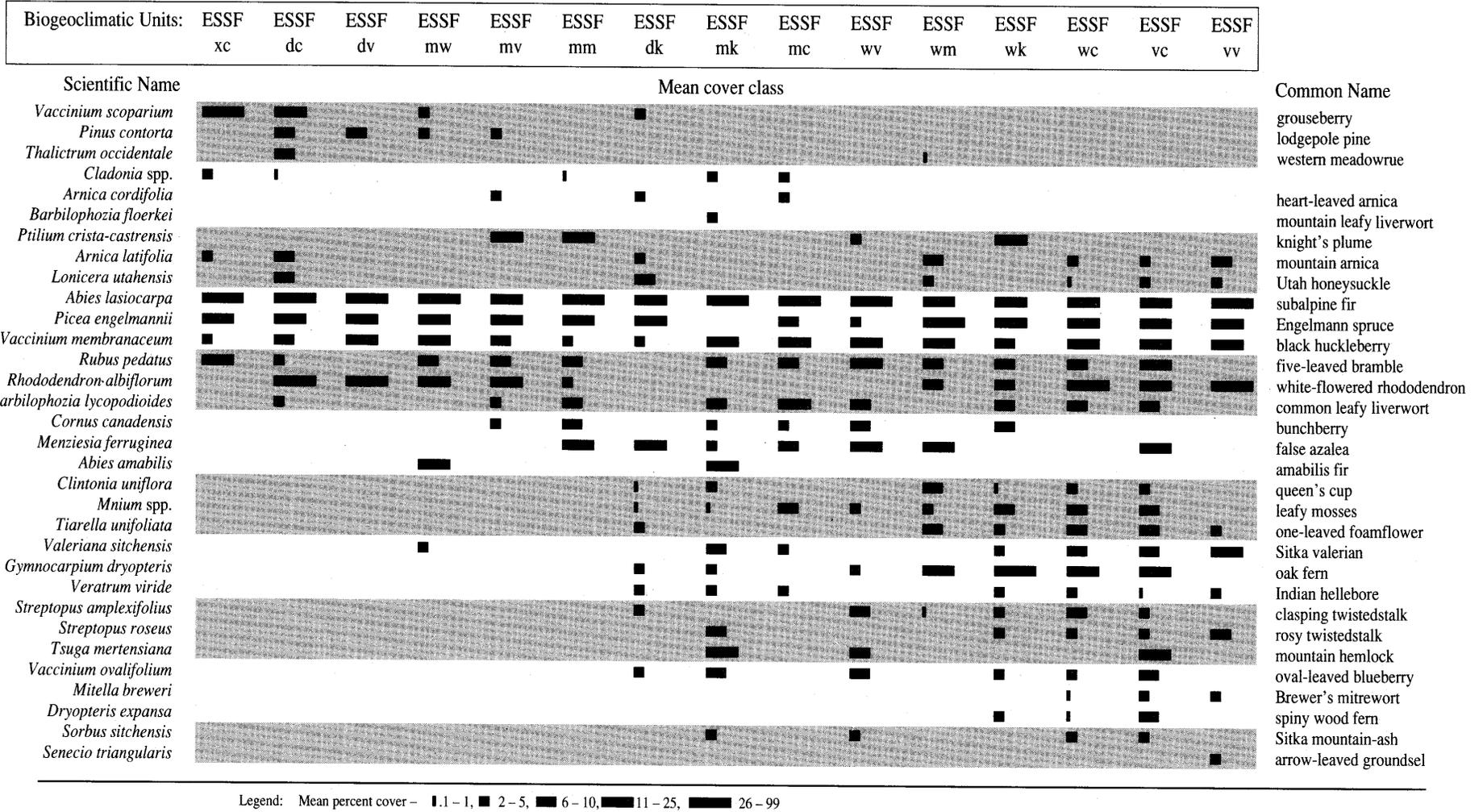
TABLE 31. Synopsis of subzones in the Engelmann Spruce — Subalpine Fir zone (ESSF)<sup>a</sup>

Subzone	Code	Old code
Very Dry Cold ESSF	ESSFxc	(ESSFd)
Dry Cool ESSF	ESSFdk	(ESSFa)
Dry Cold ESSF	ESSFdc	(ESSFel/e2)
Dry Very Cold ESSF	ESSFdv	(ESSFe3)
Moist Warm ESSF	ESSFmw	(ESSFf)
Moist Mild ESSF	ESSFmm	(ESSFo)
Moist Cool ESSF	ESSFmk	(ESSFi)
Moist Cold ESSF	ESSFmc	(ESSFk)
Moist Very Cold ESSF	ESSFmv	(ESSFv/n)
Wet Mild ESSF	ESSFwm	(ESSFc)
Wet Cool ESSF	ESSFwk	(ESSFh1/h3)
Wet Cold ESSF	ESSFwc	(ESSFc/m/b/h2/h3)
Wet Very Cold ESSF	ESSFvw	(ESSFi)
Very Wet Cold ESSF	ESSFvc	(ESSFb/w)
Very Wet Very Cold ESSF	ESSFvv	(ESSFu)

<sup>a</sup> Parkland subzones occur above each of the forested subzones. They are designated by the letter 'p' appended to the code (e.g., ESSFxcp is the Very Dry Cold Parkland ESSF subzone).

The moist climate group includes three Interior subzones (ESSFmv, ESSFmc, ESSFmm) and two subcontinental subzones (ESSFmk and ESSFmw). They are characterized by an ericaceous shrub layer, a sparse cover of herbs, and a relatively dense moss layer. The Interior subzones are distinguished by the presence of *Ptilium crista-castrensis* (knight's plume), *Cornus canadensis* (bunchberry), and *Arnica cordifolia* (heart-leaved arnica). The subcontinental subzones occur immediately leeward of the Coast Mountains from the Bulkley Ranges south to the U.S. border. They are distinguished by a poorly developed herb layer and the frequent occurrence of mountain hemlock and amabilis fir.

The six subzones in the wet climate group have a moderately dense ericaceous shrub layer and a very productive, luxuriant herbaceous layer on zonal sites. Characteristic species of these subzones are *Vaccinium ovalifolium* (oval-leaved blueberry), *Gymnocarpium dryopteris* (oak fern), *Tiarella unifoliata* (one-leaved foamflower), *Streptopus roseus* (rosy twistedstalk), and *Valeriana sitchensis*. Five of



Legend: Mean percent cover – ■ 1-1, ■ 2-5, ■ 6-10, ■ 11-25, ■ 26-99

FIGURE 56. Zonal vegetation of forested subzones of the Engelmann Spruce — Subalpine fir zone.

these subzones (ESSFwm, ESSFwk, ESSFwc, ESSFvc, ESSFvv) occur in the high-snowfall areas of the Columbia and Rocky mountains of eastern British Columbia. The sixth subzone (ESSFwv) occurs in the northwestern part of the province (north of the Skeena River) on the eastern flanks of the Coast Mountains.

Fifteen parkland subzones are also recognized in the ESSF. Each forested subzone has areas of parkland above it. These areas are transitional to true alpine and are classed as separate subzones.

## **SOME REPRESENTATIVE SITE ASSOCIATIONS**

The four site associations described below are common in the moist and wet groups of subzones and form a typical sequence of ecosystems in the ESSFwk (Figure 57).

### **Subalpine fir — Oak fern — Knight's plume**

The Subalpine fir — Oak fern — Knight's plume site association is the zonal association in the ESSFwk. It occurs on fresh, moderately well-drained morainal and colluvial materials with a coarse loamy texture. Soils are typically Orthic Humo-Ferrie Podzols with an Orthihemimor or Mycohemimor humus form.

The tree layer is most often dominated by Engelmann spruce but occasionally by subalpine fir. Lodgepole pine is an infrequent seral species.

The shrub layer is moderately well developed and dominated primarily by *Vaccinium membranaceum* (black huckleberry), *V. ovalifolium*, *Rhododendron albiflorum* (white-flowered rhododendron), and *Ribes lacustre* (black gooseberry). Small amounts of *Oplopanax horridus* (devil's club), *Lonicera involucrata* (black twinberry), and *Rubus parviflorus* (thimbleberry) are often present, especially at lower elevations. Subalpine fir regeneration is typically abundant.

The moderately well-developed herb layer is dominated by *Streptopus roseus*, *Rubus pedatus* (five-leaved bramble), *Gymnocarpium dryopteris* (oak fern), and *Valeriana sitchensis*. Species that are usually present but in lesser amounts are *Veratrum viride*, *Athyrium filix-femina*, *Lycopodium annotinum* (stiff clubmoss), *Tiarella unifoliata*, *Clintonia uniflora* (queen's cup), and *Listera cordata* (heart-leaved twayblade).

The moss layer includes *Pleurozium schreberi* (red-stemmed feathermoss), *Rhizomnium nudum*, *Ptilium crista-castrensis* (knight's plume), *Brachythecium* spp., *Rhytidiopsis robusta* (pipecleaner moss), and *Peltigera apthosa*.

### **Subalpine fir — Huckleberry — Feathermoss**

This association includes the driest forested sites of the ESSFwk. It occurs on slightly to moderately dry sites on ridge crests, bedrock outcrops, and on upper, south-facing slopes. Most sites are on coarse-textured morainal or colluvial materials. Soils