

# Red spruce / Red-berried elder / **Rock polypody**

Picea rubens / Sambucus racemosa / Polypodium virginianum

n=3



Cheticamp River Valley, Cape Breton Highlands National Park, Inverness County

**Concept:** This somewhat uncommon woodland is characterized by its open coniferous canopy, low species richness and unique talus substrate. It is found only in areas where topography and bedrock outcropping allow the formation of talus slopes. Sites often contain only patches of vegetation across a broader talus matrix. Red spruce, black spruce and/or hemlock are common canopy dominants, and the understory is similarly variable. OW3 is comparable to OW6 (White birch – Red oak – White ash / Marginal wood fern – Herb-Robert), but is generally associated with less fertile substrates.

**Vegetation:** The poorly-developed canopy may be dominated by a number of evergreen tree species, but sampled stands support high levels of red spruce or hemlock. Understory associates include vascular plants common to acidic conifer forest and/or rocky substrates (e.g. foxberry, rock polypody, marginal wood fern), but most of these species are infrequent. Bryophyte cover is usually low. On older sites, shrubs and bryophytes may form a mat over underlying talus.

**Environmental Setting:** This ecosystem is found on talus deposits. On steeper grades and/or upper slope positions, talus can be unstable, but older downslope deposits are less mobile and more suitable for plant growth. Trees and other plants are sometimes rooted in underlying mineral soil, but more often in pockets of organic matter and weathered rock found among surface rock fragments. Mineral soil (if present) is usually acidic and dry. Exposure is moderate to extreme. Most occurrences are in the Cape Breton Highlands and Nova Scotia Uplands ecoregions. The Vegetation Type (VT) is scattered across New Brunswick.

**Successional Dynamics:** This ecosystem is an early to mid-successional stage, but mechanisms for establishment and renewal of this VT are not well understood. As soils deepen over talus, the ecosystem will advance to include features more typical of upland conifer forest, but their expression will be weakened by inherent soil stoniness and related restrictions in rooting potential and nutrient availability.

## **Ecological Features**

Softwood talus woodlands are uncommon small patch ecosystems that are both under sampled and poorly understood in Nova Scotia. Plots were established in warmer areas of the province, where temperate flora are more common. Stronger boreal expressions

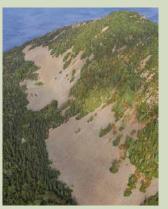
are expected in cooler areas of Cape Breton. Red spruce / Red-berried elder / Rock polypody woodland supports remarkably unique habitat conditions, but most associated animal, plant and lichen species are undocumented. Exceptions include the rock vole, Gaspé and long

tailed shrews, and various land snails. Canopy closure is variable but stand structures tend to be complex, supporting diverse microhabitats. The ecosystem has moderate potential to develop old growth where slopes have stabilized.

Characteristic Plants	OW3	
	Freq.	Cover (%)
Red spruce	67	37.0
Hemlock	67	16.0
White birch	67	3.5
Red maple	67	2.0
Balsam fir	33	11.0
Black spruce	33	10.0
Yellow birch	33	5.0
White pine	33	5.0
Beech	33	2.0
Sugar maple	33	1.0
Ironwood	33	1.0
Tree Layer (Mean % Cover)		51
Red-berried elder	67	3.5
Velvet-leaf blueberry	67	2.0
Balsam fir	67	1.5
Red spruce	33	6.0
False holly	33	5.0
Red raspberry	33	4.0
Striped maple	33	3.0
Hemlock	33	3.0
White pine	33	2.0
Serviceberry	33	1.0
Beaked hazelnut	33	1.0
Labrador tea	33	1.0
Fly-honeysuckle	33	1.0
Red oak	33	1.0
Lowbush blueberry	33	1.0
Shrub Layer (Mean % Cover)		14
Rock polypody	67	1.5
Foxberry	33	10.0
Marginal wood fern	33	5.0
Creeping snowberry	33	3.0
Sarsaparilla	33	2.0
Common hair grass	33	2.0
Spinulose wood fern	33	2.0
Teaberry	33	2.0
White goldenrod	33	2.0
Rough goldenrod	33	1.0
Starflower	33	1.0
Poverty grass	33	0.5
Umbel-like sedge	33	0.1
Herb Layer (Mean % Cover)	100	11
Cup lichens	100	1.7
Grey reindeer lichen	67	6.0
Schreber's moss	67	5.5
Pin cushion moss	67	0.8
Green reindeer lichen	33	1.0
Juniper polytrichum	33	1.0
Bazzania	33	1.0
Wavy dicranum	33	0.5
Stair-step moss	33	0.5
Hair-cap moss	33	0.1
Bryo-Lichen Layer (Mean % Cov	er)	11

### **Distinguishing Features**

This softwood woodland of spruce and hemlock occurs on talus slopes. Rock polypody is common.



Talus slope, CBHNP [Envirofoto]

#### **Site Characteristics**

Slope Position: Crest<sup>3</sup> Middle<sup>3</sup> Upper<sup>3</sup> Surface Stoniness: (Very - Excessively)10

nd<sup>10</sup> Bedrock Outcrop:

150 - 220m Elevation Range: Slope Gradient: Moderate<sup>7</sup> nd<sup>3</sup> Aspect: South7 nd3 Exposure: Mod. exposed<sup>7</sup> nd<sup>3</sup>

nd<sup>10</sup> Microtopography:  $nd^{10}$ Drainage:

#### **Soil Characteristics**

Soil Type:  $nd^{10}$ Parent Material: Colluvium<sup>10</sup> Rooting Depth (cm):  $(<30)^7 nd^3$ Duff Thickness (cm):  $nd^{10}$ 

