

OF1

White spruce / Aster – Goldenrod / Shaggy moss

Picea glauca / *Aster* spp. – *Solidago* spp. / *Rhytidiadelphus triquetris*

n=25



Farmville,
Lunenburg County

Concept: This early successional Vegetation Type (VT) has abundant white spruce, often with a minor component of balsam fir. OF1 stands usually develop closed overstory canopies resulting in needle carpet and/or moss-dominated forest floors with minimal shrub and herb cover. OF1 represents the dominant softwood forest associated with abandoned agricultural lands in central and eastern Nova Scotia.

Vegetation: White spruce is the dominant overstory tree. Common associates include balsam fir, red maple and tamarack. Both the shrub and herb layers can be species rich, but they are usually poorly developed. Hawkweeds, goldenrods, asters and several grass species are indicative of past agricultural land-use. Other common, but seldom abundant, species include strawberry, common speedwell, tall buttercup and bedstraws. Moss cover can be variable and interspersed with needle carpet. Where present, species include shaggy moss, Schreber's moss, broom moss, hair-cap moss and stair-step moss.

Environmental Setting: OF1 is mainly associated with fresh to fresh-moist, nutrient medium to rich soils of variable texture. This VT is found throughout Nova Scotia, but is primarily associated with several Nova Scotia Upland ecoregions (Cobequid Hills, Cobequid Slopes, Cape Breton Hills, Pictou Antigonish Highlands) and the Atlantic Coastal and Fundy Shore ecoregions.

Ecological Features

Past cultivation across this patch forest has leveled most pre-disturbance micro topography, while rock walls and piles, old foundations and wells provide additional evidence of agricultural land use. Linear rock piles may provide habitat for small cavity dwellers including rodents, snakes, and ground dwelling insects like wasps and bees. Other

unique aspects include the forest's close proximity to open fields and active farms and the frequent presence of apple and other fruit trees. These features may attract deer, red fox, coyotes, red squirrels, small mammals, and birds including ruffed grouse, thrushes, crows and blue jays. OF1 provides excellent growing conditions for mycorrhizal

mushrooms such as chanterelle and boletes, which are allied with spruce. Although these forests add to landscape structural diversity, they have a simplified ecological make-up, reflected by low tree diversity, structural complexity, and deadwood volume. Mature forests are highly susceptible to spruce bark beetle attack, leading to their rapid collapse.

Sites that have been tilled or pastured have level micro-topography and a distinct Ap (plough layer) soil horizon.

Successional Dynamics: OF1 is an even-aged, early successional VT dominated by white spruce. Although white spruce has the ability to regenerate grassy microsites, old field trees tend to have a shorter lifespan than those found in natural forest conditions. They also do not re-establish under their own cover, which inevitably leads to ecosystem collapse. Natural disturbance agents include insects (e.g. bark beetles, tussock moth, spruce budworm) and windthrow. Subsequent successional stages usually include species indicative of pre-agricultural forest cover, especially if such seed sources are nearby. Stands that slowly deteriorate are more likely to succeed to such forest conditions as shade-tolerant species regenerate on site. Clearcut harvesting may initiate an earlier successional stage dominated by grey birch, pin cherry, aspen, white birch and/or other woody shrubs. Depending in part on the level of advanced regeneration at time of harvest, OF1 may also succeed to OF4 (Balsam fir – White spruce / Evergreen wood fern – Wood aster) or other VTs dominated by shade-intolerant species such as white birch, aspen and red maple. As many OF1 sites were originally tolerant hardwood sites, later successional stages are likely to include a component of sugar maple, yellow birch and/or beech, possibly leading to TH1 (Sugar maple / Hay-scented fern) or TH2 (Sugar maple / New York fern – Northern beech fern).

Characteristic Plants

OF1

	Freq. (%)	Cover (%)
White spruce	100	60.3
Balsam fir	52	17.7
Red maple	17	4.8
Tamarack	13	2.3
Tree Layer (Mean % Cover)		72
Balsam fir	70	1.5
Red maple	57	1.0
Mountain-ash	26	0.6
Wild raisin	26	0.1
White spruce	22	1.4
White ash	22	0.2
Shrub Layer (Mean % Cover)		4
Starflower	83	1.1
Wild lily-of-the-valley	74	3.2
Evergreen wood fern	52	2.8
Bunchberry	48	3.8
Violets	43	1.5
Rough goldenrod	35	0.1
Common speedwell	30	0.8
Indian pipe	30	0.8
Fibrous-root sedge	26	5.2
Dwarf raspberry	26	1.0
Sarsaparilla	26	0.1
Goldthread	22	7.6
Tall buttercup	22	2.7
Hawkweeds	22	0.6
Three seeded sedge	22	0.4
Herb Layer (Mean % Cover)		17
Schreber's moss	83	22.4
Broom moss	74	2.8
Hair-cap moss	70	3.1
Stair-step moss	57	16.5
Shaggy moss	57	15.5
Hypnum moss	39	1.4
Plume moss	35	0.2
Wavy dicranum	22	2.2
Rhytidiadelphus moss	13	1.0
Goose neck moss	4	1.2
Bryo-Lichen Layer (Mean % Cover)		44

Distinguishing Features

This softwood forest on well drained soils is extensively white spruce. Rock foundations, rock piles, rock walls and wire fencing are indicators of past agricultural use. Level microtopography and a soil profile that shows a plough layer are good site indicators. Dense stands have poorly developed herb and moss layers.



Shaggy moss

Site Characteristics

Slope Position:	Lower ⁴ Level ² Middle ² Upper ²
Surface Stoniness:	(Non - Slightly) ⁸ (Moderately) ²
Bedrock Outcrop:	(Non-rocky) ⁹ (Slightly - Moderately) ¹
Elevation Range:	9 - 310m
Slope Gradient:	Gentle ⁵ Level ² Moderate ² Strong ¹
Aspect:	North ¹ East ² South ² West ² None ² nd ¹
Exposure:	Moderate ⁴ Mod. exposed ³ Exposed ² Mod. sheltered ¹
Microtopography:	Level ⁷ Moderate ¹ Slightly ¹ Other ¹
Drainage:	Well ⁶ Imperfect ³ Moderately well ²

Soil Characteristics

Soil Type:	ST8 ⁵ ST2-L ² ST9 ¹ ST11 ¹ Other ¹
Parent Material:	Glacial till ¹⁰
Rooting Depth (cm):	(<30) ² (30-45) ³ (>45) ⁵
Duff Thickness (cm):	(0-5) ⁴ (6-10) ⁴ (11-20) ¹ nd ¹

