OF4

Balsam fir – White spruce / Evergreen wood fern – Wood aster

Abies balsamea – Picea glauca / Dryopteris intermedia – Aster acuminatus

n=7

Rory Neils Lake, Richmond County

Concept: This early to mid-successional Vegetation Type (VT) has an overstory dominated by balsam fir, usually with a strong component of white spruce. This VT is a second-generation old field forest which develops from previously harvested or severely disturbed OF1, OF2, OF3 or OF5 stands. Understory flora associated with this VT are more abundant and representative of natural forest conditions than those of other old field forest types. OF4 is found throughout the province, but is mainly associated with previous OF1 (White spruce / Aster – Goldenrod / Shaggy moss) stands.

Vegetation: Balsam fir and white spruce are the dominant overstory trees, while red maple, tamarack and white birch are common associates. The shrub layer is dominated by regenerating trees, especially balsam fir, with lesser red maple, yellow birch and sugar maple. The presence of striped maple and mountain maple indicates a return to more natural vegetation conditions. In the herb layer, fewer of the species indicative of past agricultural land use are found. Instead, evergreen wood fern, wood aster, sarsaparilla and other flora typical of upland forest are more common. Moss cover is variable, with Schreber's moss, stair-step moss and hair-cap moss the main moss species found.

Environmental Setting: OF4 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 ecodistricts (Cobequid Hills, Cobequid Slopes, Cape Breton Hills, Pictou Antigonish Highlands) and the Atlantic Coastal and Fundy Shore ecoregions. Sites that were tilled or pastured generally have level microtopography and a visible Ap (plough layer) soil horizon.

Successional Dynamics: OF4 is an even-aged, early to mid-successional VT dominated by balsam fir. This VT originates from advanced regeneration established under first generation old field forests (usually old field white spruce). Natural disturbance agents include insects (bark beetles, tussock moth, spruce budworm) and windthrow. Later successional stages will generally include species from the original forest cover, especially if seed sources are nearby. Possible late successional stages include TH1 (Sugar maple / Hay-scented fern), TH2 (Sugar maple / New York fern – Northern beech fern), MW1 (Red spruce – Yellow birch / Evergreen wood fern) and MW3 (Hemlock – Yellow birch / Evergreen wood fern). 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 other woody shrubs.

Ecological Features

This second-growth patch forest follows stand-level disturbances of old field forests (OF1, OF2 and OF3). These disturbances may accelerate succession towards pre-agricultural forest conditions. Past cultivation has leveled most 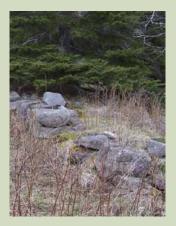pre-disturbance microtopography, while rock walls and piles, old foundations and wells provide additional evidence of past agricultural land use. Linear rock piles may provide dwellings for rodents, snakes, and insects like wasps and bees. These forests are often close to open fields and farms, and depending on their disturbance history, may contain large white spruce snags and fallen stems. OF4 may attract deer, red fox, coyote, snowshoe hare, red squirrels and pileated woodpeckers. It provides excellent growing conditions for mycorrhizal mushrooms including chanterelle and various boletes.

Characteristic Plants	OF4	
	Freq. (%)	Cover (%)
Balsam fir	100	55.2
White spruce	89	20.0
White birch	44	0.8
Red maple	22	6.5
Tamarack	22	4.0
Grey birch	22	1.5
Trembling aspen	11	12.0
Red spruce	11	4.0
Black spruce	11	0.1
Large-tooth aspen	11	0.1
Tree Layer (Mean % Cover)		**78**
Balsam fir	100	2.7
Red maple	56	2.2
Mountain-ash	56	0.1
Yellow birch	33	1.2
Velvet-leaf blueberry	33	0.1
Speckled alder	22	12.5
Mountain maple	22	1.0
Striped maple	22	0.6
Sugar maple	22	0.5
Beaked hazelnut	22	0.3
Fly-honeysuckle	22	0.1
Lowbush blueberry	22	0.1
Red raspberry	22	0.1
Wild raisin	22	0.1
Shrub Layer (Mean % Cover)		**8**
Evergreen wood fern	100	2.4
Wild lily-of-the-valley	100	1.6
Bunchberry	89	4.4
Starflower	89	0.3
Sarsaparilla	67	1.4
Wood aster	67	0.2
Goldthread	56	2.4
Dwarf raspberry	44	0.5
Drooping wood sedge	44	0.4
Common speedwell	33	0.7
Bluebead lily	33	0.3
Rough goldenrod	33	0.1
Spinulose wood fern	22	2.6
Twinflower	22	1.0
Bracken	22	0.8
Hay-scented fern	22	0.3
Short husk	22	0.3
Canada goldenrod	22	0.1
Ground pine	22	0.1
New York fern	22	0.1
Violets	22	0.1
Herb Layer (Mean % Cover)		**14**
Schreber's moss	89	34.8
Hair-cap moss	89	3.6
Stair-step moss	67	21.3
Broom moss	67	2.2
Wavy dicranum	44	1.4
Plume moss	44	0.2
Bazzania	22	6.5
Shaggy moss	22	1.0
Bryo-Lichen Layer (Mean % Cover)		**53**

Distinguishing Features

This softwood forest is dominated by balsam fir that usually originates following harvesting of a previous old field forest. Shrubs and herbs tend to be more indicative of natural forest conditions.

Rock wall
[John Gillis]

Site Characteristics

Slope Position:	Level[4] Middle[4] Upper[2]
Surface Stoniness:	(Non - Slightly)[10]
Bedrock Outcrop:	(Non-rocky)[10]
Elevation Range:	11 - 316m
Slope Gradient:	Gentle[6] Level[4]
Aspect:	North[4] West[2] None[4]
Exposure:	Moderate[6] Exposure[3] Mod. exposed[1]
Microtopography:	Slightly[6] Level[2] Moderately[1] Strongly[1]
Drainage:	Well[6] Imperfect[3] Moderately well[1]

Soil Characteristics

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

Nova Scotia Ecodistricts
- Known distribution
- Likely distribution