

IH2

Red oak – Red maple / Witch-hazel

Quercus rubra – *Acer rubrum* / *Hamamelis virginiana*

IH2a

Red oak variant

Quercus rubra

n=24



Holden Lake,
Lunenburg County

Concept: This early to mid-successional Vegetation Type (VT) has a mixed hardwood overstory with a strong component of red oak. It is the prominence of red oak that distinguishes this unit from other intolerant hardwood VTs. Stands dominated by red oak are described by variant IH2a, a condition that possibly results from earlier fire and/or harvesting disturbances. Red oak – Red maple / Witch-hazel usually follows stand-replacing disturbance events and is almost exclusively a Western ecoregion VT. Sometimes embedded within an IH2 site is the woodland OW5 (Red oak / Huckleberry / Cow-wheat – Rice grass / Reindeer lichen).

Vegetation: Red oak, red maple and white birch are the dominant overstory trees, along with occasional large-tooth aspen, black spruce and balsam fir. The overstory may also include a few scattered white pine in a super canopy position. These relict trees are usually survivors of past disturbance events. The shrub layer is well developed, often including wild raisin, serviceberry, velvet-leaf blueberry, witch-hazel and/or lambkill, along with regenerating trees (especially red oak, red maple, balsam fir and white pine). In the herb layer species indicative of poor, dry conditions include bracken, teaberry, round-leaved pyrola, mayflower, pink lady's slipper and/or princes'-pine. The bryophyte layer is poorly developed.

Environmental Setting: IH2 is mainly associated with dry to fresh, nutrient poor soils of glacial origin. Soils and sites are often stony. This VT is abundant throughout the Western ecoregion, especially in the South Mountain, Western Barrens, Rossignol and Sable ecodistricts. It is also occasionally found in central Nova Scotia on a variety of soils with low nutrient status. This VT is relatively rare in New Brunswick, where it is largely restricted to the south. It is extremely uncommon on Prince Edward Island.

Successional Dynamics: Relatively dry, nutrient poor soils associated with this VT may lead to an edaphic climax community dominated by red oak, white pine and black spruce. Historically, stand maintaining fires would have reduced understory fuel loads and promoted red oak and possibly white pine presence until the overstory was destroyed by intense canopy fire. (Although the role of low intensity fires in red oak development is not well understood, it appears to be an important component of successional history in some stands.) IH2 can develop from IH1 (Large-tooth aspen / Lambkill / Bracken) stands and, once established, can maintain itself or transition to SP9 (Red oak – White pine / Teaberry). As the potential impacts of fire are reduced through management, IH2 could succeed to SP4 (White pine / Blueberry / Bracken) or on better sites to SH4 (Red spruce – White pine / Lambkill / Bracken).

Ecological Features

This early to mid-successional large patch forest occurs primarily in western Nova Scotia. Red oak is intermediate in shade tolerance and may occur in both the understory and overstory. This tree is a valuable mast producer for wildlife species including small mammals, bear,

ruffed grouse and deer. Growth of oak regeneration may be enhanced by understory fire, which promotes vigorous sprouting from seedlings and saplings and gives them a competitive advantage. Red maple regenerates quickly as coppice and is a favoured browse by

deer and moose. Mature red maple flower before most other spring plants, providing one of the most important early and abundant pollen and nectar sources for a wide range of insects. Oak is the preferred host of maitake (or hen-of-the-woods) mushroom.

Characteristic Plants	IH2		IH2a	
	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)
Red oak	100	32.2	100	59.4
Red maple	100	31.3	93	14.1
White pine	58	5.7	29	2.3
White birch	50	9.2	43	7.3
Balsam fir	50	7.0	7	3.0
Black spruce	25	10.0	29	3.8
Yellow birch	25	6.7	7	15.0
Red spruce	17	25.0	14	0.5
Beech	17	12.5	7	2.0
Sugar maple	17	4.5	14	1.5
Large-tooth aspen	8	15.0	14	11.5
White spruce			14	2.5
Tree Layer (Mean % Cover)		87		83
Red maple	100	2.5	93	6.5
Red oak	100	2.4	86	6.3
Balsam fir	75	9.0	43	1.4
Wild raisin	75	0.6	71	1.9
Velvet-leaf blueberry	67	4.3	79	7.0
White pine	67	0.7	50	5.4
Red spruce	58	4.2	36	0.5
Witch-hazel	50	11.3	64	2.8
Black spruce	42	6.5	36	2.9
Lambkill	42	3.0	79	10.1
Serviceberry	42	2.1	43	0.3
Striped maple	33	9.0	29	2.8
Beech	33	4.3	21	3.4
Huckleberry	25	7.3	43	16.5
Sugar maple	25	1.9	14	2.5
Lowbush blueberry	17	2.8	64	11.3
Large-tooth aspen			21	0.5
Shrub Layer (Mean % Cover)		38		41
Sarsaparilla	100	2.5	57	3.0
Wild lily-of-the-valley	92	1.2	64	1.1
Bracken	83	5.2	79	11.9
Starflower	83	1.3	93	0.3
Bunchberry	75	3.5	57	0.8
Partridge-berry	67	4.0	50	0.8
Mayflower	67	0.8	36	2.6
Teaberry	67	0.2	57	22.1
Bluebead lily	58	0.7	21	0.1
Indian cucumber root	58	0.3	43	0.4
Indian pipe	58	0.1	36	0.1
Goldthread	50	2.1	7	2.0
Pink lady's slipper	42	0.2	21	0.1
Wood aster	42	0.1	14	0.5
Princes'-pine	33	0.6	14	3.1
Painted trillium	33	0.1	36	0.3
Twinflower	25	3.3	14	10.0
Interrupted fern	25	0.2	14	19.1
Hay-scented fern	25	0.1	14	21.5
Lions paw			29	1.8
Herb Layer (Mean % Cover)		19		43
Broom moss	92	1.6	86	0.8
Hypnum moss	83	2.5	71	1.4
Stair-step moss	67	1.3	14	1.6
Schreber's moss	58	1.4	71	2.4
Grey reindeer lichen	25	0.2	29	7.5
Bryo-Lichen Layer (Mean % Cover)		6		8

Distinguishing Features

This hardwood forest occurs on well drained, nutrient poor sites dominated by red oak and red maple. Ericaceous shrubs, as well as mayflower, teaberry, round leaf pyrola, bracken fern, pink lady's slipper and princes'-pine are common. Red oak is diagnostic for the variant IH2a.



Witch-hazel

Site Characteristics

Slope Position:	Upper ⁶ Middle ³ Other ¹
Surface Stoniness:	(Moderately) ⁵ (Very - Excessively) ⁴ (Non - Slightly) ¹
Bedrock Outcrop:	(Non-rocky) ⁸ (Slightly - Moderately) ²
Elevation Range:	11 - 184m
Slope Gradient:	Gentle ² Level ¹ Moderate ¹ nd ¹
Aspect:	North ¹ East ⁴ South ² West ² None ¹
Exposure:	Moderate ⁵ Mod. exposed ⁵
Microtopography:	Slightly ⁴ Moderately ⁴ Strongly ²
Drainage:	Well ⁷ Moderately well ² Other ¹

Soil Characteristics

Soil Type:	ST2 ⁴ ST2-G ³ ST2-L ² ST6 ¹ nd ¹
Parent Material:	Glacial till ⁸ nd ²
Rooting Depth (cm):	(<30) ¹ (30-45) ³ (>45) ⁵ nd ¹
Duff Thickness (cm):	(0-5) ⁴ (6-10) ³ (11-20) ² nd ¹

