Notes on Caithness Woodland

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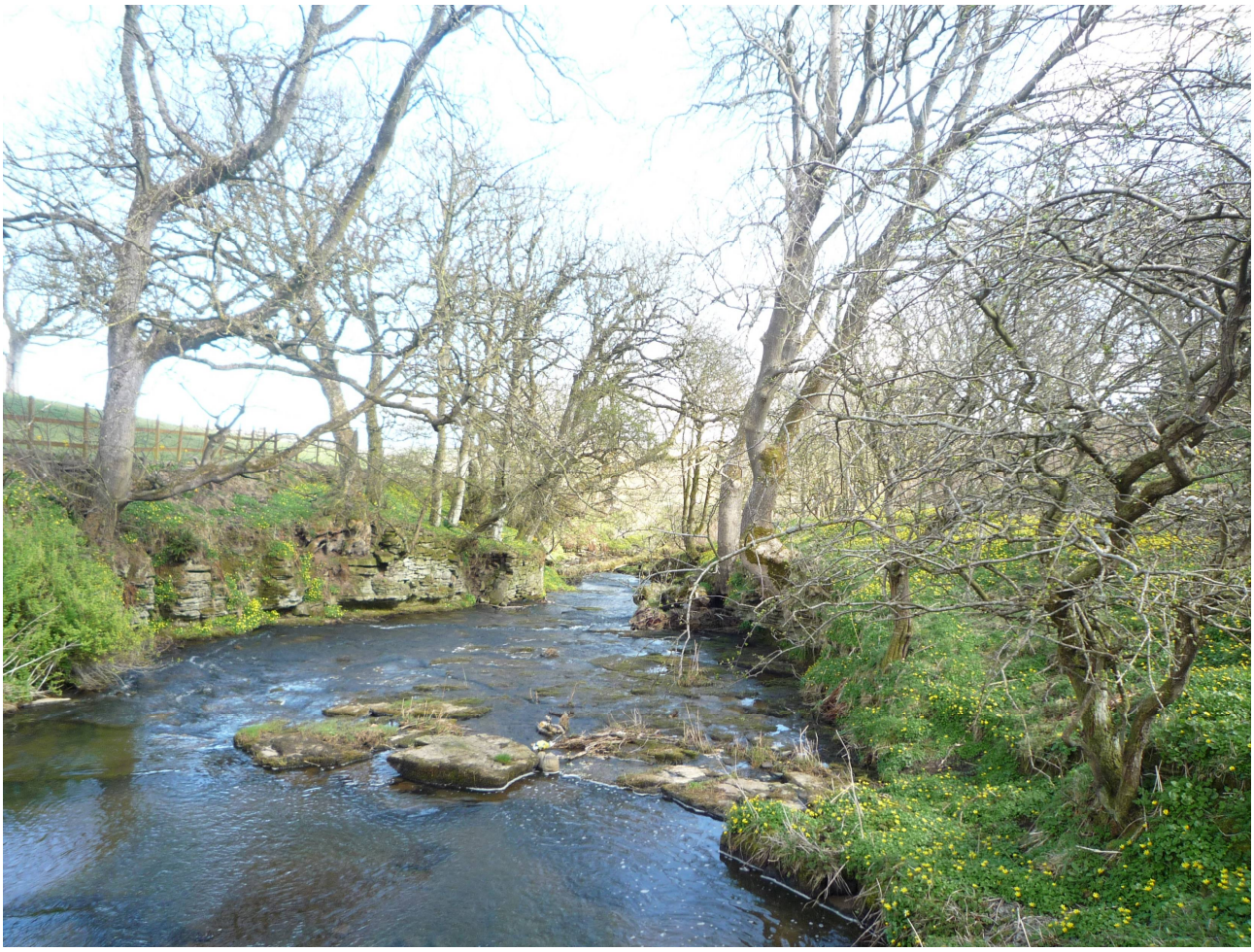

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Part 1 Introduction

When the subject of natural habitats, plant communities and ecology began to take shape in the early 1900's, there was a meeting held in Leeds in 1904 which formed the *Central Committee for the Survey and Study of British Vegetation.* One of the earliest enthusiasts to take up such study was the professional geologist Cecil Burleigh Crampton. At the time he was beginning the geological survey of Caithness which led to a book "The Geology of Caithness" published in 1914, and while doing the fieldwork for that he made extensive observations of the plant communities of the county. So emerged one of the first accounts in Britain of plant communities which was submitted to and published by the above *Central Committee*. " *The Vegetation of Caithness Considered in Relation to the Geology"* was published soon after 1911. Thus the study of Caithness woodland, as part of this book, was one of the first studies of British woodlands.

The next significant work was a new survey of the vegetation of the Scottish Highlands sponsored by the Nature Conservacy in 1954, initially by Professor Duncan Poore and Donald McVean and later joined by Derek Ratcliffe. This resulted in 1962 in the publication of "*Plant Communities of the Scottish Highlands"* by McVean and Ratcliffe which included a good coverage of the woodland types.

Over the past 50 years individual woodlands in Caithness have been surveyed by Scottish Natural History and its predecessor organisation and where the site became an SSSI the citation includes a summary of the key features of the wood.

It was most valuable to have the publication in 1991 of the first part of a new initiative by the Nature Conservancy Council. This set out to review and standardise all that was known about plant communities. The first part was a book on woodlands, and "*British Plant Communities – Volume 1 – Woodlands and Scrub"* edited by D.S. Rodwell, allows me to fit the woodlands of Caithness into a British national context.

Part 2 The Classic Woodland Types Applicable to Caithness

There are classic woodland types which occur in large parts of UK and here we describe those which are applicable to Caithness, with some modification because of the particular climatic and geological features of the area.

The Classic W17 Birch-Oak Woodland

The habitat is described in the National Vegetation Classification as "*Quercus petraea – Betula pubescens – Dicranum majus Woodland"* or Type W17 woodland. It is said to be "a community {on} very acid and often shallow fragmentary soils in the cooler and wetter north-west of Britain"

The frequent plants of the classic form of this habitat are:

Betula pubescens	Hairy Birch
Quercus petraea	Sessile Oak
Deschampsia flexuosa	Wavy Hair Grass
Vaccinium myrtillus	Blueberry
Dicranum majus	Greater Fork-moss
Hylocomium splendens	Glittering Wood-moss
Plagiothecium undulatum	Waved Silk-moss
Pleurozium schreberi	Red-stemmed Feather-moss
Polytrichiastrum formosum	Bank Haircap moss
Rhytidiadelphus loreus	Little Shaggy-moss

In brief, the classic W17 woodland can be recognised by birch and oak trees with a ground flora of blueberry and assorted mosses. Rowan trees (*Sorbus aucuparius)* commonly occur in W17 woodland.

The Caithness versions of W17.

The most obvious difference from the classic version in Caithness is the absence of oak. It may be solely because the summers are too cool for the acorns to form and ripen, or it may partly be that the trees that were once growing were cut down. For whatever reason, there is no seedbank of sessile oak and only the birch is the dominant tree. The shrub layer of a Caithness W17 consists of juvenile birch plus perhaps juvenile rowan and occasional holly. In the ground layer blueberry and mosses should be present and heather where there is less shading

Because the underlying Old Red Sandstone can be rich in soluble minerals and the till glacially derived from the bed of the North Sea is likewise mineral-rich, the Caithness woods can tend towards the richer types such as W11 described later. On steep slopes the ground flora tends towards W11 because the better drainage promotes a less acid soil.

The Classic W11 Oak-birch Woodland

This woodland is described in the National Vegetation Classification as *Quercus Petraea – Betula pubescens – Oxalis acetosella Woodland* or Type W11 Woodland. Essentially it is on less acid ground than the W17 woodland.

The constant species which define the classic W11 are:

Betula pendula / pubescens	Silver Birch / Downy Birch
Quercus petraea	Sessile Oak
Agrostis capillaris	Common Bent grass
Anthoxanthum odoratum	Sweet Vernal-grass
Deschampsia flexuosa	Wavy Hair-grass
Galium saxatile	Heath Bedstraw
Holcus mollis	Creeping Soft-grass
Oxalis acetosella	Wood-sorrel
Potentilla erecta	Tormentil
Pteridium aquilinum	Bracken
Viola riviniana	Common Dog-violet
Hylocomium splendens	Glittering Wood-moss
Pseudoscleropodium purum	Neat Feather-moss
Rhytidiadelphus squarrosus	Springy Turf-moss
Thuidium tamariscinum	Common Tamarisk-moss

The shrub layer might consist of juvenile birch, rowan, juniper(*Juniperus communis) and hazel (Corylus avellana).*

Thus the woodland can be recognised as a birch – oak wood with a grassy and mossy ground flora lacking heather or blueberry.

The Caithness variants of W11 Woodland

Once again, the main variation from the classic form is the lack of oak, but also the birch will be *Betula pubescens* with *B. pendula* very rare.

Where glacial till or mineral-rich sandstone are part of the substrate there is a tendency to intergrade with richer types of woodland such as W9.

The Classic W10 Damp Oakwood

In the National Vegetation Classification this type is known as *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland. It is found on a base-poor brown soil which is not too wet.

The constant species are:

Quercus robur	Pedunculate Oak
Lonicera periclymenum	Honeysuckle
Pteridium aquilinum	Bracken
Rubus fruticosus agg.	Bramble

This is a southern type of woodland and Caithness is at the very edge of its range and thus hardly typical and not easily recognised.

The Caithness variant of W10 woodland.

The specific variant is called the *Acer pseudoplatanus – Oxalis acetosella* sub-community. Bracken is still a dominant. Oak is absent. Downy Birch is the dominant tree, though rowan is common and aspen, bird cherry and hazel are frequent. The important marker species in the ground flora are Greater Stitchwort *(Stellaria holostea)* and Wood Sorrel (*Oxalis acetosella*). It favours the drier parts of the county in the south-east.

The Classic W9 Northern Ashwood

In the National Vegetation Classification this type is known as *Fraxinus excelsior - Sorbus aucuparia – Mercurialis perennis* woodland or Type W9. It is the type typical of brown soil on calcareous rock or till in a northern montane climate.

The constant species of the classic form are:

Fraxinus excelsior	Ash
Corylus avellana	Hazel
Dryopteris filix-mas	Male-fern
Mercurialis perennis	Dog's Mercury
Oxalis acetosella	Wood-sorrel
Viola riviniana	Common Dog-violet
Kindbergia praelonga	Common Feather-moss
Eurhynchium striatum	Common Striated Feather-moss
Plagiomnium undulatum	Hart's-tongue Thyme-moss
Thuidium tamariscinum	Common Tamarisk-moss

Rowan (*Sorbus aucuparia),* Birch (*Betula pubescens), Alder(Alnus glutinosa),* Aspen (*Populus tremula)* and Wych Elm (Ulmus glabra) occasionally occur.

The Caithness variant of W9 Ashwood

All the constant species, above, are in the Caithness version of W9 except for Dog's Mercury whose northern range does not extend beyond the Great Glen. One notable feature is the frequent occurrence of Guelder Rose *(Viburnum opulus)* and Juniper (*Juniperus communis)* which are more prominent than in the classic community. An interesting ground flora species is the Moschatel (*Adoxa moschatellina)* to be found only in the east coast ashwoods.

The Classic Alder Woods of Type W7

In the National Vegetation Classification this type is known as *Alnus glutinosa – Fraxinus excelsior – Lysimachia nemorum* woodland or Type W7.

The constant species are:

Alnus glutinosa	Alder
Filipendula ulmaria	Meadowsweet
Lysimachia nemorum	Yellow Pimpernel
Kindbergia praelonga	Common Feather-moss

This is the woodland of wet to very wet or slope-flushed ground which is only moderately base-rich. The willows *Salix cinerea* and *S.pentandra* sometimes accompany the alder. The important recognition feature is the dominance of Meadowsweet in the ground flora.

The Caithness variants of W7 Alderwood

The Caithness version of this habitat is the classic one except that *Lysimachia nemorum* is not usually present. The Caithness sites have not been well evaluated and some good surveys are desirable. Alder and Ash are often present. Meadowsweet is the groundflora marker species. In the wettest places Marsh Pennywort (*Hydrocotyl vulgaris)* and Marsh-marigold (*Caltha palustris)* may be plentiful. In drier places large ferns will be a component, especially Buckler Fern *(Dryopteris dilatata)* and Lady Fern *(Athyrium filix-femina).*

The Classic Alder Woods of type W4

In the National Vegetation Classification this type is known as *Betula pubescens – Molinia caerulea* woodland of type W4.

The constant species are:

Betula pubescens	Downy Birch
Molinia caerulea	Purple Moor Grass
Sphagnum recurvum / palustre	Sphagnum Moss

This is the woodland of wet or very wet or slope-flushed ground which is base-poor or acid. The Caithness version of this habitat is the *Juncus effusus* sub-community. The ground flora is a mixture of Soft-rush tussocks and Purple Moor Grass tussocks, though one or other of the two may dominate. The willow *Salix cinerea* and Alder may be prominent components.

Rocky Gorges

The Habitat

Where a drainage route lost its way during or after the glaciation it may have created a new route through a weakness in the rock to form a narrow, deep gorge. This will have a vigorous flow of water, so there is little opportunity to form an extensive alluvial floor. Often there is some stable floor at the foot of the vertical walls or in quieter alcoves.

The walls are steep or vertical, either damp bare rock or unstable steep alluvium. There are low light levels because the walls shade the sunlight. The closed atmosphere is damp or even has a wet spray zone caused by the fast-moving water.

The habitat is sheltered from the wind allowing trees, shrubs and tall herbs to prosper.

The dominant factors controlling the vegetation are the acidity of the water, the rock face and the alluvium and depending on these factors it will develop, usually a W11, or occasionally a W17 woodland.

Part 3 Woodland Fragments in Caithness

The Berriedale and Langwell Valleys

Substantial parts of the Berriedale and Langwell valleys have remnants of mixed W17 and W11 woodland. The ground is acid and steeply sloped. It was well surveyed by CB Crampton prior to 1911. On the steep slopes, the top of the slope, influenced by the acid groundwater coming down from the peat moor, is W17 with heather and blueberry dominant in the ground flora. Further down the slope the rainwater has diluted the acid groundwater and the rock has contributed some minerals, so the ground flora is changed to W11 type. A good example is the area called Coille Allt na Beithe whose middle is at ND049231. Another good area is called Shin Wood at ND089227. There are also areas of Alder wood of type W7 or W4 where the ground is wetter and more level at the bottom of the valley. Areas dominated by hazel are where the ground is more mineral-rich.

The Dunbeath Valley

Much of the Dunbeath river watercourse has shaped a low-sided valley with terraces of alluvial gravel at the bottom of the valley. The woodland mostly occupies these terraces. They can be well drained where the soil level is well above the groundwater (river) level and here the favoured woodland is a W11 enriched by much hazel and some bird-cherry. Where the terrace is not much above groundwater level it is a willow-dominated wood of type W7. There are some very old trees in this valley.

Badryrie wood

A fragment of woodland at Badryrie (ND207432) was enclosed by Caithness Field Club in 1984 and has been surveyed twice since then. At the time of enclosure there were mainly mature birch trees and a few willows in a setting of a heavily grazed ground flora. It was surrounded by acid peatland in the form of heather moor. The survey in 2002 concluded that enclosure had enabled young trees and ground flora to develop so that it was becoming type W11 with some W4. The individual trees have been logged and characterised so that their progress can be monitored in future years.

Tacher Wood

This is a remaining fragment of woodland which presumably is an example of the type of wood which once covered the upper parts of the Thurso river and its tributaries. It is in a river valley, so gets some shelter from the wind. Surrounding it, the ground is peat moorland of type M10, so there is an element of acid groundwater percolating into the valley walls. The river water is mildly acid and flushes the riverbank terraces seasonally. The terraces are permanently moist covered mostly with tussocks of Soft Rush *(Juncus effusus)*. The valley sides have grasses and herbs, indicating that the calcium and other bases in the clay till are sufficient to overcome the element of acid groundwater from the moorland above. The wood was enclosed and some new trees were planted in 2010 by North Highland Forest Trust. It is predominantly of type W11 with elements of alder woods of the type W7 and W4 in the wetter parts of the flood terraces.

Gills Burn

At ND324727 is a small patch of natural scrub along the banks of the burn on either side of the road. I surveyed the site in 2010. It has shrubs and small trees (including bird-cherry) with a green flower-rich ground flora which includes primrose, meadowsweet, bracken, heath bedstraw and common-dog-violet Thus it is a W11-type of woodland.

Ousdale

The valley of the Ousdale Burn (ND075199 is a typical part) and the surrounding area of grassy clifftop come alive in Springtime with a dense flowering of Greater Stitchwort (*Stellaria holostea*). This is the relict groundflora of a former large area of type W10 woodland which was apparently once extensively wooded but is now treeless except in the burn valley. In the places where the soil is less mature it merges into the W17 and W11 mixtures typical of the Langwell valley.

Latheronwheel Burn

A narrow strip of natural woodland remains on the banks of the burn. It widens closer to the sea where it has been transformed by plantation. The presence of Moschatel *(Adoxa moschatelina)* in the ground flora indicates W9 type of wood in the drier parts. There is also good wet parts closer to the burn banks.

The Strath Burn

The burn flows through peat moorland, but where the burn has cut its valley it has exposed rocky bluffs and sweeter ground. It was once well wooded along the banks and some of that remains – for example at ND252516. I have lost my notes of a visit in the 1970's, but Crampton, on a visit in 1909 or so, recorded willows, rose, elm, rowan, hazel, birch, honeysuckle and a rich flowering ground flora which probably indicates a good W11 type of wood. It would be valuable to have a modern survey of this wood.

Scouthal Wood.

Feeding into the Strath Burn is the Burn of Acharole and around the place where they join together was Scouthal wood, now a sparse relic of its former self. There are some trees around a waterfall at ND241536 and the ground for 500 metres south-west of there is cleared former woodland. It has the distinction of being the only site for Herb Paris *(Paris quadrifolia)* north of Inverness and last seen there in 1889. It would be great to re-find it!

Geise Burn

Below the farm of Geise and down to the Thurso river at around ND110650 is a fine remnant of woodland on the banks of a small burn. A footpath has been made through it giving good access. It is primarily an ashwood with a floriferous ground flora and some planted trees.

Achorn Gorge

Where the Achorn Burn flows down to join the Dunbeath water it has cut a deep gorge with vertical wooded sides around ND140307. It has hazel, rowan, aspen birch and willows growing from the sides of the gorge, but little ground flora due to the shading of the steep walls. It is possible to walk through the gorge when the burn is low, but on my last visit (2005) a high deer fence made access very difficult.

The Glens

South of Reay the Sandside Burn runs from peaty moorland to the sea. It is mostly devoid of natural woodland but there is an area named on the map Glen Chorcaill and known locally as “The Glens” which has steep-sided shallow valleys cut through it and a peaty lochan at the south end. It is a natural site for a type W17 woodland and it shows typical signs of having been such, though grazing by deer has now eliminated all but a few traces of birch trees.

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  http://www.europeana.eu/portal/record/08705/CAE02149A4DAFEB3604948B81166A32A0138B897.html?start=5&pageId=brd&query=caithness&qf=TYPE:TEXT&view=table&startPage=1

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