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Barhill Woods, Kirkcudbright: Historic Woodland Assessment

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Illus 1 Barhill woodland heritage walk (Photo: Claire Williamson, Rathmell Archaeology)

Barhill Wood Historic Woodland Assessment: Summary

This project has assessed the evidence for the history of Barhill Wood, identifying that woodland existed there in the late medieval period, with a subsequent period of woodland absence evident by the mid-18th century, before tree cover was reintroduced as part of estate-wide plantations by the Earls of Selkirk in the late 18th century. The style of plantation saw the rocky knolls being enclosed and planted, while the better ground between them was retained for agriculture, in this case for sheltered grazing in small fields. Many of these small fields remained open until planted up by the Forestry Commission in 1953. The loss in a fire of the St Mary's Isle estate records means that specific written evidence for the management of the Barhill woods prior to FC acquisition may not survive. The combination of fields and woodland very probably echoed a much older integrated forestry and farming system developed in the particular topography of this region, and faint traces of earthen banks within Barhill Wood are likely to be from this earlier system.

The 18th century plantations were created for both ornament and economy, re-clothing the bare hills, and the woods were worked until at least the period between the First and Second World Wars, when our tree-ring evidence suggests the coppices were last cut. The documentary and field evidence show this to have been a mixed species plantation with a large amount of sweet chestnut which could have been coppiced for production of fencing and other products. While mostly identified as dead stumps, a few sweet chestnut coppiced trees survive in the less disturbed parts of the wood.

The natural heritage of Barhill Wood is well known, especially its importance as a red squirrel habitat, which is to a great extent a consequence of the mix of conifer and broadleaf species planted in the 18th and 20th centuries. What is probably less well known is the survival of a range of cultural heritage features in the wood. Some of them, like the enclosure dykes, stone quarries and boundary banks, relate to the woodland's history as a mixed forestry and agricultural system. However, there is also a section of a very old road preserved within the wood and in the fields to its east, likely to be late medieval in origin if not even earlier. Unlike the other old roads radiating from Kirkcudbright, this one has not been converted into a tarmacked public road, and has a delightful stretch of hollow-way surviving at its town-ward end. The wood may well contain other built heritage features and this is worthy of further investigation. In due course, introducing some interpretive material about the history of the wood could add to the enjoyment of this already popular place.

This report includes a discussion of current and future woodland management issues to assist possible future community involvement.

Barhill Woodland Heritage: Fun Facts for Educators

Farming and forestry

You may notice something unusual about this wood - there are old stone dykes within it which have trees on either side and do not obviously enclose or separate anything. The historic evidence reveals that these were once enclosure walls (acting like fences) around the plantations of the late 18th century, with trees planted on the poor thin soils of the rocky knolls and the better land between the knolls kept as small fields used for sheltered grazing. Many of the small old fields were then planted with trees in the 1950s by the Forestry Commission, so now there are trees both inside and outside the old enclosure dykes. However, one old field survives just to the west of Barhill Wood and is still used for grazing. Can you find any old fields inside the wood?

The old road through the wood

One of Kirkcudbright's oldest roads survives through the wood. Its route is shown as a red dashed line on Illus 3. It is easy to find and you can walk along it from one side of the wood to the other. At its western end, in Silver Craigs Wood between the town and Barhill, it has been worn down over hundreds of years by the feet of many travellers to become a 'hollow-way'. The old road then crosses the field into Barhill Wood where it acts as a path. Near the eastern side of the wood it passes through what was once a gate, now an opening in the remains of a dyke marked by two old hornbeam trees acting like gate-posts. Can you find them? Walk on from there towards the red squirrel hide and look out into the fields, and you will see the earthwork of the old road continuing eastwards. It is probably medieval or even earlier in origin, and unlike most of the other old routes radiating from Kirkcudbright, it has not become a tarmacked public road.

Tree forms and what they tell us

There are two main forms of tree at Barhill Wood: single-stemmed 'maiden' trees (what we think of as 'normal' trees); and multi-stemmed coppiced trees. Coppicing was undertaken historically on a range of broadleaf tree species and means cutting the tree back to just above the ground and letting it regrow. Broadleaf trees will then usually produce many new shoots which will grow into useful pole sized stems before being harvested by cutting back again. The harvesting is done on a rotation, for example about every 20 years for oak in Scotland. At Barhill, one of the species coppiced was sweet chestnut, possibly to produce fencing material. The base of the coppiced tree gets bigger over time, and is called the 'stool'. The bigger the stool the older the tree. Our research indicates the Barhill coppices were last worked between the First and Second World wars, although some may have been felled or cut back again at or after the time of the Forestry Commission plantations in the 1950s. Can you find examples of the two different tree forms?

How old is that tree?

It is often thought that you can work out how old a tree is by the girth (circumference) of its trunk, but in fact growth rates are so variable between trees that this is pretty unreliable. There are lots of stumps of felled trees in Barhill Wood and on some of them you can see the tree rings. Every year the tree puts on a new growth ring just under the bark, so every ring represents one year in the tree's life, with the earliest ring at the centre and the most recent ring at the outside. Count the rings on an old stump and you will find out how old that tree was when it was felled. It is also possible to age living trees by taking a small sample out of them with a special coring device. Narrower than a pencil, the core allows the rings of the living tree to be counted. The science of investigating tree-rings is called 'Dendrochronology'. As well as providing tree age information, dendrochronology can be used to study climate change and to date old objects made of wood.

Know your trees

There are many different tree species at Barhill, native and exotic, so it is a good place to practice tree identification. There are excellent resources on The Woodland Trust website to help you
https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/british-trees/how-to-identify-trees.
It's easiest in the summer with leaves present, but come back in winter and check out their forms and bark too.

Introduction

Rathmell Archaeology, on behalf of the Galloway Glens Landscape Partnership's 'Can You Dig It' archaeology programme, invited Dendrochronicle to undertake an Historic Woodland Assessment at Barhill Wood, Kirkcudbright. This particular wood was suggested by GGLP given its historical nature and the local community interest in the wood.

The main woodland is owned by Forestry and Land Scotland (formerly the Forestry Commission, FC), while the adjoining smaller woodland closer to the town, Silver Craigs Wood, is owned by Dumfries and Galloway Council. Barhill Wood was acquired by the FC in 1952 from the landowners, the Hope Dunbar family of St Mary's Isle, and covers some 17 ha. It was historically part of the estates of the Earls of Selkirk. The woodland is important to the town, both visually as a backdrop, and in daily use by the community for walking and cycling. There have been recent very successful community initiatives within the wood, such as the creation of an outdoor classroom and red squirrel hide, and the hope is that the wider community will in time become more involved in the woodland's management.

The FC (Stables 2009) describe Barhill Wood as a plantation on an Ancient Woodland site, with a varied species mix of conifer and broadleaf and with some relict Ancient Woodland present. Their main objective for the block is gradual restoration to Native Woodland.

Peter Quelch and Coralie Mills spent most of three days (28th to 30th May 2019) getting to know this small but surprisingly complex woodland close to Kirkcudbright town. Furthermore, Coralie Mills led two public guided walks for the community on 14th and 15th June 2019, sharing some of the immediate results of the work. Core samples from six living trees were also taken for tree-ageing purposes on those dates, some as demonstrations during the guided walks.

Historic maps analysis

Our first technique, employed even before entering the site, was to consult the old maps available publicly on the National Library for Scotland website. The detailed map analysis is attached separately (Appendix 1), with images of the relevant map extracts included. The sequence contains nine selected old maps and plans, and seven extracts from the various editions and scales of early 20th century Ordnance Survey maps, plus an aerial photographic view from 1930. Two local 18th century plans are also included, note that these are not part of the NLS online collection.

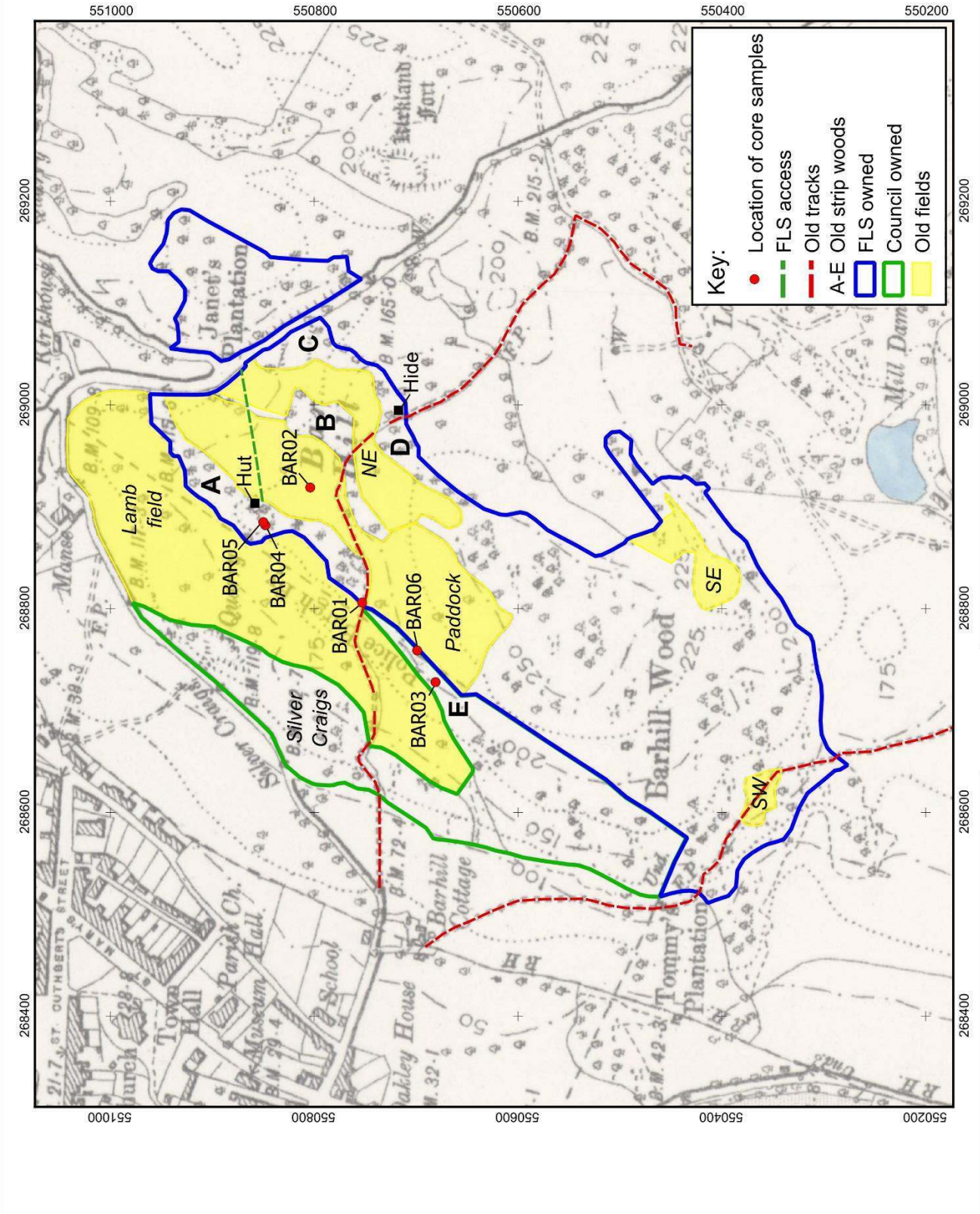
So, the old map analysis shows that Barhill ridge was wooded at the time of Timothy Pont's survey c1590, as depicted in Blaeu's Atlas of 1654, and again in 1662. Pont's survey is the earliest available to us so it is significant that woodlands at Barhill can be traced back through the map evidence to at least the late 16th century. One assumes these must have been natural origin woods, but not necessarily – they could be late medieval/early modern period plantings, being so close to an important trading town with port and castle.

nls View: Gallovidiæ Pars Media - Blaeu Atlas Maior, 1662
https://maps.nls.uk/view/108520437

Illus 2 Blaeu's Atlas of 1662 with survey data from Pont c1590, clearly showing the hill above Kirkcudbright town at Kirkland as wooded, as is also St Mary's Isle

However, there is not necessarily continuity of woodland on this site, as Barr Hill seems to be bare at the time of Roy's survey in c.1750, though we know that woods in poor condition or unenclosed may be missed off his maps. It could well be that the Barhill Farm grazings, as shown on John Gillone's survey plan of 1776, did contain an element of natural scrub on the site of previous woodlands, but the improvement period plans tended to accentuate the new improved woods, parks and avenues and did not show natural scrubland. The second survey plan, published by Robert Heron in 1790, is a survey by John and James Tate which they call an 'eye-draught' of Kirkcudbright. This sketch plan does indeed show a new star shaped plantation on Barhill, and this is confirmed in later county maps by Ainslie 1797 and Thomson 1821.

The first edition OS map of 1847 at 6 inches to the mile shows these now mature woodlands in great detail, as does the second edition OS map of 1895 which is also available at the 25 inch to the mile scale. The woodland's complex outline changes little over this time, and this is verified by a fascinating early aerial view of the town and wooded hill in 1930. Subsequently, as mentioned above, the main Barhill Wood was acquired by the Forestry Commission in 1952 and as their stock-map shows, was planted up in 1953 with a mix of largely non-native broadleaf and conifer species.



Illus 3 Barhill Wood and environs, with ownership boundaries (blue FLS, green DGC), strip wood plantations A-E, the red squirrel 'hide' and core-sampled tree locations (red dots) shown on OS 6" 2nd edition base map

Field observations

Woodland topography and archaeology

The terrain within Barhill main woodland is of narrow rocky ridges running SW to NE according to the Silurian geology of hard greywacke and shale, folded into these ridges. The stone is hard enough for building purposes, for constructing the field walls and roads and for building in the town itself. The ridges therefore have many disused small stone quarries on them, interspersed with rather smooth and level valleys.

Illus 4 Stone quarry in Strip Wood D, with ash and beech. Some beech has had beech bark disease in the past but this is not nearly so serious a threat as the current outbreak of ash dieback (photo PQ132)

The planting of the early 1950s went 'through hill and dale' with no areas left bare, and the land within the FC fence boundaries is almost completely planted up. But there is a reason for this unusual mosaic of topography within the wider woodland of today. Visitors to the woodland trails will notice that the ridges within the woodland have low drystone dykes surrounding them, yet the original purpose of those dykes is not obvious. During our field visits we traced most of these dykes and worked out their pattern, which corresponds well with the 19th century layout shown very clearly on the OS Second Edition 25 inch to the mile maps (see Appendix 1 for details).

Just a glance at the aerial photo of 1930 (Appendix 1) shows that the level areas between the ridges were indeed old narrow fields, even by that late date. So, the estate left the intermediate strip fields unplanted at the time of the original c1780 planting, presumably as a benefit to farmers at the time for sheltering livestock. Even today the larger rectangular old field within the FC woodland is known as 'The Paddock', while the remaining strip field between the FC and council owned woods just to the Paddock's north-west side is still used for grazing. It has been named the 'Lamb Field' in Illus 3 as the writers of this report were told locally that it has been used for lambing into the recent past

due to the shelter afforded. Traces of old cultivation rigs running roughly NE to SW have been noted in the centre and lower areas of this field (David Devereux pers comm).

Illus 5 View of a typical section of Barhill wood, with the path south running along the old NW strip field, and the much older woodland area (Strip A) on the rocky ridge behind, separated from the old field by a low drystone dyke, and all now planted with mature Norway spruce and beech (photo PQ88)

This 'knap and dale' (hill and field) landscape is particularly interesting to author PQ who sees a very similar arrangement in the landscape of Mid Argyll. The modern forest of Knapdale in north Kintyre is also planted on a ridge and valley system formed by a metamorphic Dalradian geology, with ridges also running SW-NE. Taynish National Nature Reserve, owned by Scottish Natural Heritage (SNH), is a wooded peninsula within the Knapdale complex which was not afforested with conifers. Here it is possible to study the traditional field and woodland mosaic of an ancient landscape that was only partly improved during the late 18th century, ie at the same time as the Kirkcudbright district when Barhill wood was planted.

So, although the majority of the dyke system within the current woodland at Barhill seems to date from small field patterns captured and retained by the improvement era planting of c.1780, perhaps the land use pattern was already well established through medieval times and even earlier? It is interesting that the northern part of strip woodland C seems to have a very sinuous earth bank boundary on its western side rather than a stone dyke, and perhaps this indicates a pre-improvement woodland boundary? Just west of the old road beside the squirrel hide is an old ash stool now between two modern fence lines (of different ages) which also indicates a very sinuous older woodbank.

Illus 6 Old ash stool on the sinuous woodbank of Strip Wood D, just west of the squirrel hide (photo PQ128)

One of the truisms of this type of landscape study is that the geology and soils of an area is relatively fixed, and the resulting post glacial landscape can only be farmed in certain ways. This becomes very obvious when you have a rocky ridge and narrow valley system such as at Barhill, when clearly any arable fields must be sited within the valleys. The ridges on the other hand, being of little use to agriculture, are well suited for growing woodland. It seems to the authors that there is scope for archaeological research into Barhill woodland's old strip fields within a wider landscape context.

Illus 7 Wood pasture landscape south of the squirrel hide (photo PQ119)

Illus 8 Southern boundary dyke of woodland strip B with author CM inspecting a large chestnut stump, with oak on the left, probably both from the original c1780 planting, amid 1953 beech. (photo PQ92)

Illus 9 Another view of strip woodland B, with the old NE field on the RHS (south-east) of the dyke , again all planted with beech and Norway spruce, with an older ash on the dyke at the left (photo PQ94)

Other field records

There are no DGC Historic Environment records in Barhill Wood or Janet's Plantation (at the NE end of Barhill Wood, see Illus 3). The nearest site included in the HER is Kirkland Fort about 250m east of Barhill Wood. There are other significant historic sites close by, such as the early church of St Cuthbert and the lords of Galloway castle at Loch Fergus, and further studies into the wider landscape history of the lands at Barhill and around Kirkcudbright would be worthwhile. The early maps use the name 'Kirkland' for the woods shown at the approximate location of Barhill, and perhaps this land was in the ownership of the church in medieval times. Further work into this was beyond the scope of this HWA project but would be valuable in landscape history terms.

The Native Woodland Survey of Scotland (NWSS) records for the study area can be found on the recently created Scottish Forestry Map Viewer. Unfortunately, this does not provide the same level of detail for the NWSS records as was previously available through FCS online. The NWSS divides the wood into five compartments, reflecting the different historic land-use histories to some degree, but all classified as PAWS (Plantation on Ancient Woodland Site). The new map viewer does not allow one to see the tree species recorded, nor the National Vegetation Class (NVC, which is based largely on the ground flora). However, the high percentage of canopy cover (between 80 and 100% recorded) and the largely 'unidentifiable' habitat type (relating to a lack of ground cover under the canopy) indicates that this area was recorded as dense mature plantation cover with little understorey vegetation. The accompanying record of every compartment also being 100% semi-natural woodland therefore appears to be an error, and certainly does not correspond with the common presence of non-native planted tree species. Our observations of the older examples of native tree species, in the boundaries especially, and the records of nearby less-altered woods suggest that this might originally have been upland ash wood, at least in part, probably falling into NVC W9 (ash/rowan/dog's mercury woodland type) perhaps with some W7 (alder/ash/yellow pimpernel woodland type) and other related classes in this varied topography.

Woodland management issues

Access and recreation

The woodland in both ownerships is heavily used by local residents and is easily accessed by foot and bicycle, either direct from the town or from the FC car park within the wood. The woodland has an outdoor classroom for visiting groups and a squirrel observation hide, both of which are Galloway Glens / community projects created in 2018. There are informal mountain bike trails within the woodland of a wide range of difficulties, and clearly there are some keenly competitive riders within the community. Janet's Plantation has no designed access at present, but has potential for trails and viewpoints. The highest part of the woodland has some informal shelters and fire sites, possibly on the site of an old croft, but these are in poor condition and not visited by the public at large.

Amenity and landscape value

Most of this woodland is very much under the public eye, either as seen by visitors within the woods, as a backdrop to Kirkcudbright town, or as seen in the wider landscape of the district. Therefore careful planning will be needed to protect the landscaping and amenity value of the woodland during any future woodland operations. There has not been a recent history of thinning and felling

in these woodlands, but with the plantations now rather mature, it is inevitable that selective felling will be required soon. The relatively new FC access road is an asset in that regard, and will allow timber lorries to safely access extracted logs as and when required. Wind-throw of individual trees or even whole stands may also occur in this rather exposed location.

Illus 10 Sheep grazing in the 'lamb field' west of Strip Wood A , looking north-east (photo PQ30)

Red Squirrel conservation

The resident red squirrels present a challenge for future management of the woodland, as the cones of the pines, larch and spruce trees represent a significant food source for them. In addition, the tall conifers provide shelter for these endangered animals. Any kind of simplistic conversion to predominantly native species woodland, for example of the oak/hazel type which would grow well on these hard ridges, would almost certainly worsen the red squirrel habitat value of the woodlands.

Illus 11 Janet's Plantation poses difficult management decisions, since it is mainly Norway spruce/ beech/sycamore mix: spruce being good for red squirrels while the broadleaves favour grey squirrels (photo PQ34)

Clearly, any managing group would need to take expert advice on woodland management to benefit red squirrels, and hence develop a plan for a gradual transformation of Barhill to woodland of the desired mix. There is good advice in the relevant FC Practice Note no 102, titled Managing Forests as Red Squirrel Strongholds (2012). Their Table 3 lists four categories of tree and shrub species according to how much they benefit red squirrels.

The tree species most discouraged for red squirrels are large seeded broadleaves: beech, chestnuts, hazel, oaks and sycamore, all of which are present at Barhill, particularly beech and sycamore. Other common broadleaves with smaller seed like willows, alder, birches, holly, aspen, rowan are seen as neutral for red squirrels. Broadleaves which do provide some benefit for red squirrels include bird cherry, blackthorn, dog rose, hawthorn, wild cherry and wych elm. Most of these 'secondary' species are already found at Barhill and could be allowed to increase in proportion in future.

The favoured species for red squirrel are all coniferous, and include Douglas fir, larches, pines, spruces, and also yew. Although we did not notice any yews at Barhill, it would probably not be difficult to introduce some in due course. However, the other conifers are present in quite a good mix, and are predominantly mature, so it is not surprising that Barhill woods are already a favourable habitat for red squirrels.

It is, however, surprising that Barhill is not identified on the Scottish Forestry Map Viewer 'Policy' layer as a 'Red Squirrel Stronghold'. We are unsure therefore whether Barhill is formally recognised as an important red squirrel site. Such recognition would be relevant in influencing the future appropriate management of the wood.

Future management

Beginning the process of introducing younger age classes of crops in this small and sensitive woodland will probably involve selective thinning of some whole stands, plus felling in small groups. Through sale of logs to local craftspeople and smaller sawmills, the undoubtedly high-quality timber might also be used quite locally, as befits a woodland with community management aims.

As discussed in the section above on red squirrel conservation, there will need to be careful planning of both tree-felling and replanting species choice. The wholesale felling of mature conifers, or simple conversion to native woodland types, could inadvertently result in making the habitat more suitable for grey squirrels.

Of course, the future woodland management may not only turn on the single issue of improving red squirrel habitat, and there are likely to be compromises made with other objectives, such as creating diverse habitats to suit a wide range of wildlife and for enhancing visual and experiential amenities. Consideration should also be given to maintaining the historic aspects of the woodland by retaining at least some trees planted as part of the initially diverse species choice, especially the few surviving sweet chestnut coppice stools, an occasional hornbeam, maybe one or two horse chestnuts, and the occasional oak coppice which is probably derived from some of the earliest planting.

Illus 12 Sweet chestnut stool in Janet's Plantation, derived from the original 1780s planting (photo PQ77)

Illus 13 Very large sweet chestnut stool in Strip Wood E which was not planted by the FC (photo PQ150)

A long-term management plan might include the gradual thinning of mature tree crops and also the felling of whole groups in places. The area of such group felling should be at least twice tree height in diameter in order to promote ground level regeneration. There may be a case to open up some of the strip fields again, but in a way that does not invite windthrow of the trees on the ridges or slopes on each side of the strip fields. There may well be additional scope within the woodland for more open glades, as there are few at present, perhaps re-opening one of the southern small circular fields.

Illus 14 One of the old fields near the south of Barhill wood (SW field) with dense beech, which could be opened up into a glade to favour the bluebells (photo PQ184)

The tall slender beech and sycamore seem a high priority for removal, bearing in mind the squirrel conservation argument. On the ridges themselves, perhaps a pine/birch/rowan/hawthorn mix would be much more friendly to red squirrels than the current beech, which in any case tends to be quite scrubby on the ridge tops. The beech could be used to create quality firewood for sale.

Illus 15 Typical dense beech on a ridge near the south of Barhill (photo PQ176)

Illus 16 An open beech stand near to the last photo is much more attractive for walkers, though open grown beech trees will of course produce more seed! (photo PQ181)

Illus 17 Already by chance there are small stands of birch with pine, some larch, hawthorn and much less beech in the southern part of Barhill wood, which could be an aspiration for much of the ridge-top woodlands in future. (photo PQ173)

Tree ageing by dendrochronology

Six living trees were sampled using a Swedish increment corer, on 14th and 15th June 2019 and analysed in August 2019 by Coralie Mills. The sampled trees are shown in Illus 18 and the sample details, including the ageing results, are given in Table 1.

Illus 18 Clockwise from top left: oak coppice BAR01; sitka spruce maiden BAR02; sweet chestnut coppice BAR03; beech maiden BAR04; sitka spruce maiden BAR05; wych elm, unusual form, possibly maiden with later secondary stem or a coppice form, BAR06.

The first core sample, BAR01 was from one stem of a multi-stem coppiced oak on the western boundary of the main Barhill Wood, above the 'lamb field' (Illus 3; Illus 18). Samples BAR02, BAR04 and BAR05 were from maiden trees believed to have been planted in the early stages of FC ownership. Sample BAR03 was from a stem of a large sweet chestnut coppice, from one of the largest stools seen, and from a species which was clearly much more prevalent at Barhill in the past as the examination of many stumps showed. Sample BAR06 was from an unusual Wych Elm. There was a main stem and what appeared to be a secondary smaller stem which was thought possibly to be later. The larger main stem was sampled.

Table 1 Key attributes of Barhill living tree cores

Sample / species	**NGR: NX**	**Sample height (m)**	**Girth at 1.3m height (m)**	**Number of measured rings** +sv = outer ring spring vessels only	**Central ring present & measured? If No, est Pith Offset**	**Measured to bark edge?**	**Measured ring span**	**Estimated stem origin date** (allowing for any PO and sample height – rate 1m height takes 5-10 yrs)
BAR01 Oak coppice stem *(Quercus sp.)* (2 cores i & ii)	68806 50753	0.9	1.26	(i) 12+sv	PO-7	Y	2007-2019	c.2000 Unclear core
				(ii) 17+sv	PO-5	Y	2002-2019	c.1995
BAR02 Sitka spruce maiden *(Picea sitchensis)*	68919 50804	1.1	1.52	61+sv	PO-1	Y	1958-2019	c.1948-53
BAR03 Sweet chestnut coppice stem *(Castanea satvia)*	68728 50681	1.3	1.67 (stool circumf 6m)	71+sv	PO-7	Y	1948-2019	c.1929-35
BAR04 Beech maiden *(Fagus sylvatica)*	68882 50848	1.05	1.15	51+sv	PO-7	Y	1968-2019	c.1951-56
BAR05 Sitka spruce maiden *(Picea sitchensis)*	68885 50850	1.0	1.52	47+sv	PO-2	Y	1972-2019	c.1960-65
BAR06 Wych elm, stunted maiden? Singled coppice? *(Ulmus glabra)*	68759 50699	0.72	1.33	53+sv	PO-6	Y	1966 -2019	c.1953-57

In Table 1, key attributes of the core samples are given, including the calendar dated span of the measured ring sequences. The tree ring width sequences were recorded using the DENDRO programme suite (Tyers 1999) following the English Heritage Dendrochronology Guidelines (1999). This approach improved the accuracy of the ring counts by revealing and resolving problematic parts of the sequences, for example where very narrow or unclear rings occurred. The resulting dendro-dated ring spans were then adjusted to allow for any missing central rings from the core (using the Pith Offset estimate or PO) and for the estimated number of years it would have taken the young sapling tree to reach sampling height after germinating: the estimate used is very approximate at 1 to 2 years for every 10 cm of height gained, or 5 to 10 years to reach 1m height (Mills 2011) - the height at which most of the core samples were taken. Actual vertical growth rates are hugely variable depending on whether the sapling was raised in a nursery (which they probably were for FC and earlier planted trees), where the rates could be faster, or whether growing out in a wood experiencing grazing damage or other negative influences on growth such as competition or shading, where they could be considerably slower. The results of the dendrochronological work are considered below.

Dendrochronology results and interpretation

The results can be considered in two groups: firstly the maiden (ie single-stemmed) trees from the relatively recent plantings, BAR02 (sitka spruce), BAR04 (beech) and BAR05 (sitka spruce); and

secondly the more complex multi-stem forms of trees thought to originate from earlier plantings, BAR01 (oak coppice), BAR03 (sweet chestnut coppice) and BAR06 (wych elm, unusual form).

According to the Forestry Commission stock map for Barhill Wood, their plantings were undertaken in 1953 for the main wood and in 1962 for Janet's Plantation. Our sampled maiden trees were all in the main wood (Illus 3) and the dendrochronological results for BAR02 and BAR04 tally well with this information. Note that the dendrochronological results determine sprouting date while the FC records show planting out date. Tree saplings would be raised in a nursery and planted out usually around 3 years of age. Thus, based on the FC information we would expect a sprouting date of around 1950 in the main wood. The dendrochronological results (Table 1) are 1948-53 for Sitka spruce BAR02 and 1951-56 for Beech BAR04. The 'dendro' ageing method, while very precise in terms of ring span dating, involves an estimate for the vertical growth rate, i.e. the number of years it takes the sapling to reach core sampling height, usually about 1m above ground surface. Ring patterns are too distorted near the root plate to sample close to the ground surface. Taking this into account, the dendrochronological results are within or very close to the expected date and are therefore encouraging in terms of the tree-ring method identifying the origin date reliably.

The origin date result for Sitka spruce BAR05 is a little later at 1960-65. BAR05 is in the same part of the wood as BAR02 and BAR04 but has an origin date in line with the FC 1962 date for planting up Janet's Plantation. It seems likely some enrichment planting was undertaken at that stage to fill gaps from the original 1953 planting of the main wood.

The results from the other three sampled trees are more diverse. All three were thought to derive from the earlier, pre-FC, historic woodland cover, and oak BAR01 and sweet chestnut BAR03 are multi-stem forms which have definitely been coppiced. The core samples were taken from near the base of a coppice stem on each of these two trees, i.e. from a stem which has regrown since the last coppice cut. This gives a close indication of the date of the last coppice cut. In the case of oak BAR01 the result was c. 1995, while for the sweet chestnut BAR03 it was much earlier at 1929-1935. This difference was quite unexpected, with these trees being not far apart in the unplanted (by FC) strip to the west of the paddock (Illus 3). However, oak BAR01 is on the Barhill Wood western boundary bank with the open 'lamb field', whereas BAR03 is within the body of the wood. Therefore the likely explanation is that oak BAR01 was cut back when new fencing was introduced around Barhill Wood. Clearly the wood has been re-fenced within FC ownership times. The origin date for the sweet chestnut coppice stem BAR03 is between the First and Second World Wars, and this is probably when Barhill Wood, or some part of it at least, was last coppiced commercially. Sweet chestnut coppices still survive in SE England, and perhaps elsewhere, and fencing is one of their main products.

The stem origin date result for Wych Elm BAR06 is different again, at 1953-57. The sample was taken low, below the emergence of the two stems (Illus 18). This tree was sampled because it was a possible candidate to be a surviving un-coppiced tree of the pre-FC cover. However, the analysis showed that it originated soon after the FC acquired the wood, and it seems most likely that it is natural regeneration that got away alongside the new FC plantings. More generally, we noted widespread young Wych Elms getting away underneath the plantation canopy, as it is a relatively shade-tolerant species.

Documentary evidence: written records

This HWA has assessed the scope for documentary evidence to contribute to understanding the history of Barhill Wood in further studies, rather than undertaking detailed archival research at this stage.

Local enquiries revealed that the St Mary's Isle estate papers were largely destroyed in a fire in the early 1940s. Local historian David Devereux advised of this situation and provided a summary of knowledge of the history of Barhill Wood from other sources. He indicated that it was understood to have been planted in the late 18th century by the Earl of Selkirk, or more specifically by Lord Daer, then managing the estate for his father. This certainly ties in well with the map and plan evidence outlined above and in Appendix 1, although there is also map evidence to suggest there had also been woodland cover here in an earlier era, but apparently largely lost by the mid-18th century.

In the absence of estate records, the Old and New Statistical Accounts of Scotland entries for Kirkcudbright parish provide particularly valuable insights. In the Old Statistical Account there is an account of the 'Forest Trees' in the parish (Sinclair 1794, 7-8):

> 'Besides the various useful improvements in husbandry, which are carried on in the parish, these which are adapted for ornament, as well as utility, should not to be omitted. The Earl of Selkirk has planted, with great taste and judgement, several hundred acres, with various kinds of forest trees, such as oaks, beeches, ashes, elms, birches, chestnuts, sycamores, hornbeams, rowans, walnuts, larches, together with different sorts of pines, as Scotch, black and white, and American spruce, silver fir and balm of Gilead. He has also reared a nursery, consisting of 15 acres of ground, which, contains more than a million of plants, all in a most thriving condition, and soon to be transplanted for cherishing and beautifying various other fields.'

The species list quoted above includes many of the species still present at Barhill Wood, although notably we did not see any walnut or Balm of Gilead. A local participant on one of our guided walks said that there is a mature walnut tree in a garden in Kirkcudbright which does bear nuts.

The Old Statistical Account goes on to relate further investments in establishing orchards and fruit trees in the parish (Sinclair 1794, 8):

> 'His Lordship has likewise laid out an extensive orchard of fruit trees, for the purpose of establishing a small orchard at every farm house. A few years ago, there was not a single fruit tree to be seen in any part of the parish, except what grew about St Mary's Isle. Some vestiges of old orchards scattered up and down, are still to be traced, but neither trees nor fruit are anywhere to be found. They must have gone into decay near a century ago. … In short from the various improvements made, and still carrying on, the face of this country will, in the course of a few years, be totally changed. It will assume a most beautiful appearance. The most charming landscapes will strike the eye, and afford delightful subjects for the poet's fancy, and the painter's pencil.'

While the latter entry is not specifically about Barhill, it does demonstrate a considerable estate interest in restoring productive trees in the parish, at a time when woodland seems to have become scarce in the area. This is reflected in the map evidence (see above and Appendix 1).

This scenario is further described and explained in the Rev. Samuel Smith's treatise on the Agriculture of Galloway (Smith 1810, 176-80), written very much from an 'Improvement' perspective. It provides some fascinating and relevant information regarding the selection of areas for plantation and how this fits with the wider agricultural land-use. Therefore, the sections on the Earl of Selkirk's plantations around Kirkcudbright are quoted at length, because they explain much of what we observed in the field.

> 'The plantations of the Earl of Selkirk are more extensive. They cover upwards of eight hundred Scotch acres, and are so finely diversified, as to convey the idea of a still greater extent. The general plan upon which they are laid out, was formed, and the execution of them begun, by the late Earl, about thirty-five years ago. To his Lordship's taste they do great honour. Although designed at a period, when the public taste in matters of this kind, was far less fastidious than at present, it may safely be asserted, that they will bear to be tried by the principles even of Mr Price.
>
> 'The late Earl had executed only a small part of the plan when, in the year 1786, he transferred the management of his estate to his son, Lord Daer, who immediately made the most judicious arrangements for carrying on this branch of his improvements. The estate was most accurately surveyed, and all the ground intended to be planted marked out. Perceiving, that many advantages would arise from raising the plants up on the spot, he formed a nursery of about twenty acres, which was very speedily stocked with plants suited to the soil and climate. A portion of the ground previously marked out, varying in extent according to circumstances, was then inclosed and planted annually; beginning with the grounds most contiguous to St Mary's Isle, and gradually extending to the remoter parts of the estate. This mode of proceeding, has been steadily pursued for upwards of twenty years, and the plan has been now nearly completed by the present Earl.
>
> 'By the method described, it will appear obvious, that there would not only be a great saving of expense, by the constant employment afforded at all seasons, to nearly the same number of labourers ; in the management of the nursery ; in forming inclosures ; planting, weeding, pruning, etc, but, what is of still greater consequence, that the labourers having acquired skill and dexterity, by long experience under the direction of an intelligent overseer, would execute every part of the work with much greater judgment and precision.
>
> 'Previous to these improvements, the country in the neighbourhood of Kirkcudbright was extremely naked, and the astonishing alteration produced in the appearance of it, can only be conceived by those who have had an opportunity of seeing it in its former, and in its present state; but abstracting altogether from ornament, it is probable, that they will ultimately be a source of profit.
>
> 'To those who take an interest in matters of taste, a more minute account of the principles, which have been attended to, in laying out the plantations, may be acceptable.
>
> 'Considerations of utility and ornament, concurred in determining the selection of unarable banks on the steep sides of hills, and of rocky knolls near their summits. Steep banks which are inconvenient, for tillage are of course less valuable, and may be given up for planting without so great a sacrifice, as land of equal fertility in other situations; while, on the other hand, there is no place where trees thrive so well, or where a wood of moderate extent, can produce so much

picturesque effect. Upon the summits of high land, though trees do not grow so rapidly, they produce a shelter which adds to the value of the adjoining lands. At the same time, it may be observed, that in any hilly country, fringes of wood irregularly skirting the horizon produce an interesting and varied scenery. In laying out each plantation, the object chiefly attended to, was to preserve the effect of a natural wood; and for this purpose, the outlines of the plantation, were adapted to the natural form of the ground. In most of the natural woods which remain in Galloway, we may observe, that the trees and brush wood, extend as far as the ground is steep or rocky, while the land fit for tillage has been cleared and cultivated ; and in consequence of the irregular boundary of different soils, we find glades of cultivated land, projecting into the woods, and detached woody knolls interspersed among the adjacent fields, producing altogether an interesting and singularly beautiful variety. The picturesque effects, which had thus arisen from accident, it was Lord Selkirk's aim to imitate, and in most instances the means of effecting this, were pointed out by the marks of the plough. In the former rude state of agriculture, little pains had been taken to bring into cultivation, any land which was not naturally accessible, and the steep or rocky banks had been left untouched in the midst of arable fields. If these neglected patches could have been planted exactly to the boundaries which the plough had reached, they would have produced the same effect as if the natural wood had never been cleared. The difficulty arose from the necessity of fencing the plantation effectually from cattle. To inclose every bank or knoll separately, would have required an immoderate extent of fences. This was obviated by inclosing within one fence a groupe, or chain of knolls, along with the arable land which was interspersed among them, and which was in some cases left unplanted as glades in the woods, and sometimes was planted, in order to give dress to the different knolls, which might otherwise have appeared too unconnected. The boundaries of the plantations, however, were in all cases carried as nearly as possible along the boundary of the arable land; and though it afterwards required a greater length of fences to follow the intricate varieties of the ground, yet the picturesque effect which was gained, was thought a sufficient inducement for this sacrifice.

'In one respect the effect has not proved equal to the intention. The fences which divide the plantations from the pasture fields, mark their termination with a distinct and hard outline, very different from the imperceptible gradation observed in the edges of natural woods. To remedy this defect, the present Earl of Selkirk has lately removed the fences of some of the plantations which are approaching to maturity, making new fences at a little distance concealed within the wood, and leaving a verge on the outside open to the field. The trees have attained to such a growth, that those which are left exposed to the pasturing stock are not likely to suffer. It would have been better, however, and more easily executed, if this interior fence had been made at the first, and the fence along the extreme boundary of the plantation had only been of a temporary nature, to be removed as soon as the outer verge of trees and brushwood had attained a certain degree of maturity, and also if this outer verge had been intermixed with a greater proportion of under-growths than the rest of the plantation.'

The relevant entry in the New Statistical Account of Scotland in 1845 shows how the plantations have developed since then (NSAS Vol 4, 'The Parish of Kirkcudbright' by Rev John McMillan, Minister).

'The plantations are composed principally of oak, ash, elm, beech, plane, Spanish-chestnut, larch, Scotch fir, spruce, and silver fir; and partially of alder, birch, hornbeam, horse-chestnut, walnut, gean [wild cherry], maple, lime, laburnum, Huntingdon willow, poplar, balm of Gilead fir, and pinaster.

> 'There is little wood indigenous to the soil, with the exception of a few ash and mountain-ash trees in the glens of Glenlay and Bombie; and along the bank of the Dee, a little below and above the old bridge of Tongland. There are some oaks, in addition to the ash and rowan; and further up the river, within Culdoch, in the march of Netherthird, there are a few birch.
>
> 'The other plants and shrubs natural to such localities are, the hazel, hawthorn, sloe, wild dog-wood, crab, black-saugh, whin, broom, buckie, and bramble briars, rasp, honeysuckle, and ivy.

In summary, the NSAS 1845 account depicts a parish with plantation trees as its principal wooded cover, with a planted species list very similar to that given in the Old Statistical Account. There is very little native woodland, with some limited ash, rowan (mountain-ash) and oak, though rather more woody shrubs including some thorny (graze-resistant) species still evident in the small thickets within hilly pasture land today.

At about the same time, the Ordnance Survey First Edition name book for Kirkcudbrightshire provides a brief description of Barhill Wood and Janet's Plantation:

> OS Name Book 1848-51 'Barhill A wood of tolerable extent consisting of fir, oak, ash *(? unclear),* and a few other sorts. It is on the estate of the Earl of Selkirk'.
>
> OS Name Book 1848-51 'Janet's Plantation A small plantation situate on the left of and adjoining the road from Kirkcudbright to Auckinearn *(? Spelling)* the trees are chiefly ash, beech and oak. It is the property of the Earl of Selkirk'.

The documentary evidence, although lacking any estate records, has provided useful insights into the wooded landscape history of the study area, and this will be considered further alongside the other lines of evidence in the discussion below.

Discussion

This project has assessed a range of sources of evidence for Barhill Wood, including historic maps, field assessment, dendrochronological results and documentary evidence, greatly assisted also by the sharing of local knowledge. Today, Barhill Wood is dominated by the mix of largely non-native broadleaf and conifer tree species planted by the Forestry Commission in the 1950s, but it has a much longer story to tell.

The earliest site-specific evidence found is from historic cartography, with Bleau's Atlas of 1654, based largely on Pont's manuscript maps of the late 16th century, showing woods at 'Kirkland' in what approximates to the position of Barhill Wood. However, by the time of Roy's military survey in the mid-18th century, this area is largely treeless, and this corresponds with the documentary evidence of the late 18th and early 19th centuries describing a largely denuded landscape in this part of Galloway. Woodland returns through the hand of man, in fact through the plantation activity of the landowners, the Earls of Selkirk, with a massive phase of plantation spreading out from St Mary's Isle into the surrounding estate lands after about 1786. The Old Statistical Account (Sinclair 1794) relates an extensive list of planted species introduced then, a mix of native and non-natives, and of broadleaves and conifers. Some of these species still persist at the site today, especially in the boundaries, as coppice forms in unplanted areas or in the understorey of the mid-20th century

plantings. The 18th century witnessed extensive plantations being introduced in Scotland as part of the 'Improvement Era' (Smout *et al* 2005).

A treatise on the agriculture of Galloway (Smith 1810) provides some fascinating details on how the Earls of Selkirk's late 18th century plantations were located, designed and enclosed. It was re-assuring to read that information after we had come to much the same conclusion from the field and map work, ie that the plantations had been made on the bare rocky knolls between a series of old fields. Dykes were built to enclose and protect the plantations and to separate them from the fields, and many of those dykes still survive. However, most of the fields have been planted into in the 1950s. Smith (1810) talks of these being arable fields more generally on the estate, but in the case of Barhill it seems more likely that they were already part of a pastoral system. Indeed, the field between Barhill Wood and Silver Craigs Wood has survived and is still used for grazing cattle and sheep.

Smith (1810) provides an interesting detail on the enclosure of the plantations, explaining that after the trees had become established, the fence line was moved a little way into the woodland edge so to soften the visual effect. We did see locations where there was more than one boundary bank, for example at the northern edge of Janet's Plantation, and on the eastern side of Barhill Wood, probably the result of this process.

What we are largely lacking is the evidence for the management of those plantations after they were established, and before the FC took over the management. The estate papers lost in a fire would no doubt have been hugely informative on this aspect. Given the prevalence of coppice form trees surviving from the old cover, many with large stools, it would seem likely that the plantations were managed as coppice, probably 'coppice with standards'. The tree-ring evidence points to a last coppice cut between the First and Second World Wars and we cannot say for sure how long this coppice system prevailed beforehand. One relevant point is the former greater proportion of sweet chestnut in the wood, as evident from the many stumps which appear to be of this species, and they could have been a valuable coppice component, providing useful fencing material for example. There is relatively little oak in this wood, and therefore it seems unlikely to have been a predominantly oak coppice historically.

The wood provides an excellent example of a place where cultural and natural history intertwine. There is built heritage within the wood, in the form of the enclosure dykes and even earlier traces of earthen field banks, which has not so far entered the archaeological record. There is also an early road preserved in the wood, which connects to the south east corner of old Kirkcudbright and runs roughly west to east through the wood, past the modern red squirrel hide and through into the fields to the east of the wood in the direction of Dumfries. Where it enters Silver Craigs wood from the town, it has the sunken appearance of a hollow-way, and is very likely to be at least medieval in date. While most other old routes radiating from Kirkcudbright eventually became tarmacked public roads, this one survived in its old pre-improvement form and is an important archaeological feature of the woods. One can still follow the old road through the wood, and there is even an old gateway across it within the wood, near the hide, marked by two veteran hornbeams which have survived within the 20th century plantings. In the twentieth century this old road route had become known as the Nine Stiles Walk, and is one of the old roads around Kirkcudbright investigated by former DGC Roads Engineer, Alex D Anderson and reported in a recent issue of TDGNHAS (Anderson 2018).

We have included a brief section on woodland management issues (usually beyond the scope of an HWA), in the spirit of supporting the local community in any future decisions, not least because the history of the wood is relevant to these considerations. The FC (now FLS) stated management objective (Stables 2009) is 'gradual restoration to native woodland', and usually this is something we would wholeheartedly endorse. However, Barhill has not been native woodland for a very long time, probably not since the 16th or 17th century at the very least, with a period of woodland absence in the 18th century, and as such is it is now a PAWS (Plantation on Ancient Woodland Site) with a very interesting history. A combination of the late 18th century and mid-20th century plantings has produced a habitat with a mix of native and non-native trees and forms, and the planted conifers in particular have created good conditions for red squirrels to survive in.

Many of these stands are mature in forestry terms and merit thinning or felling, but if focussed on removing the conifers in favour of native trees, this could have a detrimental effect on red squirrel food sources.

Of course, managing for nature more widely is also important and a balance has to be struck between retaining the species mix and restoring the ecological integrity of the woodland. One option is that some of the small fields planted up in 1953, particularly those closely planted with beech in the southern end of the wood, could be opened up to provide glades which would favour the regeneration of an understorey and bluebells in particular. This would be likely to enhance both the biodiversity and the amenity values of the wood.

What at first sight appeared to be a largely modern plantation has revealed an interesting landscape history, from woodland to open fields and back to woodland with different styles of planting and woodland management taking place from the 18th to the 20th centuries. Furthermore, there are the physical remains of a long-established integrated management system of agriculture and forestry, unusual in Scotland as a whole but no doubt more common in Galloway. Aspects of this system survive into the modern day with the use for grazing of the sheltered field between Barhill Wood and Silver Craigs Wood, that field also reported to have been used for lambing in the recent past. Many more such small sheltered fields survived within Barhill Wood until the mid-20th century, and they can still be identified with careful observation of the enclosure dykes and planting patterns. The tree planting has occurred before the use of heavy machinery and therefore much of the land surface and many built heritage features have survived intact within the footprint of the woods, adding to the interest of walking through them. It would be worthwhile considering the development of some interpretation materials regarding the cultural heritage aspects in due course.

Acknowledgements

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Appendix 1 Historic map analysis, *Peter Quelch*

Joan Blaeu, 1654 and 1662

Blaeu's atlas of 1654 which is based on Timothy Pont's survey of the late 16th C, shows the rectangular outline of 'Kirkcubright' town in vivid red, with the castle adjacent. Immediately east of the town (Blaeu is printed with north to the RHS) are unenclosed woodlands close to the place-name Kirkland. This depiction of woodland is significant as the map otherwise only shows occasional distinctive woods, often in enclosed parks in the surrounding district.

Joan Blaeu's Atlas 1654

Blaeu's Atlas Major of 1662 has the same information presented slightly differently, with the Kirkland woods and also woodlands on 'St Mary YI' being prominent. Archie McConnell (of the Dumfries Archival Mapping Project) reports that it is known that St Mary's Isle has held woodlands since medieval monastic times, including some veteran Sweet Chestnut trees.

nls View: Gallovidiæ Pars Media - Blaeu Atlas Maior, 1662
https://maps.nls.uk/view/108520437

Joan Blaeu's Atlas 1662

Herman Moll, 1745

Molls map of Kirkcudbrightshire is interesting for its place-names but does not show any woodland, so is of little help in dating the woodland at Kirkland.

Herman Moll 1745

Herman Moll 1745

William Roy Military survey 1747-55

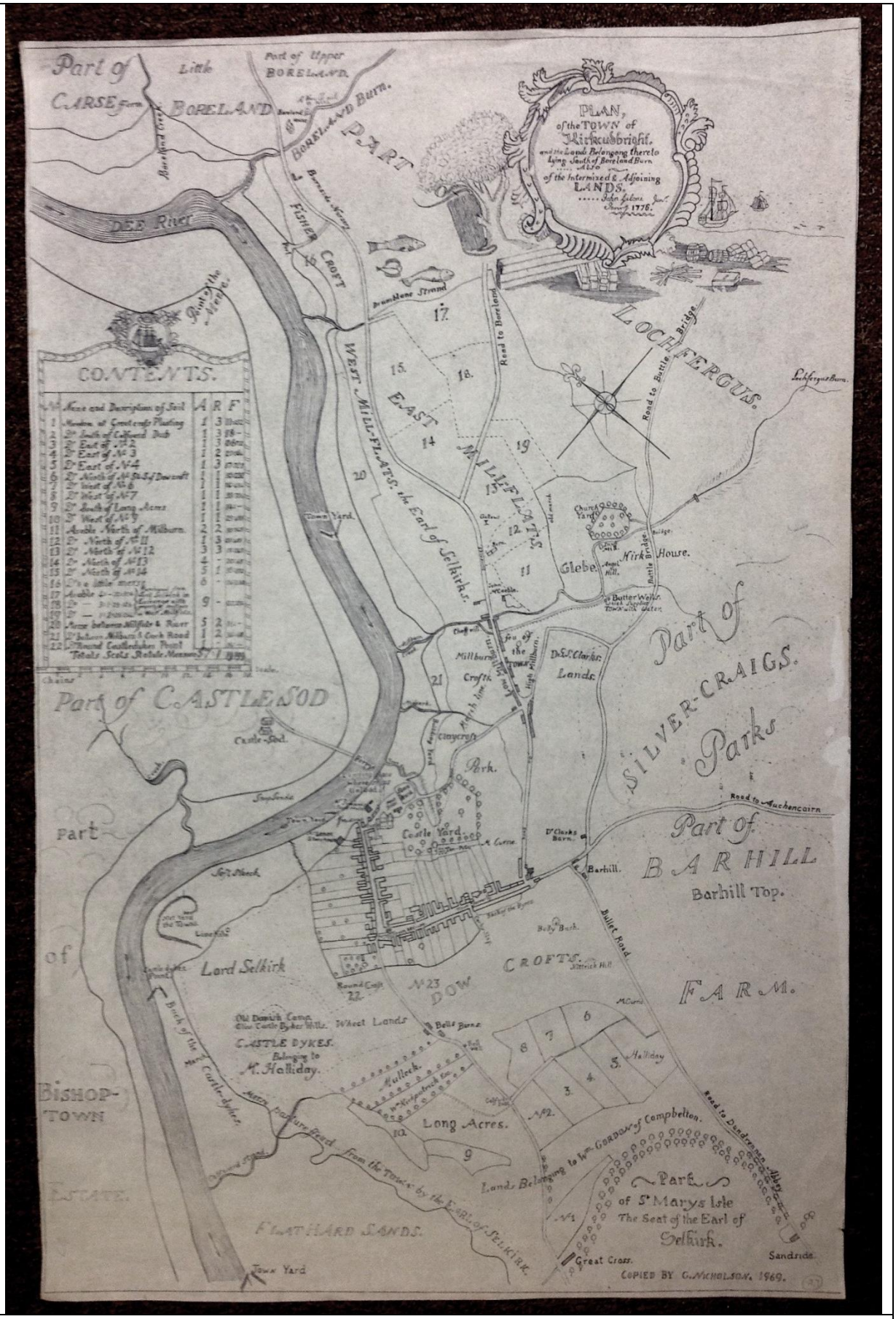
The military survey is a detailed and well-drawn map, showing the street pattern in Kirkcudbright town and all the surrounding agricultural enclosures, but does not depict any woodland on Kirkland hill. It is hard to say whether this means that any previously planted or natural origin woodlands (as shown on Pont and Blaeu's survey) on Barhill were at a very low ebb or destroyed at that time, or whether it is an omission from a map which was mainly concerned with showing new agricultural enclosures near the town. My feeling is that in c1750 there were either no woods on Barhill or only sparse scrub left over from the late 16th C woodland cover shown on Pont/Blaeu.

William Roy's Military Survey 1747-55

John Gillone 1776

The most authoritative plan found in this study is a 'Plan of the Town of Kirkcudbright' surveyed by 'John Gillone, January 1776'. Interestingly the plan shows no planting at Barhill, either north or south of the 'Road to Auchencairn', which is the same road that Roy shows as the 'Low road to Dumfries'. South of that road is labelled 'Part of Barhill Farm', while to the north is labelled 'Part of Silver-Craigs Parks'. The hill has been surveyed to allow contours to be inserted on the plan, but no woodlands.

Obviously, by the date of survey of 1776 the planting of Barhill wood had not yet taken place. However, as Archie McConnel (of DAMP) reminds us, the purpose of these late 18th C plans was to help the lairds and their land managers plan the details of land improvements including any new plantations. So, it seems likely that the planting of Barhill Wood and Janet's Plantation took place within a few years after 1776, say around 1780.



John Gillone 1776 (hand-traced copy made by Mr G Nicholson, provided by local historian David Devereux)

James and John Tate/Robert Heron, 1790

A second useful detailed plan is taken from Robert Heron's book of his travels 'Observations made in a journey through the Western Counties of Scotland in 1792'. The plan is printed as Plate IV entitled '*An eye draught of Kirkcudbright and parts adjacent 1790*'. It is known that James and John Tate (father and son) carried out these 'eyedraught' plans in Dumfries and Galloway, often for municipalities like Kirkcudbright. It is a sketch plan yet appears remarkably accurate, so it must be based on some measured survey, but depicted as if the surveyors were in a balloon! However, no doubt the Tates would have been given access to the detailed plan by Gillone carried out only 14 years before.

The relevance to this study is that the Tate/Heron plan clearly shows the Barhill woods in splendid isolation and planted in an unusual star shape. When compared to the first edition OS 6 inch map, the prominent westwards extending arm of the star corresponds exactly, as does the spur to the SE which we found on the ground, now barely wooded and outside the current fence.

The north spur is also identifiable as the triangular strip woodland E (see this survey's map, Illus 3) running up to the 'Paddock'. Strip woodland E (mostly DGC owned) is currently the most natural in character of all the woods in the Barhill complex, with some of the best old trees remaining as coppice stools, while the flora in parts is that of an ancient woodland.

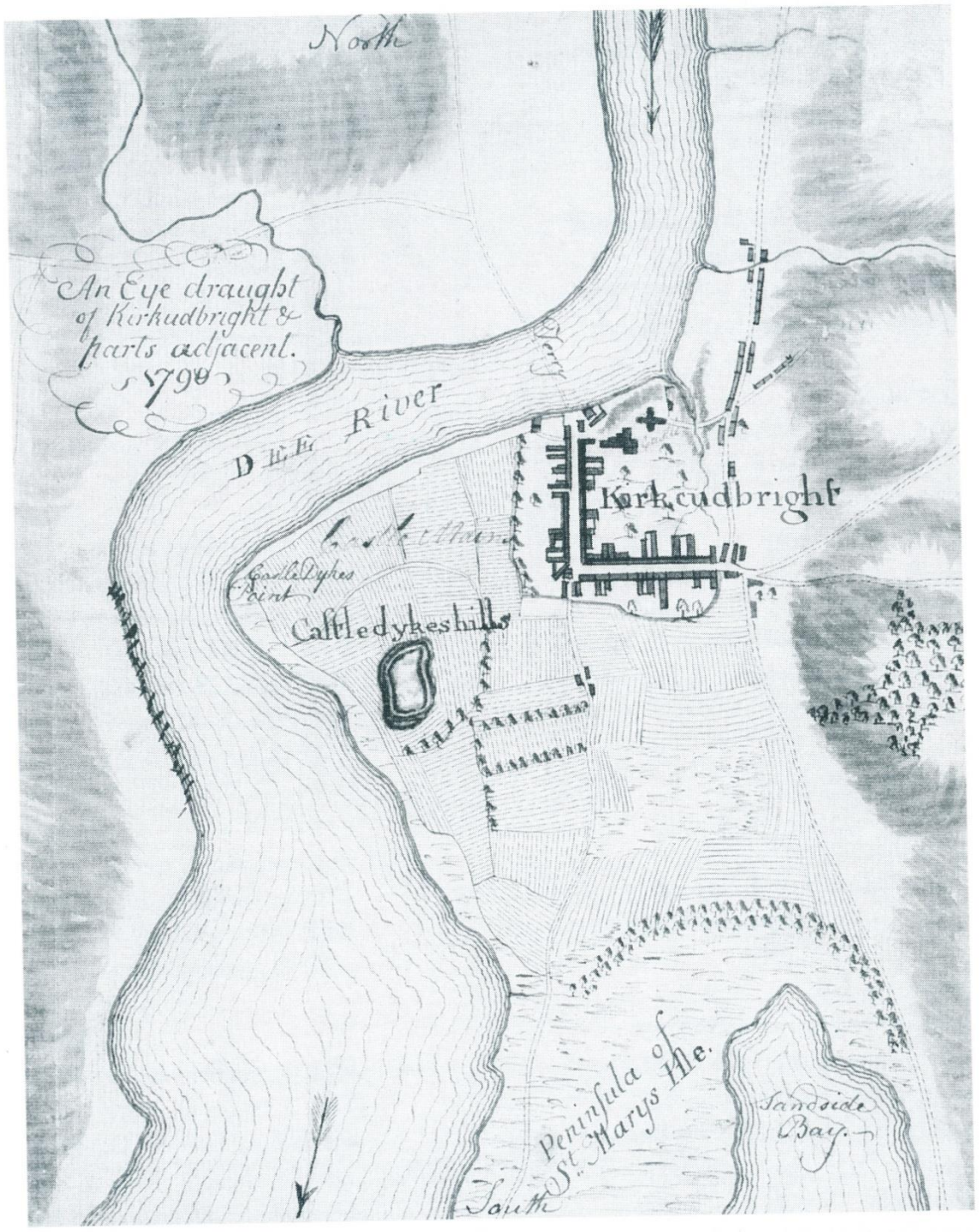


Plate IV

James and John Tate/Robert Heron 1790 (as reproduced in Macleod 2002)

John Ainslie, 1797

Ainslie's map of the Stewartry of Kirkcudbright published in 1797 does indeed show two sets of woodland east of the town, with Barhill Wood firmly in place running north of Cannee, much as now. It is difficult to exactly trace the woodland boundaries on these older county maps as the roads and even the named farm locations are not the same as on the later accurate OS mapping of the post improvement landscape. However, clearly Barhill plantation has been created by the time of the Ainslie survey. Ainslie shows estate ownerships on his map and for St Mary's Isle, and presumably for Barhill Farm too, the owner is the Earl of Selkirk.

John Ainslie 1797

John Thomson, 1821

As part of John Thomson's Atlas of Scotland published in 1832, the sheet for Kirkcudbrightshire was published in 1821. It is similar to the older Ainslie survey but less detailed for the Kirkland woodland. It does however show a long wooded ridge from Auchenflower in the south to Mickle Kirkland in the north, and also a strip of separate woodland above the town (ie Silvercraigs wood) with an open field in between (this survey's 'Lamb field').

John Thomson 1821

Ordnance Survey old maps (downloaded from NLS website)

The first edition OS map for the study area was surveyed in 1850 and published in 1854. The map represents an accurate and reliable picture of the land after the main improvements have been carried out. The old road from Low Kirkland west to Kirkcudbright is shown and this road can be traced from the open field to the east of the current squirrel hide down to the hollow way, then through Silver Craig Wood down to Kirkcudbright.

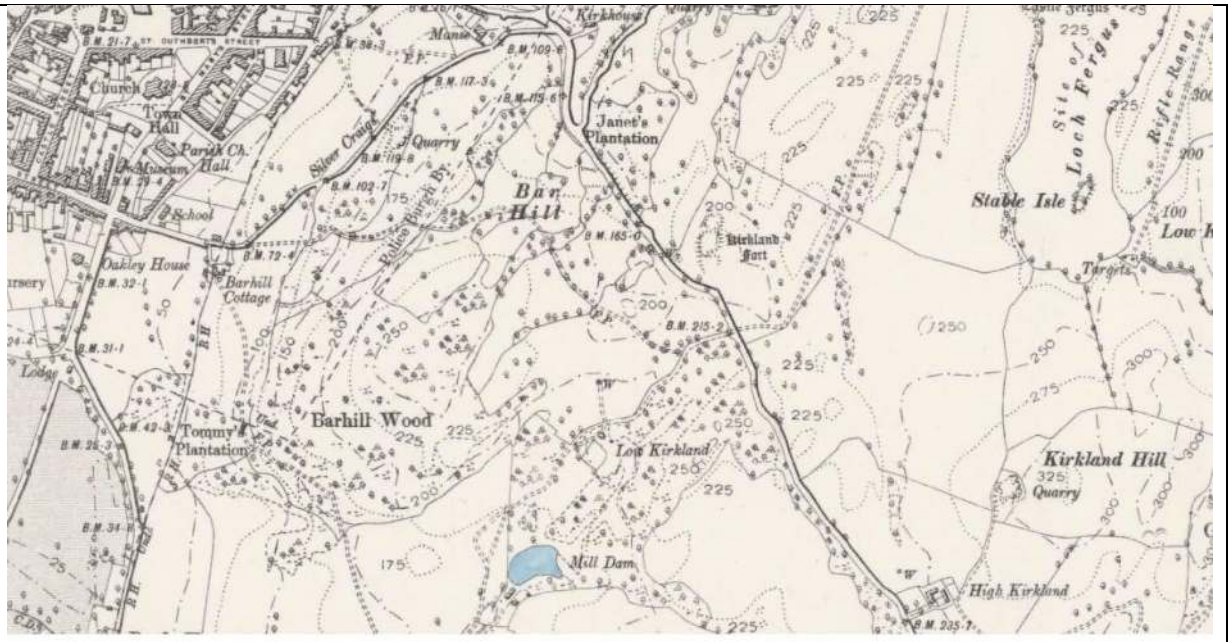
The OS map even shows 'old fence' on the line of this road in the field opposite the hide, while the raised bank of that old fence (or wall or hedge) and adjoining road is very visible on the ground. Further research finds that this is indeed the 'low road between Kirkcudbright and Dumfries' as marked on the Military survey c1750, and again on Gillone 1776 as 'The Road to Auchencairn'. All maps later than Gillone show the public roads on this side of town much as now.

The old road to Dumfries, where it meets Barhill wood close to the squirrel hide (photo PQ124)

The other key point of the first edition OS is that it shows that Barhill woodland is only a solid block at its southern half, and even then there are substantial bare patches within the enclosure near the south end. These patches seen on the ground are flat with good soil and resemble small fields internally within the main enclosure.

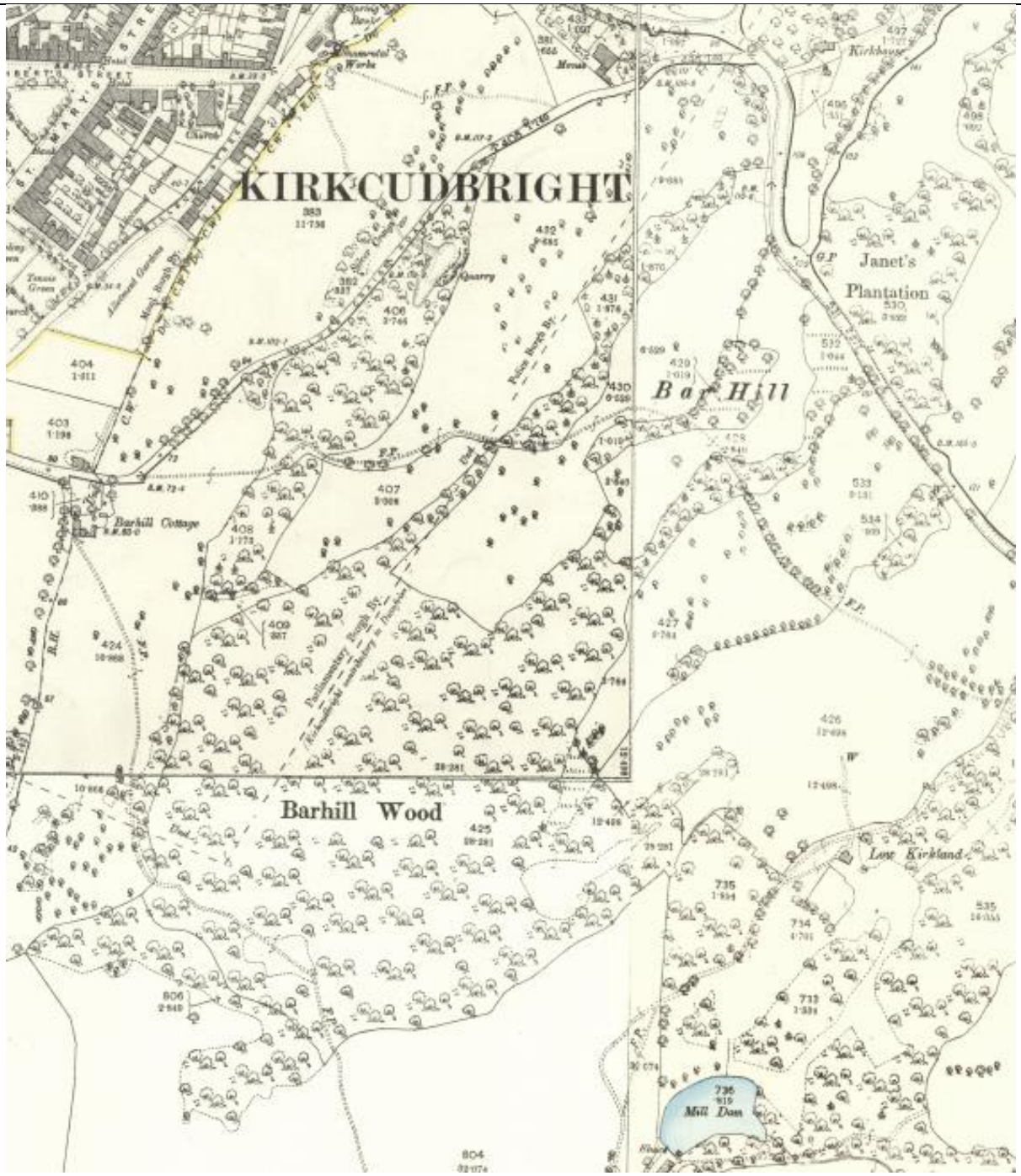
OS First Edition 6 inch surveyed 1850

At the centre and north of the woodland the narrow cultivable valleys between the wooded rocky ridges are shown as un-wooded on the first edition OS, and indeed also on the second edition OS revised in 1894. Janet's Plantation on the north east side of the public road is however shown as a single enclosed block on the first edition OS, although both maps show strips of wooded ridges in the agricultural land east of that plantation.



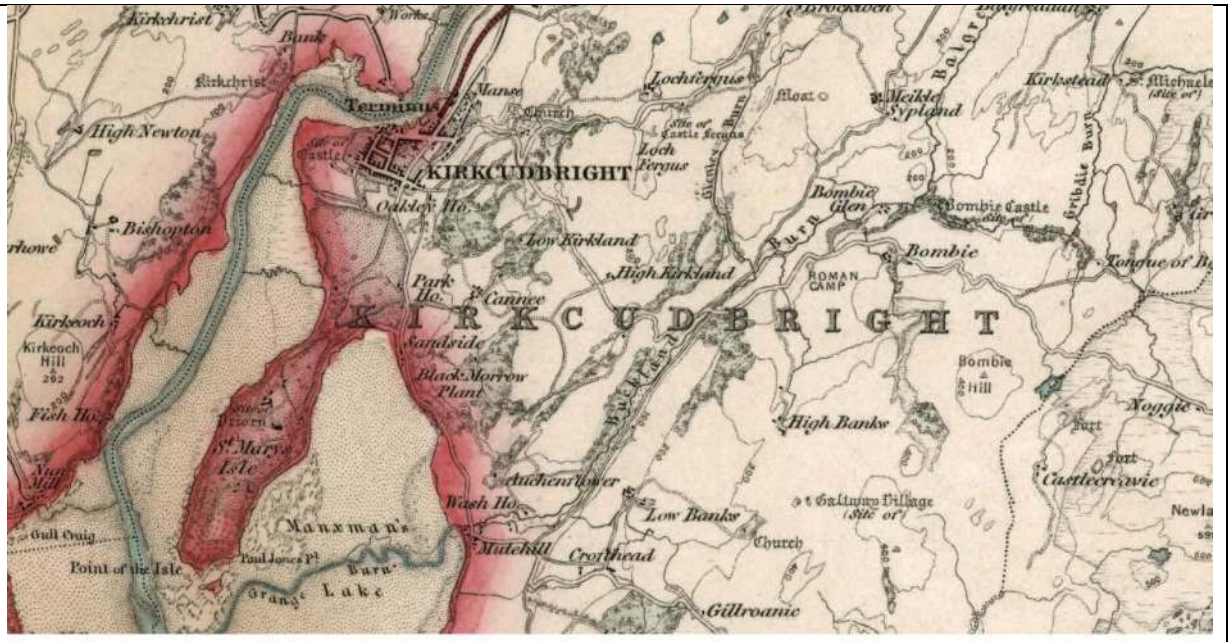
OS Second Edition 6 inch surveyed 1894

The second edition OS is also available at 25 inch to the mile scale and these maps show the unusual strip layout and also internal bare areas very clearly indeed. Around ten downloads from the NLS website were taken to capture the whole woodland study area. When blown up on screen they give a very clear picture of each internal and external boundary feature of the late 19th C woodland layout.



OS Second Edition 25 inch surveyed 1894 (composite map from NLS website)

The various editions of the OS at one inch to the mile are useful in showing the basic outline of Barhill wood. The first edition one inch (surveyed 1847) shows Barhill woodland, though not named, as an octopus shape with long tentacles to the north-east!



nls View: Sheet 5 [Kirkcudbright] - Ordnance Survey One-inch to the mile maps of Scotland, 1st Edition, 1856-1891
https://maps.nls.uk/view/74488558

OS One inch First edition surveyed 1847

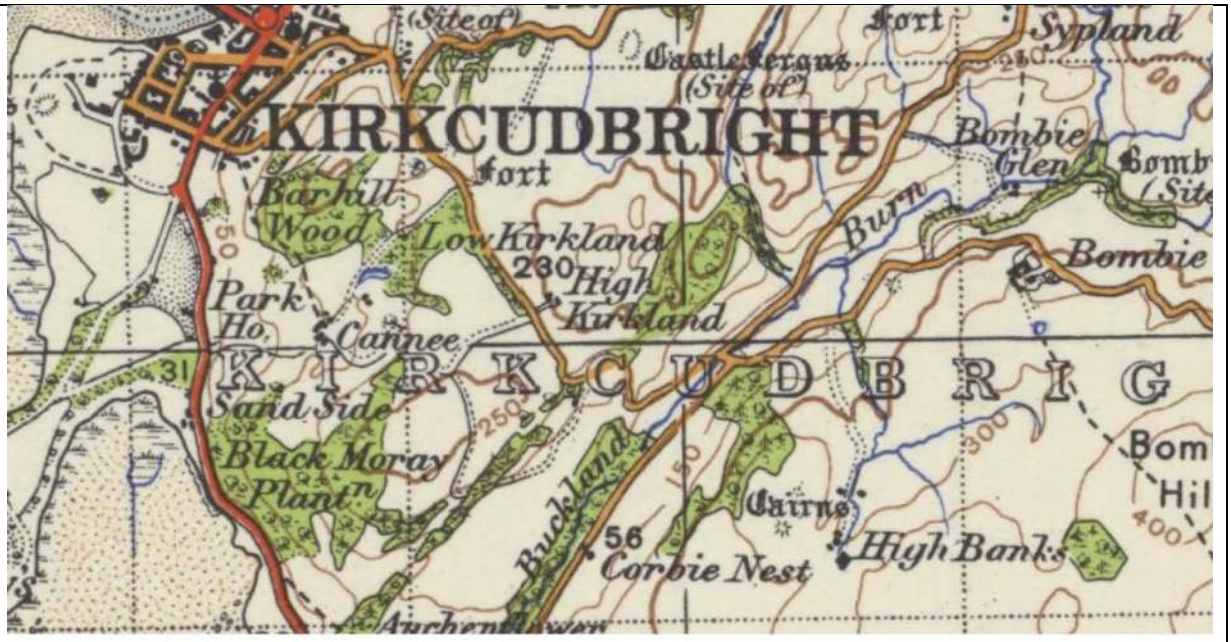
The second edition (s 1895) shows very much the same pattern, as does the third edition one inch (s 1902).

nls View: Sheet 5 Kirkcudbright - Ordnance Survey One-inch to the mile maps of Scotland, 2nd Edition, 1885-1900
https://maps.nls.uk/view/74488559

OS One inch Second edition surveyed 1895

OS One inch Third edition surveyed 1902

The Popular edition one inch map (s 1922) shows the same woodland layout but with the old road from Low Kirkland not being shown, but a new footpath route from Cannee to the town running across the south end of the wood.



OS One inch Popular edition, sheet 92, surveyed 1922

Early aerial photography

Finally, the aerial photographic view dated 1930 plainly shows the Octopus shape of Barhill woodland in the early 20th C. It was only two decades later that the FC replanted the whole woodland including the narrow internal fields, giving the mature plantation that we have today.

Aerial view of Kirkcudbright and Barhill Woods in 1930

List of old maps selected

Pre-OS old maps and plans

1 Joan Blaeu 1654

2 Joan Blaeu 1662

3/4 Herman Moll 1745

5 William Roy 1747-55

6 John Gillone 1776

7 Robert Heron 1790

8 John Ainslie 1797

9 John Thomson 1821

OS large scale maps

OS 1st Ed 6 inch (sheet 50) s1850, p1854

OS 2nd Ed 6 inch (sheet LV NW) s1894, p1896

OS 2nd Ed 25 inch composite s1894

OS small scale maps

First Edition OS One inch, Sheet 5, s1847, p1857

Second Edition OS One inch, Sheet 5, s1895, p1897

Third Edition OS One inch, Sheet 5, s1902, p 1905

Popular Edition OS One inch, Sheet 92, s 1922, p1925

Aerial photograph

View of Kirkcudbright with Barhill woods plainly visible, taken in c1930