

Woodlot Management Plan

Castle Wood

Caerlaverock 2020 - 2025



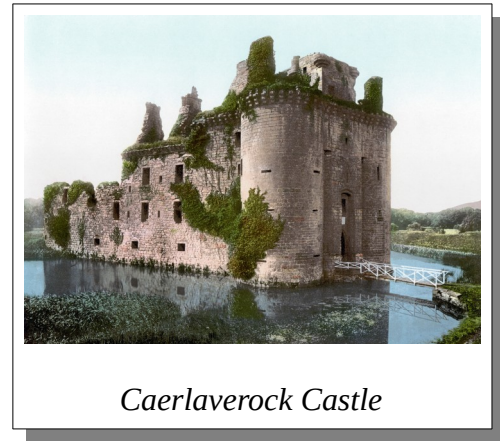
By Andy Brown

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Introduction

Castle Wood is a distinctive wood which lying to the South of Caerlaverock Castle on on the beautiful Solway coast. The Nith estuary is directly to the West. Caerlaverock Castle is the historic stronghold of the Maxwells, with two castle sites having dominated the area since the 12th century. The woodland includes a scheduled ancient monument area, and within this a Guardianship area which is managed by Historic Scotland. Almost the entire woodland is classed as a 'native woodland' by Forestry Commission Scotland (FCS), and this is a significant area of such locally.

To the immediate south of the woodland is the Caerlaverock nature reserve managed by Scottish Natural Heritage (SNH).



Caerlaverock Castle

About Woodlot Licences

The Woodlot Licence system comes from British Columbia where rural people have been able to rent Woodlot Licences on Crown Land for over 50 years, and it has proved a very successful system for small scale forest management and encouraging local forest tenure. See <https://woodlot.bc.ca/>

For about ten years Woodlot Licences have been set-up in Scotland and are continuing to gain ground, initially by the Scottish Woodlot Association, but more recently more groups have got involved in supporting this process. There are now 5 Woodlot Licences in Dumfriesshire and others elsewhere in Scotland. Castle Wood was one of the earlier ones and has inspired many others. We are working on new ways to co-operate with support from Scottish Forestry.

This plan is for the second 5 year period at Castle Wood. There is now one Woodlot Licence covering the 32 hectares of the Woodlot which is managed by Andy Brown, supported by his family and other Woodlot Licence holders.

About the Woodlot Licence Holders

Andy Brown is an experienced professional forester. He has held the post of Woodlands Manager at Castle Milk and Corrie Estates for the past 13 years and has managed all aspects of forest management, from planning and planting through to thinnings, felling and sawmilling. He manages a squad of woodsmen and has prepared a twenty year forest plan for the 2,000 hectares of forest on the Estate, which is now at the ten year revision stage.

Andy holds a BSc Honours degree in Forest Management from the University of Aberdeen, graduating in 2001, and has worked in both a large Scottish sawmiller and the Forestry Commission with 20 years experience of forest and sawmilling

Gail is married to Andy and is a primary school teacher in Dumfries, they have three children Iona (12) and Duncan & James (both 10).



the Brown family

Work done on the Woodlot so far

The main thing we have done so far in the Woodlot is to thin out Compartments 3 and 5, with parts of 6.

This has really benefited the woodland and opened up the canopy to more light. This has improved conditions on the forest floor and we now see lots of natural regeneration coming away in these areas, including holly, oak and rowan.

The timber has been mixed hardwood firewood (mainly birch, rowan and alder), that we have used at home in our own stoves. We have also sold a small amount on to firewood processors in Annan which supplies local people there.

We have cleared many fallen stems and made it easier to get about the woodland, as these were often blocking some old paths running along the main drains in CMPTs 3 & 4. After clearing them this has improved access for others using the woodland and the path is now used by walkers at least part way through the middle of the woodland.



Upgrading of Access in 2017

We have used various methods of extraction, most recently an Alstor mini-forwarder which was really successful with low-impact extraction. We are hoping to continue to use this machine and we have over the years established access routes to enable us to get deep into the woodland.

We have followed the Allowable Annual Cut and not exceeded it over the past 5 years, generally being well under the maximum allowed. Our current agreement allows us to cut 20 tonnes a year, which is well within the Allowable Annual Cut for this Woodlot which we calculated when we started to be 190 tonnes a year.

Other work that has been done is the upgrade of the Access point in CMPT 3. We brought in diggers and stone and made this a lot better for access, replacing an old wooden bridge with a piped plastic culvert. This area has always been our main access point and is where we have stacked timber. We managed to get a six-wheeler lorry into this access point to lift timber. We have also erected temporary goalposts in this area for crossing under the powerlines and got GS6 clearance when extracting.

We have got several felling licences from Forestry Commission Scotland (now called Scottish Forestry) over the years and have liaised closely with them with regards to regulations. The current felling licence/permission includes three small 0.01 ha areas of windblow in compartments 5 and 6 in the overstood coppice.



enrichment Planting

We have liaised closely with Historic Environment Scotland several times and had a visit with their archaeologist John Malcolm back in 2016. This was because the area east of CMPTs 5 & 3 is in a Scheduled Ancient Monument area. John was very impressed with the work we had done so far and

the lack of ground damage and so had no hesitation in recommending we carry on within the Scheduled Monument area. We will need to refer back to them if we need to look at crossing the Deer Park Paling in CMPT 4. Learning about the history of the Deer Park, the Castle itself and the Harbour area in CMPTs 1 & 4 has been absolutely fascinating and a key interest point in having the Woodlot.

We have worked to do some respacing in CMPT 3 and hope to do more of this in the coming year. We have also removed a lot of Tuley tubes from old hardwood restocking in CMPT 5.

This past year COVID has meant it has been difficult to get work done but we hope to re-start things. We have planted some Oak and other hardwoods in tuley tubes in gaps in the canopy, this was a fun activity with the kids.

As well as being a place where we have done forestry work we have used the Woodlot a lot of recreation for our family both in the Woodlot itself and also up to the “Wizards hut” at the end of path in CMPT 1. Our kids have enjoyed playing in the Woodlot and learning about hands on forestry there. We have collected firewood with them and they have learned to make and shoot bows and arrows! Iona did a video on the Woodlot about learning during Lockdown and featured the Castle in it. We hope we can continue to use the Woodlot for producing firewood, practicing forest management, and as a space for our kids to grow for many years and we are very grateful for the opportunity the Woodlot Licence gives us.





Holy natural regen after thin



Work on the Woodlot Licence

Castle Wood Woodlot Videos

We have put together several Videos which we have uploaded to Youtube. Clicking on the links below should take you to them.

<https://youtu.be/oDpeiUSEZgQ> Lockdown Video

Our daughter Iona put this together with help from her brothers Duncan and Jamie. Over in BC they ran a competition for kids to shoot a short video on their Woodlot Licence showing how they were using their Woodlots for home schooling over Lockdown, here

https://www.youtube.com/channel/UCiEqfHa03fJ1k_D2pB1oY9g

https://youtu.be/vK6w1_Wp-bQ Alstor Forwarder

This shows the Alstor Forwarder being worked by Mark Rowe who is a fellow Woodlot Licence holder over at Speddoch Estate near Dumfries. Mark helps me work the Woodlot and this mini-forwarder is fantastic. As you can see in the video it is low impact and is very convenient.

https://youtu.be/85Av_2WhqqY Planting Video

We have done some enrichment planting in a gap in the forest canopy with the children recently, this was great fun for them and we plan to do more of this.



Iona's Lockdown Woodlot Video

Brief History of Castle Wood

There has been woodland here for many hundreds of years, during which time it has been managed for timber production. Fine old Oaks can still be found in the woodland and these specimens will be several hundred years old, with evidence of pollarding and coppicing.

It seems likely that conifers have been planted in this woodland for some time as was common on Scottish estates. There looks to have been heavy felling in the past, likely during World War Two, when many similar woods were felled for the war effort. The felled part was restocked with conifers and beech after ploughing. Other areas of the wood, particularly the eastern section, appear not to have been felled so hard and still have a mainly broadleaved composition with more mature trees that are widely spaced. Some of the beech restock stands are in very regular small squares clearly planted on the furrows and this was common post war. The conifers planted look to have been Sitka and Norway Spruce. In recent decades there has been a phased removal of the conifers followed by replanting with mixed broadleaves (including Oak, Ash, Rowan, Birch) in Tulley tubes and with birch and willow regeneration coming into these gaps also. Most of the new planting appears to date from the early 2000's.

Description of the Woodlot

General Conditions

The Castle Wood is right on the Solway Estuary, and comprises a pleasant mixed, primarily hardwood woodland. Being a coastal woodland that is exposed to the sea to the South-West, the trees are generally not particularly tall in height although there are large old Oak to the North and East.

Overall the woodland is fairly wet, with very wet going in places. This will make extraction difficult and there clearly has been challenges when extracting during the conifer clearance.

Component Description

The Woodland has been described below as per several components which can be seen on the Sub-Compartment map.

I - Mixed Mature Broadleaves (18.9ha):

This is the predominant woodland type with more mature hardwoods dating back to post war period at least with many older trees scattered throughout. Very sparse stocking in places. A mixture of younger regen throughout. In the Eastern compartments there are more older trees. Throughout the area there are small groups of nicely formed Beech approximately 70 year old that would benefit from thinnings.

II - Mixed Broadleaved Restocking (8.74ha): These areas consist of approx 20 year old restocking in Tulley tubes. Most of the areas are not yet mature enough to justify thinning but will benefit from respacing.

III - Ash/Sycamore Coppice (2.54ha): This area is to the North of the woodland and comprises an

area that has clearly been heavily cleared of conifers in the past. The boundary between it and the mixed mature broadleaves described above is vague. In these areas there are groups of over-stood stools of mainly Plane (Sycamore) and Ash trees.

IV - Sitka Spruce (1.37ha): A limited remnant area of Sitka Spruce near the Castle, probably dating to the 50's or 60's. Very wet in places here.

V - Beech Stand (0.67ha): A large stand of mature Beech.

VI - Open Ground (0.58ha): Areas of open ground which will be valuable for wildlife.

Total Area: 32.8ha

All areas would benefit from thinning and where appropriate cleaning of regeneration and restock.

Component Photos



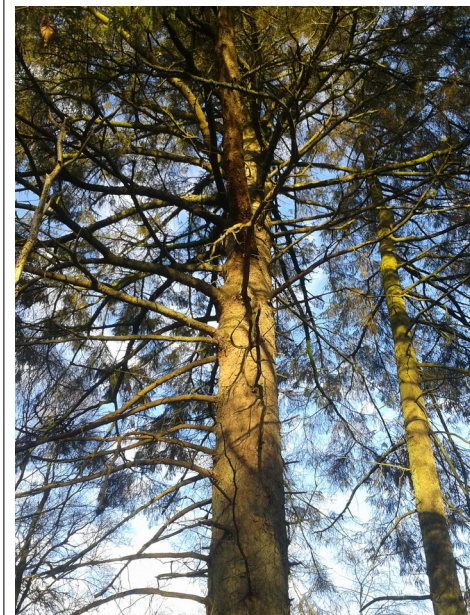
I - Mature Broadleaves Cpt 4



II - MB Restocked area in Cpt 3



III - Coppice in Cpt 5



IV - Sitka Spruce Cpt 6

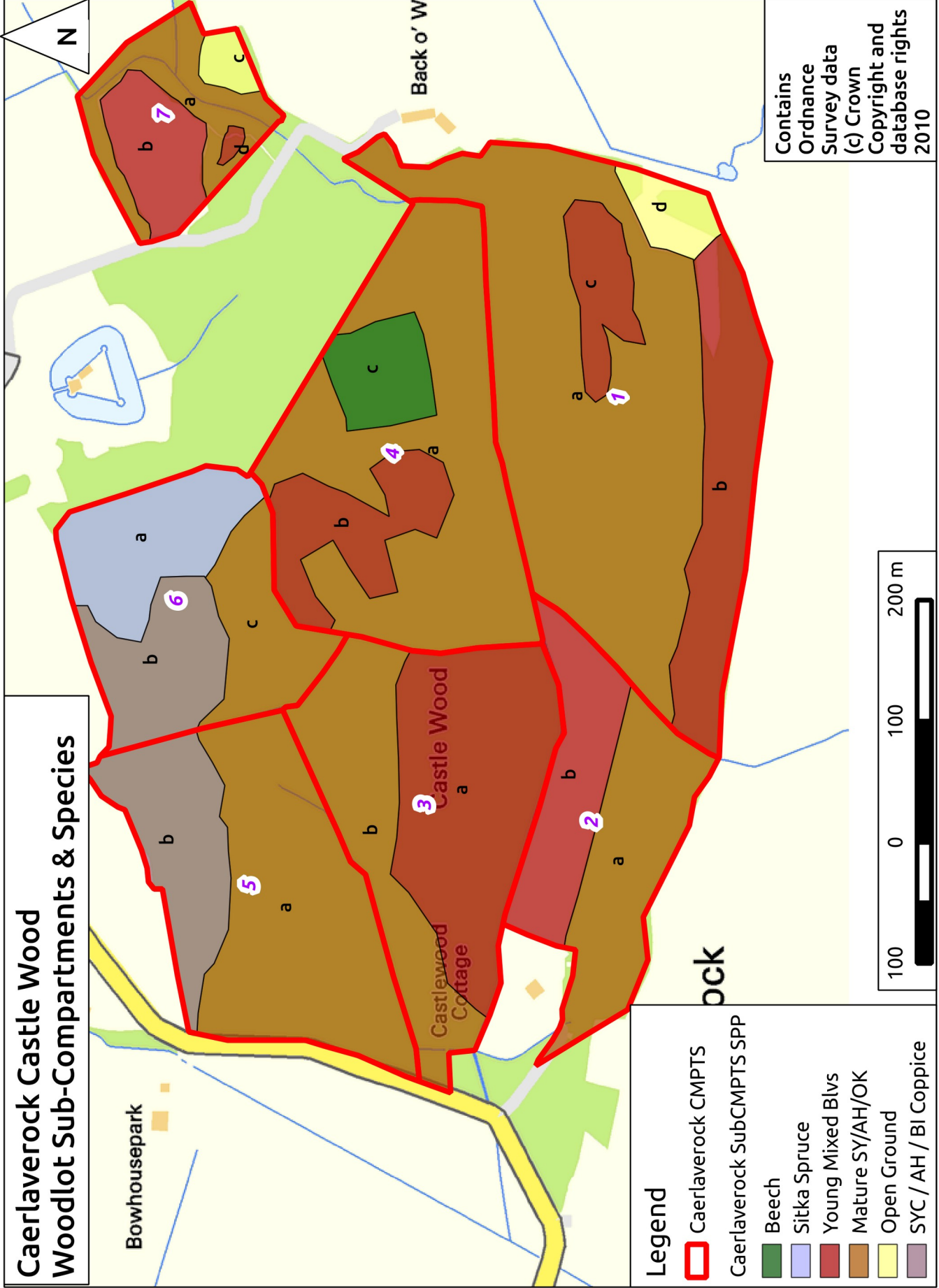


V - Beech Plantation Cpt 4



*VI - SNH path & Open Ground,
Cpt 1*

Caerlaverock Castle Wood Woodlot Sub-Compartments & Species



Legend

- Caerlaverock CMPTS
- Caerlaverock SubCMPTS SPP
- Beech
- Sitka Spruce
- Young Mixed Blvs
- Mature SY/AH/OK
- Open Ground
- SYC / AH / BI Coppice

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Woodlot Sub-Compartment & Species Map

Management Proposals for the Woodlots

Thinnings

The main management proposal is to thin the woodland throughout. This will be a gradual process which will utilise the calculated Allowable Annual Thin (AAT) of the woodland which is 3.91ha. This will be on a sub-compartment basis as indicated by the Thinning Map.

Thinning prescription will be to remove the poorer and/or damaged, dead or those stems which are judged to offer greater opportunities for regeneration if removed. Thinning intensity will be to be between 1/3rd and 1/4tr of the stems in any one thinning.

The thinning cycle is currently set at 7 years but we will monitor closely how the woodland responds to the thinnings. Thinnings will be marked with pink or red paint at least one month prior to felling to allow the landowners and the SWA an opportunity for inspection and to raise on queries prior to felling the selected trees.

Felling

While thinnings will be the main management proposal for the woodland we will also look to conduct small fellings, particularly in the coppice areas in Compartments 5 and 6. This will involve felling small coupets of up to 0.5ha in size. Group fellings will generally follow the areas that are thinned.

Restocking

Since we will be primarily felling in the coppice areas, we will be aiming for the coppice stools to regenerate. It is hoped that, judging by the high level of natural regeneration in many areas of the woodland, that deer numbers are not sufficiently high to cause problems for coppicing. However we will keep a careful eye on this, and where regeneration is not proving sufficiently successful we will look to restock or lay from existing coppice stools. We will also look to enrich coupes and compartments where we think they will benefit from fresh planting.

Equipment

Over the last five years felling has been conducted in small teams motor-manually using chainsaws, and where necessary hand winches. This will continue to be the method used for felling, and scrub cutting / respacing of the young areas of hardwoods.

Various low-impact methods of extraction have been used, with the most recent being the hiring in of an Alstor mini-forwarder. This was used to extract the timber in 3 metre lengths for stacking at roadside.

We will continue to use this for of extraction and other low impact methods. We have established a

main extraction route that runs right up through the middle of the Woodlot, this has provided a good access that has held up without any ground damage.

Any proposed deviation from this will be discussed in the first instance with the landowner.

Paths

There are two paths near the Woodlot Area as shown on the map. The first one is managed by Scottish Natural Heritage, running below Compartments 2 then 1, ending in a Hide. The other path runs through Compartments 1 and 7 and is managed by Historic Scotland. Both paths have interpretative boards set off the line of the path.

These paths are excluded from the Woodlot Licence Area, both their direct course and a margin on either side, and the management and maintenance of the paths remains the respective bodies. Neither path should interfere with the management of the Woodlot, and vice versa. Any felling near the paths will have banksmen in place.

Qualifications & Insurance

All felling is done by qualified NPTC chainsaw holders and is covered by appropriate Public Liability insurance. Contractors are used to assist and they hold appropriate tickets and insurance. The Estate will maintain landowners liability insurance for the woodland area.

Guardianship Area

There is an area of woodland bordering CMPTS 6, 4, 1 and 7 which has been excluded from the Woodlot Lease area as it is under the Guardianship of Historic Scotland.

Scheduled Ancient Monument Area

All the compartments of the Woodlot area, with the exception of the western end of Compartments 5, 3 and 2, are classed as a Scheduled Ancient Monument. This is due to the Castle and its historic environs, with ditches, embankments and other signs of previous settlement.

We have already worked in this area as the working of the Woodlot has progressed over the last 5 years. We had a site visit with a field officer from Historic Scotland, John Malcolm, late in 2016 and we have included his recommendations in Appendix II. To sum up, John was more than happy with the work we were doing and the minimal impact from extraction. This was later confirmed by Historic Environment Scotland when we applied for another Felling Permission in 2020. It is expected that during the period of this plan we will need to work in and around the Deer Park Paling, which is likely to require further discussions with Historic Environment Scotland. Bringing the woodland back into management has been recognised as a positive by Historic Environment Scotland.

Native Woodland Classification

Almost the entire Woodlot area is classified by the Forestry Commission Scotland as Native Woodland.

There will be careful scrutiny by the FCS on any felling or thinning proposals and we are comfortable with discussing and negotiating this with the FCS. There is likely to be an insistence on restocking with appropriate native species.

There is an area classified as a Plantation on an Ancient Woodland Site (PAWS). This is CMPT 4c which is the larger area of Beech plantation. This is fairly inoffensive as far as PAWS go and we will look to thin this area during the 5 years of this plan. This will encourage native regeneration.

Powerline

There is an Overhead powerline along the roadside which just cuts through CMPT 3 & 5. We will avoid any felling within 2 tree lengths of this line, and will take care when working underneath the line on the access road. We have erected temporary goalposts when crossing under the Powerline with machinery and have had the height of the Powerline measured by Scottish Power.

Public Road

There is a Public Road along the Western boundary. Any felling within 2 tree lengths of the road will be supported by Banksmen.

Working Times

The Woodlots will continue to be primarily be worked at weekends and on Summer evenings.

Access

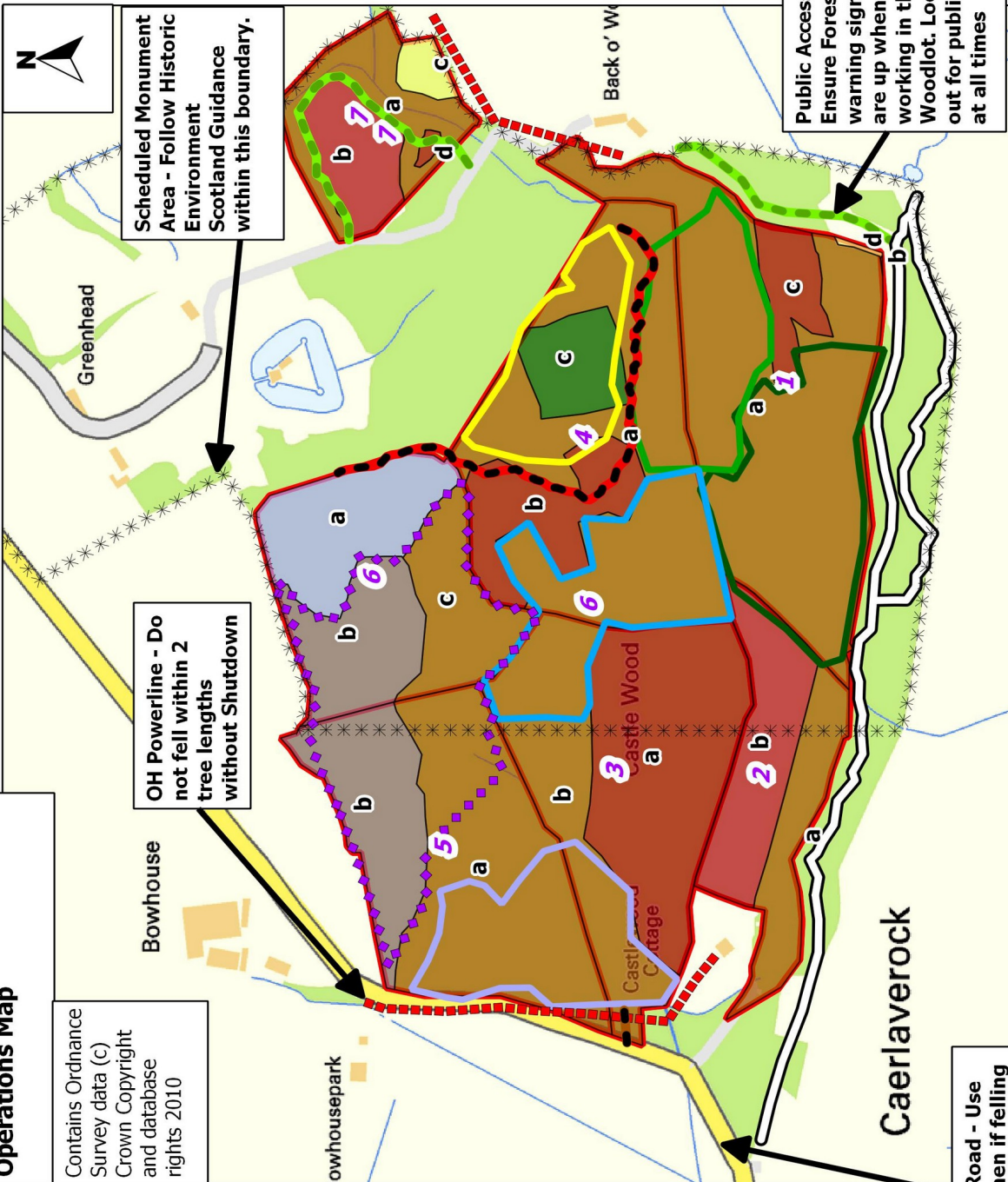
The main access point that we have used over the years is the old road in Cpt 3. In late 2017 we upgraded this road by re-stoning it and replaced the old wooden bridge which was failing with a plastic culvert and stoned over it. This has greatly improved the access to the Woodlot. We envisage this access continuing to be the main access, but would like to look at other potential access points in the future.

The Woodlots do have much boggy ground and access but we have found that by using appropriate small scale machinery and carefully planned access routes, there has been little ground disturbance. The establishment of access routes for timber extraction has been a big improvement to the woodland and we will continue to set these up as operations progress.

Castle Wood Woodlot Licence Operations Map

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- Legend**
- Scheduled Ancient Monument Area
- Caerlaverock Lines
- Forest Road
- Track
- Estate Tar Road
- Path
- Powerline
- Deer Park Boundary
- SNH Path
- Historic Scotland Path
- Occasional Small Group Felling/Coppice
- Thinning Year 1
- Thinning Year 2
- Thinning Year 3
- Thinning Year 4
- Thinning Year 5
- Caerlaverock SubCMPTS SPP v2
- Beech
- Sitka Spruce
- Young Mixed Blvs
- Mature SY/AH/OK
- Open Ground
- SYC / AH / BI Coppice
- Caerlaverock CMPTS Woodlot Licence



GRID REF: NY 019 653

Woodlot Thinning Plan

Allowable Annual Cut, Thin & Fees

SWA Woodlot Licence Calculator

Gross Area (ha) 32.8
 AAC (ha) 0.64 AAT (ha) 3.91

CMPT Name	CMPT	Sub-CMPT	Gross Area	Current Species	Rotation of Restocking	Netdowns %	Thinning Cycle
	1	a	5.98	MBLS	70	15	7
	1	b	1.85	MB	70	15	7
	1	c	0.63	MB	70	15	7
	1	d	0.39	OG	0	100	
	2	a	1.75	MBLS	70	15	7
	2	b	1.36	MB	70	15	7
	3	a	2.92	MB	70	15	7
	3	b	1.99	MBLS	20	15	7
	4	a	3.99	MBLS	70	15	7
	4	b	1.14	MB	70	15	7
	4	c	0.67	BE	70	15	7
	5	a	3.2	MBLS	20	15	7
	5	b	1.39	SY/AH	20	15	7
	6	a	1.37	SS	40	15	7
	6	b	1.15	SY/AH	20	15	7
	6	c	1.05	MBLS	70	15	7
	7	a	0.94	MBLS	70	15	7
	7	b	0.8	MB	70	15	7
	7	c	0.19	OG		100	
	7	d	0.04	MB	70	15	7

32.8
 Total Gross Area Total

Allowable Annual Cut (AAC) is a mechanism to ensure that the Woodlot is managed sustainably and that a regular annual supply of timber can be produced. The Sustainable Allowable Annual Cut has been calculated as above table at 0.64 ha/yr, with 3.91 ha/yr thinnings. This is simply by dividing the various sub-compartments by their likely rotation, and the total area by a sensible thinning cycle which we have set as seven years, and this cycle has been borne out by observations on the ground since 2014.

The AAC is based on working most of the Woodlot with a 70 year restocking rotation, based on planting hardwoods and/or hardwood natural regeneration as appropriate. Several compartments, mainly 5, with parts of 6 and 3 have been allocated a 20 year restocking rotation, as these are the areas where there will be coppicing. Once established more of the Woodlot area could be put into this type of management, which has many wildlife and environmental benefits as well as producing plentiful timber in good sizes for firewood. It is likely that Coppice and Standard was the traditional

method of managing this woodland before estate plantation forestry became established, and even after this time.

Working is difficult in this Woodlot due to the soft ground and access limited to a landing at the roadside in Compartment 3, making for a long extraction to the rest of the Woodlot. Our calculations below based on actual figures realised and timber measurements would give a Sustainable Allowable Annual Cut of 130 cubic metres per year from both Woodlot based on experience so far from thinnings, and expected yield from group-fells should these be applied across the whole woodlot.. This estimate has proved accurate although we have not cut as much as this over the years we have had the Woodlot, particularly since we have only done thinnings so far and are currently planning group fells only in Cmpts 5 & 6. The current Allowable Annual Cut in the Woodlot Licence agreement is for 20 cubic metres a year, but this could sustainably be increased further as the Woodlot continues to develop.

Actual figures realised

Typically thinnings have yielded around 9 cubic metres per hectare thinned. The coppice group fell areas are expected to yield equivalent of 150 cubic metres per hectare.

0.64 hectares x 150 m³ clearfell: 96m³

3.91 hectares x 9 m³ thinnings: 35.19 m³

Total: 131.19

Business Plan

The Woodlot Licence is not managed as a business as such and produces small amounts of firewood. Currently the Allowable Annual Cut is set at 20 cubic metres a year, although as we have seen above this could be increased sustainably. Generally our aim is to generate enough firewood for ourselves and from small amounts sold to cover the annual fee to the Estate and the cover the costs of insurance. The insurance we arrange is specific to us working at Castle Wood. We hire in contract chainsaw operators to work with us who are also Woodlot Licence holders and who work at preferential rates.

We could look to increase the Allowable Annual Cut as the Woodlot could sustainably handle a higher rate of cutting and we make look to do this in future years in discussion with the Estate.

Outgoings:

Fees to Estate @ £XX / m3	£XXX
Insurance	£XXX
Labour costs & Extraction Costs	£XXX
Total Costs	£XXX

Revenues:

20 m3 firewood in lengths at Roadside @ £XX / m3	£XXX
Total Revenues	£XXX

Operating Profit £X

The costs for felling and extraction are lower than they would be using contractors at this scale and acknowledge that much of the work (and the management) will be done gratis by the Licence holders. Value adding by processing the firewood for home use is an important part of the overall picture.

Appendix

- I: Historic Scotland: consultation and recommendations from John Malcolm of Historic Scotland.
- II: Landscape Plan, After Bran 2004. Details of Scheduled Monument Area.