



# Eshiels Wood

## MANAGEMENT PLAN

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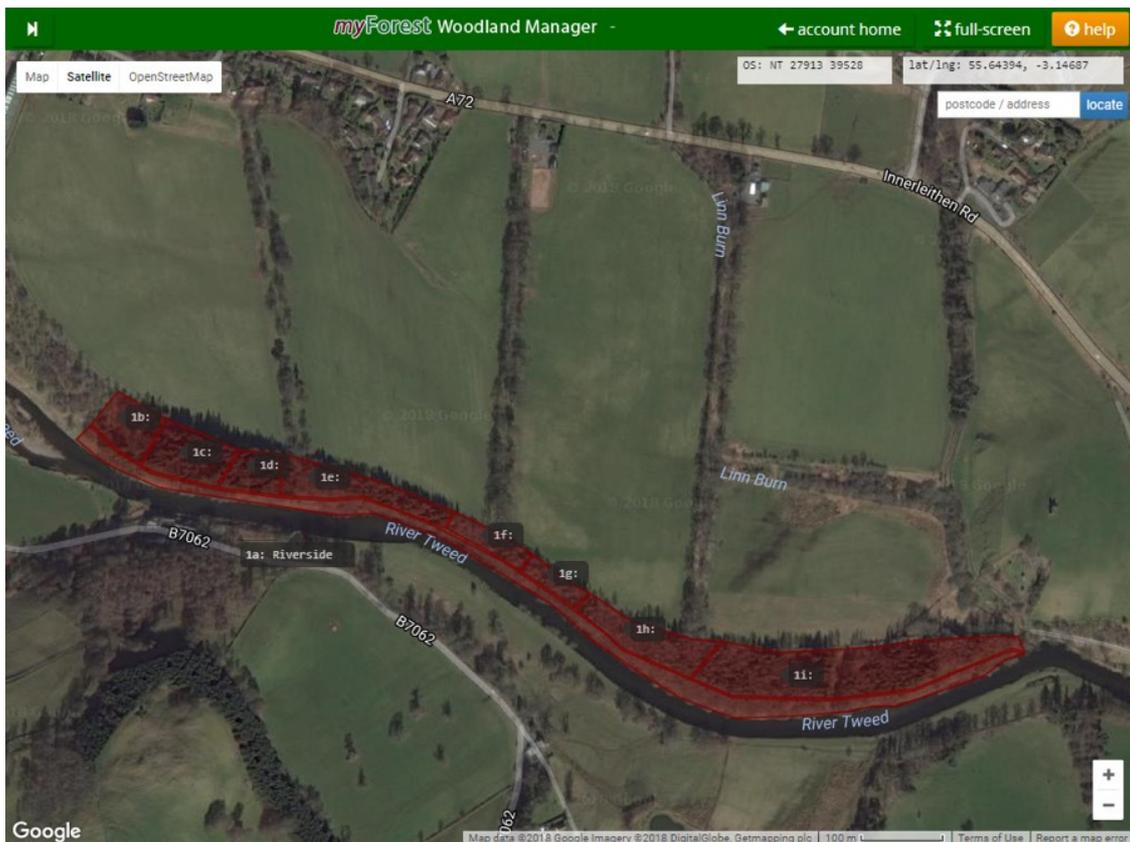
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# Woodland Description

## Maps

Eshiels Wood is best regarded as one compartment, defined by the River Tweed to the south and the cycle path to the north, the old tip to the west and the path junction to the east.

The southern edge is best described as one sub-compartment, a narrow strip following the Tweed and including the designated areas. The remainder of the wood has been divided into 8 fairly homogeneous sub-compartments which have been mapped using My Forest. These sub-compartments are rather small to be regarded as compartments. Most have similarities with the other sub-compartments.



## History of Management

The wood is currently under the management of Forest Enterprise Scotland (FES) which has been responsible for forestry operations. Eshiels is an outlier of Glentress Forest, one of the earliest FC acquisitions. The oldest trees date back to 1928 when an area of Sitka spruce was planted towards the west end. At this time, some of the sycamores may have been coppiced and there probably were other broadleaved trees left on the fringes.

More recently, in 1966 and 1976 Norway spruce and Japanese/ hybrid larch were planted throughout the woodland and Norway spruce is now probably the commonest species in the wood. In many places the spacing is only 1 metre, suggesting that they were planted as a Christmas tree crop and either harvested as such, leaving some to grow on, or subject to a large number of failures.

The rest of the woodland is stocked by natural regeneration of mainly native species with silver birch, ash and sycamore dominating. The woodland is almost fully stocked. There is an electricity wayleave towards the east end and a gas pipeline beside the cycle track in the central part of the wood. The balance of species is around 70% conifer and 30% broadleaves with every part of the woodland mixed to some extent.

It appears that thinnings have been carried out in the early years of the stand but not recently as there are no signs of stumps. There is a wide range of sizes indicative of self-thinning. There are no fences or drains to be maintained. The wide wall/ dyke, which may be ancient, has not been maintained but appears to be quite stable.

## Species and Age

There are 3 main conifer species (70% of the woods in total by area of canopy) and around 10 broadleaved species (30%) present. The broadleaved species seen were sycamore, silver birch, ash, rowan, hawthorn, sessile oak, common alder, elm, lime and several willows. The conifers were planted as described above and the p66 and 76 Norway spruce and larch are growing quite quickly despite close spacing in some cases. The broadleaves are either very old, growing very slowly, or more commonly, fairly young as the result of several waves of natural regeneration. There are very few seedlings or pole stage saplings present in the wood, suggesting that recently there has been a high level of browsing pressure. There is intermittent elder forming a partial shrub layer with more shrubs, such as red currant, on the river edge.

Each of the 9 sub-compartments is described in more detail in the Appendix.

Ground flora is diverse and natural in the southern part of the woodland, as reported in the ecological survey. It could be that this is a plantation on an ancient woodland site (PAWS).

The soil is a deep undifferentiated alluvial soil with a sandy loam character. There is a reasonable organic content and very few stones. The river floods the woodland and surrounding fields from time to time, the most recent inundation to a depth of about 1 metre. The site is flat apart from the rise up to the dyke and cycle path which runs along an old railway line.

## Constraints and Designations

The Land Information search confirmed that the southern edge of the wood (bank + 5 metres) forms part of the River Tweed SSSI and Special Area of Conservation. This is an internationally important site. The west end of the wood is Primary Zone native woodland integrated habitat network. The rest is Secondary Zone. Surprisingly perhaps, none of the wood is included in the Native Woodland Survey of Scotland, possibly due to it being in the hands of FES.

The whole of the wood is designated by SNH as a Priority Area for Red Squirrel Conservation. There is a Scottish Wildlife Trust squirrel project active in the Tweed Valley.

The wide dyke which runs through most of the wood close to the cycle track is recognised as a Heritage Feature on the Land Information map but its derivation is unknown. There are two entries under the National Record of the Historic Environment for a cinerary urn and a post medieval Toll House. Their locations are unknown.

The western 20% of the wood falls within the WIAT area. As Peebles is expanding eastwards, a case could be made for WIAT funding.

## Public Access

The cycle/ foot path is very well used by residents of Peebles and Cardrona. In addition, there is a well beaten internal path which winds through the woodland. This is used by walkers and mountain bikers.

The wood is used by local people, possibly Scouts or youth groups, judging by the structures built and a small number of painted trees. There is minimum littering, fly tipping or any other anti-social activity.

The woodland is obviously appreciated by the local population. Any future woodland operations will need to be flagged up and interpreted in an engaging way to maintain support from local users.

## Woodland Protection

Plant Health- Ash is one of the dominant broadleaves in parts of the woodland. It is susceptible to ash dieback (Chalara) and already signs of this disease have been seen in the wood. It is likely that most of the ash will die over the next 10 years, although some may have resistance. There is a very small number of young elm trees. These will probably grow healthily until they reach a size where they are susceptible to Dutch elm disease. A few scattered trees have a good chance of survival for many years.

The main invasive species is Himalayan balsam which grows on the river's edge in places.

Mammal Damage- Roe deer will pass through the wood regularly and any young trees or coppice growth will need to be protected. There are rabbits present in the wood and many more in the adjacent shelter strips. There are no signs of livestock encroachment (fields are well fenced). There may be the occasional brown hare and there will be some mice, voles and shrews especially in the lush broadleaved areas.

Squirrels- The mixed woodland habitat is suitable for both grey and red squirrels and both may be present in the woodland as part of a larger network.

Water and Soil- The Tweed floods the woodland to the depth of a metre from time to time and the ecosystem is able to bounce back after this. There are no signs of soil erosion.

Climate Change- The woodland is almost fully stocked and is helping to mitigate the effects of global warming. The majority of species are non-native, although Norway spruce was probably present during the previous inter-glacial period, and sycamore has been here for a long time. Moving to a more diverse ecosystem with a higher proportion of native species will improve the resilience of the woodland.

# Vision and Objectives

## Vision

Eshiels Wood will be a place where biodiversity and woodland production meet, as part of a wider vision for education in sustainable community living.

## Management Objectives

1. Improve **biodiversity** and the River Tweed corridor – by diversifying the species and bringing more light into the wood
2. Improve sustainable **productive** management of our local woodlands through community ownership
3. Resurrect coppice management skills and provide a space for further **skills training and nature learning**.

## Stakeholder Engagement

A great deal of engagement with stakeholders and the local community has already taken place and more is planned. Site visits have taken place with some of these parties. Stakeholders consulted include:

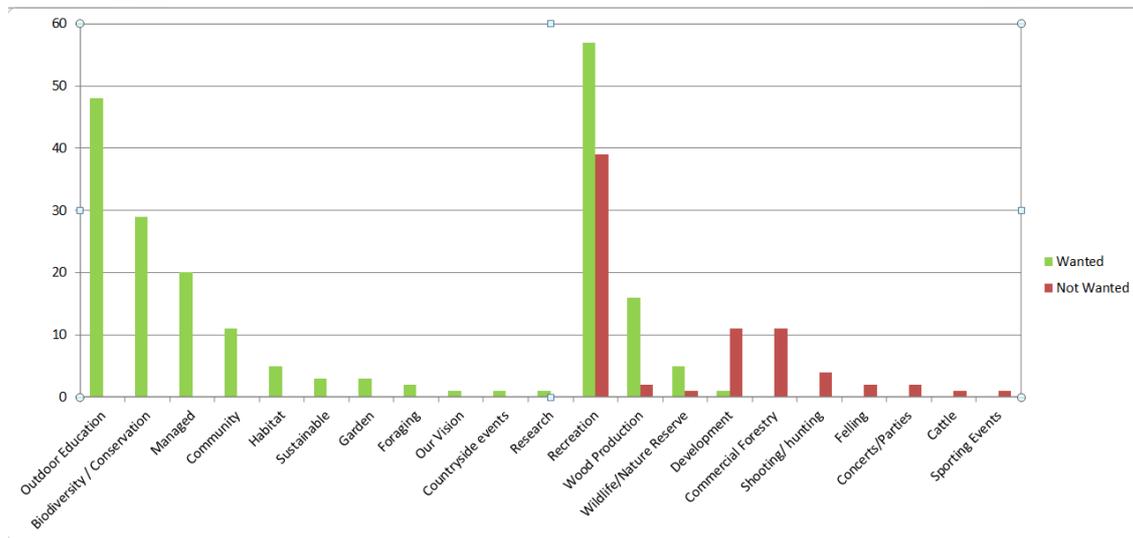
- Peebles Community Council, Peebles Community Trust and the Tweeddale Wood Fuel group
- Forestry Commission Scotland and Forest Enterprise Scotland
- Ecology Officer, Scottish Borders Council
- Operations Manager, Scottish Natural Heritage
- Homestead Horselogging and Lockwood Forest Services

In addition, around 1000 leaflets have been distributed to households in Eshiels, Cardrona and Peebles as well as public outlets. A stall was manned for two days at the Tweed Valley Wood Festival in Peebles.

There is a Facebook page-

[https://www.facebook.com/EshielsWG/?hc\\_ref=ARSJ78Z3iWQm859-gLiIWpBNhSnJdMVUQZyQouCE1C9rkdV5agu7rtb\\_iRSQBsPweds&fref=nf](https://www.facebook.com/EshielsWG/?hc_ref=ARSJ78Z3iWQm859-gLiIWpBNhSnJdMVUQZyQouCE1C9rkdV5agu7rtb_iRSQBsPweds&fref=nf)

Many members of the local community have responded to a Survey Monkey survey on what they would like to see the wood used/ not used for. The results to date are:



The most popular aspirations for the wood are recreation, outdoor education, biodiversity/ conservation, management, wood production and community involvement.

On the negative side, some people don't want to see recreation, development or commercial forestry. The negative view of recreation relates mainly to cycling. It can be assumed that light levels of sympathetic recreation would be approved by almost everybody and disapproved of by very few.

## Analysis and Management Strategy

### Constraints and Opportunities

Issue	Constraint	Opportunity
1. Current species mix not fully matched to aspirations of the group	Wood is dominated by Sitka and Norway spruce, hybrid larch and	Skillful management over a period of time will change the species

	sycamore	balance
2. Wood is probably a Plantation on an Ancient Woodland Site (PAWS)	Wood is dominated by non native species introduced by planting	Majority of the conifers can be removed over time and made into useful products
3. Access for machinery	There is no access for conventional heavy forestry equipment	Small scale timber harvesting and extraction equipment, including horses, is more suited to the site and to the group
4. Access for lorries	Access for lorries has to be through the Council yard to a stacking area which has not yet been built	Support could be gained from SBC and a stacking area made up
5. Servitude Agreement	In dispute between SBC and FES, could sap energy of the group	SBC & FES need to resolve this possibly through compensation
6. Public access	Cycle path is well used & the wood is highly visible	Easy foot access. Suitable places for interpretation of woodland qualities and operations
7. Southern edge of the wood is a SSSI/ SAC	All operations will have to be discussed with SNH	Management to protect and enhance an internationally important site
8. Heritage sites within the wood	Features such as the wide dyke will need to be protected	Additional features to be interpreted to the public
9. Human activity within the wood- dens	Possible damage to trees and obstructions to the path	Encouragement of engagement with the wood
10. Squirrels	Probably red and grey squirrels in the wood, damage to trees	Remove grey squirrels through trapping via SWT project
11. Roe deer	Browsing damage to young trees and coppice shoots	Protection of trees through guards or temporary fencing
12. Rabbits	Damage to young trees and coppice shoots	Protection via guards or fencing or fence + cull
13. Tree pests & diseases	Chalara present in the wood	Fell diseased ash trees for wood fuel

14. Invasive species	Small area of Himalayan balsam	Eradicate, thereby improving biodiversity
15. Lack of deadwood	Results in lack of invertebrates and insectivorous birds. Lack of cavity nesting sites.	Leave standing deadwood where possible, ring bark a few Norway spruce, put up bird and bat boxes.
16. Resilience	Wood is dominated by 4 introduced species in small age classes	Move steadily to a much higher proportion of native species of all ages
17. Forest economics	Difficult site to manage conventionally at a profit due to scale, access and size of trees	Use small scale management for niche markets eg wood fuel
18. Public attitudes	Surveys show preference for recreation, education, biodiversity/conservation, management, wood production and community benefits. Also NO cycling, development, commercial forestry or clearfelling	Manage with the public preferences in mind. Continuous cover forestry
19. Group capacity	Limited number of active members of the group, all of whom are busy	Likely to be a popular project attracting new people, linking with wood fuel provision

## Management Strategy

A good starting point for the Management Strategy is the vision which the Eshiels Community Woodland group has for the future of the woodland. It is:

‘Eshiels Wood will be a place where biodiversity and woodland production meet, as part of a wider vision for education in sustainable community living.’

In other words there are two aspirations which both need to be achieved in this long, thin small woodland. They are biodiversity and woodland production. The way that these two aspirations are achieved will be ‘as part of a wider vision for education in sustainable community living.’ This takes the tuning of the

management strategy up several notches. Standard forestry practice will not suffice. Let's consider these two aspirations plus guidance in greater detail.

Biodiversity The focus for biodiversity has to be the internationally significant SSSI/ SAC alongside the River Tweed, as described in the Baseline Habitat Survey. This is defined as bank + 5 metres. It is proposed that a separate compartment between 5 and 10 metres wide be identified on the southern edge of the wood, incorporating the SSSI. The focus here will be completely on biodiversity. Exotic conifers will be removed, invasive species eradicated, native broadleaves planted where appropriate, all after consultation with SNH and other stakeholders. After that, this part of the woodland could be allowed to return to a wildwood with minimum intervention.

The rest of the woodland will also have biodiversity as a primary objective and any activities and operations will relate to the river's edge and to the cycle track. The direction of travel for the species balance will be from introduced conifers to native broadleaves. The management regime will move from high forest thinning and felling towards coppicing. The age structure will move from narrow age classes towards a wide range of ages with an emphasis on young coppice regrowth, contributing to the shrub layer. All of these changes will benefit biodiversity. They will also satisfy the community's interest in outdoor education, biodiversity/ conservation, management, community, habitat and wildlife reserve.

Considering the other issues, resilience will improve and a PAWS site will be restored. There may be a negative effect on one iconic species, red squirrels, although the long-term retention of some conifers should mitigate this. At least the wood will form part of a habitat network through which red squirrels can travel.

Biodiversity will dramatically improve throughout the woodland.

### Woodland Production

The group and the community do not want clearfelling. Heavy equipment can't use the cycle track which would break up under the pressure. Access and extraction would need to be along an internal ride. This would have to be carefully managed to avoid rutting during wet weather and would require the opening up of a wider ride than at present.

Lightweight harvesting and extraction equipment, including horses, could be used to fell and extract softwood timber, causing minimal damage.

However, if lightweight harvesting and extraction equipment is used to produce material to sell in bulk into conventional markets, it is very unlikely to be profitable. Timber prices are fixed by fully mechanized large scale upland clearfells.

One way to make harvesting profitable would be to fell the majority of the trees in one operation but it has already been decided that this would be undesirable.

The alternative, is to remove the conifer crop much more gradually through selective thinning and group felling for niche markets, using lightweight harvesting and extraction. This will bring greater benefits to the community and would probably generate an ongoing income for the group.

In the future, the balance will shift from the conifers to the broadleaves, which could be managed as coppice with standards. This will produce wood fuel and long straight poles which could have a variety of different uses.

Any planting or coppice regrowth will need to be protected against roe deer and possibly rabbits. The use of recyclable netting would be a sustainable solution. This is described in the Appendix under Sub-compartment B.

Before concluding, it is important to consider the third part of the vision and objectives.

### Education in Sustainable Community Living

For the Eshiels Community Woodland Group it is the process of managing the woodland that is important, as well as the end result. The group wishes to learn from that process, sharing the knowledge and skills with a wider network. Sustainable community living means involving local people in the management of a local woodland resource, producing products and benefits which they want and need. Managing in a way which is within their capabilities, bringing in specialists when required.

Sustainable is a widely used word with different meanings. Here it is about managing the woodland so that the benefits and products continue to be available indefinitely into the future without depleting the underlying environmental capital. Sustainable woodland management.

It also means sustainable in the sense of small carbon footprint, using timber and non timber woodland products wisely as a renewable resource. For example, hardwood and softwood wood fuel can substitute for oil, gas and coal. The

Tweeddale Wood Fuel Group, whose membership overlaps with the Eshiels Woodland Group, is already very active in this area. Timber can be used as a building material, for fencing, crafts and in gardens for many different purposes as an alternative to plastic and metals.

Finally, sustainable community living can also be taken to mean sustainable communities. Working and planning together brings people together and builds a strong community spirit. Many groups around the world are coming together to build community and manage their own local resources as an alternative to relying completely on corporate capitalism. Eshiels Wood could be a small step in this direction and an important learning exercise.

## Management Proposals

It is proposed that Eshiels Wood is managed in two distinct ways, the Riverside Wood(A) and the Community Wood (B- I).

The **Riverside Wood** (2.2 ha) could be managed intensively in the short term, followed by minimum intervention. Likely operations are felling conifers, eradicating invasives, planting native broadleaves and providing interpretation.

The **Community Wood** (5.4 ha) could be managed as Continuous Cover Woodland through the following silvicultural operations:

- Selective thinning & small group felling of conifers
- Selective thinning of broadleaves to a spacing of about 3 metres
- Low & formative pruning of both conifers and broadleaves, to improve timber quality
- Coppicing of large sycamore stools + protection
- Coppicing of other broadleaves + protection
- Planting of native broadleaves + guards
- Removal of conifer regeneration
- Interpretation of woodland operations

The Eshiels group could collaborate with the local Wood Fuel group to develop an efficient system to convert the small roundwood from thinnings (softwood and hardwood) and coppicing to wood fuel, season it and sell it. It may be possible to season firewood poles in the wood for a year before extracting them or it may be better to remove them to a more secure place. The proposed stacking area in the SBC wood near the back gates to the SBC depot could be useful for short-term storage. Any extraction will have to be through the woodland, in both directions,

rather than along the cycle path, which would be damaged. The woodland next to the path can be managed to enhance the experience of those using the track.

The work can be organized as a forestry working circle, concentrating on one area at a time. There could be 5 areas as follows, so each would be returned to once every 5 years.

Area P	Sub-compartments B & C	1.1 ha
Area Q	Sub-compartments D & E	1.1 ha
Area R	Sub-compartments F, G & H	1.2 ha
Area S	Sub-compartment I west	1.1 ha
Area T	Sub-compartment I east	1.0 ha

Activity	Yr 1	2	3	4	5	6	7	8...
Removal of exotics + planting native species in A								
Thinning of spruces + coppicing of sycamores in P								
Thin spruce & larch, coppice sycamore, plant native species in Q								
Thin conifers and broadleaves, plant native species, start coppice cycle in R								
Thin conifers and broadleaves in S								
Thin conifers and broadleaves in T								
Provide interpretation and good governance								

## Timber Sales

The best way to think of the timber flow and hence the cash flow from timber is that it will be fiscally neutral but with community benefits. It has to be opportunistic, using available niche markets and available labour and

machinery. For example, a chainsaw training course could be held in the woods and marked trees could be felled for free. Tops could be sold for Christmas trees or stems sold for making temporary buildings. Wood fuel will always be in demand, even for well seasoned softwood. Costs should balance income otherwise the project wouldn't go ahead. An occasional surplus would be welcome but unpredictable.

## Grants

A Felling Licence will be required for thinning and felling operations. This is straightforward. An estimate will need to be made of how much thinning and how much group felling of conifers will be carried out over a 5 year period, together with an estimated volume. The species to be planted into the gaps (after group felling), numbers and protection will also be noted. Finally a map is required showing the area in question. Felling licences are usually issued relatively quickly.

There is no major forestry grant available which will make the woodlands economic to manage, but there are several parts of the Forestry Grant Scheme which will help. All require maps and a management plan. This Management Plan should be compatible.

<b>FGS Grant</b>	<b>Operations</b>	<b>Grant Rate</b>	<b>Notes</b>
WIG/ Habitats & Species	Scrub eradication (light) for the Himalayan balsam	£1100/ ha	All WIGs require a Management Plan. The SSSI can use actual costs if these are greater.
WIG/ Habitats & Species	Scare fencing for coppice/ small planting areas	£2.46/ metre	Proposal doesn't quite match the grant spec. and is innovative.
WIG/ Habitats & Species	Woodland thinning	£380/ ha	If thinning is uneconomic, this is an alternative
WIG/ Habitats & Species	Small scale planting	£3 per tree/ shrub	Useful for small areas.
WIG/ LISS	Monitoring	£50/ ha one off	Monitoring of tree species, sizes and natural regeneration
WIG/ WIAT	Path development & maintenance, signage	Standard costs	Requires an additional WIAT Plan for which £1000 is

	& interpretation, outdoor furniture, tree surveys, safety felling, brashing, etc.		available. Eshiels Wood is only partially in WIAT area.
SMF/ LISS	Deer monitoring	£30/ year	Assessing deer damage
SMF/ Public Access	Tree surveys, litter picks, path clearance, sign & furniture maintenance	£100/ ha/ year for rural or WIAT woods	Grant scheme coming to an end.
SMF/ Grey Squirrel Control	Grey squirrel control	£200/ trap/ year	Proper use of live traps with cull returns
Harvesting & Processing	Harvesting, primary and secondary processing equipment at a non-industrial scale	Between £1000 & £35000	Up to 40% of total value. Very limited availability. Firewood log processor is an obvious target. Other equipment may be best rented rather than owned.

The Forestry Grant Scheme finishes in 2020 and it is unknown at present what will replace it.

The Woodland Trust currently supplies free trees and protection. Borders Forest Trust and Tweed Forum offer small grants for tree planting.

Grants are likely to be limited in size and usefulness. This means that voluntary input and income from the sale of timber, both softwood and hardwood, over a long period of time are going to be critical to the financial sustainability of the woodland.

## References

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# Appendix

## Sub-compartment Descriptions and Recommendations

### Sub-compartment A (2.2 ha) Riverside Wood

This wood forms the southern edge of Eshiels Wood along its entire length, extending between 5 and 10 metres northwards from the river. It therefore includes the whole of the SSSI/ SAC.



This is the most irregular part of the whole woodland with:

- some open ground, maybe 5%
- large broadleaves, up to 60 cms in diameter (dbh), well spaced, mainly sycamore often multi-stemmed, with some willow and common alder, often on the riverbank itself

- smaller broadleaves, up to 30 cms in diameter, at roughly 3 metre spacing, of silver birch, ash, sycamore, rowan, hawthorn, sessile oak, elm and several other species
- Norway spruce and Japanese larch in swathes, up to 50 cms diameter, at 1-5 metre spacing

The ground flora is well developed due to the good light penetration, especially in the winter.

**Recommendation** This area can be managed as a wildwood with minimum intervention, allowing its biodiversity and naturalness to develop. Allowable activities would be the removal of introduced conifers- spruce and larch and invasive species such as Himalayan balsam. A small number of native broadleaves, as recommended in the ecological survey, could be planted and protected. In addition, some redcurrants could be planted to encourage the currant shoot-borer micro-moth. Any proposed activities will need to be discussed with SNH.

Sub-compartment B (0.5 ha)



This is the first compartment at the west (Peebles) end of the wood. It is not very well defined on its western or eastern boundaries. It is characterized by around 20 large multi-stemmed sycamores which will have arisen from coppice shoots formed when the trees were last felled.

This may have been in 1928 when the Sitka spruce was planted. The individual stems have diameters of 10- 50 cms.

In addition, there are several large Norway spruce with diameters over 60 cms and a few smaller silver birch (20-30 cms).

Ground vegetation is suppressed due to the shading effect of the large sycamores and spruce. What vegetation there is, is indicative of an ash-elm woodland type.

**Recommendation** The sycamore coppice may be old but it should still coppice back if it is felled. To be successful, about half the area should be felled at one time, either the northern or the southern section. This will generate a good amount of wood fuel which can be seasoned and sold by the group.

The coppice area will need to be protected from roe deer by putting up a temporary deer fence. This could be a lightweight plastic mesh fence which can be rolled up after 3 years and used in another part of the woodland. The netting can either be held up by lightweight poles cut in the wood or tied to remaining trees. Details of such fencing can be found on page 32 of the Forest Fencing guide [https://www.forestry.gov.uk/PDF/fctgoo2.pdf/\\$FILE/fctgoo2.pdf](https://www.forestry.gov.uk/PDF/fctgoo2.pdf/$FILE/fctgoo2.pdf) If an area of 0.1 ha is coppiced at one time, the area is 1000m<sup>2</sup>, the radius 18m, giving a circumference of 113 metres. It is possible that two or three areas would need to be fenced at any one time. Untreated posts or peripheral trees could be used to support the netting.

Lop and top from spruce felling is another possibility but a very large amount would be required.

The silver birch and Norway spruce in this area could be left as standards. The rest of the sub-compartment not regenerated could act as a picnic/ events area.

#### Sub-compartment C (0.6 ha)

This stand is nearly 95% stocked with 1/3 Sitka spruce, 1/3 Norway spruce and 1/3 mixed broadleaves.

The Sitka dates back to 1928 and includes some 'magnificent' trees, up to 80cms in diameter. Most are around 60 cms spaced at around 5



metre spacing. They are tall and of good form.

The Norway spruce was planted mainly in 1966 and is now 25-50 cms in diameter. In places the spacing is 1 metre suggesting that they were originally planted as a Christmas tree crop and subsequently thinned heavily. They are now in clusters.

The broadleaves consist of further large sycamore coppice and scattered mature silver birch, 25- 40 cms in diameter in small groups. There is plenty of standing and fallen deadwood. Elder is common in the understorey. Ground flora is restricted due to shading.

**Recommendation** The Norway spruce and most of the Sitka spruce can be gradually selectively felled and removed when markets are available. Poorer quality material can be sold as wood fuel. The sycamore can be coppiced and should respond.

Once sufficient open space has been created, suitable native broadleaves (oak, gean, alder, willow, hazel, etc.) can be planted and protected using individual guards. Deer fencing is probably not an option due to scale and culling will be ineffective and too dangerous. These broadleaves will be suitable for coppicing in the future. The remaining silver birch will, hopefully, provide a seed source for a flush of regeneration of birch which will help to nurse up the broadleaves and improve the soil. Some Sitka regeneration may need to be removed.

#### Sub-compartment D (0.3 ha)



This stand begins at the collapsed den. It is dominated (80%) by Norway spruce p76 of regular form. The stand is self thinning at an average spacing of 2.5 metres and so diameters vary widely from 10 to 50 cms, with an average of around 25 cms. An average tree will be 0.6 m<sup>3</sup>, giving a total volume for the stand

of 230 m<sup>3</sup>. The remaining 10% is broadleaves, mainly silver birch. Ground flora is suppressed.

**Recommendation** Gradually thin out the Norway spruce as and when special markets, such as tipi poles, are available. Some of the smaller stems can be seasoned and sold as wood fuel. As spaces become available, plant with native broadleaves for coppicing in the future. This will remain a conifer stand for some time to come.

Sub-compartment E (0.7 ha)

Referred to as Dog Craig on some maps, this is a mixed woodland area. Half is Norway spruce and hybrid larch. In this case, the conifers have been thinned more heavily and the average spacing is a variable 4 metres. Some can be seen in the background to this photo. The average diameter is around 30 cms and their



form is good.

The remaining area is stocked with broadleaves, mainly large sycamore coppice and silver birch as before with occasional rowan, hawthorn, etc.

**Recommendation** Continue to selectively thin the spruce and coppice the sycamore. The sycamore stools will need protection by temporary fencing or 'dead hedges'. In this case there might be sufficient lop and top from the spruce thinnings to give adequate protection from roe deer browsing. When opportunities arise plant & protect native broadleaves in open spaces.

Sub-compartment F (0.3 ha)

This is a narrow part of the woodland, known as Kailzie Throat. It is 60% stocked with broadleaves, mainly ash, oak, hawthorn, willow and sycamore at fairly close spacing of around 1-2 metres. They have arisen from a flush of regeneration in the past. Diameters are mainly 20- 30 cms and their form is often good. Ground flora



is dominated by wood rush.

The other 40% is Norway spruce and hybrid larch of decent size and form- 30 cms diameter, 3 metre spacing. Overall, this is an attractive and vigorous young woodland although deadwood and understory shrubs are quite limited. Sadly, it is limited in size.



**Recommendation** The conifers can be thinned when special markets allow plus wood fuel. Broadleaves can gradually be planted back into this area.

The broadleaves can also be thinned to a spacing of 3 metres, removing ash which is likely to suffer from dieback. Remaining trees can be pruned to add value. The remaining broadleaves can then be coppiced, probably in two coupes, north and south. The coppice regrowth can be protected using temporary netting. A few standards can be left, ideally of a minor species such as oak. Once 5-6 years have passed, the other coupe can be felled and protected using the same netting.

Alternatively, this part of the wood could be regarded as wildwood with low intervention. The conifers and sycamore could be felled and native broadleaves planted to take their place. Once the balance of species is right, this sub-compartment could then be left to develop naturally.

Sub-compartment G (0.2 ha)

Similar conifer stand to that above, 30 cms diameter at 3 metre stocking, well tended with good form. Some standing and fallen dead wood.

**Recommendation** Gradual selective thinning of the conifers and planting back to native broadleaves for coppicing. Extraction could now be eastwards using the Eshiels burn track.

Sub-compartment H (0.7 ha)

This is a largely broadleaved stand (90%) with a few (10%) Norway spruce and larch of similar characteristics to those above.



The dominant broadleaves are sycamore, ash, hawthorn and willow, some present as coppice regrowth. Quality for timber is generally poor. Most have diameters of 20-30 cms and are spaced at 3 metres.

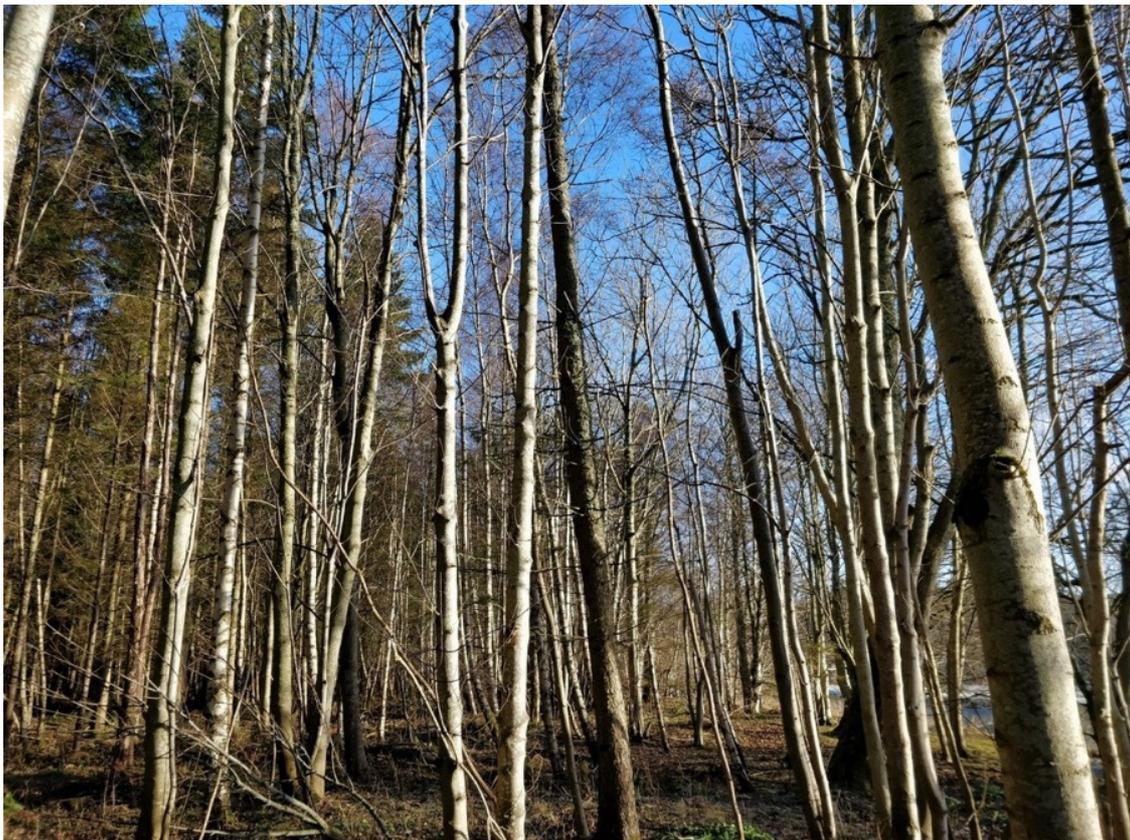
**Recommendation** This would make an ideal coppice wood with suitable species, right age, right spacing. An area of around 0.1 ha could be felled and protected for

3 years, followed by another area and so on, leaving a small number of standards (not sycamore) to grow on. Some of the conifers on either side of the path could be felled.

#### Sub-compartment I (2.1 ha)

The eastern end of the wood is a 50/50 mix of conifers (Norway spruce and hybrid larch) and mixed broadleaves.

The conifers are as in the previous 4 sub-compartments, possibly planted in 1966, but more widely spaced- 30-40 cms diameter at 4 metre spacing. Tall, with good form, concentrated in the northern and eastern parts of this stand. These are the highest value spruce trees in Eshiels Wood.



The dominant broadleaves are sycamore, silver birch and ash with occasional oak, willow, rowan, lime, elm, hawthorn and hazel. These trees are a bit younger and smaller than in the previous sub-compartments and again are likely to have arisen

as one cohort through natural regeneration. Most of the trees have an average diameter of 20 cms and the average spacing is around 1.5 metres. There is a little deadwood. Ground vegetation is quite diverse. There are very few seedlings less than 15 years old.

**Recommendation** Gradual selective thinning of the conifers for special markets, as before, with extraction to the east. Accessing the Eshiels Burn track will be tricky. Felling will also be a challenge due to interlocking crowns and it may be that only the trees on the edge of conifer groups can be felled.

The broadleaves can also be gradually selectively thinned until the spacing is around 3 metres. Good quality wood fuel will be produced. Sadly, the ash may bear the brunt of the thinning if the Chalara continues to spread. Once the 3 m spacing is reached, a decision can be made to coppice the stand in several coupes of around 0.1 ha or to continue to selectively thin to produce high quality hardwood timber logs. These logs could be extracted by floating them down the river to a convenient loading point.

## Overall

There are a number of different stands within the woodland and they merge continuously with each other.

The Riverside Wood (A) can be best managed as a wildwood with minimum intervention once certain preliminary activities have been carried out. The northern edge of the woodland, next to the cycle track, can be managed sensitively to enhance the experience of those using the track.

There are a number of large Sitka spruce at the west end of the remaining woodland. The majority of the Norway spruce and larch were planted in 1976 and are 42 years old at the time of this report. Their form is good (spruce better than larch) and they vary greatly in size according to their original stocking density and how heavily they have been thinned).

The total volume of standing softwood timber is in the order of 800 to 1000 m<sup>3</sup> (tonnes), based on the calculations for sub-compartment D.

It is recommended that the conifers be selectively thinned over a long period of time for special markets, when they are available, plus wood fuel. Eventually they can be largely replaced with native broadleaves.

The broadleaves are even more variable, from large trees beside the river, through old sycamore coppice to young mixed woodland in the eastern part of the wood. Timber quality is also very variable, generally poor, but the younger stands have good potential.

The best way to manage the broadleaved areas is through coppicing, leaving behind some quality trees as standards. The site is flat with good access for people, horses and light equipment. This is an intensive form of management and great care will have to be taken to protect the coppice regrowth. Some stands will have to be thinned to get them to a suitable spacing for coppicing to begin.

Deadwood is limited due to the youthful nature of the woodland. Standing dead trees should be left whenever possible, a few Norway spruce could be ring-barked and bird and bat boxes could be put up to simulate cavity nesting sites.

The management outlined will:

1. Improve **biodiversity** and the River Tweed corridor – by diversifying the species and bringing more light into the wood
2. Improve sustainable **productive** management of our local woodlands through community ownership
3. Resurrect coppice management skills and provide a space for further **skills training and nature learning**.

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