Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Ladybank

Land Management Plan

2020 - 2039

This plan sets out the strategic direction for management over the next 20 years and provides details of the operations proposed in the first 10 years.

Ladybank
Land Management Plan

We manage Scotland's National Forest Estate to the United Kingdom Woodland Assurance Standard – the standard endorsed in the UK by the international Forest Stewardship Council® and the Programme for the Endorsement of Forest Certification. We are independently audited.

Our land management plans bring together key information, enable us to evaluate options and plan responsibly for the future. We welcome comments on these plans at any time.

FSC®
www.fsc.org
FSC® C123223
The mark of responsible forestry

PEFC™
PEFC/16-40-1002
Promoting Sustainable Forest Management
www.pefc.org

Ladybank
Land Management Plan

Contents

Ladybank
Land Management Plan

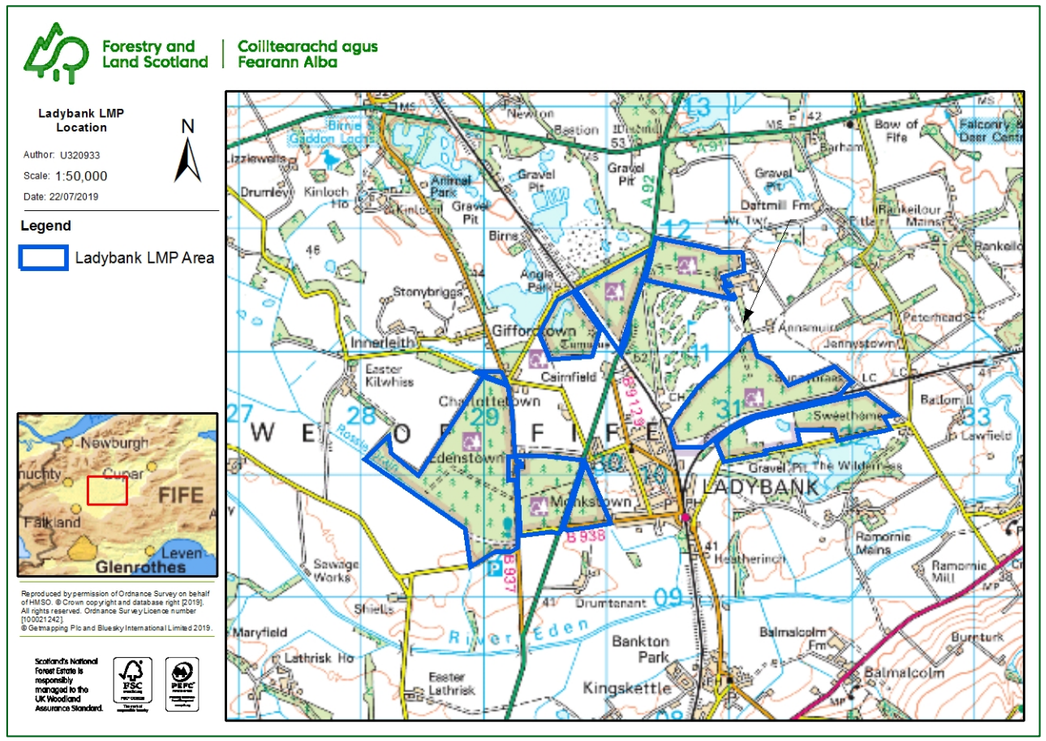
1. Introduction and summary

1.1 Location

Ladybank is situated in the geographical area known as the Howe of Fife; a largely flat, agricultural landscape, overlooked by the Lomond hills approximately 10km to the south west. The forest displays no significant landforms, sitting, almost entirely uniformly, at 45 metres above sea level. There are transitory views of the forest from the railway line and the various roads that pass beside and through the blocks but there are no significant overviews that help to place the forest within the wider landscape.

1.2 The site

The forest consists of a number of dispersed compartments, surrounding the town of Ladybank in Fife. The blocks are separated by the East Coast Mainline and Perth branch line railways, the A92 and B937. The forest covers a total area of 281 ha and predominantly consists of stands of mature Scot's and Corsican pine. The extent of the plan area and location is defined in map 1 below.



1.3 Certification

The management of the woodland is certified and at all times we seek to adhere to the UK Woodland Assurance Standard (UKWAS).

1.4 Key Issues

The key issues in this plan are:

- **High visitor numbers are causing issues with litter and dog waste.**
- **Regeneration of beech and western hemlock is outcompeting other desirable species in parts of the block.**
- **Beech seed is a favoured food for grey squirrel, which are now endemic throughout most of Fife with the exception of Ladybank and some other significant areas of conifer forests where red squirrels are still present.**
- **Tree disease – Dothistroma needle blight has affected much of the pine plantations in the forest.**
- **Access to the site for management operations is restricted by poor roading.**

1.5 Proposals in Brief

- **Fell 11.11ha of conifer woodland.**
- **Thin 220.03ha of conifer woodland.**
- **Restock felled areas with 5.56ha of productive broadleaves, 3.14ha with Scots Pine and 0.99ha with broadleaf species as part of an intimate mixture.**
- **Upgrade 1770m of forest road to improve management access.**
- **Plant open wayleaves adjacent to the railway with native shrub and hedgerow species.**
- **Management of open water and surrounding areas to increase biodiversity.**

1.6 Timing

This plan presents in detail the management, felling, thinning and restocking proposals for the next 10 years (2020-2029). This first ten year period is particularly important because it relates to the part of the land management plan that requires specific approval from Scottish Forestry. Longer term management of Ladybank is included in the plan but mainly to provide an indication of the direction of travel and to provide context.

1.7 Consultation and Further Information

During the development of this plan we have consulted with the local community and statutory and other interested stakeholders.

For further information on the plan please contact:

Nick Gough
Planning Forester
Forest and Land Scotland
East Region
Inverpark
Dunkeld
PH8 0JR
T: 0300 067 6200
E: enquiries.east@forestryandland.gov.scot

2. Scottish Forestry Regulatory Requirements

This section provides a summary of the elements of the Land Management Plan which are regulated by Scottish Forestry. In line with approvals sought, this focusses on relevant operations and activities proposed for the first 10 years of this plan.

2.1 Summary of Planned Operations

Proposed Operations	2020 - 2029
Felling	11.11
Thinning	220.03
Restocking	11.11
New Road Construction	60
Road Upgrade	1770m

2.1.1 Proposed Felling in Years 2020-2024

Proposed Phase	Area to be Felled (ha)	Proportion of Woodland Area (%)
2020 - 2024	7.18	2.6
2025 - 2029	3.93	1.4

Details of Clearfell by Coupe for phase 1

Coupe Reference	Programme Year	Species 1	(ha)	Species 2	Area (ha)	Open Area (ha)	Total Area (ha)
56006	2022/23	SP	6.46	MB	0.72	0.00	7.18

Changes in Age Class over plan period

Age of Trees	Growth Stage	2020 %	2024 %	2029 %	2039 %
0-10	Establishment	2.4	2.1	3.0	1.4
11 - 20	Thicket	0.3	1.2	2.2	3.0
21 – 40	Pole	33.6	30.3	7.6	2.5
41 - 60	Maturing High Forest	5.0	5.4	26.3	29.3
61+	Old High Forest	50.1	49.8	50.5	54.7
Integral Open Ground	N/A	8.6	11.1	10.4	9.1
Open Hill Ground	N/A	0.0	0.0	0.0	0.0

2.1.2 Proposed Thinning in Years 2020-2024

Proposed Phase	Area to be Thinned (ha)	Proportion of Woodland Area (%)
2020 - 2024	53.98	19.2
2025 - 2029	177.19	63.1

Coupe Reference	Programme Year	Species 1	Area (ha)	Species 2	Area (ha)	Species 3	Area (ha)	Open Area (ha)	Total Area (ha)
56001	2023/24	SP	8.76	MC	4.72	MB	3.00	1.07	17.55
56006	2023/24	SP	6.46	MB	0.72	-	-	0.00	7.18
56019	2022/23	SP	22.75	CP	1.41	MB	4.61	0.48	29.25

2.1.3 Proposed Restocking in Years 2020-2024

Proposed Phase	Area to be Restocked (ha)	Proportion of Woodland Area (%)
2020 - 2024	-	-
2025 - 2029	7.18	2.6

Proposed Restocking by Coupe

Coupe Reference	Programme Year	Species 1	(ha)	Species 2	Area (ha)	Open Area (ha)	Total Area (ha)
56006A	2023/24	SBI	5.56	-	-	0.62	6.18
56006B	2023/24	MB	0.20	-	-	0.80	1.00

Species Change Over Plan Period

Species	2020 Area (ha)	2020 %	2024 Area (ha)	2024 %	2029 Area (ha)	2029 %	2039 Area (ha)	2039 %
Scots pine	180.8	64.3	174.3	62.0	172.3	61.3	174.3	62.0
Corsican pine	30.4	10.8	30.4	10.8	29.2	10.4	30.4	10.8
Other conifers	21.6	7.7	21.6	7.7	21.6	7.7	21.6	7.7
Birch (Downy/Silver)	2.4	0.8	2.4	0.8	8.0	2.8	8.0	2.8
Other Broadleaves	22.7	8.1	22.0	7.8	21.5	7.6	22.3	7.9
Open/awaiting restock	23.4	8.3	30.6	10.9	28.7	10.2	24.7	8.8
Total	281.3	100.0	281.3	100.0	281.3	100.0	281.3	100.0

2.1.4 Access and Roading in Years 2020-2024

Period of Works	Proposed Length for Construction (m)	Proposed Length for Upgrade (m)
2020 – 2024	60	1600
2025 – 2029	0	170
Beyond 2030	0	0

2.2 Departure from UKFS Guidelines

The Land Management Plan seeks to follow the UKFS in all requirements. No felling will take place until any neighbouring restock areas have achieved two metres in height. If this is not achieved the separation will be agreed with Scottish Forestry.

2.3 Tolerance Tables

Refer to Appendix III.

3. EIA Determination

3.1 Deforestation

No deforestation is planned in the duration of this plan.

3.2 Forest Roading

There will be one section of new roading proposed during this plan period – an access and stacking area approximately 50m long with a 10m spur to allow turning. This will be located in the Cairnfield Muir coupe and will join the public road at grid reference NO 297 115. Approximately 1600m of road upgrades and five turning areas will be required in phase I with a further 170m or upgrade and two turning areas in phase II to allow for safe extraction of timber. As these are upgrades to existing facilities there will be no net forest area removal.

There are no site designations impacted by the proposed works.

3.3 Quarries

It is not anticipated that new quarries will be required.

3.4 Afforestation

No new woodland creation is proposed within this plan.

3.5 Additional Regulatory Requirements

3.5.1 Water Framework

Given the scale of the proposal, as long as SEPA general binding rules are adhered to, a construction site licence will not be required.

3.5.2 Prior Notification

Maintenance of roads will be carried out in line with Timber Transport Forum document "The design and use of the structural pavement of unsealed roads (2014)". Prior notification will be sought for the area of new road that is greater than 25m from the public road. As all remaining proposed roading works in the scope of this plan are classed as maintenance of existing infrastructure no prior notification should be required. If the need arises, prior notification will be sought at the time of work planning.

3.5.3 Planning Consent

Planning consent will be sought for the portion of new road construction within 25m of the public road mentioned in section 3.2.

4. Introduction

4.1 Existing Land Holding

Ladybank forest consists of a single block, made up of a number of dispersed coupes, surrounding the town of Ladybank in Fife. The blocks are separated by the East Coast Mainline and Perth branch line railways, the A92 and B937. The forest covers a total area of 281 ha and predominantly consists of stands of mature Scot's and Corsican pine.

The age structure of the forest is reasonably diverse; approximately half the forest was planted prior to 1960 and the majority of the rest was planted during the 1980's. As mentioned, the forest is heavily dominated by stands of large mature pines with some areas of other conifers and broadleaves typically occupying some of the wetter sites. The forest is currently managed exclusively under continuous cover forestry (CCF) practices, aiming to maintain canopy cover through selective felling and natural regeneration. Pines are regenerating well in parts of the forest but are being out-competed by beech and western hemlock in certain areas.

The forest is of key importance for residents of Ladybank, being heavily used by local dog walkers. A woodland user group has taken interest in past management and the views of residents will be a significant factor in any plans going forward.

4.2 Setting and Context

The compartments making up Ladybank forest surround the town of Ladybank in Fife. The town emerged with the arrival of the railway line in 1847 at the point where routes from Edinburgh diverged to either Perth or Dundee. The forests were established shortly after to provide firewood for the growing population and to supply local industry.

The forest is situated in the Howe of Fife; a largely flat, low-lying plain that follows the course of the river Eden. Local land use is predominantly agricultural with small interlocking shelterbelt woodlands. The area is also dotted with a number of active and disused gravel pits. The closest significant landforms are the Lomond hills, approximately 7km to the south west.

4.3 Land Management Plan Management Objective Zones

The land holding is considered as a single unit in this LMP.

5. Plan Objectives

5.1 Issues

The pertinent issues to be considered within this land management plan are:

- **High visitor numbers are causing issues with litter and dog waste.**
- **Regeneration of beech and western hemlock is outcompeting other desirable species in parts of the block.**
- **Beech seed is a favoured food for grey squirrel, which are now endemic throughout most of Fife with the exception of Ladybank and some other significant areas of conifer forests where red squirrels are still present.**
- **Tree disease – Dothistroma needle blight has affected much of the pine plantations in the forest.**
- **Access to the site for management operations is restricted by poor roading.**

5.2 Key Challenges

- **Maintaining community interest and engagement with the site.**
- **Maintaining habitat for red squirrel.**
- **Creating access for management operations.**
- **Controlling natural regeneration to create the desired future forest structure.**

5.3 Management Objectives

5.3.1 National Spatial Overview (NSO)

To best manage the national estate as a whole an approach has been proposed that considers which national targets can be best met in any area. This moves away from the requirement to try to meet all objectives on every site. This exercise has led to the production of the NSO which zones the country and suggests which areas can best meet the various national corporate priorities.

The NSO suggests that the most significant contributions to national corporate policy for this area – North Fife are:

- **Ecosystem services and public benefit,**
  - **Carbon sequestration**
  - **Recreation improving health and wellbeing.**

- **Other National Commitments**
  - **Protection of red squirrel strongholds**
  - **Investment in silvicultural practices**
  - **Management of tree diseases**
  - **Education and outreach.**

- **Contribution to financial stability**
  - **Production of high quality timber crops**
  - **Specialist timber markets.**

The Forestry and Land Scotland NSO categorises this site within zone 3: Dornoch, Black Isle, North East, Lowland Angus and North Fife.

The aims and objectives identified that this area can best contribute to are:

Ecosystem services and additional public benefits – Secure carbon sequestration through CCF, High recreation use of NFE contributes to increased health and well-being, support for small sawmills and sustainable timber production.

Other National Commitments: Woodlands in and around towns, habitat management, investment in silvicultural practices, management of tree disease, education, outreach and community engagement.

Contribution to financial stability: High quality timber crops, high potential for sawlogs and specialist timber products.

5.3.2 Objective 1

Secure carbon sequestration through the growth of high quality timber. – The site is well suited to the growth of high quality timber and is of an age that stability can be maximised enabling movement towards a highly diverse age structure.

5.3.3 Objective 2

Improve the wellbeing of the local population through recreational use of the site. – The location of the site is easily accessed by foot from Ladybank. Travel from further afield is possible due to numerous formal and informal parking areas.

5.3.4 Objective 3

Maintain and improve the ecosystem services provided by the site. – The forest is a stronghold for red squirrel in an area that is otherwise dominated by greys.

5.4 Secondary objectives

In addition to the objectives driven by the NSO there are also additional aspirations that are locally significant to the LMP area.

- **Ensure the historic environment is protected and accessible.** – The forest contains two scheduled monuments.
- **Protect and enhance wetland features –** The block includes some areas of former gravel works which have since filled with water.
- **Improve open habitat adjacent to railway lines. –** Currently open ground along the railway line could be planted with low shrubs and hedgerow plants to create wildlife habitat and to soften the transition from commercial crops to open space.

6. Analysis and Concept

6.1 Analysis

Objective	Opportunity	Constraint	Concept
Maintain public access throughout the block.	▪ Local residents of Ladybank make extensive use of the block for dog walking and recreation. ▪ 4 way marked trails to explore. ▪ 2 maintained carparks.	▪ Informal trail network is extensive throughout the block. ▪ High usage brings problems with litter, dog mess and vandalism.	▪ Continue to maintain existing path network and car-parking facilities. ▪ Engage with community groups via contact with FLS visitor services manager to target persistent dog fouling offenders.
Continue management of the forest for the benefit of red squirrel populations.	▪ Red squirrel populations have remained resilient in the block as greys have expanded territory across Fife. ▪ Good local awareness and active red squirrel conservation group.	▪ Beech is favoured by grey squirrel.	▪ Continue working with local groups to monitor squirrel populations. ▪ Active removal of beech regen will reduce future feed source. ▪ Removal of some mature, non-veteran beech in South Annsmuir will help to reduce the proportion of beech natural regen.
Ensure production of quality timber through CCF management.	▪ Mature pine stands have been well managed in the past. ▪ Ground is flat and firm enough to support permanent extraction racks. ▪ High numbers of people and dogs using the block means deer numbers are low.	▪ Some crops have missed 1st thinning window. ▪ Regeneration of alternative species (BE, SS and WH) are outcompeting pines in some areas. ▪ Thick ground vegetation is also preventing good pine regeneration.	▪ Manage stands under irregular shelterwood system. ▪ In stands 50+ years old; crown thin to increase light levels for regen. ▪ In younger stands; low or intermediate thin to favour future crop trees. ▪ Utilise permanent racks to minimise ground disturbance across the site. ▪ Remove undesirable species during thinning operations where possible to reduce expenditure.
Manage forest to maintain or enhance the pine dominated species mixture.	▪ Forest is currently dominated by well managed mature pine crops. ▪ Natural regeneration of pine is evident, particularly in Heatherhall wood.	▪ Regeneration of alternative species (BE, SS and WH) are outcompeting pines in some areas. ▪ Thick ground vegetation is also preventing good pine regeneration. ▪ A number of mature, seed bearing beech trees are dispersed throughout the crop in South Annsmuir.	▪ Where light levels are suitable for regen; respace crops to favour pines. ▪ Scarify ground to remove vegetation and promote good growing conditions for pine. ▪ Plan to prioritise felling of seed bearing SS stands. ▪ Consider options to remove mature, non-veteran BE from South Annsmuir. ▪ Where BE regen is dominant open up canopy in small group selections and underplant with pine.
Ensure the historic environment is protected and accessible.	▪ 2 scheduled monuments – burial mound and iron age settlement in Cairnfield Muir. ▪ WWII defences – 2 pillboxes and anti-tank ditches. ▪ Evidence of pre-industrial ridge and furrow agricultural system.	▪ Natural regen threatens condition of some historic features.	▪ Maintain appropriate buffers and manage regen around heritage features.
Ensure access is suitable for felling/ thinning operations and appropriate stacking/ loading areas are in place	▪ Coupes are small and have good access onto public roads. ▪ It would be possible to access most coupes from a roadside landing, internal roading would be unnecessary in most parts.	▪ Proximity to roads/railway/utilities in several coupes. ▪ Internal road network largely unsuitable for heavy traffic. ▪ High recreation use will pose a hazard to operations. ▪ Public may see timber loading areas as additional parking facilities.	▪ Identify upcoming coupes and plan necessary road upgrades/timber handling areas in advance of operations.
Protect and enhance wetland features for environmental benefits.	▪ Ponds currently in Cairnfield Muir and Heggie's Muir coupes. ▪ Other former wetland sites in Heatherhall wood and South Annsmuir.		▪ Respace BL's around ponds in Cairnfield Muir. ▪ Helen's Myre will be assessed and considered for peatland restoration during phase 1 of the plan. ▪ Continue to manage as priority wet woodland.
Improve open habitat adjacent to railway line	▪ Planting on open ground will help transition the edge of the commercial conifer crops into the open ground.	▪ Tall tree species have the risk of blowing onto power lines or railway track and will require frequent management to maintain in a safe state.	▪ Plant open space with a mixture of hedgerow species; e.g. hawthorn, blackthorn, hazel with some scattered oak and birch further from the railway line.

Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Ladybank LMP Concept

Author: U320933

Scale @ A3: 1:20,000

Date: 15/07/2020

Legend

- Forest Roads
- Proposed Road
- Ash
- Beech
- Birch
- Fir
- Larch
- Oak
- Other Broadleaves
- Other Conifers
- Pines
- Spruce
- No Species
- Blocks

0 100 200 400 600 800 1000 Metres

N

Scotland's National Forest Estate is responsibly managed to the UK Woodland Assurance Standard.

FSC www.fsc.org FSC® C123223 The mark of responsible forestry

PEFC PEFC/16-40-1002 Promoting Sustainable Forest Management www.pefc.org

Maintain open space buffer around scheduled monuments.

Thin to promote stability in future final crop trees.

Clear regenerating Western hemlock as part of thinning operation. Should provide a marketable biomass crop.

Programme of road upgrades to be completed in advance of scheduled thinning/felling operations.

Manage beech regen as an understorey crop beneath the pine. This will provide financial return as firewood in 30-40 years and will benefit the next rotation pine crop by shading out competing ground vegetation and providing nutrient rich leaf litter.

Areas where beech regen has been cleared replant groups of SP in gaps created by wind blow or opened up through thinning.

Replant felled area in Heggies Muir with productive broadleaves.

Thin pine to open up gaps in the canopy to aid establishment of light demanding species in second rotation crop.

Low density planting in railway line wayleaves with a mixture of shrub and hedgerow species in small groups.

Maintain provision of carparks and waymarked trails in Heatherhall and Monkstown Wood.

7. Long Term Land management Plan Proposals

7.1 Management

The Ladybank Land Management Plan has been designed in accordance with sound silvicultural, legal and environmental principles set out within the UK forestry Standard and UK Woodland Assurance Standard and in line with the Forestry and Land Scotland National Spatial Overview.

Detail of all operations scheduled for the first phase of this plan can be seen in Section 2 and on maps on pages 21-23.

7.2 Silvicultural Systems

The location, soils, present species and climatic conditions all mean that continuous cover silvicultural systems are best placed to meet the management objectives. Where possible all present crops will be managed towards Continuous Cover Forestry (CCF) systems. The precise system targeted will be tailored to suit the present and subsequent species.

7.3 Harvesting Proposals

7.3.1 Felling proposals

The plan area contains one phase I and one phase II coupes scheduled for felling in the period of the LMP. In both cases small areas of Scots pine that are now beyond their thinning windows and are at risk of blowing. The majority of the remaining area will be managed under CCF as a continuation of the previous plan.

7.3.2 Thinning Proposals

Due to the high percentage of CCF management within the block it is expected that approximately 78% of the plan area will receive a thinning intervention during the next 10 years. The plan area has been split into seven thinning coupes, largely dictated by the physical barriers of roads and railways that separate the areas of the wood.

7.3.3 Restock Proposals, Future Habitats and Species

Scots and Corsican pine will continue to be the dominant timber species with elements of native broadleaves emerging in a mixture with the pines as natural regeneration. Areas designated for clearfell will be restocked with productive broadleaves or Scots pine and broadleaf mixtures.

7.3.4 Open Land management

Open space within the LMP area are infrequent, mostly concentrated adjacent to the mainline railway. The intention for these areas is to plant a mixture of native shrub and hedgerow species in small groups at low density with the aim of creating habitat and breaking up the hard lines of the mature forest behind. Using short, shrubby species should prevent any future safety issues arising with the neighbouring railway and overhead power lines.

8. Critical Success Factors

- **No reduction to red squirrel numbers during plan period.**
- **Management operations undertaken in all proposed coupes.**
- **Pine element of second rotation crop to be in excess of 50%.**
- **No long-term impediment to visitor access.**
- **All heritage features kept clear of trees and protected during management operations.**

9. Management Prescriptions

9.1 Forest Management Types

All operations will be undertaken in line with UKWAS and UKFS requirements and as set out in FLS guidance. Appendix VI includes links to these documents.

9.1.1 Stewardship

Beat-up

There are no intended beat-up operations proposed during this plan period.

Weed control

Areas of bracken in Heatherhall to be rolled.

Respacing

Respacing of naturally regenerating trees is required in two coupes, both within the Cairnfield Muir block:

- **56017 – 0.93 ha of native broadleaves surrounding the former gravel pits.**
- **56018 – 6.02 ha of Scot's pine.**

9.1.2 Silvicultural System

The aim is to manage these woodlands under a continuous cover silvicultural system. The precise system used will depend on the intended desired species of regeneration.

9.1.3 Restock / Regeneration

There is one proposed area of restock in this plan; coupe 56006 will be restocked with silver birch (*Betula pendula)* with the intention of developing a stand of productive hardwood. Planting will be at 1.5m spacing.

Currently open wayleaves adjacent to the mainline railway will also be planted with small groups of native hedgerow and shrub species; hazel (*Corylus avellana*), hawthorn (*Cretaegus monogyna*) and blackthorn (*Prunus spinosa*), with some oaks (*Quercus petrea*) away from the railway line. Overall canopy density in these areas should be low, with more than 85% of the area remaining open. Groups to be positioned to break up sight lines and soften the edge of adjacent conifer plantations.

Natural regeneration is already establishing across much of the forest; in particular coupes 56015, 56016 and 56022. Careful consideration will need to be taken to ensure that desirable species are regenerating in these areas. If, in spite of the best efforts of the FM team, desirable species are not establishing in sufficient numbers the decision will be taken to underplant.

In coupes 56015 and 56016 the emerging beech regen is dominating the understorey. This will be managed to produce a biomass crop under the pine canopy with the aim of producing a financial return as well as improving soil conditions and suppressing ground vegetation for subsequent rotations. The beech understorey should be felled prior to the development of seed.

The requirement for and specification of ground preparation will be identified at the work planning phase. There are no conflicts over adjacency guidelines in this plan due to the disparate nature of the felling coupes.

9.2 Future Habitats and Species

There is no significant change planned in the species composition of the forest during this plan period.

Where at the work planning stage species selection differ markedly from those identified in the LMP revised restock plans will first be agreed with Scottish Forestry. See tolerance tables in appendix III.

9.3 Operational Access

Access for extraction to roadside has been identified in each felling/thinning coupe. Some improvements to the current road network will be required prior to working and there will be one new section of road construction, detailed in section 3.2. A full description of requirements is included in the schedule of works in section 2.1.4 and concept map in section 6.2.

Prior consultation on timber transport will be sought with Fife Council ahead of any planned operations.

9.4 Herbivore Management

Deer numbers in the forest are not deemed to be significant problem for the establishment or regeneration of trees due to high visitor numbers. Rabbits may pose a threat to establishment of new planting along railway line wayleaves; planting groups should be protected with rabbit netting enclosures.

The proposed restock in coupe 56006 should be protected with a deer fence. This will result in restricted access for the duration of the establishment period but will be beneficial for the survival rates of young trees.

9.5 Management of Open Ground

See section 9.1.3, paragraph 2 for details of proposed planting in open spaces.

9.6 Public Access

The current provision of car-parking and waymarked trails in Heatherhall and Edensmuir are to be maintained but no new visitor services are proposed for the duration of this plan.

9.7 Heritage Features

Scheduled and unscheduled monuments within the forest are to be protected during management operations and buffer zones are to be maintained free from regenerating trees in accordance with current FLS conservation plan guidance.

Appendix I – Land Management Plan Consultation record

I/1.0 Record of statutory consultation

Statutory Consultee	Date Contacted	Date response received	Issues Raised	Forest District Response
Local community drop-in session	29/04/2019	Attended by local residents and members of Ladybank Forest Users Group (LFUG)	See separate public consultation response in appendix I/1.1.	See separate public consultation response in appendix I/1.1.
Fife Council	20/02/2019	No response received		
HES	20/02/2019	No response received		
Network Rail	16/06/2019	No response received		
Claire Smith - RSPB	20/02/2019	25/02/2019	RSPB Scotland does not hold any data on priority species for forested area of Ladybank. I have checked with Tayside Raptor Study Group and Ken Shaw and we are not aware of any rare nesting raptors using the wood. Gareth is aware of the kestrel and owl nest boxes that have been placed in the wood and can advise on where these are and on leaving areas that may provide good foraging e.g. open areas, understorey, some areas of brash etc.	Noted - Provisions for nesting birds will be addressed at an operational level.
SEPA	20/02/2019	No response received		
SNH	20/02/2019	No response received		
Ladybank Forest Users Gorup	20/02/2019	29/04/2019	Comments received at drop in session	
Ladybank Golf Club	20/02/2019	No response received		
Hillary Munroe - Scottish Badgers	20/02/2019	No response received		
Ladybank Sand and Gravel Co.	20/02/2019	No response received		

I/1.1 Record of public drop-in session

Item	Action Required	Outcome
Plan required to manage the old firebreaks along the railway lines for biodiversity. Currently the wild flowers are being suffocated by coarse grass.	Plant a variety of native hedgerow species such as hawthorn, blackthorn, rosa rugosa in groups along railway line wayleaves to provide habitat for insects, birds and mammals. The only way to manage the site to remove the coarse grass dominance and increase wild flowers would be to graze but the expense of fencing is prohibitive, or possibly mow and remove the cut grass which we currently don't have the capacity or funds to manage. Previous survey work has identified wildflower hotspots and the planting suggested above will avoid these whilst breaking up the grass dominated habitats and improving overall biodiversity for invertebrates, birds and mammals.	Planting of way leaves will be included in the plan to be actioned by the FLS environment team. Environment team cannot action this, it will have to be delivered by the FM & Stewardship team with the environment team helping with the species and identifying suitable planting sites. The main outcome will be a diverse matrix of grass and scrub land along the railway buffers improving overall biodiversity and habitat quality
Litter, dog waste - respect for the environment. Dog dirt - but I'm not sure what you can do. Did the highlighting have any effect? Most irritating are the bags of dog dirt left lying around! Educate people on picking up after their dog!! More bins within the wood (Heatherhall). Dog bins/dog poo solution Less litter (although I don't know how you could achieve that). Another dog poo bin by golf course exit of South Annsmuir. If only dog walkers would clear up after their pets! - I know it's not your responsibility. Ask people to take away their rubbish and pick up dog poo. If possible more bins at North Annsmuir.	Increase number of dog waste bins and frequency of emptying. Conduct local awareness campaign to encourage responsible dog ownership.	FLS manage 5 dog bins at Heatherhall Woods in the main carpark and a further two in the small car park off the B937. Ladybank Forest Users group (LFUG) manage two dog bins at the Golf Street entrance to South Annsmuir. Fife Council manage litter bins at the entrances to Monkstown Wood and Gravel Pit Wood. This level of bin provision is exceptional and we do not have the resources to increase provision further. There is clearly a behavioural issue where some dog owners are not picking up their dogs waste or using the bins. FLS have been working with LFUG members in a targeted campaign at key access points to highlight the dog fouling issue using spray paint and behavioural signage.

Item	Action Required	Outcome
Please ensure that the forest/woodland is maintained to sustain wildlife.	Follow guidance from environment team on management for biodiversity.	I need to have a look at the plans, thinning rotations etc. to better answer this one, but short of including small clearfells to create small areas of stand initiation stage scrub at restock which will increase for example migrant bird diversity the answer is probably variable thinning densities, including not thinning some areas, and robust environment checks prior to any forestry operations to protect any important micro habitats and breeding wildlife.
Maybe cut back the fallen trees that are blocking pathways.	Clear windblown trees from paths as and when they occur.	Clear windblown trees from paths as and when they occur.
Allow more native species to generate and make a mixed woodland.	Respace regen to allow a wide variety of native species to emerge in the next rotation crop.	Respacing of regen will aim to favour pines and native broadleaved species.
Keep as natural as possible. Leave it alone. Support pines. Otherwise leave it.	Maintain the current mature pine overstorey with emerging regeneration of pines with mixed broadleaves.	In order to maintain the current appearance of the forest it will be necessary to carry out some timely thinning operations to increase light levels and encourage regeneration. A small area of clearfell is planned in Heggies Muir to clear an unmanaged stand of pine which is infected with *Dothistroma*. This will be restocked with a suitable native species that is adapted to site conditions. Retain standing and fallen deadwood where safe to do so away from paths and tracks. Vary thinning densities and rotations to create structural diversity in the blocks or stands.
Maintain the car parking area on the Charlottetown road and by Heggies Muir which is now quite badly rutted and potholed.	Fill pot holes and resurface car parking area.	FLS have prioritised repairs to the main car parking areas of Heatherhall Wood and Monkston wood in FY 19/20. Other access points are not classed as formal car parks and any maintenance of these areas would be lower priority, only attracting maintenance when the opportunity and budget is available.

Item	Action Required	Outcome
Provide species that are beneficial for red squirrel retention.	Manage emerging regeneration to favour species that provide food and cover for red squirrels. Consider planting NS if possible? How shade tolerant is it? Could it be under-planted in small areas amongst well thinned SP	Red squirrel are a key priority species and Ladybank forest is a stronghold within region otherwise dominated by greys. Protection of red squirrel will be a key consideration when writing this plan.
Make sure the wild flowers "up the field" are protected.	Protect and cultivate wildflower meadows for the benefit of pollinator species.	Unsure of the exact location but every effort will be made to preserve wildflower meadows within the forest for their biodiversity value.
I would like to see the silver birch removed as they seem to be everywhere. As an orienteer I would prefer that the woodland was open and runnable. Therefore prefer no young beech and birch.	Target silver birch regeneration and remove from the matrix of understorey growth.	As a native species silver birch is an important component of this woodland for ecological, landscape and habitat reasons, as well as being a key commercial tree for firewood and furniture making. There will be no plans to remove silver birch in the foreseeable future.
Fire prevention posters - Kids having BBQ's when the grass is tinder dry.	Erect fire warning posters during high risk seasons.	FLS local staff can put up signs when the fire risk is measured as high. This would be on a risk assessed basis.
Circular routes with fitness equipment. Designated MTB routes.	Consider proposal and respond.	Visitors are free to access Ladybank Woods as per the Scottish Outdoor Access Code. Most of our visitors are very local or from within Fife, and all the Ladybank woods are small and easy to explore. As such FLS decided that waymarked facilities are not appropriate for this location and hope that visitors can explore and discover the woods themselves.
More information surrounding the paths - level of accessibility. Notice board telling people the different trees and birds to look for.	Install interpretation boards at key locations around the forest.	There are interpretation boards located in Heatherhall car park and Monkston car park which contain this kind of information.

Item	Action Required	Outcome
High level crossing for red squirrels between Heatherhall and Eden's Muir.	Investigate with local council and highways department for permission. Currently looking at a similar project in Moray so we can look at taking this forward but no guarantees. What's the roadside vegetation like? If there are a lot of hazel for example it wouldn't do any good because the squirrels would just continue to cross at road level.	Further investigation required.
Cut broom from pathway along B937 at edge of Heatherhall.	Include path clearance in FM maintenance program.	Path maintenance on non-waymarked routes will be carried out where budget and resources allow.
Gate has been bolted shut in fence around new planting in Heggies Muir.	Remove bolt to allow access.	The gates were initially shut because visitors were leaving it open and allowing deer to enter and browse the young trees. There were also hygiene issues with dog waste and contractors working within these areas Due to the high number of users it is intended to keep the area closed off until the trees have become fully established. This site has plenty of available land around the enclosed areas for dog exercising as per the Scottish Outdoor Access Code. FLS recognise the benefits to some dog owners of having an enclosed area in which to exercise dogs, however at this time our primary objective for these enclosures is to protect and establish trees. There are a number of private dog walking fields in the Fife/Clackmannan area who offer safe enclosed areas.

Appendix II - Supporting Information

II/1.0 The Existing Forestry and Land Holding

II/1.1 History of the Land Holding

Managed forests have existed at Ladybank long before the creation of the Forestry Commission. The majority of the block is designated as 'Plantation Woodland of Ancient Origin', appearing on maps from 1860 with some areas dating back as far as 1750. The town of Ladybank grew up with the arrival of the railway in the 1840's and the forests no doubt developed as a resource to supply local industry as the town grew.

The previous plan for Ladybank was last approved on 12th June 2007 and was set to expire in 2017. It received a plan extension to allow completion, extending the approval period to 12th June 2018. Previous plan reference: 033/A/L/07 (1).

II/2.0 Analysis of Previous Plan

II/2.0.1 Aims of Previous Plan and Objectives

The objectives set out in the previous plan are detailed below. It should be noted that at the point of the mid-term review in 2012 a significant change in thinning prescriptions was proposed to tackle the increasing presence of Dothistroma Needle Blight (DNB) in the block.

Objective	Assessment of objective during plan period
Manage the forest under CCF through regular thinning interventions to increase structural diversity and encourage regeneration.	Partially successful - Natural regen of a variety of desirable species is evident in the understorey but in some areas is being outcompeted by beech and western hemlock. Not all coupes have been thinned as planned. Following 2012 review a number of younger crops received a significant thinning intervention to reduce spread of DNB in the block.
Plant low lying shrubs in railway line wayleaves.	Not achieved - No planting in wayleaves has taken place to date.
From 2012 amendment - Plant on open ground surrounding former gravel pit in Heggies Muir.	Successful - Planting of Scot's pine and native broadleaves in 2012 developing well.
Manage the forest for the benefit of local red squirrel populations.	Successful - Red squirrel numbers have remained steady for the duration of the plan. Grey squirrel populations in the wood have been kept in check.
Protect all known archaeological sites.	Partially successful - Some encroachment of trees around the earthworks of the iron-age fort in Cairnfield Muir.
All forest operations carried out in accordance with forest and water guidelines.	Successful.
Planning permission being sought for a sand and gravel works to be opened up in North Annsmuir.	Planning request was unsuccessful.

These objectives from the 2007 approved plan have largely been met although the emergence of DNB has caused some disruption to planned thinning cycles, which are crucial to the development of LISS in the block.

II/2.0.2 How previous plan relates to today's objectives

With the exception of the proposed gravel works the objectives laid out in the previous plan still remain relevant. Unsuccessful or partially completed items have been updated and brought forward in the new plan where relevant.

II/3.0 Background Information

II/3.0.1 Physical Site Factors

Geology, Soils and Landform

Soils are predominantly podzols and brown earth. There are a small number of isolated sites where conditions are wetter which has led to the formation of gleying. There is a small area identified as a raised bog at Helen's Myre in Heatherhall.

The geology of the area is made up of freely draining fluvioglacial sand and gravel deposits over sandstone.

Hydrology

There are no identifiable surface watercourses apparent within the forest itself. The most significant local water feature is the Rossie drain, which forms the southern boundary of Heatherhall.

Soil moisture regime (SMR): Environmental Site Classification (ESC) analysis shows:

- Moisture deficits are high (136 mm) – i.e. the climate is dry.
- The available water capacity is low.
- Moisture availability is limited by the free draining nature of the underlying geology.

ESC suggests Soil Moisture Regime ranging from wet to moderately dry throughout the block. This will be largely determined by local soil characteristics. Areas of Edensmuir and Monkstown Wood have been drained.

Climate

The climate of the site is described in ESC terminology as 'warm moist'. The ESC climate values are derived from a range of factors shown below. Due to the small size and uniform elevation of the forest there is practically no variation in readings across the block.

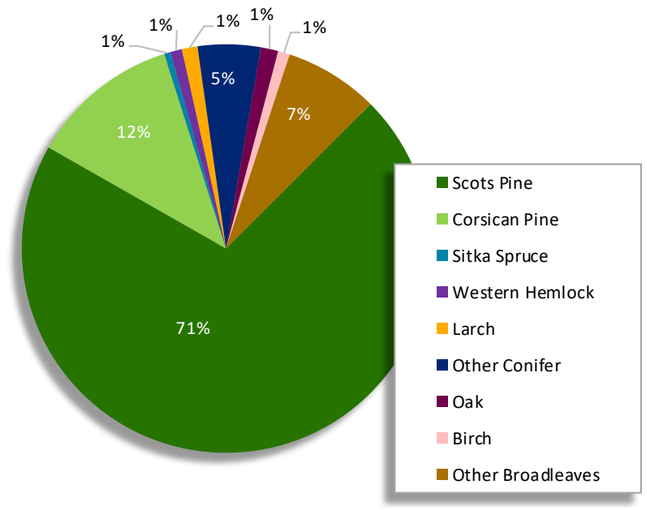
- **Elevation: ~45m Above Sea Level**
- **Accumulated temp: 1493°C**
- **Moisture deficit: 136 mm**
- **DAMS score (a measure of windiness and exposure): 11**

II/3.0.2 The Existing Forest

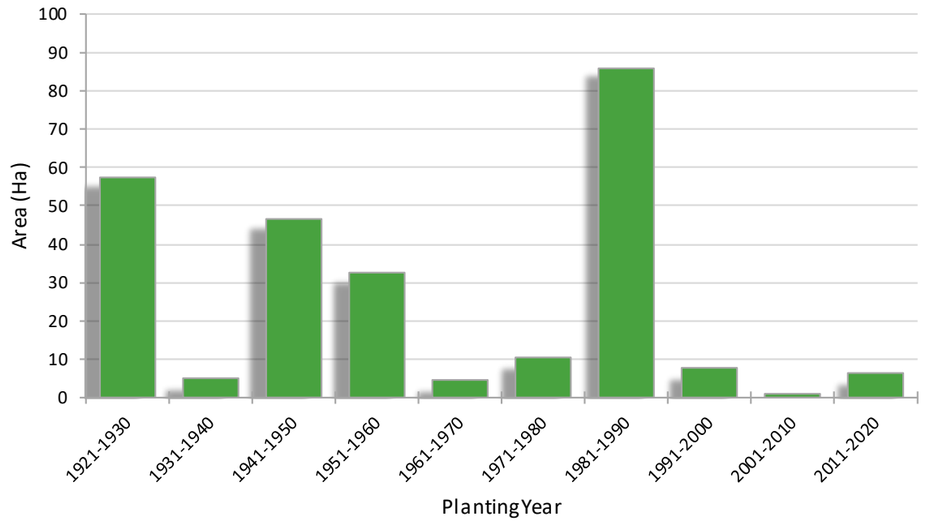
Age, Structure, Species and Potential Yield

The age structure of the forest is reasonably diverse; approximately half the forest was planted prior to 1960 and the majority of the rest was planted during the 1980's. The forest is heavily dominated by stands of large mature pines with some areas of other conifers and broadleaves typically occupying some of the wetter sites. The forest is currently managed exclusively under continuous cover forestry (CCF) practices, aiming to maintain canopy cover through natural regeneration. Pines are regenerating well in parts of the forest but are being out-competed by beech and western hemlock in certain areas. The species composition and age structure of the forest are detailed in graphs I and II.

Graph I - Current Species Distribution



Graph II - Current Age Class Distribution



Access
Road access within the block is fairly limited. Due to the small size and firm ground conditions of most coupes it is possible to forward timber to a roadside stacking and loading area instead of bringing haulage into the woods. There is a road access through North Annsmuir that crosses the edge of the golf course into South Annsmuir as this is the only practical access for this coupe. Upgrades will be required to all access routes and loading points to make them suitable for use in timber extraction. Access for timber lorries is directly onto the A92 meaning there are no restrictions on haulage routes.

LISS Potential
LISS is defined as "the use of silvicultural systems whereby the forest canopy is maintained at one or more levels without clearfell of areas over two hectares"

The forest is already managed under CCF prescriptions and a diverse matrix of regeneration is evident in the older crops. Regular and timely thinning in younger crops will be critical in their continued suitability for future transformation. Low DAMS scores coupled with firm flat ground and low browsing pressure make Ladybank an ideal site for CCF management.

Thinning Potential
Much as for the section above, the DAMS score is acceptable for thinning to be undertaken as long as thinning is commenced at a suitable age.

II/3.0.3 Land Use
The surrounding land use consists mainly of agricultural and residential property with some areas of light industrial and commercial development also; the aforementioned golf course, a caravan park, recycling depot and a gravel pit all share boundaries with the forest.

II/3.0.4 Biodiversity and Environmental Designations
The forest is a key stronghold for red squirrel in Fife in an area that has been largely overcome by greys. Raptor species and badgers are also known to be present in the block. Deer numbers are not significant in the block, most likely due to the high numbers of people and dogs that frequent the area.

II/3.0.5 Landscape
The forest is situated in the geographical area known as the Howe of Fife; a largely flat, agricultural landscape, overlooked by the Lomond hills approximately 10km to the south west. The forest displays no significant landforms, sitting, almost entirely uniformly, at 45 metres above sea level. There are transitory views of the forest from the railway line and the various roads that pass beside and through the blocks but there are no significant overviews that help to place the forest within the wider landscape.

II/3.0.6 Social Factors
Recreation and access will be key considerations when making planning decisions in Ladybank. The forest is heavily used by local residents as well as people from further afield, mostly for taking exercise and dog walking. Members of the public can access the forest via two maintained carparks which link to a network of four waymarked paths as well as a number of unofficial routes throughout the block. There are also a number of unsanctioned parking areas that are used to access popular walks. Sitting between the blocks known locally as North and South Annsmuir is the Ladybank golf course.

The forest contains two scheduled monuments (SM); the remains of a Bronze Age barrow and an Iron Age settlement. Visible at the two sites are remnants of former ditches and earthwork enclosures ranging from 0.6 to 1.0 metre in height. There are also a number of other heritage features including evidence of 19th century field enclosures and the remains of a number of WWII defences that formed part of the Fife Stop Line.

II/3.0.7 Statutory Requirements and Key External Policies
There are no statutory designations in place in Ladybank.

Appendix III - Tolerance Tables

	Adjustment to Felling Coupe Boundaries	Timing of Restocking	Change to Species	Windthrow Response
FC Approval Not Normally Required	0.5ha or 5% of coupe – whichever is less	Planting up to 5 seasons after felling (allowing for fallow periods for Hylobius). For natural regeneration up to 10 planting seasons after felling.	Change within species group, e.g. conifers: native broadleaves	
Approval by Exchange of Email and Map	0.5ha to 2.0ha or 10% of coupe – which ever is first		Greater than 15% species change	Up to 5.0ha – if mainly windblown trees between 5.0ha to 10ha in areas of low sensitivity.
Approval by Formal Plan Amendment	Greater than 2.0ha or 10% of coupe	Delay in excess of that described above.	Increased native woodland component. Increase in native broadleaves and open/bog restoration	Greater than 5.0ha

Appendix IV - Land Management Plan Brief

IV/1.0 Previous plan objectives

See appendix II/2.0 – analysis of previous plan.

IV/1.1 Strategic Influence

The management of National Forest Estate is guided by The Forest Enterprise Scotland Corporate Plan (2017 - 2019), which identifies six key aspirations for the publicly owned forests:

- **Healthy: achieving good environmental and silvicultural condition in a changing climate;**
- **Productive: providing sustainable economic benefits from the land;**
- **Treasured: as a multi-purpose resource that sustains livelihoods, improves quality of life and offers involvement and enjoyment;**
- **Accessible: local woodlands and national treasures that are well promoted, welcoming and open for all;**
- **Cared for: working with nature, respecting landscape, natural and cultural heritage;**
- **Good value: exemplary, efficient and effective delivery of public benefits.**

IV/1.2 Key Issues and Constraints

- **High visitor numbers is causing issues with litter and dog waste.**
- **Regeneration of beech and western hemlock is outcompeting other desirable species in parts of the block.**
- **Beech seed is a favoured food for grey squirrel, which are now endemic throughout Fife with the exception of Ladybank forest.**
- **Tree diseases – Dothistroma needle blight (DNB) has affected much of the pine plantations in the forest.**
- **Access to the site for management operations is restricted by poor roading.**

IV/1.3 Aims of new plan

Aim	Objective	Actions and Prescriptions
Continue to manage the site in line with silvicultural practices to maximise the sequestration of carbon dioxide	Identify areas where understorey regeneration is not succeeding and plan accordingly to increase seedling establishment.	Make use of thinning, ground preparation and under planting to establish the next rotation crop.
Continue to manage the site in line with silvicultural practices to maximise the sequestration of carbon dioxide	Identify suitable long term retentions in areas where timber production is a low priority.	Monkstown wood and the Hazel coppice stand at the top of Heatherhall are potential candidates.
Continue to manage the site in line with silvicultural practices to maximise the sequestration of carbon dioxide	Manage larch stands to minimise the risk of infection from *Phytopthora ramorum*.	Consider removal of mature larch elements during thinning operations.
Continue to manage the site in line with silvicultural practices to maximise the sequestration of carbon dioxide	Ensure access for timber harvesting operations is adequate.	Identify necessary roads and loading areas.
Improve the wellbeing of the local population through recreational use of the site	Work to as a minimum maintain the current level of recreational access.	Maintain current provision of paths and car parking facilities.
Improve the wellbeing of the local population through recreational use of the site	Ensure that alternate access provision is identified where woodland management works make it unreasonable to keep an existing route or provision open.	Provide advanced notification of intended works and suggest alternative areas for forest users during operations.
Improve the wellbeing of the local population through recreational use of the site	Manage the relationship with the local community to minimise any potential conflict.	Continue to engage with and assist local forest user group.
Manage the forest for the sustainable production of timber.	Continue CCF practices laid out in earlier plans.	Develop thinning programme to develop all identified areas towards multi-aged stands.
Maintain and improve ecosystem services provided by the site. Particularly those in areas of open ground.	Manage the site for the benefit of the local red squirrel population.	Promote favourable food species for red squirrel.
Maintain and improve ecosystem services provided by the site. Particularly those in areas of open ground.	Improve open habitat adjacent to the railway line.	Plant in wayleaves to provide habitat diversification and landscaping benefits.

Aim	Objective	Actions and Prescriptions
Maintain and improve ecosystem services provided by the site. Particularly those in areas of open ground.	Consider opportunities to add new flora species to the site, particularly pollinators to support the Scottish Pollinator Strategy.	Investigate opportunities to create new wildflower areas in railway line wayleaves.
Provide forest users with the opportunity to explore the cultural heritage of the site.	Create a plan for heritage features within the block.	Ensure all heritage features are open and accessible.

Appendix V – Schedule of Works 2020-2024

Coupe Reference	Area (ha)	Operation	Description	Programme Year
56019	-	Road Maintenance	Upgrade turning circle and loading areas in coupe 56019.	2021/22
56019	-	Road Construction	Construct access with stacking and turning area for coupe 56019. Approx. length 50m + turning point. Cost £10-12k.	2021/22
56019	0.93	Respacing	Respace BL regen around pond.	2021/22
56017	3.04	Environment	Ensure SM buffer zones are kept open.	2021/22
56018	6.02	Respacing	Respace un-thinned pine regen.	2021/22
56019	29.25	Thinning	Mixed age pine stand containing more mature elements around the edge and younger crops in the centre. LISS thin to promote stability and open space for crown development. Remove larch during thinning.	2021/22
56001	-	Road Maintenance	Upgrade turning and stacking areas in coupe 56001.	2022/23
56004 & 56005	8.03	New Planting	Plant hedge/shrub species along railway line wayleave. Plant in groups to break up sight lines. Protect with rabbit netting if appropriate.	2022/23
56006	7.18	Felling	Clearfell un-thinned SP.	2022/23
56001	17.55	Thinning	Majority pine stand with broadleaf and other conifer elements. LISS thin to promote stability and open space for crown development.	2022/23
56015 & 56016	-	Road Maintenance	Upgrade road to access thinning coupes 56013 &56015.	2023/24
56015	40.08	Thinning	Majority pine stand with broadleaf and other conifer elements. Open gaps from windblow and create others in non-blown areas to create good light conditions for SP establishment.	2023/24
56013	7.08	Thinning	Young SP stand. 1st thin at same time as 56015. Look for badger sets before commencing works.	2023/24
56015	32.74	Respacing	Respace regen post thinning – favour pine and oak/birch where present. Otherwise clean and single beech regen to manage as understorey firewood crop.	2023/24
56015	7.34	Restock	Plant groups of SP in gaps created during thinning.	2023/24
56006	-	Fencing	Deer fence to protect SBI planting – approx. 1,100m	2023/24
56006	7.18	Restock	Replant with SBI	2023/24*
56016	25.14	Thinning	Majority pine stand with broadleaf and other conifer elements. Open gaps from windblow and create others in non-blown areas to create good light conditions for SP regen. Remove larch and Western hemlock during thinning.	2024/25
56016	25.14	Respacing	Respace regen post thinning – favour pine and oak/birch where present. Otherwise clean and single beech regen to manage as understorey firewood crop.	2024/25

Appendix VI – Links to Policy and Guidance Documents

UKWAS Certification Standard

- http://ukwas.org.uk/standard/background-and-purpose/
- http://ukwas.org.uk/wp-content/uploads/2018/05/UKWAS-4-Appendix-References-v1.0-FINAL.pdf

UKFS Standard

- https://forestry.gov.scot/sustainable-forestry/ukfs-scotland

Scotland's Forestry Strategy 2019-2029

- https://www.gov.scot/publications/scotlands-forestry-strategy-20192029/

FLS Corporate Strategies

- https://forestryandland.gov.scot/what-we-do/plans-and-strategies

Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Ladybank LMP Context

Author: U320933

Scale @ A3: 1:20,000

Date: 22/07/2019

Legend

- LBK BE seed trees
- Forest Roads
- Core Paths
- Water Pipelines
- Overhead powerline
- Underground powerline
- Gas Pipelines
- Blocks
- Scheduled Monuments
- Heritage Features
- Heritage Impact Zones

Dominant Regeneration

Species

- Beech
- Western Hemlock

Ancient Woodland

ANTIQUITY

- Ancient (of semi-natural origin)
- Long-Established (of plantation origin)
- Other (on Roy map)

0 0.075 0.15 0.3 0.45 0.6 Km

N

Scotland's National Forest Estate is responsibly managed to the UK Woodland Assurance Standard.

FSC www.fsc.org FSC® C123223 The mark of responsible forestry

PEFC PEFC/16-45-1003 Promoting Sustainable Forest Management www.pefc.org

Remains of iron age settlement.

WWII pillbox.

WWII tank defenses.

Remains of bronze age barrow.

Helen's Myre - Circular ditched enclosure.

Rossie drain: Significant local water feature forms southern boundary of Heatherhall wood.

WWII pillbox.

Evidence of ridge and furrow agricultural system.

Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Ladybank LMP
Management Coupes

Author: U320933

Scale @ A3: 1:20,000

Date: 22/07/2019

Legend

- Blocks
- Felled or fell year requires review (2011 - 2019)
- Phase 1 felling (2020 - 2024)
- Phase 2 felling (2025 - 2029)
- Phase 3 felling (2030 - 2034)
- Phase 4 felling (2035 - 2039)
- Phase 5 felling (2040 - 2044)
- Phase 6 felling (2045 - 2049)
- Phase 7 felling (2050 - 2054)
- After 2054
- Long Term Retention (Fell after Phase 3)
- Natural reserve
- Minimum Intervention
- Low impact silviculture
- Open
- Missing Data

0 0.125 0.25 0.5 0.75 1 Km

N

Scotland's National Forest Estate is responsibly managed to the UK Woodland Assurance Standard.

FSC www.fsc.org FSC® C123223 The mark of responsible forestry

PEFC PEFC/16-40-1003 Promoting Sustainable Forest Management www.pefc.org

Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Ladybank LMP
Future Species Composition

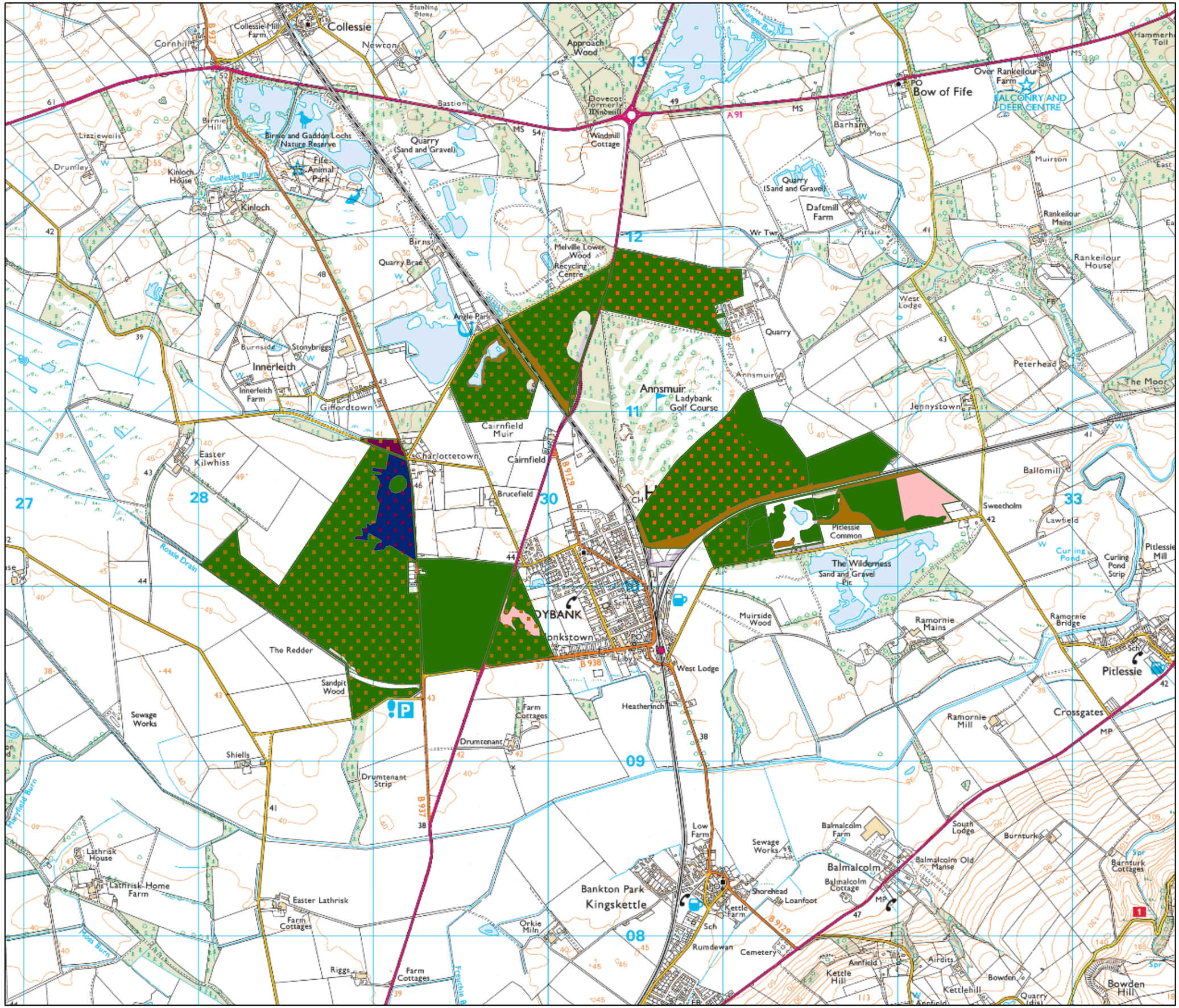
Author: U320933

Scale @ A3: 1:20,000

Date: 29/07/2019

Legend

- Blocks
- Sitka spruce (SS)
- Norway spruce (NS)
- Lodgepole pine (LP)
- Scots pine (SP)
- Larch sp (EL/HL/JL)
- Douglas fir (DF)
- Mixed/ other conifers (MC/XC)
- Birch (BI)
- Oak (OK)
- Ash (AH)
- Beech (BE)
- Mixed/ other broadleaves (MB/XB)
- Open land
- Species Mixture: Main colour = Dominant species
  Dots = Secondary species
  Sitka spruce with Birch shown here



Km
0 0.075 0.15 0.3 0.45 0.6

N

Scotland's National Forest Estate is responsibly managed to the UK Woodland Assurance Standard.

FSC www.fsc.org FSC® C123223 The mark of responsible forestry

PEFC PEFC/16-40-1002 Promoting Sustainable Forest Management www.pefc.org

Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Ladybank LMP
Recreation Features

Author: U320933

Scale @ A3: 1:20,000

Date: 07/05/2020

Legend

- Formal Parking
- Forest Roads

Waymarked Trails

- Alan Crawford Walk
- Red
- White
- Yellow
- Core Paths
- Scheduled Monuments

Visitor Zone

- Welcome
- Interactive
- Passive
- Blocks

0 200 400 600 800 1000 Metres

N

Scotland's National Forest Estate is responsibly managed to the UK Woodland Assurance Standard.

FSC www.fsc.org FSC® C123223 The mark of responsible forestry

PEFC PEFC/16-40-1002 Promoting Sustainable Forest Management www.pefc.org