



Forestry and
Land Scotland
Coilltearachd agus
Fearann Alba



Appendix I: Supplementary Information

2. Loch Katrine

Land Management Plan

2023-2032



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Appendix: List of maps

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- M18 Future Habitats and Species

Artist Impressions on concept: Concept# 1-11



Appendix I: Supporting Information

Reference the Forest Design Plan 2007 (Scottish Forestry File Ref: 033/CT/L/08 (15)), as well as the Integrated Catch Management Plan (ICMP) 2002 Appendix VI, for further information

[Loch Katrine Land Management Plan - Forestry and Land Scotland](#): FLS Consultation page

[Loch Katrine Land Management Plan \(arcgis.com\)](#): Story Board

1.0 The existing forest and land

1.1 History of the land holding

This plan will replace the previous Forest Design Plan (Scottish Forestry File Ref: 033/CT/L/08 (15) which has had approval from the 24th October 2008 to the 24th October 2013.

The Loch Katrine Land Management Plan (LMP) area (**Reference: M1 Location and Context & M2 Zone reference map**), sits in the heart of Loch Lomond and Trossachs National Park (LLTNP), the first national park formed within Scotland. The catchment area forms part of a strategically important water supply, which is managed by Scottish Water, supplying much of the central belt of Scotland.

This LMP will be the first revise of the original Forest Design plan (FDP), which was approved in 2008, as undertaken by Forest Enterprise Scotland (FES) at the time, now Forestry and Land Scotland (FLS). This first FDP proposed the undertaking of new woodland creation as well as the installation of recreation features, which formed part of a wider project, undertaken with a collaboration with other organisations. This project was a partnership with neighbouring landowners such as Glen Finglas, owned by the Woodland trust and located in the east, as well as to the west at Inversnaid, which is owned by the Royal Society For the Protection of Birds (RSPB). The project and partnership formed was part of the Scottish Forestry Alliance (SFA) and Heritage Lottery Fund (HLF) scheme, to create what is now called the 'Great Trossachs Forest'.

The Scottish Forest Alliance (SFA) and Heritage Lottery Fund (HLF) area covering the first project can be found as follows: **Reference: M5 Scottish Forestry Alliance (SFA) Phase #1 2055-2015**.

The Loch Katrine catchment, which includes Loch Arklet, is host to an Ancient Semi-Natural Woodland (ASNW) with a number of designations such as the Site of Special Scientific Interest (SSSI) and a Special Area of Conservation (SAC). The catchment has long been an attraction for its natural beauty, and in some areas this has been further recognised through a designation, as a National Scenic Area (NSA)

The catchment has a variety of land uses within its holding, as well as private businesses and local residential properties, as highlighted in the previous FDP and the Integrated Management Plan (ICMP) **Reference: Appendix VI-Forest Design Plan 2007**. Tourism and recreation are both an historical feature, as well as a growing industry within the Trossachs region. Although FLS have no



current aspirations to develop further recreation features, within the catchment, the current infrastructure will be maintained. FLS will continue to work with local businesses and the landowner to ensure this land is maintained and enhanced, so it continues to be the iconic attraction that it is known for by the public, well into the future.

The topography in Loch Katrine is rugged and elevation varies from around 115m above sea level at the Trossachs Pier, up to 729m at the summit of Ben Venue. Much of the catchment, in the upper elevations, currently exists as open space where it is proposed in this next phase of the project to develop and encourage woodland creation as well as undertake peatland restoration. The concept of woodland, which often made referenced to such areas as found in the lower lying Loch shore, which exist as a high forest structure within the Ancient Semi Natural Woodland (ASNW). This is a very different type of woodland and habitat, in comparison to the woodland habitat that could be found at a higher elevation, such as will be proposed in this LMP.

The mid to upper elevations (i.e. > 300m) are much more exposed to the climate conditions of the region as well to winter exposure, which contributes to a shortened growing season. Within the upper elevations the woodland that will eventually form could be described as a 'transitional woodland', phasing into a montane zone. This type of woodland forms a very different structure and habitat, in comparison to the lowland woodland found around the Loch shore. Therefore one could envision a much lower density woodland, with wind swept nature and a stunted form, taking on a fragmented and patchy structure.

Over a landscape scale, this will form a mosaic pattern with lots of open space between the woodland, forming a diverse and important habitat structure. One which is currently missing within Scotland. However, this type of transitional woodland can be found in many other neighbouring countries, such as Norway and other Scandinavian countries which have a similar geology, soils and climatic conditions. All which have woodland advancing into the upper elevations and hill tops.

This revised LMP will set out ambitious aspirations to contribute towards Scottish Government targets for native woodland expansion, as well as peatland restoration focused on carbon capture and storage. It aims to stabilize riparian corridors, so as to mitigate against active erosion in exposed channels, as well as to help reduce the effects of 'debris flows' or landslides; associated with sudden down pour rainfall events. These aims will help to improve water quality within the Loch, to create a sustainable volume of water within this reservoir for future supply, as well as to diversify, improve and restore native habitats.

Given the ongoing concern with the Ramorum disease, found in mainly larch trees, a programme to remove this species has been proposed. Location of which can be found within the Plantations on Ancient Semi Natural Sites (PAW'S). In particular, protection will continue to be afforded to the SACs and SSSIs and restoration of ancient woodland sites, to progress these areas back to native tree and other species. The control of non-native invasive species such as Rhododendron



and Sitka spruce will form an important part of the delivery operations. An effective deer management programme will be critical to the long term success of the project and nature reserve, so as to protect sensitive species and reduce the impacts on native habitats through herbivore pressure.

For further background information **‘Reference the Forest Design Plan 2007 (Scottish Forestry File Ref: 033/CT/L/08 (15)), as well as the Integrated Catch Management Plan (ICMP) 2002 Appendix VI.**

The below Ordnance Survey maps show the change in land use from 1863, through to the Scottish Forestry Alliance 2005-2015. They illustrate the land use change over the last 100+ years.

Figure 6: Ordnance Survey.



Figure 7: Ordnance Survey.

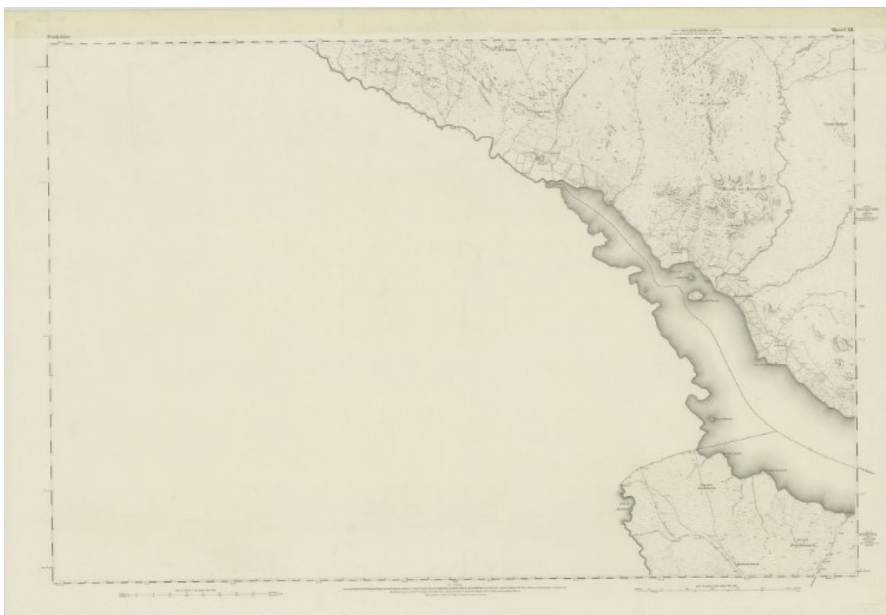




Figure 8: Ordnance Survey.

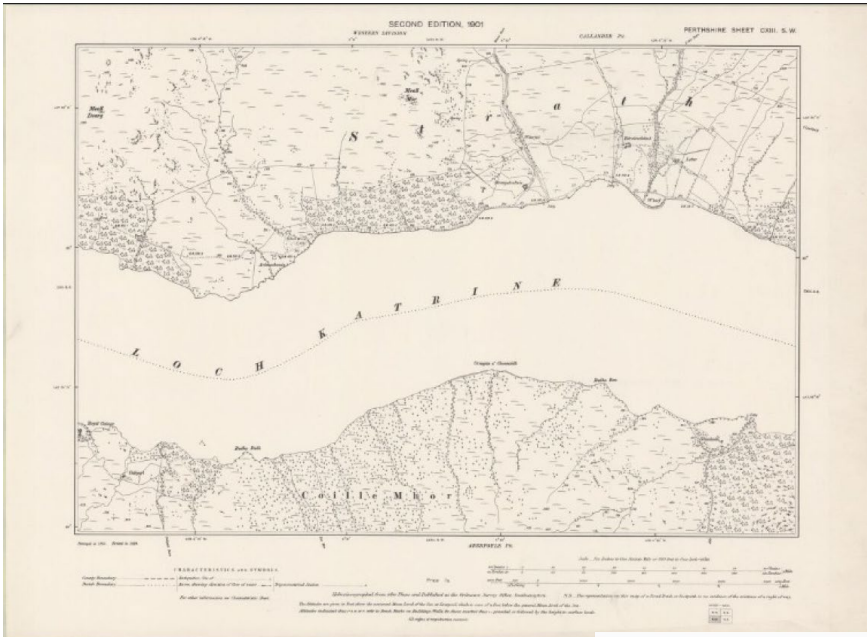


Figure 9: Ordnance Survey.



Figure 10: Ordnance Survey.





Figure 11: Ordnance Survey.

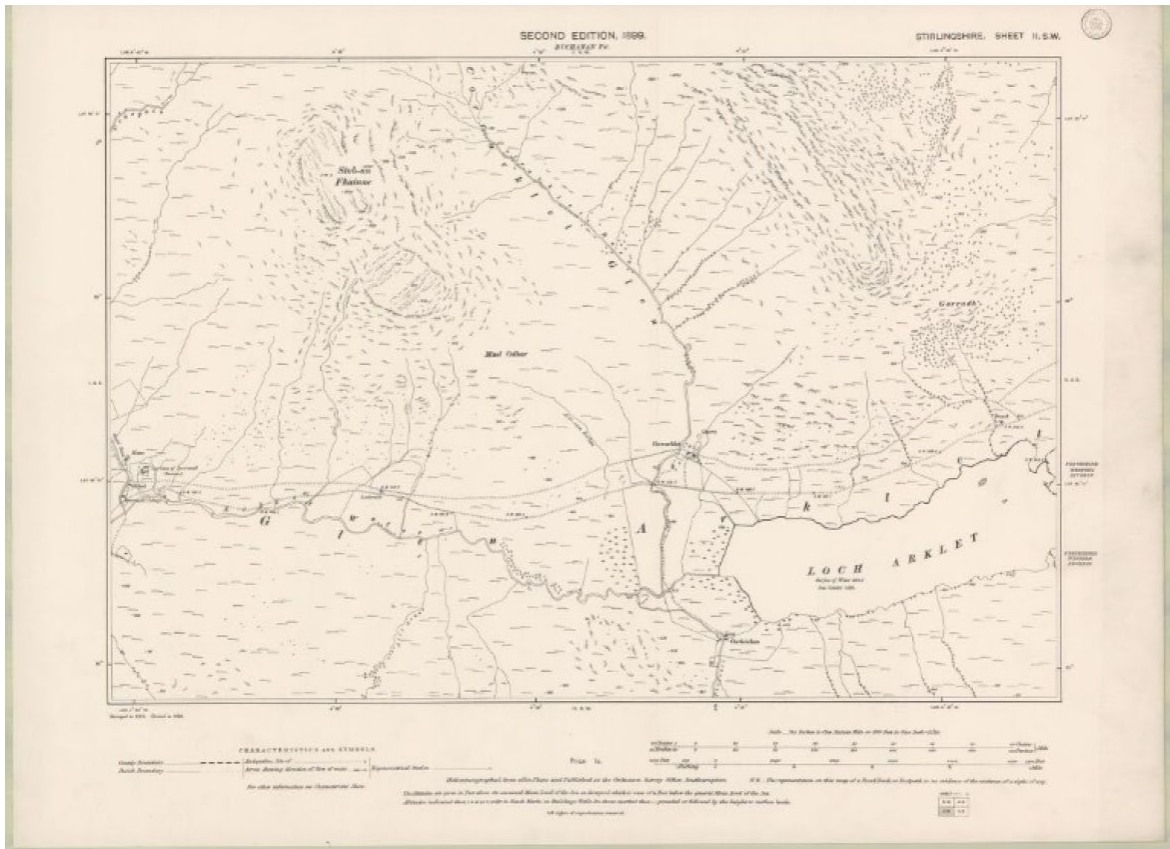
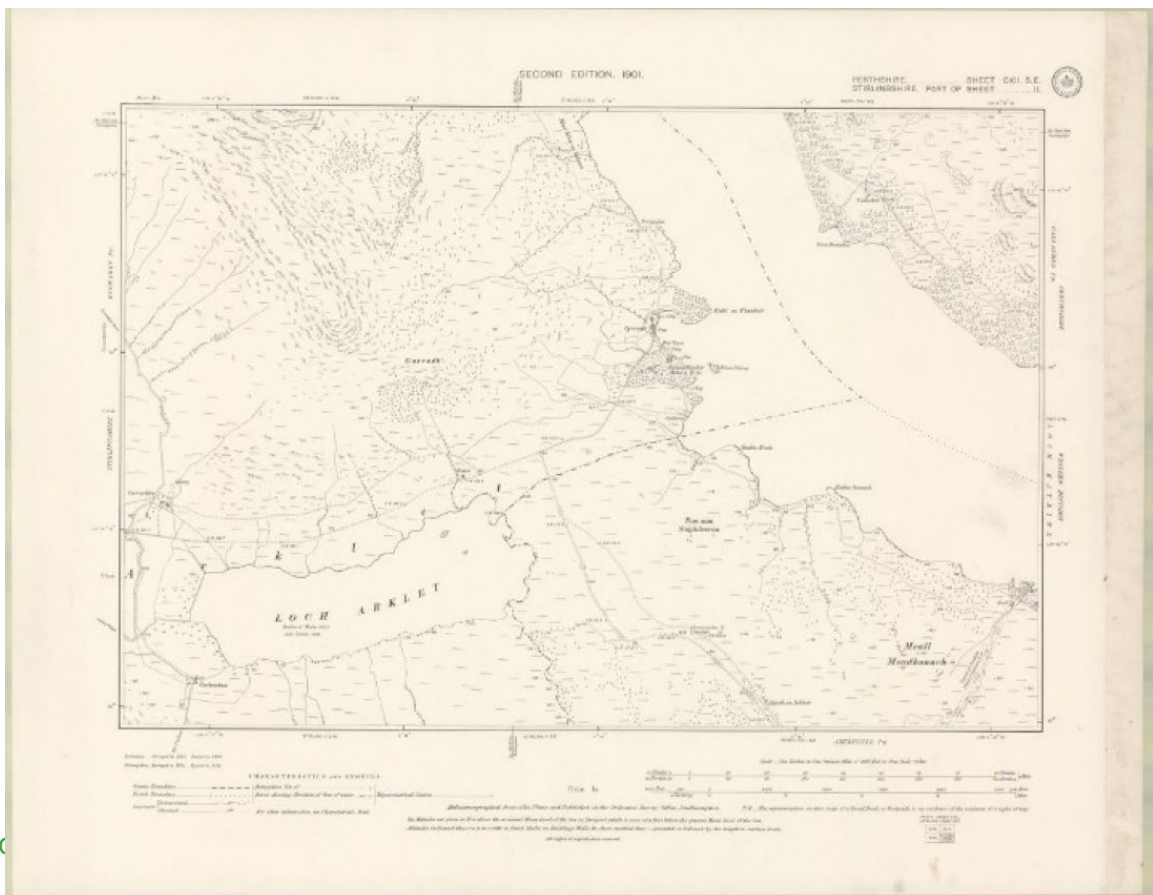


Figure 12: Ordnance Survey.





2. Analysis of the previous plan

The general objectives of the previous forest design plan were to expand the woodland cover within the catchment, using native tree species; which formed part of the Great Trossachs Forest partnership. The former coniferous plantations, associated with the Plantation on Ancient Woodland Sites (PAW'S), were also planned for removal. Accompanying this was a programme to improve the infrastructure, so as to facilitate the delivery of operations, as well as for public access; which had associated benefits for recreation and tourism.

Further detail and progress on the aims of the previous plan are provided below.

2.1 Aims and Objectives of the previous plan and achievements

Objective	Proposed Management Action	Progress to date 1-Little/No progress 2-Some progress 3-Progress as per LMP
Woodland creation	- Retention of existing water quality.	3-Scottish Water has reported a Water quality improvement over the recent 10 year period.
	- Creation of a native woodland corridor and linkage from Glen Finglas to Loch Lomond.	3-The south Katrine and South Arklet woodland creation has helped to develop this linkage, which has been further enhanced by natural regeneration which has supplemented this planting..
	- Expansion of the existing native woodland area.	3-The SFA woodland creation has increased to 1,120 ha (556 ha of direct planting, 437.8 ha of natural regeneration, Reference: M5 Scottish Forestry Alliance (SFA) ph#1 2055-2015.
	- Active management of the existing woodlands.	3
	- Increase in the floral and faunal biodiversity of woodlands.	3
	- Increase deer management to reduce numbers to sustainable levels;	2- Reference: Appendix XII Deer Management plan
	-Integration with the Loch Lomond and the Trossachs National Park's Woodland Framework.	3
Farming	- To ensure that the quality of Loch Katrine and Loch Arklet is retained.	2- The cattle grazing was undertaken with an onsite grazier. However, the grazing was no longer seen as viable and was removed.



Objective	Proposed Management Action	Progress to date 1-Little/No progress 2-Some progress 3-Progress as per LMP
	-To reduce grazing to a level which allows the maximum area of native woodland for planting/natural regeneration.	2-As below
	-To retain sufficient area of grazing to allow the retention of an economically viable farming operation.	2-Grazing was undertaken as part of the FDP period. However, this venture was ultimately disbanded.
	- To reduce grazing pressure within the agricultural area to maximise biodiversity.	2-Undertaken in grazing areas. With the cattle grazing management removed towards the end of the FDP, this has declined. Molinia now dominates much of the open space and is transitioning to later stages of succession. Tree regeneration and native shrub species, such as heather, are starting to move into areas.
Tourism	-To retain the existing water quality.	3-Water quality has been reported to have improved over the last 10 years (as reported from Scottish Water).
	-To develop open access for the general public and appropriate supporting recreation facilities in sympathy with the natural environment of Loch Katrine and Loch Arklet.	3-The primrose walk, Old Military walk, as well as the Arklet route leading to the Royal Cottage.
	-Create footpaths within the catchment, which are sympathetic to the landscape and maximise use by integrating with other recreational providers.	3-The Old Military footpath and the primrose pathway were created with Heritage Lottery Funding (HLF)
	-Develop a close working relationship with the Sir Walter Scot Trust (SWST), looking for opportunities for joint visitor enhancement.	3-The Art and Literature trail (undertaken with HLF funding) is used by many which visit the Loch in association to the SWSSS
	-Develop linkages with FCS Queen Elizabeth Forest Park, National Park, West highland Way, National Cycle Network and other rights of way and neighbouring estates.	3
	- Develop an Interpretation Plan, which will enhance the visitor experience.	3-The Heritage Lottery Fund (HLF) helped finance the production of the 'Art and Literature trail' located at key points around the Loch.
	- Work with the Community to ensure they can benefit from the increased visitor's numbers.	2
Nature Conservation	- Develop woodland and biodiversity targets by which our management regimes can be assessed	3



Objective	Proposed Management Action	Progress to date 1-Little/No progress 2-Some progress 3-Progress as per LMP
	- Reduction in grazing density to allow the development of the natural flora.	3- In many areas the native vegetation (Heather and Blaeberry) are returning. Significant deer and livestock pressure from the northern boundary, has limited the progression along the north shore from Glen Gyle to Brenachoille. However along the south Katrine shore and Loch Arklet areas there has been significant development.
	-Manage old growth stands with a minimum of intervention.	3
	- Allow the development of a full altitudinal range of native woodlands.	2-Herbivore pressure (Deer, sheep and goats) remains a limiting factor to this. As well as a lack of seed source in the upper elevations.
	-Restriction of native woodland establishment to very low density in Ornithological Sensitive areas.	3
	-Contribute to development and delivery of the objectives with LL&TNP, the UK Bio-diversity Action Plan and Scottish Wildlife Sites.	3
	- Explore and develop opportunities to augment deadwood.	3-A proportion of the PAW'S plantation, notably at Letter and Brenachoille were killed standing and retained at standing deadwood.
	- Look for opportunities to restore ancient woodland sites previously planted with conifers.	2-Only Michelle's point was successfully removed. The Glen Gyle, Old School House and Primrose blocks remain.
	- Survey and safeguard the cultural heritage sites within the catchment.	3-An archaeological survey was undertaken. Heritage features such as the Clan McGregor graveyard were maintained and promoted with signage as part of the 'Art and Literature trail'.



Objective	Proposed Management Action	Progress to date 1-Little/No progress 2-Some progress 3-Progress as per LMP
	- Remove non-natives: SS regeneration and Rhododendron	<p>2- Rhododendron: Brenachoile and Michelle’s point have been successfully tackled with direct control. A collaboration with the LLTNP has helped to push this objective forward in the catchment and working with the residential owners of the associated properties. There is ongoing work at Glen Gyle, which has Rhododendron spread from the Glen Gyle house area, as well as around Stronachlachar (sourced from private residential housing).</p> <p>Sitka spruce: The conifer plantations at School House, Glen Gyle and Primrose are seeding out invasive Sitka spruce within the catchment. A removal of the coniferous plantations on PAW’s sites is required with a programme of Sitka spruce felling of all regeneration. There is also some regeneration of Sitka spruce on the south Katrine area from the neighbouring FLS land within Loch Chon. A removal of the this advanced regeneration, as well as a coniferous block located to the shoulder of Ben Venue, would help to mitigate this advancement.</p>

Table 15: Progress on previous LMP objectives

2.1.1 How the previous plan relates to today’s objectives

This new revision of the plan builds on some of the previous objectives, originally set out in the FDP 2008, which have either not been concluded, are requiring further work, or to change or reduce other aspects of intended aspirations of the project. It also seeks to set out new objectives in light of government policies **See main document Section 5.0: Plan objectives.**

3.1 Background Information

3.1 Physical site factors

3.1.1 Geology, Soils and landform

There are no designated geological sites in the catchment and no areas of particular geological interest have been identified. The catchment owes much of its character to glaciation including the deep floor of the Loch that extends to a maximum depth of 150m

Loch Katrine lies close to the boundary of the Highlands and Lowlands. Within the Loch Katrine catchment, which includes Loch Arklet, the geology extends from the Ben Ledi Grit formation –



Psammite and semipelite metamorphic bedrock formed between 635 and 508 million years ago, during the Ediacaran and Cambrian periods. As well as Loch Katrine Volcaniclastic formation- Metasandstone and metamudstone. This metamorphic rock formed between 635 and 541 Million years ago during the Ediacaran period.

Bedrock Geology:

- North Britian Siluro-Devonian Calc-alkaline Dyke Suite-Felsite. Igneous bedrock formed between 443.8 and 358.9 million years ago during the Silurian and Devonian periods.
- North Britain Siluro-devonian Calc-alkaline Dyke Suite - Lamprophyres. Igneous bedrock formed between 443.8 and 358.9 million years ago during the Silurian and Devonian periods.
- North Britain Siluro-devonian Calc-alkaline Dyke Suite - Felsite. Igneous bedrock formed between 443.8 and 358.9 million years ago during the Silurian and Devonian periods.
- Central Scotland Late Carboniferous Tholeiitic Dyke Swarm - Quartz-microgabbro. Igneous bedrock formed between 330.9 and 298.9 million years ago during the Carboniferous period.
- South Of Scotland Granitic Suite - Diorite, pyroxene-mica. Igneous bedrock formed between 427.4 and 393.3 million years ago during the Silurian and Devonian periods.
- Southern Highland Group - Metavolcaniclastic sedimentary rock. Metamorphic bedrock formed between 1000 and 499 million years ago between the Tonian and Cambrian periods.

General overview of superficial deposits

The surface geology forms a range of Till, Devensian-Diamicton superficial deposits. As well as hummocky Glacial deposits –Diamicton, sand and gravel formed up to 3 million years ago in the Quaternary period. These sediment deposits are Glaciogenic in origin through detrital processes (created by the action of ice and meltwater).

Areas around Loch Arklet have Alluvium origins- composed of clay, silt, sand and gravel superficial deposits, which have from fluvial origins of a detrital nature, which range from a coarse to fine grained texture and form beds and lenses of deposits reflecting the channels, floodplains and levees of a river.

Soils

Reference: M11-Soils. Soils in the area are all of the Strichen Association with the exception of areas of blanket peat located on the higher ground to the north of the catchment. The eastern end of the catchment is characterised by brown forest soils and the lower ground along the south shore and west-end of Loch Katrine, by humus iron podzols and brown forest soils. The lower land around Loch Arklet is characterised by peaty podzols, peaty gleys and peat.

The rest of the north shore of Loch Katrine (Brenachoile to Portnellan) is characterised by gleys and podzols. Peats are found at higher elevations.



Landslides and rock slope failures (RSF)

The Catchment falls within the largest cluster of 'rock slope failures' in mainland Scotland. There are several significant sites such as Glengyle. This site above Glengyle House is the largest but least obvious RSF around Katrine, extending over 0.5 km². It is of considerable scientific interest, as one of the 60 largest RSFs in the Highlands, with a varied and intricate array of features. If the failed mass were to collapse completely, it could affect Glengyle House and the shore road, and enter the head of the loch. In fact, this RSF probably occurred around 8-10,000 years ago, and is almost certainly now stable other than for minor rockfalls and soft debris slumps.

The An Garadh site above the Allt a' Choin side valley is smaller, with the largest feature being a slipped megablock 20 m high 10 m wide and 50 m long, one of the largest encountered in the Highlands. The Meall Mor site has several bold RSFs which occur on the east side of the spur above Strone. At the south end, a 200 m by 200 m rock mass has slipped out to split the ridge with a broad 'graben' (rift) 35 m wide and 15 m deep.

3.1.2 Current climate and exposure

The Loch Katrine catchment is representative of an upland catchment and the site is generally classified as cool and wet with exposure ranging from moderate on the lower southern extent of the site to high and even severe in the most elevated areas of the site, near to the northern site boundary.

Annual precipitation over the catchment increases with altitude and from east to west, varies from about 1760 millimetres per annum on the lowest eastern ground to about 2600 millimetres per annum on the highest ground. These high levels of rainfall make it an ideal water supply catchment. Snow lies frequently above 350m between September and May. Exposure varies from sheltered to severe with increasing elevation and aspect, with a prevailing south westerly wind.

3.1.3 Hydrology

The catchment is fed by a network of watercourses and burns, which feed into Loch Katrine and Loch Arklet, reservoirs forming as part of Scotland's strategic water supply, for the Central belt. **Reference: M15 – Watercourse (Riparian Corridor) and Appendix VIII Hydrological report.**

3.1.4 Water

The development of Loch Katrine as a water supply to Glasgow commenced in the 1850's and was opened by Queen Victoria in 1859. A further major expansion occurred in the 1890's.

The system comprises a series of five lochs/reservoirs, with Loch Katrine, Loch Arklet and Glen Finglas Reservoir used for supply, fed through two aqueducts to two raw water reservoirs, Mugdock and Craigmaddie, which are located at Milngavie, 27 miles away. A new water treatment works and associated water storage reservoir in the vicinity of Milngavie, designed to treat water from Loch



Katrine, is being built in order to comply with the EC Drinking Water Directive brought into Scottish Law under the Water Supply Water Quality (Scotland) Regulations 1990. It is uncertain when this will be completed.

The Loch Katrine and Loch Arklet catchments have been retained within SW’s ownership. This ensures that SW has control over any activities, which can affect the quantity or quality of the water supply.

Forest Operation	Watercourse		Water Supply
	<2m wide	>2m wide	5-50m
Buffer Width	2-10m	2-20m	
Chemical pesticides	Not required for woodland creation or restock. Only in the use of Eco-Plugs for a target application to non-native species control.		
Fertilisers	Only hand application of inorganic fertiliser. Scottish Water approval and guidance is required before specific locations can be considered within the catchment for woodland creation.		
Ground preparation	Brush raking for restock sites. No mounding to be undertaken within the catchment.		
Drainage	Not permitted		
Harvesting	Watercourses must be only crossed with the use of a bridge.		
Roads	Roads should be kept out of buffer areas, unless there is a requirement to cross the feature. Appropriate crossings to be undertaken with guidance and approval from Scottish Water within the catchment		

Table 16: Permitted activities with buffers around watercourses and water supplies for different forestry operations

Reference: Managing Forest Operations to Protect the Water Environment, UK Forestry Stand-Forest and water guideline.

3.2 The existing forest

3.2.1 Species, age structure

Table 15 – Loch Katrine zoning. Figures 1,2 and 3. Reference: Section 7 Land Management proposals, and Section 4- Existing land holding show the percentage make-up of the various land use with the catchment, referencing the potential woodland creation.

The woodland creation proposed in this LMP can be **Reference: M16.0-17.2 and M15 Watercourse (Riparian corridor).**

3.2.2 Access

Access takes the form of public and private tar roads. The Lochard road from Aberfoyle reaches the catchment on the western side of the Loch, nearest to Loch Arklet. This road then connects further,



within the catchment, to the east so as to reach Stronachlachar. If taken to the west the road connects to Inversaid; terminating at the Loch shore. On the north shore from the Trossachs side this private road takes you to Glen Gyle and onto Stronachlachar, forming a ring road.

Forestry roads exist at Glen Gyle (Eve's road) as well as on the south side of Loch Katrine extending from the private tar road, which passes the Royal cottage and ends at Culligart. The 4x4 forestry road then travels along the south shore from Culligart ending at Glasahoile.

The primary focus for recreation locally can be found at the Trossachs pier in the east and Stronachlachar pier in the west, delivered by the Steamship and its carpark, with interpretation boards, plaques and memorials. Access along the Loch shore can be taken via the North shore road, which is used by cars associated with Scottish Water and for a handful of residents.

Mountaineering groups access the hill tops for the spectacular views of the surrounding landscape. Views which will remain open, without the presence of trees, for the current generation at least. The development of an upland woodland, which will progress naturally over time, will aspire to have many of the hill tops in the catchment with some form of scrub or tree cover. However, this tree cover will be in most cases a stunted and twisted form, taking a considerable time to develop. Therefore the risk of blocking views from the hill tops in most of the surrounding hills is not perceived to be a concern, given that most of the key viewpoints are on bare rock and skeletal soils, which are unlikely to support anything other than a dwarf 'tree' or shrub.

As with all FLS woodlands, Loch Katrine will be open to public access in accordance with the Scottish Outdoor Access Code, 2005. Occasional area closures or diversions may be put in place to manage public safety around forest operations, such as with the PAW'S restoration. The affected areas and duration of such closures will be kept to a minimum.

3.2.3 Operational Access

Operational site access is gained directly from the Trossachs pier, located in the east of Loch Katrine, as well as from the Stronachlachar pier, located in the west. The existing forest road network will be maintained. This road network will form the basis of the existing recreational path system, of which no further plans are intended in this LMP.

3.2.4 Plantation on Ancient Woodland Sites (PAW's)

3.2.5 Long Term Retentions

Scots Pine and Douglas fir are located within stands towards the Trossachs pier and can be **Referenced in M7.0 & M7.1.1-5 Management maps**, which are associated with the PAW's restoration sites.

The Douglas-fir stand forms a cathedral appearance along the north shore road and is valued by many visitors. For this reason the Douglas-fir will be retained long term. In the upper levels of the Douglas-fir



stand there are signs of windblow, with historic openings, which in areas are gradually creating an open forest structure. This will be allowed to develop long term, so as to reduce the density of the stand down to a more open structure. Over time natural regeneration of broadleaved trees will occur, as well as through the introduction of other broadleaved tree species or shrubs, which are currently missing within this block. This will therefore restructure the stand over a long transition, using natural processes, so as to retain the Douglas fir and the role which forms an aesthetic function. Allowing the remaining Douglas-fir trees to grow on into old age and achieve a cathedral appearance.

The Scot Pine stands will be retained within the PAW's sites, along with the odd Norway spruce. These conifer trees provide a good habitat of squirrels and other species as a food source. As both species conifer are not an aggressive colonizer through natural regeneration, with Scot Pine also being native. The risk of spread from Norway spruce is perceived to be minimal and also manageable that a small retention of this species within the PAW's sites is perceived to be beneficial for the wider ecosystem.

3.2.6 Pathogens

3.2.5.1 Dothistroma Needle blight (DNB)

DNB causes a premature needle defoliation, resulting in a loss of yield and, in severe cases, tree death. The catchment has a number of mature Scot Pine from historic plantings at the start of the 1900's, as well as more recent planting in the SFA woodland creation project. Although DNB outbreaks have occurred in the central belt, it is not regarded as a risk as the pine component is a small percentage of the woodland creation, which is predominately native broadleaved.

3.2.5.1 *Phytophthora ramorum* (*P.ramorum*)

P. ramorum is a fungus-like pathogen of plants which is causing extensive damage and mortality to trees and other plants in parts of the United Kingdom. Of particular concern associated with this pathogen is the tree species larch, which has been shown to be more vulnerable and at risk from infection with associated mortality. Currently there are no infections detected within the larch stands at Loch Katrine. However, the proximity to infected forestry blocks on the west coast, will likely result in an infection making its way into the catchment very soon.

3.3 Landscape & Land use

3.3.1 Landscape character

Loch Katrine and Loch Arklet sits in the heart of the Loch Lomond and The Trossachs National Park. The wider landscape at Loch Katrine & Loch Arklet has been altered through intensive land management over long period of human history. Most recently, the removal of the sheep grazing herd and woodland creation scheme, funded by the Scottish Forest Alliance and Heritage fund. Which developed the woodland creation in the lower lying and mid-levels of the catchment.

In this phase of the project (PH #2) the woodland creation will be focused on the mid to upper levels of the catchment, as well as within the riparian corridors.



Popularized in the 18th century by writers and poets the area remains a draw for thousands of visitors each year. The value of this wild and rugged landscape of mountains, lochs and forest is recognized in the many formal designations and features:

- its central location in the Loch Lomond and The Trossachs National Park
- as a key tourist destination for the Loch and the ‘Sir Walter Scott Steamship’
- the Trossachs National Scenic Area

Loch Katrine and Loch Arklet falls within the ‘High Summit’, ‘Straths and Glens with Lochs Valley’ and ‘Rolling Forest Plateau’ landscape character types, as defined by Scottish Natural Heritage. The former two landscape types are broadly described as a large scale landform, with distinctive upland character created by the combination of elevation, exposure, smooth plateau landform and moorland vegetation.

Further details can be accessed directly from Scottish Natural Heritage at:

<https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions>

The new woodland will be characterised by high proportions of native broadleaf, native shrub species and open areas in the higher elevations relating to priority open habitat. The landscape visualisations illustrate the key viewpoints that have been considered in the design and how these will be enhanced by woodland creation on site.

The local FLS planning team and contracted landscape architects have worked together to ensure that the new woodland design is in-keeping with and complimenting the local landscape. This has involved joint site visits, landscape forces assessment and scenario testing via visualisation software. **Reference: Section 7.5.7 Landscape and Appendix VII- (LVRDR report & LVRDR Appendix).**

3.3.2 Visibility

Loch Katrine And Loch Arklet are prominent in terms of visibility. There are many viewpoints which have been considered in the planting design. These include a view from a section of the Loch Arklet shore along the Loch looking towards the Arrochar Alps. The following visualisations help to illustrate how the mature forest may look from both of these viewpoints.

Design considerations have also been made with regards to the Overhead Powerline located within the Glen Gyle, as part of the ‘VIEW’ project to mask the hard infrastructure, as well as the Eve’s road.



The proposed native woodland and habitat enhancement should complement the visual and recreation experience by:

- Emphasis of diverse landscape character by appropriate design
- Enhancement of visual and ecological transition between valley floor and open hill
- Reinforcing the timeliness of the setting by minimising visual intrusion of development
- Detailed planting design and woodland management proposals to enhance large scale and closer views and local features

3.3.3 Neighbouring land use

The surrounding land use predominately consist of a matrix of forestry, upland grazing and deer shooting. There are dotted private ownerships within the catchment itself, which form both residential as well as holiday retreats.

The two most notable forest blocks to the north are Blaircreich. To the east, The woodland Trusts Glen Finglas. FLS forestry blocks (Achary, Loch Chon and Loch Ard) dominate to the east and south, extending into the west with the Ptarmigan on the shore of Loch Lomond. Comer estate and RSPB are then located to the west.

3.4 Biodiversity & Environment

3.4.1 Priority Habitat & Species

Priority Habitat and species are protected under the UK biodiversity Action Plan (UKBAP). FLS policy notes this and aims to protect, enhance and expand these habitats where appropriate. There are a broad range of habitat and species types within the plan area, outlined in Appendix which have been listed below:

FDP: Phase 1 survey information

The Forest Design Plan provides information for the whole of the Loch Katrine catchment. Phase 1 is limited in its ability to identify Priority Habitats and this is because the data provided is limited to the broad habitat/vegetation community type with no indication of the value of the habitat.

A National Vegetation Classification (NVC) Survey was undertaken for the areas covered by the WGS, i.e. Stronachlachar, Glasahoile, Ben A'an, Primrose Hill, Schoolhouse, Boathouse and Glen Gyle Woods.

LMP: Phase 2 survey information

A further Open habitat survey was undertaken to identify woodland creation potential throughout the catchment **Reference: M13: Open habitat survey and peatland habitat**. This was specific to areas that were not covered in the Phase 1 survey, which highlighted the need to look at the open habitats within the mid to upper elevations of the catchment. Potential woodland creation areas were assessed based on identifying primarily acid grassland habitat, as well as to identify and consider priority Open habitat and 'Ground Water dependent Terrestrial Ecosystems' (GWDTE) in adjacency.



Category	Associated Scottish Biodiversity List Habitat
LBAP Habitat – Wet Woodland, Upland Oakwood	Upland Birchwood, Upland Oakwood
UKBAP & LBAP – Blanket bog	Blanket Bog
UKBAP & LBAP species – Soprano Pipistrelle bat, water vole	
UKBAP species - Juniper	

Table 17: Loch Katrine Priority Habitats and Species.

NVC Code	Annex 1 Habitat
H10, H12, H18 and H21	4030 European Dry Heaths
M15	4010 North Atlantic Wet Heaths with <i>Erica tetralix</i> (where peat depth <0.5m) Blanket Bog (where peat depth >0.5m)
M16	4010 North Atlantic Wet Heaths with <i>Erica tetralix</i>
M1, M2, M17, M19, M20 and M25 (where peat depth >0.5m)	7130 Blanket Bogs

Table 18: Annex I Habitats and Corresponding NVC Communities

NVC Code	NVC Community Name
M15	<i>Trichophorum cespitosum</i> - <i>Erica tetralix</i> wet heath
M25	<i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire
U6	<i>Juncus squarrosus</i> - <i>Festuca ovina</i> grassland
M6	<i>Carex echinata</i> - <i>Sphagnum fallax/denticulatum</i> mire
M16	<i>Erica tetralix</i> - <i>Sphagnum compactum</i> wet heath
M23	<i>Juncus effusus/acetiflorus</i> – <i>Galium palustre</i> rush pasture
U16	<i>Luzula sylvatica</i> - <i>Vaccinium myrtillus</i> tall-herb community
W4	<i>Betula pubescens</i> – <i>Molinia caerulea</i> woodland

Table 19: GWDTE communities



SEPA has classified a number of NVC communities that have potential to be dependent on groundwater. Wetlands or habitats containing particular NVC communities are to be considered GWDTE unless further information can be provided to demonstrate this is not the case.

Designation as a potential GWDTE does not infer an intrinsic biodiversity value, and GWDTE status has not been used as criteria to determine a habitats respective conservation importance. There is however a statutory requirement to consider GWDTEs and the data gathered during the NVC surveys has been used to inform this assessment.

Using SEPA's guidance, **Table 19 above** shows which communities recorded within the survey areas may be considered GWDTE. Those communities which may have limited (moderate) dependency on groundwater in certain settings are marked in yellow and NVC communities recorded that are likely to be considered high, or sensitive GWDTE in certain hydrogeological settings, are highlighted in red.

Woodland creation, as undertaken through active tree planting, will be avoided in areas which have been identified as 'priority open habitats' or containing 'GWDTE'. It should however be recognised that a reduction in the herbivore pressure long term, to reduce browsing pressure, will permit a recovery of the native vegetation. Open habitats which have been maintained by intensive grazing pressure will develop over time into different vegetation types, through natural successional processes. Indeed many current open habitats, identified as priority habitats were likely once woodland, such as with the W17 which can be found in many places currently as a U5 habitat. As a result of intensive land management practices, undertaken in the past, these long term effects have formed a reflective plant community (commonly associated with over grazing pressure and degraded soils). Active planting will not be undertaken within these habitats, but should woodland develop in these open habitats, over time, they will be allowed to naturally transition into a variety of woodland types. Over long time scales the habitat may change numerous times, moving from woodland back to open habitat and vis versa.

The key concept in this LMP, i.e. the long term vision, is to allow natural succession to take its course throughout the catchment, with natural processes playing out over long time periods. To form a variety of habitats, increasing diversity, for the benefit of the environment.

3.4.2 Ancient Woodland Management

Ben A'an & Brenachoile Woods SSSI, together with the nearby Craigmore and Cuilvona Woods SSSI, have been designated a Special Area of Conservation under the collective name of **Trossachs Woods (SAC)**.

The existing native woodlands at Loch Katrine have been highlighted in the previous plan as in need of management. Within the catchment there is approximately 668 ha native broadleaved woodland in management, 65ha of this is considered to be Ancient Semi natural Woodland (ASNW). If the former restock blocks at primrose and other are included this increases to 817 ha of native woodland.

The broad-leaved woodlands are divided into the following broad groups. Birch Woods with a marshy or peatland ground flora, Upland Oak-Birch Woods with a dry, acid ground flora. Locally, there are examples of Upland Mixed Ashwoods or base-rich woods associated with local enrichment on steep gorges/slopes.

The lower slopes of areas such Brenachoile woods and the roadside strip beside the loch include some really large old oak trees previously standards with large crowns. It is assumed these trees were opened



up by thinning after the practice of coppicing ceased. On the steeper less accessible slopes the oak trees are smaller, growing closer together with dense closely spaced canopies with poorly developed crowns.

Despite the woodlands at Ben A'an having a long history of grazing by sheep and cattle, yet the woodland has developed in a natural way. A number of different grazing regimes and also complete exclusion must be considered to assess the best method of maintaining these woodlands long term.

Rhododendron: In areas such as Brenachoile woods, one of the biggest threats will be rhododendron especially where it is spreading from the estate grounds of Brenachoile Lodge, have been treated. The Stronachlachar areas, in particular Sophie's island has recently been treated in 2022. The principle chemical used to treat this problem has been Glyphosate, with a previous technique of over-spraying bushes up to 1m in height and spraying onto cut stumps for larger bushes, which have an associated cut and burn technique to remove excess branch material. This method increase the chance of chemical run-off into the water supply, as well as the risk of fire, which has occurred in the past. The current research suggests that stem injection of the large bushes is very effective and this will therefore be the preferred method used wherever possible moving forward.

Sitka spruce control: Where blocks are near conifer stands small numbers of non-native are causing concern, principally where Sitka spruce are re-seeding. This will be removed through a number of methods such as wrenching or over spraying young material. Bushes above 1m will be cut and the stump sprayed or stem injected. The principle chemical used will be Glyphosate.

3.4.3 Other notable species

In preparation of this plan a breeding bird survey was carried out at Loch Katrine. The results are detailed in **Appendix VIII**.

Flora: Reference: **Appendix IX**

- Alpine clubmoss *Diphasiastrum alpinum*: This species is rare and only found one location in North Katrine on an old Quad track. It appears the creation on the quad track has created conditions suitable for this species. Wither is exists elsewhere in the catchment, is still subject to identifying other populations; but it is presumed likely. The creation of other quad tracks on site, although minor, may be beneficial for this species in particular.

Fauna

- Deer: Assessment of deer population & counts have been undertaken by an independent consultant Strath Caulaidh. Detailed population information will be provided within **Appendix I - Section 3.4.5 Wildlife Management**.
- Wild Goats: there are reports and sightings of wild goats from Loch Lomond and it is likely that they are present in the catchment.
- Badgers: Records in the area and identified setts.
- Bats : Loch Katrine contains at least four species of bats: Pipistral, Long-eared, Natter and Daubenten's. FLS are involved in one of the largest monitoring records within the UK..
- Otters: Are noted for passing through the catchment



- Water vole: Noted in a few locations within the catchment

FLS appointed Anderson surveyors to conduct a bird survey report in connection with the proposed LMP for Loch Katrine and Loch Arklet. A breeding bird survey was required to ascertain the likely impact of forestry on breeding birds and habitats with particular focus on assessing the sites potential to support protected species throughout the course of the LMP period. [Reference Appendix IX Breeding bird survey and Black Grouse and Golden Eagle report](#), details the various species present within the catchment. [Reference the Forest Design Plan 2007 \(Scottish Forestry File Ref: 033/CT/L/08 \(15\)\)](#), as well as the [Integrated Catch Management Plan \(ICMP\) 2002 Appendix VI](#), for further information.

Notable Bird species:

- **Black Grouse (*Lyrurus Tetrix Britannicus*):** [Reference: Appendix I Section 3.5.6 conservation grazing](#)
Lek areas will be buffered with a **50m zone** to ensure no woodland creation planting will take place within. Further mitigation and or advice will be sought from the environmental FLS team, with operational detail specified at the workplan stage process.
- **Golden Eagle (*Aquila chryaetos*):** [Reference: M16.2 – Golden eagle considerations, M16.3 – Fencing zones, GET Model, Golden Eagle Buffers example](#)

The research indicates that Golden eagles prefer open country with old, widely spaced trees and linked large open areas. The density of breeding eagles is generally low in forested landscapes but productivity can be relatively high in old forests where medium-sized prey is more abundant. The main effect on eagles of increased native woodlands in Scotland is related to prey abundance. Live prey will decline in proportion to the amount of area covered by new native woodlands and the supply of carrion will be virtually eliminated. Until a landscape-scale network of 'mature' native woodland is established, which has areas of large, widely spaced trees and some open ground, current guidance on where to establish commercial conifer forests is broadly applicable to new native woodland when considering its impact on eagles and their prey. Because new native woodlands are likely to be small in relation to eagle home range sizes, they should be managed within the context of surrounding forests and open ground. Forests and woodlands can extend the breeding range of golden eagles by providing suitable nesting places in areas where these are absent, but of course these new nest sites in trees will only develop after many years. Incorporating suitable design features into new woodlands may moderate their impact. In the best case, declines in breeding density as a result of more woodland cover will be partially offset by an increase in productivity — and perhaps an extension of the breeding range. However, without landscape-level management of woodlands, as well as complementary management of large herbivores within the forest and on adjacent open ground, the benefits in terms of increased productivity will not be realised.

To deliver improvement to eagle ranges from native woodland cover the following management of open ground will be adopted:



- Develop wide ecotones (low tree density with <40% canopy cover when mature) between open areas and woodland.
- Aim for low-density deer populations. Some grazing by deer can contribute to plant diversity and improve habitats for potential eagle prey.

Source: Forestry Commission Scotland Information Note 71, M.J.McGrady and S.J.Petty.

- Reference: M16.2 – Golden eagle zones, M16.3 –Fencing zones, GET Model, Golden Eagle Buffers example. Appendix IX Breeding bird survey and Black Grouse and Golden Eagle report,



Figure 13: The above is an example of an imaginary landscape, which has groups of seed islands scattered throughout. The seed islands are varying sizes from 1ha to 4 ha, or as small as a 10m x 10m

Waders

Waders which have historically used the area for breeding were surveyed for;

Curlew *Numenius Arquata*

Golden Plover *Pluvialis apricaria*

Dunlin *Calidris alpina*

Common Sandpiper *Actitis hypoleucos*



Redshank *Tringa tetanus*
Oyster catcher *Haematopus ostralegus*
Lapwing *Vanellus vanellus*

A presence of breeding wading birds, as listed above, was not found in the catchment during the survey. Historically it was believed that their presence was noted. Therefore this missing component will likely be down to a variety of factors;

- Poor habitats condition,
- Populations are dwindling nationally, particularly in traditional breeding areas across the uplands in Scotland.

The impacts of degraded habitats are compounded by climate change and effects on wintering grounds. The peatland restoration works proposed **Reference: M12 – Peatland restoration** could serve to improve the habitats for these species which will benefit from a re-wetting of the bog areas which are currently, in very poor condition. This improvement of the hydrological unit, as well as in the wider area, throughout the upper catchment will change the species composition of both flora and fauna. An increase in invertebrates will serve to improve the conditions suitable for breeding birds to return and thrive.

Waders, such as Dunlin and golden plover, have the potential to breed once again within in the higher areas of the catchment. The Curlew, along with lapwing and redshank, was once prolific, however during the survey there were no recorded pairs for these three species during 2021.

Many of the areas, particularly on the north shore of Loch Katrine, afford no protection from avian or mammalian predation; due to the habitats remaining in a poor condition. Most habitats are predominately dominated by *Molinia* due to long-term grazing pressure, draining and previous burning practices. There has been little tree regeneration within many of the areas with the exception of some lower slopes along stream sides.

Grazing pressure is the main reason for limited regeneration over large areas of the catchment. Until an improvement in the diversity of habitats and vegetation can be achieved, a number of ground nesting species will remain scarce or absent. Restored open habitats and low-density native planting, will encourage some of the more common upland species to return, some which have been absent for many years.

The reinstatement / restoration of the blanket bogs will have huge benefits to a range of species including waders. The heather on some areas has improved greatly over the last 3-4 years and has had benefits for red grouse which are now far more abundant on the areas where habitats are regenerating and improving. Areas 1, 2 and 5 have seen improvements in heather regeneration which has had a significant increase in grouse numbers in recent years.

Traditionally the south shore and Arklet south were less intensively grazed by sheep as the area is North facing and sits in the cold and shadows. The south shore of Loch Katrine and south Loch Arklet seem to be recovering well, both areas have much lower densities of deer, particularly Arklet where the entire area is within an enclosure. The area is covered in upland heath and natural tree regeneration is growing well across a large part of this area.



A recommendation from the independent survey was to leave open areas in particular wet, flushed areas running from the Hungry Loch back to the Portnellan downfall. Aside from the riparian corridor, which will have planting to stabilize the burn banks as a mitigation against further erosion, this has been incorporated within the **Reference: M4 -Final Concept Map**.

Pearl-bordered Fritillary (PBF) and Small bordered Fritillary (SBF)

The PBF is one of the earliest fritillaries to emerge and can be found as early as April in woodland clearings or rough hillsides with bracken. In Loch Katrine towards the Trossachs Pier in particular, there have been notable recordings of this species. It flies close to the ground, stopping regularly to feed on spring flowers such as Bugle. The butterfly was once very widespread but has declined rapidly in recent decades, and is now highly threatened in Scotland.

Located above the primrose woodland block, an area of open habitat has been retained to be managed as a planned bracken corridor, with associated open space, beneficial to the PBF. This area will serve to function as a link, into the future mosaic woodland habitat above, **Reference: M4 Final Concept Map**

3.4.4 Invasive Non-Native species

Grey Squirrel (*Sciurus carolinensis*): Grey squirrels have been present in the catchment in the past. However, an increase in pine martens (*Martes martes*), has served to remove as well as keep this species outwit the catchment.

Rhododendron (*Rhododendron ponticum*): Rhododendron is a non-native plant which is located on many of the private residential properties within the catchment. LLTNP and FLS are working with neighbouring landowners to remove this species and to replace with a native or non-aggressive ornamental rhododendron alternative. As this plant species harbours the Ramorum disease and is also aggressive in its spread and domination, removing native vegetation; its control is paramount within this NNR.

Sitka spruce (*Picea sitchensis*): Loch Katrine is a NNR with ASNW, with the aspiration to create native woodland, predominately broadleaved, with wetlands and peatland areas. Due to the nature of Sitka spruce and its plasticity for a range of conditions and ability to tolerate wet conditions Sitka has the ability to colonize areas readily and quickly given a nearby seed source. The PAW's clearfelling of WGS coniferous plantations, is paramount to removing a future seed source for the catchment. As well as to remove any trees which have seeded out from the blocks further into the catchment.

3.4.5 Wildlife Management (Herbivore impacts)

Loch Katrine has historically been managed as an upland hill farming unit used for raising sheep and held approximately 8300 ewes, which equated to a density of 92/km². In the early 2000's management of the site was taken over by Forest Enterprise Scotland (FES), now FLS with a new management objective to expand native woodlands across the site. Subsequently, the sheep were removed from the hill ground as part of the new plan and over 100 km of new deer fencing was erected to exclude deer from key areas.



Wild red deer are the most numerous large grazing mammal present within the catchment, with also roe deer at a smaller percentage. Mountain hare are known to be present, although they appear to be relatively uncommon. Sheep are found on the upper reaches of the site, having migrated across the march boundary from estates located to the north of Katrine.

The deer population at Katrine is made up of two parts;

- (i) A resident population present on the lower slopes of the hills and within the porous enclosures and
- (ii) A transient population moving in and out of the area. Historic and current Strath Caulaidh data indicates that the deer population within the wider Balquidder deer management area has remained largely unchanged. This is due to the open nature of the area and large amounts of migration occurring between Katrine and its neighboring estates.

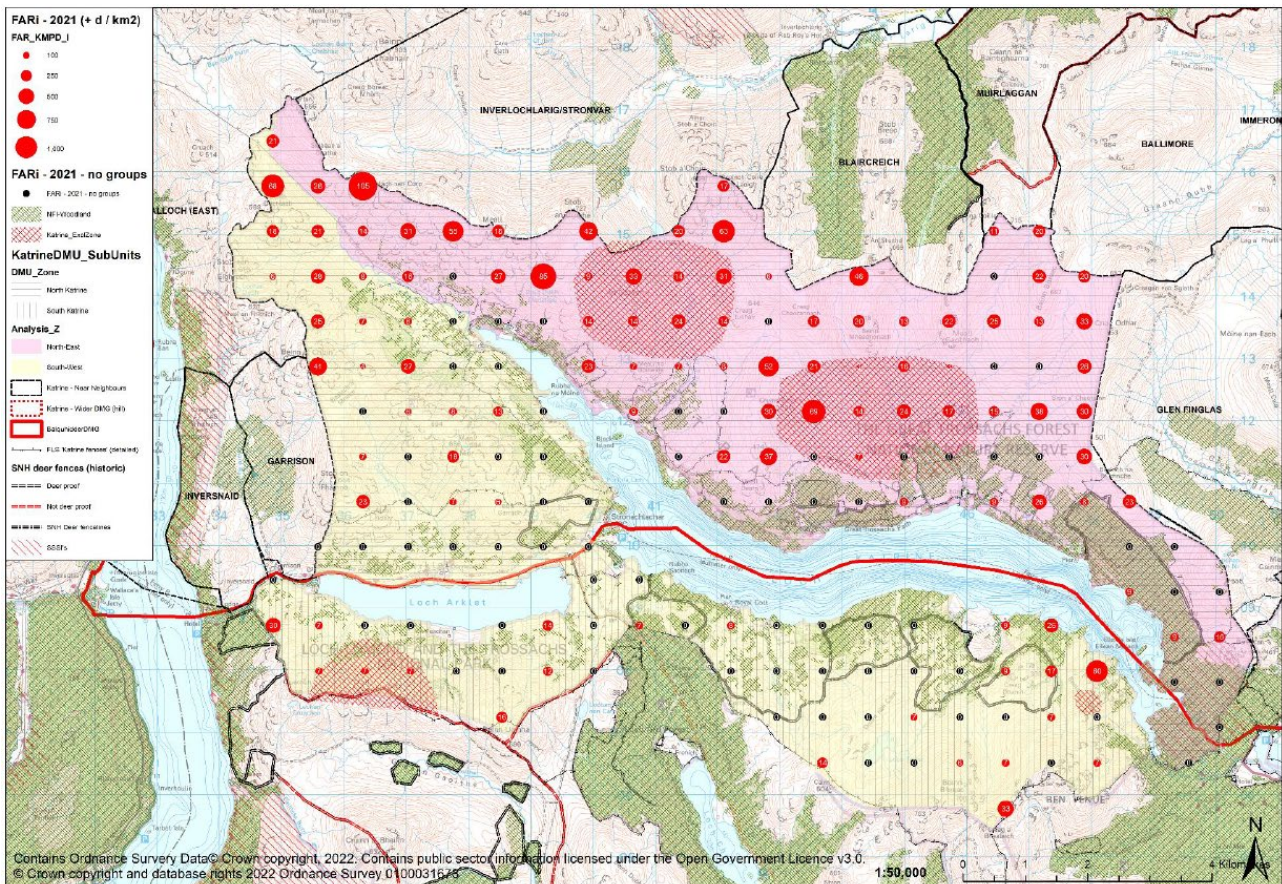


Figure 14: Herbivore densities per km²

There are high deer densities on the open hill range, which highlights the extent and intensity of deer migration between Katrine and its neighbors. The Strath Caulaidh research indicate that 765 deer utilize Katrine and that most of these animals are found on North Katrine with 15 % thought to be Roe deer. The research indicates that the average deer density across the site is between 7-19/km².

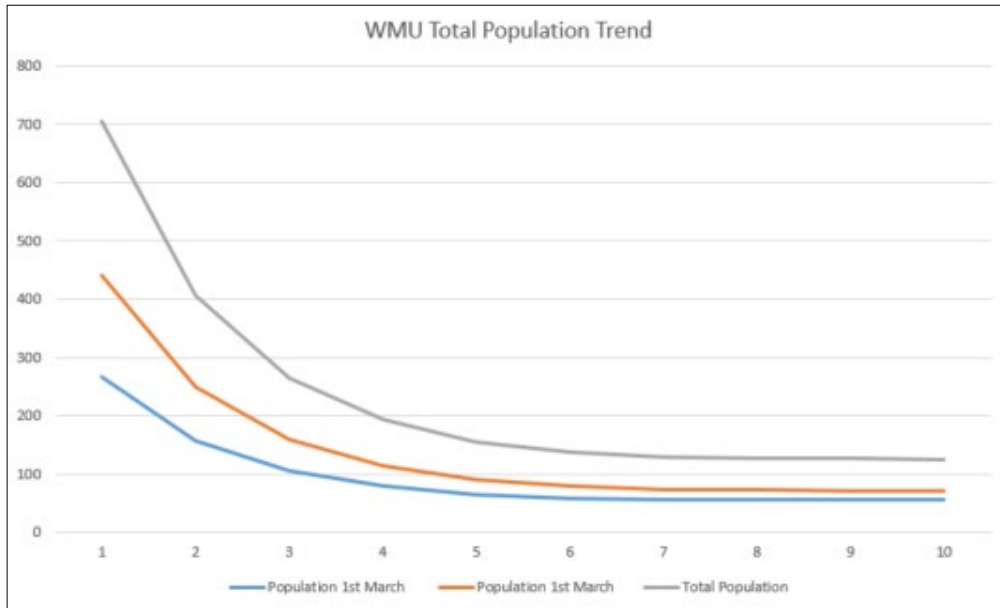


Figure 15: Deer population model with Year 1 being 2021

Figure 16 below shows the projected population for Katrine over the next 9 years (Year 1 is 2021). This model assumes a high fecundity of 40%, female immigration into the system of 20% of total population and 25% for males. We believe this model is reachable if the objectives in section 3 below are met and will bring deer densities down to 1-3 deer/km² by 2024.

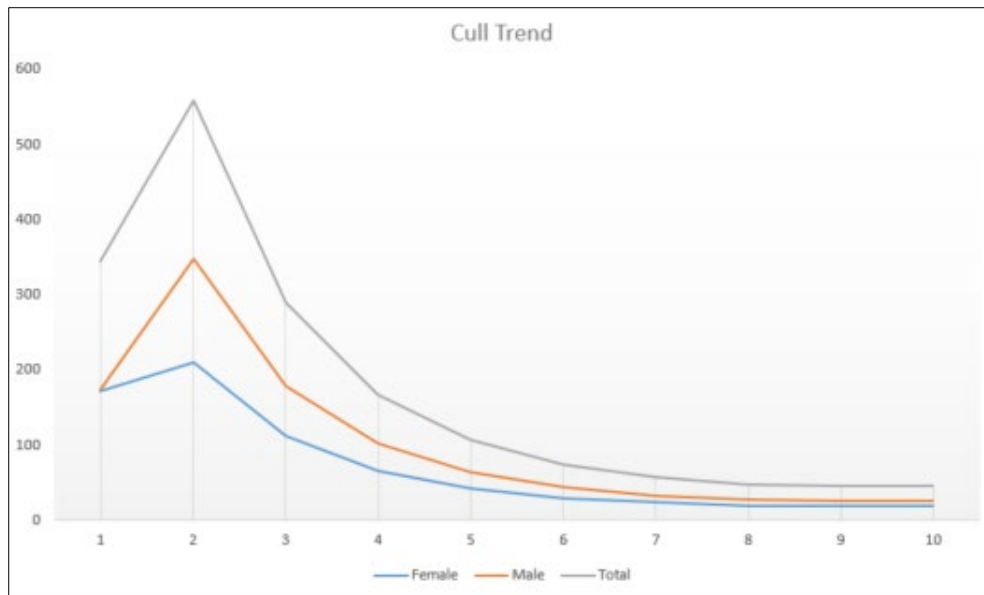


Figure 16 : Projected cull to achieve 1-3 deer/km²

Figure 16 indicates the cull levels we will be aiming for. The large increase in the cull between Year 1 (2021) and Year 2 (2022) is due to staff shortages in 2021 which caused a reduced cull and FLS deploying a contractor within Katrine during the spring of 2022 which led to a large spring cull. The cull then decreases as the deer densities does, with fecundity assumed to fall due to higher cull pressures.



Full details of the proposed deer management can be found within **Appendix XII – Loch Katrine Deer Management Plan**. The main objectives are as follows:

- Bring the population down to a target density of 1-3 deer/km²
- Fencing will be used to protect 'seed islands', adopting a smaller scale. The use of large strategic fencing will be avoided.
- Ensure that all biological resources on the National Forest Estate remain in favourable condition (as per NatureScot guidelines).
- Work closely with our neighbours to manage the deer population, which is largely part of a transient population that migrates between Katrine and its neighbours to the north.
- Improve access throughout the catchment to facilitate the long term management and safety of operators.
- Remove livestock (sheep and other) from the catchment.
- To maintain a sustainable deer population long term.
- Predator control is ongoing throughout the catchment for ground nesting birds.

3.5 Heritage

A total 92 archaeological sites can be found within the catchment, identified and illustrated in **Reference: M10 - Conservation and Heritage** map, which have been considered when designing the woodland creations areas, as shown in **Reference: M16 -17.2 Woodland creation and M18 Future Habitats**.

To ensure these features are maintained on site, appropriate buffers have been incorporated within the design, in accordance to the guidance found in the 'Forest and Historic Environmental guidelines (2011)'. outlines the as well as during the operational delivery.

3.5.1 Non-scheduled Archaeology

There are a number of features throughout the catchment . Appropriate buffers will be applied and maintained around non-scheduled archaeological features so as to ensure that trees. All operations in the vicinity of such features will be conducted in accordance with the UK forest standard guidelines on Forest and the Historic Environment, applying suitable controls to ensure their protection.

Of these features of particular note are the graveyards of the Clan McGregor. Rob Roy MacGregor was also born at Glengyle at the western end of Loch Katrine in 1671. At that time it was a much more populated place than it is now, as the glen itself was the main drove route for cattle from Loch Lomond and the west. Both of the MacGregor clan graveyards are located on Loch Katrine, one near the western end of the loch, the other at Portnellan on the north shore.



Scottish Waters infrastructure, such as the inlet chambers located at the Royal cottage and Loch Arklet form part of the strategic water supply. Underground tunnels also have historic markers, located along their route path, typically formed as marker stones; which indicate the location of aerial shafts. Appropriate buffers will be applied at these locations as well as mitigation, directed by Scottish Water.

A buffer zone of 20m will be applied to features. For banks and dykes and or other linear features a 5-10 buffer will be applied.

Forestry and Land Scotland comply with current industry best practice guidelines (e.g. Forest and water guidelines) and UKFS stipulations in order to protect water quality throughout all forest operations.

3.5.2 Cultural Heritage

An archaeological survey in and around the WGS areas in the catchment was undertaken in 1996 by Glasgow University Archaeological Research Department (GUARD), a gazetteer of sites recovered from both the desk top and walk-over surveys has been produced, which identified 84 sites of interest. There are no designated historic sites (Scheduled Monuments or Designed Landscapes) in the catchment. In addition Stirling Council Environmental Services has identified an additional 34 sites of archaeological or historic interest from the Stirling Sites and Monuments Record and First Edition OS Maps of the 1860's. All of the sites recorded are probably post-medieval from the 17-19 the century, although some may be a continuation or re-use of earlier sites.

As part of the baseline assessment FCS will undertake a full archaeological survey of the potential woodland areas not previously surveyed. This will allow FCS to safeguard the cultural heritage sites within the catchment. All existing or new sites will be protected during any mounding and planting operations. The buffers identified in the FCS Forest & Archaeology Guidelines will be followed.

In addition to sites identified within the survey, the Victorian Water Infrastructure will also be treated with the same due regard.

Landscape Conservation and Enhancement

The potential of new woodlands to alter the character of the landscape requires designed shape and form of the proposed woodland areas to relate well to the existing landscape character and the need for a landscape appraisal. A full Visual Analysis and Design Concept has been undertaken by CSA, with also the FLS Landscape Architect.

3.5.3 Woodland Pasture

Ancient Woodland pasture is defined by the presence of open grown, old or 'veteran' trees in a habitat which is kept open by grazing animals. In Loch Katrine a history of woodland management and grazing, which have evolved together, over time can be found. The habitat which is produced as a result of this grazing-maintained system is one with elements of both woodland and pasture. It is a good example of 'bio-cultural heritage' apart of the wider cultural landscape.



The result is an open woodland structure with open-grown trees, which can attain a great age, over a range of semi-natural ground vegetation. this

Priority areas within the catchment will be focused in areas with a history of worked veteran trees which relate to medieval and later settlements, between them forming a historic landscape of national significance.

The priority for these areas is to not disturb them until they are better researched and appreciated, then consider the best land use for them. In the meantime, under the precautionary principle, the best management for them is to continue what they have been used to for centuries, which is light grazing by farm livestock, preferably late summer only.

The priority woodland pastures within Loch Katrine would be:

- **Bruach**
- **North Glen Gyle**
- **Boathouse Colle Mhor**
- **Allt na Chroiteagan**
- **Balach nam Bo**

FLS will be employing the use of cattle for the management of bracken and or open spaces, which relate to important viewpoints. It is therefore a potential for FLS to look at the woodland pasture in the future, as a potential area for enhancement. This will be undertaken with advice and guidance from woodland pasture specialists. However, in the interim there are areas in proximity to the woodland pasture, or previous woodland pasture that have declined, that could benefit in the short term from the addition of some standard tree planting or seed islands. This will provide options for future management in this type of system, or allow the woodland to expand further into a high forest structure.

Our plan would be based on a carefully managed herd of Suckler Cows, which represents the best form of herbivore presence, particularly along the margins of existing broad-leaved woodland areas, such as the lowland riparian corridors, where most early regeneration might be expected to occur. Area for grazing will in some circumstances mirror areas which have potential for forest expansion, since this fits the ancient grazing regimes used in the Wood Pasture system.

3.5.6 Conservation Grazing

Reference: LMP main document- Section 7.0.4 Open Habitat and space. The use of cattle will be considered as a management tool in the ongoing maintenance of open spaces; associated with viewpoints around Loch Arklet. Cattle can provide positive benefits with regards to the promotion of plant diversity, such as with tall herbs and flowering species; found in association with the grazing activity. Other associated benefits with the use of cattle in conservation grazing are;

Bracken Control: Managing a large concentration of cattle within a small area, for a short time period, will serve to damage bracken thickets and aid in its eventual decline. Poaching of the ground will also



disturb the ground, allowing mineral soil to be exposed and help to develop natural regeneration expand in some areas dominated by bracken only.

Grouse Leks: **Black grouse** leks are actively managed as open space, with intervention means such as cutting/strimming being adopted. The use of cattle in conjunction will serve to reduce the development of natural regeneration, or tussock grasses from developing in a way that could affect these open spaces.

Fire control: Acid grassland currently dominates many of the upland areas within the catchment. Many of these areas are gradually transitioning through a variety of different successional stages as a result of the managed herbivore pressure having been removed i.e. sheep grazing. Most of the grassland areas, in the mid to upper elevations, have been maintained in the past by means of intensive drainage, lowering the water table; as well as cyclic burning so as to remove woody or native shrubs/other herbaceous species. Further to this a regime of overgrazing for long periods of time has served to remove or reduce the native vegetation, promoting and maintaining a grassland habitat to service productive grazing. Acid grasslands vary across the catchment, with regards to their successional stage, which is correlated to the impacts of the previous land management regimes, as highlighted above; as well as the background herbivore pressure of other herbivores (deer & goats etc).

However, the land has experienced a break in this intensive land management regime over the last 15 years. Many of the grassland areas are now maturing into their final stages of succession; thereby achieving a biomass of vegetation, which would have never been achieved in the past. As grass requires the removal and incorporation of its biomass into the ground; so as to allow its renewal and regeneration. The grasslands will gradually decline, as they are unable to regrow and regenerate. Overtime the grass will begin to thin out, thereby creating open space between the tussocks, allowing the return of native woody shrubs and or native herbaceous vegetation as well as trees.

This process of natural succession is desired for the catchment, within the acid grasslands areas, as it will help to facilitate the return of the native vegetation. However, this interim increase in grass biomass also brings the potential increased risk of fire. Which could be started by human activity, rather than natural processes such as lightning.

During spring and early summer FLS will seek to flail/mow areas of the catchment, so as to create a series of fire breaks. These strips of cut grass will measure in width between 25m-50m, located at specific locations, which are deemed vulnerable or prone to fire activity from humans; as well as on the catchment boundary; pending the terrain and access. This will serve to reduce the impact of fire, should it occur; as well as to protect the water supply and our neighbouring landowners.

Further to this, over time, the use of cattle will be deployed as part of further conservation grazing and management of fire into the future.



3.6 Social factors

3.6.1 Recreation

The Trossachs are a nationally, and even internationally, an important area for tourism. Loch Katrine has and remains such destination within the Central Region, with the main attraction being the Sir Walter Scott Steamship (SWSSS) providing tours of Loch Katrine. The north shore road provides a popular cycle and walking route to Stronachlachar. The main recreation features are shown on

Reference: M9, Recreation and access.

Carparks are available at the Trossachs Pier in the east and the Stronachlachar pier in the north. Within the nearby FLS Loch Achray forest there are extremely popular forest rails which allow access to hill paths such as to the summits of Ben Venue and Ben A'an. The Ben A'an car park has recently been expanded to help cater for the large increase in the number of people climbing the hill.

The neighboring Achary forest block provides a wealth of recreational facilities and walks, which can link to popular view points within the catchment, such as Ben Venue and Ben A'an.

The primrose walking route is located towards the east side of the catchment, at the Trossachs pier. This short circular route starts from the pier and goes to Brenachoile and back to the pier, adjacent to the Sir Walter Steam Ship Trust lease area and car park. The maintenance and up keep of this walking route will be undertaken during the life of this LMP. However, there are no ambitions to create any new access related projects for FLS, within the life of this LMP.

There have been a number of improvements in 2022 to the Glen Gyle (Eve's road), which was once an old drove route for moving cattle down from the Highlands to the markets in the lowlands at Crieff or Falkirk. The Culligart to Glasahoile route, which exists as a 4 x 4 route, has also been improved in 2022 to provide access to the South Katrine area. These routes open public access to areas of the catchment which would otherwise be inaccessible, or only reached by the more venturous hill walker.

3.6.2 Community

The plan area falls within boundaries of two Community Councils (CC). Strathard covers the largest area to the west. To the north and east the Trossachs CC.

All community councils have been consulted during plan development and key issues and concerns have been discussed. Local stakeholders are also consulted on a regular basis by a number of FLS functions, particularly visitor services and involved in development of various projects. A monthly newsletter was produced by FLS for both CC's, with also periodic team and on site meetings to discuss and provide update on the LMP.



3.6.3 Statutory requirements and key external policies

- Scotland's Forestry Strategy 2019-2029
- A Land Use Strategy for Scotland 2016-2021
- The UK Forestry Standard 2017
- UK Woodland Assurance Scheme 2018
- NPA trees and Woodland Strategy 2019-2039
- SNH National Landscape Character Assessment 2019



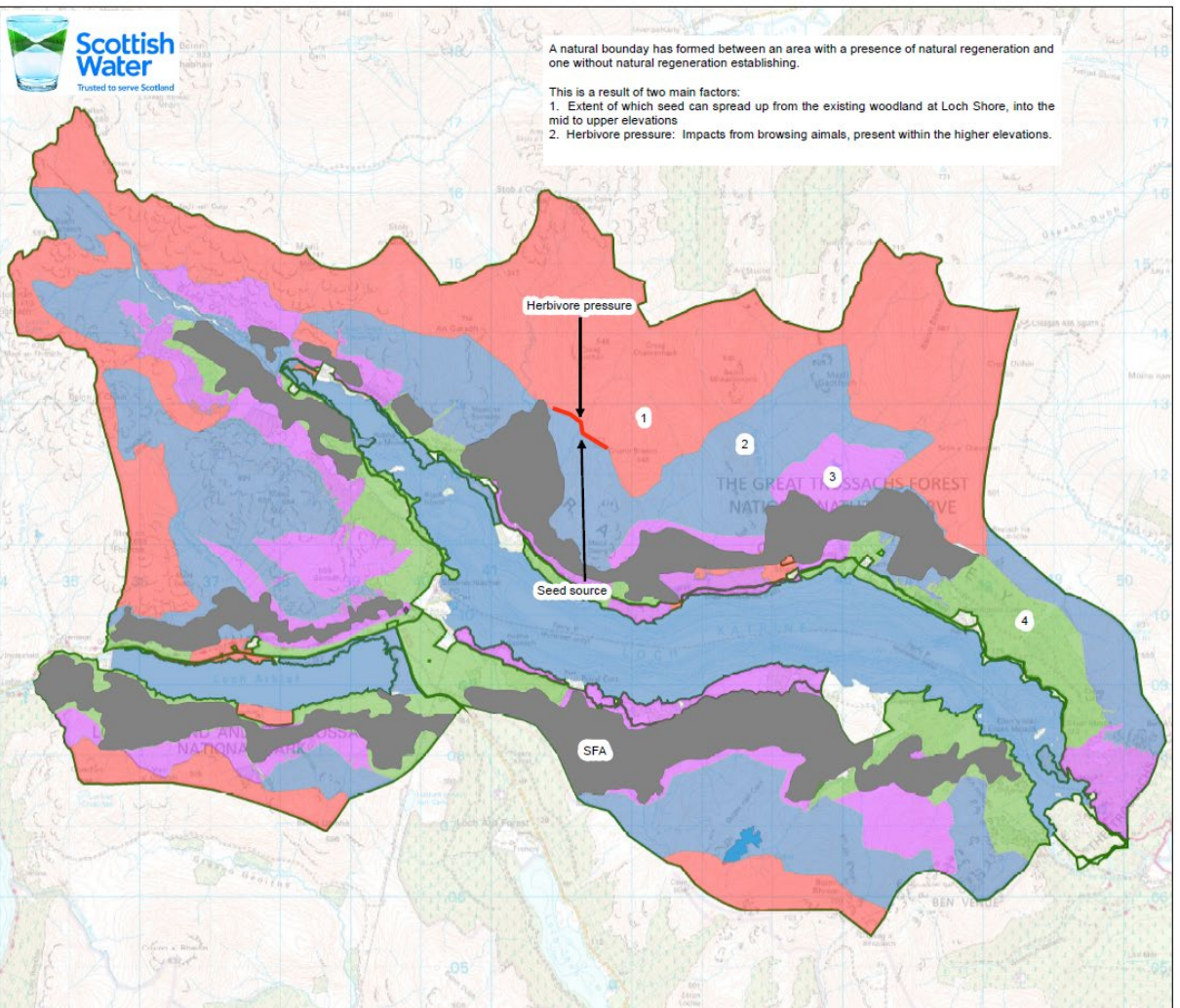
4. Seed island Concept & Riparian Corridor

4.1 Seed islands

Reference: Artist Impressions: Concept 1-11

The upper elevation of the catchment has a few isolated trees in inaccessible locations, which could be potential remnants such as with the Aspen, as well as more recent regenerating Rowan trees. These are typically found on hanging rocky crags and inaccessible locations; which are out with the reach from herbivore browsing and historic burning.

Reference: M14-14.1 - Natural regeneration survey and Analysis The data from the natural regeneration survey has been used to categorized the regeneration into broad stratified zones. The map below shows a red zone (category 1) which has little to no regeneration present. This zone also contains very few, if any, remnant veteran trees, which could serve as a potential seed source. Seed viable for regeneration is therefore pushing up from the lower elevations, within the existing woodland, found mostly at the Loch shore, as noted in Zone 2, 3 & 4.



Loch Katrine Land Management Plan: Natural Regeneration Survey

Author: James Hand
Scale @ A3: 1:50,000
Date: 06/01/2023

Legend

- Natural Regeneration**
- 1, No Regen <50 stems/ha
- Nat Regen Category**
- 2, Regen present (50-399 stems/ha + <0.4m height)
 - 3, Regen present (>400 stems/ha + >0.4m height)
 - 4, (>500 stems/ha + >1.5m height)
 - KAT_SFA_1.0_final
 - Loch Tinker
 - Loch Katrine & Ariket
 - Land Management Plan area

0 0.2250 0.45 0.9 1.35 1.8

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Figure 17: Three main factors limiting a spread of Natural Regeneration in the upper elevations



source is developed in a higher elevations, to allow seed to spread from within the upper elevations. This is important for a number of reasons;

1. Trees which survive in this location will gradually evolve in their genetics to adapt to the microclimate within the upper elevations
2. It provided another source of seed for the future. Pending a fire or other event in the lower elevations ,which could remove this seed source, this will enable another option for the future.



**Loch Katrine Land Management Plan:
Natural Regeneration Survey**

Author: James Hand
Scale @ A3: 1:50,000
Date: 06/01/2023

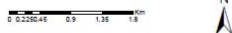
Legend

Natural Regeneration

- 1. No Regen \sim50 stems/ha
- 2. Regen present (50-399 stems/ha + \sim0.4m height)
- 3. Regen present (>400 stems/ha + >0.4m height)
- 4. (>500 stems/ha + >1.5m height)

Phase 2 (LMP 2023)

- Woodland creation
- Riparian Planting
- Nat Regeneration
- Loch Tinker
- Loch Katrine & Ariket
- Land Management Plan area



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

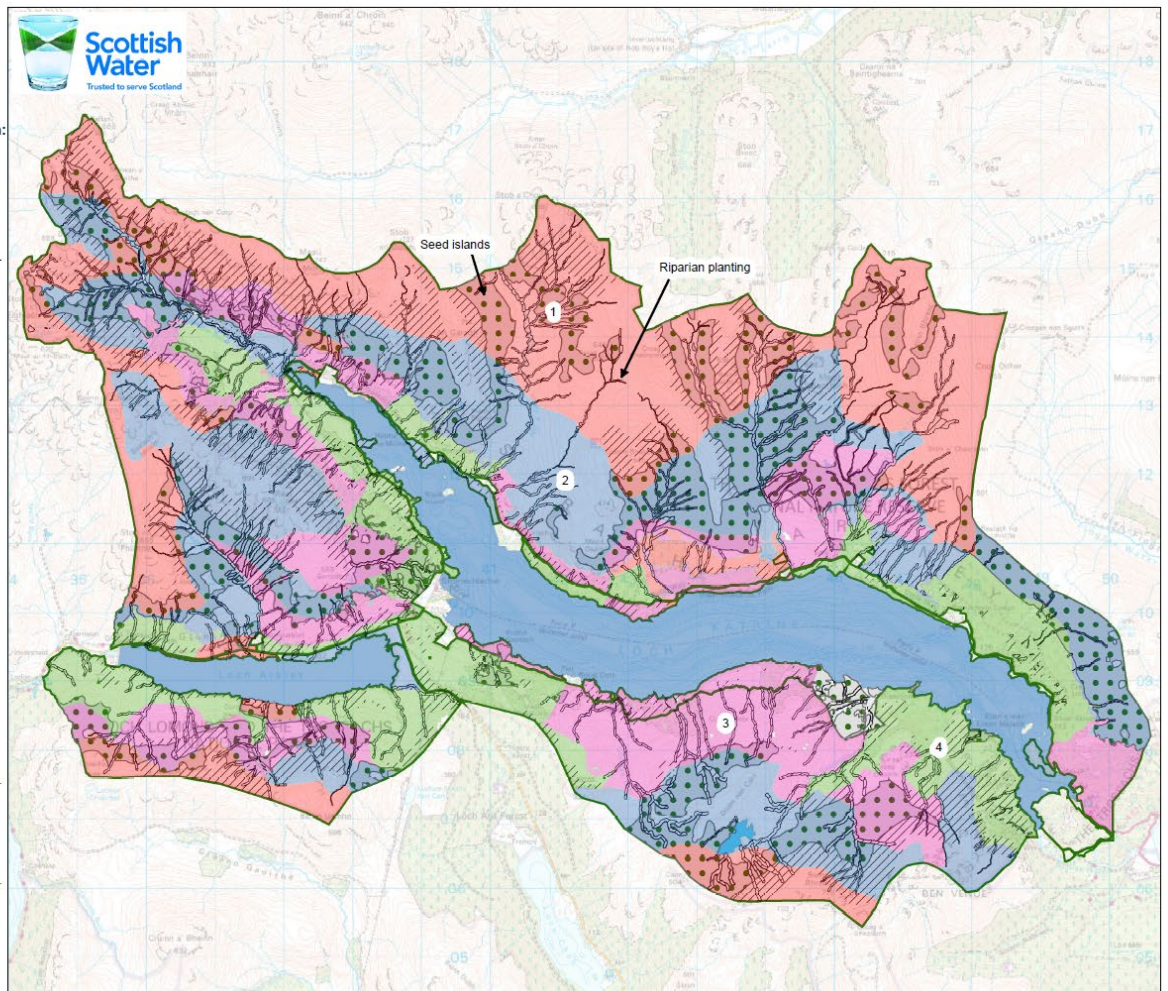


Figure 18: Woodland creation focused in the Red and blue categories, with the use of seed islands.

As noted above, it will take time to establish and develop the seed islands, as well as for them to function as a future seed source and to produce viable seed. The delay in afforestation or colonization from natural regeneration is further compounded by degraded soils, resulting from a legacy of historical land use. Further to this, wind exposure is greatly exacerbated by a lack of tree presence in these zones, which can provide a mutual buffering, so as to reduce the effects of wind and create a more favourable microclimate . It will therefore take time for the microclimate to evolve and become favourable to permit the development and expansion of this upland woodland. It is therefore proposed that a focus



on pioneer species will be adopted, so as to follow a natural sequence of development and improvement of the soil conditions. As well as to minimize the impacts on other species such as the Golden eagle, aiding a gradual change in the environment.

It is therefore envisioned that for the next 20 years the seed islands will function as a pioneer seed source. This seed source will then allow for natural regeneration to develop at a much quicker rate of progression in the future, once a long term reduction in herbivore pressure is achieved. Therefore FLS will focus management efforts within the seed island areas for both logistic, rational and strategic use of resources. This will ensure that a seed source can be achieved and safeguarded within the higher elevations, to create a seed bank on which natural processes can develop from, well into the future.



Figure 19: Seed islands

The design of fencing is critical for effective deer management and to allow the movement of animals through the landscape in a natural way, so as to reach riparian zones etc. Careful positioning of exclosures can also avoid the desire or need for hill walkers to enter within an exclosure, thereby maintaining security and protection of the trees within. It also helps to remove the risk of wildlife getting trapped within an exclosure.

Therefore each exclosure will be designed by the operations team, with the involvement of the wildlife and planning team, so as to ensure the design will function best for operational delivery as well as to ensure public and or wildlife obstructions are avoided.

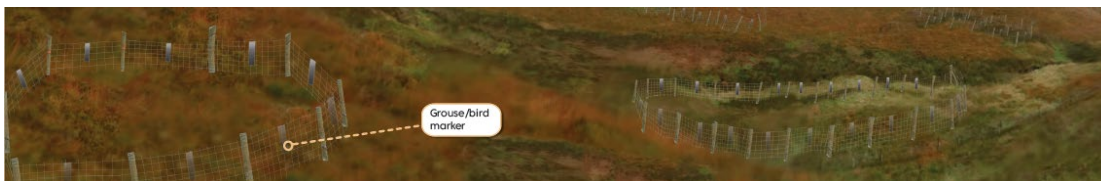


Figure 20: Grouse markings on fence lines, Reference Artist impression Concept #7&8



4.2 Riparian Corridors & protection

The stabilization of riparian corridors is key to reducing the impacts of erosion along burns, which increases levels of sedimentation reaching the reservoir of both Loch Katrine and Loch Arklet. Canopy cover and root stabilization will function to slow the impacts of water which is moving through this system of currently exposed channels. This will potentially mitigate against landslides and other extreme weather events; such as sudden down pours of rain as experienced in 2019.



Figure 21: Riparian planting concept



5. Future woodland-Vision for the future

Long Term Vision

To protect the existing native woodland and encourage its expansion from the lower elevations at Loch shore, up into the upland elevations of the catchment. This development and recovery will take time, but can be achieved through a strategic and long term management of the herbivore impacts. As well as promoting a healthy and sustainable population of deer throughout the wider landscape.

The Loch Katrine reservoir forms a strategic water supply for Central Scotland, and in a changing climate future resilience within the catchment will be key to buffering and protecting the Loch, especially from extreme events such as landslides. Capture of carbon in both woodland creation and peatland restoration, achieved through woodland creation and a rewetting of peatland areas, will help to restore an ecosystem functioning; which will contribute and follow government targets and current policies.

Wherever possible, natural processes of succession will be encouraged to develop within the catchment, playing out over long time periods; so as to enable the evolution of a long term dynamic ecosystem. Which can adapt to changes in the climate, well into the future, as well as to help to improve the biodiversity of both flora and fauna within this natural nature reserve.

Tourism and recreation are also on the increase and both woodland creation and a variety of open habitats will make a positive contribution to the wider local landscape.

Scotland has an absence of large predators and without this component within the landscape, herbivore populations cannot be maintained at a sustainable level, so as to pressure herds of animals to keep moving through the landscape. Without this movement, habitats are severally impacted. Therefore human intervention is required to manage the herbivore population, so as to maintain healthy populations and to allow habitats to function through natural processes of succession.

It is hoped that the herbivore population can be reduced to sustainable level, and maintained long term. Keeping a presence of a range of herbivore animals within the landscape, but done in a managed way so as to ensure that their function is kept for a variety of benefits to the environment at a landscape scale.

To reach this proposed vision a series of stages have been outline below, as a guide of how this may progress within Loch Katrine. It should be noted that much of this success is pending herbivore management, therefore some stages may be advanced or prolonged during this transition. It will therefore require updating, or adjusted in further LMP revises.

- **Stage #1 (2007-2015): Scottish Forestry Alliance (Phase #1) Woodland Creation**
- **Stage #2 (2023 – 2032): Seed island establishment (Phase #2)**
- **Stage #3 (2032 – 2042): Seed island development & expansion**
- **Stage #4 (2042 – 2052): Seed Island natural regeneration and diversification**
- **Stage #5 (2052 – 2062): Expansion and diversification of transitional woodland**



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Appendix II: Land Management Plan Brief Significant Background Information

Introduction

Loch Katrine sits at the heart of Loch Lomond & The Trossachs National Park and has long been recognised as one of the outstanding scenic areas of Scotland. In addition to the visual benefits Loch Katrine and Loch Arklet have supplied drinking water to Glasgow since the 1850's.

This land management plan will replace the previous Forest Design Plan (FC File Ref: 033/CT/L/08 (15), which has approval from the period 24/10/2008 – 24/10/2013. This new plan will set out the renewed management proposals over the next 10 year period approval and beyond

Silvicultural Approach

The elevation range in Loch Katrine rises from 150m at Loch shore to the highest point of 729m at the summit of Ben Venue. The soils range from brown earths through podzols, ironpans and gleys to deep peats.

The upland hills in Scotland and Loch Katrine are missing a key component of the natural landscape. A woodland habitat which forms a fragmented mosaic which transitions to the montane and alpine elevations. This LMP seeks to start the process of facilitating the return of this habitat through a natural succession, over long periods of time. This will be achieved through an establishment and development of 'seed islands', with a long term management to create a sustainable and healthy population of herbivores to reduce the impact on native vegetation and habitats.

Current Management Approach

Approximately 2,621 ha of the managed area is under forest cover, with 29 ha to be felled and restocked as part of the Plantation on Ancient Woodland Site (PAW'S) restoration.

The catchment has access in the form of both public and private road networks which mainly follows along the Loch shore. This includes the north shore road of Loch Katrine (Trossachs pier to Stronachlachar pier) and North Arklet (Stronachlachar pier to Inversaid). As well as a private road on the south shore of Loch Katrine from the Stronachlachar public road to Culligart. Forest roads exist such as the Eve's road at Glen Gyle and the 4x4 road on the south Loch Katrine loch from Culligart to Glassahoile. Access to the mid to upper elevations is accessed by cross country quad routes, of which FLS is seeking improvements in the form of minor works to aid in long term management and safety of operations.

Main Considerations

Loch Katrine and Loch Arklet function as reservoirs and are a strategic drinking supply for the central belt of Scotland

Loch Katrine and Loch Arklet have a network of watercourses throughout the catchment. There is a significant potential to enhance the Forest Habitat Network along most of the riparian corridors.



Coniferous plantations found on Plantation on Ancient Woodland Sites (PAW's) are a key objective to remove this seed source from the catchment

Invasive species control such as with *Rhododendron ponticum*, will be key to restoring the native habitats found within this Natural Nature Reserve (NNR). FLS seek to work with our neighbors to reduce and or promote the removal and replacement of invasive non-native species and to replace with a native alternative; within private properties found within the catchment. Thereby removing any seeds sources which can increase the spread of aggressive non-native species of plant, which can also harbor tree diseases

Landscape design is not significant. Native woodland creation in the upland areas is fragmented and being broadleaved species the visual impacts will not be noticeable to people and or the wider landscape. Features such as the crags and rugged nature of the hills will be maintained as well as key viewpoints

Loch Katrine and Loch Arklet has no scheduled monuments associated with it. However, there are various non-scheduled features throughout the catchment

FLS has a number of informal walking routes at the Trossachs side of the Loch. Tourism is a key feature with the Sir Walter Scott Steamship, as well as recreation in the form of walking and cycling. FLS seek to maintain the existing walking routes and the 'Art and Literature' trails, working with our partners. In this LMP there are no aspirations, currently, to develop recreation features any further

The catchment has a number of environmental designations associated with it such as the Site of Scientific Special Interest (SSSI) a national designation and an International Natura Designation as a Special Area of Conservation (SAC), associated with Acidic oak Woodland. There are also a number of priority species identified in the Biodiversity Action Plans (UKBAP) and (LBAP) which use the catchment such as the Black grouse, Golden eagle.

Herbivore impacts on natural regeneration of trees as well as the native vegetation is significant. Deer species (Roe and Red), along with goat and sheep are present throughout the catchment. A sustained deer management is required to keep the background population at an acceptable level that with permit natural regeneration to develop and protect the native habitats from herbivore pressure. Collaboration with our neighbors is ongoing, so as to find long term solutions to remove and reduce the movement of livestock into the catchment.

The landowners, Scottish Water, have asked FLS to include an additional Gross area of 62.96ha for woodland creation. Which are within in two locations, 46.08ha at Glasahoille and 16.88ha at Corrieachen. Both areas are located out with the FLS lease area.

Peatland habitat within the catchment is in a poor condition. Restoration in the form of drain blocking and hag reforming seeks to rewet these hydrological units within the catchment and at the landscape scale. To do this FLS will work with its neighboring landowners and partners to prevent further erosion and degrading of this habitat



Appendix III: Scoping and Design Brief

Loch Katrine Land Management Plan

Scoping was carried out by email and a number of stakeholders contacted in September 2021. In addition the Loch Lomond and Trossachs national Park were directly involved in early discussions on plan objectives and other discussions as the plan developed.

A summary of responses is given in Appendix I

An internal meeting was held on 29th September 2020 and a draft set of objectives drawn up. Further advice was taken from operational staff and final objectives reflect the aspirations of both internal and external stakeholders.

Design brief

The objectives of the renewal plan, which were developed following the internal and external consultation, are summarised overleaf and emphasise the key principals of maintaining the catchment as a water supply for the central belt, whilst developing the potential for further woodland creation and peatland restoration to deliver range of other ecosystem services into the future.

- Protect water quality which forms a strategic supply
- Plan to manage & mitigate against the effects of climatic change.
- Design and manage the woodland using sound silvicultural practice and site specific species selection to ensure long-term viability and sustainability of the forest and catchment.
- Managing the land so it can respond to natural processes
- Reconnecting protecting and enhancing native habitats to create a sustainable ecosystem with high biodiversity value through a mosaic of native habitats.
- Protect establishing planted & naturally regenerating trees from herbivore browsing through active mammal management
- Preserve the historical and cultural features within the forest and the catchment.
- Maintain and encourage good development of native broadleaves on areas of former Plantations on Ancient Woodland Sites (PAWS)
- Remove non-native and invasive species such as Sitka spruce and Rhododendron
- Protect and enhance views from within and of the site empathetic of the landscape contributing to Loch Katrine's historic setting
- Maintain attractive woodlands and trails and other recreational features, such as the art literature trail, for the future.
- Promote responsible access and use of the forest and the catchment
- Collaborate with our neighbouring landowners to monitor wildlife movements between the catchment and wilder area as the habitat changes over time



Appendix IV: LMP Consultation engagement

Strathard Community Engagement & Trossachs Community Council

A monthly newsletter was produced for the community councils, which fall within the Loch Katrine catchment. This newsletter was provided an update on the project with regards to ongoing works as well as the progression of the Land Management Plan (LMP), providing prior notification of any scoping and or public consultation events.

The local residents within the catchment were also provided with a printed newsletter, if they did not have access to the internet or with the local community councils.

A number of meetings both online as well as in person were also arranged to meet with the local community council working group, such as with SCC.



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Loch Katrine Land Management Plan Update: July 2022



Loch Katrine Land Management Plan (LMP) update newsletter for July 2022.

- Development of the LMP main document is well underway, with various maps and appendixes being produced as well. This stage involves a process of reviewing the consultation feedback, in consideration of the key objectives for the project as well as the survey reports and information. From this, a concept can be formed with the aim to produce a balanced design and aspiration of how the catchment can be managed over the next 10 years. As well as this, the LMP will look forward into the future, so as to indicate a direction of travel for the catchment long term.
- Undertaking fence repairs, to existing fence lines damaged by the various landslide events. **These works have been brought back into consideration, looking for a potential start around mid to late August; once the Golden eagle and ground nesting birds restrictions have been lifted, which are in place to ensure disturbance is avoided.**
- Preparing to organize a repair of the forest road access, which has been affected by the landslide in 2019. This will be focused on the Eve's road and the south Katrine road to Glasahoile. **These works have now been brought back into the programme, due to a reduction on the buffer zones in these locations. Works to start in Late July for the Eve's road, with the Culligart to Glasahoile to follow after.**
- Public Consultation: **The online consultation page is still active, with land management plan maps being added to the page gradually.**



Appendix V: LMP Consultation record

Table 20: Loch Katrine Land Management Plan consultation record.

Date	Consultee(s)	Event/Meeting	Notes	FLS comment
22.10.21	Gene Maxwell	Scoping event at Stronachlachar (Drop in session)	FLS reviewed the scoping map and objectives for the Land Management Plan	
22.10.21	Clyde & Maggie Bradley	Scoping event at Stronachlachar (Drop in session)	FLS reviewed the scoping map and objectives for the Land Management Plan	
22.10.21	Alexandra Docherty, Scott & Wathe Cottages	Scoping event at Stronachlachar (Drop in session)	FLS reviewed the scoping map and objectives for the Land Management Plan	
22.10.21	David Moore	Scoping event at Stronachlachar (Drop in session)	FLS reviewed the scoping map and objectives for the Land Management Plan. David is the resident at the Culligart house. He mentioned that he was not receiving the Newsletter via the SCC, therefore was pleased to have received the paper version, which FLS had dropped in.	FLS agreed to drop in newsletters to Culligart to keep the Moore's up to date with the project and any road repair works, which might affect them.
22.10.21	Sheila Gordon	Scoping event at Stronachlachar (Drop in session)	Query with regards to deer and wanting to see more deer in the lower lying areas around Glen Gyle. FLS had a discussion with regards to woodland creation and the objectives of the LMP. Discussion was had on wildlife control as well as the open habitats, such as peatlands and the impact that can occur with high numbers of browsing animals. Noted that as the Glen Gyle resident she was on the boundary between the Strathard Community Council (SCC) and the Trossachs Community Council (TCC), but would likely be joining the SCC group as a representative member.	
22.10.21	Katy Lamb	Scoping event at Stronachlachar (Drop in session)	Member of the Strathard Community Council (SCC). FLS reviewed the scoping map and objectives for the Land Management Plan. Katy was keen to arrange a meeting with SCC on site and was pleased to review the Newsletters sent by FLS to update the CC on the project progression.	
22.10.21	Jane Jones	Janes Jones was unable to attend the onsite event so sent an email with comments	#1: Thank you for your email and the maps. Obviously you are still in the process of collecting information from various surveys including those from the community before a draft plan will be produced so I cannot comment on any planting or other proposals FLS might make. However I would make the following observations. From your survey questions I am interested in woodland creation, where, what species and planting or natural regeneration, carbon capture, bog restoration –	#1: The intention would be to follow a nature based approach of succession. This would be achieved by means of encouraging natural regeneration. Which will be achieved with deer control and deer fencing, which we have already seen a great response in areas. The deer fencing will be designed to allow the movement of deer through the catchment, with smaller enclosures this time, as I am not keen on long lengths of fence i.e. strategic



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
			<p>how and where would this be achieved. The effect of these works on the landscape. And finally, how will access and recreation be affected if at all. People have talked about making a route along the south side of Katrine but I think this should be left as a wilder area. It is still accessible to those who want to explore this side of the loch but lets leave some areas for nature.</p> <p>#2: It would certainly be good to get a higher treeline were appropriate even if the trees are small and stunted with mountain willows and juniper (odd bushes have been recorded on the catchment)included in the mix. Aspen is restricted to some of the crags, due to grazing pressure but it would be good to see more as well as hawthorn and crab apple (several old trees have been found on the south shore of Katrine. I hope that any areas where there is a good appropriate ground flora would be left and not covered in trees and likewise any rare plants protected.</p> <p>#3: It would be good to get some summer grazing again as the vegetation is becoming rank. I know there are difficulties with this but I hope some solution can be found.</p> <p>#4: The view down Loch Arklet from the B829 has always been a issue with some not wanting any trees impeding the view. However, in my opinion the odd rowan/birch left would not be an problem. On the opposite side of the road there is a nice area of bog with White Beak sedge and cranberry which it would be good to see restored, which interestingly is not marked as peat land on your conservation map though there is large area is nearby.</p> <p>#5: Hopefully, areas which have appropriate habitat for Pearl-bordered Fritillary would be enhanced, if possible, now the butterfly has been found on the Katrine catchment after many years of searching</p> <p>I think this is all my thoughts for the moment, i look forward to seeing your LMP proposals in due course. Certainly it is great to see the catchment becoming more wooded since the project started.</p>	<p>fences. In my experience they don't work, or only for a while as they can become unmanageable with reduced resources in order to checking and maintain.....the restricted movement of deer also caused increased damage to the fence and moves deer in a way which causes more issues long term.</p> <p>There will be an enrichment planting within the natural regeneration fenced areas, to add species that will not be a component as of yet, such as Aspen/holly/hazel/juniper/blackthorn and hawthorn etc. Oak will also feature in areas (once I can gather some acorns locally) which are at lower elevation. The Glen Gyle, moving up the eves road is an area of interest. The intention would be to also add oak into areas on the border of the previous phase#1 areas SFA and the new woodland phase#2. Over time this addition will gradually move up, once the environment changes, but I would like to allow the oak to regenerate by natural means. Once the pioneer woodland (birch/willow/alder) has formed a fragmented woodland the environment should over time encourage the Jays to gradually expand out.</p> <p>Areas of direct planting, which will be undertaken by screef and hand planting, will be focused on willow/Birch/Alder and Aspen (my favourite tree) If I can get the provenance and quantity, aspen might feature more in areas, as is a spp which is lacking in a lot of areas.</p> <p>Agreed, that would be the intention. Sue Morris at the visitor would like to have some information boards at the access gate, located off the Stronachlachar road to inform to people that this is a dead end road once you get to Glasahoile.....so as to avoid people walking down this far.</p> <p>#2: Agreed. Simon Franks had mentioned crab apple, so that is certainly something I will give more thought to. I have found a number of old holly trees and Hazel as well. I would like to incorporate hazel, Holly and other shrubs into the existing woodland component as well.</p> <p>#3: We would hope to have a lease for a tenant grazier to maintain open spaces i.e. Loch Arklet. Obviously we are reducing the browsing impacts with deer control which will have an effect on the vegetation, but once the trees are established then it is likely we would then look to return to</p>



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
				<p>a sustainable level of control. With deer then becoming a woodland animal, controlled at a sustainable level, which would allow for natural regeneration to continue and to keep the vegetation in check.</p> <p>#4: Could you please highlight this for me....I would be interested to go and check this for myself. I am looking at areas of peat restoration and open habitat, with our open habitat ecologist and peatland team, so would like to flag this to them as well.</p> <p>#5: This is something I have been looking at with Katy and keen to look at how this can be maintained and enhanced in areas.</p> <ul style="list-style-type: none"> • FLS provided Jane with maps and a link to the LMP web page.
07.05.22	Nick and Tom Lester-Davis	Public Consultation Drop-in Event#1: Kinlochard Community hall	Walked around the information boards with an FLS rep (either James hand or Shirley leek) and discussed the Loch Katrine project. Covered topics including the old SFA project, wildlife control, peatland restoration/open habitat, new woodland creation, recreation and access, PAW'S restoration.	
07.05.22	Colin and Ann Boyd	Public Consultation Drop-in Event#1: Kinlochard Community hall	As Above	
07.05.22	Margret Newfield	Public Consultation Drop-in Event#1: Kinlochard Community hall	As Above	
07.05.22	Fiona McLean	Public Consultation Drop-in Event#1: Kinlochard Community hall	As Above.	
07.05.22	Jack & Task Sheppard	Public Consultation Drop-in Event#1: Kinlochard Community hall	As Above	
07.05.22	Bernard & Catherine Love	Public Consultation Drop-in Event#1:	As Above	



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
		Kinlochard Community hall		
07.05.22	Sandy and Elli Boyle	Public Consultation Drop-in Event#1: Kinlochard Community hall	As Above	
07.02.22	Plus 2 who did not sign in	Public Consultation Drop-in Event#1: Kinlochard Community hall	As Above	
07.02.22	Janes Jones	Public Consultation Drop-in Event#1: Kinlochard Community hall	Reviewed an additional email from Janes Jones following the consultation drop-in event: Thanks for the link to the Katrine LMP storyboard. It is interesting looking at the old and present pictures. In most cases the difference is quite small. Trees however have grown and the south shore is certainly more clothed as is the Fairy Knowe area. I certainly feel the objectives for Katrine are good and I certainly look forward to seeing more trees, be it stunted and twisted on the higher slopes and the peatland areas which need restoration improved. I hope you manage to persuade adjoining land owners to help reduce deer numbers. A crucial objective for your plans. Jane	Jane Jones commented on the story board, the online interactive age, which was presented at the drop-in session. This was then added to the FLS consultation page for the public to review and get in touch with any further queries on the project.
11.05.22	Heather Fraser (Scottish Forestry representative)	Public Consultation Drop-in Event#2: Aberfoyle Lodge		Provided information and walk through of the display boards. Contact details for any further queries was provided.
07.05.22	Katy Lamb	Public Consultation Drop-in Event#2: Aberfoyle Lodge		Provided information and walk through of the display boards. Contact details for any further queries was provided.
11.05.22	Graeme Duncan (Forth Rivers Trust)	Public Consultation Drop-in Event#2: Aberfoyle Lodge	Hi James, Good to meet you yesterday at the Loch Katrine LMP in Aberfoyle. As I said briefly yesterday, I work for Forth Rivers Trust and we're working on a project called Riverwoods that aims to build a habitat network of riparian woodland based on existing and proposed woodland. We will be primarily looking at Inverlochlarig and building on the work we've done there but also looking at Ballimore and exploring what opportunities for woodland creation there are. We also want to put an emphasis on natural regen and encourage that as much as possible. There were certainly a number of projects included the LMP yesterday that would be relevant to our project. It would be great, if possible, to come visit some sites around Loch Katrine and get an idea of what you've done there and get some advice on your woodland creation schemes. I'd be particularly interested in any regen projects you have in the pipeline.	The Forth rivers trust were very keen to collaborate with the Loch Katrine project and to look at the riparian network and explore how this could be connected beyond into adjacent lands. Action point for FLS to arrange a site meeting with FRT at Loch Katrine to look at proposals on site and discuss further collaboration with Ballimore estate and other. FLS arranged a site visit with FRT on the 25/05/2022.



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
			Is there a time that suits you we could come for a site visit?	
11.05.22	Jamie Howie Steve Murphy	Public Consultation Drop-in Event#2: Aberfoyle Lodge	FLS planning forester	Provided information and walk through of the display boards. Contact details for any further queries was provided.
11.05.22	Heather and Chris & Helen Webster	Public Consultation Drop-in Event#2: Aberfoyle Lodge	A member of the Public Chris Webster, was very interested in doing a documentary with regards to the woodland creation. Chris identified himself as an independent camera man, working with the BBC and landward etc.	Provided information and walk through of the display boards. Contact details for any further queries was provided.
		Other meetings		
07.10.2021	Scottish Forestry	Ste meeting to review planting	Recording of natural regeneration on the sub-compartment, density of woodland creation in establishment, recording and presentation on maps.	
21.10.2021	Royal Society for the Protection of Birds (RSPB)	On site visit to RSPB Inversaid and Loch Arklet	Site visit to review the SFA on their site and FLS Loch Katrine. Discuss ground nesting birds and the plans for the next phase of woodland creation	
17.11.2021	Loch Lomond and Trssach National Park (LLTNP)	Online meeting to introduce the LMP		
13.12.2021	Woodland Trust	Site meeting (Glen Finglas)	A meeting with the woodland trust to look at the SFA project and discuss FLS aspiration for woodland creation and peatland restoration with the woodland trust and scope to collaborate further.	
02.03.2022	Loch Lomond and Trssach National Park (LLTNP)	Follow up meeting with the Loch Katrine LMP. Scottish water, FLS and LLTNP	Invitees: Carol McGinnes, FLS (Chair), James Hand, FLS, Gordon Reid, Scottish Water, Georgie Reid, Scottish Water, Mark Williams, Scottish Water, Andrew Walker, Scottish Water, Simon Jones, LLTNP, Simon Franks, LLTNP, Graeme Hennan, LLTNP, Fiona Stewart, LLTNP, Alan Bell, LLTNP, Dominic Hall, LLTNP	Meeting discussed the project and FLS presented a presentation which outlined the key concepts
17.03.2022	Scottish Forestry	Online meeting	Presenting woodland creation key concepts. Sephera Creber, Cameron Maxwell, Heather Fraser attended with Shirley leek from FLS and James Hand.	
22.04.2022	Strathard Community Council (SCC)	On site meeting with SCC at Loch Katrine, to visit Glen Gyle and look at the phase#1 planting and discuss the phase#2 woodland creation and peatland restoration to follow.	Meeting at Stronachlachar with Shirley Leek and James hand forming the FLS representatives. SCC representatives: Katy Lamb, Janes Jones, Andrew Faulk (Enda Mcloghlin???) Or Linda Middleton???. Invite was also sent to the hello SSC email for other to attend if they wished.	
28.04.2022	Balquiddar Deer Management group (BQDMG)	Online meeting with BQDMG to discuss the Loch Katrine plan and go		Meeting discussed the project and FLS tried to present a presentation, however due to the Zoom format the presentation was unable to load. FLS did



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
		over key concepts of the woodland creation and plan objectives which include peatland restoration.		manage to show a few maps and images and then discussed further the key concepts. Action point from the meeting was to arrange a site meeting (face to face) at Loch Katrine to look at the first phase of the project and discuss the next phase, with the key area of collaboration with wildlife control and for the DMG to feed into the Deer Management Plan
		Providing Story board link to web page	Loch Katrine Land Management Plan - Forestry and Land Scotland : FLS Consultation page	Loch Katrine Land Management Plan (arcgis.com) : Story Board
27.05.2022	Strathard Community Council	Story board presentation	FLS provided a link to the online interactive page called the 'Story Board', located on the FLS consultation page.	
27.05.2022	Trossachs Community council	Story board presentation	As above	
27.05.2022	Balquiddar Deer Management group (BQDMG)	Story board presentation	<p>Alcuin responded on the 15th July 2022:</p> <p>My name is Alcuin Arkotxa MacKenzie. I am one of the owners of the Muirlaggan Forest Partnership that is one of your neighbours to the north of Loch Katrine. We manage 600ha of mixed conifer/native woodland. We have a further 400ha of open hill. Since my grandparents took on the ground in the 1970s we have successfully increased the native woodland cover over the ground including the higher elevations. We have a healthy deer population and farm 500 ewes on the hill. We share a deer population with our neighbours of which north Katrine is one. We have a vested interest in what you are proposing with your deer management and native woodland establishment.</p> <p>I am also the deer manager for the neighboring estate Blaircreich, which is also one of your neighbours to the north.</p> <p>We have a history of challenges with FLS deer management as we had an agreement that FLS would not shoot mature stags unless they were in a fenced enclosure. The return was that we would increase our hind culls. Sadly FLS has not stuck to this agreement. This was one of the principal reasons for Ballimore, also one of our shared neighbours, leaving the Balquhidder Deer Management Group.</p>	<p>FLS replied with the following, as well as to provide two maps indicating the potential woodland creation areas, as well as the link to the web page for more maps.</p> <p>Thank you for your comments below. FLS are currently working on the wildlife management plan for the LMP, which is in the draft stage. We are hoping to discuss detail of this at our meeting with the BQDMG on site, to get your input before this is finalized.</p> <p>I have attached a map, please note this is a draft concept map. I must stress this not the final version; as this is being refined all the time as more information is reviewed and input from our ongoing independent survey. We have an ongoing open habitat survey, which is identifying the priority open habitats (peatland & Ground water Dependant terrestrial ecosystems) and potential woodland creation areas.</p>



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
			<p>I read through your consultation document but could find little detail on what you are proposing to do about deer management in the north of Loch Katrine. All I could find was a comment that innovative wildlife management techniques are proposed, what are these?</p> <p>Similarly I could find little information about how the woodland creation would take place other than through seed islands, drone seeding and herbivore management.</p> <p>As your neighbours we have witnessed in my opinion 17 years of missed opportunity in north Katrine. Pressure by FLS rangers and contractors on the deer has been very high, but from what I have seen and judging from what you have been tasked to do natural regeneration at the higher elevations outside of the fenced areas has largely failed. I am concerned that based on the little information that I have seen in your consultation there is a chance that large amounts of money will be spent and little will be achieved.</p> <p>I am concerned that a large amount of money and effort will be spent on shooting deer as it has been in the past and will yield little result other than further alienating your neighbours and compromising their activities.</p> <p>I am very keen to work with you to help you achieve your aims. If you are interested in sharing your detailed plans and if you were open for discussion on what you intend to do in North Katrine perhaps we could help you.</p>	<p>The key concept of this phase of the project, with regards to woodland creation, is to create suitable conditions on which the long-term succession and establishment of natural vegetation and woodland can develop, via natural processes. This will be achieved by the creation of seed islands at higher elevations, which will act as a long-term seed source/supply for the future. These seed island will aid natural regeneration in the mid to upper elevations, with a focus on pioneer species. These pioneer species will aid to improve the site conditions (soils, organisms, microclimate, habitat etc) to then facilitate natural processes of succession to develop over time, which will then develop into a dynamic native woodland, most likely different to this initial pioneer woodland. This of course ties directly in with reducing the browsing pressure, to a sustainable level, which will allow this natural nature reserve to develop long term via natural processes.</p> <p>Another focus of this initial planting will be in the riparian zones, which follow along the watercourses/burns, in order to stabilize burn banks and any exposed soil. I have attached a second map which details this, with buffer zones applied to the key watercourses/burns.</p> <p>Please see link to the FLS consultation page, https://forestryandland.gov.scot/what-we-do/planning/consultations/loch-katrine-land-management-plan; which also contains some further maps. I will be adding more maps in due course (potentially next week).</p>
27.05.2022	Mountaineering group	Story board presentation	No Comment	Information provided with contact details



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
27.05.2022	Raptor group	Story board presentation	As above	Information provided with contact details
27.05.2022	Woodland Trust	Story board presentation	Hamish from the woodland Trust responded with a noted to say that the story board presented a lot of information which was very general, however he would like to see more detail on the woodland creation areas within the catchment.	FLS replied to provide a map which highlighted the potential woodland creation areas within the catchment. Noting a caveat that this was a draft concept and that due to ongoing surveys the actual areas were being refined as this information was presented.
27.05.2022	RSPB	Story board presentation	No comment	FLS also had a further discussion via phone call to talk about the first phase project in relation to the strategic fencing. How could this be maintained and to look at collaborating on a programme for joint removal and or further works.
		Deer Management Group (DMG)		
19.07.2022	Balquiddar Deer Management Group (BDMG).	Balquiddar Deer Management Group (BDMG) meeting with key board members. Nichola Colquhoun (LLTNP), Victor C (Native woods), Hamish Thomson (Woodland Trust)	This was a dummy run, in advance of the main event with the BQDMG, as well as for members that could not make the meeting on the 30 th . It was also for the main board members to discuss other details in advance of the larger meeting.	A positive meeting. The members of BQDMG understood the concept but wanted more detail on the woodland creation areas. FLS noted they are happy to provide once these have been completed, as were still being processed. However, maps with the current areas were shared with the group in advance of the finalized draft.
30.08.2022	Balquiddar Deer Management Group (BDMG).	Balquiddar Deer Management Group (BDMG). Loch Katrine site meeting. Alcuin Arkotxa-MacKenzie, Mike Luti,	Meeting was at Stronachlachar Pier at Loch Katrine. FLS met with the BQDMG and introductions were given around the group (FLS, Nature Scot, Scottish Water & BQDMG). Presentation undertaken by James Hand on the LMP and concept. Further discussion on the deer management aspect of neighbours.	This was a positive meeting overall. It involved quite a debate amongst the group on various aspects, such as historical issues and future concerns; some of which are as follows.. Alcuin:



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
		<p>Malcolm (Inverlochlarig), Malcolm walker (Scottish Water), FLS- Shirley Leek, James Hand, Paul Bekier, Mattys Jooste, Matt young, Chris Little, Estelle gill (Nature Scot) & James Irvine (Nature Scot).</p>	<p>Site visit to Glen Gyle to look at the PH#1 woodland creation and the potential PH#2 areas proposed. Discussion on fencing feasibility, concept delivery and trespass with regards to livestock (sheep)..</p>	<ul style="list-style-type: none"> • Agreed that the seed islands will work and that it is a good idea. • He wants a marsh fence all the way along, but when James said it is impossible to maintain he agreed. • He needs mature stags – possibly 40. Jimmy from NatureScot told me Alcuin has never shot 40 stags so this was inaccurate. • He says the behaviour of the deer on his land has changed so much that he can't sell stalking anymore <p>Davey:</p> <ul style="list-style-type: none"> • Does not agree with out of season shooting • Also needs 40 stags for paid stalking <p>Glenfelloch:</p> <ul style="list-style-type: none"> • Happy to do over-boundary agreement. We need to make sure this falls within tax obligations. Must be deer control and not paid stalking. • Agrees that over-boundary can work, but only with some rules. Does not want contractors on his land all the time.
<p>24.10.2022</p>	<p>Raptor group (Dave Anderson)</p>	<p>FLS Aberfoyle office</p>	<p>Review the woodland creation areas presented on the LMP, associated to the consideration of the Golden eagle and how the raptor group understand the concept as well as how this is being presented on the map.</p> <p>DA suggested producing a map to further detail the broad stratified areas, to get across the seed island concept. This would show to the RG that the broad areas shown on the map do not indicate that the whole area will be planted i.e. just a proportion of it.</p> <p>DA suggested producing a map to show the tree species being planted, in areas around the Golden eagle nest sites, as well as a buffer applied for no planting or</p>	<p>FLS will produce an example map to get across the concept of the seed island. But with the caveat that this is an example map and not an accurate depiction of actual seed island locations.</p> <p>FLS noted that around a nest trees will not be planted, which will be shown on the example map. A buffer zone will be applied and only shrub spp would be approached under guidance and direction from the environmental team. FLS reassured DA also that the trees being planted in this phase of the</p>



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
			shrub spp to be only planted. So as to ensure that the nest sites would not have tree blocking the line of sight.	project are at a higher elevation, so will take a considerable time to establish and gain height (2-3x longer than in the PH#1 area). Therefore, the risk of trees blocking views around nest sites etc is not possible and beyond this LMP 10 year period (possibly the next as well).
10.11.2022	Balquiddar Deer Management Group (BDMG).	19:00: Balquiddar DMG meeting at the Balquiddar village hall.	FLS provided the new stag shooting protocol to the BQDMG. The group were very pleased with the protocol.	FLS presented the protocol for shooting Red deer stags on North Katrine. FLS presented LMP plan in association to the deer management plan.
	Raptor Group			
15 or 16 .11.2022	Raptor group	Zoom & Teams meeting at 14:00 online to 16:00.	Alan Fielding-Raptor group Phil Whitfield-Raptor group Dave anderson-Raptor group James Hand (FLS presenting)	Reviewed the LMP maps for woodland creation as well as the concept visualisations with artist impressions of the future woodland. Discussed the satellite data. Phil and Alan presented the satellite data showing the territories of the Golden eagle. Discussed obtaining the satellite data form the raptor group. Discussed the option for the raptor group to produce a report on the project, commenting on issues which may affect the eagle and or mitigation. The raptor group were pleased with the project proposal for the future woodland and agreed that this habitat will benefit the eagle in the long term. On presenting the concept and further discussion on the woodland, with associated fencing plans, the group did not flag any concerns with the proposals.
	Sir Walter Scott			
23.11.2022	Sr Walter Scott Steam Ship Trust (SWSSST) & Scottish Water	Aberfoyle office: SWSSST in person meeting, with Scottish Water via Teams	Tom Wallace: Sir Walter Scott Steamship Trust Mark Williams: Scottish Water Gordon Reid: Scottish Water	Reviewed the LMP maps for woodland creation as well as the concept visualisations with artist impressions of the future woodland.



Date	Consultee(s)	Event/Meeting	Notes	FLS comment
			James Hand: FLS Shirley Leek: FLS	Discussed the LMP objectives and project plans associated within the period 2023-2032. FLS asked the SWSST if they had any concerns with the plans or would like to provide and further suggestions. SWSST appeared to be in favour of the proposed plans, with no objections. They were keen in promoting more tourism, however, SWSST understood that recreational plans were not a key focus of this LMP. However, could be considered in future LMP revises if funding was available.
16.01.2023	Sr Walter Scott Steam Ship Trust (SWSST) & Scottish Water	Correspondence with Tom Wallace	Email and provided LMP maps	Provided further information and maps with regards to the harvesting operation, as had been requested on the meeting of the 23.11.23
	Community Councils			
Aug 2021- May 2023	Strathard Community Council (SCC) & Trossachs Community Council (TCC)	Monthly Newsletters to community councils to provide an update on the Land Management Plan progress and any on site updates.	Email and Newsletter provided to SCC and TCC	
Dec 2023	Strathard Community Council (SCC) & Trossachs Community Council (TCC)	Monthly Newsletters to community councils to provide an update on the Land Management Plan progress and any on site updates.	Email and Newsletter provided to SCC and TCC	

Table 20: Loch Katrine Land Management Plan consultation record.



Loch Katrine Land Management Plan, online google form, consultation questionnaire.

Loch Katrine Initial Consultation
Please let us know your priorities and aspirations for the Loch Katrine land management plan (LMP)

1. What aspects of the Land Management Plan are you interested in?

- Woodland Creation
- Forest operations
- Carbon capture and how this will be accounted for
- Silviculture
- Bog restoration
- Landscape impacts
- Tree species choice
- Recreation and Access
- Water quality
- Other:

What are your top priorities for the plan?
That there is minimal human interference (eg afforestation) in the wild land area.

What are things which are less of a priority, but you would still like to see included?
Encouragement of natural processes leading to more native trees.

Please add any further comments here

This content is neither created nor endorsed by Google.

Google Forms

Loch Katrine Initial Consultation
Please let us know your priorities and aspirations for the Loch Katrine land management plan (LMP)

1. What aspects of the Land Management Plan are you interested in?

- Woodland Creation
- Forest operations
- Carbon capture and how this will be accounted for
- Silviculture
- Bog restoration
- Landscape impacts
- Tree species choice
- Recreation and Access
- Water quality
- Other: renewal of aqueduct path from Loch Katrine towards Kinlochard

What are your top priorities for the plan?
see above

What are things which are less of a priority, but you would still like to see included?
none

Please add any further comments here

This content is neither created nor endorsed by Google.

Google Forms

Figure 22: Online form available at the FLS web page, noted in the newsletters



Loch Katrine Initial Consultation

Please let us know your priorities and aspirations for the Loch Katrine land management plan (LMP)

1. What aspects of the Land Management Plan are you interested in?

- Woodland Creation
- Forest operations
- Carbon capture and how this will be accounted for
- Silviculture
- Bog restoration
- Landscape impacts
- Tree species choice
- Recreation and Access
- Water quality
- Other:

What are your top priorities for the plan?

Creation and Improvement of paths around Loch Katrine, particularly South Loch Katrine

What are things which are less of a priority, but you would still like to see included?

Native tree planting

Please add any further comments here

The creation of paths around Loch Katrine which connect with the existing path network (eg around South Side of Loch Katrine) will reduce the number of cars driving up the single track to Stronachlachar, which causes a lot of traffic problems and people coming off the road. Increased car parking capacity may also need to be considered - alongside the National Park, Scottish Water and the Walter Scott Trust.

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Google Forms

Loch Katrine Initial Consultation

Please let us know your priorities and aspirations for the Loch Katrine land management plan (LMP)

1. What aspects of the Land Management Plan are you interested in?

- Woodland Creation
- Forest operations
- Carbon capture and how this will be accounted for
- Silviculture
- Bog restoration
- Landscape impacts
- Tree species choice
- Recreation and Access
- Water quality
- Other:

What are your top priorities for the plan?

Climate change and water quality

What are things which are less of a priority, but you would still like to see included?

Recreation and access

Please add any further comments here

This content is neither created nor endorsed by Google.

Google Forms

Figure 23: Online form available at the FLS web page, noted in the newsletters



Appendix VI: Forest Design Plan (Scottish Forestry File Ref: 033/CT/L/08 (15)), as well as the Integrated Catch Management Plan (ICMP) 2002

Appendix VII: Landscape Design and Visualization

- LVRDR
- LVRDR Appendices

Appendix VIII: Hydrological Report Forest Research [Comment on Assessment of Potential Impact of Woodland Expansion on Water Yield at Loch Katrine](#)

Appendix IX: Breeding Birds and Bird of Prey/Ground Nesting Bird Report and Rarer Records for Fauna Survey 2013

Appendix X: Priority Open Habitat & Woodland Creation Survey Report

Appendix XI: Natural Regeneration Survey

Appendix XII: Deer Management Plan

Appendix XIII: Peatland Restoration

Appendix XIV: Archaeological Report



Forestry and
Land Scotland
Coilltearachd agus
Fearann Alba



Appendix XX: Artist Impressions 1-11





Forestry and
Land Scotland

Coilltearachd agus
Fearann Alba

Concept #1 (Artist Impression): A fragmented woodland (mosaic planting) located on Moraine Knolls with open space between

Loch Katrine

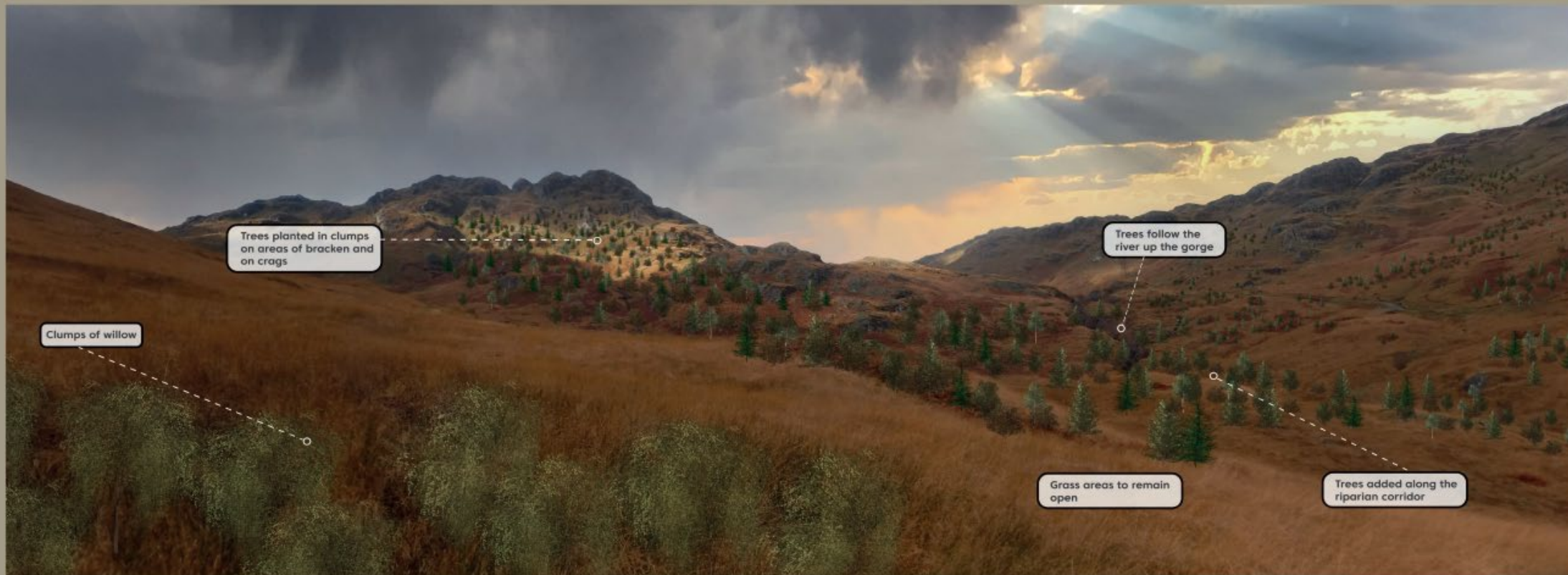
Land Management Plan
Consultation





Loch Katrine

Land Management Plan
Consultation





Loch Katrine

Land Management Plan
Consultation

Trees planted on the areas
of bracken and up the slopes

Trees added along the
riparian corridor

Clumps of trees on a
moraine knoll



Loch Katrine

Land Management Plan
Consultation

Planting across areas
of bracken

Areas of failed planting
due to land slides will be
replanted

Alder riparian planting





Forestry and
Land Scotland

Coilltearachd agus
Fearann Alba

Concept #5 (Artist Impression): Riparian Planting

Loch Katrine

Land Management Plan
Consultation



Trees added along the
riparian corridor at
Corriearklet Glen



Forestry and
Land Scotland

Coilltearachd agus
Fearann Alba

Concept #6 (Artist Impression): Screening infrastructure
(Overhead Power-line) with tree planting

Loch Katrine

Land Management Plan
Consultation





Forestry and
Land Scotland

Coilltearachd agus
Fearann Alba

Concept #7 (Artist Impression): Seed islands with fenced enclosure and bird markers

Loch Katrine

Land Management Plan
Consultation





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Concept #8 (Artist Impression): Seed island fenced enclosure with tree planting. The potential vision for 20-30 years' time

Loch Katrine

Land Management Plan
Consultation





Loch Katrine

Land Management Plan
Consultation





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Concept #10 (Artist Impression): 100 Years+ Deadwood

Loch Katrine

Land Management Plan
Consultation



Standing
deadwood

Fallen
deadwood



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Concept #11 (Artist Impression): 100 Years+ 'Future Woodland

Loch Katrine

Land Management Plan
Consultation





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