



**SP ENERGY  
NETWORKS**

## **Glen Gyle | YW3**

**Changing the VIEW : Landscape Enhancement  
Proposals Workbook**

**Project Title:** Changing the View : Glen Gyle Landscape Enhancement Proposals  
**Client:** Scottish Power Energy Networks

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Planning & EIA  
 Design  
 Landscape Planning  
 Landscape Management  
 Ecology  
 Mapping & Visualisation

LUC GLASGOW  
 37 Otago Street  
 Glasgow  
 G12 8JJ  
 T +44 (0)141 334 9595  
 glasgow@landuse.co.uk

Offices also in:  
 London  
 Bristol  
 Edinburgh



Land Use Consultants Ltd  
 Registered in England  
 Registered number: 2549296  
 Registered Office:  
 43 Chalton Street  
 London NW1 1JD  
 LUC uses 100% recycled paper

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## 1 Introduction

### Project Background

1.1  
LUC has been commissioned by Scottish Power Energy Networks (SPEN) to assess the visual impact of existing transmission infrastructure in the Loch Lomond and The Trossachs National Park, and identify areas suitable for potential mitigation in order to reduce identified visual impacts.

'Changing the VIEW' (Visual Impact of Existing Wirescape) is a project being driven by SPEN, to positively influence the visual impact of existing transmission infrastructure in some of Scotland's most sensitive and highly valued landscapes. The project presents a rare opportunity to reduce the landscape and visual impacts of infrastructure in specific areas within or near to National Parks and National Scenic Areas (NSAs). SPEN are keen to work collaboratively and in partnership with a range of stakeholders, to access a share of a £500 OFGEM fund, to deliver the best possible outcome for the areas in which they operate.

1.2  
SPEN greatly value the local expertise and knowledge of stakeholders in understanding the nature of landscape and visual impacts, the potential for mitigation, and importantly, the range of different interests which will influence the deliverability of any given project.

1.3  
This stage builds on the work of our initial stakeholder consultation, overall review of existing landscape and visual impacts, and identification of potential projects to take forward.

1.4  
Stage 3 now builds on the work of our stakeholder consultation, overall review of existing landscape and visual impacts, and identification of potential projects to take forward. Each mitigation project will be developed in further detail, in conjunction with landowners and other stakeholders, to submit to OFGEM for consideration.

### 1.5 Stage 1 and 2 Findings

A landscape and visual impact assessment, undertaken by LUC, identified the key landscape and visual impacts associated with the existing overhead line in this section. In landscape terms the line is relatively well integrated within this large scale upland landscape, particularly where the pylons are sited on lower slopes and back

clothed by rugged hills. The line does, however, detract from the sense of remoteness and wildness which is otherwise experienced. The line is visually contained by the glen landform, but prominent in views from the core path which runs up the glen and from surrounding hills and ridges.

### Introduction

1.6  
The Glen Gyle area has been identified as an area which may benefit from mitigation. Through a process of stakeholder consultation and technical review, landscape enhancement was identified as the most appropriate form of mitigation.

1.7  
The purpose of this workbook is to set out the reasons why Glen Gyle would benefit from visual mitigation, and to present the options and ideas for landscape enhancement.

### The Site

1.8  
**Site Description**  
The section of 275kV overhead transmission line identified for mitigation runs through Glen Gyle, a dramatic, steep sided upland glen enclosed by the rugged peaks of Meall Mor, Beinn a Choin and Beinn Ducteach. The glen forms part of the Loch Katrine catchment, and is managed by Forestry Commission Scotland as part of **The Great Trossachs Forest National Nature Reserve**. The line runs parallel to the Glen Gyle Water, a burn which drains into Loch Katrine to the south-east. The primary landcover is upland grassland, with clusters of native woodland on rocky outcrops and along the Glen Gyle Water. There is some young coniferous tree planting at the lower end of the glen. Glen Gyle is within the **Ben More – Ben Ledi Wild Land Area (07)**; the upper part of the glen is particularly remote, and accessible only via a maintenance track. The lower part of the glen is in proximity to the Great Trossachs Path which circumnavigates Loch Katrine.

1.9  
**Other Projects and Initiatives**  
There are a number of ongoing projects and initiatives in the National Park. Glen Gyle lies within the project area

for **The Great Trossachs Forest Project**. This covers an area over 160 square kilometres, and is now the largest National Nature Reserve in Scotland. This long term (200 year) project aims to return heavily grazed land and

plantation forestry to a more dynamic mix of habitats, including native woodland, in tandem with further opportunities for recreation.

1.10  
The **Mountains and People Project** aims to support community groups in the National Park who wish to improve their community path networks. The project is led by the Loch Lomond and The Trossachs National Park Community Partnership, who work closely with the National Park Authority to provide information, training and guidance to enable path groups to develop community paths and identify methods to maintain them.

### 1.11 Opportunities for Mitigation

Although this is not an area of the National Park which is accessed by large numbers of people, landscape and visual impacts were judged to be **High**. A range of mitigation options were considered, but re-routeing was not judged to be feasible, and undergrounding would lead to substantial ground disturbance, resulting in potential impacts on the wild land characteristics of the glen. Landscape enhancement, focused on native woodland planting and restoration of over-grazed vegetation, was therefore identified as the most appropriate solution for further exploration.

1.12  
Glen Gyle lies within The Great Trossachs Forest Project area, and Changing the View offers opportunities to deliver benefits which meet the aims and objectives of this initiative, including:

- **Habitat Management:** *To create a forest landscape large enough to support a dynamic and functional ecosystem, which expands and contracts over time, allowing habitats and species to adapt to climate change. This includes protecting and enhancing over 10,000 hectares of native woodland, moorland, montane scrub, wood pasture, grassland and wetland; and creating around 4400ha of native woodland.*

- **People engagement:** *To become a renowned focal point offering a high quality visitor experience attracting visitors from the UK and overseas, benefiting local communities both socially and economically. This will include improved access and engaging local communities and businesses by working with them.*
- **Life-long learning:** *Involving schools, universities, research institutes and volunteers; and providing opportunities for people to learn about cultural landscapes, forest ecosystems, sustainable land management, climate change, biodiversity and wildlife.*
- **Partnership working:** *To be a flagship partnership project, setting an example and encouraging other land managers to work across boundaries to benefit wildlife and people.*
- **Other:** *Delivering quality water to Glasgow and enabling delivery of the priorities set by Loch Katrine's Integrated Catchment Management Plan.*

### 1.13 Visual

Mitigation may include large scale native woodland planting in the glen, which would help to reverse **overgrazing**, whilst **offering other benefits such as improvements to biodiversity**. This work could be undertaken in tandem with improvements to Paths, providing access to remote summits in the Wild Land Area. Implementation of these types of project could be run as volunteer initiatives alongside others in this part of the National Park.

## 2 Site Appraisal

### Context

2.1

The section of overhead line runs through Glen Gyle, a dramatic, steep sided upland glen enclosed by the rugged peaks of Meall Mor, Beinn a Choin and Beinn Ducteach. The section identified as likely to benefit from mitigation is approximately 3.8 km in length. The line runs parallel to the Glen Gyle Water, which flows into Loch Katrine. The upper part of the glen is relatively remote and accessible only via a rough hill track, which is also a Core Path. The lower part of the glen is accessible via the **Great Trossachs Path** which circumnavigates Loch Katrine. The glen is within the **Ben More – Ben Ledi Wild Land Area (07)** and Great Trossachs Forest National Nature Reserve.

### Character/ landscape pattern

2.2

The upper part of the glen is defined by the Highland Summits landscape character type, which is characterised by massive, rugged peaks cut by narrow glens with fast flowing rivers, and a strong sense of remoteness. The land cover is simple, comprising semi natural grassland with bracken / bog and trees on lower slopes. The lower part of the glen is within the Straths and Glens landscape character type; key landscape features include the loch and small areas of coniferous forestry. There is no settlement in the glen, except on the fringes of Loch Katrine.

### Visual amenity and Views

2.3

The lower end of the glen is visible to users of the Great Trossachs Path, which circumnavigates Loch Katrine. The middle and upper parts of the glen are visible to walkers using the core path which runs alongside the overhead line, with remnant trees filtering some views from the path. The line is also visible from the rugged summits which enclose the glen, such as Beinn a' Choin.

### Special qualities and Landscape Features

2.4

The area displays some of the Special Qualities of the National Park, most notably the strong sense of place

which results from the combination of loch, woodland and craggy slopes and summits. The area also has a sense of remoteness and tranquillity.

Some parts of the glen display the diverse mixed forest landscape typical of the Loch Katrine catchment.

### Mitigation Proposals

2.5

There is an opportunity to plant native trees (eg Scots Pine and other broadleaved species) in line with the Great Trossachs Forest Project which includes this area. There is also an opportunity to reduce the prominence of the overhead line corridor by regenerating overgrazed vegetation.

### Landscape Management

2.6

Glen Gyle is currently managed by Forestry Commission Scotland and Glen Falloch Estate. The glen is part of the Great Trossachs Forest National Nature Reserve which is being managed to restore a more natural habitat mosaic with enhanced ecosystem functions. This also includes the removal of regenerating Sitka Spruce trees and Rhododendron, where applicable.

## P1. Site Photographs

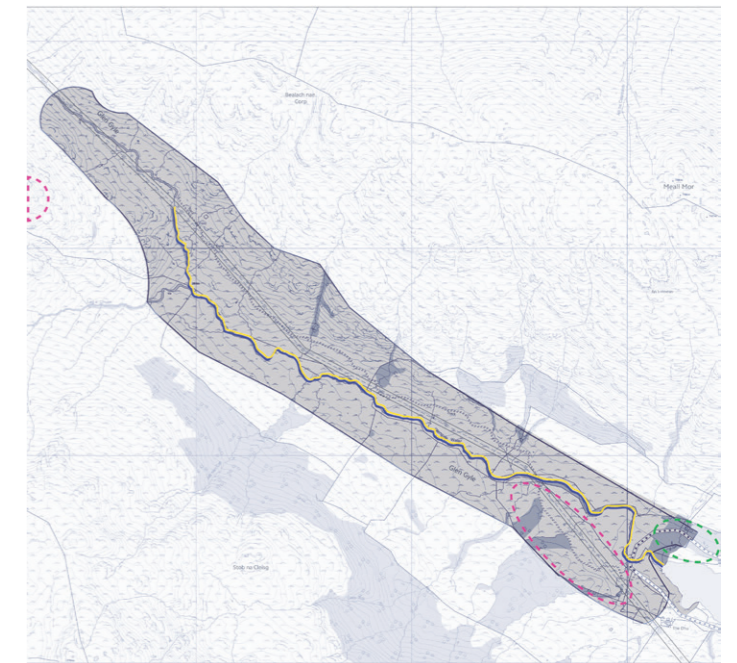
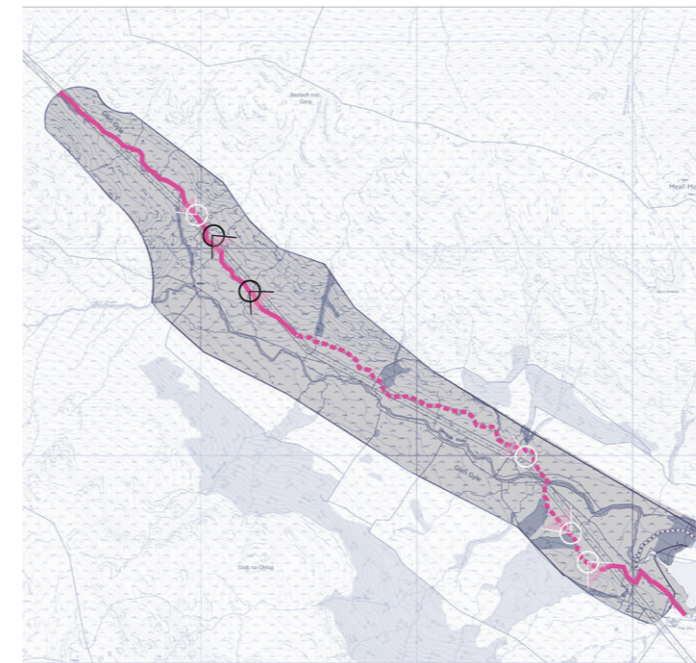


F2.1 Local Landscape Character Areas

F2.2 Existing Vegetation

F2.3 Visibility from Three Lochs Way and Views

F2.4 Special Qualities and Landscape Features



- Key**
- A** Highland summits
  - B** Highland summits (glen sides)
  - C** Highland summits with upland glen floor (Glen Gyle water)
  - D** Straths & Glens with lochs (forestry)
  - E** Straths & Glens with lochs & native coniferous woodland
  - F** Straths & Glens with lochs (waters edge)

- Key**
- A** Upland grassland
  - B** Upland grassland with clusters of native deciduous tree planting on rocky outcrops & occasional windblown self seeded trees
  - C** Upland grassland, tree lined Glen Gyle water
  - D** Upland grassland with new coniferous tree planting

- Key**
- Very high visibility
  - High visibility with some screening & intervening tree planting
  - Medium visibility at a distance with no skylining
  - Some visibility intermittent screened tree planting
  - No Visibility
  - Long ranging views
  - Medium ranging views terminated by landform

- Key**
- Landform
  - Scots pine/native woodland
  - Glen Gyle water & riparian habitat/trees

### 3 Precedent Projects and Guiding Principles

#### General

##### 3.1

This first section of this chapter sets out precedent projects, the principles of which, inform the development of concept design for Glen Gyle.

This section is followed by the setting of guiding principles which have been developed to inform the design process for landscape enhancements for the mitigation of visual impacts of lines on the experience of Glen Gyle.

The guiding principles have been set out as a workthrough to demonstrate the following design elements which are to be taken into consideration during design development:

- Great Trossachs Forest and Scottish Natural Heritage Woodland Typologies;
- Materials;
- Woodland edge treatments;
- Woodland glade/ ride creation;
- Feathered woodland upland edge creation;
- Woodland establishment;
- Footpath creation; and
- Woodland planting structure.

#### Precedent Projects

##### 3.2

The following projects have been identified as examples of the proposal that could be developed in Glen Gyle.

##### **Ben A'an Improvement Programme**

Ben A'an is a popular small hill in the Queen Elizabeth Forest Park, to the east of Loch Katrine. The improvement works began in October 2014 and are part of The Great Trossachs Forest Project, which aims to restore a large scale area of Scotland's native woodland. The path upgrade is part of a wider project called 'The Mountains

and the People', funded by Heritage Lottery Fund in partnership with Cairngorms National Park, Loch Lomond and the Trossachs National Park, Forestry Commission Scotland and the Cairngorm Outdoor Access Trust. The first stage is complete, comprising trail upgrades and the felling of non-native trees beside the path. Stage 2 will see the forest management team carry out ground preparation works before re-planting part of the area with native trees.

##### **Carrifran Wildwood, Scottish Borders**

The Carrifran Wildwood project is an ecological restoration initiative set up by members of the Borders Forest Trust, in Carrifran glen near Moffat in the Scottish Borders. The aim is to recreate an extensive tract of wild and largely wooded land, which will eventually becoming a self-functioning natural ecosystem. The plan is to create a natural looking woodland mosaic with open ground, over 1500 acres. Over 600,000 trees and shrubs have been planted in the glen since 2000, all from local provenance stock. Increases in species such as woodland feeding birds have been noted. The project was initially funded by members of the public and charitable trusts, and is now supported by public and private sector organisations such as the Millennium Forest for Scotland Trust, SNH and the Forestry Commission.

##### **Glenlude, Scottish Borders**

The John Muir Trust is working on a 20-year plan to 'rewild' a former sheep farm and conifer plantation into a mosaic of native habitats, at Glenlude, near Selkirk in the Scottish Borders. The conifer plantation is gradually being replaced with native broadleaf trees, which are also being planted on some of the open grassland. The trees are grown from seed collected locally and grown in Glenlude's tree nursery. Volunteers include schools, John Muir Trust members and a drug and alcohol rehabilitation charity.

### P2. Precedent Project Photographs



Ben A'an Improvement Programme: Images showing native woodland planting and regeneration



Carrifran Wildwood: Images showing ecological restoration of Carrifran glen through native woodland planting



Glenlude: Images showing gradual removal of conifer plantation for creation of mosaic of native habitats through native woodland planting

**P3. Indicative Planting Palette Photographs**

**Planting**

3.3  
The following images display the proposed planting species and style, and materials palette which are proposed to be used in Glen Gyle.

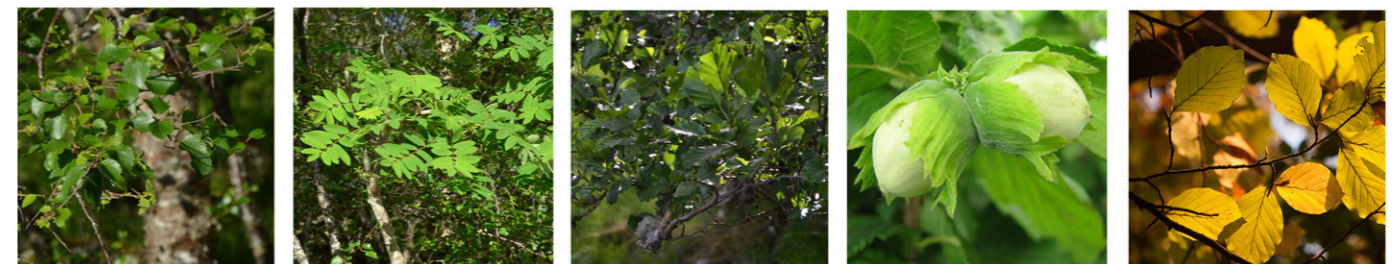
3.4  
The following is a list of native species which can be drawn on for woodland mixes. Many of these species are common to the National Park. **The Biodiversity Action Plan for the National Park** (Wild Park 2020) notes that expanding and restoring native woodland is one of the major goals for Forestry Commission land in the National Park.

**Woodland mixes**

Pinus sylvestris	Scots pine
Betula pendula	Silver birch
Betula pubescens	Downy birch
Alnus glutinosa	Alder
Populus tremulus	Aspen
Fraxinus excelsior	Ash
Fagus sylvatica	Beech
Carpinus betulus	Hornbeam
Quercus robur /	Oak (Common / Sessile)
Quercus petraea	Rowan
Sorbus aucuparia	Whitebeam
Sorbus intermedia	Wild cherry / Gean
Prunus avium	Willow (Crack / White / Goat /
Salix fragilis / alba /	Grey / Eared)
caprea / cinerea / aurita	Wych elm
Ulmus glabra	Field maple
Acer campestre	Holly
Ilex Aquifolium	Common Juniper
Juniperus communis	

**Native Hedgerow / Shrubs / Understorey**

Crataegus monogyna	Hawthorn
Prunus spinosa	Blackthorn
Acer campestre	Field maple
Corylus avellana	Hazel
Fagus sylvatica	Beech
Ilex Aquifolium	Holly
Lonicera periclymenum	Honeysuckle
Sambucus nigra	Elder
Rosa canina	Dog rose
Rosa rubiginosa	Sweet briar
Viburnum Opulus	Guelder rose
Ligustrum vulgare	Wild privet



Silver birch (Betula pendula) Rowan (Sorbus aucuparia) Alder (Alnus glutinosa) Hazel (Corylus avellana) Beech (Fagus sylvatica)



Scot's pine (Pinus sylvestris) Holly (Ilex aquifolium) Dog rose (Rosa canina) Birch and Willow (Betula spp. and Salix spp.) Goat willow (Salix caprea)



Blackthorn (Prunus spinosa) Hawthorn (Crataegus monogyna) Juniper (Juniperus communis) Common Oak (Quercus robur) Downy birch (Betula pubescens)



## Planting/ Woodland Typologies



### A. Native pine woodland

Altitudinal range from sea level to over 600m on steeply sloping ground with dry to damp acidic soils. Occurs with upland oakwood, upland birchwood and wet woodland habitats and also in patches within non-native conifer plantations.

#### Woodland Layer (Primary) 85%

Pinus sylvestris (Scot's pine)

#### Woodland Layer (Secondary) 15%

Betula pendula (Silver birch)  
Betula pubescens (Downy birch)  
Sorbus acuparia (Rowan)  
Alnus glutinosa (Alder)  
Salix cinera (Grey willow)  
Ilex aquifolium (Holly)  
Corylus avellana (Hazel)

#### Shrub/ Understorey Layer

Salix aurita (Eared willow)  
Juniperus communis (Juniper)



### B. Upland birchwoods

Moderate/ steep slopes generally below 400m, with well drained soils, but can extend well above this, can also occur in mosaics with Upland oakwoods, upland mixed ashwoods and wet woodland habitats.

#### Woodland Layer Primary 85%

Betula pendula/ pubescens (Birch spp.)

#### Woodland Layer (Secondary) 15%

Pinus sylvestris (Scot's pine)  
**Shrub/ Understorey Layer**  
Juniper (Juniperus communis)  
Eared willow (Salix aurita)  
Aspen (Populus tremula)  
Grey willow (Salix cinera)



### C. Upland mixed ashwoods

Moderate/ steep slopes with moist soils below 300m, in association with upland oakwood, upland birchwood and wet woodland habitats. Is also found in scattered patches on steep crags up to about 500m.

#### Woodland Layer (Primary) 85%

Fraxinus excelsior (Common ash)  
Ulmus glabra (Wych elm)

#### Woodland Layer (Secondary) 15%

Grey willow (Salix cinera)  
Hazel (Corylus avellana)  
Downy birch (Betula pubescens)  
Elder (Sambucus nigra)  
Sorbus acuparia (Rowan)  
**Shrub/ Understorey Layer**  
Blackthorn (Prunus spinosa)  
Dog rose (Rosa canina)  
Eared willow (Salix aurita)  
Gorse (Ulex europaeus)



### D. Atlantic oakwoods

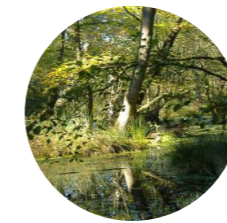
Moderate/ steep slopes below 300m in with well drained soils. Can occur in mosaics with upland birchwoods, upland mixed ashwoods and wet woodland habitats. Oak forms >30% of the canopy cover.

#### Woodland Layer (Primary) 80%

Sessile Oak (Quercus patraea)  
Common Oak (Quercus robur)

#### Woodland Layer (Secondary) 20%

Silver birch (Betula pendula)  
Rowan (Sorbus acuparia)  
Hazel (Corylus avellana)  
Holly (Ilex aquifolium)  
**Shrub/ Understorey Layer**  
Juniperus communis (Juniper)  
Bramble (Rubus fruticosus)  
Dog rose (Rosa canina)  
Gorse (Ulex europaeus)  
Broom (Cytisus scoparius)



### E. Wet woodland

Flushed slopes, wet hollows, valley floors and edges of wetlands, rivers streams and lochs in upland and lowland situations.

#### Woodland Layer (Primary) 100%

Grey willow (Salix cinera)  
Goat willow (Salix caprea)  
Downy Birch (Betula pubescens)  
Alder (Alnus glutinosa)  
**Shrub/ Understorey Layer**  
Eared willow (Salix aurita)  
Osier (Salix viminalis)  
Hawthorn (Crataegus monogyna)



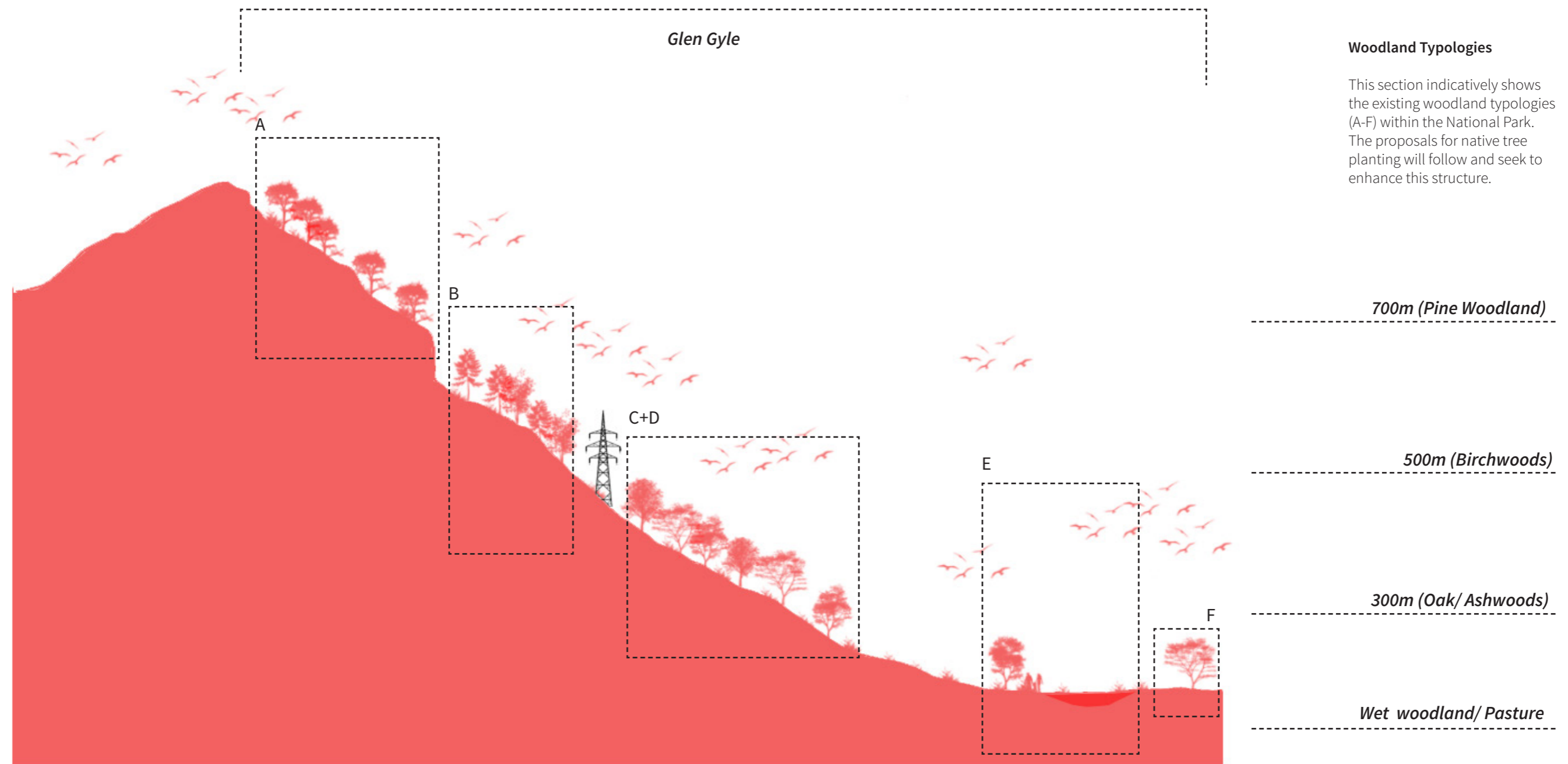
### F. Wood-pasture and Parkland

Mostly below 300m in altitude in areas of native or plantation woodland or enclosed farmland. In upland areas most commonly associated with native woodland.

#### Tree Planting

Sessile Oak (Quercus patraea)  
Common Oak (Quercus robur)  
Ash (Fraxinus excelsior)  
Alder (Alnus glutinosa)  
Birch (Betula pendula/ pubescens)  
Scot's pine (Pinus sylvestris)  
Hazel (Corylus avellana)  
Hawthorn (Crataegus monogyna)

F3.1 Indicative Section Woodland Typologies



**Woodland Typologies**

This section indicatively shows the existing woodland typologies (A-F) within the National Park. The proposals for native tree planting will follow and seek to enhance this structure.

700m (Pine Woodland)

500m (Birchwoods)

300m (Oak/Ashwoods)

Wet woodland/Pasture

## Materials



### G. Fencing

To ensure successful establishment of the proposed native woodland planting area will require to be deer/ sheep fenced for protection from grazing animals. All new woodland will be fenced in accordance with Forestry Commission/ National Park technical guidance and specification.

Fence lines will be designed to be sympathetic to natural contours and integrate forest edges into the landscape, creating natural forest edges as detailed over the following pages.

All fencing shall be treated softwood timber with a durability of 40 years plus with combination of rectangular wire mesh and hexagonal wire mesh netting galvanised to BS EN 10244-2 to prevent deer and wild mammal species. Fencing shall be min. 1.8m in height, 300mm x 220mm max. mesh size with 1050mm wide rabbit/ hare proof hexagonal 31mm mesh netting to base to be turned back by 150mm and pinned.

Treated softwood timber stiles and gates will also be required to facilitate access for woodland management activities. There will also be a requirement to cross streams in some locations which will require appropriate design to prevent access.

All areas shall be assessed by a qualified ecologist to identify species requirements i.e. badgers etc. to ensure appropriate gates are installed.



### H. New Upland Footpaths

All new footpaths shall be designed in accordance with SNH/ National Park/ Upland Path Advisory Group technical guidance i.e. Upland Pathwork Construction Standards for Scotland/ Constructed tracks in the Scottish Uplands.

In general paths should be constructed using locally won aggregate where possible to a width varying between 600-1200mm and a minimum depth of 250mm. Minimum depths for path construction are as follows:

- 50mm of compacted surface material;
- 100mm of compacted base material; and
- 150mm of sub-base material.

Excavated material with turfs and boulders shall be used to define and contain the path edge, with the path surface sitting slightly higher than the ground at the path edge to avoid water collecting.

Localised site conditions will require independent assessment of suitable construction methods and materials i.e. in situations of peat/ waterlogged ground which may require matting/ geotextile use.

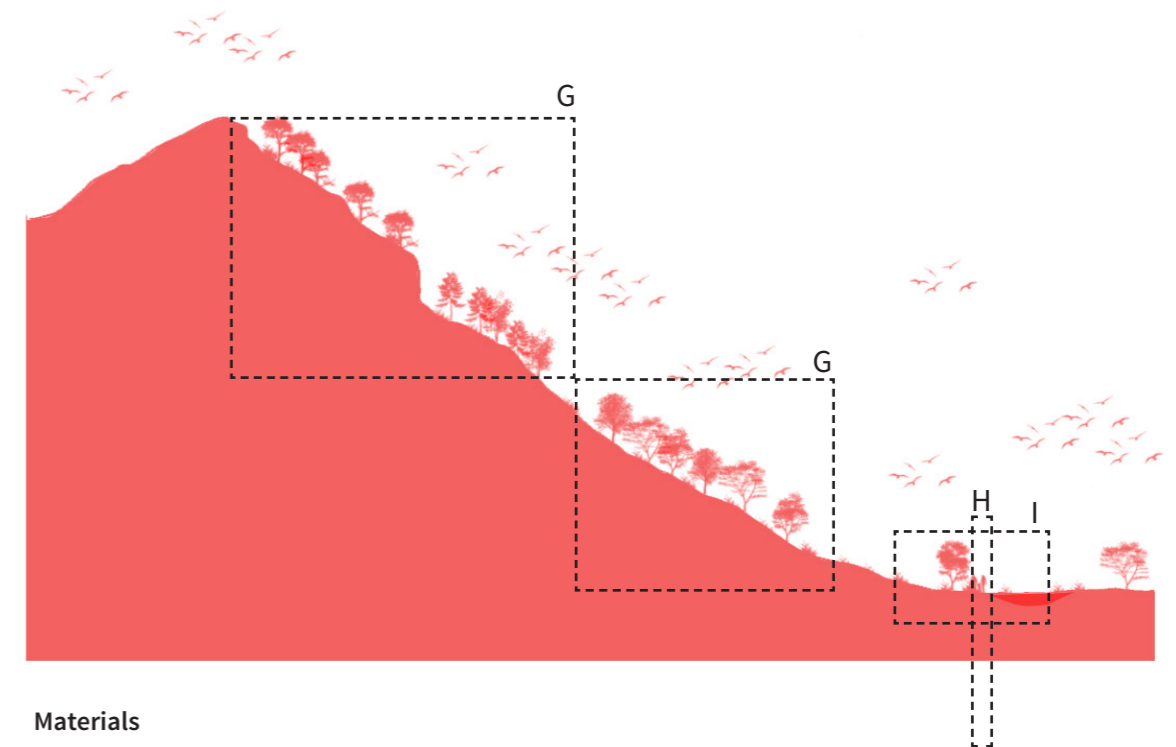


### I. Wayfinding

The proposals involve the provision of alternative routes through the site area resulting in the requirement for creation new pathways which deviate from the existing routes. There is therefore a requirement to ensure these are adequately sign posted to ensure that these routes are adopted by users. To assist with this it is proposed that a wayfinding strategy is created to include implementation of the following:

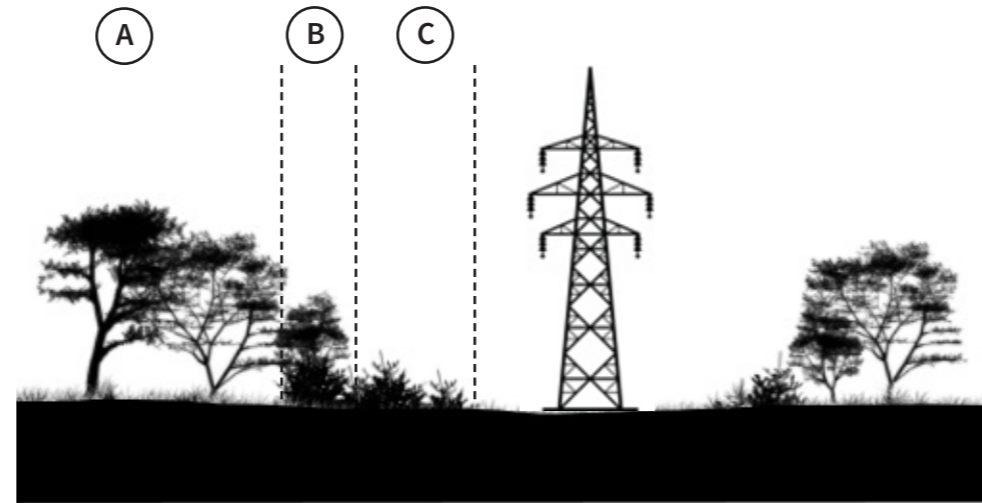
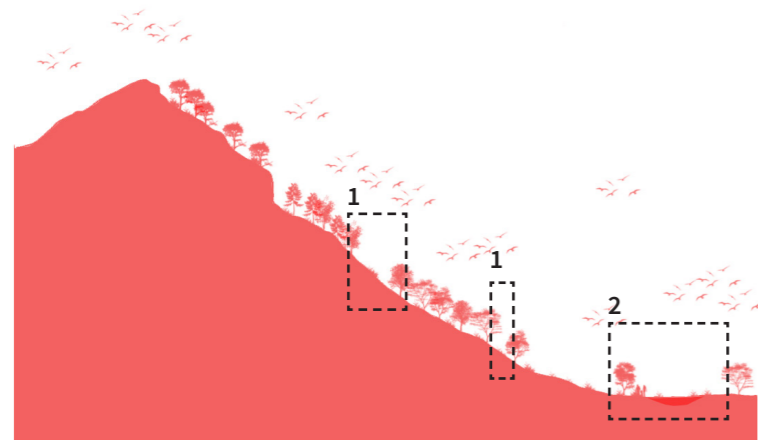
- Fingerpost directional signage;
- Waymarking posts; and
- Orientation panels.

All signage and wayfinding elements are to be design sensitively to suit the surrounding setting and be appropriate in scale and location in accordance with National Park/ Signage Guidance for Outdoor Access guidance. Materials to be utilised shall be durable treated where appropriate to provide a long lifespan.



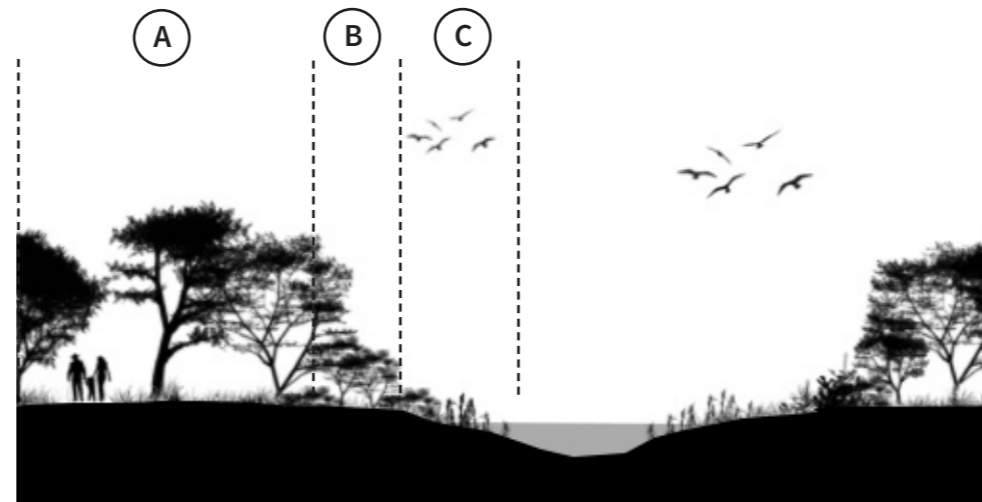
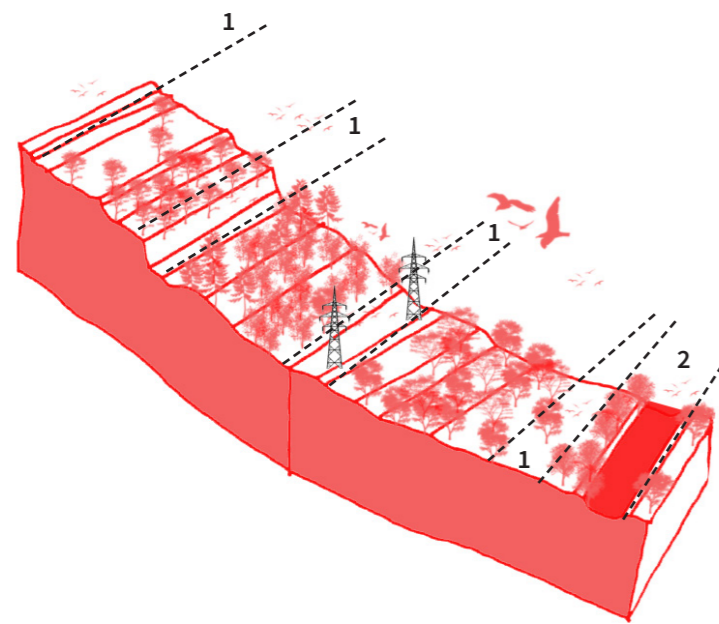
### Materials

This section indicatively shows where proposed materials for fencing, footpaths and wayfinding will be deployed.



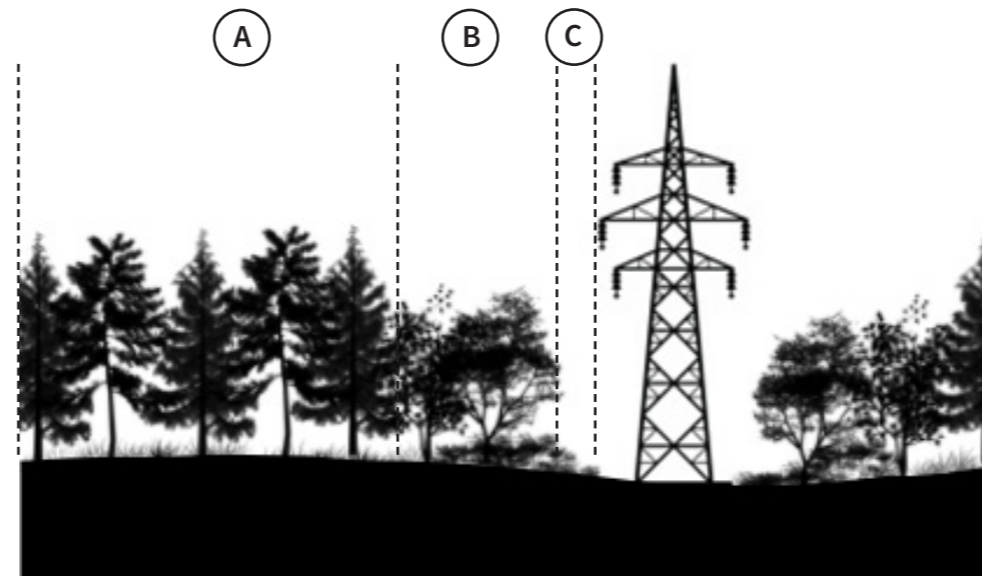
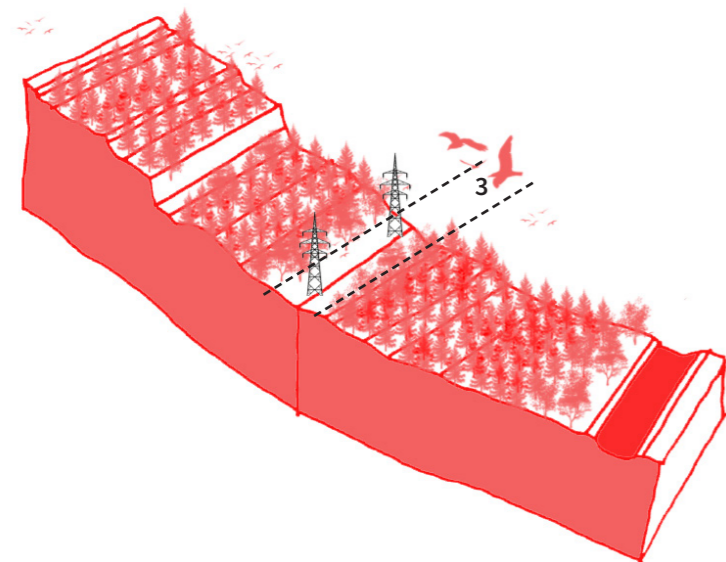
**F3.2  
Woodland Edge Treatment 1  
indicative Section**

This treatment will be deployed in areas where new woodland is to be created along the wayleave and to all new woodland edges and glades.



**F3.3  
Woodland Edge Treatment 2  
Indicative Section**

This treatment will be deployed in areas where new woodland is to be created along water edge/ riparian woodland.



**F3.4  
Woodland Edge Treatment 3  
Indicative Section**

This treatment will be deployed in areas where new woodland is to be created to existing plantation wayleave.

- A. Woodland zone
- B. Shrub zone
- This is the transition zone between trees and the open area of the wayleave/ open space.
- C. Herb zone
- This is the transition zone between trees and the open area of the wayleave/ open space.

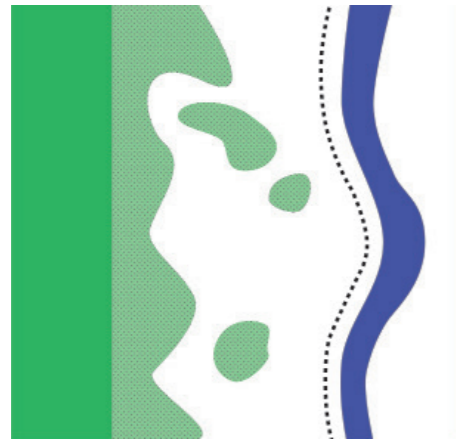
**F3.5  
Woodland Edge Treatments  
indicative Plan Diagrams**

The following plan diagrams illustrate the proposed edge treatment in situations likely to arise during the design development and implementation of native woodland planting. These are intended to act as a guide for edge treatments in the scenarios likely to be encountered.

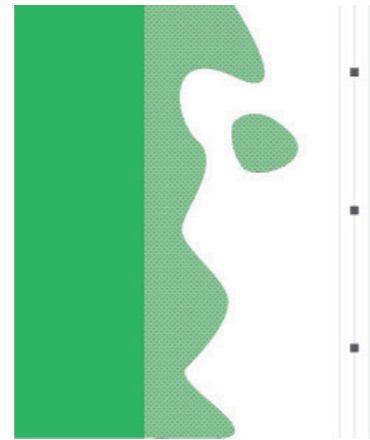
Treatments all propose naturalistic design of the permanent woodland and woodland edge through creation of glades, rides, scalloped edges, habitat islands and feathered edges to upland slope sides through sensitive following of natural hollows and depressions within the existing landform.



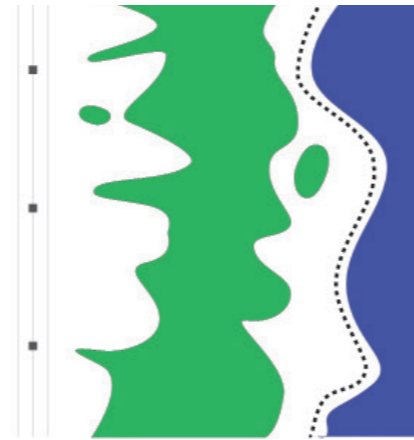
Native woodland edge to existing forestry and open space



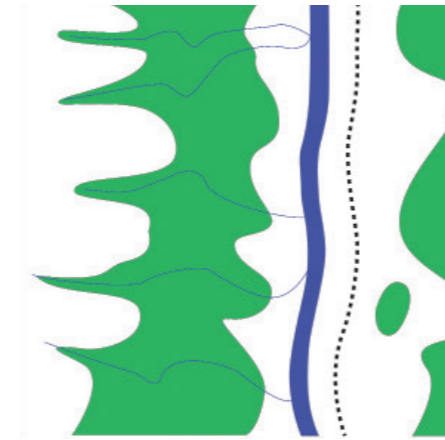
Native woodland edge to wayleave



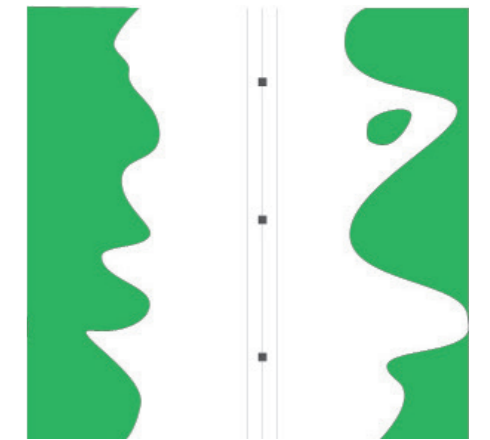
Native woodland on lower slopes between waters edge and wayleave



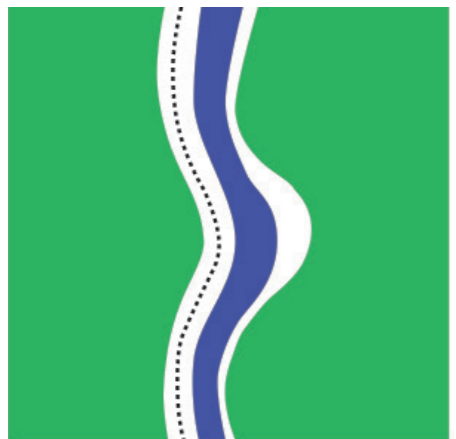
Native woodland on steep slopes with tributaries



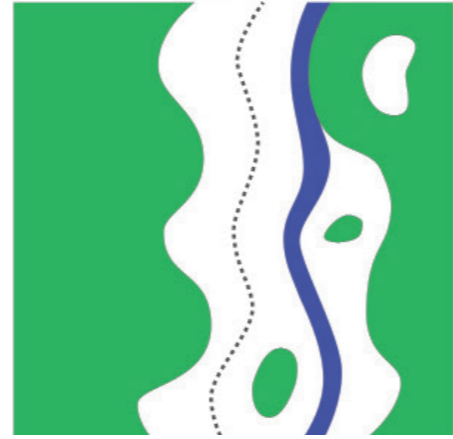
New native woodland edge to wayleave



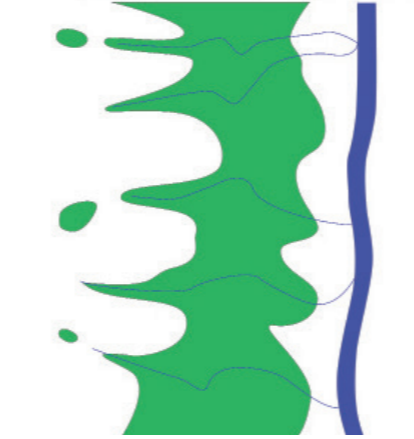
Riparian/ wet woodland corridor along rivers/ streams



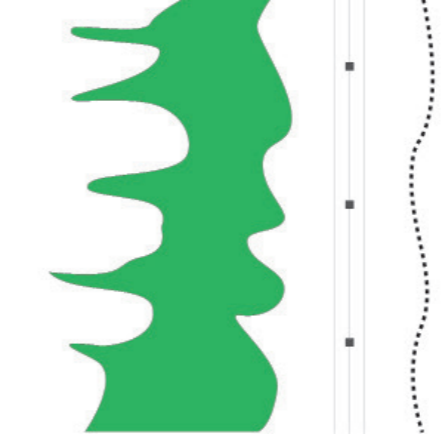
Native woodland edge to river/ stream and footpath



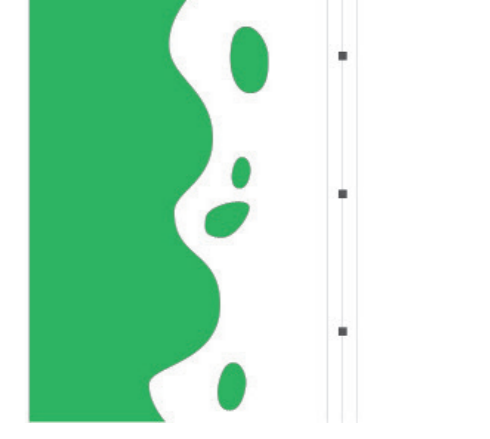
Native woodland planting edge to upland glen



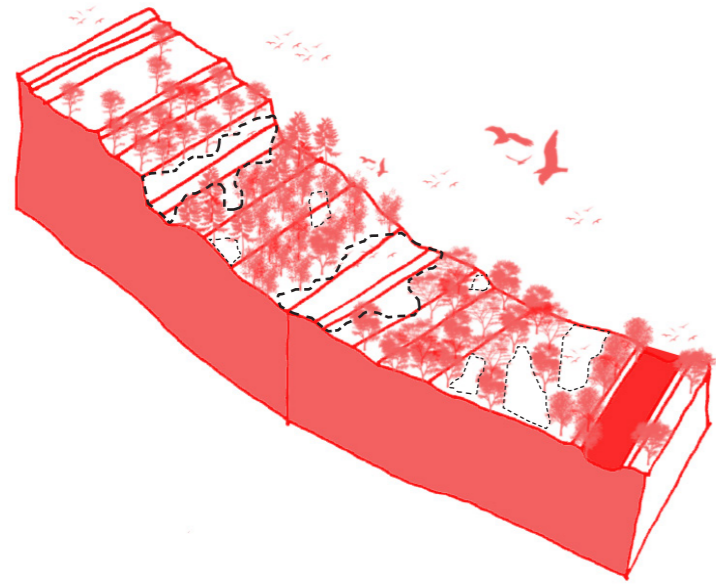
Native woodland planting to lower slopes and wayleave edge



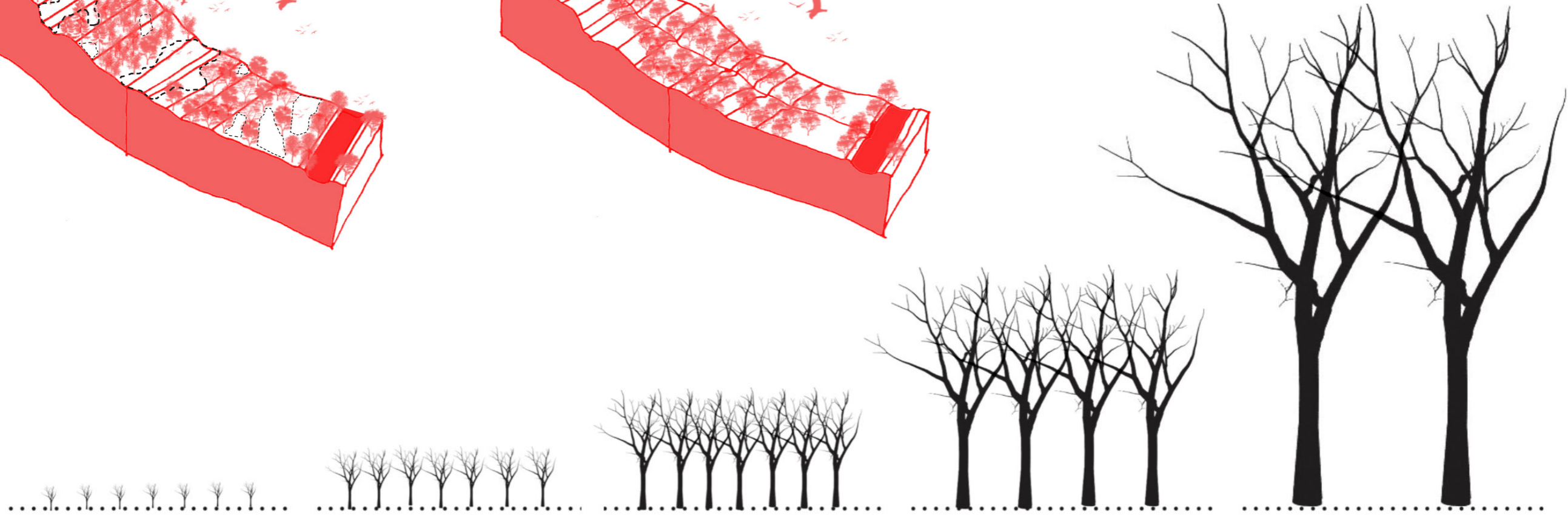
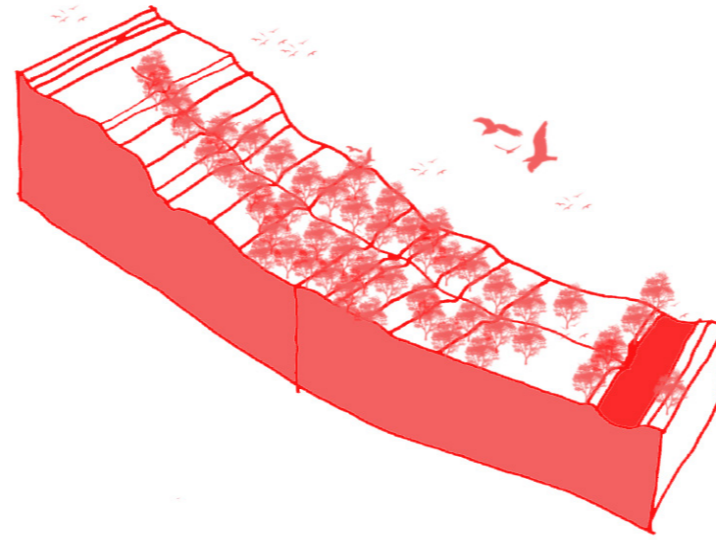
Native woodland edge to wayleave



F3.6 Woodland Glade/ Ride Creation



F3.7 Feathered Woodland Upland Edge Creation



**F3.8**  
**Woodland Establishment**  
**Diagrams**

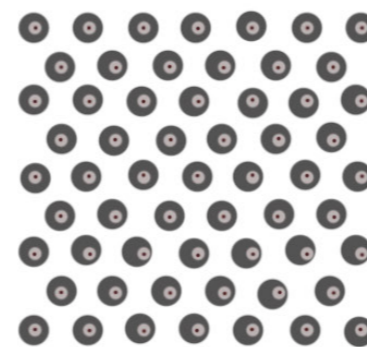
**1 year old**  
Whips at 0.5m-1.0m height and 15cm wide; trunk 2cm wide

Age: 1 year  
Canopy: 15cm  
Height: 0.5m-1.0m  
Girth: 2cm



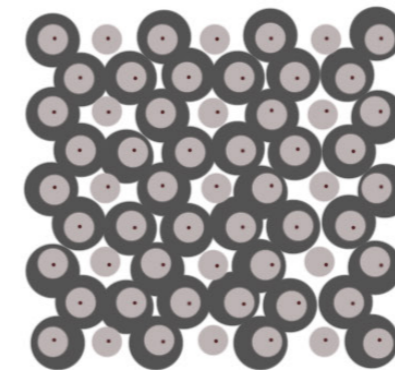
**5 years old**  
Growth 2.0m-3.5m height and 0.6m wide; trunk 8-10cm wide

Age: 5 years  
Canopy: 0.6m  
Height: 2.0-3.5m  
Girth: 8-10cm



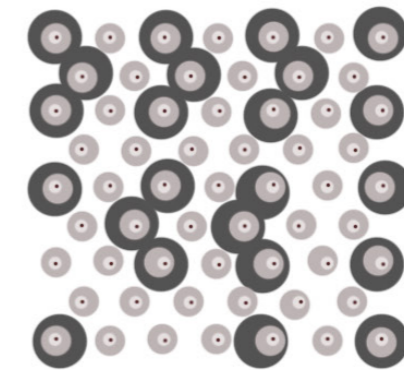
**10 years old**  
6.0-7.5m height and 1.2m wide; trunk 15-20cm wide

Age: 10 years  
Canopy: 1.2m  
Height: 6.0-7.5m  
Girth: 15-20cm  
Thinning: every 5-10 years



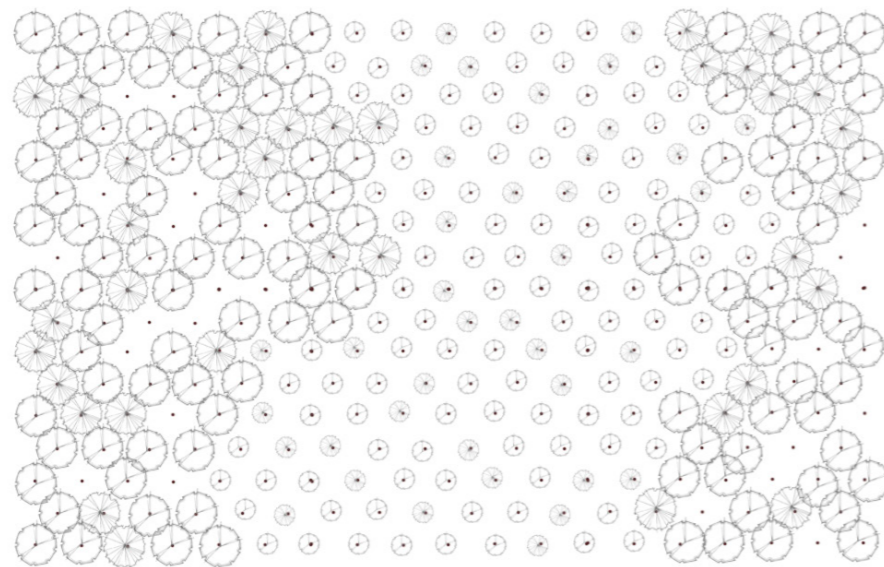
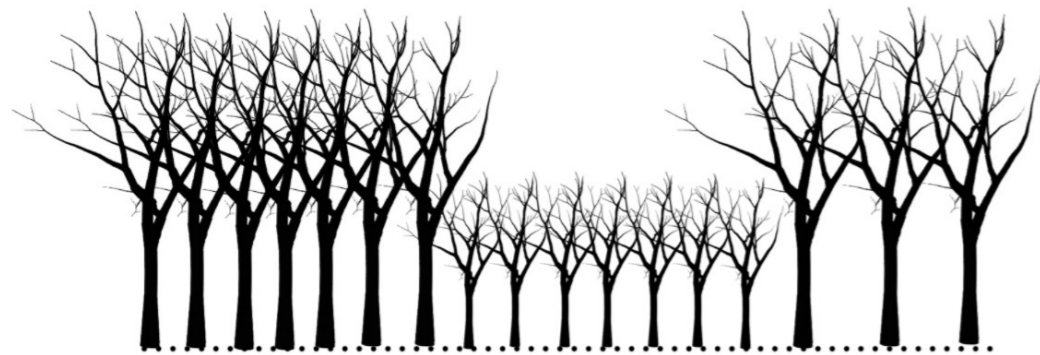
**25 years old**  
10-15m height and 7m wide; trunk 25cm wide

Age: 25 years  
Canopy: 7m  
Height: 10-15m  
Girth: 25cm  
Thinning: every 5-10 years



**40 years old**  
20-30m height and 10-15m wide; trunk 30-40cm wide

Age: 40 years  
Canopy: 10-15m  
Height: 20-30m  
Girth: 30-40cm  
Thinning: every 5-10 years



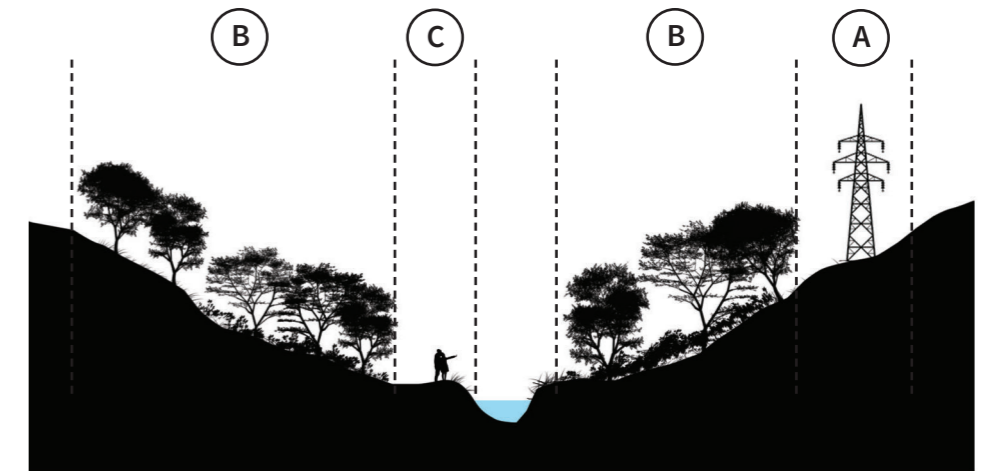
**F3.9**  
Mixed Age Woodland  
Establishment Diagram

**25 and 10 year old**  
Planting carried out at 15 year intervals to ensure diversity of age of woodland for ecological benefits.  
Above shows indicative woodland at 25 and 10 years of age.

**F3.10**  
Footpath Creation Treatment 1  
Indicative Section

A. Wayleave  
B. Wet Woodland/ Riparian zone  
This is the transition zone between trees and the open area of the wayleave/ open space.  
C. Footpath on water's edge on valley/ glen floor

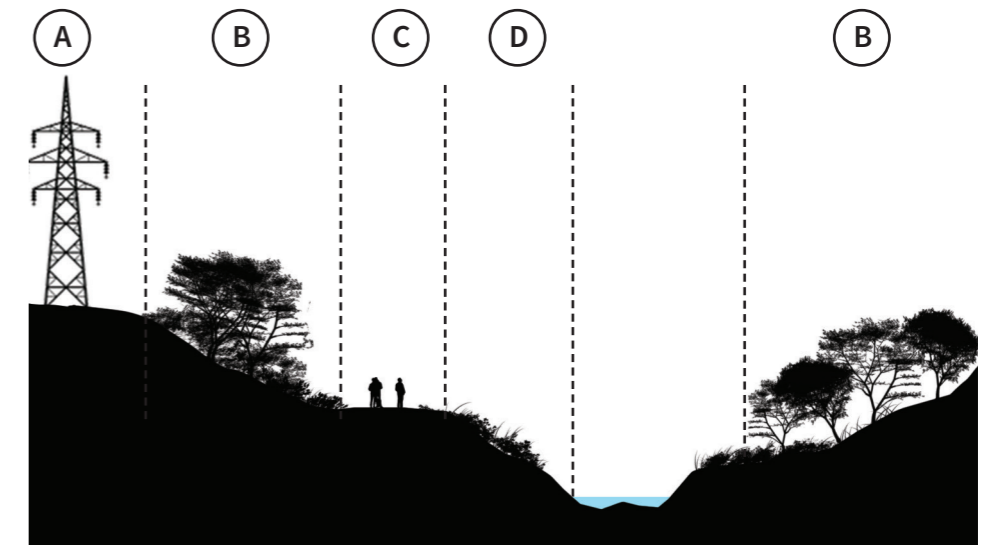
This treatment will be deployed in areas where footpaths are proposed directly adjacent to the water's edge.



**F3.11**  
Footpath Creation Treatment 2  
Indicative Section

A. Wayleave  
B. Wet Woodland/ Riparian zone  
This is the transition zone between trees and the open area of the wayleave/ open space.  
C. Footpath away from water's edge on lower slope sides  
D. Herb/ Wetland zone

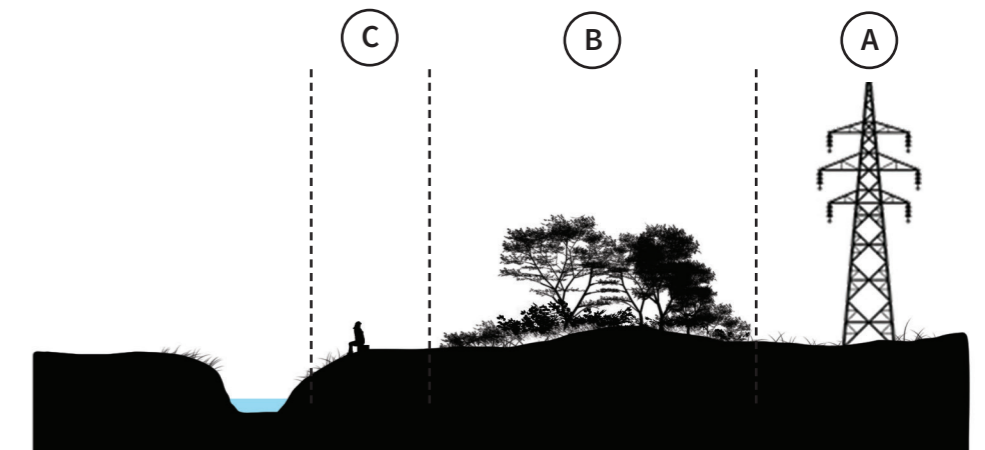
This treatment will be deployed in areas where footpaths are proposed to lower slope sides in close proximity to water's edge.



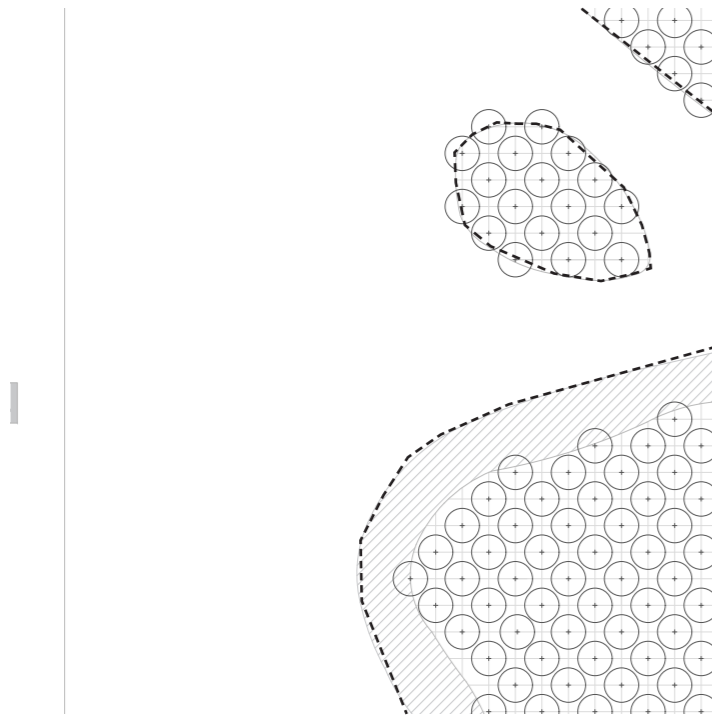
**F3.12**  
Footpath Creation Treatment 3  
Indicative Section

A. Wayleave  
B. Wet Woodland/ Riparian zone  
This is the transition zone between trees and the open area of the wayleave/ open space.  
C. Footpath away from water's edge on lower slope sides

This treatment will be deployed in areas where footpaths and viewpoints are proposed to open space/ open water.

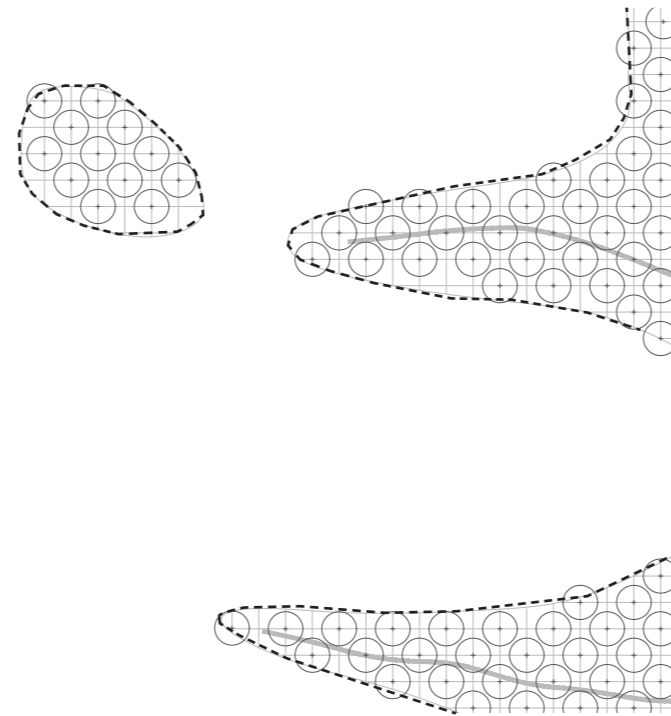


**F3.13**  
Woodland Edge Indicative Planting Structure



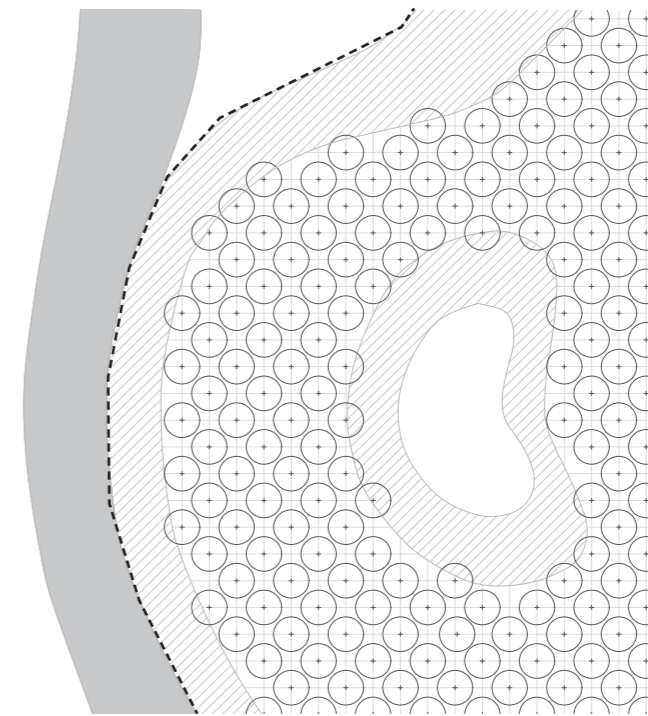
**A. Wayleave with habitat island**

Woodland planting to interior. Dashed black line indicates extents of area to be fenced during establishment. The hatched area illustrates area not to be planted but to allow for natural regeneration to form shrub zone.



**B. Upland slope with tributaries and habitat island**

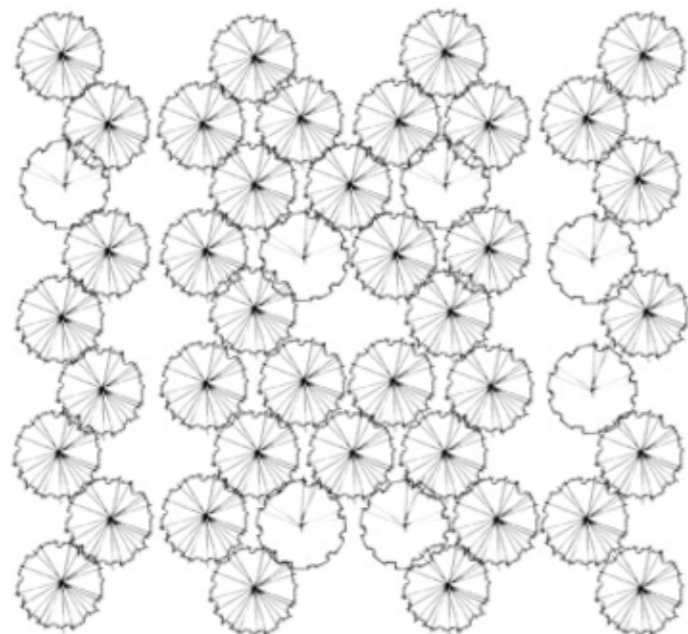
Woodland planting to upland edge to follow natural hollows and depressions. Dashed black line indicates extents of area to be fenced during establishment.



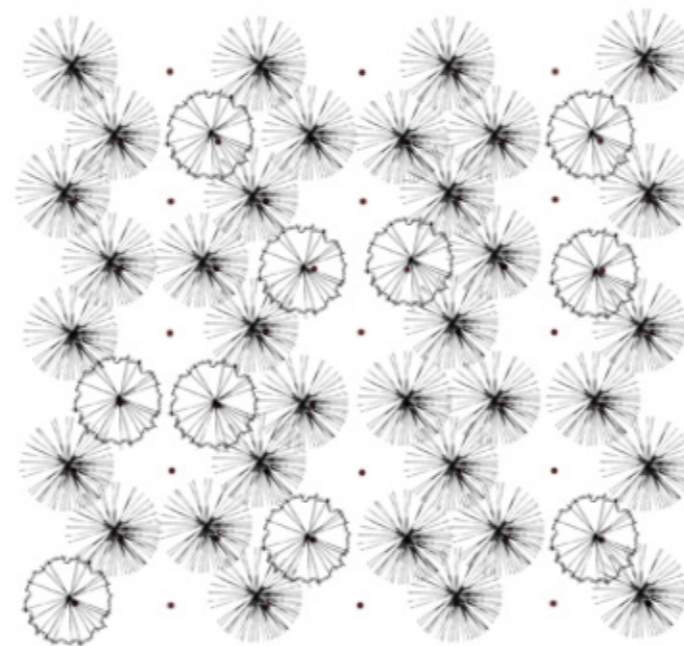
**C. Water edge with woodland glade**

Woodland planting to interior with areas left unplanted to form glades within the woodland mosaic. Dashed black line indicates extents of area to be fenced during establishment. The hatched area illustrates area not to be planted but to allow for natural regeneration to form shrub zone.

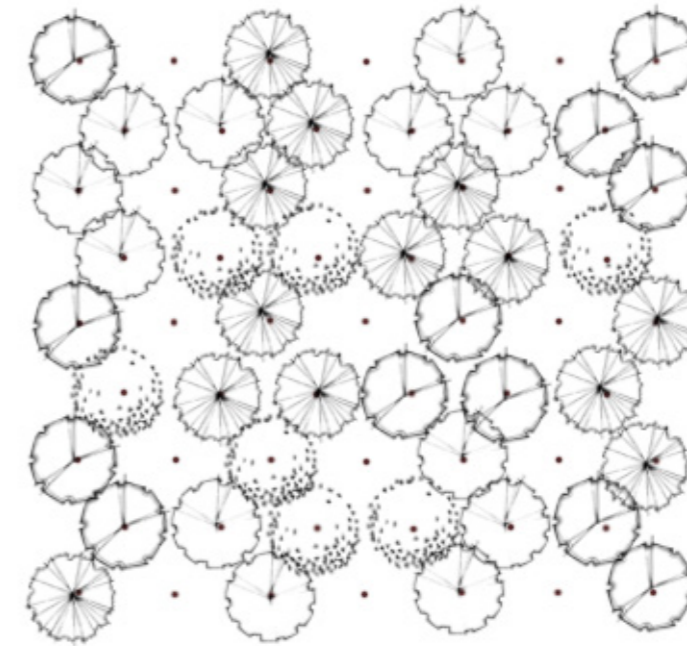
**F3.14**  
Indicative Woodland Structure (25 years old)



**A. Native Birch/Ash/Oakwoods**



**B. Native Pinewood**



**C. Wet Woodland**



## 4 Concept Development/Optioneering

### General

4.1 The findings from the site appraisal have been taken forward to inform the development of the overall concept for landscape enhancement proposals. Due to the size of the area and the complexities of the landscape, a series of options were developed which provide different solutions for mitigation of the visual impact of the line within Glen Gyle and associated hill path, which provides access to remote summits in the **Ben More – Ben Ledi Wild Land Area (07)**.

4.2 Three potential options have been developed and are set out in this chapter. Analysis of each option has also been carried out, to ascertain strengths and weaknesses, and assist in determining the most suitable option to take forward and develop further to outline design stage.

### 4.3 Option 1

This option explores retaining the existing track and providing wide spread landscape enhancement measures to the northern and southern slopes in the form of native woodland planting. This proposal will assist in providing intermittent screening of the transmission line from Loch Katrine. The transmission line will still be clearly visible from the existing path along Glen Gyle.

### 4.4 Option 2

This option explores provision of an alternative route to, the existing track, along the glen floor in closer proximity to the Glen Gyle Water. The track is proposed to be rerouted to the south of the Glen Gyle Water before traversing at the fork to wind round an existing rock outcrop and follow the existing waterfall to join the existing track along the upper section of Glen Gyle. This proposal fosters a more direct relationship with the Glen Gyle Water, enhancing user experience. Landscape enhancement measures are proposed to the glen floor and lower slopes of southern valley side in the form of native woodland planting. The transmission line would still be visible from the rerouted track; however, user experience would be greatly improved.

4.5

### Option 3

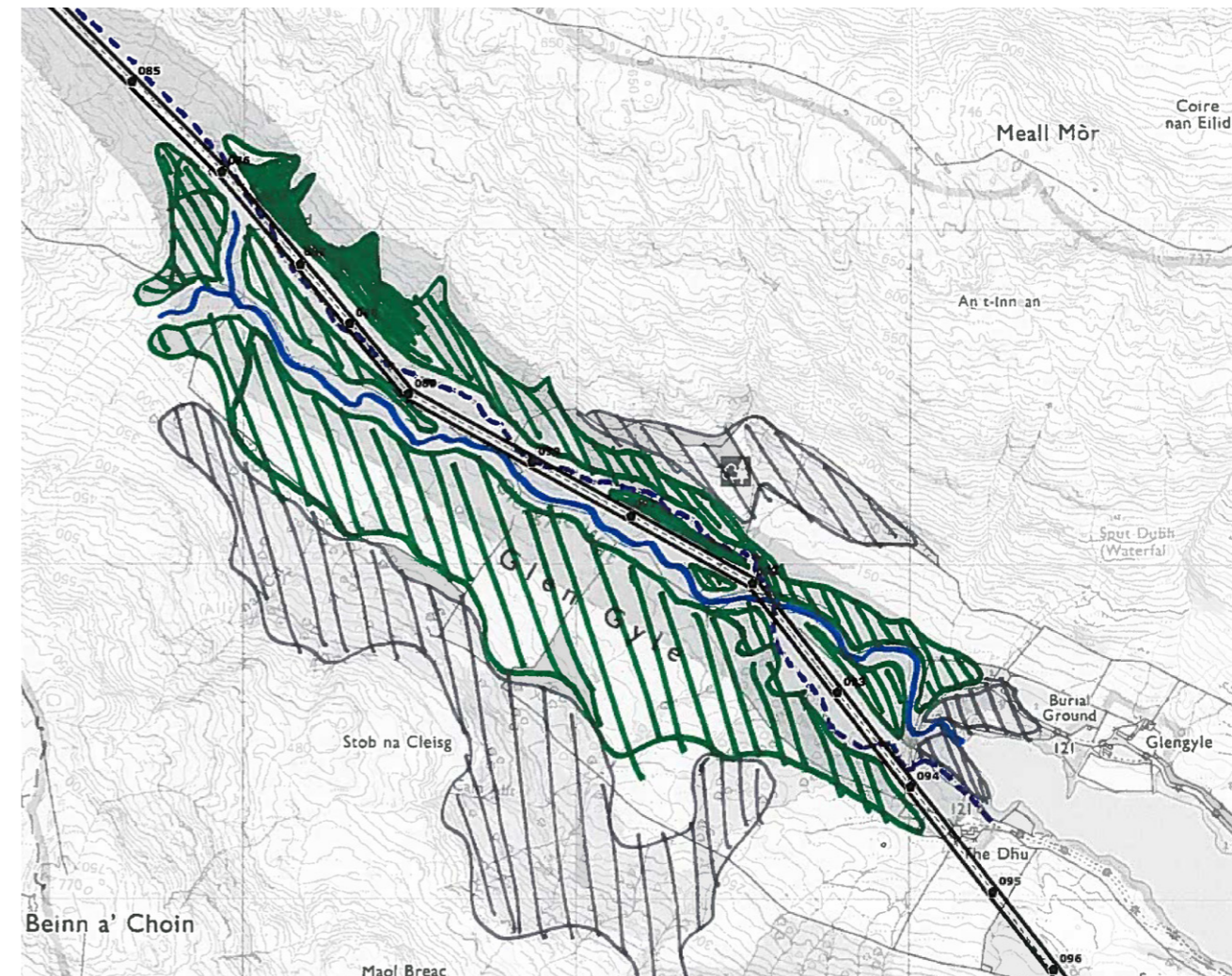
This option explores provision of an alternative route to, the existing track along the Glen Gyle Water to the floor of glen. The track is proposed to take a route which follows the banks of the Water before climbing from the fork of the Water up and around Beinn Ducteach. From here the route would offer the option of joining the West Highland Way or travelling between Beinn Ducteach and Cruach to join the Ben Glas Burn to Inverrannan. This proposal fosters a direct relationship with the Glen Gyle Water, enhancing user experience.

Landscape enhancement measures are proposed to the glen floor and lower slopes of the southern valley side in the form of native tree planting. Enhancement of the riparian habitat along the Glen Gyle Water is also proposed in the form of supplementary tree and woodland planting.

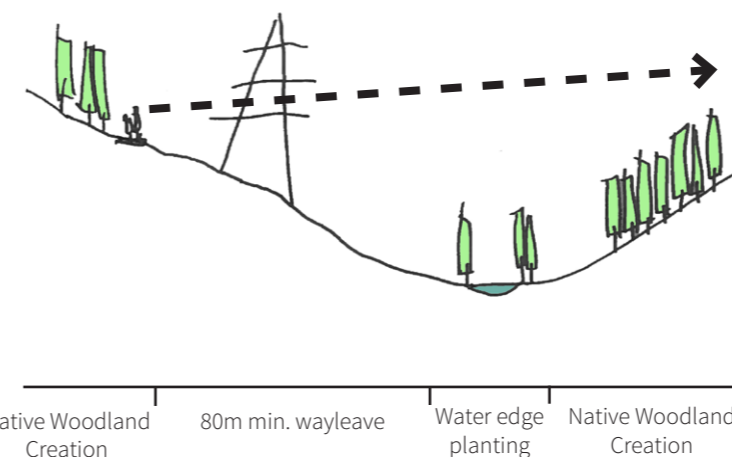
The transmission lines would be less visible from the proposed rerouted track especially in the upper section of the glen due to the track no longer running parallel to the transmission lines.

## Option 1

### Plan



### Section

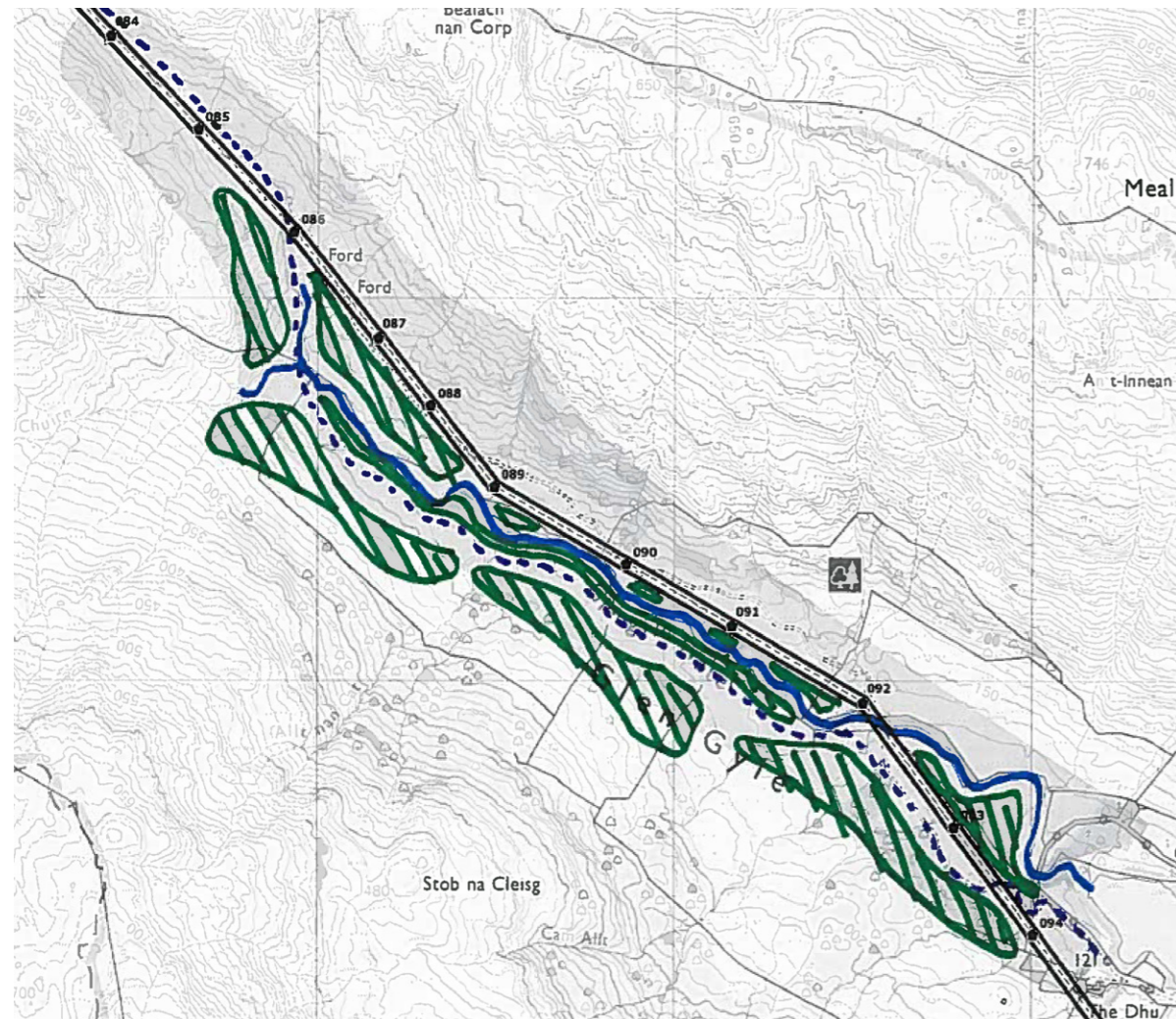


Section showing retention of the track along the existing route with new woodland planting to slope sides and along Glen Gyle Water.

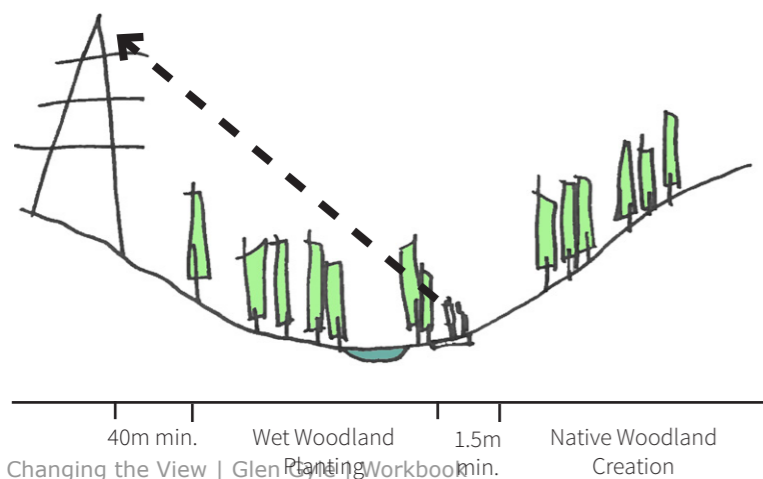
It is anticipated this option will not afford much screening, with views of the transmission lines remaining similar to the existing situation.

Option 2

Plan



Section

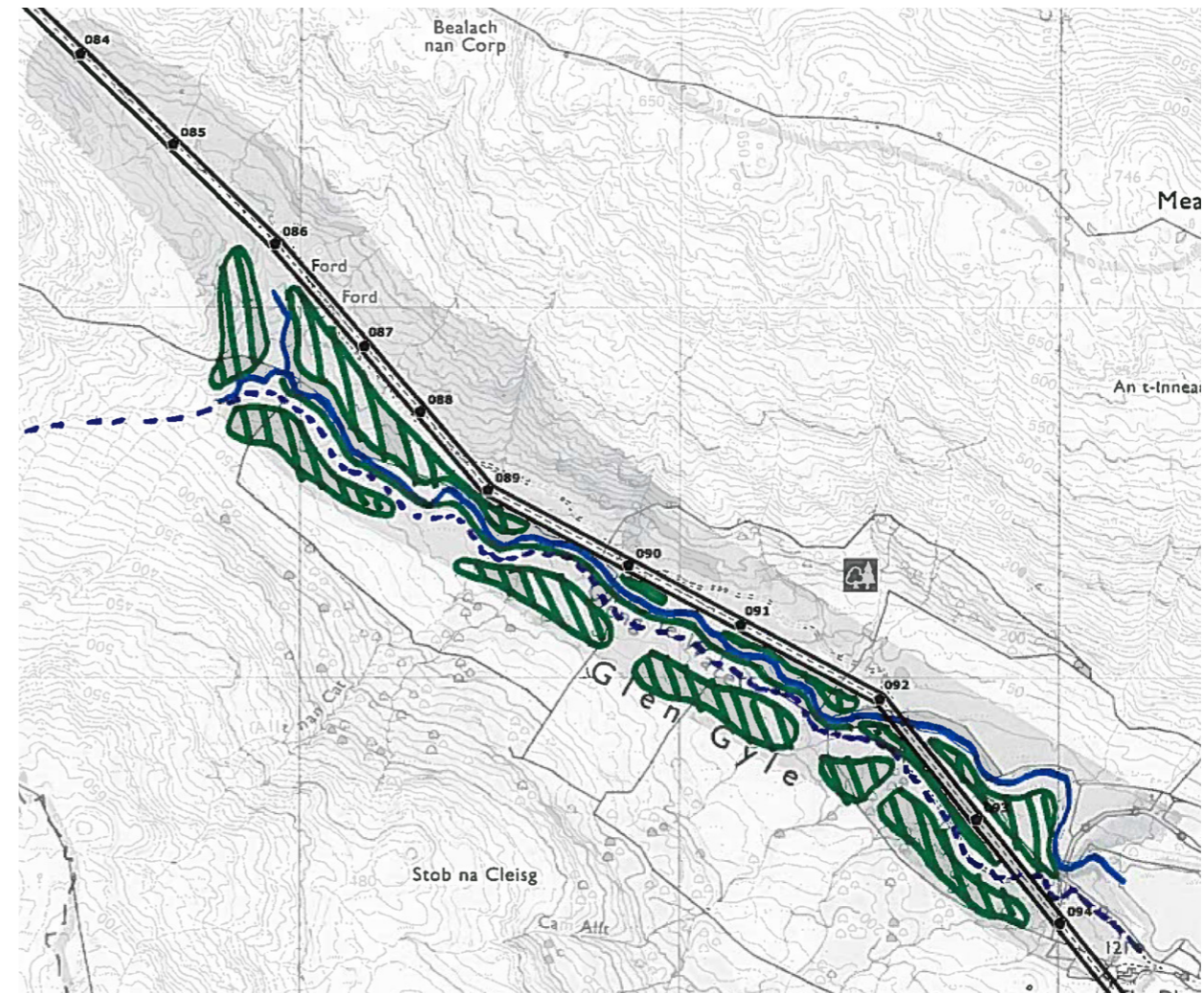


Section showing alternative route of track from existing route to the southern side of the Glen Gyle Water. Landscape enhancement tree planting is proposed to glen floor and lower slopes to provide screening and enhance riparian habitats.

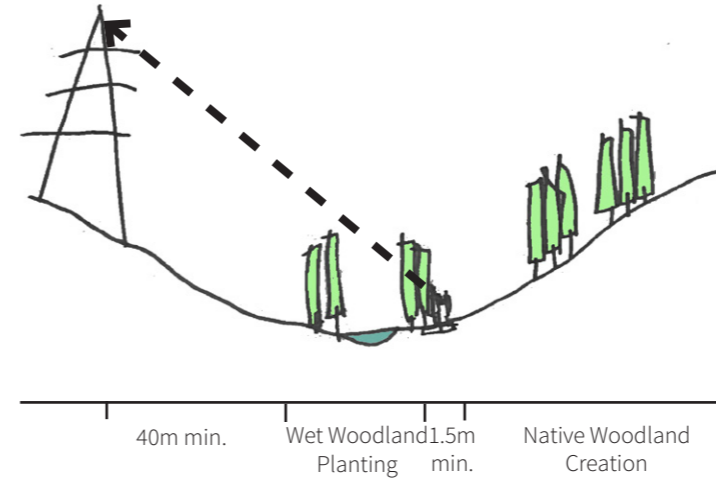
It is anticipated that intermittent screening will be afforded, dependent on how extensively this treatment is applied along the Glen Gyle Water corridor.

Option 3

Plan



Section



Section showing alternative route of track from existing route to the southern side of the Glen Gyle Water and around intervening landform to afford screening. The route would run largely in parallel to the transmission corridor but provide an alternate route to the upper section of Glen Gyle.

Native broadleaf tree planting is proposed along the water to screen views of the towers and overhead lines.

It is anticipated that there will be intermittent screening afforded.

#### 4 Concept Development/ Optioneering

##### Options Analysis

- 4.6 **Option 1**
- Strengths:**
- Intermittent screening afforded to Great Trossachs Path;
  - Utilises existing track; and
  - Increases native woodland planting within the glen.
- Weaknesses:**
- No screening afforded from existing track; Extensive landtake required;
  - Provides limited screening with views from existing track relatively unchanged; and
  - Dramatic change to existing upland glen landscape character.
- Opportunities:**
- Creation of woodland habitats; and
  - Native woodland creation.

- 4.7 **Option 2**
- Strengths:**
- Provides screening to section along Glen Gyle Water;
  - Limited landtake required (58.6ha);
  - Supplements existing landscape pattern;
  - Improved experiential connection with Glen Gyle Water edge;
  - Flexibility in widths of screening planting to strike a balance between screening and landtake requirements;
  - Relatively inexpensive treatment; and
  - Landscape character change limited to glen floor and lower slopes.
- Weaknesses:**
- Limited screening of transmission lines afforded to Great Trossachs Path;
  - Route still runs parallel with transmission lines in upper section of glen; and
  - Limited area of native woodland created.
- Opportunities:**
- Creation of native woodland and associated habitats;
  - Strengthening of riparian habitats along tributary Glen Gyle Water;
  - Potential interpretation areas along route; and
  - Improved biodiversity.

- 4.8 **Option 3**
- Strengths:**
- Provides screening of transmission lines in upper and lower section of the glen;
  - Limited landtake required (58.6ha);
  - Supplements existing landscape pattern;
  - Improved experiential connection with Glen Gyle Water edge; and
  - Flexible width of screening planting to strike balance between screening and landtake requirements.
- Weaknesses:**
- Limited screening afforded to Great Trossachs Path;
  - Potential safety issues due to waterside route; and
  - Limited area of native woodland created.
- Opportunities:**
- Strengthening of riparian habitats along Glen Gyle Water;
  - Interpretation areas along route; and
  - Creation of native woodland and associated habitats.

- 4.9
- Following on from the options analysis the option taken forward for development to outline design stage is option 1.
- Option 1 is to be taken forward as it affords the most beneficial levels of screening from the Great Trossachs Path, which is deemed to be of **High** visual sensitivity to the lines.
- Whilst there will be relatively little change in short ranging views experienced from the existing hill path, due to its proximity to the lines, the benefits of widescale native planting on far reaching views from Glen Gyle will be significant.

## 5 Outline Proposals

### General

#### 5.1

The proposals for Glen Gyle have been developed further taking into consideration landscape and visual factors to produce the proposed outline design. The proposal builds upon the fundamental elements and guiding principles of the concept design outlined in the Glen Gyle Workbook, to create a proposal which fulfils the primary objective of reducing the existing visual impact associated with the transmission lines, in views experienced from the Great Trossachs Path at the head of Loch Katrine and from the hill path within Glen Gyle.

The proposal seeks to create an enhanced route through Glen Gyle, which provides access to remote hill summits in the Ben More – Ben Ledi Wild Land Area (07) whilst reducing both the perceptibility of the presence of the transmission lines for receptors within Glen Gyle and the Great Trossachs Path at the northern head of Loch Katrine.

The proposal develops the concept of re-routing the existing hill path away from the transmission lines, providing an alternative route with an enhanced visitor experience along the meandering Glengyle Water which was explored during the optioneering stage. The creation and enhancement of extensive areas of mixed native woodland will be sympathetically designed and implemented to complement the proposals and objectives of the Great Trossachs Forest Initiative.

The outline proposal includes the following mitigation measures for reducing the visual impact of the parallel transmission lines on receptors within Glen Fruin and the surrounding area:

- Creation of new route for the Three Lochs Way along the existing track to the base of the southern glen side slopes providing an alternative route for people, with enhanced visual experience along Fruin Water and reduced visibility of the lines;
- Localised woodland planting to the glen floor and river corridor to screen and filter views of the transmission lines and minimise visibility from the proposed new path, whilst improving the receptor experience and setting, whilst supplementing the existing riparian habitat along Fruin Water;
- Wide scale mixed native woodland planting to the southern glen slopes of Glen Fruin to create screening and minimise visibility of the transmission lines, whilst reducing the prominence of the infrastructure within the glen through sympathetic woodland design which responds to existing topography and landscape pattern, and tie into existing woodland on upland slopes;
- Habitat and biodiversity benefits through the creation and enhancement of existing mixed native woodland and riparian planting along Fruin Water; and
- Linking paths between road and new path via existing tree lined stream corridors for enhanced connections between the existing route of the Three Lochs Way and proposed alternative route.

### Key Benefits

#### 5.2

- Provides oblique screening of transmission lines from alternative route of Three Lochs Way;
- Provides traffic free route for walkers, and potentially mountain bikers/cyclists, with improved visual experience along Fruin Water for receptors;
- Utilises, in part, existing access road along Glen Fruin, minimising the extents of new path construction required;
- Minimises land take of productive agricultural land within the glen floor;
- Flexible width of new native woodland and riparian planting to strike a balance between screening and land take requirements;
- Creation of sensitively designed wide scale native woodland habitat in Glen Fruin; and
- Creation of interpretation and seating/rest areas along alternative route, with potential to promote longer distance views towards the Luss Hills north of Glen Fruin.

### Key Challenges

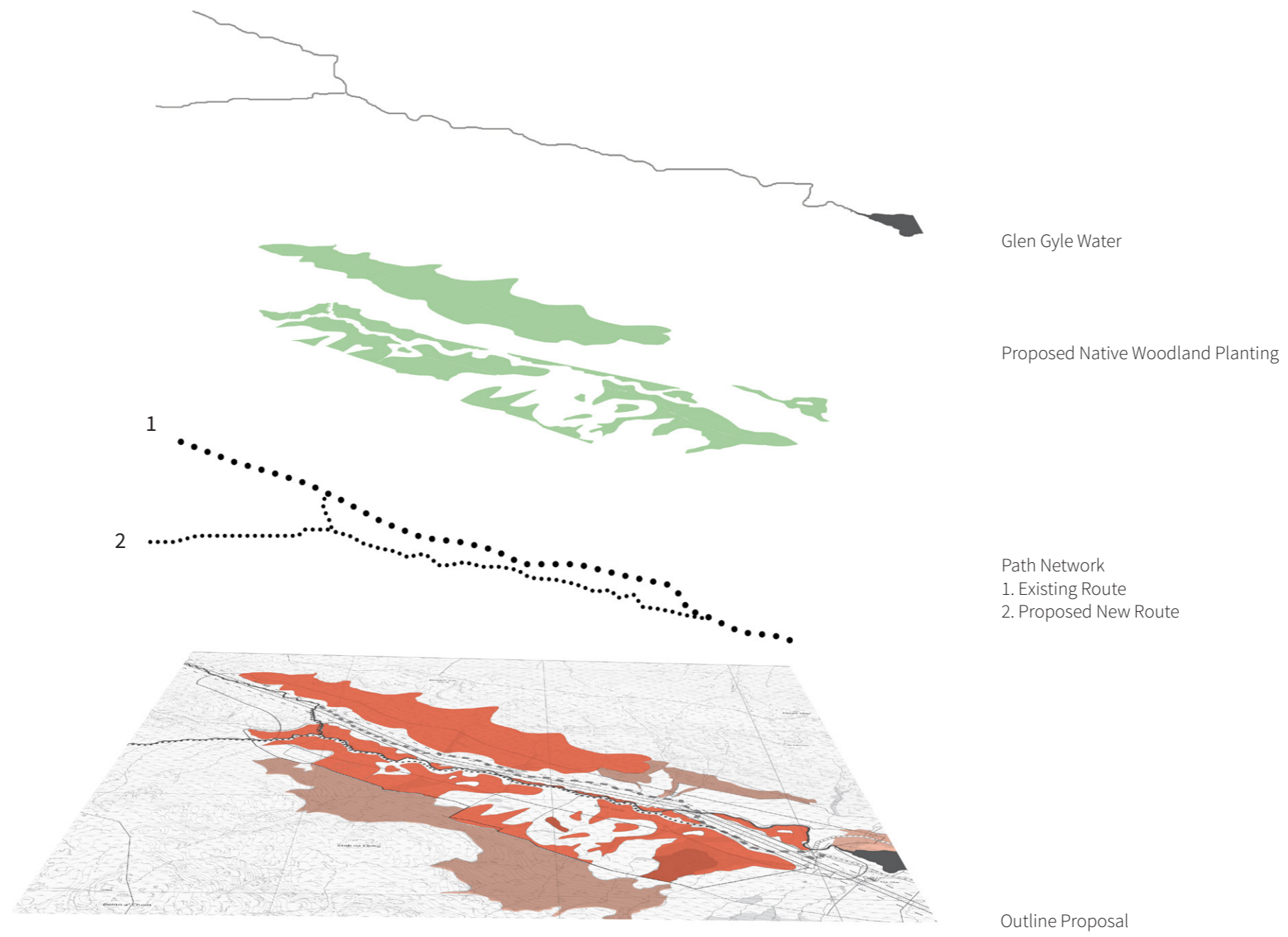
#### 5.3

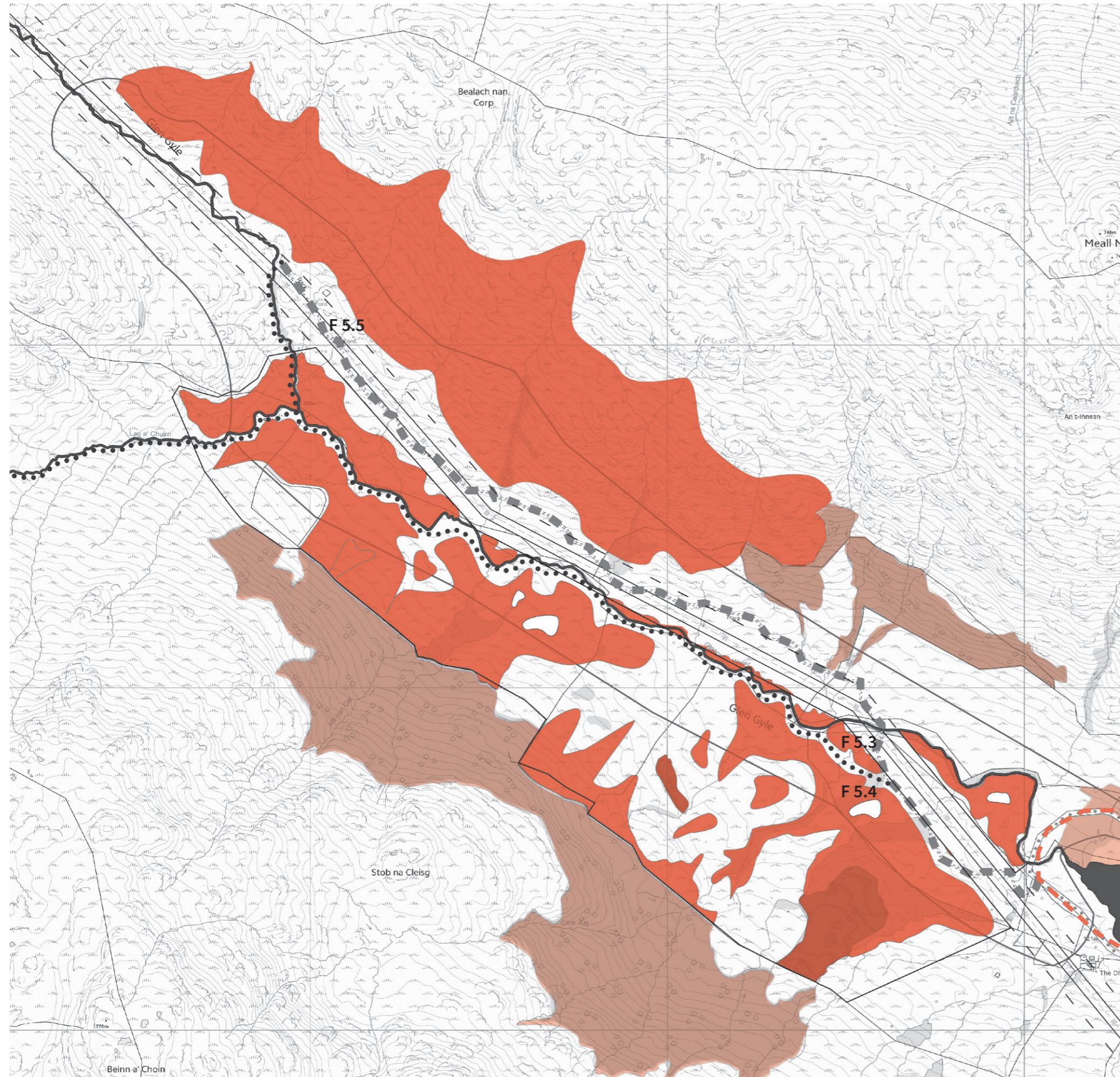
- Extensive land take required to deliver substantial areas of native woodland planting on the southern glen slopes;
- Long-term establishment of woodland before visual impact mitigation is effective; and
- Changes in land management practices – including removal, reduction or management of grazing to establish woodland planting from existing grassland and moorland vegetation.

#### 5.4






The introduction of extensive native woodland will be implemented in line the **Biodiversity Action Plan for the National Park (Wild Park 2020)**. Appropriate woodland mixes of native species of trees and lower growing vegetation will be developed sympathetically, with reference to the geographical location, elevation, topography, soil type, hydrology and biodiversity of the specific area.

F5.1 Proposal Component Diagram





Key

-  Proposed Native Mixed Woodland Planting
-  Existing Hill Path
-  Proposed New Route
-  Existing Planting
-  Great Trossachs Path
- F 5.3** Consult Following Figure as Numbered



**Analysis**

Highlighting ridge lines, depressions, hollows and features within the existing landform. Hollows highlighted in white dashed line. The Glen Gyle Water is highlighted in dashed blue line.



**Proposed**

Native woodland planting to the glen floor along Glen Gyle Water which responds to the natural topography and provides some screening of the line from the existing lower section of path.

**F5.3 Indicative Sketch Situation 1  
Glen Floor Wet Woodland/ Riparian**

**Visibility**

Sketch showing native woodland creation along Glen Gyle Water and impact on visibility of the lines. Whilst the line is still visible, planting in the foreground detracts the eye and lessens the visual effects of the line.



**Analysis**

Highlighting ridge lines, depressions, hollows and features within the existing landform. Hollows highlighted in white dashed line.



**Proposed**

Native woodland planting to the glen lower slopes which responds to the natural topography and provides intermittent screening of the line from the existing lower section of path.

**F5.4 Indicative Sketch Situation 2  
Glen Lower Slopes Native Woodland**

**Visibility**

Sketch showing native woodland creation along Glen Gyle lower slopes and impact on visibility of the line. The line would be intermittently visible from the existing path as it winds through the initial section of the valley.

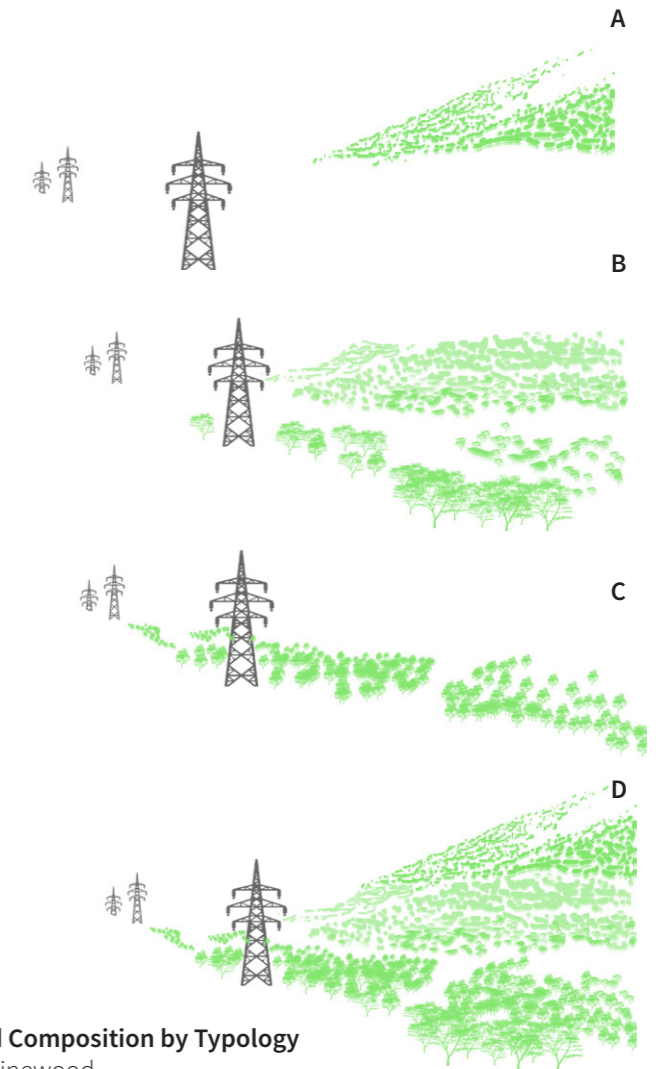
F5.5 Indicative Sketch Situation 3  
Upland valley sides and glen floor native planting



**Analysis**  
Highlighting ridge lines, depressions, hollows and features within the existing landform. Indicative wayleave corridor is highlighted in white dashed line. The Glen Gyle Water is highlighted in dashed blue line.



**Proposed**  
Native woodland planting to the glen slopes and glen floor which responds to the natural topography and Glen Gyle Water.



**Woodland Composition by Typology**  
A. Native pinewood  
B. Birch/ ash/ oakwoods  
C. Wet woodland  
D. Combined Mosaic

**Visibility**  
Sketch showing native woodland creation along Glen Gyle slopes and glen floor, and impact on visibility of the line. The line would be visible from the existing path looking back down Glen Gyle to Loch Katrine. Views from the proposed route along Glen Gyle Water would be largely precluded by proposed tree planting to the glen floor and Glen Gyle Water.



## 6 Realisation Requirements

### Implementation

6.1

The following is a brief summary of the key tasks that would be required to implement a project of the nature described.

- **Screening** - EIA 'unlikely' to be required;
- **Scoping and consultation (if EIA required)** – identify key user groups, legal and good practice requirements for EIA / discussion with local authority, setting of management objectives;
- **Survey** – detailed site survey (e.g. legal, physical, biodiversity, historic environment, recreation, landscape, people, management of grazing animals; species selection);
- **Analysis** – identify site constraints and opportunities, landscape character and landform analysis, potential NVC woodland types, historic environment;
- **Synthesis** – development of a design concept, followed by sketch designs then detailed designs for new areas of woodland and new riverside path;
- **Implementation** –ground preparation, establishment of new planting (through natural regeneration, seeding or planting), path construction and improvements; and
- **Monitoring and review**– against management objectives, making changes if necessary.

It is anticipated that the works described above could be undertaken in a 5-10 year period, although woodland would take longer to mature.

### Management and Maintenance

6.2

Detailed site survey will help to establish the maintenance requirements of the site. The following elements are likely to be a key consideration:

- Fencing of new areas of tree planting to protect from grazing;
- Management of regeneration of non-natives; and
- Maintenance of path including signage / way markers.

### Benefits to Landowners

6.3

#### Converting grassland or moorland to native woodland

- Increase in nesting opportunities for birds and bats;
- Can provide habitat for rare plant and animal species;
- Can create links between scattered areas of woodland habitat, which may be important for the movement of some plant and animal species;
- Can be used to promote community involvement, from consultation to active management;
- Increase in soil water retention / reduced flooding and erosion; and
- Can provide shelter for arable land or grazing animals.

#### New footpath

- Enhanced route with reduced visual impacts from lines;
- Increased opportunities for recreation, likely to attract more visitors; and
- Easier access across estate.

### Planting and Materials Indicative Costings

#### Costs of Creating and Managing Woodland

6.4

Forestry Commission Scotland provide extensive guidance and information about the creation, implementation and management of woodland, including the relative costs. The costs of creating and managing woodland varies, depending on the size of the proposed scheme, trees planted, and the purpose of woodland.

#### Factors to consider:

- Future access;
- Deer and rabbits;
- Environmental impact;
- Creation costs;
- Maintenance costs;
- Potential requirement for an Environmental Impact Assessment (EIA) for larger schemes;
- The character and views of the site will look like in the short-term and long-term; and
- Tree planting is usually carried out between October and March, avoiding frost and snow.

#### Things to consider when considering the cost of new woodland:

- Design costs: e.g. consultancy fees;
- Machinery costs;
- Site/ground preparation: ripping or mounding, establishment of low vigour grassy turf;
- Planting costs;
- Cost of material (seedlings etc.): trees from nurseries;
- Tree protection: spiral shelter, tube and stake and tie;
- Fencing: post and wire, post and rail, rabbit proof, deer proof;
- Labour; and
- Maintenance and upkeep: e.g. weed-free areas around the trees, replacements for failed trees, deer and rabbit control.



#### Planting

ITEM	QUANTITY	UNIT	RATE	COST
Tree planting (including shelter)	2324716	m <sup>2</sup>	£3.50	£8,136,506
			<b>Total</b>	<b>£8,136,506</b>



#### Materials

ITEM	QUANTITY	UNIT	RATE	COST
Deer and stock fencing	13850	lin/m	£20.75	£287,388
Footpath	3585	lin/m	£30.00	£107,550
Footbridge (<3m span)	3	lin/m	£1500.00	£4,500
Stiles	10	each	£125.00	£1,250
Waymarker post	8	each	£30.00	£240
Fingerpost	3	each	£60.00	£180
Interpretation board	1	each	£1200.00	£1,200
			<b>Total</b>	<b>£402,308</b>

**Total Outline Project Cost £8,538,814 (nearest £)**