

Appendix 1 - Background information

Site and woodland description

Location, aspect and general composition

FLS' Slattadale landholding is in Wester Ross in the north-west Highlands, 5 miles south-west of Gairloch, on the western shores of Loch Maree. The Plan area occupies 462 hectares, ranging in altitude between 130 and 180 m with a generally north-easterly aspect. It encompasses remnants of genetically distinct near-natural Caledonian pine woodland including on Eilean Ruairidh Mòr; ancient semi-natural broadleaved woodland modified by commercial forestry and stands of non-native conifers planted for timber production. Many rare and protected species of flora and fauna are associated with the forest and adjacent wetland habitats, reflected in the designation of Loch Maree as an SSSI, SAC, SPA, RAMSAR and NSA.

Much of Slattadale Forest was planted and subsequently restocked with non-native conifers, for timber production, between the 1920's and 1990's. Forestry and Land Scotland (FLS) started to restore semi-natural woodland from the 1990's onwards. In the 2008 Forest Plan for Slattadale, the decision to restore all productive woodland stands to semi-natural habitats was first made and programme of incremental clearfelling of non-native forest stands initiated. The programme was increased in scale (by approved Plan amendment) to include a pre-emptive felling of all Lodgepole pine-dominant woodland after the detection of a *Dothistroma* fungal blight in this pine species – and with potential to infect the ancient Caledonian pinewood remnants. Over 71% of the entire landholding is afforested: 35% is native woodland, 25% non-native conifers and presently 40% lying fallow after non-native tree felling - awaiting establishment of native woodland primarily by natural regeneration. 29% of the entire landholding is open ground which includes the forest road network, two quarries, car parks and visitor facilities but is mainly heathland habitats primarily located above the lower afforested terrain.

Neighbouring land use

The landholding has three main neighbours: Flowerdale estate to the north and west (a sporting estate with some new native woodland schemes establishing), Grudie estate to the south and east (a sporting estate with some tenanted farm ground at Talladale) and Loch Maree (a designated freshwater body). Additionally there are a few discrete residential properties: a hotel and a guesthouse at Talladale (south-east), a private house/garden site at Slattadale itself and a small farm unit (livestock/grazing) with residential house at Garbhaig. The area is bisected by the A832 public road which is owned and managed by the local authority along with a roadside curtilage of varying extent along its length.

Geology, soils and peat

The landholding is situated upon the Moine sequence of pre-Cambrian metasedimentary rocks and has an underlying local geology of predominantly Torridonian sandstone and grit overlain by a mosaic of peaty podzolic gley/peaty gley/podzolic soils. These soil types reflect the generally insoluble and impervious nature of the parent rock material as well as the high rainfall of the area, with resultant soil nutrient status determined as Very Poor and soil moisture status of Very Moist. Originally afforested with (mainly) Sitka spruce in the 1920's, these forest tree crops have typically attained an average Yield Class of 4 to 6 T ha⁻¹ yr⁻¹ by the time of clear-felling in the early 2000's.

There are small, localised areas of wet heath and mire with active peat accumulation - where slopes are gentlest (thus drainage poorest) and where there is little evidence of historic, intensive cultivation that may have otherwise modified its natural character. However there are no areas of deep peat (i.e. > 50 cm) identified with the currently afforested or fallowing areas. Soil types found across the landholding are shown on **Map 9**

Climate and predicted climate change

The site has an annual average accumulated temperature of 1,137 day-degrees above 5°C with average annual soil moisture deficit of less than 85 mm. Forest Research's Ecological Site Classification model summarises the site as having a cool, moderately exposed and moist climate. Future climate predictions are difficult to make accurately to a local level, however the broad trend in climate change in this region through the 21st century is expected to result in:

- Warmer summers and a longer growing season;
- Fewer frost days and milder (overall) winters;
- Increased instances and periods of summer drought;
- Increased winter rainfall and summer rain storms;
- Increased wind – currently anticipated as an increase in frequency of storm events as opposed to an increase in peak wind speeds.

Site and woodland description

Key habitats and species

The following are notable species and habitat listed in the Scottish Biodiversity Strategy Priority Species and Habitats:

Habitat: Blanket Bog; Caledonian pine woodland; Dry heath; Wet heath with cross-leaved heath; Oligotrophic loch (adjacent) and Plantation on Ancient Woodland sites.

Species: Black throated diver; Dragonfly & beetle assemblages; otter; pine marten; juniper and bat species.

Section 2.1 lists designated sites (and component qualifying features) within, overlapping or abutting the landholding. Section 4.4.4 details objectives and actions prescribed for management of key species/habitat.

Hydrology

Map 5 shows all permanent watercourses originating within, or flowing through, the Land Management Plan area. (N.B. **Map 2** displays private water supplies and Garbhaig hydro-electric scheme water pipeline).

All but 1.1 hectares of the LMP area (see 'Flooding' commentary below) sits within the River Ewe catchment and this catchment contains the designated Loch Maree freshwater body. The overall condition of surface water for Loch Maree is 'Good' (SEPA, 2020) and has remained so since 2013/14 when nutrient levels were deemed "worse than good" but with no obvious source of nutrient pollution identified. The Long Term prognosis for water quality is judged to be 'Good' with the current physical condition, access for fish migration, freedom from invasive species and naturalized water flows and levels were all assessed as 'High' (i.e. good).

No permanent watercourses within the LMP area – including River Slattadale and Abhainn Garbhaig - are identified as river water bodies by the Framework Water Directive (2000/60/EC) and consequently there is no specific monitoring or reporting on their condition/water quality.

Slattadale lies in the Wester Ross, Assynt and Kintail groundwater area and current Groundwater Classification is 'Good' with currently no pressures affecting overall condition.

Flooding

Kerrysdale has been identified as a new target area in SEPA's 2021 Flood Risk Management plans - the only one in the vicinity of Slattadale LMP area. There is a history of flooding to the road there and communities are known to be affected by consequent road closures. Flooding at the junction of the A832 and B8056 cuts off road access to Shieldaig, Badachro and the communities towards Redpoint which are all accessed by the B8056.

FLS' Slattadale landholding is some 5 kilometres east of Kerrysdale with the vast majority of the LMP area in a different catchment (River Ewe) and so management having no effect whatsoever on Kerrysdale. 1.1 ha of the LMP area – currently regenerating as native woodland after non-native pinewood felling in 2016 – lies inside the watershed of the Kerrysdale catchment (total area c. 3,000 ha) – representing 0.03% of the catchment - so the wider forest proposals of this LMP are judged to have no significant effect on possible future flooding events at Kerrysdale.

Steep ground assessment

There are no areas within the landholding identified or classified as having potential slope instability.

The steepest slopes with managed and maturing productive woodland are located between the A832/33 kV overhead powerline corridor and the internal forest road - in the vicinity of Innis Dubh in the central section of the landholding. Tree felling and timber extraction envisaged here includes Phase 2 coupe 51320 (see **Map 5** and section 4.1.1) which will require cable crane/winch techniques to clear fell and extract timber from some sections of these slopes. Pre-notification and consultation with the Network Operator is also required here to agree a safe working methodology in proximity to the overhead lines. Follow-on woodland envisaged on these slopes is upland birchwood species by natural regeneration with routine cleaning of (larger growing) non-native conifer regeneration to ensure ecological integrity but simultaneously eliminating windthrow risk with its associated localised soil/root disturbance on these slopes.

Windthrow risk

Slattadale has an average Detailed Aspect Method of Scoring (DAMS) exposure score of 12 – a moderately exposed rating – but with a maximum of 18 (very exposed) towards the upper margins of north of the landholding and a minimum of 9 (moderately sheltered) on north-facing, lochside terrain in the south-east.

Consideration of windthrow risk is conventionally undertaken when assessing the suitability of a site for different and novel productive conifer species for timber production. As the emphasis of management at Slattadale is for native woodland restructuring primarily for conservation and amenity, exposure rating analysis is not relevant in determining future tree species choice.

Site and woodland description

Plant health

FLS Tree Health Governance was revised in 2022 – essentially switching the approach to managing pest and diseases as ‘business as usual’ instead of the previous approach based upon tackle specific threats with focused action groups. As a land manager FLS has Legal and Good Forestry Practice requirement responsibilities under the UK Forestry Standard with suspected pests and diseases reported to Plant Health Inspectors and forestry authority (Scottish Forestry) and the biosecurity measures recommended by the authority carried out.

Dothistroma needle blight caused much deterioration of lodgepole pine woodland in the northern half of the landholding in the early years of this century, and were the focus of extensive clear felling to eradicate the threat this fungus potentially posed to veteran Scots pine in Caledonian pinewood remnants. This blight may persist at low levels on regenerating and singleton lodgepole pine elsewhere within the LMP area but will either be routinely cleaned’ from establishing native woodland or felled as the incremental programme of non-native woodland clearfelling progresses.

Chalara ash dieback is evident on several young ash in mixed native woodland regeneration on the loch-side at Garbhaig where public access is very unlikely (dense thicket-stage growth with prolific brambles) and consequently no additional biosecurity measures have been stipulated to minimise contact or spread by forest users.

Phytophthora ramorum – whilst not recorded on the landholding – is a major fungus-like pathogen affecting larch and spreading northwards from an initial infection zones in the south and west of the country. The current FLS Larch Strategy (revised January 2022) for this vicinity/landholding is both reactive and pre-emptive as follows:

- Eradicate the disease by felling infected trees and areas of trees notified for felling by the forest authority to the timescale enforced by a Special Plant Health Notice;
- Decreasing the area of larch woodland across the national forest by 20% (of a 2021 baseline) by April 2027;
- Construct access to greater than 80% of all larch coupes by April 2027;
- Fell all difficult and complex larch coupes by 2032.

Currently there is a total of 7 hectares of larch trees within the landholding of which 3.11 ha (44%) is proposed for felling by 2032. All existing larch trees/woodland are already easily accessible from the forest road network should a *P ramorum* infection occur and consequent SPHN be served requiring prompt felling.

Fire risk

FLS continues to work closely with the Scottish Fire and Rescue Service (SFRS) to prevent and tackle wildfires that threaten Scotland’s National Forests and Land. FLS support SFRS in their lead role for fire prevention and suppression through creating annual Fire Plans, maintaining a year-round staff duty and response rota, and providing SFRS with additional logistical support at incidences of fire on or close to FLS land. FLS’s primary objective is always to protect people’s health, safety and wellbeing.

Warmer summers, with increased incidences of droughty periods, will increase the periods when vegetation (standing biomass) can potentially succumb to wildfire. Areas of open vegetation – upland heath and following/early-regenerating native woodland – have an increased capacity to burn on account of the quicker drying characteristics of these more open, short stature habitats and constituent plants vis-à-vis established woodland. As a consequence, instances of fire raising (e.g. unsolicited fires started in or within the vicinity of car parks and visitor thresholds) need to be continuously monitored for and control measures adjusted accordingly to minimise this potential wildfire risk to the vulnerable regenerating, as well as existing, woodland.

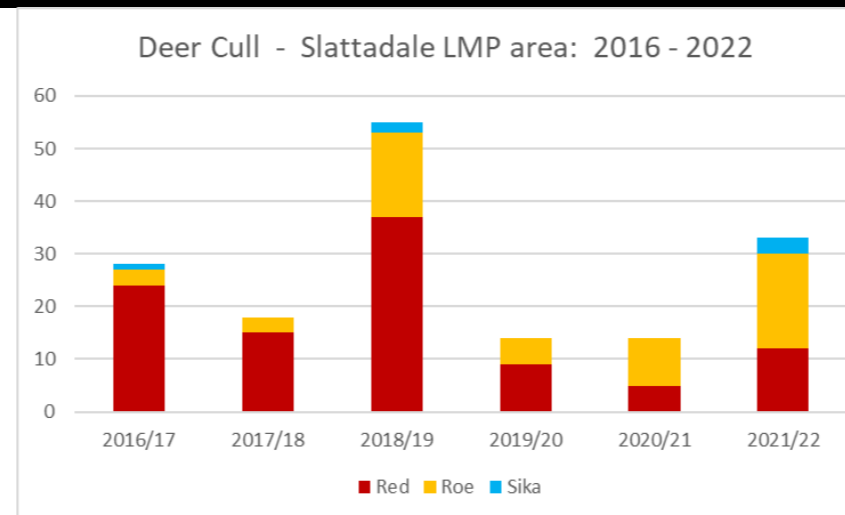
Deer/Herbivore Management

With the exception of Eilean Ruairidh Mor, the Slattadale LMP area is enclosed by a maintained perimeter deer fence (approximately 9,900 m) along its uphill boundary. This is complemented by deer grids on the A832 road where it enters and exits the landholding at its south-eastern and north-western ends. Deer fencing is no longer maintained along Loch Maree shoreline (north-east) and A832 roadside (south-east) and consequently new deer incursions are possible from neighbouring ground but in fairly limited numbers and in both directions. Since 2000, new woodland creation schemes on neighbouring Flowerdale estate have created additional deer fenced enclosures on Slattadale’s northern and most westerly boundaries. With these new woodlands now establishing, these enclosures are likely to be discontinued and likelihood of increased deer incursions may result. The section of march fencing between Talladale and neighbouring Grudie estate has been replaced, on mutual agreement and contribution, between FLS and the estate during the last Plan period.

Hydro-electricity scheme construction work in the Garbhaig/Coire Fearnna area in 2015/16, resulted in the perimeter deer fencing remaining open for some months in this area and a resultant increase in deer was observed with control effort then focused in this vicinity for some years thereafter.

Cull data for the last six years for Slattadale is presented here:

Site and woodland description



Landscape character and visibility

Slattadale is located within a steep sided glen, on the south-western shore of iconic Loch Maree. Until the early 21st century, it was a discrete and extensively afforested landholding of predominantly coniferous plantation complemented by remnant stands of native broadleaved and pine woodland. Large areas of conifer plantation have been clearfelled on the flatter lower lying ground over the past fifteen years. As a result, the former sense of compact and continuous woodland is now replaced in some areas by expansive tracts of fallowing open ground with conspicuous – from some vantage points – and currently incongruous stands of retained mature native Scots pine trees.

The Ross and Cromarty Landscape Character Assessment (NatureScot, reviewed 2020) defines the Slattadale Forest LMP area's main landscape character type as '*Wooded Glens and Rocky Moorland*'. Common characteristics of this landscape character type relevant to the LMP area are:

- Low lying, sheltered, mainly rocky moorlands with sinuous glens and narrow gorges
- Mainly complex, deeply undulating landform with rocky knolls, lochans and small sinuous burns
- Glens, occasional gorges, steep rocky sides, uneven descending central floor and central river with water falls
- High proportion of native tree cover- large patches of broadleaf trees, Caledonian pine woods, regenerating trees and new planting, interspersed with moorland and grassland
- Little settlement, occasional estate house / hotel and isolated house
- Sinuous roads avoid high ground and follow glens and loch shores
- Infrequent low-key roadside facilities absorbed into landform and tree cover where evident
- Enclosed views focus attention on foreground detail, occasionally opening to views of glen, lochs and distant mountains often ins and lochs, glimpsed through tree cover.

The relevant key characteristics of adjacent landscape character types are:

Rugged Mountain Massif: Broad band of high mountains, vertical sides and bar rock of mountains reflects the natures of the underlying geology.

- High, rugged mountains on a broad bulky base forming discrete groups separated by deep linear glens and fjords
- Patches and bands of remnant native pinewoods and broadleaf woodland at base of mountains
- Angular skyline of rocky peaks and ridges
- Mountain scale and height emphasised by contrast with surrounding low moorlands, loch and sea,
- Wild character derived from natural rugged and remote landscape
- Remnant stands of broadleaf trees and native pines occur in patches and bands at foot of mountains and in sheltered inland locations as on the shores of Loch Maree.

Rocky Moorland and Rugged Hills: a transitional type of landscape between Rugged Mountain Massif and lower lying Coastal Moorland and Rocky Glens.

- Mainly moderate to high elevation landscape of between 100-400m
- Irregular rocky moorland which descends in spurs and shoulders from adjoining higher mountains down to lower moorlands
- In places, relatively high rugged hills with corries and lochans and craggy (not angular) summits rising from rocky moorland

Site and woodland description

- Low moorland vegetation types dominate: rough grasses and heathers, peaty soils with an abundance of scattered rock (boulders and rocky outcrops) to create a rough mosaic landcover.
- Caledonian pinewood stands in some sheltered locations enhance the rugged landscape
- Largely uninhabited with very few roads or built structures but possibly occasional paths and tracks
- Wild character commonly extends over large areas, derived from ruggedness, naturalness and lack of structures, and continues into the adjacent mountain landscape.

Cnocan: a rough and undulating landscape with a high proportion of bare rock formed by glacial erosion and weathering of hard light-coloured rock. Clearly distinguishable from neighbouring tracts of (softer, flatter) moorland and (higher, more angular) mountains.

- Low, rocky with bumpy profile
- Dominance of bare light grey rock, rounded
- Complex mosaic of landcover - bare ground and loose rock interspersed with occasional patches of lochans and bogs, broadleaf trees, shrubby vegetation and grasses.
- Wild character, largely unsettled and a lack of human activity
- Raw appearance that imparts a wild character which continues into the adjacent mountain types.

Public access and recreation

The location of FLS Visitor Zones is indicated on Map 2 and relate to access roading to two car parking areas (Victoria Falls and Loch Maree shore-side) with associated interpretation and trailhead signage. At the loch-side there are picnic tables and a toilet block and at Victoria Falls there is a viewing platform on the adjacent circular trail. **Appendix 7** details the intended management for both these areas and section 4.7.2 outlines the objectives for which these sites are managed. The lochside car park is an increasingly popular location to park and access Loch Maree for kayakers and small recreational craft.

The Tollie path – a local authority designated Core Path – links the loch-side car park/picnic site northwards onto Gairloch estate ground and on to Poolewe. A short path diverges from the Tollie path and runs along the River Slattadale to link with the forest road leading onto the northern boundary of the landholding. This forest road then connects northwards to the Tollie path or offering a circular route on the Tollie path southwards back to the loch-side car park. It also offers pedestrian access to the historic features at An Doire (see Historic Environment below).

The forest road to the west of Abhainn Garbhaig, in the Coire Fearná area of the site, is a convenient access route southwards into the mountainous interior of Flowerdale and Torridon Forest regions.

Historic Environment

The FLS Heritage record for the Slattadale LMP area is itemised here by their general location:

An Doire (NG8830 7360 - undesignated) – Farmstead - one unroofed structure lying within a small field-system {depicted on 1st edition OS 6-inch map (Ross-shire 1881, sheet lvii)}.

Talladale (NG9145 7030 – undesignated) – several historic features: two clearance cairns, rectangular stone cairn, a field wall and other rectangular stone alignment, small oval turf and stone structure

The OS 6 inch map (Ross-shire 1881, sheet lvii) – available to FLS as a GIS layer - depicts many additional structures and features of the pre-20th century extensively (as opposed to intensively) farmed landscape (dykes, fank, farm buildings and inbye, woodland enclosures and trackways) much of which is still in existence or discernible within the contemporary terrain. These features will be routinely identified and marked in pre-operational forest management activity.

Invasive Species

Invasive non-native species for the Slattadale landholding include: *Fallopia japonica*, *Rhododendron ponticum* and *Acaena novae-zelandiae*. All three species have been the subject of efforts to control, if not eradicate, them during the last Plan period. This has utilised glyphosate as a foliar spray on small plants and (for large *Rhododendron* bushes) cutting/dismantling and stem treatment of cut stumps with glyphosate. *Acaena novae-zelandiae* – fairly localised to the vicinity of Victoria Falls trails at present – has also had programmes of hand pulling and burning of mature plants prior to their seed ripening and dispersal phases. This control work has been carried out both under direct FLS contract but also through collaborative working with (then) Scottish Natural Heritage's Beinn Eighe reserve staff and volunteer programmes.

In 2022, FLS produced a revised approach to prioritising rhododendron control across the national estate on account of the negative impact on biodiversity that this species poses to woodland and open ground habitat particularly on Scotland's oceanic west coast. Slattadale is now defined as a Priority Rainforest Rhododendron – an area where control is judged as making the biggest difference to landscape-scale biodiversity conservation. FLS are currently collaborating with other partners in an Alliance for Scotland's Rainforest project that intends new control measures to eradicate seed sources in the area.

Site and woodland description

Renewable energy developments, utilities and other infrastructure

A hydro-electric power scheme was initially established by Garbhaig Hydro Power Company Ltd. - downstream of Loch Garhaig - in 1987 (1 MW). The facility was upgraded to 2 MW capacity (commissioned: 2016) through purchase of additional FLS ground to site a new turbine house and the laying of a new underground penstock running parallel to Allt Garbhaig from Loch Garbhaig (outwith the Plan area) to the turbine house (beside the A832, 200 m downstream of the Victoria Falls – see **Maps 2** and **5**). There is no other renewable energy generation infrastructure within the LMP area.

Two sections of 33 kV overhead electricity powerlines intersect and pass through parts of the LMP area (see **Map 2**) and a number of individual residential dwellings are served by short spur lines (either overhead and/or underground). The 33 kV line is currently of strategic regional importance as it not only collects power generated by Garbhaig hydro-electric scheme to the grid but also is currently the only power line connecting the National Grid to the towns of Gairloch, Poolewe and all communities on the western seaboard from Redpoint (south) to Dundonnell (north).

At the time of LMP renewal, SSE are undertaking an upgrade of some of overhead line and pole infrastructure on FLS ground as part of the Aultbea-Ullapool Load Reinforcement Project intended to duplicate the provision of electricity to this area. This duplication is expected to allow a greater degree of tolerance to arranging localised power outages required for tree felling in close proximity to powerlines - as the impact on 'downstream' electricity consumers will be largely negated by an alternative back-fed supply or the temporary provision of a stand-alone generator for individual dwellings on isolated spur lines.

Appendix 2 – Consultation Record

Consultee	Initial Scoping contact	Response	FLS Follow-up
Scottish Environment Protection Agency (SEPA)	email 30/7/21	email response 10/8/21 - supportive of general direction and ambition of draft Plan's objectives. Emphasising need for: SFS & UKFS compliance; adherence to ConFor operational guidance; observance of SEPA's Riverwoods initiative; minimisation of soil & carbon losses; reduction/removal of plastics; protection of private water supplies; non-disturbance of shallow & deep peats; need to identify (and plan to remove) any barriers to fish movement.	Email sent to SEPA notifying them of online publication of submitted draft LMP, referencing/responding to specific issues raised earlier.
Scottish Forestry	email 30/7/21	No related correspondence between SF and FLS during Plan revision period.	
Historic Environment Scotland	email 30/7/21	No response.	
Nature Scot	email 30/7/21	Meeting: Beinn Eighe Reserve Manager 15/8/21 - broad discussion of Slattadale restoration ambition and delivery proposals and NS/FLS mutual interests: invasive species control, deer management, Scots pine seed collection & nursery role, Eilean Ruairidh Mor management, increased visitor impacts. Email response (20/8/21) NS Area Officer South Highland - various topics: keen for local provenance tree seed use; any rhododendron control?, peatland restoration? loch siltation measures? treatment of non-native tree regeneration? any sheep incursion? what white-tailed sea eagle (and other bird) disturbance measures? management of visitors and impacts.	Email sent to NS Area Officer South notifying them of online publication of submitted draft LMP, referencing/responding to specific issues raised earlier and the local meeting with Beinn Eighe Reserve Manager. FLS Visitor Services ultimately engaged in an active multi-partnership approach to assessing and addressing visitor access issues and impacts.
Torrison & Kinlochewe Community Council	email 30/7/21	No response.	Notified of publication of draft LMP onto FLS Consultation web portal and its submission to SF - mentioning opportunity to feedback to SF during its Public Register period. Offer (email to secretary) to present Plan summary for discussion at a future comm council meeting if required.
Highland Council (<i>Forestry</i>)	email 30/7/21	No response.	
Highland Council (<i>Archaeology</i>)	email 30/7/21	No response.	
Highland Council (<i>Access Officer</i>)	email 30/7/21	No response.	
Highland Council (<i>Roads Operational Manager</i>)	email 30/7/21	No response.	
Gairloch Community Council	email 30/7/21	No response.	
Gairloch Conservation Unit - Deer Management Group	email 30/7/21	No response.	FLS is a long-established and active member of GCU DMG with familiarity with local (and wider) deer management issues and objectives pertinent to FLS' Slattadale (ring-fenced) objectives. Will continue in this role.
Skye and Wester Ross Fisheries Trust (SWRFT)	email 30/7/21	Occasional correspondence during LMP evolution - SWRFT seeking outline support/approval for new freshwater pool networks for aquatic insects; permission for juniper berry collection;	Ongoing engagement anticipated between SWRFT and FLS throughout LMP delivery period. Potential conservation project collaboration possible including under the Alliance for Scotland's Rainforest project.

Consultee	Initial Scoping contact	Response	FLS Follow-up
		collaboration and access for potential community-based conservation volunteer programme. All FLS responses: encouraging and supportive of topics and proposals raised.	
Scottish Water	email 30/7/21	No response.	
Visit Wester Ross	email 30/7/21	No formal response.	Met VWR Secretary in-forest (2/9/21) and discussed FLS management and Plan objectives. He was content with general direction of management (native woodland and improved landscape character) but chiefly concerned with the provision of Visitor Services facilities (car parks, toilets, trails and their effective management). Was pleased to see toilets re-opened after 15-month closure and too for use of NatureScot ranger service to keep a regular eye on site use/abuse provide conspicuous visitor support and guidance.
Garbhaig Hydro Power Company Limited	email 30/7/21	No response.	
SSE	email 30/7/21	No response. Chance site meeting with SSE line surveyor Alastair Rattray (17/8/21) – explained LMP review process and my request for SSE input if wanted. He would escalate this request within SSE for any potential response. No further response.	
Gairloch and Loch Ewe Action Forum (GALE)	email 30/7/21	Responded to alert FLS to their forwarding of the scoping email to fledgling Slattadale SCIO (see interaction below).	
Wester Ross Biosphere	email 30/7/21	email 14/2/22 (Donald MacIver) - enquiring as to whether FLS wish to collaborate in a Gaelic Development Plan proposal for the Biosphere region.	email 14/2/22 - Directed the enquiry to FLS' national Visitor Experience Manager and Scottish Government Senior Gaelic Development Officer for further discussion/consideration (N.B. enquiry is outwith the scope of the Land Management Plan and its review process).
Trees for Life	email 30/7/21	No response.	
Mountaineering Scotland	email 30/7/21	No response.	
RSPB	email 30/7/21	Email 11/9/21: confirmed receipt of LMP review notification and intention to respond. No response by December 2022.	
ConFor	email 30/7/21	No response.	
Old Mill Highland Lodge	email 30/7/21	(meeting: 16/9/21) - discussed general direction of LMP - generally supportive - and limited FLS management anticipated at shared native woodland/stream boundary. Often promotes Tollie Path to visitors. Identified (and updated records for) private water supply intake and that of neighbours.	
Loch Maree Hotel	email 30/7/21	Telecon 23/9/21: updated location of water supply intake (FLS GIS data record: wrong/old), is content with forest management in vicinity of (over the road from) hotel.	
Slattadale House	email 30/7/21	Site meetings 20/7/21, 7/10/22, : key concerns - ongoing visitor misuse of adjacent car park/picnic site (FLS Visitor Services aware & involved); requesting correct land ownership update for LMP maps re house/garden site and acquired byre; anxious as to impact of adjacent clear felling (exposure, privacy, loss of treasured trees/woodland). . They appreciate and support the native woodland restructuring ambition, just sensitive to short term impacts of implementation (access, timber transfer points, general scale and pace of change).	Legal boundary maps updated. Agreed retention of one large boundary spruce and sterile rhododendron specimen. Explained intended road upgrades and felling extent and timescales. Agreed to retain veteran beech/larch/spruce stands (previously classified as Natural Reserve) until native woodland restructuring has advanced to the stage where there are now large, maturing

Consultee	Initial Scoping contact	Response	FLS Follow-up
			native trees in the vicinity (age diversity) - unless tree health or safety concerns or road upgrade works require some necessary felling.
Gairloch Estate	email 30/7/21	Telecon (29/7) - main concern: maintain integrity of march fence to keep deer out as almost all Estate woodland creation areas now established so deer numbers are increasing outwith the FLS fence to north and west.	Re-iterated native woodland restructuring intention of management and thus intention to continue to maintain perimeter fencing, gates and grids and control interior deer population to allow successful regeneration..
Grudie & Talladale Estate	email 30/7/21	No response.	
Garbhaig House/Farm	hand delivery: LMP notification documents/maps	(meeting: 13/8/21) Dismayed at abrupt closure of toilet block (winter 2019). Concern this may ultimately result in contamination of his private water supply from increased 'wild toileting' on land abounding public car park.	FLS toilets subsequently re-opened from spring 2022. FLS to allow scrub vegetation to develop unchecked in the vicinity of the water supply intake and tank - to limit unsolicited public access and potential fouling of the water supply.
Slattadale SCIO - <i>community-interest organisation & community asset transfer applicant</i>	received forwarded email 30/7/21 from GALE	email request to discuss (Aug 2020) -> online meeting with Steering Group lead (pre-SCIO establishment): discussed main objectives and implications of the revised draft Plan; ambitions of land acquisition/use by community group; potential LMP interaction/impact on asset transfer site/siting. Generally supportive of Plan direction - accepting and sanguine as to forest change for long term benefit.	Final discussion with SCIO representatives at a Community Asset Transfer meeting (21/11/22) reiterating proposed timescales for forest management work in the vicinity of the CATS site. SCIO to investigate possible planning constraints and growing their membership to meet CATS application conditions.

Appendix 3 – Tolerance Table

	Adjustment to felling coupe boundaries	Timing of restocking	Change to species	Wind throw or environmental response	Adjustment to road lines
Scottish Forestry approval not normally required (<i>record & notify SF</i>)	Upto 10% of coupe size	Upto 5 planting seasons after felling (allowing fallow periods for <i>Hylobius</i>).	Change within native species group (<i>e.g. Scots pinewood to upland birchwood</i>); non-native conifers (<i>e.g. Sitka spruce to Douglas fir</i>), and non-native to native species (<i>allowing for changes to facilitate Ancient Woodland policy</i>).		Departures of upto 60 m from the centre of the roadline.
Approval by exchange of letters and map	10 to 15% of coupe size	Over 5 years	Change of coupe objective likely to be consistent with current policy (<i>e.g. from productive woodland to open ground, open ground to native tree species</i>).	Upto 5 ha.	Departures of greater than 60 m from the centre of the planned roadline.
Approval by formal plan amendment	Greater than 15% of coupe size		Major change of objective likely to be contrary to policy (<i>e.g. native to non-native tree species, open ground to non-native species woodland</i>).	More than 5 ha.	As above, depending on sensitivity.

Other Tree Felling in Exceptional Circumstances

FLS will normally seek to map and identify all planned tree felling in advance, through the LMP process. However there are some circumstances requiring small scale tree felling where this may not be possible and where it may be impractical to apply for a separate felling permission due to the risks or impacts of delaying the felling.

Felling permission is therefore sought for the LMP approval period to cover the following circumstances:

- Individual tree, rows of trees or small groups of trees that are impacting on important infrastructure (as defined below*), either because they are encroaching on or have been de-stabilised or made unsafe by wind, physical damage, or impeded drainage. * Infrastructure includes forest roads, footpaths, access (vehicle, cycle, horse, walking) routes, buildings, utilities and services and drains.

The maximum volume of felling in exceptional circumstances covered by this approval is 75 cubic metres per Land Management Plan per calendar year.

A record of the volume felled in this way will be maintained and will be considered during the five year Land Management Plan review.

A 5-year fallow period between felling and any prescribed restocking is adopted across the LMP area to allow a natural reduction in *Hylobius* populations. Population monitoring will be carried out prior to restocking in order to ascertain population levels as a means of reducing the use of insecticide applications during subsequent restocking and establishment phase. Given the drive to minimise the use of pesticides on FLS landholdings, delaying restocking operations might be the most appropriate option to successfully establishing the next generation of trees. Where and when this is a preferred option - outside tolerance limits agreed with Scottish Forestry – prior approval will be sought to address any adjacency issues resulting from proposed delayed restocking.



Please complete this form to find out if you need consent from Scottish Forestry, under the **Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017**, to carry out your proposed forestry project. Please refer to Schedule 2 Selection Criteria for Screening Forestry Projects under [Applying for an opinion](#). If you are not sure about what information to include on this form please contact your [local Conservancy office](#).

Proposed Work							
Please put a cross in the box to indicate the type of work you are proposing to carry out. Give the area in hectares and where appropriate the percentage of conifers and broadleaves							
Proposed Work	Select (x)	Area in hectares	% Conifer	% Broadleaves	Proposed work	Select (x)	Area in hectares
Afforestation					Forest roads	X	0.42
Deforestation					Forest quarry		
Location of work		Slattadale Forest, by Gairloch - loch-side forest roading					

Description of Forestry Project and Location
<p>Provide details of the forestry project (size, design, use of natural resources such as soil, and the cumulative effect if relevant). Please attach map(s) showing the boundary of the proposed work and other known details.</p> <p><i>In order to stack, uplift and export timber from loch-side conifer woodland at Slattadale, a programme of road upgrading is planned prior to harvesting - with felling envisaged in 2024/25 (currently pending SF approval in new Land Management Plan submission for FLS' Slattadale landholding - Jan 2023).</i></p> <p><i>The Management Map (Map 4) of the new LMP shows the location of this Phase 1 upgrade work (proposals also outlined in the Plan: section 2.8 - Proposed roading operations). An additional Location Map has been produced and accompanies this Request form.</i></p> <p><i>The upgrade of the road sections <u>does not</u> require EIA determination as the work involves stripping, re-building and re-surfacing (unbound stone) of existing carriageways within their original constructed footprint. Once complete, timber lorries will be able to enter the forest at the southern threshold, park and load on the timber transfer stances and - once loaded - exit from the northerly one.</i></p> <p><i>The construction of two timber transfer stances adjoining the southern section of road <u>does</u> require EIA determination as the work is within a National Scenic Area and involves the temporary construction of two areas of hard-standing (total area: 0.42 ha) to function as timber stacking and uplift stances throughout the duration of Phase 1 harvesting. This provides level stacking areas on a section of road with sloping road batters that do not offer the possibility for verge-side timber stacking and avoids timber lorries parking (and blocking) vehicular access during uplift periods.</i></p> <p><i>The transfer stances are to be de-constructed, upon completion of timber export, to create two new vehicle passing places (2 x 50m x av. 5m = 0.05 ha) on this single track forest road where there is currently one modest vehicle passing point on it's curved 430 m length and where there are already frequent instances of vehicle impasse during busy visitor periods.</i></p> <p><i>All stone required for road upgrade and transfer stance construction will be sourced from an existing in-forest quarry (indicated on Location Map) and dimension/specification detail for the forest road upgrade work and timber transfer stance construction/deconstruction are provided in an appended Engineering Assessment document.</i></p>

Provide details on the existing land use and the environmental sensitivity of the area that is likely to be affected by the forestry project.

The areas identified for construction of the two timber transfer stances are directly adjacent and abutting an existing forest road that provides vehicular access to a private residence (Slattadale House) and the FLS car park/picnic site on Loch Maree shore. Currently there is non-native coniferous woodland established beyond the sloped road batter (uniform stand of mixed conifers: mainly Sitka spruce with some European larch and Douglas fir; planted 1985), scheduled for Phase 1 clear fell (LMP approval-dependent) and prescribed for subsequent natural regeneration of native woodland for conservation and amenity in perpetuity.

Initial construction of the timber transfer stances (each 60 m long, maximum 35 m deep - see Engineering Assessment appended) requires prior felling of a strip of this woodland to accommodate the structures for the duration of wider clear felling, timber recovery and export.

The current in-forest environment is relatively ecologically poor with high shade (little understorey vegetation) from non-native trees established for over 35 years at high density and uniform spacing. Eventual deconstruction of the timber stances to final use as vehicle passing places will see the total 0.42 ha hard standing areas reduced to a 0.05 ha (i.e. two 50m x max 5m bays) with native woodland regeneration anticipated and tolerated upto the edge of the existing afforested boundary and so with no consequent net deforestation.

The development is within the Wester Ross National Scenic Area - designated on account of the scale and extent of mountainous rocky moorland and wooded glens.

The timber stances will be constructed 160m and 200m from Loch Maree (with the mature conifer woodland between) - a SSSI freshwater body designated on account of its water quality (very clear and low nutrient oligotrophic feature) and associated shoreline and island wildlife.

Description of Likely Significant Effects

Provide details on any likely significant effects that the project will have on the environment (resulting from the project itself or the use of natural resources) and the extent of the information available to assist you with this assessment.

Stone aggregates for timber stance construction will be sourced from existing, in-forest quarry (NG 8985 7115) so no additional environmental impact is anticipated from their collection, transport and supply.

The development is in the National Scenic Area however the short term construction work and objectives - to provide temporary local-stone-built infrastructure to allow removal of non-native conifer woodland and subsequently regenerate site-appropriate native woodland - is a significant positive landscape change only made practically possible by this temporary construction work. The permanent and reduced 'legacy structures' of two new vehicle passing places on an increasingly busy single track road is considered practical, proportionate and a not-untypical road development in this setting and circumstances.

There are no permanent water courses or existing culverts associated with, or connecting, the area of planned roadside development and designated Loch Maree. All forestry and civil engineering works involved in the establishment, use and deconstruction of the timber stances will be defined and overseen by FLS in full adherence of 'Forestry and Water - UKFS guidelines (6th Edition)' which are designed to avoid any potential negative impacts on watercourses/bodies (e.g. diffuse pollution) throughout proposed development work and ensure appropriate controls and/or mitigation are employed in anticipation of accidents, mechanical failure and other unforeseen or external factors likely to affect operational delivery.

The developer (FLS) has a suite of GIS data relating to forests, soils, watercourses, heritage and environmental features/designations in order to effectively plan and deliver work in full knowledge of the environmental context.

Include details of any consultees or stakeholders that you have contacted in order to make this assessment. Please include any relevant correspondence you have received from them.

Road upgrade and transfer point construction are integral projects of FLS' Land Management Plan (LMP) for Slattadale Forest, first publicly notified for review (and inviting comments) from statutory, as well as local and external, stakeholders in May 2021. The resulting draft LMP - of which this EIA SORF forms a part - is now submitted for approval by Scottish Forestry and all stakeholders have again been notified of this action and invited to view and feedback on draft proposals (draft LMP hosted online on FLS website). Stakeholders are also notified that they may make further representations to Scottish Forestry during the Plan's approval process which includes a 28-day period on the Public Register.

Face-to-face meeting: Slattadale House residents, 7/10/22 - (private dwelling with access rights along forest road) - to explain proposed road upgrade and transfer point construction. Explained intention to gate and lock timber stances in periods of inactivity to avoid unsolicited parking and to maintain vehicle egress throughout construction and subsequent use unless any planned short-term closure is mutually agreed.

Online meeting: Slattadale SCIO representatives, 21/11/22 - (community group exploring land purchase proposal @ Slattadale) - explained proposed woodland harvesting and associated road upgrades and timber stance construction: its short term use and long term intention. Group satisfied with proposals.

Mitigation of Likely Significant Effects

If you believe there are likely significant effects that the project will have on the environment, provide information on the opportunities you have taken to mitigate these effects.

All operational work will be undertaken in full compliance with "Forestry & Water - UKFS Guidance (2017)" to ensure compliance with legal and regulatory water quality protection and conservation.

All planned felling and construction work will be preceded by walkover survey by FLS environment ranger to check existing, and any new, environmental sensitivities within the operating area. This is a pre-requisite step in the FLS Work Plan process - undertaken prior to contract commencement to ensure all known, and any novel, potential environmental and social impacts are fully recorded, considered and ultimately adequately controlled or mitigated for in operational contract conditions and carried through to delivery working method.

Environmental Impact Assessment Screening Opinion Request Form

Sensitive Areas	
Please indicate if any of the forestry project is within a sensitive area (see list below). Write in the sensitive area and give the area of the proposal within it.	
Sensitive Area	Area
National Scenic Area - Wester Ross (145,300 ha)	0.42 hectares

Sensitive areas:

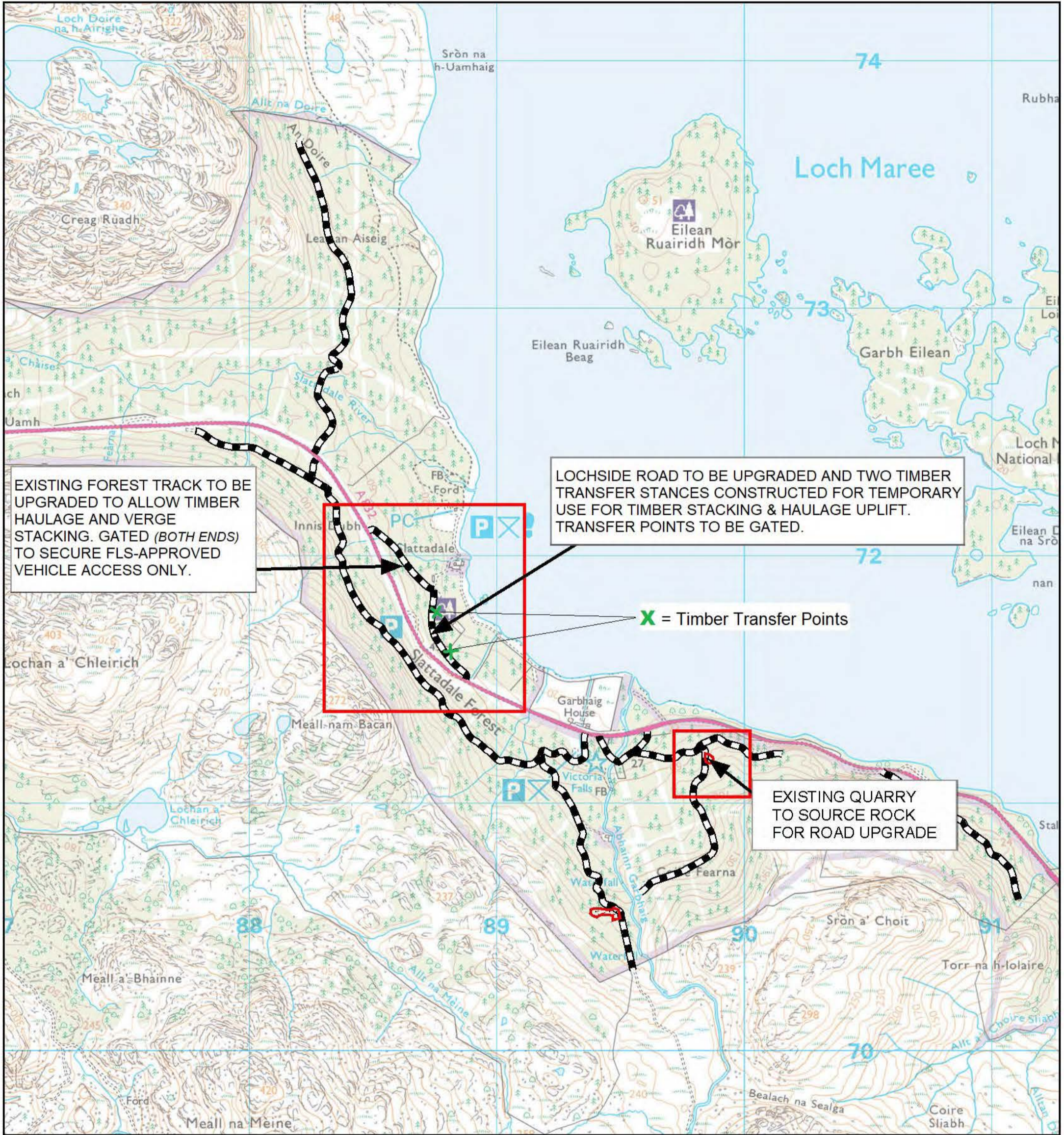
- Site of Special Scientific Interest or National Nature Reserve
- Special Protection Area or Special Area of Conservation
- World Heritage Site
- Scheduled Ancient Monuments
- National Scenic Area
- National Park
- Deep peat soil

Property Details			
Property Name:	Slattadale Forest		
Business Reference Number:	n/a	Main Location Code:	n/a
Grid Reference: (e.g. NH 234 567)	NG 8870 7190	Nearest town or locality:	Gairloch
Local Authority:	The Highland Council		

Owner's Details			
Title:	Mr	Forename:	Christopher
Surname:	Marsh		
Organisation:	Forestry and Land Scotland	Position:	Planning Forester
Primary Contact Number:	0300 067 6100	Alternative Contact Number:	n/a
Email:	chris.marsh@forestryandland.gov.scot		
Address:	FLS North Region office, Tower Road, Smithton		
Postcode:	IV2 7NL	Country:	Scotland
Is this the correspondence address?	Yes		

Agent's Details			
Title:		Forename:	
Surname:			
Organisation:		Position:	
Primary Contact Number:		Alternative Contact Number:	
Email:			
Address:			
Postcode:		Country:	
Is this the correspondence address?			

Office Use Only	
GLS Ref number:	



EXISTING FOREST TRACK TO BE UPGRADED TO ALLOW TIMBER HAULAGE AND VERGE STACKING. GATED (BOTH ENDS) TO SECURE FLS-APPROVED VEHICLE ACCESS ONLY.

LOCHSIDE ROAD TO BE UPGRADED AND TWO TIMBER TRANSFER STANCES CONSTRUCTED FOR TEMPORARY USE FOR TIMBER STACKING & HAULAGE UPLIFT. TRANSFER POINTS TO BE GATED.

EXISTING QUARRY TO SOURCE ROCK FOR ROAD UPGRADE

X = Timber Transfer Points

Legend

Slattadale Works

Quarries

Scale @ A3: 1:15,000

Date: 22/02/2022

Author: Sally Phillips



Quarries

Forest Roads



Forest Roads



Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2022. All rights reserved. Ordnance Survey Licence number 100024925. © Getmapping Plc and Bluesky International Limited 2022.

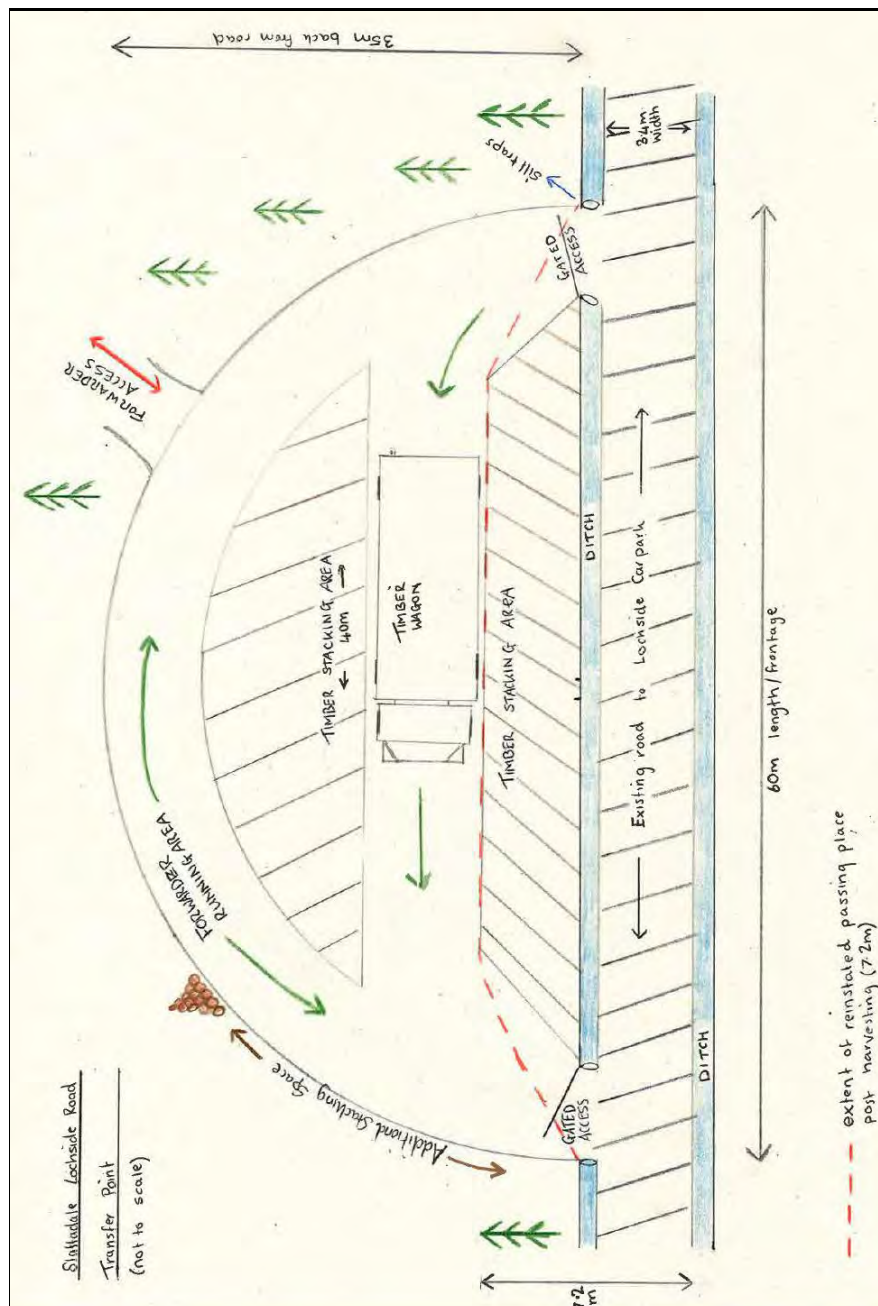
Scotland's national forests and land are responsibly managed to the UK Woodland Assurance Standard.





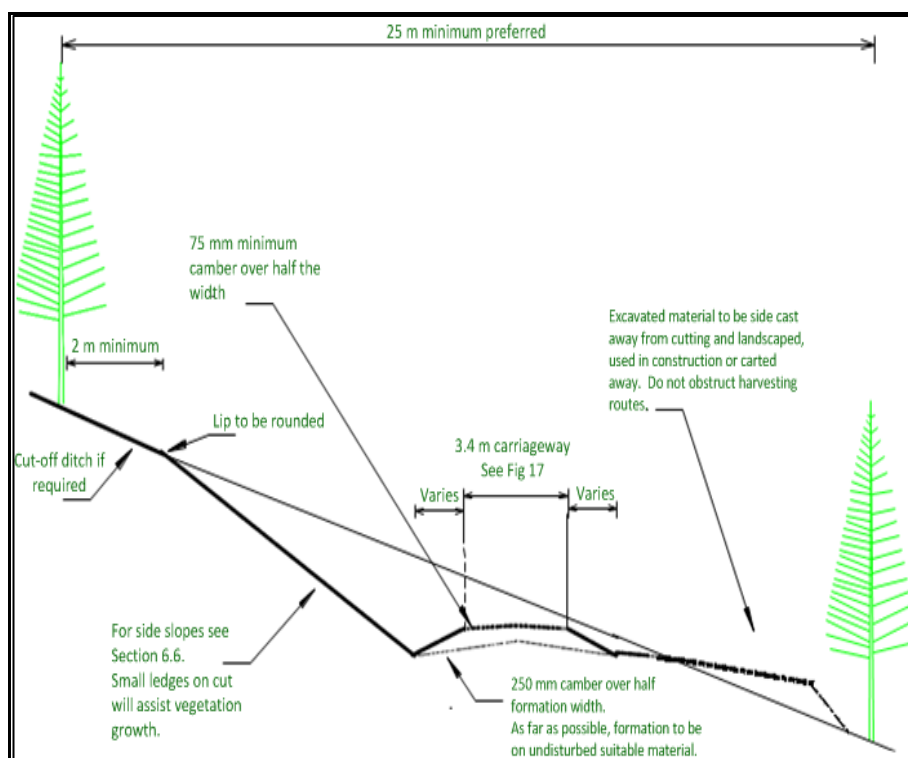
Preliminary engineering assessment - Slattadale Forest Roads Upgrade

- Upgrade of spur road from the Lochside Car Park road to the A832 – this will include renewing drainage, removing vegetation and resurfacing of running surface.
- Construction of two transfer points on main Lochside Car Park road to allow timber to be stacked and picked up by wagons without blocking access to car park or private dwelling (Transfer Point drawing attached).
- Once felling is completed the transfer points will be reinstated to passing places. All stone required for both the road upgrade



Essential dimensions/features of a temporary timber stacking area.

Road Construction Detail



Road Width

The effective road surface width on straights and curves of greater than 90 m centre line radius shall be 3.4 m. "Effective width" denotes full depth construction. Feathered edges are not included in the surface width. The effective road surface width on radii less than 90 m roads shall be widened on the inside as shown in Table 2 below, with straight transition lengths provided at the ends of each bend.

Outside Radius (m)	Minimum Widths For Maximum Angle of Deflection (°)				Transition Straight Length ** (m)	Maximum Desirable gradient on outside radius ** (%)
	15	45	90	180		
	Running surface width (m)					
90	3.4	3.4	3.4	3.4	-	10
60	3.4	3.8	4.0	4.0	20	8
45	3.4	4.0	4.5	4.5	20	7
30*	3.4	4.4	5.0	5.1	25	6.5
25		4.6	5.1	5.3	30	5
20		4.9	5.6	5.9	30	4.5
15			6.3	7.0	40	4
10***				10.0	40	5 on diagonal

* Preferred minimum radius

** Figures based on experience

*** Absolute minimum hairpin

Roadside Ditching

From approx. 1.5 m up the batter slope all vegetation must be scraped from the batter (this may not always be applicable), the invert of the ditch and up to the edge of the road. All grass, moss, soil, spoil, harvesting debris and other vegetation along the roadside must be removed to allow surface water to run into the roadside ditch, and any ridges formed by the excavator bucket during this operation must be smoothed.

The edge between the batter and hillside will be rounded off to prevent soil erosion undercutting root systems.

On the side of the road opposite the ditch all grass or other vegetation will be stripped back a minimum of 1.5 m from the edge of the road edge and the verge will be shaped to form a slight down gradient to allow water to shed. Any ridges formed by the excavator bucket during this operation must be smoothed.

The angle of repose of the batter is dependent on the type of ground and the height of the banking. The batter angle will vary from a maximum of 1 in 3 (18 deg) for bankings / slopes of less than 2 m high, up to a maximum of 1 in 1 (45 deg) for rock; 1 in 2 (26 deg) for fine grained soils and 1 in 1.5(33 deg) for all other types of soil on bankings/slopes over 2 m high.

All grasses, mosses and regen will be removed from the road surface, turning point(s) and passing place(s) as part of the ditching operation and the road will be cambered to a profile, as specified by Drawing 3 or by the FLS Engineer, before surface material is laid (if applicable).

Given the diversity of ground conditions on the National Forest Estate it may on occasion be necessary to use a hydraulic breaker to break out rock heads on some sections of the roadside ditch.

Silt settlement traps will be created in the ditch at least 10.0 m before the inlet of every culvert and in long runs of ditch every 15.0 m. At the outlet of the settlement trap a grass topped dam made of natural material must be created to allow water to build up and filter over the grass before continuing in the roadside drain. In some instances there may be a requirement to construct a hydro-brake in the roadside ditch by laying single size crushed rock.

The inlets and outlets of all culverts must be cleared and suitable sumps sufficient in size to cope with water flows created at the inlets. Settlement traps must be created at the outlets to allow particles to settle out before discharging into hill drains.

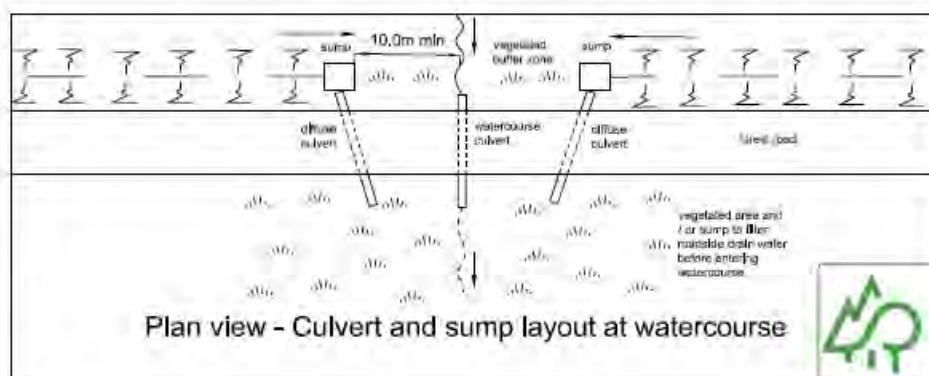
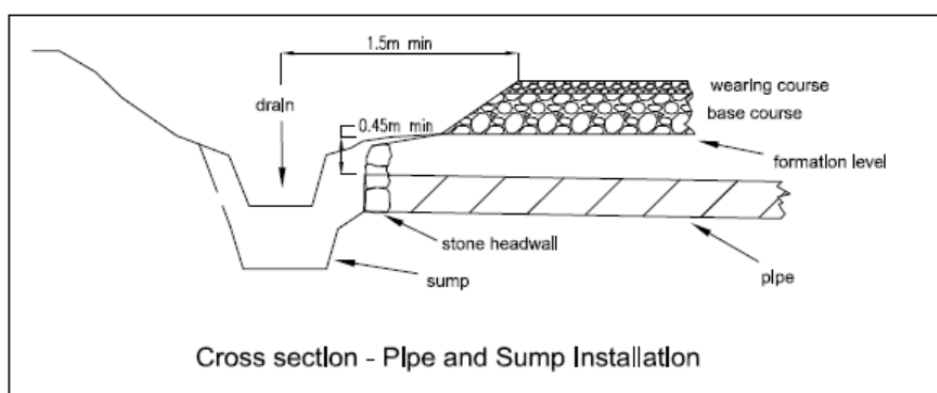
Where watercourses are present, vegetation must be left in place to act as a filter 10.0 m before the watercourse. A silt settlement trap must be created immediately before the vegetation. Vegetation must be removed from the shoulder of the road.

A visual check of the culvert must be carried out by the operator to ensure the culvert pipes are clear of debris. Where pipes are inundated by debris this must be removed. Where it is not possible to remove the debris, Forestry and Land Scotland must be informed so authorisation can be given to replace the culverts.

Any additional culvert installation will be instructed by Forestry and Land Scotland.

All spoil excavated from the ditch will be placed well back from the roadside, over the edge of the opposite banking from the ditch, out of sight and spread, levelled and sealed to avoid unsightly heaps at roadside. The spoil must be placed at least 5.0 m to either side of the outlet of the culvert to avoid being carried downstream by water during peak flows.

Where ditching is required at both sides of the road, Forestry and Land Scotland will permit the spoil being deposited, spread, levelled and sealed at both sides of the road corridor.



Appendix 5 - Designated Sites Plan

Designated sites are illustrated on Map 2

Designated Sites covered by this document

Loch Maree SSSI
Loch Maree Complex SAC
Loch Maree SPA

Dates of Plan

Start date of DSP: **to coincide with approval/start date for LMP 2023-2033.**
End date of DSP: **to coincide with 10-year expiry date of the LMP 2023-2033**

The Land Management Plan is approved for 10 years; however this Designated Site Plan document will be reviewed at Year 5 in line with the mid-term review to ensure that it is still fit for purpose.

Management Aims and Objectives

The aim of the plan is to fully take into account any management and mitigation required for the designated land on and around the national forests and land (NF&L) based on the area covered by the Slattadale Land Management Plan. This plan aims to act as a basis for targeted management for the notified features and to recognise other operations which might affect them through general use and management on the NF&L.

NB - All the designated features on FLS land relate to the island of Eilean Ruairidh Mor which is managed in partnership with NatureScot.

Section 1 Designated Sites Covered by this Land Management Plan

Designated Site Name	NatureScot Site Code	Site Type	Total Area of Designated site (Ha)	Area within this plan (Ha)	% on NF&L
<i>Loch Maree SSSI</i>	<i>1007</i>	<i>SSSI</i>	<i>3162</i>	<i>43</i>	<i>1.3</i>
<i>Loch Maree Complex</i>	<i>8299</i>	<i>SAC</i>	<i>15164</i>	<i>43</i>	<i>0.3</i>
<i>Loch Maree SPA</i>	<i>8532</i>	<i>SPA</i>	<i>3182</i>	<i>43</i>	<i>1.3</i>

Section 2 Features on or adjacent to the NF&L and condition

Features that exist on land within this LMP or have potential to be directly affected by our management operations are listed in the table below:

Site Type	Site Code	Feature description	SCM Condition (date assessed)	Condition on NF&L
SSSI	1007	Native Pinewood	Favourable Maintained (8/08)	Favourable Maintained
“	“	Beetles	Favourable Maintained (9/03)	Favourable Maintained
“	“	Dragonfly Assemblage	Favourable Maintained (8/13)	Favourable Maintained
“	“	Oligotrophic Loch	Favourable Maintained (7/10)	Favourable Maintained
SSSI +SPA	“	Black-throated Diver	Unfavourable Declining (7/13)	Unfavourable Declining
SAC	8299	Caledonian Forest	Unfavourable No Change	Favourable
“	“	Otter	Favourable Maintained (7/12)	Favourable Maintained

Loch Maree Site of Special Scientific Interest comprises Loch Maree and its associated islands one of which, Eilean Ruairidh Mor, is owned by FLS . Beinn Eighe and Loch Maree Islands were declared a National Nature Reserve (NNR) in 1977.

Native Scots Pine Woodland, an SSSI and SAC qualifying habitat, is present within the boundary of the FLS landholding. In addition Eilean Ruairidh Mor also supports the SSSI qualifying features, dragonfly assemblage.

The location of Eilean Ruairidh Mor within the body of Loch Maree makes it important to take account of the qualifying SSSI feature, Oligotrophic Loch, in any management planning, particularly in relation to potential pollution. Whilst the designation of the loch as an SSSI and SAC for Black-throated Divers requires any management to take account of any potential disturbance of nesting sites during the breeding season, April to August. Species are protected during forest operations via pre-operational planning which implements buffer zone and timing restrictions. FLS also works with a variety of partners and projects to promote species interests including those within the designated features.

FLS undertake a substantial amount of monitoring across the designated areas for habitat identification, species, woodland/habitat regeneration and deer impact assessments. This information is helping to identify both the location and condition of the protected habitats and species.

Section 3 Pressures related to achieving Favourable Condition

3.1 Native Pinewood

The islands of Loch Maree support one of the least disturbed remnants of Scots pine woodland in Scotland. The woodland is one of a group of native pinewoods in Wester Ross which are genetically distinct from other Scottish pinewoods. These woods have retained a high degree of genetic variation and have affinities with the pinewoods of Spain and southern France.

The woodland on the islands is currently regarded as being in favourable condition because of the presence of a varied age structure, with larger mature trees within a matrix of younger trees, and an abundance of deadwood. It is also notable for its understorey of juniper and its apparent 'naturalness'.

Although well grown pine saplings appear to be present in adequate numbers to sustain the current woodland cover, some pine saplings and most of the broadleaf saplings appear to have had their growth suppressed by browsing.

Non-native trees and shrubs including rhododendron do seed onto the islands and need to be controlled.

3.2 Dragonfly assemblage

The islands contain a nationally outstanding assemblage of dragonflies. Of particular importance is the Red Data Book species Northern Emerald and the national scarce species Azure Hawker and White Faced Darter. 11 of the 12 species, including all of the notable species of the notified assemblage were recorded during monitoring and therefore the feature is considered to be in favourable condition.

3.3 Beetles

The native pinewoods, the lochans and fens on the islands along with the shingle shores of the loch support a number of species of beetle including the nationally rare *Carabidae* beetle *Benbidion virens*. Although monitoring did not re find *Benbidion virens*, no deterioration in the habitats of the species were recorded and the condition of the feature was assessed as favourable.

3.4 Oligotrophic Loch

Loch Maree is an excellent example of a clear, nutrient poor loch. The loch was assessed as being in favourable condition as species composition and water quality were consistent with oligotrophic conditions.

3.5 Black-throated Diver

Disturbance, predation and water quality may all affect the Divers, it is important that these factors are considered during management.

Section 4 Planned Management

It is FLS policy to achieve Favourable condition for all features under our management control on FLS land.

4.1 Broad Objectives

4.1.1 - To maintain favourable condition of the Native Pinewood by:

- Managing the woodland and associated habitats by minimal intervention so as to maintain the unique woodland gene pool and the undisturbed nature of the island.
- Developing a strategy for monitoring natural woodland processes.
- Ensuring the impact of grazing animals remains light.
- Developing and delivering an eradication programme for all non-native species.

4.1.2 - To maintain the favourable condition of the dragonfly assemblage by:

- Maintaining the condition and diversity of habitats which support them: avoiding incidental damage or disturbance of standing water/fringe vegetation mosaic communities.

4.1.3 - To maintain the favourable condition of the beetles by:

- Maintaining the condition and diversity of habitats which support them: avoiding incidental damage or disturbance of standing water/fringe vegetation mosaic communities.

4.1.4 - To maintain the favourable condition of the oligotrophic loch by:

- Ensuring strict adherence to FC Forest & Water Guidelines in all activities.

4.1.5 - To improve the condition of the Black-throated Diver by:

- Pre-operational surveys will ensure buffer zones and timing restrictions are in place to protect breeding birds even if they are not on FLS land.
- Work with stakeholders and agencies to reduce disturbance from campers, water users etc.

4.2 Management Prescriptions

Develop and deliver management to remove all non-native tree and shrub species from the island. These will include Sitka and Norway spruce, Grand, Silver, Noble and Douglas Fir, Western hemlock, Lodgepole pine. *Rhododendron ponticum* is recognised as the shrub species posing the greatest threat.

Ensure that any collection of Scots pine seed from the island for purposes other than management of the NNR are subject to agreement between NatureScot and FLS.

4.3 Deer Management

Deer Management Prescription 2022-32

4.3.1. Reduce deer numbers on the island to a level where the browsing is acceptable. Deer culling visits to be agreed between FLS and NatureScot.

4.3.2 Monitor tree regeneration and damage to assess the need for culling.

Section 5. Operations within the LMP that could impact on the designated features on the National estate

ORC No.	ORC Description	Proposed Operations	Mitigating Measures
2	Changes to grazing management (including introductions/re-introductions, changes to stock numbers, types and dates, or cessation)	<i>None proposed</i>	
3	Stock feeding and changes in stock feeding practices. The introduction of stock feeding (including the introduction, re-introduction and changes to type and location).	<i>None proposed</i>	
5	Application of manure, fertilisers and lime.	<i>None proposed</i>	
11	The destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, dead or decaying wood, moss, lichen, fungus, leaf-mould, turf etc.	<i>Manual pulling/cutting and/or motor-manual cutting of regenerating rhododendron and non-native coniferous species. Seed collection. Taking plant samples for research purposes. Taking plant samples by FLS for plant health inspections. Vegetation management along forest roadsides.</i>	<i>The need for tree/shrub removal will be assessed by those visiting the island for deer culls. If required work will be carried out using hand tools outwith the bird breeding season.</i>
12	Tree and/or woodland management, the (re)introduction of tree and/or woodland management and changes in tree and/or woodland management.	<i>None proposed.</i>	
15	Infilling of pools or marshes.	<i>None proposed.</i>	
16a	Freshwater fisheries production and/or management. Changes in freshwater fisheries production and/or management.	<i>None proposed.</i>	
21	Construction, removal or destruction of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground.	<i>None proposed.</i>	
23	Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.	<i>None proposed.</i>	
26	Use of vehicles or craft except on existing tracks.	<i>Use of Boats.</i>	<i>Only to access for the purpose of management and with strict limits on the number of visits.</i>
28	Deer Management and hunting practice, and, changes in deer and hunting practice.	<i>Deer management: shooting.</i>	<i>Deer management is undertaken in accordance to Best Practice and in relation to deer management plans and in association with other local deer management groups. The requirement for culling on the island will be based on vegetation/browsing surveys.</i>

Appendix 6 – Habitat Regulations Appraisal

HRA Proforma: **SLATTADALE LAND MANAGEMENT PLAN**

APPRAISAL IN RELATION TO REGULATION 48 OF the Conservation (Natural Habitats, &c.) Regulations 1994 as amended¹ (HABITATS REGULATIONS APPRAISAL)

NATURA SITE DETAILS

Name of Natura site(s) potentially affected:

- 1007 – Loch Maree SSSI
- 8532 – Loch Maree SPA
- 8299 - Loch Maree Complex SAC

* Only the FLS owned island Eilean Ruaraidh Mor is within the designated sites

Name of component SSSI if relevant:

Natura qualifying interest(s) & whether priority/non-priority:

SAC Loch Maree Complex (features on FLS land in bold)

- Alder woodland on floodplains
- Alpine and subalpine heaths
- **Blanket bog**
- Bog woodland
- Plants in crevices on base-rich rocks
- **Caledonian forest**
- Depressions on peat substrates
- Dry heaths
- Tall herb communities
- **Lutra lutra Otter**
- Wet heathland with cross-leaved heath
- Western acidic oak woodland
- Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels
- Montane acid grasslands
- Plants in crevices on acid rocks
- Acidic scree

SPA Loch Maree

Black-throated Diver

Conservation objectives for qualifying interests:

For designated habitats

To avoid deterioration of the qualifying habitats - thus ensuring the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying features.

To ensure for the qualifying habitats that the following are maintained in the long term:

- Extent of the habitats on site
- Distribution of the habitats within site
- Structure and function of the habitats
- Processes supporting the habitats
- Distribution of typical species of the habitats
- Viability of typical species as components of the habitats

¹ Or, where relevant, under regulation 61 of The Conservation of Habitats and Species Regulations 2010 as amended, or regulation 25 of The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 as amended.

- No significant disturbance of typical species of the habitats

For designated species

To avoid deterioration of the habitats of the qualifying species, or significant disturbance to the qualifying species - thus ensuring the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying feature.

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

The overarching objectives for the LMP are to work towards the achievement of the Natura objectives.

STAGE 1: WHAT IS THE PLAN OR PROJECT?

Proposal title:

Slattadale Land Management Plan 2023 - 2033

Name of consultee: Forestry and Land Scotland; Colin Leslie

Name of competent authority: Scottish Forestry

Details of proposal (including location, timing, methods):

Within the lifespan of this plan (2023-2033) the planned activities are:

- Felling
- Civil Engineering
- Restocking and associated ground preparation
- Deer Management

These activities are outlined within the Plan document and would be considered further when permissions are sought, for example as planning permission or felling licence. This HRA considers the overall concepts and direction of travel, and tests them for potential impacts on the designated sites.

Slattadale Land Management Plan 2023-2033

1. Continued removal of non-native conifers from the wider forest area (approx. 37.7 ha).

The beneficial impact on Loch Maree Complex SAC will be indirect by removing the seed sources close to the SAC. The SAC will continue to be monitored for non-native regeneration which will be subsequently removed. Felling operations do have the potential to disturb designated species but this will be addressed in pre-operational planning surveys and mitigation.

2. Deer Management.

FLS aims to facilitate natural regeneration of native species and protection of habitats through reduction in grazing impacts. Surveys will inform the decisions on cull levels and FLS will continue to work with NatureScot, neighbours and the local deer management group to achieve our objectives.

3. Restocking. (approx. 151.6 ha)

Following non-native removal FLS will apply a variety of techniques to restore sites to native woodland habitat. These will include planting, scarification where a seed source exists, direct seeding, transplantation of existing SP regeneration and planting of broadleaves where no seed source is present.

STAGE 2: IS THE PLAN OR PROJECT DIRECTLY CONNECTED WITH OR NECESSARY TO SITE MANAGEMENT FOR NATURE CONSERVATION?

Yes. In order to protect designated features and improve the condition of these features the proposed work is necessary. Tree disease (*Dothistroma*) and the unmanaged presence of non-native species have the potential to create significant negative effects if not addressed.

As it has not been assessed previously, and works to benefit one feature may impact on another, it is considered further below.

STAGE 3: IS THE PLAN OR PROJECT (EITHER ALONE OR IN COMBINATION WITH OTHER PLANS OR PROJECTS) LIKELY TO HAVE A SIGNIFICANT EFFECT ON THE SITE?

Effect on designated features

There would be no significant impact on the following habitats or species as they are not present on land owned and managed by Forest and Land Scotland. These are:

SAC Loch Maree Complex

- Alder woodland on floodplains
- Alpine and subalpine heaths
- Plants in crevices on base-rich rocks
- Depressions on peat substrates
- Tall herb communities
- Western acidic oak woodland
- Montane acid grasslands
- Plants in crevices on acid rocks
- Acidic scree

See Stage 4 for details.

Mitigation or modifications required to avoid a likely significant effect & reasons for these:

Mitigation:	Reason:
• Timing of operations	• To avoid direct impacts
• Monitoring	• To assess impacts of these proposals
• Review	• This plan will be reviewed in 5 years' time

STAGE 4: UNDERTAKE AN APPROPRIATE ASSESSMENT OF THE IMPLICATIONS FOR THE SITE IN VIEW OF ITS CONSERVATION OBJECTIVES

SAC Loch Maree Complex (features on FLS land)

- Blanket bog – *No machinery will be used in vicinity of bog area. There are no plans to alter the hydrology of bog areas.*
Conclude – No likely impact on integrity of Blanket Bog
- Caledonian forest – *Existing woodland will be protected and deer management will ensure that regeneration can take place. The removal of adjacent non-native seed sources will prevent the spread of non-natives. Invasive non-native removal will also take place where required.*
Conclude – No likely impact on integrity of Caledonian Forest
- *Lutra lutra* Otter – *No operations are planned that will directly impact otters but any work will be subject to pre-operational surveys.*
Conclude – No likely impact on integrity of *Lutra lutra* Otter
- Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels – *All operations will follow the guidance “Managing forest operations to protect the water environment” by Forest Research 2019. This will ensure that activities have no negative impacts on watercourses running into the designated features.*
Conclude – No likely impact on the integrity of Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels

SPA Loch Maree

- Black-throated Diver – *All adjacent operation will be subject to pre-operational surveys to assess any impact on Divers. Timing and buffer zone restrictions in accordance with NatureScot guidance will ensure sites are protected from disturbance.*
Conclude – No likely impact on integrity of Black-throated Diver

STAGE 5: CAN IT BE ASCERTAINED THAT THE PROPOSAL WILL NOT ADVERSELY AFFECT THE INTEGRITY OF THE SITE?

The proposals will not adversely affect the integrity of any of the sites. Failure to carry out some of the proposals are likely to lead to negative impacts on the site with the proliferation of non-native trees, impacts of deer browsing and potential risks from tree disease.

Mitigation or modifications required to ensure adverse effects are avoided and reasons for these.

Mitigation:

1. Consultation with NatureScot over major projects
2. Pre-operational checks
3. Timing Restrictions and buffer zones
4. Monitoring
5. Licencing

Reason:

1. This will ensure that any major projects are taken forward with full consultation and agreement.
2. All operations will be subject to site surveys and other pre-operational checks to ensure species and habitats are monitored and protected.
3. Any operations likely to impact protected species will be subject to timing restrictions and buffer zones to ensure they are protected.
4. Species and habitats will be subject to regular monitoring and plans will be reviewed at regular intervals.
5. Licences will be sought where required.

ADVICE SOUGHT

This plan has been fully consulted on. In addition advice has been sought from NatureScot area and specialist staff, FLS Ecologists (Species, Woodland and Open habitats).

CONCLUSION/ADVICE IN RELATION TO PLAN OR PROJECT

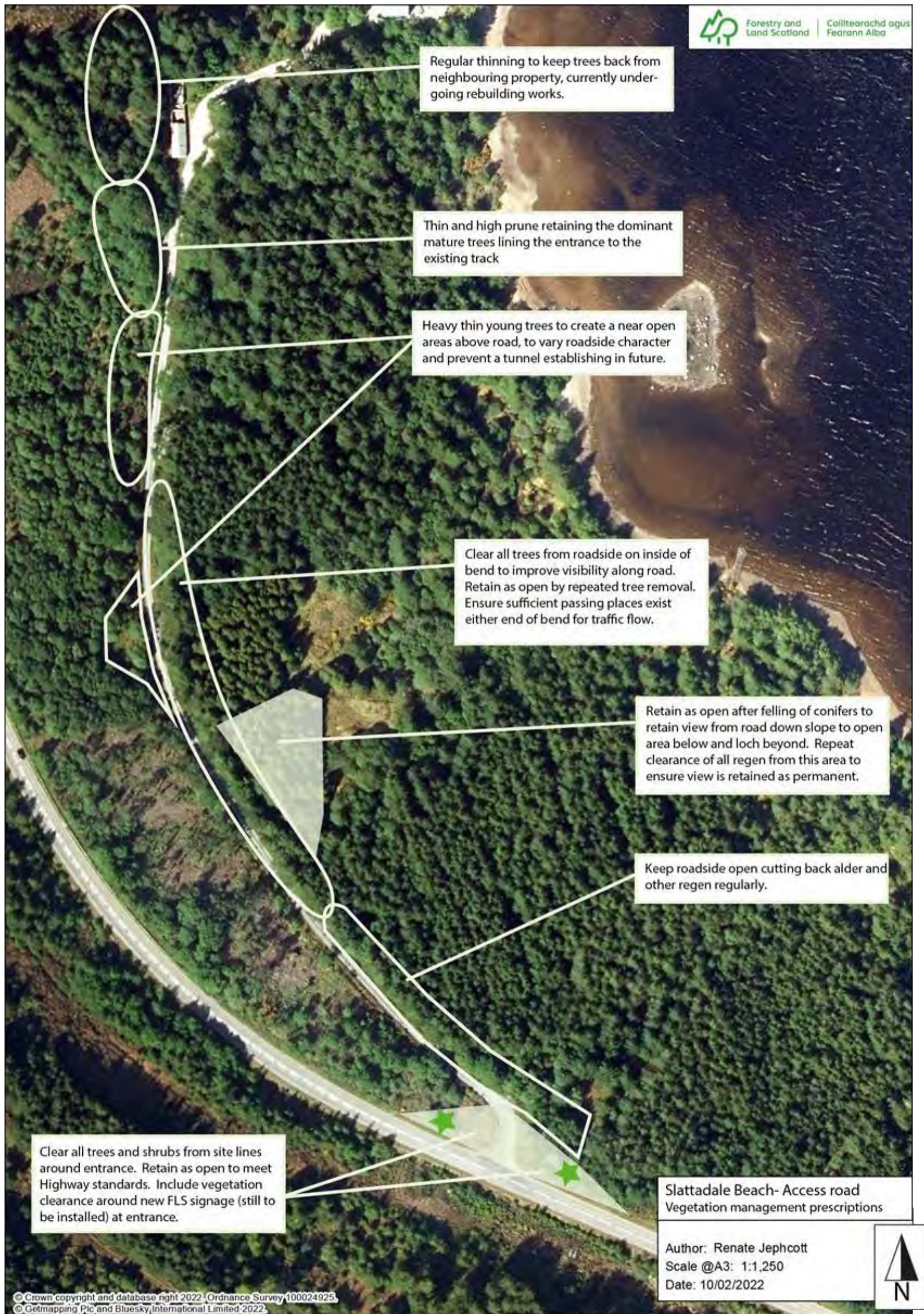
Natura model response position:

Likely significant effect on features shown in Section 4 but no impact on the integrity of any of the sites.

Appendix 7 – Visitor Zone Management Prescriptions

Section 2.6 describes general objectives of management envisaged within FLS Visitor Zones. The following annotated aerial photographs illustrate how these objectives are to be achieved at both the loch-side car park, trails and picnic site and Victoria Falls car park, circular trail and viewpoints.

Slattadale access road - beach/loch-side car park & picnic site



Slattadale beach/loch-side car park & picnic site



Victoria Falls access road, car park & circular viewpoint trail



Appendix 8 - Key policies and publications

The key legislation, policies and practice guidance used in the preparation of this Plan - and to which FLS delivery will comply - are listed below:

Legislation

Forestry and Land Management (Scotland) Act 2018

Planning (Scotland) Act 2019

Deer (Scotland) Act 1996

Land Reform (Scotland) Acts 2003 and 2016

Health and Safety at Work Act 1974

Water Environment and Water Services (Scotland) Act 2003

Water Environment (Controlled Activities) (Scotland) Regulations 2005

Flood Risk Management (Scotland) Act 2009

Nature Conservation (Scotland) Act 2004

Wildlife and Natural Environment (Scotland) Act 2011

Wildlife and Countryside Act 1981 (variation of Schedules A1 and 1A)(Scotland) Order 2013

Forestry (Environmental Impact Assessment)(Scotland) Regulations 2017

Environmental Impact Assessment (Miscellaneous Amendments)(Scotland) Regulations 2017

Forest Reproductive Material: Regulations Controlling Seed Cuttings and Planting Stock for Forestry in Great Britain, Forestry Commission Scotland 2007.

Corporate Policies and Strategies

Forestry Commission (2017) The United Kingdom Forestry Standard (Fourth Edition). FC, Edinburgh.

Scottish Government (2019) Scottish Forestry Strategy. Scottish Government, Edinburgh.

Scottish Government (2019) Forestry and Land Scotland Corporate Plan 2019 – 2022. Scottish Government, Edinburgh.

Scottish Government (2016) Getting the Best from Our Land: A Land Use Strategy for Scotland 2016 – 2021. Scottish Government, Edinburgh.

Scottish Government (2013) 2020 Challenge for Scotland's Biodiversity. Scottish Government, Edinburgh.

Scottish Government (2020) The Environment Strategy for Scotland. Scottish Government, Edinburgh.

Scottish Government (2015) Scotland's Archaeology Strategy. Scottish Government, Edinburgh.

Scottish Government (2009) The Scottish Soil Framework. Scottish Government, Edinburgh.

Forestry and Land Scotland (2018) The National Spatial Overview. FLS, Edinburgh.

Forestry Commission Scotland (2009) Control of Woodland Removal. FCS, Edinburgh.

Forestry Commission Scotland (2008) Scotland's Woodlands and the Historic Environment. FCS, Edinburgh.

Scottish Natural Heritage (2016) Scotland's National Peatland Plan, Working for Our Future. SNH, Edinburgh.

Highland Forest and Woodland Strategy (2018) The Highland Council, Inverness.

Scottish Forestry (2021) Restocking Density for Native Broadleaves. SF policy update (May 2021).

Forestry and Land Scotland (2022) FLS Larch Strategy 2022 (April 2022).

Forest Planning and Management Guidance

Forestry Commission (2017) Forests and Climate Change - UKFS Guidelines (First Edition). FCS, Edinburgh.

Broadmeadow, M ed. (2002) Climate Change Impacts on UK Forests - Bulletin 125. FCS, Edinburgh.

Forestry Commission (2017) Forests & Water - UKFS Guidelines (Sixth Edition). FCS, Edinburgh.

Forestry Commission (2019) Managing Forest Operations to Protect the Water Environment. FCS, Edinburgh.

Scottish Environment Protection Agency (2010) Engineering in the Water Environment Good Practice Guide – River Crossings 2nd Edition. SEPA.

Scottish Environment Protection Agency (2006) The Water Environment (Controlled Activities) (Scotland) Regulations 2005 – A Practical Guide. SEPA.

The Highland Council (2016) Highland and Argyll Local Flood Risk Management Plan (2016 – 2022). The Highland Council, Dingwall.

Forestry Commission (2017) Forests and Historic Environment - UKFS Guidelines (Third Edition) . FCS, Edinburgh.

Ritchie M and Wordsworth J (2010) Identifying the Historic Environment in Scotland's Forests and Woodlands. FCS, Edinburgh.

Forestry Commission Scotland (2016) The provision of archaeological information and advice in Scotland to meet the UKFS. FCS Guidance Note

Forestry and Land Scotland (2021) Archaeology and the Historic Environment. FLS internal communication, Inverness.

Forestry Commission (2017) Forests and Soil - UKFS Guidelines (Third Edition). FCS, Edinburgh.

Forestry Commission Scotland (2015) Deciding future management options for afforested deep peatland. FCS, Edinburgh.

Morrison J et al (2010) Understanding the Greenhouse Gas Implications of Forestry on Peat Soils in Scotland. Forest Research.

Paterson D.B. and Mason W.L. (1999) Cultivation of Soils for Forestry – FC Bulletin 119. HMSO.

Taylor, C.M.A. (1991) Forest Fertilisation in Britain. HMSO.

Forestry Commission (2017) Forests and Landscape - UKFS Guidelines (Fourth Edition) . FCS, Edinburgh.

Forestry Commission Scotland (2012) Achieving Diversity in Scotland's Forest Landscape. FCS, Edinburgh.

Forestry Commission (2017) Forests and Biodiversity - UKFS Guidelines (Third Edition). FCS, Edinburgh.

Pyatt, G; Ray, D; Fletcher, J (2001) An Ecological Site Classification for Forestry in Great Britain - Bulletin 124. FCS, Edinburgh.

Forestry Commission (2018) Guidance for the preparation of land management plans on Scotland's National Forest Estate. FCS, Edinburgh.

Forestry Commission (2018) Applying an Ecosystem Approach to land management planning on Scotland's National Forest Estate. FCS, Edinburgh.

Forestry Commission (2003) Management of Semi-Natural Woodlands - Upland Birchwoods – Practice Guide 6. FC, Edinburgh.

Forestry Commission (2003) Management of Semi-Natural Woodlands – Native Pinewoods – Practice Guide 7. FC, Edinburgh.

Forestry Commission (2012) Managing deadwood in forests and woodlands – Practice Guide 20. FC, Edinburgh.

Forestry Commission Scotland (2021) Deadwood Management: Guidance for FLS staff. FLS internal communication, Inverness.

Thompson, R (2009) Management of PAWS on the National Forest Estate in Scotland. FCS, Edinburgh.

Thompson, R (2009) Natural Reserves Guidance. FLS internal communication, Edinburgh.

Thompson, R (2022) FLS' Priorities for Rhododendron control. FLS internal communication, Edinburgh.

Forestry Commission (2017) Forests and People - UKFS Guidelines (Third Edition). FCS, Edinburgh.

Forestry Commission Scotland (2014) Deer Management on the National Forest Estate - Current Practice and Future Directions. FCS, Edinburgh.

Location-specific literature

Landscape Character Assessment: Ross and Cromarty – Landscape Evolution and Influences (LCA Review, 2020). NatureScot.

Scottish Environment Protection Agency (2021) Flood Risk Management Plan – Highland and Argyll Local Plan District.

Willoughby, I, Jinks, R, Stokes, V (2017) Direct seeding of birch, rowan and alder for native woodland restoration. Forest Research.

Great Glen Ecology Ltd. (2021) Slattadale Forest – Review of Forest Plan Objectives and Management. FLS-commissioned report. *(included in this LMP as Appendix 10)*

SSSI Management Plan – Eilean Ruairidh Mor, Loch Maree SSSI (1st April 2020 - 31 March 2029)

Loch Maree Islands NNR – Eilean Ruairidh Mor – Nature Reserve Agreement. FLS/NatureScot.

Steven, H.M. and Carlisle, A. (1959) The Native Pinewoods of Scotland. Oliver and Boyd, Edinburgh.

North Region Slattadale

View VP1 A832
Grid Ref: NG871725
Date: September 2022

Visualisation of Felling proposals

Visualisation year
Photograph 2022
Felling 2023

Felling Phases have a rolling 5 year period and for visualisations start on the date shown above.



- Felled or fell; year requires review
- Phase 1: < 5 yeaise
- Phase 2: between 5 and 9 yeaise
- Phase 3: between 10 and 14 yeaise
- Phase 4: between 15 and 19 yeaise
- Phase 5: between 20 and 24 yeaise
- Phase 6: between 25 and 29 yeaise
- Phase 7: between 30 and 34 yeaise
- Phase 8: 35 yeaise and greater
- Clearfell with seed trees
- Low Impact Silviculture
- Minimum Intervention
- Natural Reserve
- Long Term Retention
- Other/Open lands
- Neighbouring woodland



North Region Slattadale

View VP1 A832

Grid Ref: NG871725

Date: September 2022

Visualisation of Future Habitat and Species

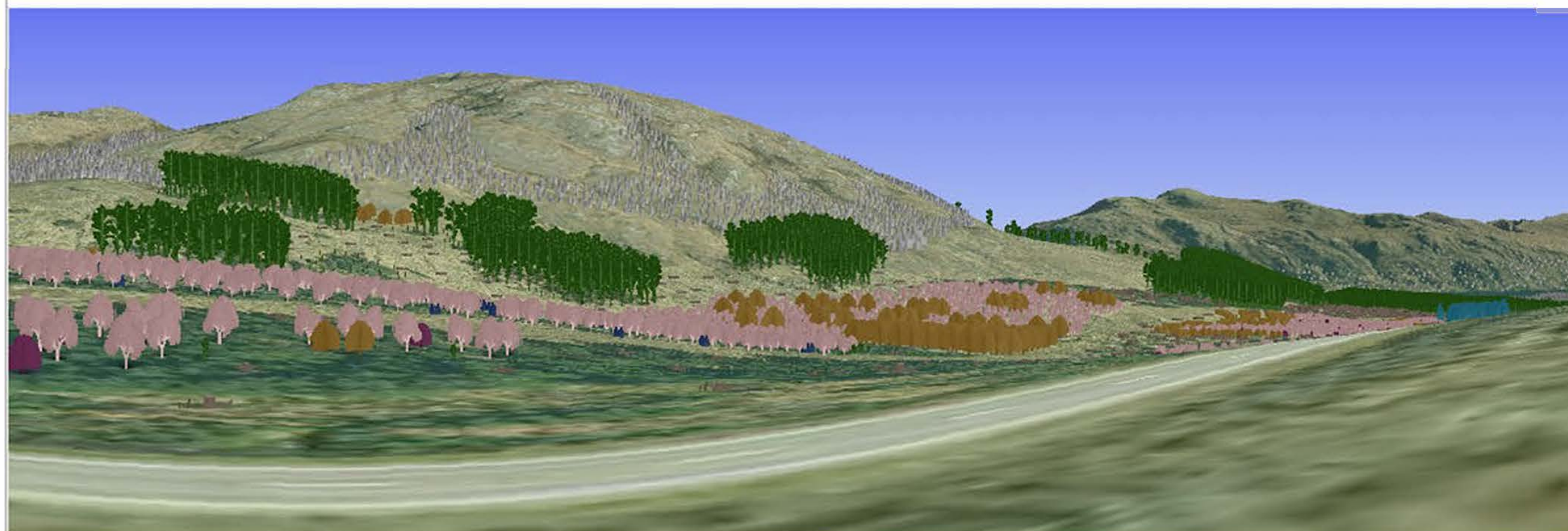
Visualisation year

Species 2023

Species 2033

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.

-  Sitka spruce
-  Norway spruce
-  Scots pine
-  Lodgepole pine
-  Larch
-  Douglas fir
-  Mixed conifers
-  Ash
-  Oak
-  Beech
-  Birch
-  Mixed broadleaves
-  Native mixed broadleaves
-  Neighbouring woodland





North Region Slattadale

View VP1 A832

Grid Ref: NG871725

Date: September 2022

Visualisation of Future Habitat and Species

Visualisation year

Species 2043

Autumn 2043

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.



- | | |
|---|--------------------------|
|  | Sitka spruce |
|  | Norway spruce |
|  | Scots pine |
|  | Lodgepole pine |
|  | Larch |
|  | Douglas fir |
|  | Mixed conifers |
|  | Ash |
|  | Oak |
|  | Beech |
|  | Birch |
|  | Mixed broadleaves |
|  | Native mixed broadleaves |
|  | Neighbouring woodland |

North Region Slattadale

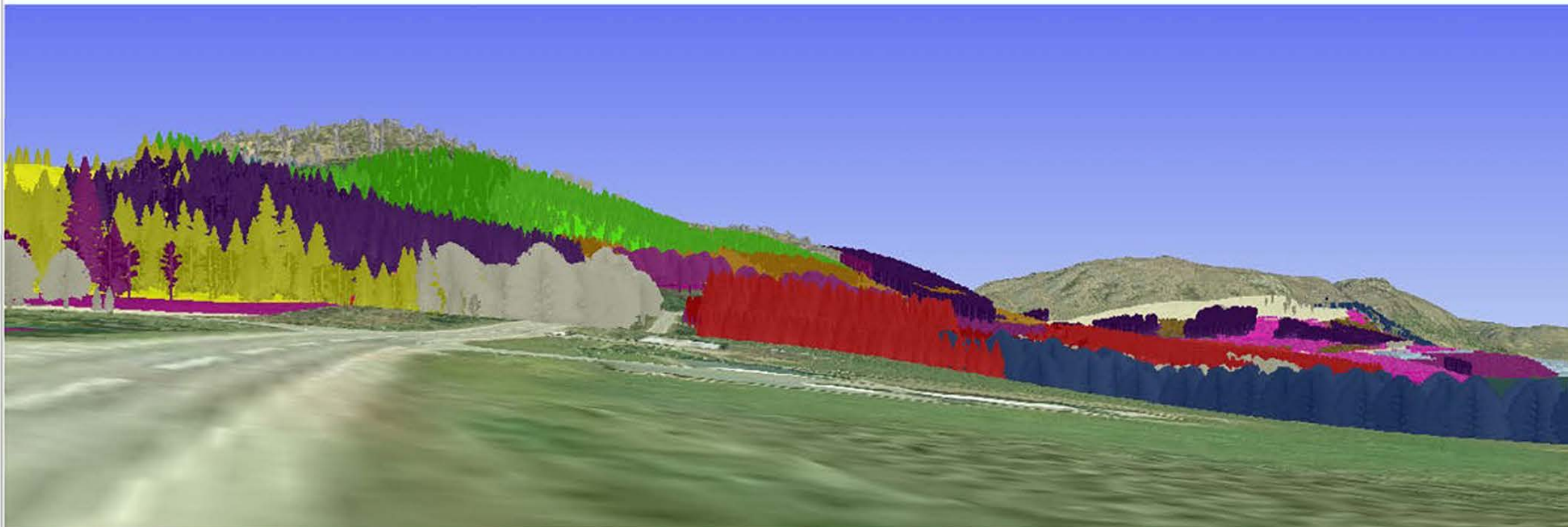
View VP2 Garbhaig
Grid Ref: NG894713
Date: September 2022

Visualisation of Felling proposals

Visualisation year
Photograph 2022

Felling 2023

Felling Phases have a rolling 5 year period and for visualisations start on the date shown above.



- Felled or fell; year requires review
- Phase 1: < 5 yeaise
- Phase 2: between 5 and 9 yeaise
- Phase 3: between 10 and 14 yeaise
- Phase 4: between 15 and 19 yeaise
- Phase 5: between 20 and 24 yeaise
- Phase 6: between 25 and 29 yeaise
- Phase 7: between 30 and 34 yeaise
- Phase 8: 35 yeaise and greater
- Clearfell with seed trees
- Low Impact Silviculture
- Minimum Intervention
- Natural Reserve
- Long Term Retention
- Other/Open lands
- Neighbouring woodland



North Region Slattadale

View VP2 Garbhaig
Grid Ref: NG894713
Date: September 2022

Visualisation of Future Habitat and Species

Visualisation year

Species 2023

Species 2023

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.

-  Sitka spruce
-  Norway spruce
-  Scots pine
-  Lodgepole pine
-  Larch
-  Douglas fir
-  Mixed conifers
-  Ash
-  Oak
-  Beech
-  Birch
-  Mixed broadleaves
-  Native mixed broadleaves
-  Neighbouring woodland





North Region Slattadale

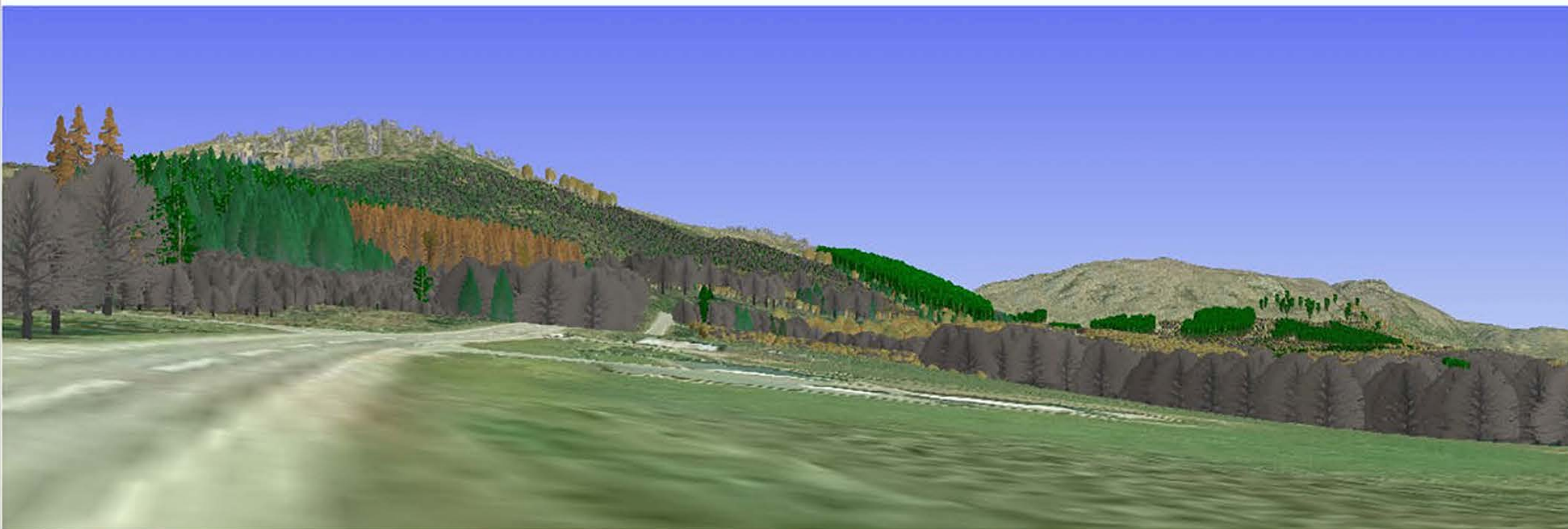
View VP2 Garbhaig
Grid Ref: NG894713
Date: September 2022

Visualisation of Future Habitat and Species

Visualisation year
Species 2043
Autumn 2043

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.

- | | |
|---|--------------------------|
|  | Sitka spruce |
|  | Norway spruce |
|  | Scots pine |
|  | Lodgepole pine |
|  | Larch |
|  | Douglas fir |
|  | Mixed conifers |
|  | Ash |
|  | Oak |
|  | Beech |
|  | Birch |
|  | Mixed broadleaves |
|  | Native mixed broadleaves |
|  | Neighbouring woodland |





North Region Slattadale

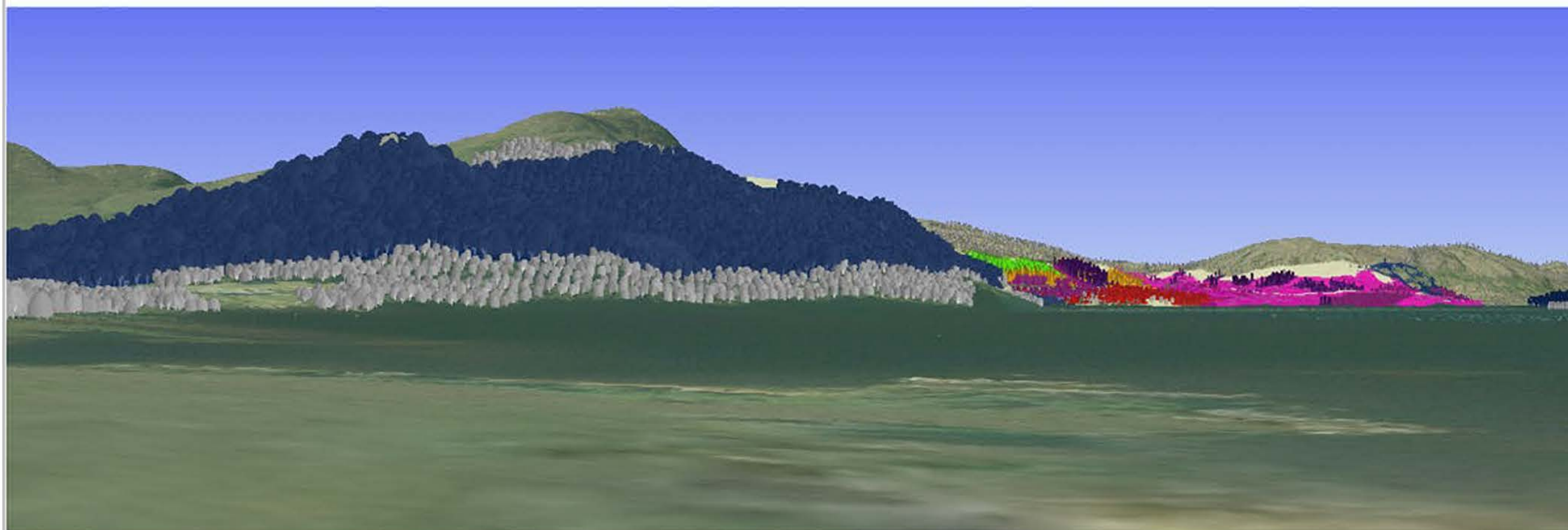
View VP3 Talladale
Grid Ref: NG921707
Date: September 2022





Visualisation of Felling proposals

Visualisation year
Photograph 2022

Felling 2023

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.



-  Felled or fell; year requires review
-  Phase 1: < 5 yearse
-  Phase 2: between 5 and 9 yearse
-  Phase 3: between 10 and 14 yearse
-  Phase 4: between 15 and 19 yearse
-  Phase 5: between 20 and 24 yearse
-  Phase 6: between 25 and 29 yearse
-  Phase 7: between 30 and 34 yearse
-  Phase 8: 35 yearse and greater
-  Clearfell with seed trees
-  Low Impact Silviculture
-  Minimum Intervention
-  Natural Reserve
-  Long Term Retention
-  Other/Open lands
-  Neighbouring woodland



North Region Slattadale

View VP3 Talladale
Grid Ref: NG921707
Date: September 2022

Visualisation of Future Habitat and Species

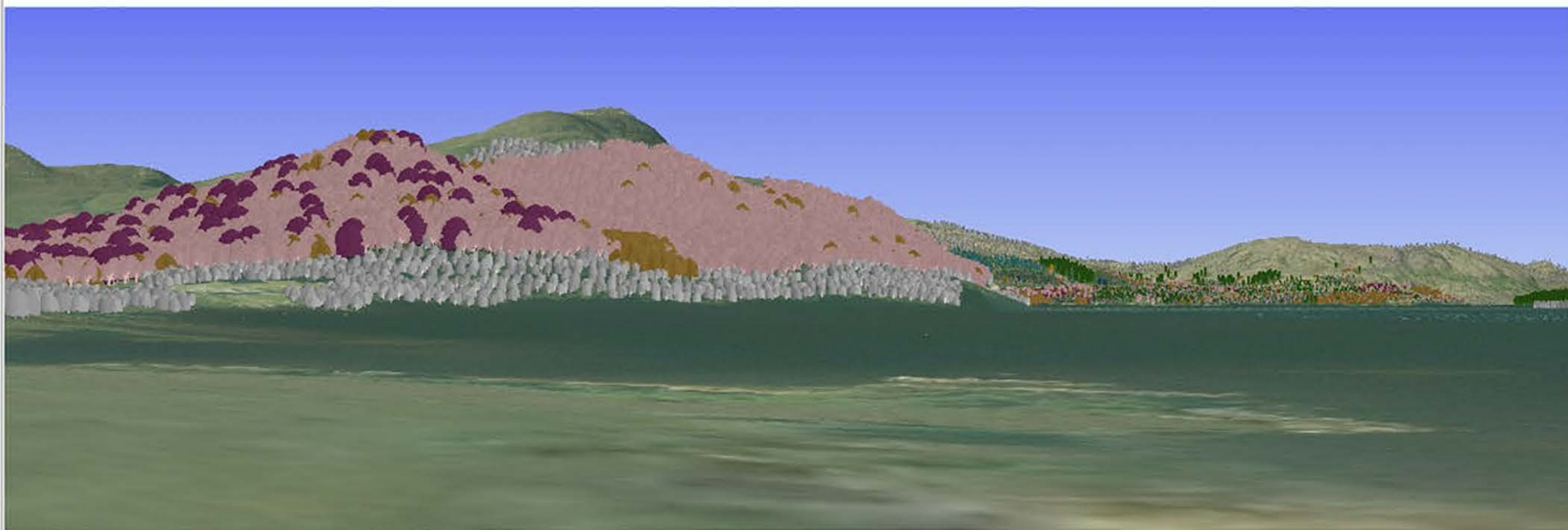
Visualisation year

Species 2023

Species 2033

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.

- | | |
|---|--------------------------|
|  | Sitka spruce |
|  | Norway spruce |
|  | Scots pine |
|  | Lodgepole pine |
|  | Larch |
|  | Douglas fir |
|  | Mixed conifers |
|  | Ash |
|  | Oak |
|  | Beech |
|  | Birch |
|  | Mixed broadleaves |
|  | Native mixed broadleaves |
|  | Neighbouring woodland |





North Region Slattadale

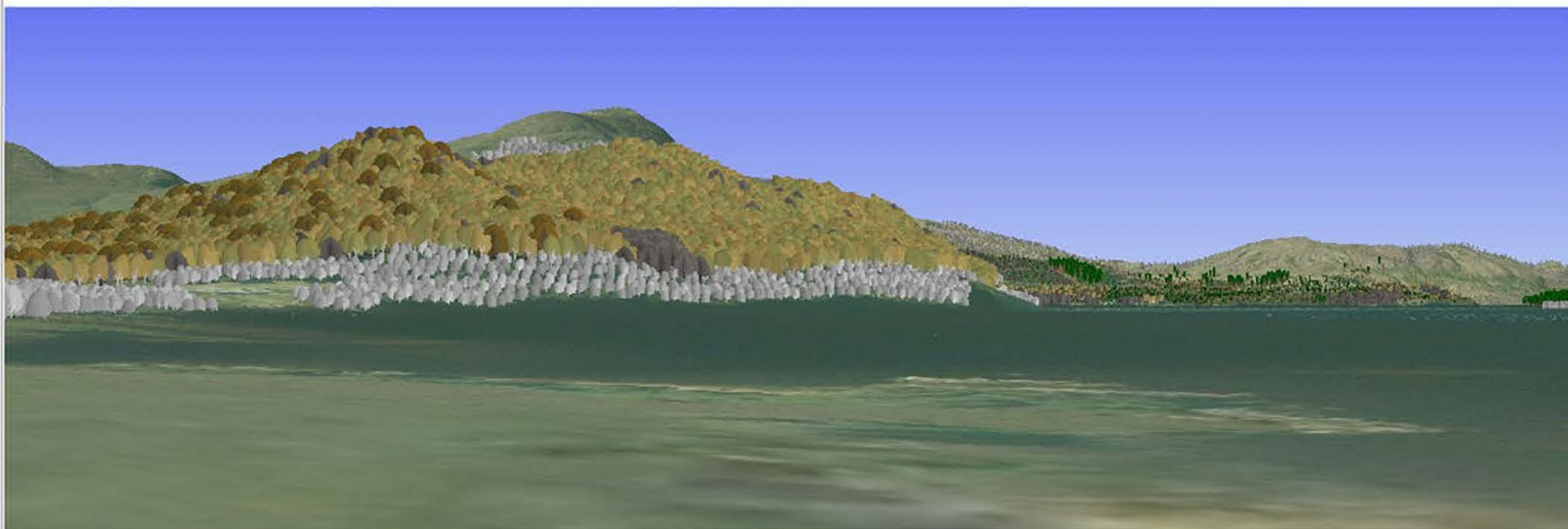
View VP3 Talladale
Grid Ref: NG921707
Date: September 2022

Visualisation of Future Habitat and Species

Visualisation year
Species 2043
Autumn 2043

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.

- | | |
|---|--------------------------|
|  | Sitka spruce |
|  | Norway spruce |
|  | Scots pine |
|  | Lodgepole pine |
|  | Larch |
|  | Douglas fir |
|  | Mixed conifers |
|  | Ash |
|  | Oak |
|  | Beech |
|  | Birch |
|  | Mixed broadleaves |
|  | Native mixed broadleaves |
|  | Neighbouring woodland |





North Region Slattadale

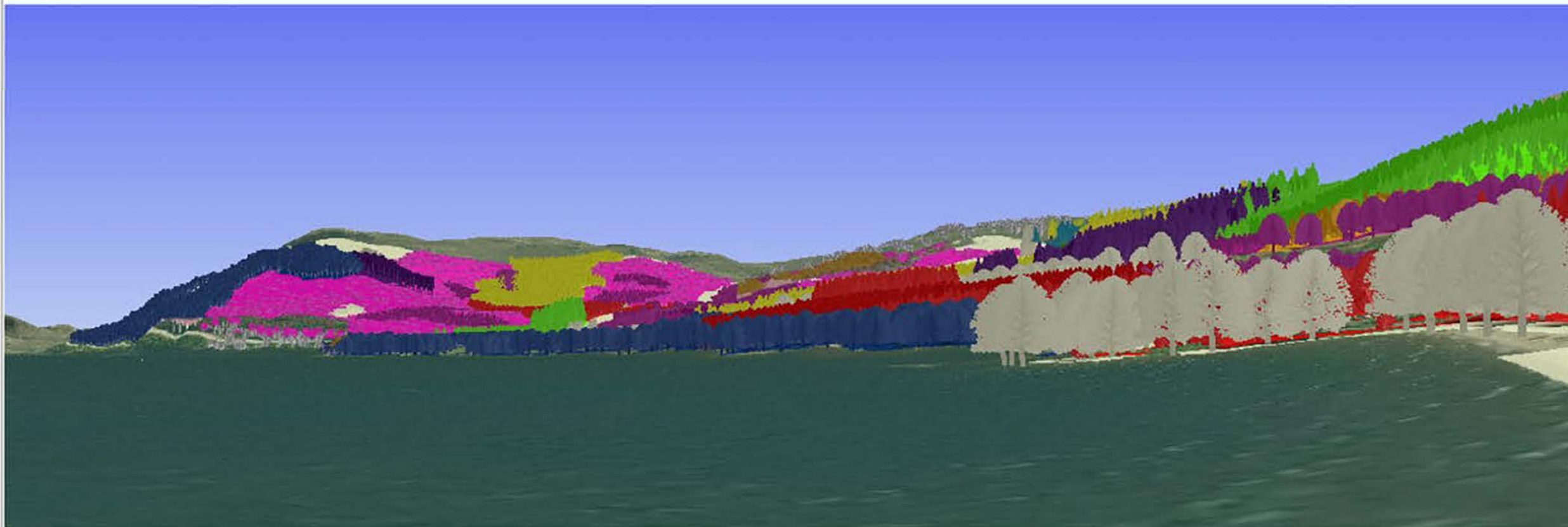
View VP4 Lochside
Grid Ref: NG889722
Date: September 2022

Visualisation of Felling proposals

Visualisation year
Photograph 2022

Felling 2023

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.



-  Felled or fell; year requires review
-  Phase 1: < 5 yearise
-  Phase 2: between 5 and 9 years
-  Phase 3: between 10 and 14 yearise
-  Phase 4: between 15 and 19 years
-  Phase 5: between 20 and 24 years
-  Phase 6: between 25 and 29 years
-  Phase 7: between 30 and 34 years
-  Phase 8: 35 years and greater
-  Clearfell with seed trees
-  Low Impact Silviculture
-  Minimum Interventione
-  Natural Reserve
-  Long Term Retention
-  Other/Open lande
-  Neighbouring woodlande



North Region Slattadale

View VP4 Lochside
Grid Ref: NG889722
Date: September 2022

Visualisation of Future Habitat and Species

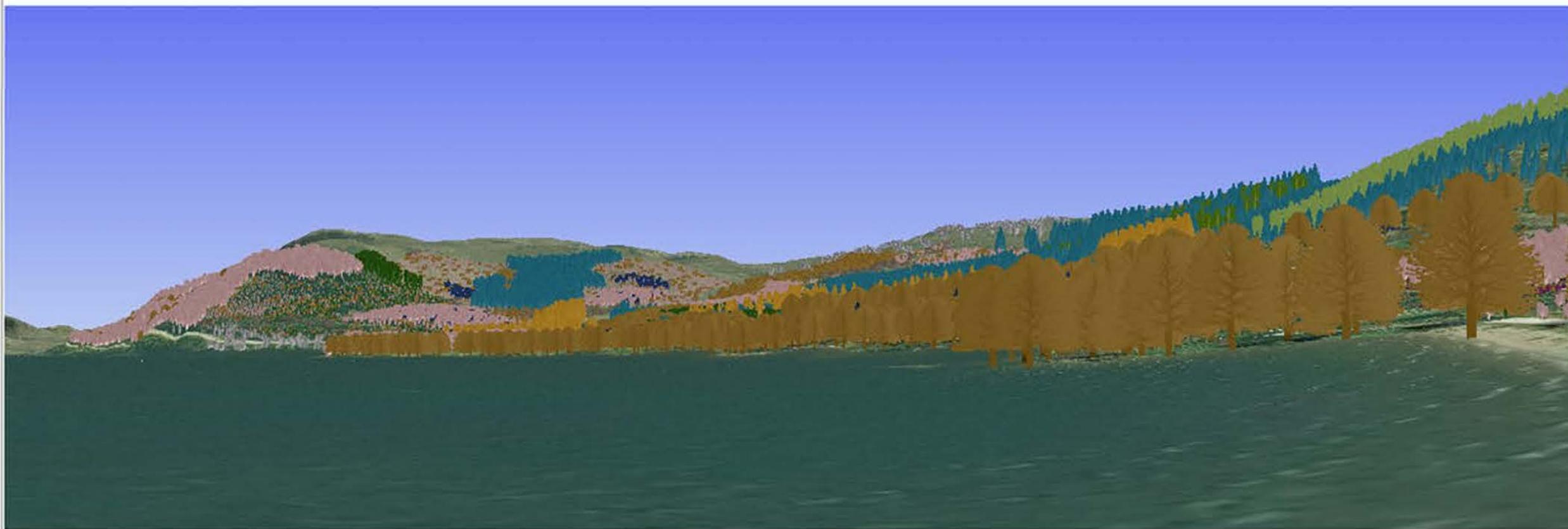
Visualisation year

Species 2023

Species 2023

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.

-  Sitka spruce
-  Norway spruce
-  Scots pine
-  Lodgepole pine
-  Larch
-  Douglas fir
-  Mixed conifers
-  Ash
-  Oak
-  Beech
-  Birch
-  Mixed broadleaves
-  Native mixed broadleaves
-  Neighbouring woodland





North Region Slattadale

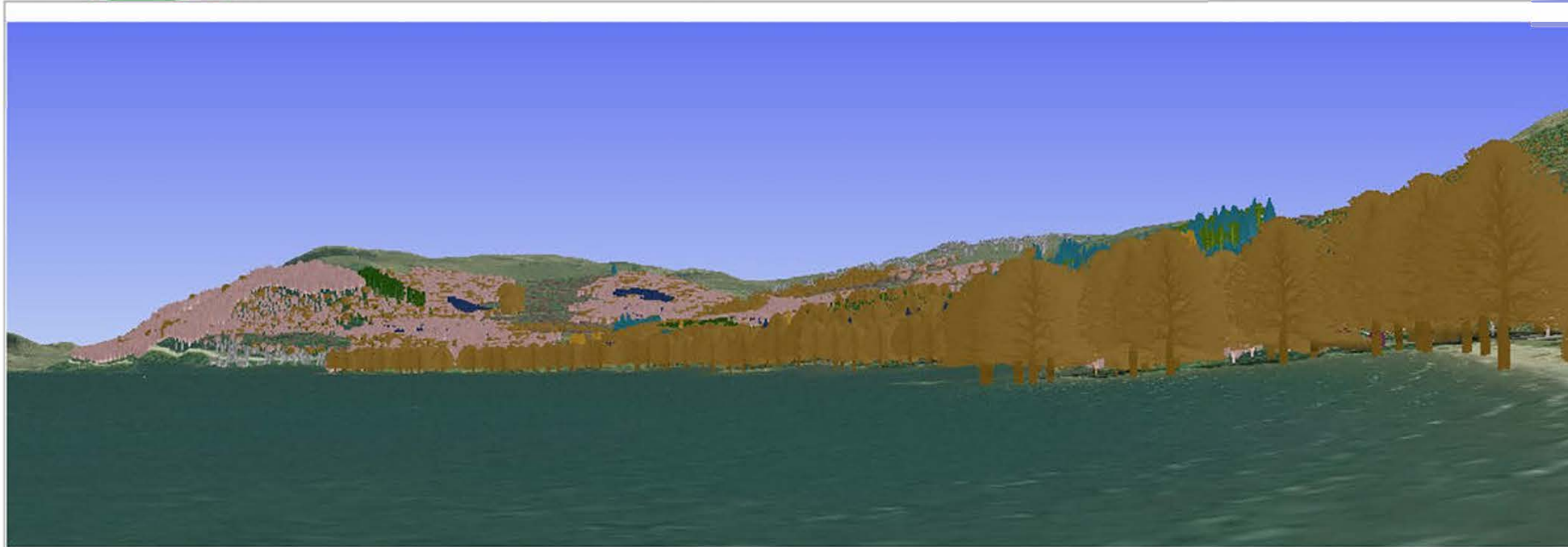
View VP4 Lochside
Grid Ref: NG889722
Date: September 2022

Visualisation of Future Habitat and Species

Visualisation year
Species 2043
Autumn 2043

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.

- | | |
|---|--------------------------|
|  | Sitka spruce |
|  | Norway spruce |
|  | Scots pine |
|  | Lodgepole pine |
|  | Larch |
|  | Douglas fir |
|  | Mixed conifers |
|  | Ash |
|  | Oak |
|  | Beech |
|  | Birch |
|  | Mixed broadleaves |
|  | Native mixed broadleaves |
|  | Neighbouring woodland |



APPENDIX 10 – Slattadale LMP 2023 - 2033

SLATTADALE FOREST

Review of Forest Plan Objectives and Management (March 2021)

This version of the report reproduced in compressed format and with Appendix 1 (Maps) only.



***Report prepared by Adele Beck
for Forestry and Land Scotland,
May 2021***

GREAT GLEN ECOLOGY LTD

Mersey Cove, Torrin, Isle of Skye

Mobile 07767 327085 **Tel** 01471 822432, **e-mail** adele@greatglenecology.org.uk

APPENDIX 10 – Slattadale LMP 2023 - 2033

Table of Contents

SLATTADALE FOREST	1
TABLE OF CONTENTS	2
INTRODUCTION.....	3
BACKGROUND	3
CONTRACT BRIEF AND OBJECTIVES	3
LIMITATIONS OF STUDY	3
METHODS	4
RESULTS.....	5
DESKTOP EXERCISE	5
FIELD SURVEY	5
KEY FINDINGS OF FIELD SURVEY	6
ANALYSIS	7
THE BIOLOGICAL RESOURCE - SWOT ANALYSIS.....	8
THE BIOLOGICAL RESOURCE - SWOT ANALYSIS (CONTINUED).....	8
THE TIMBER RESOURCE – SWOT ANALYSIS.....	9
THE TIMBER RESOURCE – SWOT ANALYSIS (CONTINUED).....	9
MANAGEMENT PRIORITIES.....	10
SHORT TERM MANAGEMENT PRIORITIES (5 YEAR)	10
CONSIDERATION OF OPTIONS FOR FUTURE MANAGEMENT.....	10
FELLING	10
RESTRUCTURING	11
APPENDICES.....	12

APPENDIX 10 – *Slattadale LMP 2023 - 2033*

Introduction

Background

Slattadale Forest lies on the western shores of Loch Maree and extends to 478 hectares.

It encompasses remnants of genetically distinct near-natural Caledonian pine woodland; ancient semi-natural broadleaved woodland modified by commercial forestry and stands of non-native conifers planted for timber production.

Many rare and protected species of flora and fauna are associated with the forest and adjacent wetland habitats, reflected in the designation of Loch Maree as an SSSI, SAC, SPA, RAMSAR and NSA.

Much of Slattadale Forest was planted and subsequently restocked with non-native conifers, for timber production, between the 1920s and 1990s.

Forestry and Land Scotland (FLS) started to restore semi-natural woodland from the 1990s onwards. FLS have now made a strategic decision to restore all productive stands to semi-natural habitats at Slattadale Forest in the long term. Early proposals for achieving this vision were first outlined in the Slattadale Forest Plan which is now due for review.

This report was commissioned by Colin Leslie, Forestry and Land Scotland, during 2020, to gather information into a format which can usefully inform the Forest Plan review process.

Contract brief and objectives

The objectives are to develop a process which will:

1. Determine the extent and current condition of habitats and features within Slattadale Forest of high conservation value, gathering as much information as possible within the time constraints of 8 surveyor days during February/March 2021.
2. Make recommendations for future management to safeguard these important habitats and features in the long term. These recommendations should allow resources to be prioritised to protect features of the highest value.
3. Any management intervention proposed should aim to be technically achievable, cost efficient and both ecologically and economically sustainable in the long term.
4. Present information in a logical and clear format which can be easily interpreted and may usefully inform the review process.

Limitations of study

There was insufficient time to complete a detailed field survey for the entire forest, but recommendations have included priorities for further survey.

The field survey was completed in February and March 2021 when many species of vascular plants are either absent or cannot be identified reliably.

The study has focused on developing options for ecological restoration, without fully considering other objectives such as recreation and community interest. Opportunities are highlighted anecdotally where they complement the over-riding objective of habitat and species conservation.

Eilean Ruraidh was not visited at the time of survey, due to the logistical difficulties of arranging transportation by boat during COV-19 restrictions.

APPENDIX 10 – *Slattadale LMP 2023 - 2033*

Methods

A desk top review of existing records was completed by Adele Beck and Jenny Singh, Great Glen Ecology. Habitats were initially stratified for survey based on this review as follows:

- Semi-natural woodland and open habitats of highest conservation value (likely to correspond to designated ASNW, other mature SNW and open wetlands/blanket bog).
- Woodland with significant mature, semi-natural remnants and other important open habitats modified by ground cultivation, drainage, afforestation, or invasive species (likely to include PAWS, riparian zones & inaccessible slopes, drained wetlands).
- Other habitats important to the protection / continuity of rare or protected species (e.g., conifer stands known to support rare fauna).
- Known threats – invasive species, fire, disturbance etc
- Productivity and accessibility of existing non-native conifers (based on SCDB, yield class, roading, aerial photographs.)

1. Field survey:

The field survey was completed by Adele Beck and Mark Robinson during March 2021, with a total of 8 surveyor days spent on site.

- The boundaries of habitats stratified during the desk top exercise were checked and amended as required.
- The condition of native woodland was assessed using the PAWS condition assessment method developed by Forest Research (Appendix IV). This method was applied to all woodland with semi-natural remnants, regardless of whether it occurred within an Ancient Woodland site.
- Herbivore impacts were assessed within the last 12 months were assessed using Forest Research protocol (Appendix IV)
- Target notes were used to record invasive species, non native regeneration and features of conservation interest.
- A rapid visual assessment of tree size / products and accessibility within all stands of remaining commercial conifers was made.

2. Analysis

Review data and extract the following information:

- Immediate threats to features of high conservation value, requiring urgent management intervention (i.e., features will be lost or severely degraded without intervention within a 5-year period).
- The extent of important habitats and changes to extent during the period of the last forest plan. Highlight trends suggesting loss of extent, increasing fragmentation or expansion of native woodland by natural regeneration.
- The quality and condition of habitats of high conservation value: Consider the diversity of semi-natural vegetation, invasive species, shading of vegetation by non-native conifers and browsing impacts. Highlight trends over the period of the last forest plan if there is sufficient baseline data.
- Ecological processes: Identify factors preventing the recovery of important habitats by natural processes.

APPENDIX 10 – Slattadale LMP 2023 - 2033

Results

Desktop exercise

A summary of protected species and habitats found within and adjacent to Slattadale Forest is summarised in Annex II.

The flora and fauna of Slattadale Forest and adjacent habitats is extraordinarily diverse, and includes a number of red-data list, nationally rare, nationally scarce and uncommon species, almost all of which are dependent on the continuity of semi-natural woodland and open habitats.

Map 1, Appendix I, shows the extent of sites formally designated for conservation within and adjacent to Slattadale Forest. These designations, with qualifying features, are summarised below:

Table 1:

Designation	Site name	Qualifying features found within Slattadale Forest (including recovering/modified remnants)
Special Area of Conservation	Loch Maree Complex	Alder Woodland on floodplains Blanket bog Caledonian forest Dry heaths Otter Wet heathland with cross leaved heath Western acidic oak woodland
Site of Special Scientific Interest	Loch Maree	Native pinewood Vascular plant assemblage Oligotrophic loch Black throated diver (breeding) Beetles Dragonfly assemblage
	Talladale Gorge	Native pinewood Upland oak woodland
Special Protection Area	Loch Maree	Black throated diver (breeding – the most important site in Britain)

Field survey

For ease of interpretation the field survey results are presented as annotated maps as follows:

- MAP 2: Areas surveyed
- MAP 3: Existing habitats and stage of restoration:
- MAP 4: Current woodland Structure Class of native woodland and herbivore Impacts
- MAP 5: Invasive Species
- MAP 6: Non-native regeneration
- MAP 7: Productivity of remaining non – native stands.

All field data is available as GIS shapefiles (Appendix III) to allow further interrogation / interpretation and includes the following shapefiles

- Areas surveyed
- Habitat stratification and stage of restoration
- Woodland structure class of native/restored woodland
- HIA plot data
- Invasive non-native species & non-native regeneration (target notes)
- Native woodland/recovering native woodland where the threat level from INNS or NNR is critical or threatened
- Rapid mapping and stratification of the remaining productive crop.

APPENDIX 10 – Slattadale LMP 2023 - 2033

Key findings of field survey

- Early felling of non-native conifers within semi-natural Caledonian pinewood and upland oak woodland has safeguarded veteran trees and led to a rapid recovery of native flora.
- There has been extensive natural regeneration of native species on clearfelled sites where a seed source is present, improving habitat connectivity.
- The management of herbivores has proved successful, with an extended period of low impacts allowing natural regeneration to occur over a period of approximately 20 years. However, there are some indications of an increasing trend in browsing impacts, whilst high impacts were noted south of the deer ring fence.
- Rhododendron is rapidly expanding, with the most valuable semi-natural restored woodland sites considered to be under critical threat. Most bushes range from pioneering to medium-sized reproductive bushes.
- Non native regeneration is rapidly expanding on to sites previously restored, with Sitka spruce regeneration proving most prolific. Many Sitka spruce saplings are at or approaching coning age.
- The remaining non native commercial stands range from high value and easily accessible stands with what appears to be a significant proportion of logs, to marginal second rotation stands of Sitka spruce on steeper slopes. The roading infrastructure for timber extraction is currently in good condition.



Above (left): A cohort of holly saplings establishing beneath young birch trees. Conifers felled to recycle within upland oak woodland circa 2000 have secured the survival of veteran trees. **Above (right):** Rhododendron bushes are, however, expanding rapidly.

APPENDIX 10 – *Slattadale LMP 2023 - 2033*

Analysis

The results suggest clear priorities for management in the short term, which include control of invasive species, removal of non-native regeneration on sites managed for native woodland and a continuation of effective deer management.

The greatest management planning challenge appears to be resolving the conflict in objectives between

- a) restoring and managing the biological resource and
- b) maintaining a phased approach to felling and restructuring all remaining non-native conifers

The strengths, weaknesses, opportunities, and challenges of managing both the biological and timber resource are considered, based on evidence gathered during the desktop and field survey.



Above Conflicting management objectives. A young stand of Sitka spruce not yet mature enough to fell and extract economically, seeding prolifically into adjacent recovering semi-natural

APPENDIX 10 – Slattadale LMP 2023 - 2033

The biological resource - SWOT analysis

<i>Strengths</i>	<i>Weaknesses</i>
<p>Ancient semi-natural woodland and open habitats within and adjacent to the forest are invaluable building blocks for ecosystem recovery and include genetically distinct Caledonian pinewoods and veteran pollards within upland birch and oak woods.</p> <p>The species richness of flora and fauna within ASNW / restored semi-natural woodland is remarkable and of national/international importance.</p> <p>There is an extensive and diverse mature native seed source.</p> <p>Management intervention has preserved semi natural flora and soils on ancient woodland sites planted with commercial conifers, following FTR of felling non-native conifers circa 2000.</p> <p>Significant progress has been made towards forest restructuring and landscape scale restoration of semi natural woodland - resulting in improved habitat connectivity, age, and species diversity.</p> <p>Collectively semi-natural habitats and associated flora and fauna within FLS management are a priceless resource which may help to deliver national, international, and global initiatives to slow and reverse species loss, habitat degradation and climate change¹ in the face of growing public interest and concern.</p> <p>The footpath infrastructure and access provide many social benefits, supporting physical and mental well-being, education and other FLS corporate objectives.</p>	<p>Conflicting objectives with commercial timber production (shading pressure / non-native seed source).</p> <p>Conflicting objectives with neighbouring sporting estates (?)</p> <p>Continued regeneration of native woodland will require long-term maintenance of low herbivore impacts.</p> <p>Difficult to value resource biological resource in monetary terms</p>

The biological resource - SWOT analysis (continued)

<i>Opportunities</i>	<i>Threats</i>
<p>Restoration of remaining plantation conifers with semi-natural remnants.</p> <p>Consider case study to value ecosystem services provided by the biological resource.</p> <p>Develop infrastructure and other mechanisms which support training, education, physical/mental wellbeing, and other Scottish Government objectives.</p> <p>Investigate sustainable sources of revenue which do not have a negative impact on the biological resource - e.g., eco-tourism, timber from native species, forest products.</p>	<p>Invasive species.</p> <p>Shading pressure from Sitka spruce and other fast-growing commercial conifers.</p> <p>Regeneration of Sitka spruce and other conifers.</p> <p>No direct revenue to support continued habitat restoration and long-term maintenance = vulnerability in times of economic recession.</p> <p>Disease – potential for introduction from planted stock and inhibits species choice during restocking.</p>

¹ E.g., Strategic Plan for Biodiversity for 2011–2020, the Parties to the Convention on Biological Diversity (CBD) 2010.

APPENDIX 10 – Slattadale LMP 2023 - 2033

The timber resource – SWOT analysis

<i>Strengths</i>	<i>Weaknesses</i>
<p>A significant proportion of the remaining standing crop on lower slopes appears to include high value logs.</p> <p>High demand / record prices for logs at time of writing in 2021.</p> <p>Productive soils and high yield classes across lower slopes.</p> <p>Good infrastructure of forest roads for timber extraction at time of writing in 2021.</p> <p>A tangible and easily valued resource, providing a revenue stream.</p> <p>Established technology, best practice and infrastructure for timber extraction, transportation and processing.</p>	<p>Highest value mature stands unlikely to remain windfirm for much longer and cannot be thinned without risk of catastrophic windblow.</p> <p>Shading impact on native flora.</p> <p>Non-native seed source causing prolific regeneration of SS saplings on restored semi-natural woodland sites.</p> <p>Silvicultural system is even aged clearfell system. Increased surface water runoff after clear felling may have negative impacts on soil, water quality and landscape. LISS unlikely to be achievable due to exposure of site.</p> <p>Challenges to restocking following clearfelling: Use of pesticides to control explosions in weevil populations may be necessary to establish young trees; conversely a fallow period will allow rank vegetation to develop which will compete with planted trees.</p> <p>A significant proportion of young trees are unlikely to be economically extractable for many years, particularly on skyline sites.</p> <p>Distance from market and haulage costs.</p> <p>The current even-aged silvicultural system and species choice of productive non native conifers is a legacy of an outdated forest policy which failed to value the biological, social, or environmental resource.</p>

The timber resource – SWOT analysis (continued)

<i>Opportunities</i>	<i>Threats</i>
<p>Native species planted at commercial densities (e.g., SP of native origin or birch) could provide a productive timber or fuelwood crop without negative impacts, although slower growing.</p> <p>A standing sale of all remaining conifers in a single coupe may make harvesting and extraction of marginal crops on steep slopes commercially viable, if sale is combined with valuable logs on lower slopes.</p> <p>Low impact silvicultural systems are more likely to be viable with wind-firm native species.</p>	<p>Risk of windblow to productive areas</p> <p>Cost of maintaining infrastructure in the long term for marginal crops may make roading and extraction uneconomic.</p> <p>Risk of disease in single-species VP crop.</p>

APPENDIX 10 – Slattadale LMP 2023 - 2033

Management Priorities

Short term management priorities (5 year)

The following actions are clear priorities for management in the short term if the condition of the biological resource is to be maintained or improved.

- Control of mature Rhododendron and removal of establishing / pioneer bushes, prioritising areas with a “critical” or “threatened” status.
- Removal of non-native regeneration, prioritising areas with “critical” or “threatened” status.
- Collaboration with adjacent landowners if possible, to remove local seed sources
- Fully assess the shading pressure on native tree species within the productive timber crop, and halo thin if necessary (insufficient time for field assessment in some stands during March 2021 – see Map 2).

Consideration of options for future management

Building on the SWOT analysis, the following felling and restructuring options will need to be given careful consideration before updating the existing plan.

Felling

Option 1: Continue with phased felling of the remaining productive timber crop, allowing young crops to reach an age where they become economically extractable.

Pros	Cons
Maximise mean tree size & possibly value before felling.	A seed source of non-native conifers will increase the vulnerability / maintenance costs to recovering native woodland & semi-natural habitats
Less of an impact on the landscape (?)	The existing roading infrastructure is in good condition. The cost of maintaining forest roads in the long term, to allow extraction of slow growing crops, may make unit costs of future extraction uneconomic.
	An opportunity to combine a standing sale with productive stands on lower slopes will be lost at a time when log prices are high (productive stands are unlikely to remain windfirm in the medium to long term)
	Young and marginal productivity crops may take a very long time to reach a size when they are economically extractable, particularly stands on steep slopes where skyline extraction may be required

APPENDIX 10 – Slattadale LMP 2023 - 2033

Option 2: Fell all remaining non-native conifers in a single coupe / standing sale.

Pros	Cons
Remove non-native seed source and reduce risk / cost of maintenance to recovering native woodland & semi-natural habitats.	Rank vegetation may develop on clear-felled sites, particularly on more fertile soils, if a native canopy does not develop quickly following clearfelling.
Remove shading pressure from native flora	Explosion in pine weevil population following clearfelling may have an impact on native SP regeneration.
An opportunity to combine a standing sale combining marginal productivity crops with high value productive stands on lower slopes at a time when log prices are high.	Potential for increased surface water runoff and soil erosion in a large clearfell?
The opportunity to expand semi-natural woodland and improve habitat linkages will be bought forward.	Initial landscape impact
Deer management may be more efficient once dense plantations are removed and deer fencing/control can be focused into a shorter timescale.	Young stands of slow-growing Sitka spruce planted during the late 1990s will need to be felled to recycle.
The existing roading infrastructure is in good condition.	

Option 2 appears to have the best prospect for native woodland recovery and an efficient use of resources.

Restructuring

The methods of establishing native woodland following clearfelling are:

- Conventional mounding and planting
- Lower impact ground cultivation (inverted mound/hand screef) and plant
- Natural regeneration.

A combination of all three of these methods across the forest is likely to be appropriate during restructuring. The following factors should be considered on a site level before choice of method:

- Distribution of the native seed source
- Soil structure, fertility, and mycorrhizae.
- Whether preservation of genetic integrity and/or natural processes is important – perhaps favouring natural regeneration even where it takes longer.

APPENDIX 10 – *Slattadale LMP 2023 - 2033*

- Whether timber production (using native species) is an objective – requiring higher densities of planting and possibly seed collection/propagation of local provenance Caledonian pine.
- Whether public access is important - precluding conventional mounding.
- Past cultivation – ploughing, drainage etc.
- Harvesting residues

All methods will require continuation of the successful deer management regime within Slattadale over the last two decades, and the existing ring fence is likely to require replacement.

Appendices

Appendix I – MAPS

MAP 1: Forest management boundary and designations.

MAP 2: Areas surveyed.

MAP 3: Existing habitats and stage of restoration.

MAP 4: Current woodland Structure Class of native woodland and herbivore Impacts

MAP 5: Invasive Species

MAP 6: Non-native regeneration

MAP 7: Rapid assessment of economic viability for felling/extraction of remaining non-native stands.

The following Appendices are not in this reproduction of the report. Please contact Forestry and Land Scotland for further detail.

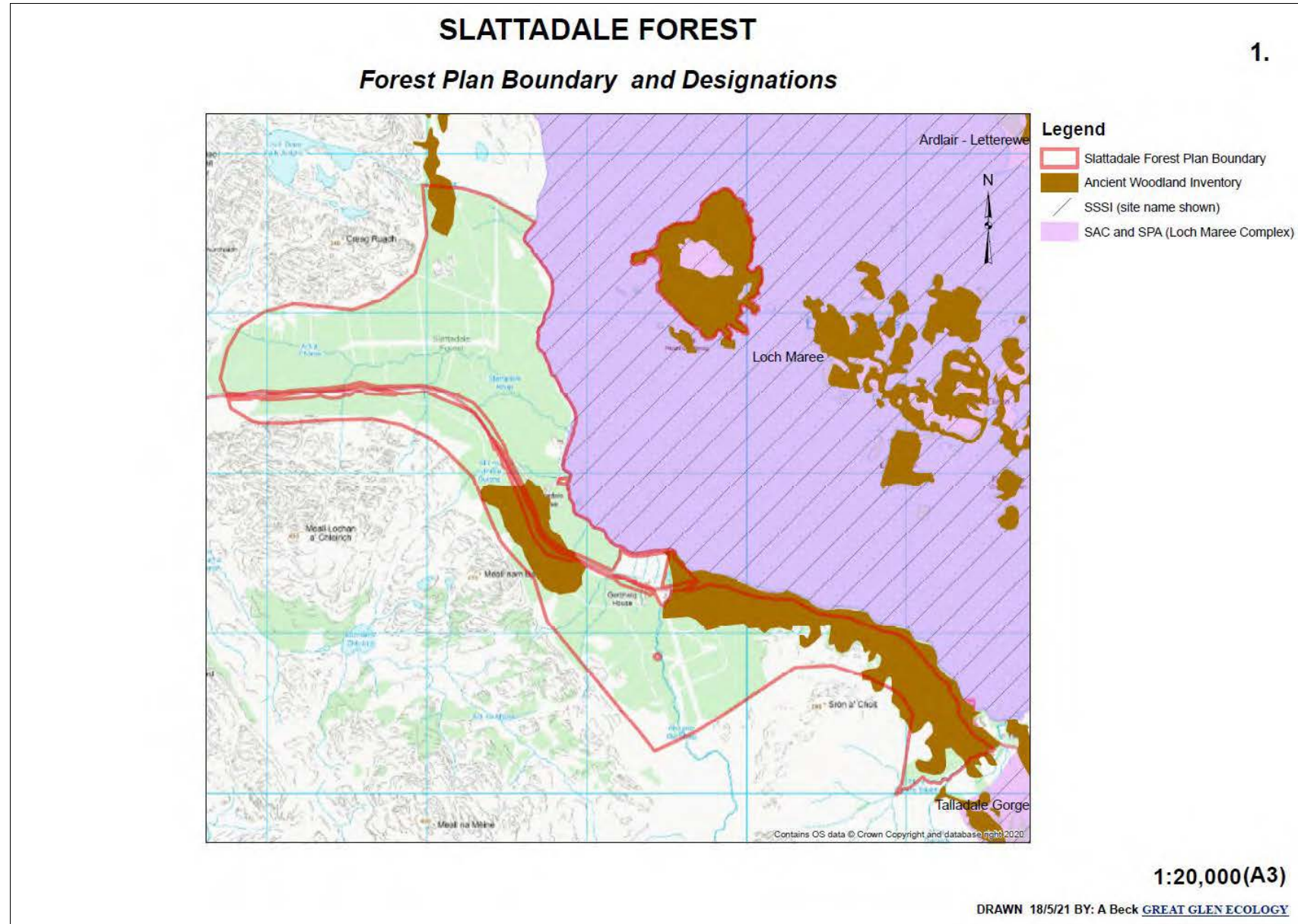
Appendix II – PROTECTED SPECIES AND HABITATS

Appendix III – GIS DATA

Appendix IV – FLS SURVEY PROTOCOL (ASNW, PAWS & HIA)

APPENDIX 10 – Slattadale LMP 2023 - 2033

MAP 1 - Forest management boundary and designations.



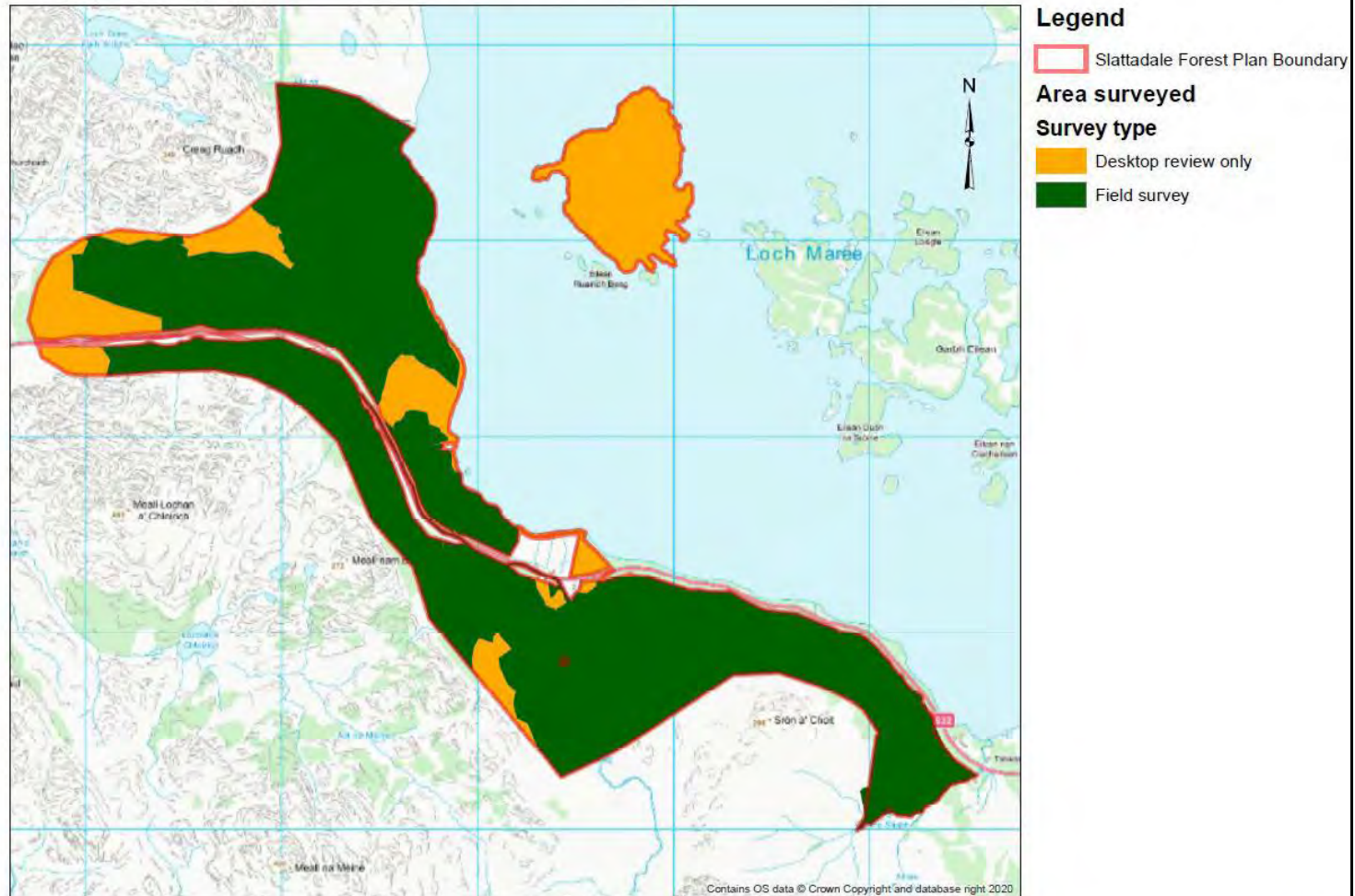
APPENDIX 10 – Slattadale LMP 2023 - 2033

MAP 2 – Areas surveyed

SLATTADALE FOREST

Extent and type of survey

2.

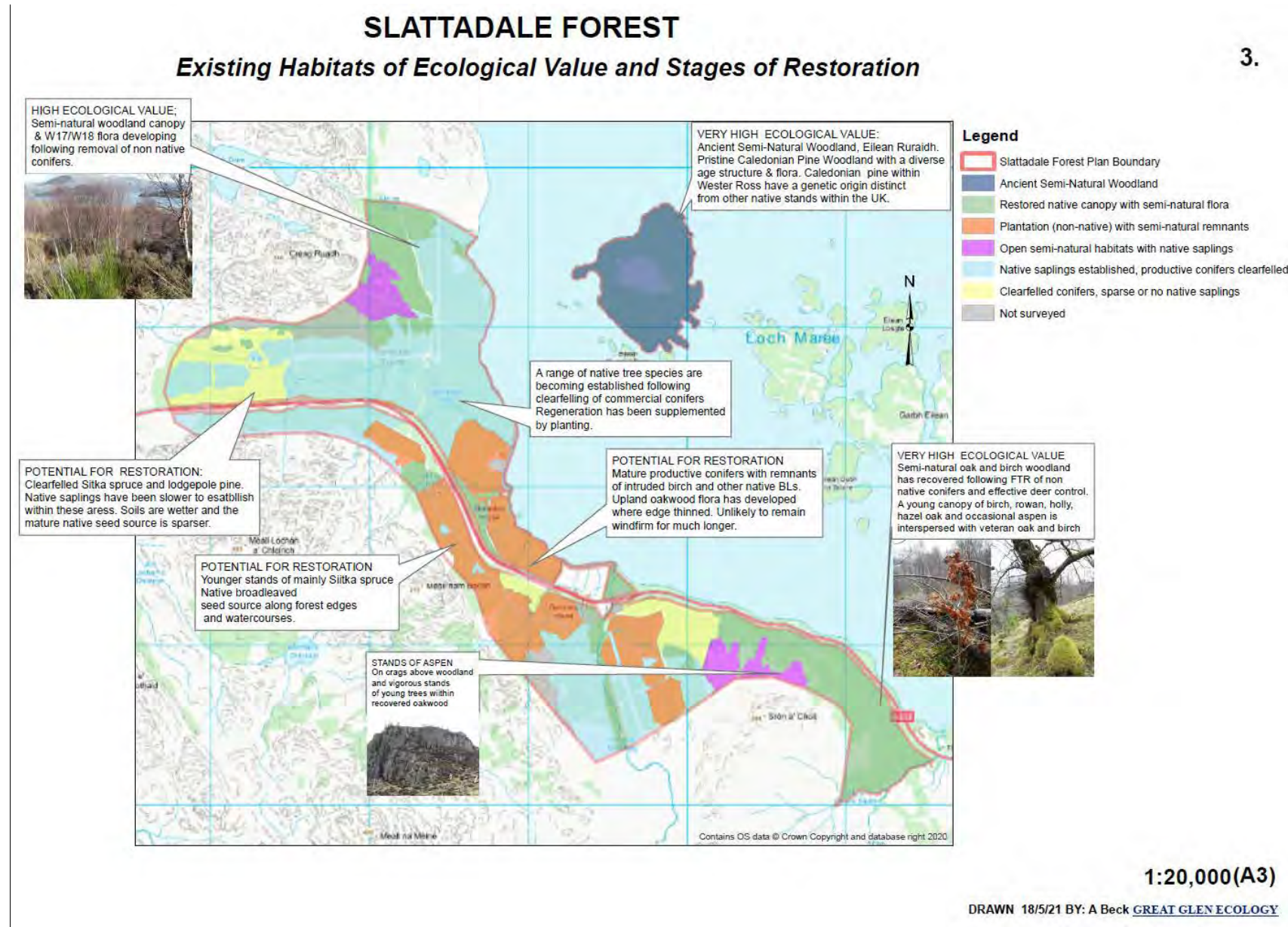


1:20,000(A3)

DRAWN 18/5/21 BY: A Beck GREAT GLEN ECOLOGY

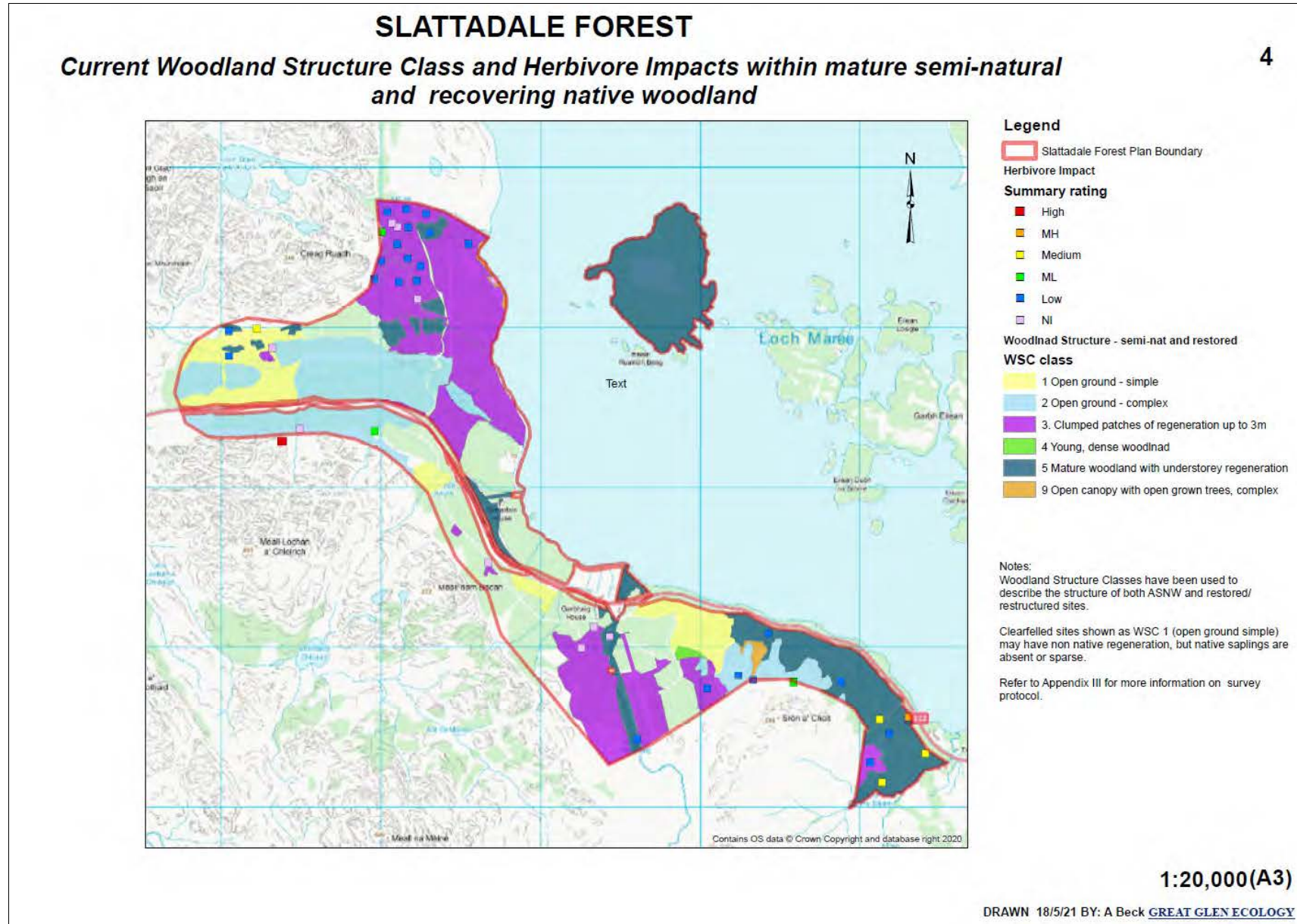
APPENDIX 10 – Slattadale LMP 2023 - 2033

Map 3 – Existing habitats and stage of restoration



APPENDIX 10 – Slattadale LMP 2023 - 2033

MAP 4 – Current woodland Structure Class of native woodland and herbivore impacts



APPENDIX 10 – Slattadale LMP 2023 - 2033

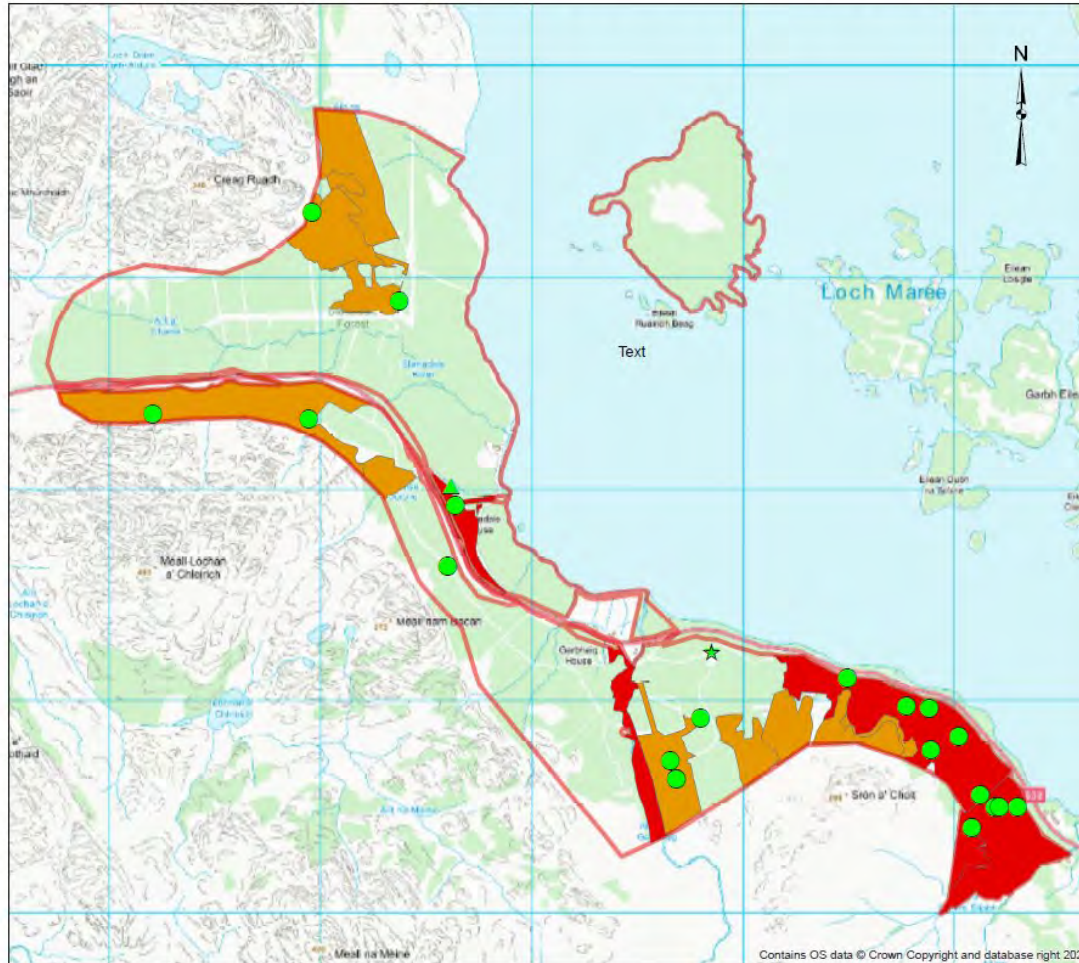
MAP 5 – Invasive species

5.

SLATTADALE FOREST

Invasive Non-Native Species

Showing semi-natural or recovering native woodland with Critical or Threatened status



Legend

Species

- ▲ Cottoneaster
- ★ New Zealand Willowherb
- Rhododendron

▭ Slattadale Forest Plan Boundary

Threat_lev

- Critical
- Threatened

Notes:
Threat categories are based on ASNW/PAWS standard methods.

Refer to Appendix III for more information on survey protocol.

1:20,000(A3)

DRAWN 18/5/21 BY: A Beck GREAT GLEN ECOLOGY

APPENDIX 10 – Slattadale LMP 2023 - 2033

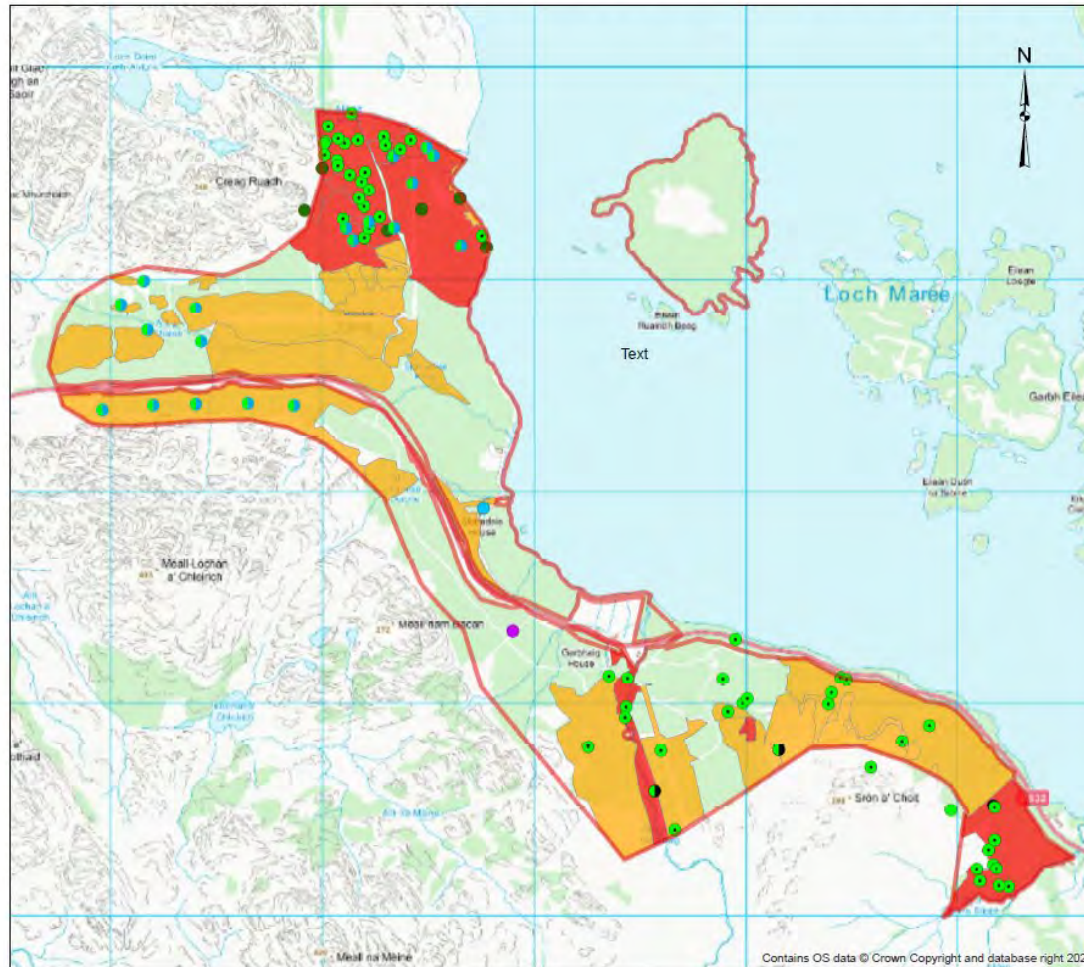
MAP 6 – Non-native regeneration

SLATTADALE FOREST

Non-native regeneration

Showing semi-natural or recovering native woodland with Critical or Threatened status

6



Legend

Slattadale Forest Plan Boundary

Non native regeneration

Species

- SS
- SS/HL
- SS/LP
- LP
- WH
- BE
- DF
- Italian alder (?)

Non native regeneration

Threat level

- Critical
- Threatened

Notes:
Threat categories are based on ASNW/PAWS standard methods.

Refer to Appendix III for more information on survey protocol.

1:20,000(A3)

DRAWN 18/5/21 BY: A Beck GREAT GLEN ECOLOGY

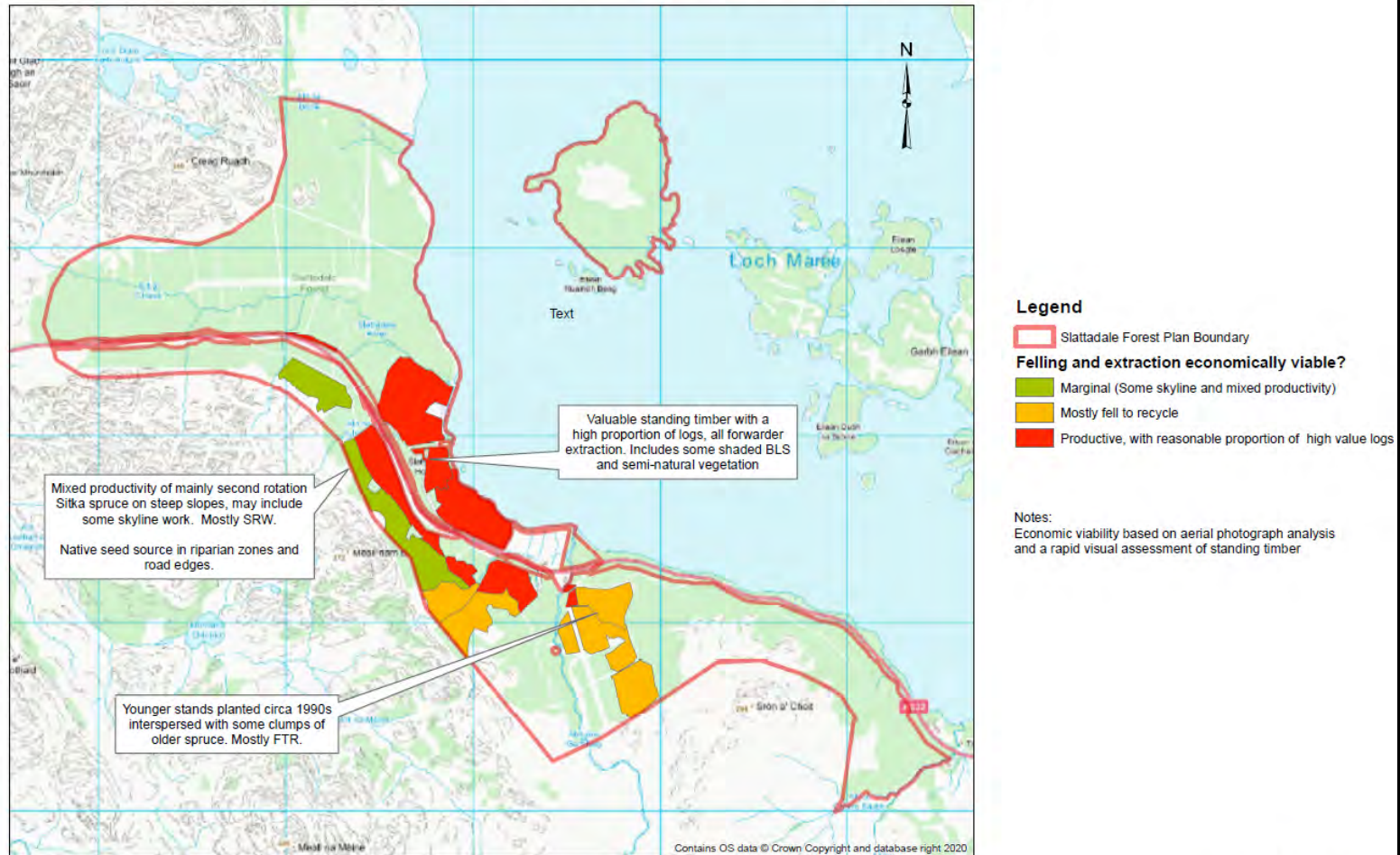
APPENDIX 10 – Slattadale LMP 2023 - 2033

MAP 7 – Rapid assessment of economic viability for felling/extraction of remaining non-native stands.

SLATTADALE FOREST

*Economic viability of felling and extracting remaining non native conifers
(based on a rapid field assessment and aerial photo analysis)*

7.



1:20,000(A3)

DRAWN 18/5/21 BY: A Beck GREAT GLEN ECOLOGY