Loch Kemp Storage - EIA Report

Appendix 19.2: Woodland Management Plan (Plan with Proposed Development)

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1. Forestry

1.1. Woodland Management Plan Introduction

- 1.1.1. This Woodland Management Plan (hereafter referred to as the Plan with Proposed Development) describes the woodland management proposals for the proposed Loch Kemp Pumped Storage Scheme at Dell Estate near Whitebridge, Inverness-shire (hereafter referred to as 'the Proposed Development'.
- 1.1.2. The felling and restocking plans within this Plan have been developed to meet the construction and access needs of the Project whilst aiming to incorporate the on-going woodland management plans for the landowner outlined in the **Dell Estate**, **Whitebridge Plantation**, **Woodland Management Plan 2022 2041** (see Volume 4, Appendix: 19 1 and accompanying Annex 1, Figures: 19 1 1, 19 1 2, 19 1 3 and 19 1 4) (hereafter referred to as the "Plan without Project").
- 1.1.3. The information in this plan informs **Volume 1, Chapter 19: Forestry** of the Kemp Pumped Storage Environmental Impact Assessment (EIA) Report.
- 1.1.4. The management plan has been developed to identify:
 - Areas of forest to be felled and replanted during the construction and operation of the Project.
 - Woodland removal and associated compensatory planting required because of the Project.
 - Woodland removal for forest to bog restoration as part of the wider Habitat Management Plan for the Proposed Development.
 - Woodland management practices including felling methodology, restocking specification; and the specification of aftercare works; and
 - Areas of forest to be felled and replanted by the Landowners as part of their ongoing woodland
 management objectives albeit there are none of the necessary consents and approvals in place
 for such works at the time of preparing this plan.

Location & Background

- 1.1.5. Located in Stratherrick on and around the undulating rocky outcrops of Tom Rathail, Torr Pataig and Torr an t-Sagairt at an elevation of 200-300m the Dell Estate woodland known as the Whitebridge Plantation is a diverse woodland dominated by coniferous species managed with the principal objective of producing a commercial crop of timber extending to approximately 237.0 hectares.
- 1.1.6. There are no areas of Ancient Semi Natural Woodland but the eastern areas around Torr an t-Sagairt and Tom Rathail have been wooded since at least the late 19th century and there are approximately 88ha recorded on the Ancient Woodland Inventory as Long-Established Woodland of Plantation Origin (LEPO) (See Constraints Map). Semi natural woodland characteristics are rare or absent as rotational thinning, felling, and replanting have been significant features of woodland management throughout the 20th century with some areas now into their third rotation of productive conifers.
- 1.1.7. The remainder of the woodland area, around Torr Pataig and Torr Cluanie, was established in the mid to late 1950's and these areas have also been subject to rotational thinning, felling, and replanting.
- 1.1.8. The soils are generally mineral and support good tree growth with SS achieving Yield Class 20 + on better soils and Scots Pine achieving Yield Class 8 10.
- 1.1.9. Upland brown earths, peaty podsols and peaty gleys occur throughout. The only significant area of deep peat in the woodland is sub comp't 11b & 11b1 where there is evidence of former peat cutting.
- 1.1.10. Scots Pine and Larch were probably the main species of the older woodland and both species continue to be a major feature of older restock sites and the 1950's plantings. However, restructuring felling and restocking over the last 30years has seen the faster growing and higher yielding Sitka Spruce become an increasing feature of the woodland.

- 1.1.11. The most recent clearfell was carried out in 2017 in sub compartment 9a (Felling Licence FLA01500). This area was due to be restocked in spring 2023. However, the landowner has sought an extension from Scottish Forestry to the period to fulfil the restocking obligation.
- 1.1.12. Storm damage occurred throughout the woodland during the gales of winter 2015 with sporadic windblow causing damage in many of the p1950's stands.

1.2. Woodland Description

Species & Age Class Composition

- 1.2.1. The current age class distribution is dominated by the expansion of the woodland in the 1950's along with what is likely the replanting of areas felled during the second world war and subsequent restructuring of these areas in the late 90's and early 2000's.
- 1.2.2. Sitka Spruce (*Picea sitchensis*) (SS) and Scots Pine (*Pinus sylvestris*) (SP) are the dominant species throughout the woodland with a wide range of other species occurring including Hybrid Larch (*Larix eurolepis*) (HL), Douglas Fir (*Pseudotsuga menziesii*) (DF), *Norway Spruce* (*Picea abies*) (NS), Serbian Spruce (*Picea omorika*) and mixtures of SP/HL, DF/HL, Mixed Conifers (MC) and MC/Native Broadleaves (NBL). Lodgepole Pine (*Pinus contorta*) is the principal species on the deep peat in compartment 11.
- 1.2.3. Semi natural broadleaved tree natural regeneration, most birch, does occur in mixture with conifers on many of the restock sites planted during the period 2000 2004. The proportion of conifer v's broadleaved species does vary greatly in such areas including (sub compartment's 7i, 7i1, 7i2, 8b, 10d & 10d1). These areas are recorded as MC/NBL on the sub compartment database.
- 1.2.4. Areas of open ground feature throughout the woodland providing structural and visual diversity. Natural regeneration of conifer and birch does occur at low stocking density in these areas adding further diversity.
- 1.2.5. The current species and age class compositions are detailed in the Sub Compartment database (See Annex 2), illustrated in the Current Species Map, (See Annex 1, Figure 19 2 1) and summarised in Chart 1.2.1 & Tables 1.2.1 & 1.2.2.

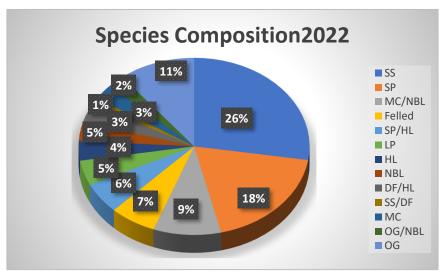


Chart 1.2.1: Species composition in 2022

Table 1.2.1: Species Composition in 2022

Species		
	Area (ha)	%
Sitka Spruce	62.69	26
Scots Pine	44.18	18
Mixed Conifer / Native Broadleaves	22.12	9
Scots Pine/Hybrid Larch	11.95	6
Lodgepole Pine	10.59	5
Hybrid Larch	10.36	4
Native Broadleaves	10.47	5
Douglas Fir/Hybrid Larch	9.88	3
Sitka Spruce/Douglas Fir	2.76	1
Mixed Conifer	6.37	3
Open Ground/Native Broadleaves	5.44	2
Open Ground	25.02	11
Felled (awaiting restock)	15.23	7
Total	237.00	100

Table 1.2.2: Age Class (years)

Age class (years)	Current
	Area (ha)
0-10	33.3
11-20	21.1
21-30	56.2
31-40	0.0
41-50	0.0
51-60	10.2
61-70	86.4
71-80	0.0
81-90	0.0
91-100	0.0
100+	0.0
Total	207.20

1.3. Forestry Proposal

1.3.1. Felling, restocking and compensatory planting plans have been prepared to accommodate the Project and to inform the EIA Report.

Felling Plan

- 1.3.2. The felling proposals are illustrated on the **Proposed Development Felling Proposals Plan (see Annex 1, Figure 19 2 2)** and are summarized in the **Table 1.3.1** below.
- 1.3.3. The proposals have been developed to reflect the tree clearance requiring consent to facilitate access and construction of the Proposed Development including access tracks, site compounds, proposed borrow pits, areas proposed for forest to bog restoration and the inundation area arising from the raised level of Loch Kemp whilst also recognizing to on-going woodland management objectives of the landowner and the requirements of the UK Forestry Standard. The combined proposals are illustrated on the Proposed Development & Landowner Felling Proposals Combined Map (see Annex 1, Figure 19 2 3).
- 1.3.4. The felling coupes required for the Proposed Development have been designed to reflect existing management boundaries and ground conditions to minimize the creation of unstable woodland edges and the risk of consequential windblow.
- 1.3.5. The proposals include 95.13ha of clear-felling over the 20year period of the plan which represents an increase of 24ha of clear-felling over that proposed in the "Plan without Proposed Development". The most significant change is in Phase 1 with an increase additional felling required to accommodate the access and construction needs of the project. However, this is partially mitigated by reductions in the felling areas for Phases 3 & 4 of the plan. If the Project receives planning consent, felling will proceed first in the areas required to facilitate access and construction followed by those areas to be inundated by the raised level of Loch Kemp and lastly areas of rotational felling from the "Plan without Project".
- 1.3.6. Harvesting methodology is described in Section 4 Woodland Management Practices.

Felling Period Area На % 47.19* 20 Project felling 6 13.37 Phase 1 2 4.48 Phase 2 9.62 4 Phase 3 9 20.93 Phase 4 25 60.40 Beyond 20yrs 19.24 8 Low Impact Silvicultural Systems 19.00 9 Long Term Retentions 42.77 17 Other (Felled, Open Ground etc) 237.00 100%

Table 1.3.1: Felling Programme

^{*}excluding Open Ground (OG) and previously felled areas awaiting restock.

Restocking Plan

- 1.3.7. The restocking plan aims to replant as much of the felled areas as possible, but the nature of the Proposed Development means that some areas felled will not be able to be replanted due to their being inundated by the raised level of Loch Kemp or that they are required as corridors for access tracks.
- 1.3.8. Areas of compartment 11 are planted on deep peat and 5.76ha of the proposed felling area on the southern edge of Loch Paiteag have been identified as being suitable for restoration to peatland due to the presence of adjacent bog habitat (M17-20 modified bog) and deep peat.
- 1.3.9. The forest to bog proposals are assessed against the CoWRP and the associated Scottish Forestry guidance 'Deciding future management options for afforested deep peatland' (2015) within Volume 4, Appendix 19: 3 Loch Kemp Pumped Storage Forest to Bog Restoration Proposals.
- 1.3.10. The proposed forest to bog restoration works are described in the outline **HMP (non-SAC) (Volume 4, Appendix 10.7)**.
- 1.3.11. All areas of woodland to be felled without restocking are recognized as woodland removal and need to be considered within the scope of the Scottish Governments Control of Woodland Removal Policy (COWPR) which does allow for compensatory planting to be carried out.
- 1.3.12. Table 1.3.2 and Annex 1, Figure 19 2 4 identifies a total area of 50.00ha of woodland to be felled without restocking including the 5.76ha proposed for forest to bog restoration. In addition, the CoWRP allows for the clearance of areas associated with normal forest practice such as the creation of access tracks for forest management to be cleared without the need for restocking. This applies to 1.47ha of woodland adjacent to access tracks which would be felled, irrespective of the Proposed Development, to facilitate track construction/improvements as part of the management proposals outlined in Dell Estate, Whitebridge Plantation, Woodland Management Plan 2022 2041 (see Volume 4, Appendix: 19 1 resulting in a total area of woodland removal without restocking of 48.43ha.
- 1.3.13. **Volume 1, Chapter 19: Forestry** of the EIA Report addresses the requirements of the COWRP with a Compensatory Planting Plan being a feature of this Plan see Sections 3.3 & 4.3 below.
- 1.3.14. Other areas, such as the site compounds and borrow pits will require their restocking to be deferred until the construction period is nearing completion.
- 1.3.15. The restocking proposals have been developed to reflect the objectives to maintain or enhance the productivity of the commercial woodland whilst considering current environmental & landscape considerations.
- 1.3.16. Improved Sitka Spruce will be the dominant species used in the restocking with elements of Scots Pine and other conifers.
- 1.3.17. Native broadleaves with native Scots Pine and Open Ground will be used on suitable sites to increase structure diversity and enhance the local landscape in the medium to longer term.
- 1.3.18. Annex 1, Figure 19 2 5 Combined Proposed Development and Landowner Year 20 Species Map illustrates the areas of woodland to be restocked, when they are to be restocked and the species to be planted with changes in species composition over the period of the plan summarized in **Table 1.3.2 & Chart 1.3.1**.
- 1.3.19. Restocking methodology is described in Section 4 Woodland Management Practices.

Table 1.3.2: Year 20 Species Composition

Species	Area				
	На	%			
Sitka Spruce	53.71	23			
Scots Pine	35.14	15			
Scots Pine/Hybrid Larch	11.29	5			
Sitka Spruce/Scots Pine	11.19	5			
Sitka Spruce/Douglas Fir	2.80	1			
Douglas Fir/Hybrid Larch	8.96	3			
Mixed Conifer	2.33	1			
Mixed Conifer/Native Broadleaves	18.24	8			
Native Broadleaves	20.86	9			
Open Ground/Native Broadleaves	3.00	1			
Open Ground*	25.34	11			
No Restock	42.67	18			
(Woodland Removal)					
Clearance for	1.57	<1%			
Forest management.**					
Total		100%			

^{*} Includes 5.76ha of forest to bog restoration

^{**}The COWRP allows for the clearance of areas associated with normal forest practice such as the creation of access tracks for forest management to be cleared without the need for restocking

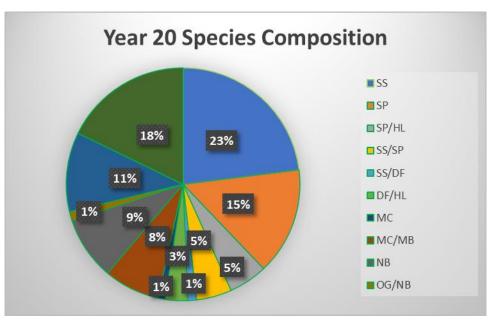


Chart 1.3.1: Year 20 Species Composition

Compensatory Planting Plan

- 1.3.20. When excluding the 5.76ha identified for forest to bog restoration and assessed in Appendix 19 3 Loch Kemp Pumped Storage Forest to Bog Restoration Proposals and the 1.57ha of clearance for forest management, the Restocking Plan identifies 42.67 ha of commercial woodland to be cleared without removal. This includes sub compartment 9a, which was felled in 2017 and now consists mostly of bare ground awaiting restocking but includes miscellaneous Mixed Conifer (MC) natural regeneration and some standing trees which were retained during felling.
- 1.3.21. **Chapter 10: Terrestrial Ecology** identifies a further 5.52 ha of Broadleaved Woodland within the Ness Woods Special Area of Conservation (SAC)¹ and 4.67 ha of Broadleaved Woodland outwith both the plantation and the Ness Woods SAC². These areas of non-commercial woodland removal also need to be considered within the scope of the Scottish Governments COWPR and increase the total woodland removal as a result of the Proposed Development to 52.86ha.
- 1.3.22. Compensatory planting is required to mitigate the loss of woodland arising from the Project and six separate enclosures (CP1 CP6) extending to 63.11ha including 15% designed open ground have been identified for Compensatory Planting of native broadleaved woodland and illustrated on the Annex 1, Figure 19 2 6 Compensatory Planting Plan.
- 1.3.23. Five of these enclosures (CP 2 -6) extending to 12.08ha are located around the upper level of inundation around Loch Kemp to broadly represent woodland removal around the Loch arising from the inundation.
- 1.3.24. The other enclosure (CP1) is more extensive, extending to 51.03ha around the slopes of Meall na Targaid and Tom a Chliabhain.
- 1.3.25. The proposed enclosures are all located within the Scottish Forestry Highland Native Woodland Target Area and are identified as very suitable or suitable for W18 Native Pinewood and W4 Native Upland Birchwood on Scottish Forestry Open Data Climatic Suitability data.
- 1.3.26. The Highland Council Highland Forest and Woodland Strategy (November 2019) categorises the proposed areas for compensatory planting as "Potential with Sensitivities" which means the land offers potential for woodland types which predominantly deliver biodiversity, landscape and/or amenity objectives.
- 1.3.27. Existing ground vegetation of heather, bracken and grasses including occasional natural regeneration of Birch, Scots Pine and other conifers along with mineral soils including upland brown earths and peaty gleys and podsols across much of the area support the desktop assessment.
- 1.3.28. There are steep slopes, areas of exposed rock and deep peat (>50cm) which will not be suitable for planting, but natural regeneration is expected to occur in these open areas adding structural and visual diversity to the new woodland areas.
- 1.3.29. Located at altitudes between 200 300m the proposed sites have DAMS scores between 10 14.
- 1.3.30. The enclosed areas will be suitable for either planting or natural regeneration providing an appropriate area of Compensatory Planting for woodland losses.

¹ Equivalent to the permanent loss of qualifying woodland habitats (Tilio-Acerion forests of slopes, screes and ravines and Old sessile oak woods with Ilex and Blechnum in the British Isles) that would be permanently lost due to permanent infrastructure within the Ness Woods SAC, as detailed in **Table 10.6**: **Summary of Habitat Loss within Ness Woods SAC** in **Chapter 10**: **Terrestrial Ecology**.

² Calculated from **Table 10.12: Summary of Habitat Loss by Phase 1 / NVC Community Type (for Habitats of Local or Greater Value, outwith Ness Woods SAC)** in **Chapter 10: Terrestrial Ecology**, which states that there would 5.48 ha of broadleaved woodland habitat loss outside the Ness Wood SAC due to permanent infrastructure.. This assessment has estimated that there would be a permanent loss 0.81 ha of Native Broadleaves, growing mostly in mixture with productive conifers, lost due to permanent infrastructure within the Whitebridge Plantation (see Table 19.11), meaning there would be 4.67 ha of broadleaved woodland loss outwith the plantation and the Ness Woods SAC, due largely to native woodland loss within the inundation area, as well as the construction of Dam1, Dam 3 and other permanent infrastructure.

- 1.3.31. Highland Council have agreed in principle³ to the concept of CP2 6 being accepted as treated as "advanced" compensatory planting, with the aim of early woodland establishment to minimise the visual impact of the loss of woodland around Loch Kemp.
- 1.3.32. The existing semi-natural broadleaved woodland around Loch Kemp provides an existing seed source close to areas CP2 4 and enclosing these areas at an early stage will allow this seed source to be utilised prior to its removal in the event of the Project being consented.
- 1.3.33. CP2 4 will be monitored annually prior to a determination on the Project to assess the extent of semi natural woodland regeneration in relation to target densities and an appropriate enrichment planting plan prepared for implementation following consent if target densities have not been achieved.
- 1.3.34. The larger area (CP1) of proposed compensatory planting will be carried out during the first planting season following consent subject to a minimum 6-month period between consent and planting works for planning and operational reasons.
- 1.3.35. CP5 & CP6 are located in areas where construction activity will be significant and compensatory planting works will be deferred until post construction with final design being subject to a post construction survey.
- 1.3.36. The compensatory planting proposals have been assessed by Scottish Forestry who have confirmed the sites identified are suitable and that EIA consent will not be required (See Annex 3: Scottish Forestry Ref no 030902580 (Afforestation EIA Consent Not Required). The work will be enforced through a Planning Condition.
- 1.3.37. When updating the year 20 species composition to take account of the compensatory planting, the net result is an increase in the total woodland area from 237ha to 257ha with the following species composition.
- 1.3.38. Compensatory Planting methodology is described in Section 4 Woodland Management Practices.

Table 1.3.3: Year 20 Species Composition with Compensatory Planting

Species	Area	
	На	%
SS	54.19	21
SP	35.10	14
SP/HL	12.60	5
SS/SP	11.50	5
SS/DF	2.80	1
DF/HL	7.40	3
мс	2.30	1
MC/NBL	18.24	7
NBL	75.60	29
OG/NBL*	6.15	2
OG* includes forest to bog restoration area.	31.74	12
Total	257.62	100%

^{*}Assumes 10% OG and 5% OG/NBL in Compensatory Planting Areas

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³ See **Table 19.1 Consultation Responses** in **Volume 1, Chapter 19: Forestry** and **Volume 4, Appendix 5.5: Further Consultation** of the EIA Report for further details.

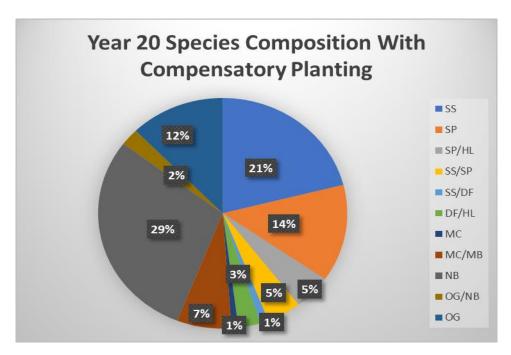


Chart 1.3.2 Year 20 Species Composition With Compensatory Planting

Woodland Management Practices

1.3.39. The following section describes the various forestry techniques and specifications to be utilized during the felling and restocking operations throughout the period of the plan.

Harvesting

- 1.3.40. Timber felling operations will be carried out using conventional harvesting techniques involving harvesting and forwarding machinery appropriate for the various sites. Some extraction by winch may be required on steeper ground.
- 1.3.41. The aim will be to maximise the recovery of merchantable timber products down to at least 7cm diameter. The site is well located in terms of access to existing markets for timber products including construction, fencing and packaging markets for sawlog material and panel board production and biomass for small roundwood.
- 1.3.42. The harvester will follow the direction of planting and harvest all trees within 15 -20m swathes presenting the produce to the side of brash mats created using the branches and treetops to create a running surface for the forwarder that allows extraction to roadside with minimal ground disturbance and compaction.
- 1.3.43. To ensure minimal debris left on site below the inundation level, brash mats, other woody debris and smaller trees not suited to conventional harvesting will, where reasonably practical, be collected and extracted to roadside for chipping and subsequent delivery to the biomass market.
- 1.3.44. Where the removal of stumps is required to facilitate borrow pits, access tracks and the compound at the site entrance, stumps will be removed and stored on site prior to chipping and subsequent delivery to the biomass market.
- 1.3.45. There are existing markets locally (Invergordon and Dalcross) for both brash and chipped stump material and maximizing recovery, especially of brash, from suitable sites is an increasingly a regular feature of forest management.
- 1.3.46. Applying this methodology to areas being felled and not restocked to facilitate the Project meets the requirement of SEPA Guidance Note LUPS GU27 Use of Trees Cleared to Facilitate Development on Afforested Land to minimize waste arising from the felling operations.

- 1.3.47. Collection of brash for the biomass market will be considered for other felled areas to be restocked but the suitability for each site will be assessed against the Forest Research Guidance on site selection for brash removal (May 2009).
- 1.3.48. Timber haulage will utilize the existing road network and improvements arising from the construction of access roads for the Project.
- 1.3.49. Estimated tonnage of timber to be harvested in the first Phase of the Plan, including those of the Plan without Project are included in the supplementary information, Sub Compartment Database and summarized in Table 6 below.

Table 1.4.1: Estimated tonnage of timber to be harvested in the first phase of the plan

Product	Estimated Tonnage	Estimated Tonnage	Estimated Tonnage	
	Baseline Phase 1	Project Phase 1	Combined (tonnes)	
	(tonnes)	(tonnes)		
Roundwood	6890	6450	13340	
Biomass*	0	4000	4000	
Total	6890	10450	17340	

^{*} Brash and stumps

- 1.3.50. A conversion factor of 0.85tonnes/cubic metre has been applied to the estimated volumes in the sub compartment database.
- 1.3.51. Biomass volumes based on an average recovery 35tonnes per hectare for brash and 100tonnes per hectare for stumps.
- 1.3.52. In sub compartment 11c (site compound location), the trees to be cleared are not of sufficient size to yield merchantable timber or biomass. The overburden on this area will be cleared and stored on-site for re-instatement purposes upon completion of the construction period. The young trees will be included in the overburden and utilised in a semi decomposed state for site re-instatement prior to the restocking of the area.
- 1.3.53. All operations will be carried out in accordance with current best practice guidelines including but not limited to:
 - Forests and Water Guidelines 4th Edition and other appropriate UKFS guidelines for environmental protection.
 - Appropriate Forest Industry Safety Accord safety guides.
- 1.3.54. The timing of the baseline felling operations will be subject to the necessary approvals being in place and it is unlikely that landowner felling operations including thinning will coincide with the felling operations associated with the Proposed Development. As a result, most of the tonnage from the landowner operations would be deferred towards the latter period of Phase 1 and thereby avoiding the main construction period.

Restocking

- 1.3.55. Restocking will be carried out in accordance with UK Forestry Standard Guidelines and will normally reflect the following methodology.
- 1.3.56. The site will be mounded using a tracked excavator to create mounds approximately 50cm wide x 75cm long X 50cm deep that provide an enhanced planting position with localised drainage and initial weed suppression. When carrying out ground preparation works, appropriate buffer zones will be maintained around the watercourses.
- 1.3.57. Within the riparian areas a varied woodland structure will be developed as per the guidelines within the Forest & Water Guidelines V4. Restocking will be carried out to achieve a minimum stocking density of 2500/ha for productive conifers and 1600/ha for the native broadleaved areas.
- 1.3.58. Sitka Spruce will be from "improved" planting stock which is predicted to produce an increase in timber quality and around 25% more volume over a rotation, compared with the traditional planting stock used in previous rotations from material originating from the Pacific Northwest.
- 1.3.59. The native broadleaves planted will preferably be from Seed Zone 201 if this zone is not available, trees from zones 105, 106 or 202 will be used.

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- 1.3.60. Native Scots Pine from the Northeast or South-Central Pine Seed Zones will be used.
- 1.3.61. Species proportions for area restocked with Native species will broadly reflect the following;
 - 45% Birch
 - 20% Native Scots Pine
 - 10% Rowan
 - 5% Sessile Oak
 - 5% Rowan
 - 5% Willow
 - 5% Common Alder
 - 5% Aspen
- 1.3.62. Planting will be carried out by hand, using a notch planting method.
- 1.3.63. Up to 20% of the restock area will be open ground to ensure structural and visual diversity.
- 1.3.64. Appropriate maintenance including weevil control, weed control, and beating up will be carried out to ensure the stocking densities are achieved by Year 5 after planting.
- 1.3.65. Protection from browsing by deer is essential to ensure satisfactory establishment of restock areas and this will be achieved using a combination of deer fencing and management culling in collaboration with the landowner.

Compensatory Planting

- 1.3.66. Natural regeneration is expected to be the principal method of achieving compensatory planting in areas CP2 CP4.
- 1.3.67. Deer fencing will be erected around these areas in the late summer/early autumn of 2023 and with an existing semi natural woodland seed source nearby, regeneration of birch is anticipated along with rowan and willow.
- 1.3.68. The target stocking density for naturally regenerated areas is 400 trees/ha by year 5. This reflects the requirement of the Scottish Government's Forestry Grant Scheme option for New Natural Regeneration.
- 1.3.69. Annual monitoring will be carried out prior to a determination on the Project to assess the extent of semi natural woodland regeneration in relation to target densities and an appropriate enrichment planting plan prepared for implementation following consent if target densities have not been achieved.
- 1.3.70. Natural regeneration is the preferred means of establishing new woodland in areas CP 4 & 5. However, as this work is post construction and some establishment will be required on reinstated ground, the appropriate establishment method will be reviewed post construction and planting will be carried out if deemed necessary.
- 1.3.71. In CP1 where planting is proposed, planting will be carried out following guidance in the Forestry Commission Bulletin 112 Creating New Native Woodlands to create woodlands using the following methodology.
- 1.3.72. Ground preparation will be hinge mounding carried out by a tracked excavator to create enhanced planting positions with localised drainage. Mounds will be irregularly spaced to reflect the look of a natural woodland with a target density of an average of 1600/ha across the site.
- 1.3.73. However, densities will vary to reflect site conditions, such as within or near wet flushes, where a lower density is a more realistic replication of woodland grading into wetland, or around the open areas next to crags. In these scenarios, where density has been reduced, the overall average stocking density will remain the same, as it will be compensated for by increased planting in other areas.
- 1.3.74. Mounds are expected to be approximately 50cm wide by 75cm long by 50cm deep.
- 1.3.75. It is likely that isolated areas of steep and/or rocky ground will not be accessible. Hand mounds or screefs will be used, but this is expected to be less than 5% of the total planted area.

- 1.3.76. There will be no drainage works carried out and the Practice Guide for Forest managers to Assess and Protect Groundwater Dependent Terrestrial Ecosystems when preparing woodland creation (April 2018) will be adhered to. No new drains will be required for this native woodland.
- 1.3.77. Any existing trees on the site will be retained and protected during operations.
- 1.3.78. The enclosures will be protected by perimeter fencing to exclude deer. Fences will be marked as per Forestry Commission Guidance Fence Marking to Reduce Grouse Collisions (December 2012). The boundaries shown on the Compensatory Planting Plan Map are indicative and fence lines will require micro-siting to take account of steep ground and rocky outcrops fences will be checked regularly and maintained as required with any deer found within being culled promptly.
- 1.3.79. Based on the existing vegetation, soil moisture, soil nutrient status and climatic conditions, the proposed native woodland is expected to broadly reflect that of a NVC W18 Native Pinewood, and the species composition of the planted area will be:
 - Caledonian Scots pine 35%
 - Downy birch 25%
 - Goat willow 7.5%
 - Rowan 7.5%
 - Sessile oak 5%
 - Alder 5%
 - Gean 5%
 - Bird cherry 2.5%
 - Aspen 2.5%
 - Juniper 2.5%
 - Eared willow 2.5%
- 1.3.80. Target stocking density at year 5 is an average of 1600 trees/ha across the plantable areas.
- 1.3.81. It is expected that nursery stock will be containerised (cell-grown) trees, though bare root may be used instead of, or as well as, cell-grown stock, depending on availability. Most plants are expected to be 20-40cm.
- 1.3.82. Planting will be carried out by hand, using a notch planting method.
- 1.3.83. Fertiliser will be applied at the time of planting, most likely using Albacote or a similar fertiliser, to provide NPK as a slow-release granule (110 trees per 5kg bag) applied within the planting hole. It is expected that no further fertiliser application will be required; however, tree growth will be monitored and throughout the establishment period and further nutrition will be applied if required.
- 1.3.84. The site is within seed zone 201. Native woodland will use stock from the correct seed zone wherever possible, or the neighbouring seed zone where this is not possible. Native Scots Pine from the Northeast or South-Central Pine Seed Zones will be used.
- 1.3.85. Where bracken is the dominant ground vegetation, this will be controlled by herbicide in the season before planting and following planting weed growth will be controlled as required to achieve satisfactory establishment.
- 1.3.86. Monitoring will be carried out regularly by the forester to check on stocking density, browsing impacts, tree health and vigour with beating up being carried out to replace dead trees and ensure target stocking densities are achieved.
- 1.3.87. The compensatory planting proposals have been assessed by Scottish Forestry who have confirmed the sites identified are suitable and that EIA consent will not be required (See Volume 4, Appendix 19.3: Scottish Forestry Ref no 030902580 (Afforestation EIA Consent Not Required)). The proposed compensatory planting will be enforced through a Planning Condition.

1.4. Monitoring and Review

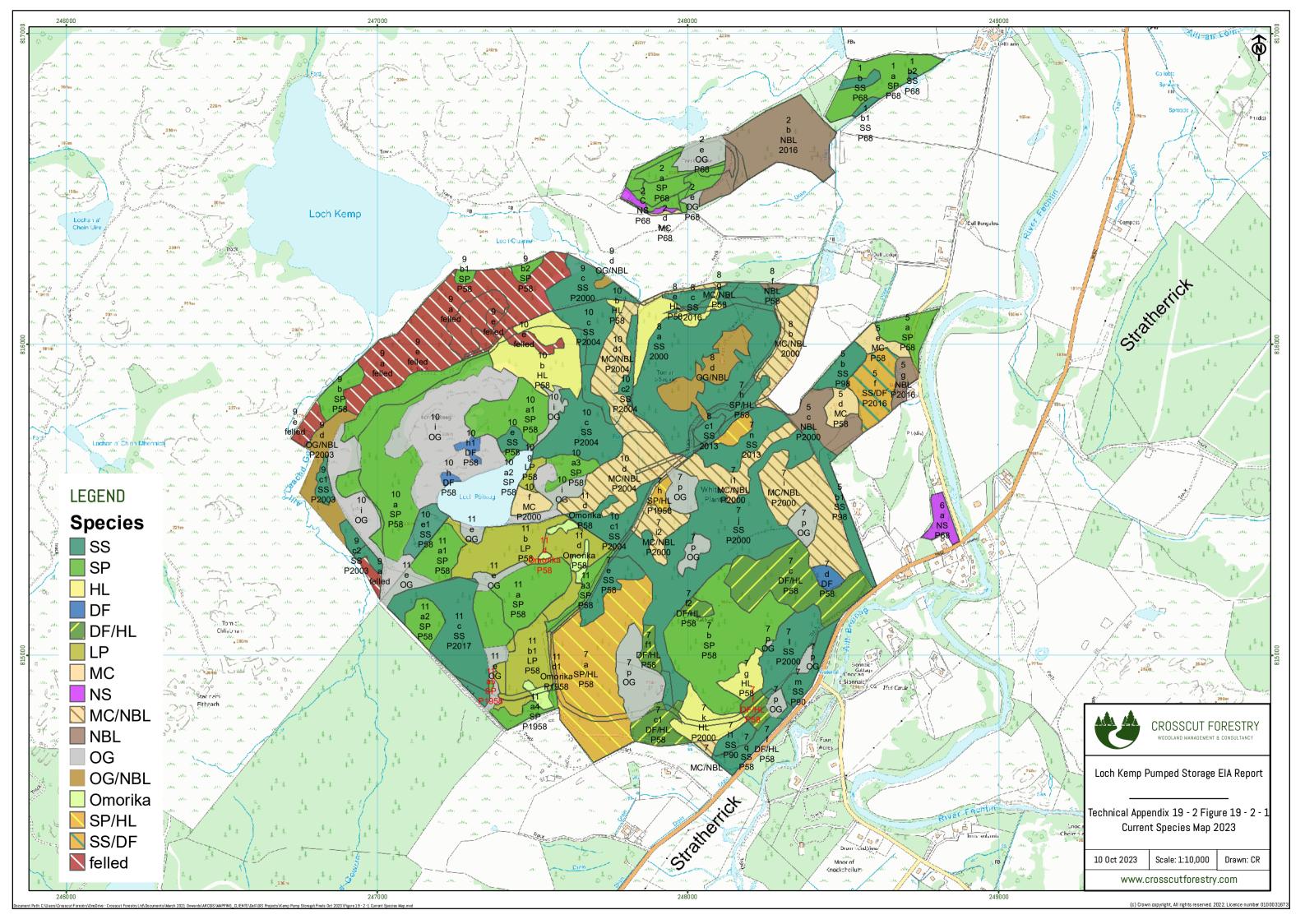
1.4.1. An independent, qualified and technically competent professional Forest Manager with the required experience will be appointed to inspect the implementation of the Management Plan with particular consideration for the Compensatory Planting Plan.

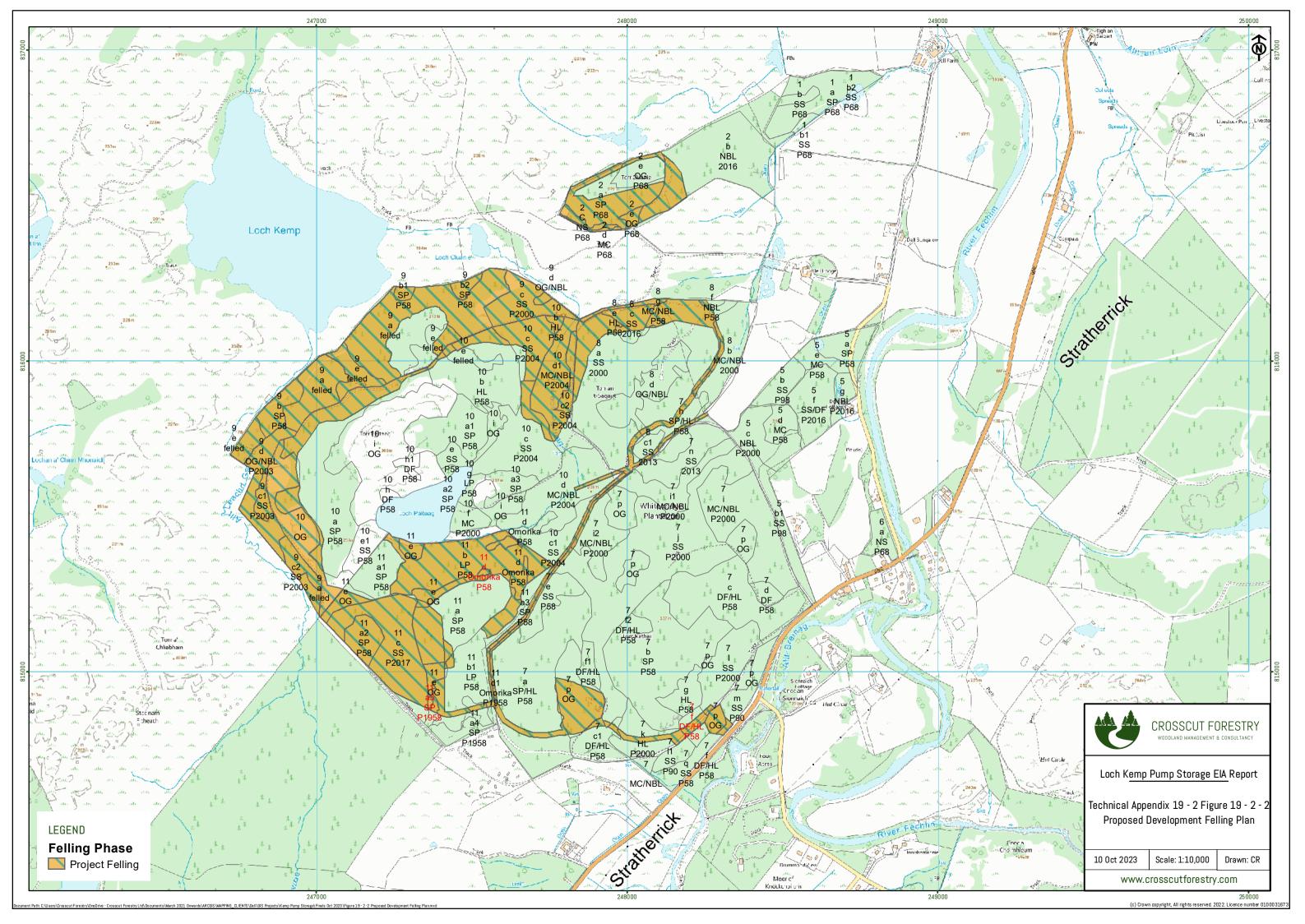
Loch Kemp Storage: Woodland Management Plan. (Plan with Proposed Development).

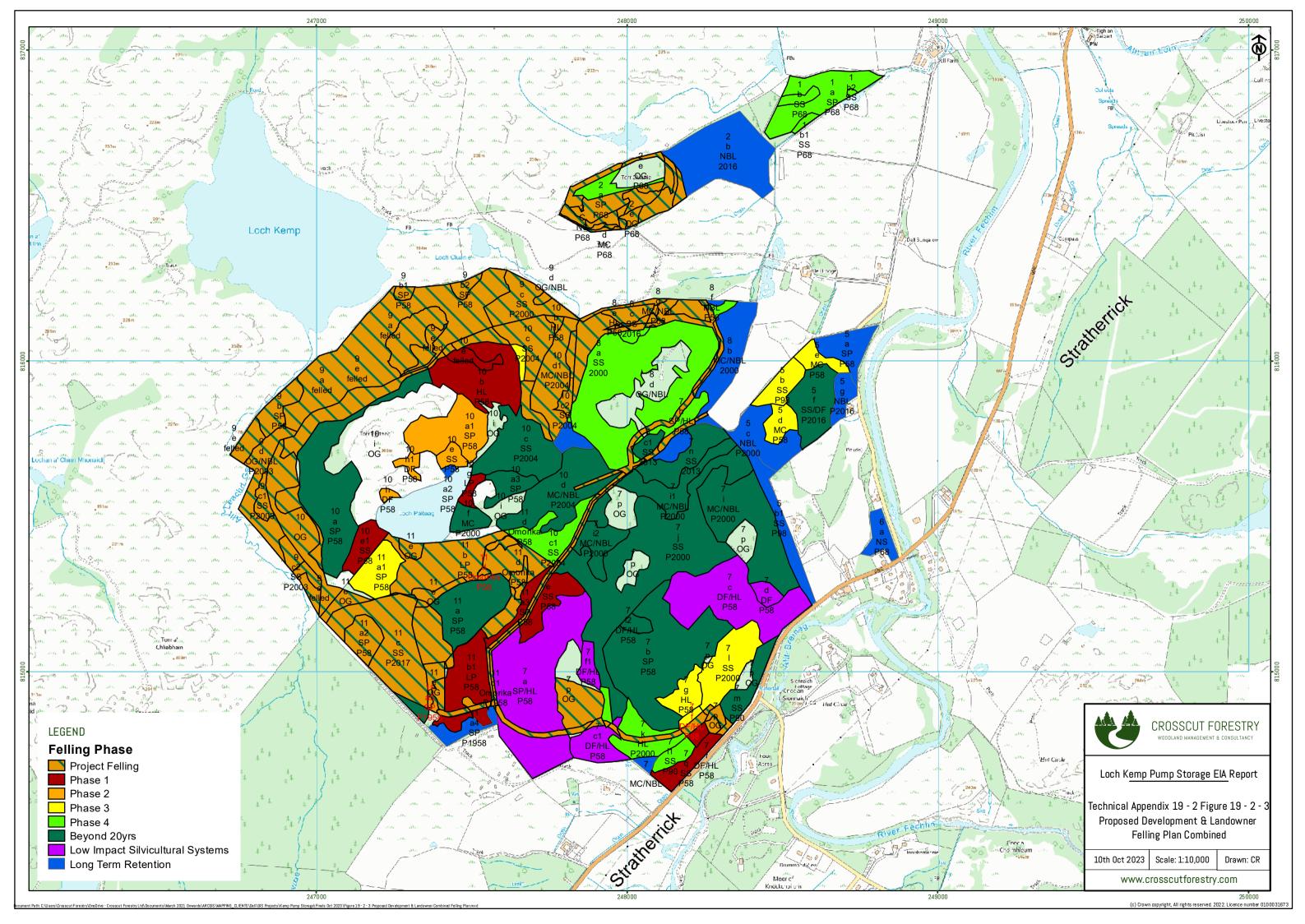
- 1.4.2. Reviews will be at regular intervals (year 1, 5 and 10) to ensure that the trees are planted correctly, maintained to the required standard and ultimately established into woodland.
- 1.4.3. This monitoring programme should be conditioned in the consent. The woodland will have to be maintained thereafter.
- 1.4.4. This professional individual should report to the planning authority, to allow the CP condition to be managed and ultimately discharged.

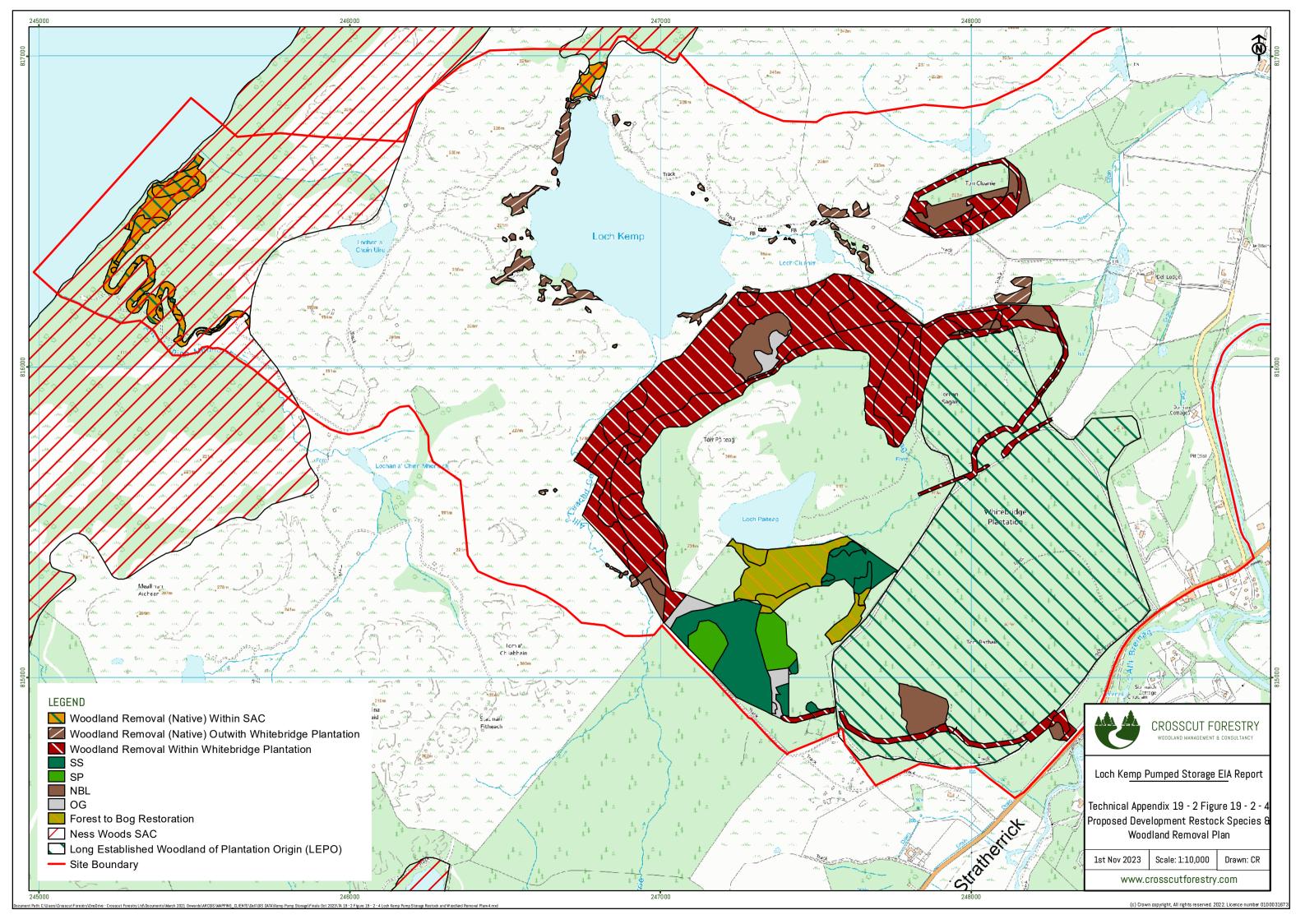
Loch Kemp Storage : Woodland Management Plan. (Plan with Proposed Development).

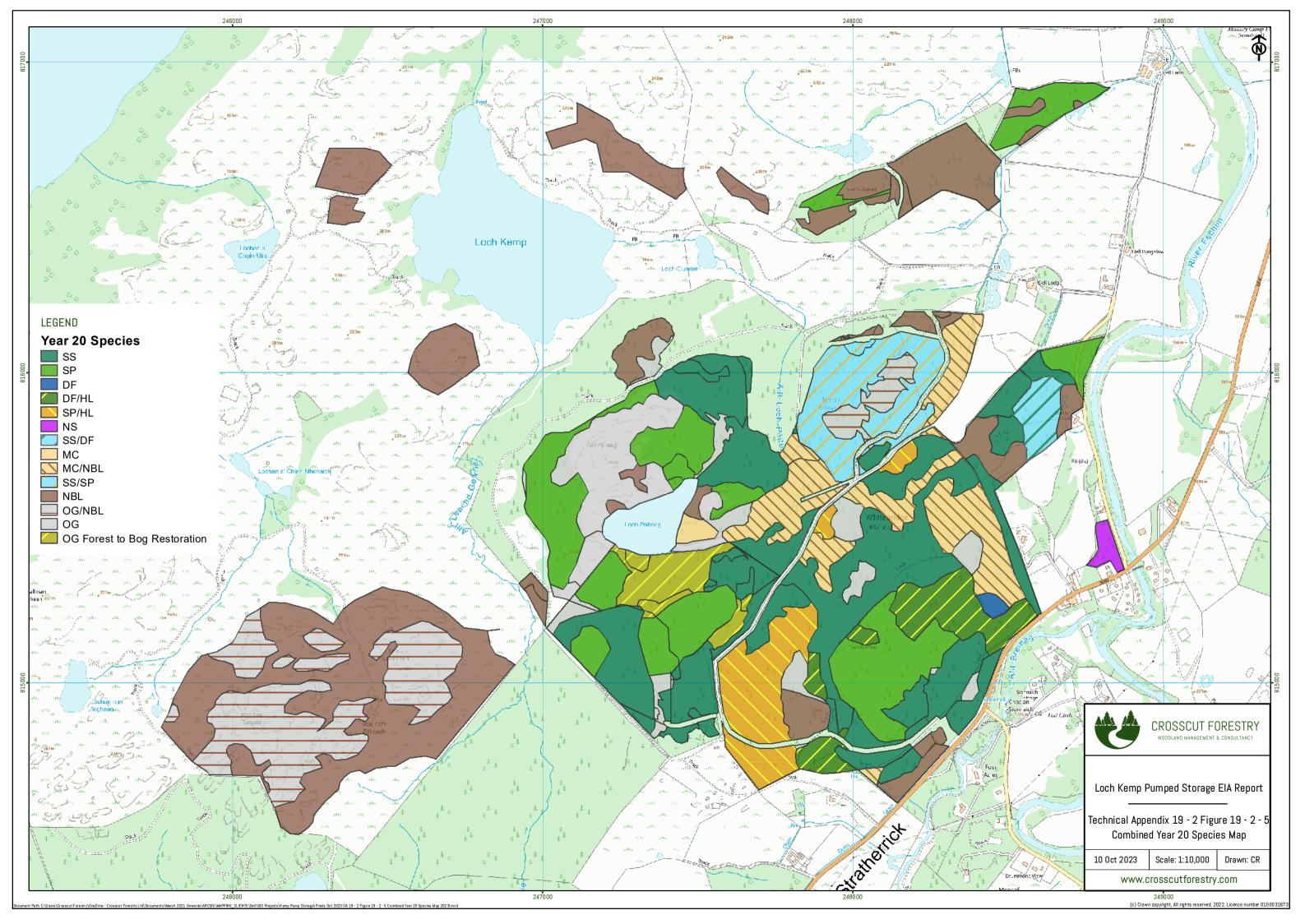
Annex 1: Figures

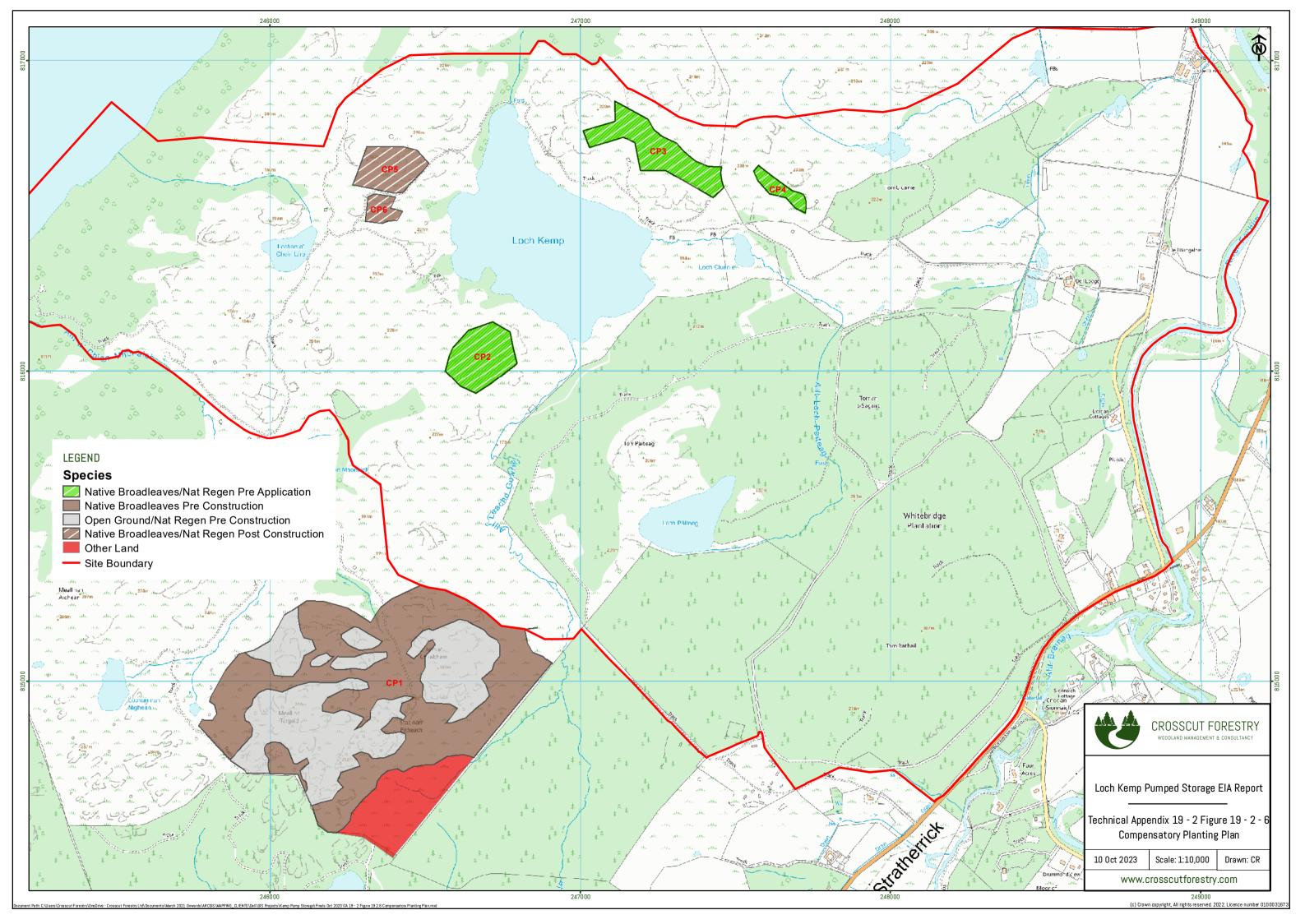












 $\label{eq:Appendix 19-2} \mbox{Loch Kemp Storage}: \mbox{Woodland Management Plan. (Plan with Proposed Development)}.$

Annex 2: Sub-Compartment Database

Comp_t	Sub Compt	Species	P Year	Felling Phase	Restock Species	Restock P Year	Area_ha	Yiel d Clas s	Curre nt Vol/h a (m3)	Curren t Total Vol (m3)
1	a	SP	P68	Phase 4	SP	P2042	3.22422	10	240	774
1	b	SS	P68	Phase 4	SS	P2042	0.66	20	500	330
2	а	SP	P68	Phase 4	SP	P2042	0.8089	10	240	194
2	а	SP	P68	Project Felling	NBL	P2029	1.18	10	240	283
2	а	SP	P68	Project Felling	Woodland Removal		1.46	10	240	350
2	b	NBL	P2016	Long Term Retention	NBL	P2016	5.90697	0	0	0
2	b	NBL	P2016	Project Felling	Woodland Removal		0.77222	0	0	0
2	b	NBL	P2016	Project Felling	NBL	P2029	0.491	0	0	0
2	С	NS	P68	Project Felling	Woodland Removal		0.33617	14	350	118
2	d	MC	P68	Project Felling	Woodland Removal		0.129	10	240	31
2	е	OG	P68		NBL	P2029	1.14585			0
2	е	OG	P68	Project Felling	Woodland Removal		0.418			0
5	а	SP	P58	Long Term Retention	SP	P58	1.63396	10	240	392
5	b	SS	P98	Phase 3	SS	P2038	1.25023	20	330	413
5	b1	SS	P98	Long Term Retention	SS	P98	1.82845	20	330	603
5	С	NBL	P2000	Long Term Retention	NBL	P2000	2.3353	0	0	0
5	d	MC	P58	Phase 3	MC	P2038	0.96721	10	300	290
5	е	MC	P58	Phase 3	MC	P2038	0.81785	10	300	245
5	f	SS/DF	P2016	Beyond 20yrs	SS/DF	P2016	2.76352	18	0	0
5	g	NBL	P2016	Long Term Retention	NBL	P2016	0.84531	0	0	0
6	а	NS	P68	Long Term Retention	NS	P68	0.95173	14	350	333
7	а	SP/HL	P58	Low Impact Silvicultural Systems	SP/HL	P58	10.18	10	300	3054
7	а	SP/HL	P58	Project Felling	Woodland Removal	0	0.42464	10	300	127
7	а	SP/HL	P58	Project Felling	Forest Access Felling		0.23181	10	300	70

Appendix 19-2 Loch Kemp Storage : Woodland Management Plan. (Plan with Proposed Development).

7	b	SP	P58	Beyond 20yrs	SP	P58	9.17815	10	300	2753
7	С	DF/HL	P58	Low Impact Silvicultural Systems	DF/HL	P58	7.83	12	450	3524
7	c1	DF/HL	P58	Project Felling	Woodland Removal	0	0.16	12	450	72
7	d	DF	P58	Low Impact Silvicultural Systems	DF	P58	0.54394	14	380	207
7	е	SS	P58	Phase 1	SS	P2026	1.56445	20	650	1017
7	е	SS	P58	Project Felling	Forest Access Felling		0.13325	20	650	87
7	f	DF/HL	P58	Project Felling	Woodland Removal	0	0.26933	12	450	121
7	f	DF/HL	P58	Phase 1	NBL	P2026	0.27672	12	450	125
7	f	DF/HL	P58	Phase 3	DF/HL	P2038	0.21743	12	450	98
7	f1	DF/HL	P58	Low Impact Silvicultural Systems	DF/HL	P58	0.68753	12	450	309
7	f2	DF/HL	P58	Beyond 20yrs	DF/HL	P58	0.44295	12	450	199
7	g	HL	P58	Phase 3	HL	P2039	1.21359	10	280	340
7	h	SP/HL	P58	Long Term Retention	SP/HL	P58	0.64785	10	300	194
7	i	SP/HL	P1958	Beyond 20yrs	SP/HL	P1958	0.46564	10	300	140
7	i	MC/NBL	P2000	Beyond 20yrs	MC/NBL	P2000	9.77	10	200	1954
7	i1	MC/NBL	P2000	Project Felling	Forest Access Felling		0.2	10	200	40
7	j	SS	P2000	Beyond 20yrs	SS	P2000	12.54084	20	300	3762
7	j	SS	P2000	Phase 4	SS	P2000	0.27523	20	300	83
7	j	SS	P2000	Project Felling	Forest Access Felling		0.08886	20	300	27
7	j	SS	P2000	Project Felling	Woodland Removal	0	0.03126	20	300	9
7	k	HL	P2000	Phase 4	HL	P2042	1.85	8	140	259
7	k	HL	P2000	Project Felling	Woodland Removal	0	0.34258	8	140	48
7	1	SS	P2000	Phase 3	SS	P2039	2.97073	20	300	891
7	1	SS	P2000	Project Felling	Woodland Removal	0	0.05589	20	300	17
7	l1	SS	P90	Phase 4	SS	P2042	0.73616	20	380	280
7		MC/NBL		Long Term Retention	MC/NBL		0.23139	10	200	46
7	m	SS	P90	Beyond 20yrs	SS	P58	1.38845	20	380	528
7	m	SS	P90	Project Felling	Woodland Removal	0	0.10716	20	380	41
7	n	SS	P2013	Beyond 20yrs	SS	P2013	2.20908	20	0	0

Appendix 19-2 Loch Kemp Storage : Woodland Management Plan. (Plan with Proposed Development).

F										
7	р	OG		Project Felling	Woodland Removal		0.23062			0
7	р	OG			OG		3.98			0
7	р	OG		Project Felling	NBL	P2029	1.83252			0
7	р	OG		Project Felling	Forest Access Felling		0.02258			0
7	р	OG		Project Felling	NBL	P2026	0.18307			0
7	р	OG		Project Felling	Woodland Removal		0.13914			0
7	q	SS	P58	Phase 1	NBL	P2026	1.13948	20	650	741
8	а	SS	P2000	Phase 4	SS	P2042	0.2196	20	300	66
8	а	SS	P2000	Project Felling	NBL	P2029	0.64	20	300	192
8	а	SS	P2000	Project Felling	Forest Access felling		0.02193	20	300	7
8	а	SS	P2000	Phase 4	SS	P2042	10.92	20	300	3276
8	а	SS	P2000	Project Felling	Woodland Removal		1.7	20	300	510
8	b	MC/NBL	P2000	Long Term Retention	MC/NBL	P2000	2.92	10	200	584
8	b1	MC/NBL	P2000	Project Felling	Woodland Removal		0.3	10	200	60
8	С	SS	P2016	Project Felling	Woodland Removal		0.74	20	0	0
8	c1	SS	P2013	Beyond 20yrs	SS	P2013	0.5	20	0	0
8	c1	SS	P2013	Project Felling	Forest Access Felling		0.08312	20	0	0
8	c2	SS	P2016	Project Felling	NBL	P2029	0.10211	20	0	0
8	d	OG/NBL			OG/NBL		3			0
8	d	OG/NBL		Project Felling	Woodland Removal		0.03618			0
8	е	HL	P58	Phase 4	HL	P2042	0.27272	10	280	76
8	e1	HL	P58	Project Felling	Woodland Removal		1.68	10	280	470
8	e2	HL	P58	Project Felling	NBL	P2029	0.09	10	280	25
8	f	NBL	P58	Long Term Retention	NBL	P58	0.07947			0
8	f1	NBL	P58	Project Felling	Woodland Removal		0.03941			0
8	g	MC/NBL	P58	Project Felling	Woodland Removal		0.30499	10	250	76
9	а	felled		Project Felling	Woodland Removal		11.49			0
9	a1	felled		Project Felling	NBL	P2026	2.43			0
9	b	SP	P58	Project Felling	Woodland Removal		1.85	10	300	555

Appendix 19-2 Loch Kemp Storage : Woodland Management Plan. (Plan with Proposed Development).

F										
9	С	SS	P2000	Project Felling	Woodland Removal	0	3.34	20	300	1002
9	c2	SS	P2003	Project Felling	NBL	P2029	0.3374	20	250	84
9	d	OG/NBL		Project Felling	Woodland Removal		2.41	20	250	603
9	е	felled		Project Felling	OG		0.6529			0
10	a	SP	P58	Beyond 20yrs	SP	P58	7.8	10	300	2340
10	a	SP	P58	Project Felling	Woodland Removal	0	3.08	10	300	924
10	a1	SP	P58	Phase 2	SP	P2032	3.37462	10	300	1012
10	a2	SP	P58	Long Term Retention	SP	P58	0.12425	10	300	37
10	b	HL	P58	Project Felling	Woodland Removal	0	0.8	10	280	224
10	b	HL	P58	Phase 1	SS	P2027	4.10599	10	280	1150
10	С	SS	P2004	Beyond 20yrs	SS	P2004	3.89189	20	250	973
10	С	SS	P2004	Project Felling	Woodland Removal	0	3.38	20	250	845
10	С	SS	P2004	Phase 3	SS	P2038	0.28668	20	250	72
10	c1	SS	P2004	Phase 4	SS	P2042	1.97	20	250	493
10	c2	SS	P2004	Project Felling	Forest Access Felling		0.19327	20	250	48
10	d	MC/NBL	P2004	Beyond 20yrs	MC/NBL	P2004	5.32	10	125	665
10	d	MC/NBL	P2004	Project Felling	Forest Access Felling		0.11024	10	125	14
10	d1	MC/NBL	P2004	Project Felling	Woodland Removal	0	2.97	10	125	371
10	е	felled		Phase 1	SS	P2027	0.5745			0
10	е	SS	P58	Phase 2	SP	P2032	0.54097	20	650	352
10	е	felled		Project Felling	Woodland Removal	0	0.09133			0
10	e1	SS	P58	Phase 1	OG		1.2136	20	650	789
10	f	MC	P2000	Beyond 20yrs	MC	P2000	0.84055	16	250	210
10	g	LP	P58	Phase 1	NBL	P2027	0.41156	6	250	103
10	h	DF	P58	Phase 2	NBL	P2032	0.56	14	380	213
10	i	OG		Project Felling	Woodland Removal		3.29328			0
10	i	OG			OG		11.53			0
11	а	SP	P58	Beyond 20yrs	SP	P58	3.56516	10	300	1070
11	a1	SP	P58	Phase 3	SP	P2038	1.89937	10	300	570

Appendix 19-2 Loch Kemp Storage : Woodland Management Plan. (Plan with Proposed Development).

11	a2	SP	P58	Project Felling	SP	P2029	2.99	10	300	897
11	a3	SP	P1958	Phase 1	SS	P2026	0.76315	10	300	229
11	a4	SP	P1958	Long Term Retention		P58	0.86488	10	300	259
11	a4	SP	P1958	Project Felling	Forest Access Felling		0.34	10	300	102
11	a5	SP	P1958	Project Felling	OG		0.04657	10	300	14
11	b	LP	P1958	Project Felling	Forest to Bog Restoration		3.95392	6	250	988
11	b	LP	P1958	Project Felling	Forest Access Felling		0.01869	6	250	5
11	b	LP	P1958	Project Felling	Woodland Removal		0.003	6	250	1
11	b	LP	P1958	Project Felling	SS		1.70442	6	250	426
11	b1	LP	P1958	Phase 1	SS	P2026	2.69	6	250	673
11	b1	LP	P1958	Project Felling	Woodland Removal		0.02243	6	250	6
11	b1	LP	P1958	Project Felling	Forest Access Felling		0.13329	6	250	33
11	b1	LP	P1958	Project Felling	Woodland Removal	0	0.16811	6	250	42
11	b1	LP	P1958	Phase 1	SS	P2026	0.37587	6	250	94
11	b1	LP	P1958	Project Felling	Forest to Bog Restoration		0.718	6	250	180
11	b1	LP	P1958	Project Felling	Woodland Removal	0	0.00053	6	250	0
11	b2	LP	P1958	Project Felling	SS	P2029	0.39	6	250	98
11	С	SS	P2017	Project Felling	SS	P2029	5.27706	20		0
11	С	SS	P2017	Beyond 20yrs	SS	P2017	0.7	20		0
11	d	Omorika	P1958	Project Felling	Forest to Bog Restoration		0.18	0	150	27
11	d	Omorika	P1958	Project Felling	SS		0.61	12	280	171
11	d1	Omorika	P1958	Phase 1	SS	P2026	0.36	12	280	101
11	d1	Omorika	P1958	Project Felling	Woodland Removal		0.08989	12	280	25
11	е	OG		Project Felling	OG		0.38			0
11	е	OG		Project Felling	Forest to Bog Restoration		0.91	Ì	İ	0
11	е	OG		Project Felling	OG		0.53	Ì	İ	0
11	е	OG			OG		0.31	Ì		0

Loch Kemp Storage: Woodland Management Plan. (Plan with Proposed Development).

Volumes are estimates based on appropriate Yield Models from **Forestry Commission Booklet 48 Yield Models For Forest Management** with allowances applied to account for local factors such as stocking density and unproductive ground.

Annex 3: Scottish Forestry Ref no 030902580 (Afforestation EIA Consent Not Required)



Glèidhteachais a Gàidhealtachd's nan

Eilean

"Fearann – coilleach" Rathad Fodderty Inbhir Pheofharain Highland and Islands Conservancy

"Woodlands" Fodderty Way Dingwall

IV15 9XB

highland.cons@forestry.gov.scot Tel: 0300 067 6950

> Conservator Neach Dion Arainneachd John Risby

Cameron Ross Crosscut Forestry Ltd Chehalis The Coulags Evanton Rossshire IV16 9XY

Our Reference: 030902580

07 June 2023

Dear Mr Ross

I refer to your client's application Kemp Pumped Storage on Dell Estate, Whitebridge which contains proposals for, 64 hectares of afforestation.

We are required to provide a Screening Opinion under the above Regulations as to whether the work you are proposing is an EIA project and will require EIA consent.

I can confirm that the work you propose will **not** require EIA consent.

The proposal is to erect fencing to recruit natural regeneration of native broadleaves, although there may also be some native conifers interspersed among the broadleaves. The works are taking place as part of a requirement to include compensatory planting as part of a planning consent which will see the loss of native woodland.

The proposed areas will extend to up to 64ha which will more than cover the lost woodlands; this will be split across 8 separate deer fence enclosures. The proposal will see natural regeneration grow within the enclosures, a visit to the site has shown there to be regeneration present however currently heavily suppressed through browsing. If nat-regen does not meet the requirements of the stocking density required then additional supplementary planting will be included.

There are no sensitivities present on the site and there will be no negative impacts created, therefore no mitigation measures are required.

The sites selected for the compensatory planting are all suitable for the proposals.

Work in relation to this forestry project is expected to start within 5 years and be completed within 10 years from the date of this letter. If you have not started any of the work identified in this screening opinion within 5 years from the date of this letter but still wish to proceed with the project, then please



Scottish Forestry is the Scottish Government agency responsible for forestry policy, support and regulation

Is e Coilltearachd na h-Alba a' bhuidheann-ghnìomha aig Riaghaltas na h-Alba a tha an urra ri poileasaidh, taic agus riaghladh do choilltearachd BRAVE values and behaviours are the roots that underpin our work.





advise us. We will screen the proposal again to decide whether your project requires EIA consent under these Regulations.

Please note that if you intend to apply for grant funding for this work, you must wait until you get an approved contract from us before you start any of the work.

Yours sincerely

