RWE

Clachaig Glen Wind Farm

Environmental Impact Assessment Report

Volume 2a

Main Report

Chapter 17: Forestry

17 Forestry

17.1 Introduction

17.1.1 This chapter of the Environmental Impact Assessment Report (EIAR) sets out the forestry baseline relevant to the Proposed Development and the proposed approach to the integration of the development into the forest environment. The Proposed Development will consist of 12 turbines, ten of which will be located within areas of established forestry forming part of the area known as Carradale Forest. The content of this chapter has been developed in close collaboration with Forestry and Land Scotland (FLS) who manage the forest on behalf of the owner, Scottish Ministers.

17.1.2 The Development Site comprises forest managed primarily for timber production, much of which is nearing or at commercial maturity. Therefore, the forest is in a process of dynamic change as it transitions from plantation to a more diverse forest which meets the current requirements of the UK Forest Standard (UKFS). The forest will continue to have a timber production objective; however, will also be managed to deliver a range of ecosystem services as required by UKFS.

17.2 Legislation, Policy and Guidance

Woodland and Forestry

17.2.1 The forestry assessment has been undertaken with reference to, *inter alia*, the following legislation, policy and guidance, some of which are detailed in Paragraphs 17.2.6 to 17.2.20:

- The Forestry and Land Management (Scotland) Act 2018 (Scottish Government, 2018),
- Scotland's Forestry Strategy 2019 -2029 (Scottish Government, 2019),
- Scotland's Third Land Use Strategy 2021-2026 (Scottish Government, 2021b),
- The UK Forestry Standard: The Government's Approach to Sustainable Forestry (Forestry Commission, 2017),
- The UK Woodland Assurance Standard Fourth Edition (UKWAS, 2018),
- Scottish Government (2009) Control of Woodland Policy 2009 (CoWRP),
- Scottish Government's policy on control of woodland removal: implementation guidance, revised February 2019 (Forestry Commission Scotland, 2019),
- Management of Forestry Waste WST-G-027 version 2 (Scottish Environmental Protection Agency, 2013),
- Use of Trees Cleared to Facilitate Development on Afforested Land – Joint Position Statement and Guidance (Scottish Environmental Protection Agency, Scottish Natural Heritage, Forestry Commission Scotland 2014), and

- Relevant regional forest policy and strategy.

The UK Forest Standard

17.2.2 The UK Forest Standard (UKFS), (Forestry Commission, 2017), sets out the reference framework for sustainable forest management in the UK. The document defines standards and requirements, and provide a basis for regulation and monitoring.

17.2.3 Together with the national forestry policies and strategies of England, Scotland, Wales and Northern Ireland, the UKFS provides a framework for the delivery of international agreements on sustainable forest management, alongside policies on implementation.

17.2.4 The UKFS presumes against woodland removal, and that felling is usually subject to restocking, however the permanent removal of trees may be sanctioned in instances of overriding environmental considerations (e.g. restoration of important habitats), and such projects are individually assessed. The UKFS states that '*the decision to restock forests on deep peat should be carefully considered, taking into the balance of benefits for carbon and other ecosystem services…Decisions should be taken on a site by site basis'* (Forestry Commission, 2017).

17.2.5 In relation to climate change, the UKFS states that, '*Managing forests and woodlands in the UK sustainably means balancing their contribution to a widening range of objectives, including social, environmental and economic benefits*' (Forestry Commission, 2017).

The Forestry and Land Management (Scotland) Act 2018

17.2.6 The Forestry and Land Management (Scotland) Act 2018 came into force on 1 April 2019, repealing the Forestry Act 1967. The Act made new provisions regarding Scottish Ministers' functions in relation to forestry and land management. The Act further devolved forestry powers to Scottish Ministers leading to improved accountability, transparency and policy alignment with forestry fully accountable to Scottish Ministers and Scottish Parliament. The objective was to deliver simpler and more transparent governance arrangements, parity between state and non-state sector in terms of regulation, alignment of forestry policy with other relevant areas and aiding delivery of wider economic, social and environmental outcomes.

Scotland's Forestry Strategy 2019 -2029

17.2.7 Scotland's Forestry Strategy (SFS) sets out a 10 year framework for action over the period of 2019 to 2029 and a longer term vision across 50 years. The SFS seeks to action, expand, protect and enhance Scotland's forests and woodlands with the aim of delivering greater economic, social and environmental benefits to Scotland's people.

17.2.8 As stated in the SFS document, the Strategy objectives are to:

- *'increase the contribution of forests and woodlands to Scotland's sustainable and inclusive economic growth;*

- *improve the resilience of Scotland's forests and woodlands and increase their contribution to a healthy and high-quality environment; and*
- *increase the use of Scotland's forest and woodland resources to enable more people to improve their health, well-being and life chances'* (Scottish Government, 2019).

17.2.9 As stated within the Strategy document, the Strategy's key priorities are:

- '*ensuring forests and woodlands are sustainably managed;*
- *expanding the area of forests and woodlands, recognising wider land-use objectives;*
- *improving efficiency and productivity, and developing markets;*
- *increasing the adaptability and resilience of forests and woodlands;*
- *enhancing the environmental benefits provided by forests and woodlands; and*
- *engaging more people, communities and businesses in the creation, management and use of forests and woodlands' (*Scottish Government, 2019).

17.2.10 A key target outlined in the SFS is increase woodland cover in Scotland to 21 % from 18.5% at the time of SFS publication. The SFS seeks to reach this target by 2032.

17.2.11 An Implementation Plan 2020 to 2022 supports the delivery of the Strategy.

Scottish Land Use Strategy

17.2.12 Scotland's Third Land Use Strategy 2021-2026 (Scottish Government, 2021b) sets out a vision, objectives and policies to achieve sustainable land use. The strategy highlights the importance of land use policy in the delivery of Scotland's Net Zero Target by 2045.

17.2.13 In particular it identifies and provides significant additional funding for woodland expansion and peatland restoration as vital land uses in the sequestration of carbon, as well as delivering social, economic and biodiversity benefits.

17.2.14 In relation to restoring peatland, the Strategy outlines that peatland habitats are vitally important for storing and sequestering carbon and also for absorbing rainfall, highlighting that only peatland that is in a 'good environmental state' can provide these benefits. The Strategy emphasises the importance of restoring degraded peatlands and indicates this is an essential part of efforts to reduce emissions in relation to climate change. The Strategy also emphasises the importance of native broadleaved woodlands.

Control of Woodland Removal Policy

17.2.15 The Scottish Government's 'Control of Woodland Removal Policy' (CoWRP) 2019 seeks to provide direction for woodland removal within Scotland to be applied by the Scottish Government to relevant decision making.

17.2.16 For the purposes of the CoWRP, woodland removal is defined as '*the permanent removal of woodland for the purposes of conversion to another type of land use' (*Forestry Commission Scotland, 2019).

17.2.17 The CoWRP sets out a number of principal aims and guiding principles. Whilst the presumption of the CoWRP is in favour of woodland resource protection, the CoWRP includes support for climate change mitigation and adaption, and outlines principles where woodland removal is supported, including where significant additional public benefits would be achieved.

17.2.18 Criteria for woodland removal without a requirement for compensatory planting is outlined and includes the following aspects as stated within the CoWRP, where a significant contribution would be made:

- '*enhancing priority habitats and their connectivity;*
- *enhancing populations of priority species;*
- *enhancing nationally important landscapes, designated historic environments and geological Sites of Special Scientific Interest (SSSI);*
- *improving conservation of water or soil resources; or*
- *public safety'* (Forestry Commission Scotland, 2019).

17.2.19 The associated guidance for meeting the acceptability criteria include the restoration of peat bogs where the removal of woodland would prevent the significant net release of greenhouse gases and contribute to the functional connectivity of priority and associated habitats without adverse impacts on priority woodland habitats or connectivity.

17.2.20 Criteria for woodland removal with a requirement for compensatory planting is outlined and includes the following aspects, where a significant contribution would be made:

- *'helping Scotland mitigate and adapt to climate change (to include the facilitation of renewable energy projects);*
- *enhancing sustainable economic growth or rural/community development;*
- *supporting Scotland as a tourist destination;*
- *encouraging recreational activities and public enjoyment of the outdoor environment;*
- *reducing natural threats to forests or other land; or*
- *increasing the social, economic or environmental quality of Scotland's woodland cover'* (Forestry Commission Scotland, 2019).

Planning Policy

National Planning Framework

17.2.21 The consultation draft of Scotland's next National Planning Framework (NPF4) was published on 10 November 2021. The draft NPF4 seeks to protect and expand woodland, and states that "*where woodland is removed in association with development, developers will generally be expected to provide compensatory planting*" (Scottish Government, 2021a). Once finalised NPF4 will supersede NPF3 (Scottish Government, 2014a) which states that "*woodlands and forestry are an economic resource, as well as an environmental asset*." and supports woodland expansion.

Scottish Planning Policy

17.2.22 Scottish Planning Policy (SPP) will also be replaced by NPF4. However as, at the time of writing, NPF4 has not yet been brought into effect, a summary of the provisions of SPP relative to forestry is provided.

17.2.23 SPP Paragraph 218 includes reference to CoWRP and its presumption in favour of protecting woodland. There is a general expectation for developers to provide compensatory planting. SPP refers to the criteria for acceptability of woodland removal as outlined in the CoWRP and indicates that this should be considered in determining planning applications (Scottish Government, 2014b).

Argyll & Bute Council Local Development Plan

17.2.24 The Argyll and Bute Local Development Plan (LDP) was adopted in March 2015 (Argyll and Bute Council, 2015) and is the current LDP. The LDP recognises that forestry, alongside renewables and other areas, is one of the key main potential growth sectors supported by the LDP. Policy LDP 3 seeks to "*protect, conserve or where possible enhance… woodland*" and Policy LDP 10 supports development proposals which avoid the loss of trees and woodland.

17.2.25 A new Local Development Plan (LDP2) (Argyll and Bute, 2019) is currently being prepared following completion of a consultation exercise and is expected to be adopted in early 2023. It recognises the importance of forests and woodlands in Argyll, with approximately 30% of the land area under tree cover. Forestry is a priority sector in the local economy and for local employment through timber production, tourism and the production of added value products, such as wood chips.

17.2.26 It identifies that these areas also offer a range of non-market benefits, including climate change mitigation, biodiversity gains, landscape enhancement and recreational opportunities.

17.2.27 Given the importance of forestry to the area, the Council developed the Argyll and Bute Woodland and Forestry Strategy 2011 in partnership with Forestry Commission Scotland (now Forestry and Land Scotland). It provides a strategic level vision of how forestry and woodland can contribute to the economy, communities and the environment of Argyll and Bute and indicates potential areas for expansion.

17.2.28 The Strategy is now over 10 years old and whilst it is considered that the broad direction of this strategy remains valid, LDP2 is seen as an appropriate time to undertake a review given the publication of the most recent Scottish Forestry Strategy and other forest policy developments.

17.2.29 Argyll and Bute Council commits to undertake a review and update of the Argyll and Bute Woodland and Forestry Strategy, working in partnership with Scottish Forestry and engaging with other key stakeholders to bring forward Supplementary Guidance to LDP2. This will take into account monitoring information and new or changing issues, including the Scottish Forestry Strategy 2019 to 2029.

17.2.30 Policy 77 and 78 of LDP2 reaffirm a strong presumption against deforestation, with climate change considerations being a significant driver for that stance. CoWRP will continue to be required to be taken into account when taking decisions concerning the removal of woodland and trees.

17.3 Methodology

Carradale Land Management Plan

17.3.1 Land Management Plans (LMPs) are developed to describe an area of woodland, set out the long-term strategy, and confirm how the forest management and silvicultural objectives of the owner will be achieved within the provisions of the UKFS and sustainability criteria. It provides the landowner with permission to undertake felling and other forest management operations.

17.3.2 FLS (West Region) are currently developing a LMP for Carradale Forest of which the Development Site is part. Community consultation on the Carradale LMP commenced in 2018, with further external consultation carried out in 2020. The LMP consulted on from 2020 included the 14-turbine wind farm approved on the Development Site in 2019 (the 'Consented Development': see Chapter 1: Introduction of this EIAR for further detail) (FLS, 2020). The LMP objectives seek to support renewables energy development and to integrate this type of development with other land management objectives (FLS, 2020).

17.3.3 However, FLS have continued to develop the Carradale LMP and an updated version (FLS, *unpublished*) is expected to be submitted to the Perth and Argyll Conservancy for approval in 2022. This updated Carradale LMP will provide felling, thinning and restocking permissions to cover ten years from 2022, as well as a strategic direction to 2045. As the Applicant has worked closely with FLS to ensure the Proposed Development is considered as part of the future strategy for the Carradale Forest, the updated Carradale LMP now reflects the Proposed Development rather than the Consented Development.

17.3.4 The felling and restocking plans allow for the forest's transition from a broadly even aged plantation, to a more diverse forest which meets the requirements of CoWRP, the UKFS and other relevant regulations and guidelines. The forest will continue to have a mainly commercial objective; however, will also be managed to deliver a range of ecosystem services as required by UKFS. These will include a significant diversification of age class, an increased area of native broadleaves and of open ground within the forest area to include peatland restoration. The latter reflects the presence of areas of deep peat and the high priority now being given to the restoration of this habitat across a range of policy areas.

17.3.5 The objectives for the Carradale LMP (FLS, 2020) are to provide sustainable productive forest with a diverse range of species, taking into account future threats of climate change and disease, prioritise the removal of Larch to help reduce the spread of *Phythopthora ramorum*, identify and prioritise deep peat areas for peatland restoration, protect and enhance cultural assets and key wildlife species / protected habitats, whilst removing invasive species. It is assumed the objectives within the updated Carradale LMP (FLS, *unpublished*) will not change.

17.3.6 As previously indicated, the plans for a wind farm at the Development Site afforded an opportunity for the Applicant to collaborate with FLS to integrate the Proposed Development infrastructure footprint and keyhole requirements into the forest environment through the developing Carradale LMP. This approach has focussed on maximising the resource outputs of the forest area as a whole, with the primary aims of minimising forest removal through the implementation of key-holing and optimising turbine performance, whilst recognising the commercial and non-market objectives of FLS to be set out in the Carradale LMP.

17.3.7 This approach, under the auspices of the LMP, to prioritise the felling, where feasible, of complete coupes which contained the infrastructure elements of the Proposed Development prior to its construction ('Phase 1), was designed to facilitate the efficient development, construction and operation of the Proposed Development and limit the risk of endemic windblow in standing crops.

17.3.8 This chapter explores the change to the updated Carradale LMP (FLS, *unpublished*) which would be required as a result of the Proposed Development. It first establishes the study area and provides further detail on the baseline used for assessment (the updated Carradale LMP). It then explores the changes to the LMP required to accommodate the Proposed Development and examines the effects of these changes and whether any mitigation in the form of compensatory planting is required.

Forestry Study Area

17.3.9 Carradale Forest, which is covered by the Carradale LMP, extends to 6,704.3ha and is an amalgamation of four Forest Design Plan areas: High Clachaig (1,124.2ha), Deucheran (3,365.6ha), Grogport (1362.7ha) and Deer Hill (851.8ha). The Development Site lies within the High Clachaig area and extends to 1,262ha (including a non-forested area outside of High Clachaig). The Forest Study Area is confined to an area within the main Development Site and is shown on Figure 17.1 (EIAR Volume 2b).

17.4 Baseline Environment

17.4.1 The updated Carradale LMP (FLS, *unpublished*) forms the baseline conditions within the Forest Study Area. Whilst this is still to go through a formal consultation process and therefore is subject to change, it remains the best foundation to predict the future baseline of the forest environment at the time of writing. It is appreciated that if significant changes to the updated Carradale LMP were to occur, then the assumptions and assessment set out in this chapter may need to be revised.

17.4.2 Like the majority of High Clachaig, which was predominantly planted in the 1960s and 70s, much of the forest in the Forest Study Area is at or approaching commercial maturity. The current age class of the Forest Study Area is shown in Table 17-1 and Figure 17.2 (EIAR Volume 2b). The age structure is reflected in the silvicultural prescriptions in the LMP.

Table 17-1 Baseline Age Class Structure of Forest Study Area

Age (Years)	Area (ha)	Area of Existing Crop (%)
30	209	29.3
33	4	0.6
35	71	10.0
40	87	12.2
41	340	47.7
62	1	0.2

17.4.3 The current species composition of High Clachaig is shown in Table 17-2 and Figure 17.3 (EIAR Volume 2b).

Table 17-2 Baseline Species Composition for High Clachaig

Species	Short form	Area (ha)	Area (%)
Sitka Spruce	SS	618.54	55.02
Lodgepole Pine	LP	73.38	6.53
Norway Spruce	NS	8.48	0.75
Japanese Larch	JL	5.80	0.52
Common Alder Long Term Retention	CAR	0.87	0.08
Other Broadleaves	-	2.04	0.18
Open Ground	*OG*	*415.09*	*36.92*

17.4.4 The main species are productive conifers dominated by Sitka spruce which accounts for 55.02% of the Forest Study Area. A small proportion of the area includes other commercial conifer species (Lodgepole Pine, Norway Spruce and Japanese Larch). Broadleaves are also present in low numbers in sporadic locations (Common Alder and other broadleaves).

17.4.5 Open ground forms a high proportion of the Forest Study Area, notably a large area on the eastern boundary. The remaining open ground represents land adjacent to the Clachaig Water, other streams and rocky outcrops left unplanted at time of forest establishment.

17.4.6 The baseline felling plan, set out in the updated Carradale LMP (FLS, *unpublished*), is summarised in Table 17-3 and illustrated in Figure 17.4 (EIAR Volume 2b). The total area to be felled within the Development Site under the LMP is 69.36 hectares. Phase 1 felling areas are anticipated to be felled by FLS prior to the construction of the Proposed Development. Phase 2 will be felled to accommodate the Proposed Development's key infrastructure (such as access tracks, foundations, hardstanding areas, compounds and laydown areas) not already felled under Phase 1. Phase 3 to 6 and post 2045 felling areas are expected to be felled by FLS once the Proposed Development is constructed.

Table 17-3 Baseline Felling Plan Species Composition for High Clachaig

Species	Short form	Phase 1 Area (2022 – 2025) pre-construction (ha)	Phase 2 Area wind farm construction (ha)	Phase 3 Area post-construction (ha)	Phase 4 to 6 Area post-construction (ha)	Post 2045 Area post-construction (ha)
Sitka Spruce	SS	63.98	18.46	91.11	281.30	148.14
Lodgepole Pine	LP	0.01	1.28	2.29	4.62	64.60
Norway Spruce	NS	-	-	0.98	1.43	6.07
Japanese Larch	JL	2.56	-	1.51	1.21	-
Undefined	-	1.59		0.51	2.56	0.15
Total	**-**	**68.14**	**19.74**	**96.40**	**291.12**	**218.96**

17.4.7 The baseline restocking plan is also set out in the updated Carradale LMP and is illustrated in Figure 17.5 (EIAR Volume 2b). Details of composition are set out in Table 17-4. As the LMP restock plan incorporates the Proposed Development within the proposed restock, the associated open ground – wind farm area is included in the table below. It is noted this only accounts for 5.12% of the full restock area.

Table 17-4 Baseline Restock Plan Composition for High Clachaig

Species	Short form	Restock Area (ha)	Restock Area (%)
Sitka Spruce	SS	229.29	20.40
Mixed Conifer	MC	108.42	9.64
Native Broadleaf	NBL	69.02	6.14
Native Broadleaf Long Term Retention	NBL LTR	0.36	0.03
Open Ground / Birch	OG/BL	57.30	5.10
Open Ground	OG	546.00	48.57
Open Ground – Wind Farm	OG - WF	57.52	5.12
Peatland Restoration	PR	56.20	5.00

17.5 Embedded Mitigation

Design

17.5.1 Through the collaborative LMP process referenced in Section 17.3, mitigation for the Proposed Development is largely embedded in its design. This includes:

- Upgrading existing forest infrastructure (road and rides) where possible (within the main Development Site, this equates to 2.1km of access track),
- Planning new access tracks where they will be of use to FLS for future forestry operations, maintenance, and felling, and
- Ensuring the majority of the infrastructure elements for the Consented Development and the Proposed Development remain in a similar location. For example, the wind turbines for the Proposed Development are largely in the same location as those in the Consented Development as much as this has been possible, taking into account other design considerations, such as turbine proximity and productivity, landscape impacts and other environmental factors.

17.5.2 Linked to the above, only two of the proposed 12 turbines (T01 and T03) lie outwith the forest area on open ground. Of the remaining turbines, T07, T10, and T14 will be located predominately (with the exception of very small areas) in coupes which are scheduled in the Carradale LMP to be felled in the period 2022 to 2025 (Phase 1), likely before wind farm construction. Although it is currently 2022, the felling identified in the updated Carradale LMP has not yet begun and timeframes for this felling can change due to commercial drivers on FLS. The remaining turbines (T02, T04 (part), T05, T06, T08 (part), T11 and T13) will be located in areas scheduled by the LMP to be felled partly in Phase 2 ('wind farm construction') and partly post construction in Phase 3 (2026 to 2030) (see Figure 17.4: Baseline Felling Plan; EIAR Volume 2b). Felling for the remaining wind farm infrastructure will be carried out under Phase 2 of the LMP, immediately prior to the Proposed Development construction.

17.5.3 In addition, there are areas planned to be felled during Phase 3 (2026 to 2030) for peatland restoration purposes. Peatland restoration will be implemented by the Applicant following FLS completion of felling within the relevant area. The specific time of felling for peatland restoration outwith the Proposed Development construction boundary will be determined by FLS and will be carried out when FLS deem fit based on associated commercial drivers. The area for peatland restoration is shown in Figure 17.5: Baseline Restock Species Composition.

17.5.4 Furthermore, the Proposed Development was designed to minimise additional land take as much as possible. For example, the proposed battery storage facility has been placed within the temporary construction compound to avoid the need to remove any additional areas of forestry to accommodate this.

Construction Replanting

17.5.5 In order to accommodate the ground investigations required to be completed prior to construction commencing and to allow for the potential micro-siting of the turbines, a larger

area of forestry potentially requires to be felled around the wind turbines of the Proposed Development than will be needed for their operation. For this reason, a larger area than the operational footprint is required to be felled to accommodate construction activities.

17.5.6 It is the intention of the Applicant to keep any such additional felling to a minimum, with additional felling driven solely by technical constraints relating to the construction of a turbine and the need to micro-site it to overcome such a constraint. It is therefore intended that any additional areas initially cleared for construction purposes, where additional felling through micro-siting has occurred, will be replanted by up to approximately 35m width of plant; from a radius of 135m to a radius of 100m from the wind turbines. This is illustrated through Figure 17.5: Baseline Restock Species Composition; EIAR Volume 2b).

Peatland Restoration

17.5.7 In the design development phase for the Proposed Development, the Applicant further collaborated with FLS to integrate peatland restoration into the Development Site. Areas of open ground and peatland restoration have been established within the updated Carradale LMP (FLS, *unpublished*), see Figure 17.5: Baseline Restock Species Composition (EIAR Volume 2b). This peatland restoration will be funded by the Applicant as identified above.

17.5.8 The restocking proposals therefore also reflect the collaborative approach between the Applicant and FLS. The proposed location of native broadleaved planting and the retention of open ground, particularly focussed on peatland restoration to be partaken by both organisations, will contribute to both positive environmental forest management objectives and to the optimisation of wind farm performance over the lifetime of the project.

17.6 Assessment of Effects

17.6.1 As indicated in Section 17.5, the impact of the Proposed Development on the forest environment has been predominantly captured in the updated Carradale LMP. Figure 17.6: Proposed Felling Plan (EIAR Volume 2b) illustrates proposed minor changes to the LMP to account for early felling required for the Proposed Development. The key change is to bring forward small areas of felling that were due to be felled under Phase 3 (2026 to 2030) of the LMP, to Phase 2 ('wind farm construction'). This relates predominately to keyholing for T02, T04 (part), T05, T06, T08 (part), T11 and T13.

17.6.2 The approach to the development of wind farms in forest environments has evolved over recent years. The impact of forests on wind turbine performance has become better understood and it has been recognised that the large-scale clearance of trees in the project development areas can have negative impacts on forest management objectives and on the combined forest and wind farm carbon benefits. In addition, ecological constraints are taken into consideration when determining appropriate buffers from wind turbines to forest edge. Therefore, the non-planting restock area proposed for each wind turbine keyhole is a 100 m radius. The removal of forest to accommodate infrastructure will be minimised through the use of existing roads and rides and will include a 15 m buffer either side of each infrastructure feature / access road (see Figure 17.6: Proposed Felling Plan; EIAR Volume 2b). New access

roads created for the Proposed Development will be utilised by FLS following completion of construction in their ongoing management of the forest.

17.6.3 The Proposed Development felling plan is shown in Figure 17.6: Proposed Felling Plan; EIAR Volume 2b and summarised in Table 17-5. This table shows the change in felling by phase in comparison to the baseline felling plan in the updated Carradale LMP (FLS, *unpublished*).

Table 17-5 Proposed Development Felling Plan Species Composition for High Clachaig

Species	Short Form	Phase 1 Area (ha) (2022 – 2025) pre-construction	Phase 1 Change (ha)	Phase 2 Area (ha) wind farm construction	Phase 2 Change (ha)	Phase 3 Area (ha) post-construction	Phase 3 Change (ha)	Phase 4 to 6 Area (ha) post construction	Phase 4 to 6 Change (ha)	Post 2045 Area (ha) post construction	Post 2045 Change (ha)
Sitka Spruce	SS	63.98	0.00	41.98	+23.52	70.33	-20.78	280.14	-1.16	146.56	-1.58
Lodgepole Pine	LP	0.01	0.00	3.73	+2.45	0	-2.29	4.46	0.00	64.60	0.00
Norway Spruce	NS	-	-	-	-	0.98	-	1.43	0.00	6.07	0.00
Japanese Larch	JL	2.56	0.00	0.47	+0.47	1.03	-0.47	1.21	-0.16	-	-
Undefined	-	1.59	0.00	0.06	+0.06	0.48	-0.03	2.54	-0.03	0.15	0.00
Total	**-**	**68.14**	**0.00**	**46.24**	**+26.50**	**72.82**	**-23.58**	**289.78**	**-1.34**	**217.38**	**-1.58**

17.6.4 The proposed Phase 1 felling shown in Table 17-5 remains the same at a total of 68.14 hectares. The proposed Phase 2 felling increases by 26.50 hectares, predominately as a result of felling required for key holing as outlined above. Phase 3 felling therefore decreases by 23.58 hectares. There is also a minor decrease in felling across Phase 4 to 6 (1.34 hectares) and Post 2045 felling (1.58 hectares). The total felling area remains the same as the baseline felling plan at 694.36 hectares.

17.6.5 A breakdown of felling within the Proposed Development construction corridor is provided in Table 17-6. **Note that this data is based on component data provided by an FLS spreadsheet which is slightly more detailed than the sub-compartment baseline GIS data. There is therefore slight variation in data as this includes a very small area of broadleaf not provided within the sub-compartment data.**

17.6.6 The total felling required within the Proposed Development construction corridor is 65.75 hectares, with 19.78 hectares in Phase 1 and 45.97 hectares in Phase 2.

17.6.7 It is noted that an area of 4.42 hectares will be felled within the construction corridor to accommodate a 5 m access track. This will be utilised by the Applicant for wind farm access during operations and by FLS for the ongoing management of the forest.

17.6.8 In addition to the felling within the construction corridor, an additional area of 36.57 hectares of Sitka Spruce will be felled during Phase 3 by FLS to accommodate peatland restoration activities funded by the Applicant.

Table 17-6 Proposed Development Felling Plan Species Composition for High Clachaig within the Construction Corridor

Species	Short form	Phase 1 pre-construction (ha)	Phase 2 Wind Farm Construction (ha)
Sitka Spruce	SS	17.99	40.61
Lodgepole Pine	LP	0.01	3.35
Other Broadleaf	XB	-	0.01
Japanese Larch	JL	1.30	0.29
Undefined	-	0.48	1.71
Total		**19.78**	**45.97**

17.6.9 As the restock plan has been designed in collaboration with FLS to accommodate the Proposed Development (see Figure 17.5: Baseline Restock Species Composition; EIAR Volume 2b) there are no alterations to the updated Carradale LMP (FLS, *unpublished*) restock plan proposed.

17.6.10 A summary of restock within the construction corridor is provided in Table 17-7. The Proposed Development operational footprint makes up 67.16 % of the construction corridor area. The remaining areas not required for the Proposed Development during operation will be replanted or utilised for peatland restoration, where feasible.

Table 17-7 Restock within Construction Corridor

Species	Short form	Restock Area (ha)	Restock Area (%)
Sitka Spruce	SS	1.36	1.59%
Mixed Conifer	MC	5.43	6.34%
Native Broadleaf	NBL	4.39	5.13%
Native Broadleaf Long Term Retention	NBL LTR	0.00	0.00%
Open Ground / Birch	OG/BL	2.84	3.31%
Open Ground	OG	6.15	7.19%
Open Ground – Wind Farm	OG - WF	57.52	67.16%
Peatland Restoration	PR	7.95	9.28%

17.7 Mitigation

Timber Harvesting

17.7.1 The large majority of timber harvesting from the Forest Study Area will be carried out under the auspices of the updated Carradale LMP (FLS, *unpublished*) by FLS as part of normal harvesting activity.

17.7.2 The small area of woodland (26.50 ha, see paragraph 17.6.4), to be cleared in advance for the Proposed Development for key-hole requirements if consented, will produce a limited volume of merchantable timber. Any merchantable timber will be dispatched via the existing forest road network to the A83 and thereafter to appropriate markets.

17.7.3 Any harvesting and timber extraction will be carried out using conventional techniques and equipment. Brash will be used to provide tracks for machine operation.

17.7.4 Stemwood down to 7cm diameter will be extracted for sale. Timber production will be maximised by considering all available markets including wood fuel.

Requirement for Compensatory Planting

17.7.5 It is recognised that, in accordance with the CoWRP, there is a requirement to compensate for the removal of trees associated with the Proposed Development.

17.7.6 Table 17-8 outlines the total felling for the Proposed Development within the construction corridor and the total felling for the area proposed by the Applicant for peatland restoration outwith the construction corridor.

Table 17-8: Total Felling for Proposed Development

Description	Ha
Total area felled for Proposed Development within construction corridor	65.75
Total area felled outwith construction corridor within proposed peatland area	36.57
Total felled	**102.32**

17.7.7 Table 17-9 outlines restock for the Proposed Development within the construction corridor. In addition, the table also shows:

- the area within the construction corridor that will directly accommodate access tracks that will be used by FLS on an ongoing basis,
- the area within the construction corridor that is proposed as open ground within the Restock Plan, and
- the area of peatland restoration proposed by the Applicant.

17.7.8 A comparison between Table 17-8 and Table 17-9 show the total proposed restock is just 18.59 ha less than the total felled.

Table 17-9 Total Restock / Peatland Restoration Proposed for Proposed Development

Description	Ha
Total area restocked within construction corridor	14.02
Total area of peatland restoration within construction corridor	7.95
Total track area for FLS ongoing use	4.42
Total area of Open Ground – Wind Farm that is proposed as Open Ground within Restock Plan	9.09
Total Restock / Peatland within Construction Corridor	**35.48**
Total Area of peatland restoration outwith construction corridor	48.25
Total Proposed	**83.73**

17.7.9 The approach to the development of the updated Carradale LMP (FLS, *unpublished*) was a collaborative process with FLS and the Applicant, which as part of the restock proposals (shown through Figure 17.5: Baseline Restock Species Composition EIAR Volume 2b), contribute to the expansion of the native woodland component and the restoration of peatland within the Forest Study Area.

17.7.10 The proposed restock plan incorporates restock of trees within the construction corridor where open ground is not required for the wind farm operation. This includes an area within the proposed turbine key holes. In addition to the proposed restock within the construction corridor, the Applicant commits to the total implementation of a significant area (56.2 ha) of

peatland restoration, with 48.25 ha of the 56.2 ha proposed outwith the Proposed Development construction corridor.

17.7.11 As outlined above, the net loss of woodland when compared to the baseline is very minimal. The Applicant is proposing a significant area of peatland restoration. Taking into account the forestry at this location is Sitka Spruce located on peat of depths up to 5 m (+), the provision of peatland restoration at the location proposed is considered far more desirable ecologically than the restock of forestry.

17.7.12 As outlined within the Scottish Land Use Strategy, peatland habitats in a 'good environmental state' are vitally important for storing and sequestering carbon, and restoration of these habitats are an essential part of efforts to reduce emissions in relation to climate change (Scottish Government, 2021b).

17.7.13 The UKFS states that '*the decision to restock forests on deep peat should be carefully considered, taking into the balance of benefits for carbon and other ecosystem services…Decisions should be taken on a site by site basis*' (Forestry Commission, 2017). UKFS also considers that the permanent removal of trees may be sanctioned in instances of overriding environmental considerations (for example, the restoration of important habitats).

17.7.14 The CoWRP also recognises the importance of the restoration of peat bogs, and includes the improvement of soil resources within the acceptability criteria for woodland removal where a significant contribution would be made, also recognising the associated benefits of peatland restoration in reducing emissions in relation to climate change (Forestry Commission Scotland, 2019).

17.7.15 Taking the above into account alongside the location proposed for peatland restoration, the benefits of peatland restoration are considered to far outweigh the value of forestry restock, and as such a ratio of 2:1 in terms of replacement hectares is deemed appropriate. Taking this ratio into account, the total area proposed for restock / peatland restoration is considered to exceed the total area felled for the Proposed Development.

17.7.16 Therefore, when combined with the restock proposed, alongside the expansion of the native woodland component of the wider forest area, and the restoration of significant areas of peatland, it is considered that no additional compensatory planting will be required.

17.7.17 The Proposed Development is deemed to comply with the requirements of CoWRP in terms of the provision of replanting of woodland, where applicable, within the construction corridor, alongside the provision of a significant contribution to the improvement of soil resources by way of peatland restoration and associated climate change benefits. The approach taken demonstrates the delivery of optimal forest, environmental and carbon outcomes.

17.7.18 It is recognised that the Carradale LMP (FLS, *unpublished*) will shortly undergo a period of consultation as part of the approval process. Prior to the commencement of development, the Applicant therefore commits to review the forestry assessment against any subsequent changes to the LMP following the consultation process, and any amendment to the felling and / or restock requirements of the Proposed Development.

17.8 Summary of Effects

17.8.1 This chapter reflects close and constructive dialogue between the Applicant and FLS over an extended period to ensure that the effects on forestry from the Proposed Development are minimal and result in beneficial effects, such as with the restoration of peatland.

17.8.2 This holistic approach ensures that the objectives of the LMP and wider forest management obligations are delivered via a 'whole site' approach to the delivery of optimal forest, environmental and carbon outcomes. It is considered that this approach results in a minimal requirement for compensatory planting.

17.8.3 It is considered that the Proposed Development complies with the requirements of CoWRP.

17.9 References

- Argyll and Bute Council (2011) Argyll and Bute Council Woodland and Forestry Strategy, March 2011.
- Argyll and Bute Council (2015) Argyll and Bute Local Development Plan.
- Argyll and Bute Council (2019) Argyll and Bute Local Development Plan 2 Written Statement.
- Forestry Commission (2017) The UK Forestry Standard: The Government's Approach to Sustainable Forestry.
- Forestry Commission Scotland (2019) Scottish Government's policy on control of woodland removal: implementation guidance, revised February 2019.
- Forestry and Land Scotland (2020) Carradale Land Management Plan.
- Forestry and Land Scotland (*unpublished*) *Updated Carradale Land Management Plan* (title yet to be determined).
- Scottish Environmental Protection Agency (2013) Management of Forestry Waste WST-G-027 version 2.
- Scottish Environmental Protection Agency, Scottish Natural Heritage, Forestry Commission Scotland (2014) Use of Trees Cleared to Facilitate Development on Afforested Land – Joint Position Statement and Guidance.
- Scottish Government (2009) Control of Woodland Policy.
- Scottish Government (2014a) Scotland's Third National Planning Framework.
- Scottish Government (2014b) Scottish Planning Policy.
- Scottish Government (2018) The Forestry and Land Management (Scotland) Act 2018.
- Scottish Government (2019) Scotland's Forestry Strategy 2019 -2029.
- Scottish Government (2021a) Scotland's Fourth National Planning Framework Consultation Draft.
- Scottish Government (2021b) Scotland's Third Land Use Strategy 2021-2026
- UKWAS (2018) The UK Woodland Assurance Standard Fourth Edition.

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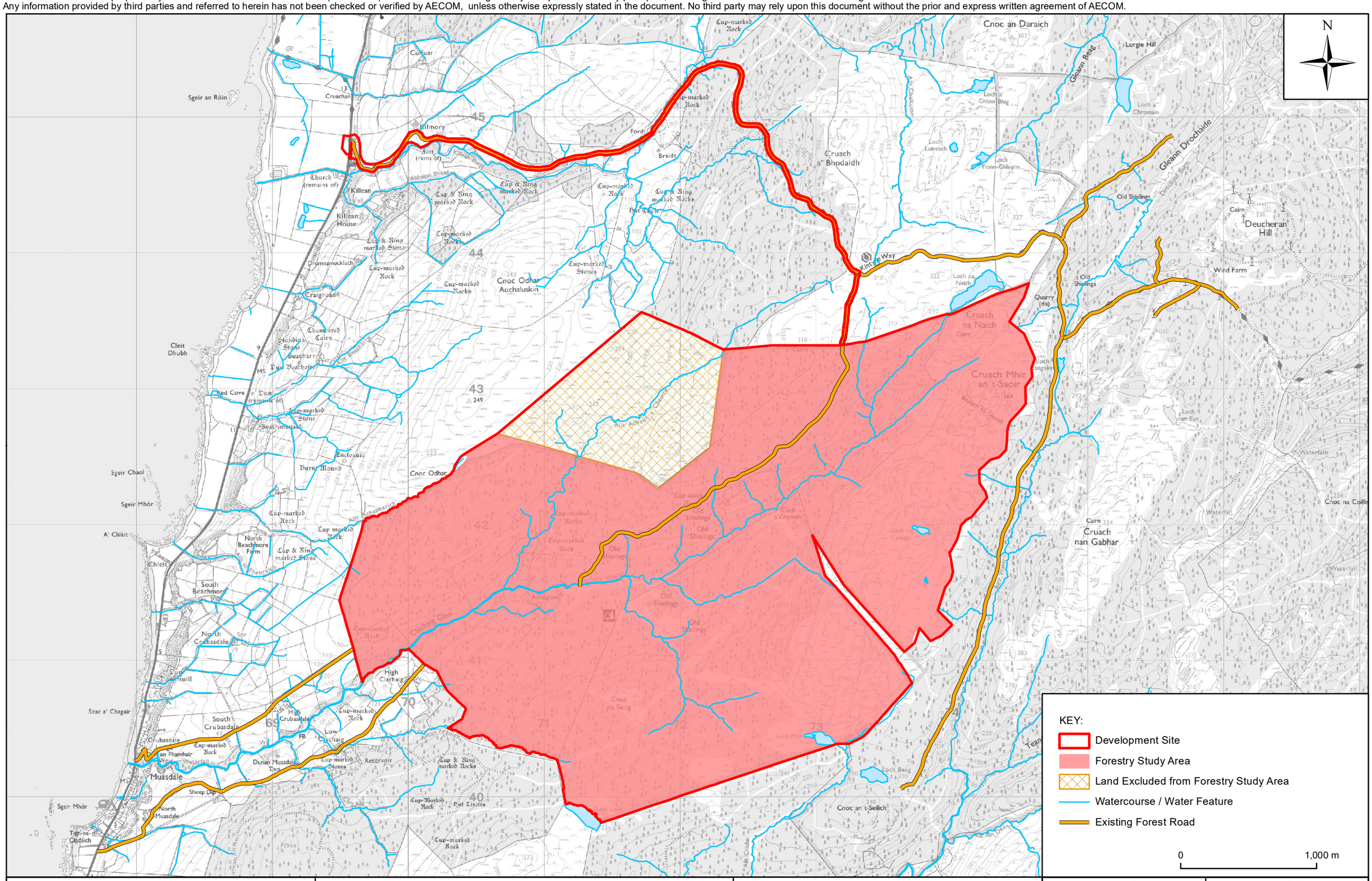
EIAR Figures

Figures: 17.1; 17.2; 17.3



KEY:

- Development Site
- Forestry Study Area
- Land Excluded from Forestry Study Area
- Watercourse / Water Feature
- Existing Forest Road

0 1,000 m

Client: RWE	Title: FIGURE 17.1 FORESTRY STUDY AREA	Drawn: LC	Checked: SW
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		Date: JANUARY 2022	Scale at A3: 1:25,000
		Drawing Number: CG_220105_EIA17.1_v2	A3

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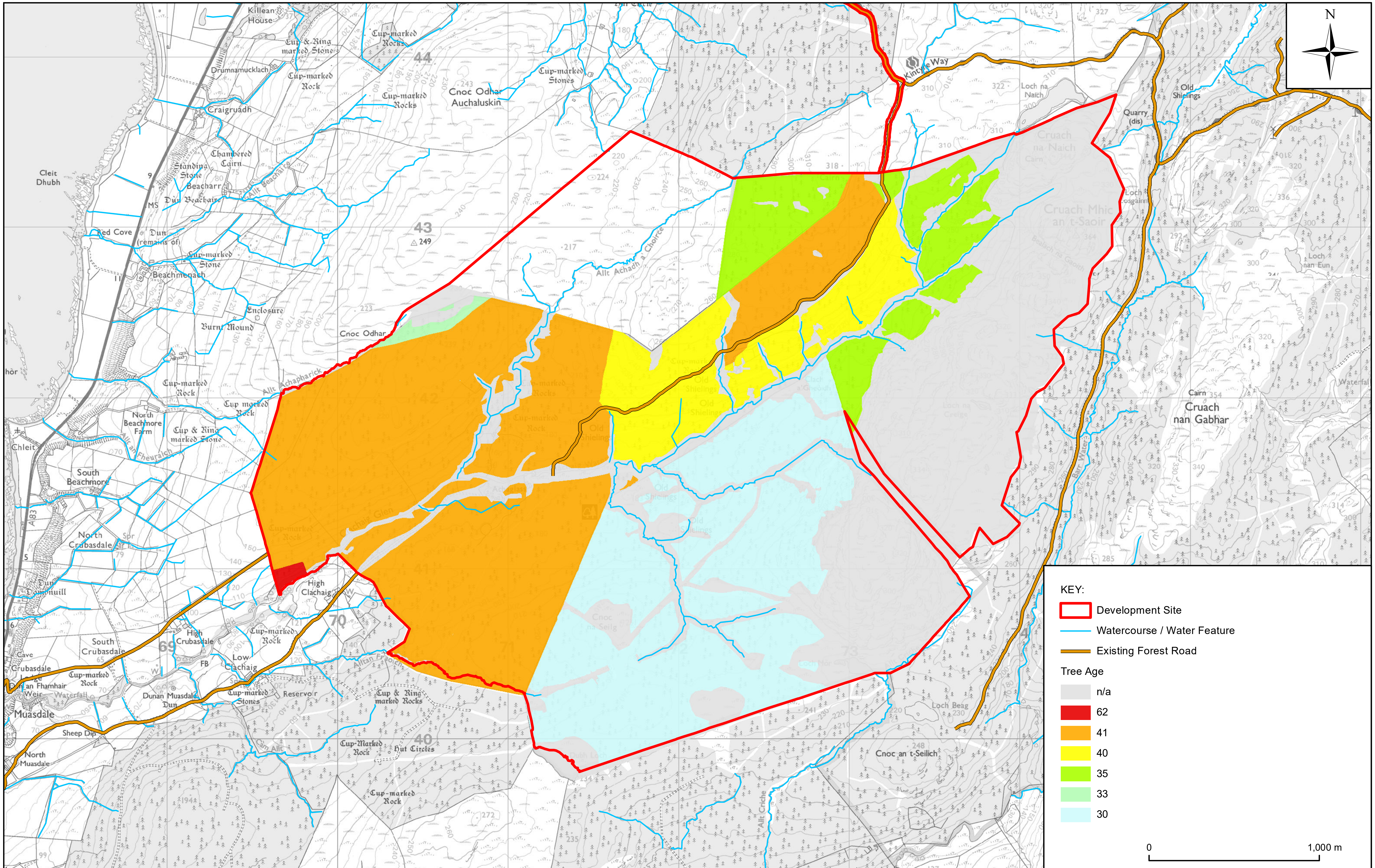
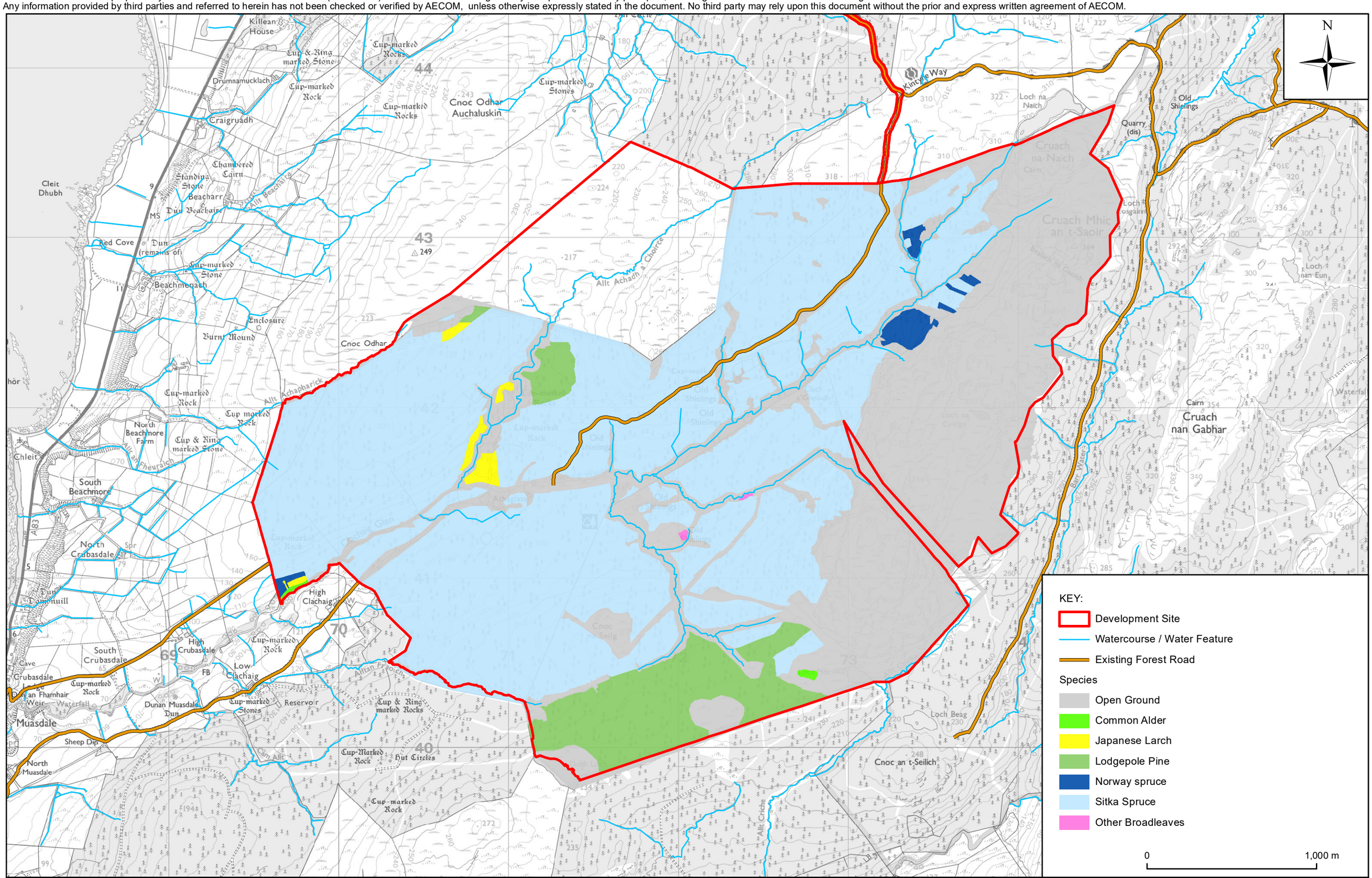


Client: RWE	Title: FIGURE 17.2 BASELINE AGE CLASS STRUCTURE	AECOM	Drawn: LC	Checked: SW
Project: CLACHAIG GLEN WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT		One Trinity Gardens, Quayside, Newcastle, NE1 2HF — Tel +44 (0) 191 224 6500, Fax +44 (0) 191 224 6599, www.aecom.com	Verified: SY	Approved: FT
			Date: JANUARY 2022	Scale at A3: 1:20,000
			Drawing Number: CG_220105_EIA17.2_v2	A3



Client: RWE	Title: FIGURE 17.3 BASELINE SPECIES COMPOSITION	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC / Checked: SW
Project: CLACHAIG GLEN WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			Verified: SY / Approved: FT
			Date: JANUARY 2022 / Scale at A3: 1:20,000
			Drawing Number: CG_220105_EIA17.3_v2 / A3

RWE

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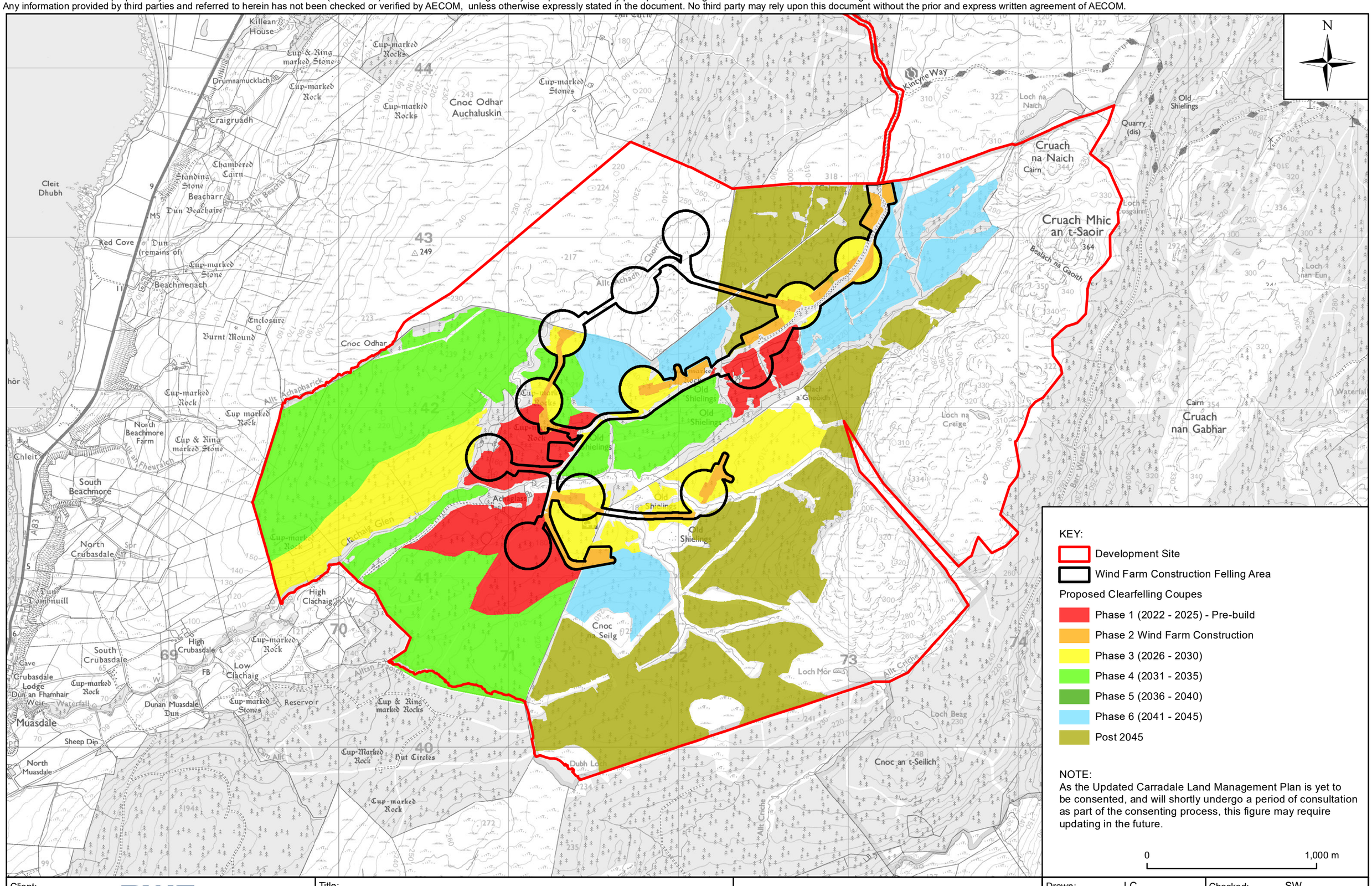
EIAR Figures

Figures: 17.4; 17.5; 17.6



Client: RWE	Title: FIGURE 17.4 BASELINE FELLING PLAN	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC / Checked: SW
Project: CLACHAIG GLEN WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT			Verified: SY / Approved: FT
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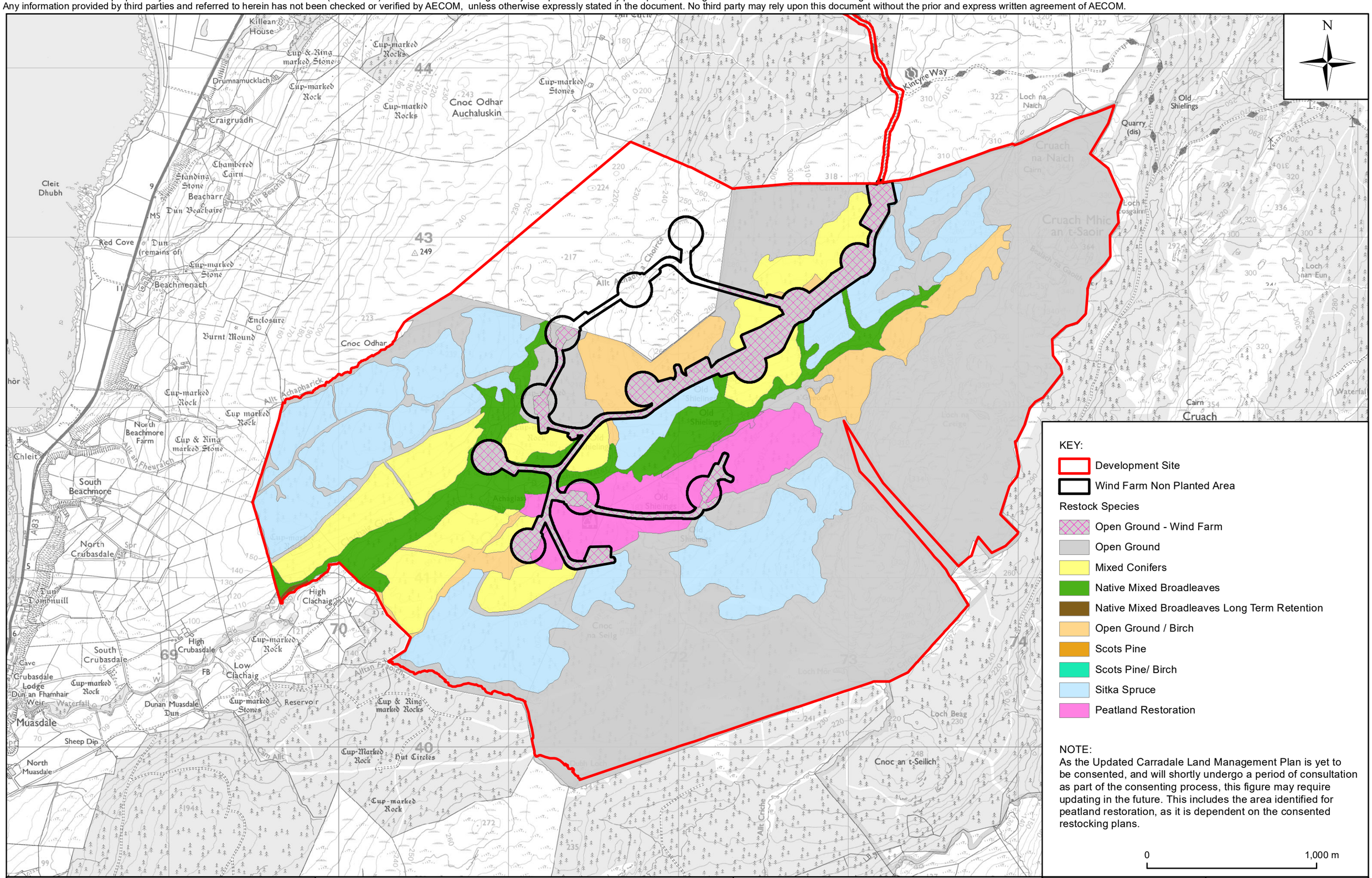

Client: RWE	Title: FIGURE 17.5 BASELINE RESTOCK SPECIES COMPOSITION	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC Checked: SW
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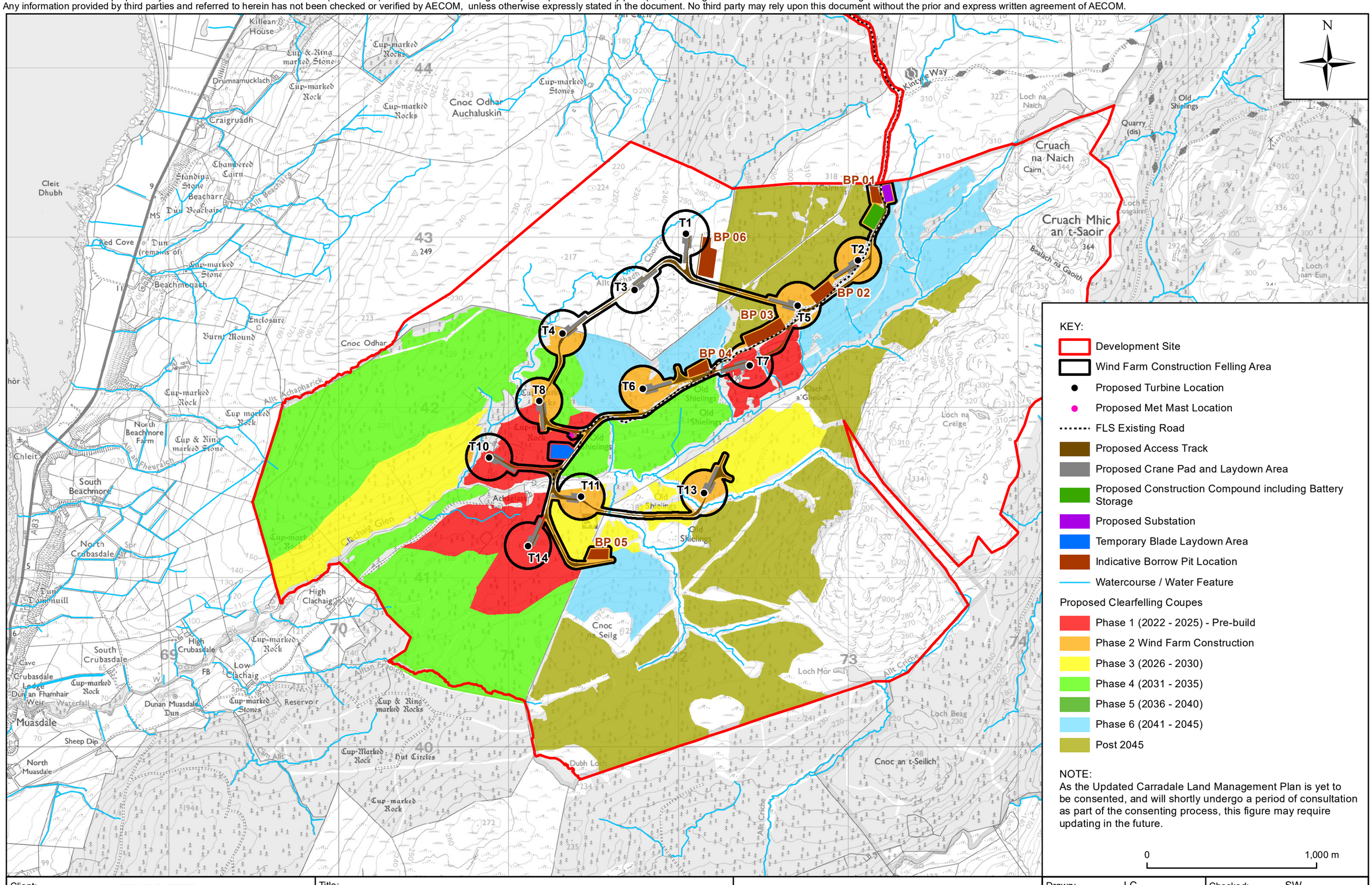

Client: RWE	Title: FIGURE 17.6 PROPOSED FELLING PLAN	AECOM One Trinity Gardens Quayside Newcastle, NE1 2HF Tel +44 (0) 191 224 6500 Fax +44 (0) 191 224 6599 www.aecom.com	Drawn: LC / Checked: SW
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			Drawing Number: CG_220201_EIA17.6_v5 / A3

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