

# Loch Kemp Storage - Scottish Government Energy Consents Unit Application Number: ECU00003398

## Review of Habitats Regulations Assessment (HRA) Matters

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### 1. INTRODUCTION

- 1.1 Ecological Planning & Research Ltd (EPR) were commissioned by the British Lichen Society (BLS) to review proposals by Statera Energy Limited for a 600MW pumped storage scheme referred to as 'Loch Kemp Storage', in relation to the implications that arise from them under the Habitats Regulations (discussed further below). The scheme was submitted to the Scottish Government Energy Consents Unit on 20 November 2023 under application number ECU00003398.
- 1.2 The proposals are for the creation of a water storage facility through the expansion of Loch Kemp, located on the high ground on the southern side of Loch Ness, Scotland, together with the construction of a new access road from Loch Kemp to Loch Ness that is proposed to pass through Ness Woods Special Area of Conservation (SAC), a 'European Site'.
- 1.3 The Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "1994 Habitats Regulations") apply to European Sites. Where reserved matters (within the meaning of Schedule 5 of the Scotland Act 1998) are concerned, certain provisions of the Conservation of Habitats and Species Regulations 2017 (the "2017 Regulations") apply instead. Both sets of regulations require an equivalent process in relation to the assessment of plans and projects with the potential to affect European sites. For convenience, in this Review both sets of Regulations are therefore collectively referred to as the 'Habitats Regulations'.
- 1.4 The Habitats Regulations originally transposed European Directive 92/43/EEC *on the conservation of natural habitats and of wild fauna and flora* (the 'Habitats Directive'), and at the time of writing must still be interpreted in light of the requirements of the Habitats Directive and relevant case law from the Court of Justice of the European Union (CJEU), the UK's exit from the European Union notwithstanding.
- 1.5 The BLS is seriously concerned about the impact of the proposals upon an Internationally important and likely irreplaceable assemblage of lichens that is present within the Ness Woods SAC and will be subject to significant negative effects caused by the proposal.
- 1.6 Additionally, the BLS has misgivings about the way in which the proposals appear to have failed to investigate readily apparent opportunities for avoiding or reducing the damage to the lichen assemblage that will be caused by the scheme, or otherwise have failed to provide any justifiable explanation as to why such opportunities have not been taken forward. Finally, the BLS does not consider that the proposals for compensation are adequate in relation to the damage that will be caused to the lichen assemblage.

- 1.7 As a result of the above, EPR has been asked by BLS to review the ecological information submitted in conjunction with the planning application pertaining to the potential effects of the proposals upon the lichen assemblage, to provide advice on whether these concerns are justified, and if so the implications that arise in relation to the application of the Habitats Regulations to the planning application.

## 2. THE IMPORTANCE OF THE LICHEN ASSEMBLAGE

### Relationship to the SAC Qualifying Features

- 2.1 Ness Woods SAC is approximately 850ha in extent and encompasses the areas of three separate Sites of Special Scientific Interest (SSSIs). Of particular relevance to this review are the two Habitats Directive Annex 1 Habitats that form the qualifying features of the SAC:
- 9180 \**Tilio-Acerion* forests of slopes, screes and ravines (an Annex 1 Priority Habitat) which is the Annex I habitat that is the primary reason for selection of the Ness Woods SAC site; and
  - 91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles' which is the Annex I habitat present as a qualifying feature, but not a primary reason for selection of the Ness Woods SAC.
- 2.2 As is conceded at paragraph 1.3.1 of the *Loch Kemp Storage: Shadow Habitats Regulations Appraisal (HRA) Report (Stage 1 and 2)* (SLR, November 2023), the lichen assemblage that will be impacted by the proposals is comprised of species that form typical/characteristic species of the '9180: *Tilio-Acerion* forests of slopes, screes and ravines' Habitats Directive Annex 1 habitat type that is both the primary reason for the designation of this SAC and also a **'Priority' Habitat under the Habitats Directive**.

### The Ecological Importance of the Lichen Assemblage in its own Right

- 2.3 Notwithstanding the fact that the lichen assemblage forms an integral component characteristic of the Annex 1 Priority Habitat for which the SAC was designated, it is also of international nature conservation importance in its own right.
- 2.4 The lichen survey recorded over 80 taxa (lichens and associated parasites) of conservation interest; substantial populations of species of conservation importance; and lichen communities of high nature conservation interest.
- 2.5 The Ness Woods SAC is in an area where three main woodland types meet: boreal woodland; southern oceanic woodland; and lowland rainforest. Certain lichen species are used as indicator species to assess the quality of these woodland types based on published criteria (Sanderson et al., 2018). The boreal and southern oceanic woodlands had remarkably high numbers of indicator species marking these two woodlands as being of exceptional quality for their lichens. The habitats of these woodlands that are of prime importance are, respectively, the old birchwoods and the hazel stands.
- 2.6 The lowland rainforest is here on the edge of its range but still had enough indicator species for it to be a high-quality example of this woodland type.

- 2.7 A terrestrial lichen survey within a selected area (primarily the proposed development parcel) of the Ness Woods SAC was commissioned by the Applicant. The survey was commissioned for 2022. The survey was conducted by consultant lichenologist Andy Acton and carried out in April/May 2022. A full report of the lichen survey is given in the ES Volume 4 Appendix 10.3 and provides a description of the importance of the lichens in the survey area. This states:

*“The birchwoods and old growth hazels (and associated trees/shrubs of other species) both support **old growth lichen communities of SSSI quality and are of national significance. The old-growth hazel habitat is of international significance for lichens.** The site supports a large number of lichen taxa that are rare/threatened in a UK and/or European context. Most of these taxa are strongly associated with veteran hazel but several were recorded on other veteran trees/shrub species including birch, ash, aspen and rowan.”*

[Extract from Executive Summary of the Lichen Survey Report – our emphasis]

- 2.8 A summary of the importance of the lichens in the area of the SAC surveyed is given in the Shadow HRA (SLR, November 2023) from section 10.6.21 to 10.6.28. The HRA concluded their summary of the importance of the lichens in the survey area as:

*“Overall, the birchwoods and old growth hazels (and associated trees/shrubs of other species) support **old growth lichen communities meeting SSSI quality, and are evaluated as of national value. The lichen assemblage specifically on the old-growth hazel habitat is assessed as being of international value.**”*

[Paragraph 10.6.28 HRA – Our emphasis]

- 2.9 Further important context on the ecological importance of the lichen assemblage is summarised below using extracts taken from paragraphs 10.6.23 to 10.6.26 of the Shadow HRA (SLR, November 2023):

***“The Site supports a large number of lichen taxa that are rare/threatened in a UK and/or European context.** Most of these taxa are strongly associated with veteran hazel but several were recorded on other veteran trees/shrub species including birch, rowan, ash, aspen, oak and alder.*

*The old growth Lobarion pulmonariae (Lobarion) community of more base-rich bark was present and locally very well-developed on veteran hazel, ash, rowan and an ancient stand of layering cherry. The Lobarion community included hyperoceanic elements more typical of the lichen-rich woods in western Scotland. The high quality of the Lobarion is reflected in the presence of fertile specimens of several species that are often not fertile in suboptimal habitats and several lichenicolous fungi.*

*The Graphidion scriptae (Graphidion) community was recorded on smooth bark. The acid bark community was very well developed on old/veteran birch with many old growth species.*

*The woodland habitats for lichens have been assessed using the Boreal Woodland Index (BWI), the Sub-oceanic Woodland Index (SWI) and the ‘Pinhead’ Index of Sanderson et al. (2018). **The Site easily exceeds the threshold for SSSI quality based on its BWI score, with 31 BWI species recorded, exceeding the 15 BWI species threshold.** Three*

Upland Rainforest Index species were also recorded, indicating the importance of the boreal woods. **Thirty-two SWI species were recorded, which exceeds the SSSI quality threshold of 20 species.**

The Site falls just below the 10 species SSSI threshold for the 'Pinhead' Index, with nine species recorded. To put the Site into context of more western woods in the Scottish temperate rainforest zone, the Site supports 23 species on the Lowland Rainforest Index (the threshold for SSSI status is 25).

**The Site therefore meets SSSI quality for lichens of birchwoods and hazel stands, based on multiple criteria. The Site is particularly important because it supports old woodland species that are scarce and threatened in this region of Scotland especially oceanic/hyperoceanic species at the edge of their range, and the best hazel stands support viable populations of a number of them, including *Pachyphiale fagicola*, *Arthonia sampaiana*, *Nevesia sampaiana* and *Parmeliella testacea*; the outstanding populations of the latter two species also meet the requirements to qualify the Site for SSSI status.**

[Our emphasis]

#### *Individual Species of Conservation Importance*

- 2.10 Of the 80 or more lichen species of conservation interest recorded in the survey area. Not all are in the impact zones of the proposed development, but they do tell of the exceptional conservation interest of the old woodlands in this area of the Ness Woods SAC.
- 2.11 Two of these lichen species, **which do have part of their population in the impact zones**, are of particular importance and are described below:
- 2.12 The first is *Nevesia sampaiana* where **its population in the survey area is the second largest in Britain**. This species is scarce in Europe outside of Britain and it is considered to be a species for which Britain has an International Responsibility (Sanderson et al., 2018<sup>1</sup>) for conserving. The size of the population in the survey area in Ness Woods SAC is of national and international significance. Even so, *Nevesia sampaiana* is in decline in Britain and has been put on the Red List for lichens as Near Threatened.
- 2.13 The population of the *Nevesia sampaiana* is so extensive and in such good condition that it supports **the largest population (in the world as far as known)** of its obligate parasite (i.e. **a parasite that can only grow on *Nevesia sampaiana***).
- 2.14 The second species is *Parmeliella testacea*, also in the 'International Responsibility' category, which has a population in the survey area described as 'outstanding' in the Lichen Survey report and is of national and international importance. Like *N. sampaiana*, *P. testacea* is declining in Britain and also listed as Near Threatened.

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<sup>1</sup> Sanderson, N. A., Wilkins, T.C., Bosanquet, S.D.S and Genney, D.R. 2018. Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 13 Lichens and associated microfungi. Joint Nature Conservation Committee, Peterborough

- 2.15 Six other species on the Red List for lichens are in or near the Proposed Development. In addition to these Red Listed species, many other notable species are likely to be impacted by the Proposed Development including Nationally Rare, Nationally Scarce, Biodiversity action Plan (BAP) and Scottish Biodiversity List species.

### *Lichen Communities*

- 2.16 The lichens form various communities in the various types of woodland and some of these communities are of high nature conservation interest both for the intrinsic value of the community as well as the species that make up the community. Lichen communities of particular interest recorded in the survey area are:

- Old-growth, base-rich bark with the Lungwort community (the '*Lobarion*');
- The smooth bark community (the '*Graphidion*');
- The acid bark community of old/veteran birches; and
- The Pinhead community.

- 2.17 “The old growth '*Lobarion*' community of more base rich bark was present and locally very well-developed on veteran hazel, ash, rowan and an ancient stand of layering cherry. The high quality of the *Lobarion* is reflected in the presence of fertile specimens of several species that are often not fertile in suboptimal habitats and several lichenicolous fungi.” [Extracted from the Lichen Survey report].

- 2.18 A diverse smooth bark '*Graphidion*' community was recorded that included old growth species, species typical of hyperoceanic conditions. The smooth bark community here is a species-rich example.

- 2.19 The acid bark community was very well developed on old/veteran birch and is a good, diverse example of this community. Particularly notable were old growth species, some of them fertile, which is not common.

- 2.20 The pinhead community is one of dry, rough bark of old birch and which is sheltered from direct rainfall. The pinhead community is well developed here and includes a diverse species assemblage.

- 2.21 The presence of this number of lichen communities and their quality is an indication of the rich diversity of the woodland in this part of the Ness Woods SAC.

### *Old-growth Hazel*

- 2.22 Many lichens species of conservation interest are associated with the old growth hazels including the internationally important populations of *Nevesia sampaiana*, its parasite *Arthonia sampaianae*, and *Parmeliella testacea*. The hazels are also the key species for the important *Lobarion* and *Graphidion* communities. The old growth stands here are of exceptional quality and are a critically important and fundamental part of the 9180 Tilio-Acerion forests of slopes, screes and ravines habitat. They have been assessed as being of international importance.

#### *Old Birch*

- 2.23 The old birch woods have species of conservation interest and are the key species for the acid bark and pinhead communities, both of which are well developed, diverse examples of each community. The old birch here was assessed as being of national importance for the lichen species and communities that it supports.

### **3. COMMENTS ON THE APPROPRIATE ASSESSMENT AND THE ASSESSMENT OF THE ADVERSE IMPACTS OF THE SCHEME UPON SAC SITE INTEGRITY**

#### **The Reported Scale of the Adverse Effect on Site Integrity**

- 3.1 The *Shadow Habitats Regulations Appraisal (HRA) Report (Stage 1 and 2)* (SLR, November 2023) concludes that the proposal would result in a **permanent** 'adverse effect on the integrity' of the Ness Woods SAC even after the application of impact avoidance and mitigation measures.
- 3.2 Whilst we concur with this overall conclusion, our view is that the Shadow HRA Report (SLR, 2023), which is also reflected in Environmental Statement (ES) Chapter 10 (Terrestrial Ecology) may significantly understate the scale of the adverse effect on SAC site integrity.
- 3.3 We have reached this conclusion because the Shadow HRA bases its assessment on the percentage (%) of the total of each of the two Habitats Directive Annex 1 qualifying habitat types that will be caused to be lost by the proposal. It does not, however, take into account the relative distribution or split in quality of the characteristic features, species and 'constitutive characteristics' of the SAC qualifying habitats as between those areas being lost and those areas being retained, when making this assessment.
- 3.4 The shortcoming in focusing only on total % area of each habitat type being lost (as opposed to the relative quality and importance of the areas being damaged or destroyed versus those being retained) is that it does not enable a decision-maker to understand whether or not the proposals are disproportionately destroying or damaging those areas that support a higher quality or density of the 'constitutive characteristics' or typical/characteristic features or species of the SAC qualifying habitats (in particular the Habitats Directive Priority Habitat).
- 3.5 For an example of the flawed 'area-percentage-based' approach that has been taken, ES Chapter 10 states at paragraphs 10.8.28 and 10.8.29 that:

*"Overall, the direct loss of up to 0.60 ha, and the indirect effect of habitat change via fragmentation of 0.13 ha of 'Tilio-Acerion forests of slopes, screes and ravines' including the associated bryophyte and lichen interest, is assessed as constituting an adverse effect upon this woodland qualifying interest, which is significant at an international level. This is based on the fact that although the extent of loss and fragmentation is small, **it represents up to 2.90% of the total habitat type within Ness Woods SAC**, which given that this habitat type is very restricted in its distribution within Ness Woods SAC, and given that it is the primary reason for selection, is considered significant."*

*"For the qualifying interest habitat 'Old sessile oak woods with Ilex and Blechnum in the British Isles', the (up to) 4.96 ha of direct habitat loss, and 1.04 ha of habitat change via*

*fragmentation, represents **(up to) 1.12% of the total habitat type within Ness Woods SAC**. Given the extent of the loss and fragmentation, and its status as qualifying interest habitat for the SAC, and given the loss or potential loss (via fragmentation) of bryophytes and high and very high conservation value lichens forming an important component of the qualifying woodland interest, the habitat loss is assessed to constitute an adverse effect which is significant at an international level.”*

[Our emphasis]

### **The Actual Adverse Effect on SAC Site Integrity**

- 3.6 The Ness Woods SAC is composed of three separate SSSI areas each separate from the other. There appears to be no information presented in the ES or any of its associated documents regarding the distribution of the two Habitats Directive Annex 1 habitats throughout the SAC and in the other SSSI components.
- 3.7 Additionally, however, the internationally and nationally important lichen species and communities/assemblages that form inherent components of these Annex 1 habitats will not be present in all areas of the Annex 1 habitats wherever they occur.
- 3.8 The lichen assemblage is in fact dependent on a number of biophysical factors including long ecological continuity of the woodland (i.e. they will need to have an element of ‘old-growth’ woodland), appropriate microclimate (for example temperature, humidity etc), aspect and historical management (there will be significant differences in lichen species in a given Annex 1 habitat depending on whether that habitat has been managed by coppicing or as a pasture woodland).
- 3.9 Based on the information provided with the planning application, we cannot know whether the internationally important lichen assemblage on old-growth hazel woodland or the nationally important lichen assemblage present in the birchwoods and old growth hazels (and associated trees/shrubs of other species) identified within the survey area for the proposed development is actually present in other parts of the Ness Woods SAC at all, or to the same or a lesser degree.
- 3.10 Furthermore, we do not know from the information that has been presented how much of the total SAC resource of either the Internationally or Nationally important lichen assemblage is actually located within the area that will be damaged or destroyed by the proposed development.
- 3.11 For reasons that will be outlined below under **Section 5** of this Review (*The Assessment of Alternatives*), the information provided with the planning application in fact indicates not only that other parts of the Ness Woods SAC do not support lichen assemblages of equivalent importance, but that alternatives for the layout and design of the proposals that might have avoided those areas that are important were summarily rejected as alternative options for the proposals without proper consideration.

3.12 In relation to the above, the CJEU concluded in Case C-258/11 *Peter Sweetman and Others* (2013), that:

*46 Consequently, if, after an appropriate assessment of a plan or project's implications for a site, carried out on the basis of the first sentence of Article 6(3) of the Habitats Directive, the competent national authority concludes that that plan or project **will lead to the lasting and irreparable loss of the whole or part of a priority natural habitat type** whose conservation was the objective that justified the designation of the site concerned as an SCI, the view should be taken that such a plan or project will adversely affect the integrity of that site.*

*Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that a plan or project not directly connected with or necessary to the management of a site **will adversely affect the integrity of that site if it is liable to prevent the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat** whose conservation was the objective justifying the designation of the site in the list of sites of Community importance, in accordance with the directive. **The precautionary principle should be applied for the purposes of that appraisal.**"*

3.13 Whilst in relation to the above it is of course the case that the Shadow HRA Report does reach the conclusion that the proposals will have an adverse effect on the integrity of the Ness Woods SAC, it should be noted that the following is also true:

1. The Internationally and Nationally important lichen assemblages that would be damaged and at least partially destroyed by the proposals do in fact represent 'constitutive characteristics' of a priority natural habitat type.
2. It is not known what percentage of the total SAC resource (or indeed the resource of the entire Natura 2000 network of all European sites) is represented by the Internationally and Nationally important lichen assemblages that have been identified within the areas that are to be damaged and destroyed. Given this *lacunae* in the information provided by the Shadow HRA (SLR, 2023), the precautionary principle should be applied, and it should be assumed that the important assemblages of lichens may not occur outside of the survey area unless it can be demonstrated otherwise.
3. The proposals will cause the 'lasting and irreparable loss' of that part of the priority natural habitat type that is represented by the lichen communities that form part of their constitutive characteristics (and by extension therefore prevent their 'lasting preservation'). The loss will be 'irreparable', not only because it will be impossible to restore the lichen communities to the areas lost/impacted, but because it is also likely to be impossible to re-create those lichen assemblages elsewhere in any reasonable timescale measured in terms of a human lifespan, as the lichen species in question require old growth (i.e. ancient) woodland, in addition to a very narrow range of other biophysical and chemical conditions (as alluded to above) that may not exist in any compensation site.



- 3.14 In relation to point 2 above, paragraph 50 of the CJEU judgement in joined cases C-387/15 and C-388/15 ‘*Orleans and Others*’ states:

*“...the Court’s case-law emphasises the fact that **the assessment carried out under Article 6(3) of the Habitats Directive** [an ‘Appropriate Assessment’] **may not have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned**”*

- 3.15 Notwithstanding therefore the fact that the Shadow HRA Report (SLR, 2023) has reached the conclusion that there will be an adverse effect on the integrity of the Ness Woods SAC, the fact that the survey data that has informed the assessment of that adverse effect is not complete means that any Appropriate Assessment based upon it cannot in our view reach accurate conclusions regarding the scale of the adverse effects of the works proposed on the protected site concerned.
- 3.16 This observation is important, since the tests that must be carried out under Article 6(4) of the Habitats Directive, in the event that an Appropriate Assessment concludes that there will be an adverse effect on the integrity of a European Site, both necessarily require this information. This is discussed further below.

#### **4. THE ASSESSMENT OF ALTERNATIVE SOLUTIONS**

- 4.1 The Habitats Directive and Regulations require that where an ‘Appropriate Assessment’ reaches the conclusion that there will be an adverse effect on the integrity of a European Site (as is the case with Ness Woods SAC in respect of the proposals), the competent authority (in this case the Scottish Government) can consent to the proposals **only if there is an absence of alternative solutions** (the ‘alternatives’ test), and if there are ‘imperative reasons of overriding public interest’ (the ‘IROPI’ test) that mean that the project must nevertheless be carried out.
- 4.2 Additionally, as the Ness Woods SAC contains a Habitats Directive Priority Habitat type, the only IROPI justifications that may be considered relate to human health or public safety, or to beneficial consequences of primary importance for the environment, or other reasons having regard to the opinions sought from Scottish Ministers.
- 4.3 The concerns identified by this Review relate mainly (but not solely) to the approach taken by the proposals to the ‘alternatives test’, and the information related to this is provided by the applicant in the *Derogation Report* (Royal HaskoningDHV, 20 November 2023).
- 4.4 Taking into account the shortcomings and of, and lacunae in, the Appropriate Assessment, as detailed above in **Section 3** of this Review, paragraph 36 of CJEU Case C-521/12 *T.C. ‘Briels and Others*’ states the following of particular relevance:

*“Knowledge of those implications [of the plan or project for the European Site] in the light of the conservation objectives relating to the site concerned is a necessary prerequisite for application of Article 6(4) since, in the absence thereof, no condition for application of that derogating provision can be assessed. The assessment of any imperative reasons of*

*overriding public interest **and that of the existence of less harmful alternatives require a weighing up against the damage caused to the site** by the plan or project under consideration. In addition, **in order to determine the nature of any compensatory measures, the damage to the site must be precisely identified** (Case C-404/09 *Commission v Spain* EU:C:2011:768, paragraph 109).*

[Our emphasis]

- 4.5 The above case also closely aligns with that of an earlier case (C-304/05 *Commission v Italy*).
- 4.6 It follows from the above that, because the Appropriate Assessment has failed to identify the scale of the adverse impact on a key constitutive feature of the Priority Annex 1 habitat type for which the SAC was designated, it is not possible either to 'weigh' the IROPI of the proposals against the scale of harm that will be done, nor indeed to satisfactorily demonstrate that there were no other alternatives for achieving the objectives of the plan or project that were either not harmful or less harmful.
- 4.7 In the latter case, it seems clear that some of the alternative layouts and designs for the proposed development were discounted from consideration prior to and in some cases without obtaining the ecological survey data that was needed to establish the least harmful approach. We provide further detail on this below.

## **The Alternatives That Have Not Been Adequately Considered**

### *Alternative Locations*

- 4.8 Whilst our concerns do not relate primarily to the assessment of alternative locations, it does seem surprising that, as stated in Table 2-4 of the *Derogation Report* (Royal HaskoningDHV, November 2023) meeting the demand for pumped electricity storage would require "...all viable locations to be developed". The *Derogation Report* appears to rely in this respect on the assertion that only already proposed sites can be brought forward in time to meet the identified need, and there does not appear to be any evidence provided to explain what efforts have been made to identify new sites that might be less constrained.

### *Alternative Designs*

- 4.9 Our review has identified that, at least in some respects, the proposals have summarily rejected alternative options for design and layout that would have been very likely to reduce the degree of harm caused by the proposals to the SAC, and that this was done prior to, and in some cases in the absence of, the necessary survey data being available to inform that decision.
- 4.10 Early-stage investigations within the Dell Estate included Phase 1 habitat mapping, National Vegetation Classification (NVC) mapping and a bryophyte walkover survey. All these were done in the summer of 2021 (para 10.5.2 ES Report Vol 1 Chapter 10). **No early-stage lichen survey was carried out as part of the preliminary investigations.**
- 4.11 The documents submitted in conjunction with the application show that 6 access track options were prepared and decided upon without even preliminary lichen survey data. The detailed lichen survey was commissioned after the track options had been decided.

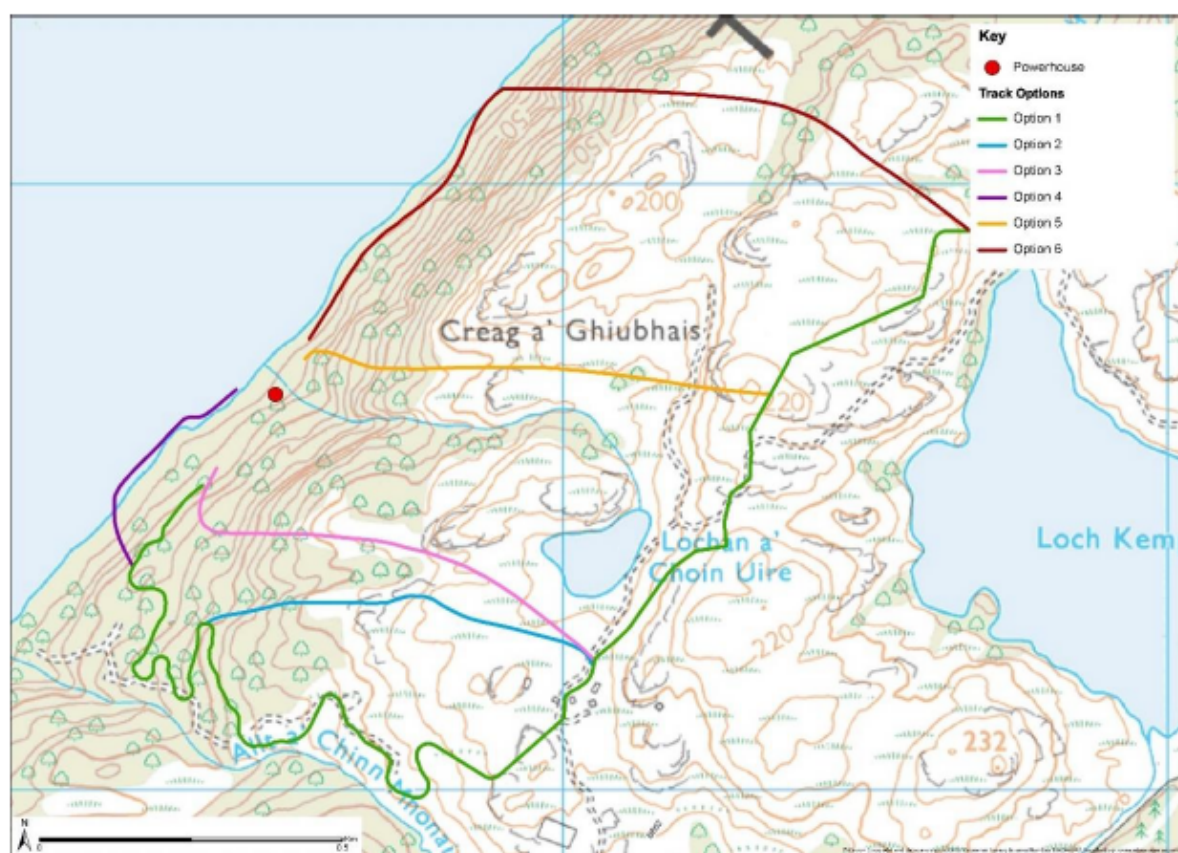
4.12 ES Chapter 2 (Design Evolution and Alternatives) identifies a number of possible options for an access track from the upper area at Loch Kemp to the shores of Loch Ness (see paras 2.6.26 to 2.6.28 and including Plate 2.3). Paragraph 2.6.26 states:

*“An appraisal was undertaken **in January 2022** to determine the preferred access track route to the preferred powerhouse site from the upper reservoir works. This appraisal was informed by desk studies and site visits undertaken by the project engineers and the project ecologist. Six track options were considered, as illustrated on Plate 2.3: Access Track Options to Lower Reservoir Works. “*

[Our emphasis]

4.13 Plate 2.3 is then shown as follows:

**Plate 2.3: Access Track Options to Lower Reservoir**



4.14 Paragraph 2.6.27 then states:

*“Following the appraisal of the six access track options leading to the preferred powerhouse site, Track Option 1 was identified as the preferred track option and was taken forward post scoping. “*

4.15 The Lichen Survey Report (Acton A, 2022) presented as Appendix 10.3 of the ES ‘*Terrestrial Lichen Survey Report*’ states on page 8 (Section 3.1) that the lichen survey work took place in April and May 2022. It is therefore clear that the decision on which access track route option to prefer was made prior to the applicant being in possession of the crucial information on the

distribution of the Internationally and Nationally important lichen assemblage that was necessary in order to enable a less harmful route to be selected.

*How the Absence of the Lichen Survey Data Prevented a Less Harmful Alternative Being Chosen*

- 4.16 It is clear from the above that Track Option 1 was selected without the benefit of the decision having been informed about the distribution of important lichen flora.
- 4.17 Importantly, as already alluded to above, the composition and age of the Annex 1 woodland types are not uniform throughout the area of the Ness Woods SAC. Each area will have its own character depending on, amongst others, physical features (geology, hydrology, aspect etc), landscape history (ecological continuity etc) and land management.
- 4.18 An example of the variation in the woodlands within the SAC can be seen within the Dell Estate. The first edition 6 inches to the mile Ordnance Survey (OS) map (published 1874) covering the area of the Dell Estate (see **Figure 1** below) shows that there are two distinctive types of woodland in this part of the SAC.

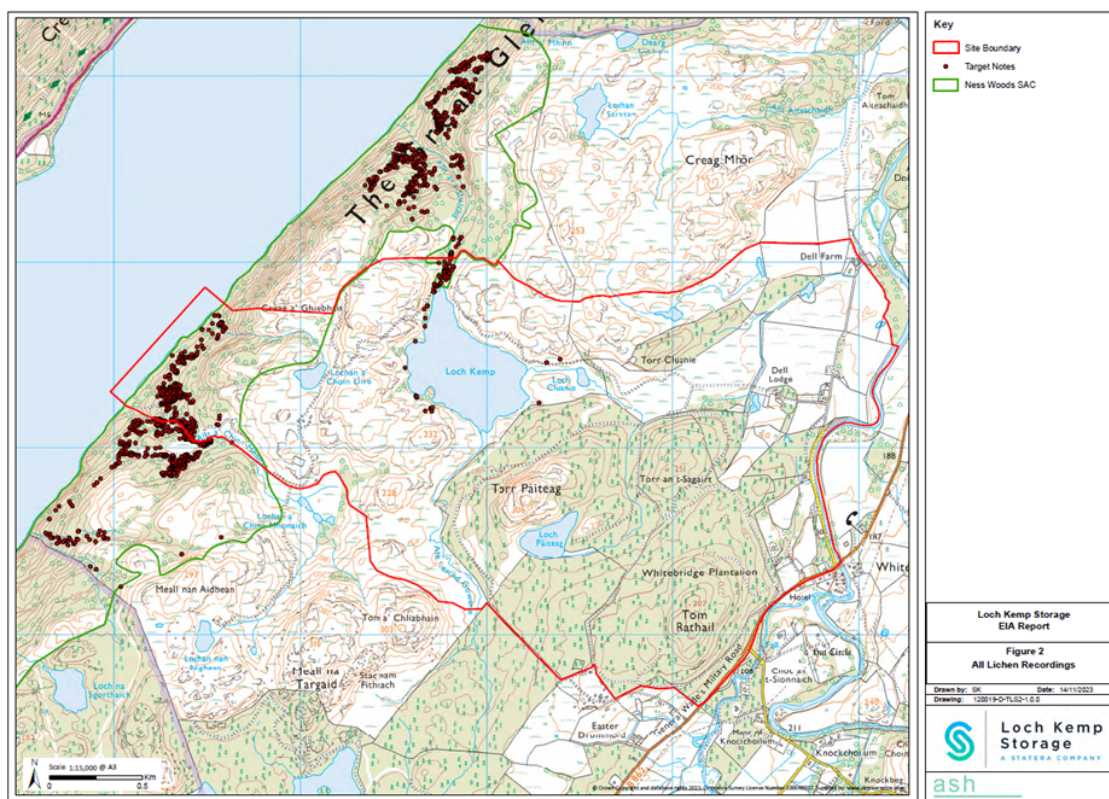
**Figure 1:** Extract from the first edition (published 1874) of the 6 inches to the mile Ordnance Survey covering the proposed development area and adjacent land in part of Ness Woods SAC. Reproduced with the permission of the National Library of Scotland



- 4.19 One woodland type is shown on the OS a 'broadleaved woodland' (the woodland areas depicted associated with Allt a' Chinn Mhonaich, the lower area of water course from Lochan a' Choin Ure, and the areas associated with Allt Slochdach) and the other is the 'scattered trees over rough grazing' (on the slopes west of Creag a' Ghiubhais).
- 4.20 The areas shown as 'broad-leaved woodland' on the 1874 OS map were surveyed for lichens as part of the Lichen Survey (Acton A, 2022), and this was presented in Appendix 10.3 of the ES 'Terrestrial Lichen Survey Report'. These areas were found to be old-growth woodland with veteran trees and to have exceptionally important lichen species, populations, and communities. As explained above however this information was not available at the time Track Options 2-6 were removed from further consideration.
- 4.21 By contrast, there is no lichen survey data presented in the ES collected from the 'scattered trees over rough grazing' area located to the west of Creag a' Ghiubhais, and therefore no detailed survey information to say what type of woodland is present today and to enable it to be compared to the 'broad-leaved woodland' type.
- 4.22 In fact, the Lichen Survey Report states on page 9 (Section 3.3 – final paragraph) that:
- "The steep slopes below Creag a' Ghiubhais were examined at a distance and were steep, heathery slopes dominated by birch. The main stands of hazel were veteran pasture hazels on richer soil accumulations (often associated with bracken slopes). On the basis of experience of other steep birch-dominated slopes elsewhere on site, **it was judged that there was much more limited potential for old growth hazel stands on these more acidic slopes below Creag a' Ghiubhais and so they were not visited.**"*
- 4.23 The absence of any lichen survey data for this area is shown on **Figure 2** below taken from the Lichen Survey Report (Acton, 2022). **Figure 2** also shows that the chosen track option (Track Option 1) **bisects straight through one of the densest aggregations of important Lichens recorded during the survey work.**
- 4.24 The potential damage to lichens therefore includes direct loss as well as alterations in humidity and levels, all of which are accepted as threats to the lichen assemblage in the Shadow HRA Report (SLR, November 2022).



**Figure 2:** Figure 2 from Lichen Report in ES Volume 4 Appendix 10.3. This map shows the lichen survey target notes and the proposed development area. No lichen survey appears to have been carried out in the area west of Craig a' Ghiubhais.



- 4.25 What is certain is that whatever woodland habitat is present today in the 'scattered trees over rough grazing' will be quite different to the old-growth woodlands that make up the adjacent 'broad-leaved woodland' areas that are so important for terrestrial lichens.
- 4.26 It seems likely that any woodland in the 'scattered trees over rough grazing' area as it was in 1874 will be a recent woodland with a few scattered old trees depending on how many have survived from those shown on the 6 inch OS map. **This area is likely to have a substantially different assemblage of lichen species to that in the old-growth woodlands.**

#### *Why the Premature Dismissal of Alternative Track Options Matters*

- 4.27 It is clear from the above that Track Option 1 was chosen before any Lichen Survey data was available to indicate how harmful this route was likely to be to the important lichen assemblages.
- 4.28 Additionally, not only was lichen survey data not available at the time the other Track Options were discounted, it is still not available for the area west of Craig a' Ghiubhais, which only a cursory inspection of historic Ordnance Survey maps has demonstrated is likely to be considerably less sensitive in terms of the important old-growth lichens that it supports.
- 4.29 Finally, the absence of lichen survey data from other large parts of the SAC (including the other two component SSSIs) means that it cannot be established what proportion of the important lichen assemblages hosted by the SAC are in fact present in those parts of the SAC proposed to be damaged or destroyed.

4.30 In relation to the above points, there are direct parallels to be drawn with the development proposals in CJEU Case C-239/04 *Commission v Portugal* (2006)

4.31 This case concerned the routing of a new motorway linking Lisbon and the Algarve region of Portugal. In bringing the case, the European Commission took the view that:

*“Having found that the Portuguese authorities **had not explained why alternative routes situated outside both the Castro Verde SPA and the residential zones of Alcarias, Conceição, Aivados and Estação de Ourique had not been considered...**”*

And therefore the Commission had taken:

*“...the view that the Portuguese Republic had failed to fulfil its obligations under Article 6(4) of the Habitats Directive...”* [To establish that there were no alternatives to achieving the objectives of the plan or project]

[Paragraph 14 of the judgement] [Our emphasis]

4.32 The CJEU ruled in favour of the European Commission, and determined that as a result of Portugal’s failure to study the alternatives referred to by the Commission:

*“...it cannot be ruled out immediately that such solutions were capable of amounting to alternative solutions within the meaning of Article 6(4) of the Habitats Directive, even if they were, as asserted by the Portuguese Republic, liable to present certain difficulties.”*

[Paragraph 38]

And that, consequently:

***...without having demonstrated the absence of alternative solutions for the route concerned, the Portuguese Republic has failed to fulfil its obligations under Article 6(4) of the Habitats Directive.***

[Paragraph 40]

4.33 In the case of the Loch Kemp proposals, even only the most basic examination of historic maps has identified an area of the SAC which is likely to be less important in supporting the important assemblages of lichens that form part of the Priority Annex 1 habitat type of the SAC. The submitted documents explain that potential routes through this area were summarily dismissed in advance of any detailed survey data being available.

4.34 With reference to the *Commission v Portugal* case mentioned above, the submitted documents do not even appear to contain an ‘assertion’ that the discounted route options would present any difficulties, or indeed any justification for why those discounted routes are not feasible/viable in practice (paragraph 2.6.27 of ES Chapter 2 simply states that Track Option 1 was ‘preferred’).

4.35 It does therefore seem that the premature and inadequately informed selection of Track Option 1 does not comply with the requirements of Article 6(4) of the Habitats Directive for there to be no less harmful alternatives to achieving the objectives of the plan or project.

- 4.36 This apparent lack of basic evidence-led decision-making also leaves open to question how other alternatives have been addressed (or not addressed). For example, **it is not clear how decisions about the location of the power house or maximum new depth of Loch Kemp have been influenced by the lichen survey data in any meaningful way.**

## 5. THE ADEQUACY OF COMPENSATORY MEASURES

- 5.1 As already detailed above, paragraph 36 of CJEU Case C-521/12 T.C. *'Briels and Others'* states the following of particular relevance:

*"...in order to determine the nature of any compensatory measures, the damage to the site must be precisely identified"*

- 5.2 For the reasons given above, including that the submitted information has not sought to quantify the proportionate loss of the lichen assemblage relative to the remaining un-impacted areas of the SAC, it cannot be said that the damage to the site has been 'precisely identified'.

- 5.3 Article 6(4) of the Habitats Directive and the equivalent provisions in the Habitats Regulations further requires that compensation measures should:

*"...ensure that the overall coherence of Natura 2000 is protected"*.

[NB: Natura 2000 sites are now integrated into the National Sites Network]

- 5.4 Given that the loss of the lichen community as a proportion of the total resource of similar communities supported elsewhere in the Natura 2000 network of protected sites is not known, it is difficult to see how it can be established that the 'overall coherence' of the network can be said to be maintained. Furthermore, as described in **Section 2** of this Review, the lichen assemblage here may be so important as to be unique, with both the lichen assemblage itself and its habitat requiring perhaps many centuries to develop, and therefore in practice being 'irreplaceable. It does not seem possible therefore to provide compensation that would achieve the requirement laid out above.

- 5.5 The Compensation Proposed to address the Residual Impacts is set out in ES Volume 1 Chapter 10.9 (Additional Mitigation, Compensation and Enhancement). Paragraph 10.9.2 states:

*"To compensate for the significant residual effects upon Ness Woods SAC, a Compensation Package would be delivered, as detailed in the Ness Woods SAC Derogation Report, which has been developed in close consultation with NatureScot. A summary of the Ness Woods Compensation Package is provided in the following section and shown in Volume 2, Figure 10.11: Overview of Ness Woods SAC Compensation Measures."*



- 5.6 A description of the Compensation measures for the Annex 1 habitats are set out in Paragraphs 10.9.3. This includes:

*“The full extent of retained Ness Woods SAC habitat that lies within the Dell Estate would be restored and managed to improve its condition from unfavourable to favourable....An adaptive management approach would be adopted....*

*.....The same woodland adaptive management approach, as described above, would also be undertaken within areas of woodland which are outside of, but adjacent to, Ness Woods SAC, totalling 8.08 ha....”*

- 5.7 Paragraph 10.9.4 then states that:

*“These compensation measures have been designed to compensate for the adverse effects upon the conservation objectives of the woodland qualifying features, to ensure the coherence of the national site network, as detailed further in the separate Shadow HRA Report and Derogation Report.*

*The Compensatory Measures would maintain the extent and distribution of the qualifying woodland habitats within the site; would restore the structure, function and supporting processes of the qualifying woodland habitats; and would restore the distribution and viability of the typical species of the qualifying woodland habitats. ...etc etc”.*

- 5.8 In our view, the above proposed compensation measures, certainly insofar as they relate to proposals to improve the management of Annex 1 habitats within the SAC, are **not ‘compensation’**. It is acknowledged that the two Annex 1 qualifying habitats of the SAC are currently assessed as being in ‘unfavourable’ condition, however, Article 6(1) of the Habitats Directive states that:

*“For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites”.*

- 5.9 In short therefore, there is already an obligation for the Annex 1 habitats of the SAC to be subject to the favourable management that is required to restore their favourable conservation status. Offering interventions that are in any case already required is not therefore ‘compensation’ and would frustrate both the aims and the spirit of the Habitats Directive and its transposing Regulations by enabling the proponents of plans and projects to exploit the poor condition of an SAC habitat to attempt to justify a development proposal.

- 5.10 Additionally, whilst browsing relief is required (and proposed as part of the compensation) this has the potential to stress the lichen assemblages as a result of increasing shade (although they may recover later if well managed). This would however risk causing an additional impact that would act in combination to the adverse effect that is already assessed as being significant at the International level.

## 6. EFFECTS ON NON-SAC LICHEN FEATURES

6.1 Paragraphs 10.8.82 and 10.8.83 state:

**“The lichen assemblage on the rocky shores of Loch Kemp is assessed as having national value. The flooding of the rock habitat around Loch Kemp will subject the existing freshwater and non- freshwater lichen species to a rapid filling and emptying regime to a maximum depth of 28 m above the current conditions. Such changes are expected to destroy these lichen communities which currently experience occasional and often slow changes in water levels of tens of centimetres only. Large draw down zones in lakes and reservoirs do not support diverse freshwater lichen assemblages due to the rapidly changing conditions which the lichens cannot adapt to118,119. The loss of this rocky shore lichen assemblage, including the survey area-level extinction of two Near Threatened or Nationally Scarce lichen species that were not recorded in any other locations at the Site or surrounding lochs and lochans surveyed (Porina interjungens (Near Threatened) and Polychidium muscicola (Nationally Scarce)), is assessed as constituting a permanent adverse effect, which is significant at the national level.**

**The heathland habitat in the proposed inundation zone around Loch Kemp was also assessed as being of national value for lichens. This habitat would be permanently lost, as frequent inundation is expected to kill off the existing flora. Loss of the heathland lichen assemblage within the inundation zone is assessed as constituting a permanent adverse effect, which is significant at the national level.”**

[Our emphasis]

6.2 In addition to the impacts on the lichen assemblages that are inherent part of the qualifying features of Ness Woods SAC therefore, the proposals also contemplate the destruction of two additional lichen communities of at least National importance (i.e. of SSSI level importance).

- 6.3 The mitigation proposed for this is set out on page 109 of ES Chapter 10 (para 10.9.6), as follows:

**“An investigation into the feasibility of translocating Loch Kemp rocky shore and surrounding moorland lichens would be undertaken** by an appropriately experienced lichenologist. Uncertainty exists over the likely success and feasibility of lichen translocation in this situation. Lichen translocation using a range of methods is known to be successful in some situations, although extensive research is lacking. **Translocation of the Loch Kemp rocky shore lichens of high value may not be feasible for many of them, as some are attached to large outcrops which would be difficult to remove pieces of suitable sizes.** It may be feasible to translocate the smaller boulders, supporting *Porina interjungens*. Translocation to rocky shore locations within the surrounding lochs (such as Lochan a Choin Uire, Loch Paiteag, Lochan a Mhonaich, Lochan nan Nighean and Lochan Scristan) **may be feasible**, if the microclimatic conditions are suitable. Translocation of the moorland lichens of high value is likely to have higher feasibility, which could be removed as plugs and 'plugged in' to similar retained heathland within the wider Site, if the microclimatic conditions are suitable. **Where deemed feasible, lichen translocation would be attempted, with the methodology, implementation and monitoring overseen by an appropriately experienced lichenologist.**”

[Our emphasis]

- 6.4 In our view, no weight can be attached to any presumption that the above proposed mitigation might be successful. In addition to the acknowledged high levels of uncertainty and the absence of any firm commitment to actually attempt any translocation, it cannot be presumed that the lichen communities concerned will be safeguarded. Additionally, if suitable conditions existed at receptor sites for these rare lichens, they would already be expected to be present. The proposals therefore can be expected to cause the permanent loss of these Nationally importance assemblages, and in addition reduce the already narrow range of locations where they might be found (thus contracting the overall range and distribution of these species).

## 7. CONCLUSIONS

- 7.1 For the reasons set out above, we consider that the proposals in their current form do not comply with the requirements of Article 6(4) of the Habitats Directive, and by extension those parts of the Habitats Regulations that transpose them into domestic legislation.
- 7.2 Whilst the lichen survey data for those areas that were subject to survey is of good quality, the extent of the survey area is insufficient to enable the scale of losses to the SAC constitutive characteristics and typical/characteristic species resulting from the destruction in the lichen communities intimately associated with the SAC Annex 1 habitats cannot be accurately evaluated.
- 7.3 Furthermore, it appears clear that the ecological survey information pertaining to these Internationally and Nationally important lichen assemblages played no part in the assessment of alternatives to achieving the objectives of the plan or project. As a result, it is very likely that opportunities for reducing the harm to the SAC and its qualifying features have been overlooked (evidence of at least one such significant missed opportunity is presented above).
- 7.4 Further, the proposed compensation for losses of SAC features is heavily reliant on delivering measures that are in fact already required to be delivered.
- 7.5 In addition, at least two Nationally important lichen assemblages located outside of the SAC boundary will be destroyed, and there can in our view be no confidence placed in the proposed mitigation, which carries with it both a high risk of failure and a lack of any firm commitment to be implemented.
- 7.6 Overall, the proposals appear to represent one of the most significant single-project threats to the British Lichen flora of which we are currently aware.

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