AGENDA ITEM 6

APPENDIX 8

2018/0151/DET

ECOLOGICAL IMPACT ASSESSMENT

Chapter 10.0
Ecological Impact Assessment

Ecological Impact Assessment for Mineral Extraction

and Extension to

Consented Quarrying Operations at

Dalwhinnie Quarry

Dalwhinnie

Highland

January 2018

Prepared for Johnstone Poole & Bloomer Ltd.

On Behalf of Leiths (Scotland) Ltd.

By

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Executive Summary

Acorna Ecology Ltd. was commissioned in 2013 by JPB Ltd. to complete a suite of protected species surveys and extended Phase I habitat survey for a proposed extension to quarrying at Dalwhinnie Quarry. This extension proposal was then superseded by the current proposal (17/04845/SCOP) for mineral extraction and extension to Dalwhinnie Quarry for which an Environmental Impact Assessment has been requested by the Local Authority. This Ecological Impact Assessment report (EcIA) has been produced based on the findings of the 2013 ecological survey suite by Acorna Associates Ltd. and the 2017 Preliminary Ecological Appraisal suite (Ref. 2.) by EnviroCentre Limited (August 2017) and makes an assessment of the potential ecological impacts that quarrying may result in.

Based on the ecological data collected to date it is considered that the key impacts are likely to be on habitat and breeding birds but no residual impact is considered significant at more than the local level for the permanent localised loss of degraded heath and acid grassland, and the loss of habitat for individual pairs of breeding birds that may be displaced, for which breeding success is not likely to be adversely impacted. Additionally, the Applicant will ensure that Final Site Restoration will be undertaken in accordance with a detailed scheme to be agreed in consultation with SNH and the planning authority. The objective will be to restore the site to an end use beneficial to ecology.

Contents

1. Introduction

Acorna Ecology Ltd. was commissioned in 2013 by JPB Ltd. to complete a suite of protected species surveys and extended Phase I habitat survey (Ref. 1.) for a proposed extension to the extant quarrying operation at Dalwhinnie Quarry. This extension proposal was then superseded by the current proposal (17/04845/SCOP) for mineral extraction and extension to Dalwhinnie Quarry for which an Environmental Impact Assessment has been requested by the Local Authority. This Ecological Impact Assessment report (EcIA) has been produced by Dr Paul Baker based on the findings of the 2013 ecological survey suite by Acorna Associates Ltd.[1] and the 2017 Preliminary Ecological Appraisal[2] suite (Ref. 2.) by EnviroCentre Limited (August 2017). At the time of this report in January 2018 Dalwhinnie Quarry is inactive and flooded. The 2.5ha Quarry lies immediately to the east of the A889 road less than 1km due north of Dalwhinnie (NN 63717 86253, Drawing RG547-18/L/F/02) on the edge of an expanse of open hillside. Large scale forestry lies to the west of the A889 to the northwest and southwest of the Quarry, with lower lying open ground associated with a watercourse being immediately to the west of the Quarry beyond the A889.

The purpose of this EcIA report is to:

- Identify potentially significant effects on the ecology of the area as a consequence of the proposed development;
- Establish appropriate mitigation measures to minimise any potential significant effects on the ecology and ensure compliance with current environmental legislation;
- Provide assessment of residual effect significance;
- Identify any appropriate ecological enhancements; and
- Establish any ecological monitoring required.

2. Planning Policy and Legislation

2.1 National Legislation

The major pieces of legislation relating specifically to the protection of wildlife and nature conservation and potentially to the proposed development site are as follows:

- The Convention on the Conservation of European Wildlife and Natural Habitats (The Berne Convention), 1979[3];
- The Wildlife and Countryside Act (WCA) (as amended), 1981[4];
- Conservation (Natural Habitats) Regulations, 1994 – otherwise known as the Habitat Regulations[5];
- The Conservation (Natural Habitats &c) Amendment (Scotland) Regulations 2007[6];
- The Nature Conservation Act (Scotland) 2004[7];
- Wildlife & Natural Environment (Scotland) Act (2011)[8];
- Wild Mammals (Protection) Act 1996[9];
- Protection of Badgers Act, 1992[10] and subsequent amendments through The Nature Conservation Act (Scotland) 2004;

- The Land Reform (Scotland) Act, 2003[11];
- Scottish Planning Policy (June 2014) [12]
- UK Biodiversity Partnership, 1994 'Biodiversity The UK Action Plan'[13]
- Scottish Biodiversity Forum (2007), Scottish Biodiversity List[14]
- Cairngorms National Park Authority (2013) Cairngorms Nature Action Plan 2013 - 2018[15]
- The Water Framework Directive (2000/60/EC)[16];

The Wildlife and Countryside Act 1981 is an enactment under The Conservation (Natural Habitats &c.) Regulations 1994 and is a major policy for implementation of the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/EEC) in Great Britain. The WCA protects the most important habitats as Sites of Special Scientific Interest (SSSI), provides a level of protection to all nesting wild birds, and provides protection to various other species.

2.1.1. The Conservation (Natural Habitats &c.) Regulations 1994 and The Conservation (Natural Habitats &c) Amendment (Scotland) Regulations, 2007

These Regulations make provision for the purpose of implementing, for Great Britain, Council Directive 92/43/EEC[8] on the conservation of natural habitats and of wild fauna and flora (referred to in these Regulations as "the Habitats Directive"). European Protected Species (EPS) are those protected under the EC Habitats Directive which is transposed into UK law by The Conservation (Natural Habitats &c.) Regulations 1994. These regulations now confer an enhanced level of protection beyond that previously provided under the Wildlife and Countryside Act 1981, so protection of these species is now solely enacted under the 1994 Regulations. EPS are fully protected in Britain and any planned development that may affect them requires prior consultation with Scottish Natural Heritage. Potentially relevant species include: bats and Otters.

These regulations identify habitats of interest to the European Union, with important sites designated as Special Areas of Conservation (SAC), which are sites of international importance.

2.1.2. The Nature Conservation Act (Scotland) 2004 & Subsequent Amendments

This Act supersedes the SSSI provisions detailed in the Wildlife and Countryside Act 1981, providing for the enhanced protection and management of SSSIs. In addition, it makes amendments to the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The species protection afforded to wild birds, animals and plants is extended to include 'reckless' acts.

2.1.3. Wild Mammals (Protection) Act 1996

It is an offence to intentionally cause any wild mammals unnecessary suffering by certain methods, including crushing and asphyxiation.

2.1.4. The Protection of Badgers Act 1992

The Protection of Badgers Act 1992 makes it an offence to:

Wilfully kill, take, possess or cruelly ill-treat a Badger, or attempt to do so;

Interfere with a sett by damaging or destroying it;

Obstruct access to, or any entrance of, a Badger sett; or

Disturb a Badger when it is occupying a sett.

Works within 30m of an active Badger sett are subject to guidelines. These guidelines state that the following may require a developmental licence:

Using very heavy machinery (generally tracked vehicles) within 30 metres of any entrance to an active sett;

Using lighter machinery (generally wheeled vehicles), particularly for any digging operation, within 20 metres; and

Light work, such as hand digging or scrub clearance within 10 metres.

Developmental licences may also be required for work such as blasting, pile driving, or use of heavy vibration at greater distances than 30m from Badger setts depending on the individual situation.

2.2. National Planning Policy

2.2.1. Scottish Planning Policy (Landscape and Natural Heritage)

The relevant adopted policy at the national level for Scotland is the Scottish Planning Policy (SPP) 2014 and is the Scottish Government's guidance on nature (and geological) conservation. It sets out the key principles of ensuring that the potential impacts of planning decisions on biodiversity and geological conservation are fully considered. These include:

The need for up-to-date assessments;

The aim of maintaining and enhancing, restoring or adding to biodiversity and geological conservation interests;

The need to take a strategic approach to the conservation, enhancement and restoration of biodiversity and geology; and

The principle of planning decisions should be to prevent harm to biodiversity and geological conservation interests and this may include consideration of mitigation/compensation measures, implemented where appropriate using planning controls.

SPP provides guidance on the protection of protected sites and other features of value, together with requiring that opportunities for improving biodiversity within developments should be maximised. SPP states that development proposals provide many opportunities for building-in beneficial biodiversity features as part of good design and also suggests that networks of natural habitat should be repaired and the fragmentation and isolation of natural habitats avoided.

SPP requires that adverse impacts of development on Species of Particular Importance (SoPI) and Habitats of Particular Importance (HoPI) should be avoided through planning conditions or obligations and that planning permission should be refused where harm to these species, or their habitats, may result unless the need for, and benefits of, the development clearly outweigh the harm.

2.3. Regional Planning Policy

2.3.1. Highland-wide Local Development Plan 2010

The Highland wide Local Development Plan (HwLDP) 2010[17] has five policies directly relating to biodiversity, and a sixth (Policy 29 Sustainable Development) that is also associated:

- Policy 57 Natural Build and Cultural Heritage;
- Policy 58 Protected Species;
- Policy 59 Other Important Species;
- Policy 60 Other Important Habitats and Article 10 Features; and
- Policy 75 Green Networks

This Plan will soon be superseded by the HwLDP2

2.3.2. Highland-wide Local Development Plan 2 (Draft future plan)

In Highland, there will be four Local Development Plans (LDPs). A main Highland-wide Local Development Plan (HwLDP)[18], which will be a planning policy only Plan, and three Area Local Development Plans (Area LDPs) delivering land use allocations. A Main Issues Report (MIR)[19] was the first consultation stage in the preparation of the replacement HwLDP (HwLDP2).

The HwLDP will provide an updated vision and spatial strategy with planning policies to guide

development in Highland over the next 20 years. As the new style Plan will be policy based, the

existing HwLDP site specific Policies 1 to 27 and the associated spatial content will not be taken

forward. In December 2017 the Scottish Government published a Planning Bill outlining potential changes to the Scottish planning system. This included possible changes to the content of future Local Development Plans and how they would be prepared, and a broadening of the issues covered by national policy (Scottish Planning Policy). The decision was taken that the review of the HwLDP should be postponed until the implications of the Planning Bill were more clearly understood. The Main Issues consultation resulted in an initial review of comments received, with an interim position on the issues raised agreed by the 17 August 2016 Planning, Development and Infrastructure Committee. This interim position remains and will inform the future stages of the HwLDP review.

The Draft HwLDP2 is likely to have the following policies directly relating to biodiversity:

- Policy 57 Natural Build and Cultural Heritage will most likely be separated into two replacement policies: Historic Environment and Natural Environment;
- Policy 58 Protected Species;
- Policy 59 Other Important Species;
- Policy 60 Other Important Habitats and Article 10 Features; and
- Policy 75 Green Networks

2.4. Local Planning Policy

2.4.1. Cairngorms National Park Local Plan 2010

The Cairngorms National Park Local Plan[20] was adopted in 2010 and set out policies for development and conservation. The Local Plan policies of potential relevance to this study include:

- Policy 1 Natura 2000 Sites;

- Policy 2 National Natural Heritage Designations;
- Policy 3 Other Important Natural and Earth Heritage Sites and Interests;
- Policy 4 Protected Species;
- Policy 5 Biodiversity; and
- Policy 13 Mineral and soil/earth resources

Planning applications in the National Park are decided by either the Cairngorms National Park Authority (CNPA) or the local authority that the application is made in. All planning applications are made to the relevant local authority of the area that they were made in (one of five local authorities which operate in the Park – Aberdeenshire, Angus, Highland, Moray and Perth & Kinross). The Cairngorms National Park Local Plan, together with any Supplementary Planning Guidance (SPG), covers the Aberdeenshire, Angus, Highland and Moray parts of the National Park only.

The relevant local authority for Dalwhinnie Quarry is the Highland Local Authority. However, the CNPA will 'call in' and determine the bigger and most sensitive applications in the CNPA area.

2.4.2. Proposed Cairngorms National Park Local Development Plan 2020

The Local Development Plan 2020[21] will be adopted and published following the feedback from the Cairngorms National Park Local Development Plan Main Issues Report Public Consultation (17 November 2017 – 2 March 2018)[22]. The Main Issues Report includes proposed policy relevant to the natural environment:

- Main Issue 7: Impacts on Natura Designations, which focuses on Capercaillie and their habitats, and Freshwater Pearl Mussels and their habitats (i.e. Natura sites); and
- Main Issue 10: Land Management in Upland Areas

2.4.3. UK Biodiversity Action Plan

Biodiversity is the variety of life in all its forms as discussed in the UK Biodiversity Action Plan (BAP). The UK BAP was formulated in response to the Convention on Biological Diversity (CBD), signed in 1992, and reviews the status of species and habitats on a national scale. The UKBAP sets out targets for a number of Priority Species and Habitats as well as for broad habitat types. Priority Species listed in the UKBAP include the Water Vole, Great Crested Newt, and several species of bat. BAPs are produced at national, regional and local levels.

2.4.4. The Scottish Biodiversity List 2007

The Scottish Biodiversity List identifies habitats and species considered to be of principal importance for the purpose of Biodiversity Conservation in Scotland. Species listed that may be relevant to this EcIA include the Otter and Water Vole. Habitats listed that may be relevant include:

- Upland Blanket bog;
- Upland Mountain heaths and willow scrub;
- Upland flushes, fens and swamps;
- Upland heathland;
- Upland Juncus squarrosus-Festuca ovina grassland; and

- Upland *Nardus stricta-Galium saxatile* grassland

2.4.5. Cairngorms Local Biodiversity Action Plan

Launched in 2002 by the Cairngorms Local Biodiversity Steering Group, the Cairngorms Local Biodiversity Action Plan (CLBAP)[23] covered the period 2002 - 2012. Unfortunately, funding in 2011 was not available for an update to the plan.

The following CLBAP Habitat Action Plans (HAPs) are potentially relevant to the proposed development:

- Acid grassland;
- Montane heath and bog; and
- Blanket bog

CLBAP key species that may be relevant to the proposal include:

- Reed Bunting;
- Skylark; and
- Twite

UK priority species that may be relevant to the proposal include:

- Bats;
- Otters; and
- Water Voles

2.4.6. Cairngorms Nature Action Plan

The Cairngorms National Park Authority produced the Cairngorms Nature Action Plan (CNAP) 2013 – 2018 during 2013. The CNAP provides an overview of key biodiversity in the Cairngorms and key species and habitats that will be the focus of action. The following CNAP Habitat Action Plans (HAPs) are potentially relevant to the proposed development:

- Montane and moorland;
- Upland heathland; and
- Blanket bog

3. Methodologies

3.1. Desk Study

Desk-based studies were completed in 2013 and 2017 to collate existing information, involving consultation with relevant organisations and a review of datasets for any records of protected and

notable species and statutory and non-statutory designations in order to determine the scope of the ecological baseline field surveys. These studies included reference to:

- SNH SiteLink[24] – a website providing information on statutory designated sites (searched for any within a 5km radius of the site);
- The Highland-wide Local Development Plan (HwLDP) for non-statutory designations (within a 5km radius of the site);
- Scotland's Environment Web Interactive Map[25] to identify the locations of any ancient or native woodlands (within a 2km radius of the site);
- National Biodiversity Network Gateway (NBN Gateway – in 2013 now superseded by the National Biodiversity Atlas[26] (searches for protected species records within 5km of the Site);
- The Scottish Biodiversity List (SBL) and CLBAP for priority species;

Note: the 2017 PEA also referred to the existing knowledge of the site from the previous Extended Phase 1 Habitat Survey carried out in 2013 by Acorna Associates Ltd.

3.2. Field Surveys

The ecology field survey in 2013 was completed in mid-May 2013 by Dr Paul Baker (MCIEEM), Acorna Associates Ltd.

The ecology field survey in 2017 was completed in mid-July 2017 by Gemma Nixon (MCIEEM), EnviroCentre.

The following ecological surveys were carried out in 2013 based on the findings of the Desk Study:

Habitats:

- Extended Phase I Habitat Survey

Protected species – all surveys were single surveys completed at the time of the habitat survey – the survey area being the Site boundary and a 100m buffer zone as far as was accessible (no access to Forestry or land in other ownership than where agreed):

- Otter (*Lutra lutra*);
- Badger (*Meles meles*);
- Water Vole (*Arvicola amphibius*); and
- Breeding birds

The following ecological surveys were carried out in July 2017, with a 50m buffer to the Site:

Habitats;

- Extended Phase I Habitat Survey; and
- Functional Wetland Typology

Protected species – all surveys were single surveys completed at the time of the habitat survey in July 2017:

- Otter;
- Badger; and
- Water Vole

Note: observations of any breeding birds were noted but no comprehensive survey completed as the survey was completed very late in the bird breeding season.

Methodologies for all ecological field surveys followed national guidance and accepted methodologies. Field survey methodologies are all detailed in Technical Appendix 1. Extended Phase I habitat survey report for 2013, and Appendix 2. Preliminary Ecological Appraisal for 2017 and so are not repeated in the text here.

3.3. Assessment Methodology and Significance Criteria

The methodology used to assess the significance of the impacts on the ecological receptors is based on the Chartered Institute for Ecology and Environmental Management (CIEEM) guidelines published in 2016[27]. This guidance follows a process of identifying, quantifying and evaluating the potential effects of development-related or other proposed actions on habitats, species and ecosystems.

Two particular uses of EcIA are:

- Providing the ecological component of Environmental Impact Assessment (EIA) required under EIA Regulations; and
- Demonstrating how a project accords with relevant planning policy and legislation where an EIA is not required.

4. Baseline Ecological Conditions

4.1. Desk Study

4.1.1. Sites with Statutory Designations

The Application Site lies within the Cairngorms National Park. Designated in 2003 this Park has a key aims of management for nature conservation benefit as well as for sustainable rural landuse.

There are two Natura 2000 sites within 3km of the Application Site. These sites were established as part of the Natura 2000 Europe-wide network of areas with nature protection within the European Union. It is made up of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated respectively under the Habitats Directive and Birds Directive.

The closest designated Natura 2000 Site is the River Spey SAC approximately 1.1km east of the Application Site with qualifying features including Atlantic Salmon (*Salmo salar*), Freshwater Pearl Mussel (*Maragitifera maragitifera*), Otter (Lutra lutra), and Sea Lamprey (*Petromyzon marinus*).

The only other designated site within 3km is the Drumochter Hills SAC, which is underpinned by designation as a Site of Special Scientific Interest (SSSI). Qualifying features include breeding bird, montane, and vascular plant assemblages.

4.1.2. Sites with Non-statutory Nature Conservation Designations

Sites of Importance for Nature Conservation or similar were searched for in the adopted Local Plan: There are no Sites with Non-Statutory Nature Conservation Designations in proximity to the Application Site.

4.1.3. Protected Species Records

The desk studies supplemented by an online data trawl in January 2018 located records of several species with enhanced statutory protection within 5km of the Application Site:

- Bats: Daubenton's Bat two records from one location by the River Truim 1.6km south (SNH Bat Casework records 1970 – 2007;
- Otter: 12 records (1040 – 2011) were found within 5km, of which eight were within 3km of the Application Site along the River Truim, of which one was 0.5km to the south of the Application Site on the Allt an t-Sluic river (National Mammal Atlas Project, SNH Site Condition Monitoring 2011-12, The Atlas of Mammals, and Scotland Otter Survey database.
- Pine Marten (*Martes martes*): four records (2015) within 5km (NBN Atlas 2018), other historical records include 1.1km north and east (Atlas of Mammals 1993);
- Badger: two records within 3km east and south (The Atlas of Mammals 1973);
- Water Vole: 14 records (2007 – 2011, NBN Atlas 2018) along the River Truim and smaller tributaries, of which two records were within 1km northeast of the Application Site;
- Red Squirrel (*Sciurus vulgaris*): two records (2010) 4 – 5km to the south and southwest of the Application Site (Scottish Squirrel Database);
- Birds: No species of bird with enhanced statutory protection have been recorded closer than 4.8km [1 record of Golden Eagle (BTO 1981) and one of Goshawk (BTO 2012)].

4.2. Field Surveys

4.2.1. Habitats

4.2.1.1. Habitats 2013

The survey in this year was only for the extension area proposed at that time as the Quarry itself was still operational. The extension area was entirely composed of the Phase I habitat type D6 Wet heath/acid grassland mosaic (Acorna Associates Ltd.).

Had the Quarry also been surveyed at that time then the following habitats would also have been recorded (but no standing water as the Quarry was dry:

- I2.1 Quarry;
- J1.3 Ephemeral/short perennial on the bunded soils around the Quarry
- J2.4 Fence;
- J3.6 Building; and
- J4 Bare ground.

4.2.1.2. Habitats 2017

A total of seven Phase 1 habitat types, including boundary features, were present within the site boundary (EnviroCentre):

- D5 Dry heath/acid grassland mosaic;
- G1 Standing water;
- I2.1 Quarry;
- J1.3 Ephemeral/short perennial;
- J2.4 Fence;
- J3.6 Building; and
- J4 Bare ground.

4.2.2. Protected Species

4.2.2.1 Otter: no evidence of the species was found either in the Application Site or within 100m of it in 2013 or within 50m of it in 2017.

4.2.2.2. Badger: no evidence of the species was found either in the Application Site or within 100m of it in 2013 or within 50m of it in 2017.

4.2.2.3. Water Vole: no evidence of the species was found either in the Application Site or within 100m of it in 2013 or within 50m of it in 2017.

4.3. Limitations

The findings of both surveys are constrained by the survey buffer zone extents of 100m in 2013 for protected species, and 50m in 2017 for protected species. Timing of survey was also a constraint as both surveys were based on only single visits in each year, and the survey in 2017 was too late to gather comprehensive data on breeding birds.

4.4. Additional Survey Effort Required

4.4.1. **Habitats**

A Phase II or National Vegetation Classification Survey will be undertaken for the heath/acid grassland habitat in the proposed extension area including a 100m buffer around this. This will be completed between April and July 2018. Additionally, a Ground Water Dependent Terrestrial Ecosystems (GWDTE) survey will also be completed in the spring of 2018.

4.4.2. Protected Species

A Site walkover to check for evidence of Otters at site will also be undertaken during one of the proposed visits to Site to complete a breeding bird survey visit, particularly with the current flooded status of the Quarry.

4.4.3. Breeding Birds

With the lack of current relevant data a series of monthly breeding bird surveys will be undertaken between late April and June 2018. This will provide essential information on potential territory losses and impacts on home ranges of breeding birds that can be input into the planning process. It is also proposed to update the breeding bird survey prior to the start of each new phase of quarrying.

5. Proposed Development

The Application to the Planning Authority will be for the re-opening and extension to Dalwhinnie Quarry. The proposed Application Site covers an area of 15.1ha and this is delineated red on Drawing RG547-18/L/F/02 accompanying the Application. Drawing RG547-18/L/F/03 shows an indicative design of the quarry at its maximum extent. Extraction would be undertaken on a phased basis, with a general layout as shown on the phase plans. The proposed extension entails developing the existing quarry in a northerly and easterly direction. Overburden and soils will be stored around the perimeter of the quarry void. In order to mitigate any potential visual impact the existing overburden storage will be re-profiled to a shallower angle and all future storage will be no higher than 5m and the outward facing slopes will be formed at a grade of 1:3, soiled and seeded. All crushing, processing, stockpiling and loading of HGVs will take place on the quarry floor within the quarry void.

Following extraction the objective will be to restore the site to an end use beneficial to ecology. The restoration landform aims to soften the regular quarry extraction faces as far as possible and to help assimilate the application site within the local landscape, as illustrated in Drawing RG547/PA/F/06. This will be achieved by re-grading the quarry floor and by the use of available quarry derived restoration fill materials (utilising the material stored around the periphery of the quarry) which will be placed against the worked out quarry faces in order to provide shallower slopes into the water body and therefore providing a variety of habitats within the application site.

6. Assessment of Effects and Mitigation Measures

6.1. Habitats

The existing dormant Quarry site is approximately 2.3ha, with the proposed extension area increasing the Quarry area including car parking etc. to 15.1ha. This will result in a loss of approximately 12.8ha of degraded heath/acid grassland mosaic while the quarry is in operation. The loss is not considered a significant negative impact at the regional, Cairngorms National Park, or local level, as the habitats are widespread in this region, and this example here is badly degraded due to damage by intense muirburn or accidental fire (scorched earths that are bare in both 2013 and 2017), with species present that are indicative of modified conditions on the heathland habitat such as mat-grass, white clover, common mouse-ear, common ragwort, and broad-leaved dock, for example. As it is a far from pristine area its conservation value is low.

Mitigation for loss of habitats and associated plant species is not possible while the Quarry is operational. The planned subsequent site restoration and enhancement will however, provide some habitat replacement at this site: although it will not be on a like-for like basis it will provide nature conservation value, so the residual impact of the Quarrying following the subsequent restoration and enhancement is considered to be low.

6.2. Protected Species

6.2.1. Species with Enhanced Statutory Protection

No evidence of any species with enhanced statutory protection was found in the survey areas in either 2013 or 2017. There are therefore no protected species ecological constraints for the proposed Application Site.

6.2.2. Breeding Birds

6.2.2.1 Within the existing Quarry

In 2013, there were no breeding birds in the Quarry site. In 2017, the Quarry was inactive and flooded and appears to have been in use by a small breeding colony (<15 pairs) of Common Gulls (*Larus canus*). This colony of gulls will be displaced by the re-opening of the Quarry as this will necessitate draining the flooded workings to continue extraction, and so nesting gulls will be an ecological constraint at the Quarry if they return to breed. This is not considered to be a significant negative impact on the species at even the local level as it is a widespread breeding species in upland Scotland, with one of the largest colonies in the UK in the wider region. It is an opportunistic species that often selects ephemeral habitats to breed in such as gravel banks in upland rivers, quarry and sandpit sites etc., and consequently moves on as sites change (loss of gravel banks, development of dense tall vegetation etc.).

The potential impact on the gull colony will be high if the Quarry is re-opened during the breeding season while the birds have active nests or dependent young, and at such a time could prove disastrous for the productivity of the colony. However, the impact on the individuals in the colony will be negligible if the re-opening of the Quarry takes place either before or after the breeding season. If the Quarry re-opens before the breeding season, the birds will simply be displaced on arrival and the birds will simply move on elsewhere to breed – based on the Quarry being small and there being no undisturbed area for the birds. – If an undisturbed area remained then some birds may remain on the periphery of the Quarry site to breed, in which case the only remaining issue may be blasting – if the work area is sufficiently large then the potential impact of this may be negligible, as this species uses other sites where blasting occurs throughout the breeding season. If the Quarry re-opens after the breeding season there is a window of opportunity of around eight months to carry out site preparation and commence operations before any gull would be back. The gulls on their return would either be displaced and move on, or may accept the activity on site and find a peripheral area to breed as they can be highly tolerant to some indirect disturbance.

Note: bearing in mind the draining down of the Quarry the birds may be much less receptive to settling at the site anyway once it is active, as the loss of water may increase depredation of eggs and young due to easier access by Foxes and other mammalian predators.

No mitigation is required for the potential loss of breeding gulls and their habitat at this site on the basis that use would be ephemeral in the natural environment, the habitat used is not only ephemeral but is a result of suspension of works so is temporary, and the restored site will provide aquatic habitat for this species again if it wishes to occupy it. The residual impact of Quarrying on the gulls following the subsequent restoration and enhancement is considered to be negligible.

6.2.2.2 Within the proposed extension area

The breeding bird data from 2013 is very much out of date but at present is the only baseline information on breeding birds available. The Application Site extension may impact 1 – 7 breeding bird home range areas for three Meadow Pipit (*Anthus pratensis*), one Skylark (*Alauda arvensis*), one Swallow (*Hirundo rustica*), and two Red Grouse (*Lagopus lagopus scotica*) but not necessarily the nest sites used. While this data is out of date it does indicate that breeding birds may be an ecological constraint. Note: small passerines are relatively short-lived and Red Grouse are a quarry species for hunting so the numbers of breeding pairs of birds in proximity to the Application Site may be quite different in 2018 compared to 2013. The area surrounding the quarry is managed for grouse shooting.

The potential impact on the individual breeding birds will be high if the proposed extension area is stripped and prepared during the breeding season at which time all nests, eggs and young may be lost (as well as nesting and foraging habitat) for the passerines within the works area (young Grouse may be able to escape if given enough time to fly away). However, the impact on breeding birds will

be negligible if the re-opening of the Quarry takes place between mid-August and April) to avoid the bird breeding season. This approach will completely remove the potential for breeding birds to be an ecological constraint. If the Quarry re-opens before the breeding season, the birds will simply be displaced on arrival and the birds will simply move elsewhere locally to breed (and habitat is not a limiting factor in this area). If the Quarry re-opens after the breeding season there is a window of opportunity of around eight months to carry out site preparation and commence operations before any breeding bird returns. Any returning breeding bird would be displaced locally and continue as before.

At the extraction stage of the Quarry there is no potential to mitigate for the loss of habitat for any breeding birds that may be displaced. However, the subsequent planned site restoration and enhancement will provide some habitat replacement at this site, as well as create new habitats such as seasonal standing water. The residual impact of Quarrying on the breeding birds following the subsequent restoration and enhancement is considered to be low.

Note: If stripping and preparation has to take place between late March and the end of July the area of the site to be stripped should first be checked by an ecologist to determine if any active nests and/or dependent young are present, and if any are found then an appropriate buffer area of 25m+ may be required to safeguard the nest or young until breeding is completed, or works delayed in a larger area depending on the species concerned.

6.3. General Site Environmental Management Procedures

A site Environmental Management Procedure will be used during the site preparation, Operational and restoration phases of the works. This will include measures to prevent or mitigate potential impacts on breeding birds and the aquatic environment (watercourses and ground water) as key ecological receptors.

Briefing of all contractors will be done in relation to any ecological requirements on the site for the time of year and area of work including the use of toolbox talks where breeding birds may be a relevant constraint. This will include emergency procedures if any active bird nest was found and a briefing regarding exclusion zones and practices, with clearly demarcated exclusion zones around any nest explained to all contractors;

All works will be undertaken in compliance with the Scottish Environment Protection Agency (SEPA) Pollution Prevention Guidelines including:

- PPG1: General guide to the prevention of water pollution;
- PPG2: Above ground Oil Storage Tanks;
- PPG5: Works in, near or liable to affect watercourses;
- PPG6: Working at construction and demolition sites; and
- PPG21: Pollution incident response planning.

The site operator will consult with SEPA where appropriate and formulate an agreement on pollution and siltation prevention measures, strategies, and emergency procedures for all phases of preparation/quarrying. This will involve the protection of any waterways by planning all drainage including draw-down of the water in the Quarry, as well as run-off from the works area/quarrying site.

Any oil and fuel storage will be located in a secure area on an impermeable base within an impermeable bund with no surface water outlet and be no closer than 60m to any watercourse to prevent contamination of surface and groundwater. The bund will be capable of retaining at least 110% of the volume of the tanks. Valves and couplings connected to oil storage tanks will be located within the bund and delivery hoses will be fitted with trigger-type handles suspended back within the bund after use. Valves and trigger filler handles will be kept padlocked when not in use. Reasonable security measures will be in place to prevent vandalism.

Refuelling will take place adjacent to the fuel store in a secure area within an impermeable bund to prevent contamination of groundwater. Mobile fuel and lubricant servicing units will be provided with appropriate quality delivery hoses with trigger-type nozzles, and be kept in the secure area. Oil powered pumps, generators etc. will be kept on impermeable drip trays surrounded by earth or sand bunds.

Transportation of fuel and oil across the site in drums or other containers will be avoided. Extreme caution will be taken to avoid spillages or leaks, with stocks of oil absorbent and containment materials retained on site. All contractors handling such containers will be trained to be familiar with the use of these materials and related emergency spillage containment procedures.

Temporary earth/spoil stockpiles created during site clearance and extraction will be located well away from any site drainage to prevent runoff of suspended solids into any watercourse. Where appropriate, silt barriers will be used and bunds created to prevent such run-off.

Dust containment and minimisation will also be in place for materials with the potential to lead to wind-blown pollution.

Any run-off/waste water from the work will not directly enter any watercourse but will be directed to an appropriate settlement structure.

7. Cumulative Effects

There are no other nearby quarrying operations that could contribute to a Cumulative Impact with the re-opening of the Dalwhinnie Quarry.

8. Compensation

Given the nature of the proposed Application and surrounding land use it will not be possible to compensate for the initial habitat losses by creation of an equal area of heathland/acid grassland mosaic, with only a small area of acid grassland being appropriate at the restoration stage. Instead, the restoration of the Site will focus on enhancement for biodiversity through creation of some new habitat features – this will be discussed in Section 9 Restoration and Enhancement.

9. Restoration and Enhancement

The final restoration scheme is not yet determined as it will be undertaken in accordance with a detailed scheme to be agreed in consultation with SNH and the planning authority during the planning process using a proposed initial Conceptual Restoration Design (Drawing RG547-PA-F-06) as the initial design for the restoration. The objective will be to restore the site to an end use beneficial to local nature conservation. The restoration landform will aim to soften the regular quarry extraction faces as far as possible and to help assimilate the application site within the local landscape.

This will be achieved by re-grading the quarry floor and by the use of available quarry derived restoration fill materials (utilising the material stored around the periphery of the quarry) which will be placed against the worked out quarry faces in order to provide shallower slopes into the water body and therefore providing a variety of habitats within the restored site. These may include but are not limited to:

- One vertical face will be left along the northern side of the Quarry to provide habitat that may be suitable for cliff nesting bird species such as raptors;

- The Quarry bund will be reinstated to the original ground level and sown with a species-rich acid grassland seed mix;

- As the Quarry has been shown to fill naturally with rainwater and run-off it is proposed to allow the remaining Quarry void to fill with water seasonally as nature dictates following the re-grading of its sides to provide the desired shallower slopes into the water. This may then benefit species such as Common Gull, Common Sandpiper, Oystercatcher, and other bird species associated with water as well as a range of invertebrate species. With the potential for use by such species it is not proposed to seed much of the shoreline of the seasonal water body but to allow it to colonise naturally, the remaining shoreline may be sown with a short-growing species-rich seed mix that reflects this type of habitat in the wider area, or may be left to colonise naturally;

- It is currently proposed to create a peninsula out into the seasonal water body – it is considered that it would be more valuable to turn this feature into a moderately large island with shallow margins into the water and a sheltered bay. This would provide species such as Common Gull and other ground nesting birds associated with water the opportunity to nest safely beyond the reach of casual predators such as Fox, although it will not deter predators such as Otter;

- The island or peninsula will be sown with a species-rich acid grassland seed mix or similar as appropriate for the final soil chemistry and pH.

Ecological advice will be sought during final restoration process.

10. Monitoring Post-Restoration

Monitoring of the restored site will be annual for the first five years after restoration and utilise fixed point photography so habitat development and changes can be recorded. It is recommended that monitoring is done at the same time of year each year, and should be during late May - June when any species of birds that may use the Site should be breeding. Vegetation monitoring will be low key using the fixed point photography, and a site walkover to identify if any patches require additional seeding.

11. Conclusions

When the recommended Compensation and Enhancements are taken into consideration the overall impact of the proposed quarrying on the key ecological constraints is reduced to an acceptable level for breeding birds, and key species of plants. This assessment therefore concludes that any potentially significant ecological impacts can be met and reduced to acceptable levels.

12. References

Ref. 1 Acorna Associates Ltd. (2013) Extended Phase I habitat survey for proposed extension of Crubenmore Quarry, Dalwhinnie.

Ref. 2 EnviroCentre Limited (2017) Dalwhinnie Quarry Preliminary Ecological Appraisal

Ref. 3 The Convention on the Conservation of European Wildlife and Natural Habitats (The Berne Convention), 1979;

Ref. 4 HMSO, (1981) 'The Wildlife and Countryside Act 1981 (WCA) (and subsequent amendment through The Conservation (Natural Habitats &c.) Amendment (Scotland) Regulations 2007, 2009, & 2011)

Ref. 5 HMSO, (1994), 'Conservation (Natural Habitats &c.) Regulations' 1994 (The Habitats Regulations)

Ref. 6 HMSO, (2007), The Conservation (Natural Habitats &c.) Amendment (Scotland) Regulations as amended (2004, 2007, 2008, 2011, and 2012)

Ref. 7 HMSO, (2004), The Nature Conservation Act (Scotland) 2004

Ref. 8 Wildlife & Natural Environment (Scotland) Act (2011);

Ref. 9 HMSO, (1996), Wild Mammals (Protection) Act 1996

Ref. 10 HMSO (1992). Protection of Badgers Act 1992 (c. 51) (and subsequent amendment through The Nature Conservation (Scotland) Act 2004)

Ref. 11 The Land Reform (Scotland) Act, 2003;

Ref. 12 Scottish Planning Policy (June 2014) replaces NPPG14 and SPP (February 2010)

Ref. 13 UK Biodiversity Partnership, 1994 'Biodiversity The UK Action Plan'

Ref. 14 Scottish Biodiversity Forum (2007), Scottish Biodiversity List

Ref. 15 Cairngorms National Park Authority (2013) Cairngorms Nature Action Plan 2013 - 2018

Ref. 16 The Water Framework Directive (2000/60/EC)[16];

Ref. 17 The Highland Council. The Highland wide Local Development Plan (HwLDP) 2010

Ref. 18 The Highland Council. Highland-wide Local Development Plan 2 (Draft future plan)

Ref.19 August 2015. The Highland Council. Highland-wide Local Development Plan Main Issues Report

Ref. 20 Cairngorms National Park Local Plan 2010

Ref. 21 Cairngorms National Park Local Development Plan 2020 Consultation Draft

Ref. 22 Cairngorms National Park Local Development Plan Main Issues Report Public Consultation (17 November 2017 – 2 March 2018)

Ref. 23 Cairngorms Local Biodiversity Steering Group. Cairngorms Local Biodiversity Action Plan (CLBAP) 2002 – 2012

Ref. 24 SNH Sitelink. https://gateway.snh.gov.uk/sitelink/

Ref. 25 Scotland's Environment Web Interactive Map. http://map.environment.scotland.gov.uk/seweb/map.htm?menutype=1

Ref. 26 National Biodiversity Atlas Scotland. https://scotland.nbnatlas.org/

Ref. 27 CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester

13. Figures

Refer to the following figures for current quarry extent and proposed application site boundary:

RG547-PA-F-01

Refer to the following Figures for Quarry Phasing:

- RG547-PA-03 – Phase 1;
- RG547-PA-F-04 – Phase 2; and
- RG547-PA-F-05 – Phase 3

Refer to the following figure for Conceptual Restoration Model:

RG547-PA-06- Restoration: Conceptual Restoration Model

14. Appendices

Technical Appendix 1: 2013 Ecology Report Acorna Associates Ltd.

Technical Appendix 2: 2017 Ecology Report EnviroCentre

Technical Appendix 1: 2013 Ecology Report Acorna Associates Ltd.

Breeding Bird Survey & Extended Phase I Habitat Survey

For Proposed Extension of Crubenmore Quarry

Dalwhinnie

Speyside

Highland

May 2013

Prepared by
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Executive Summary

Acorna Associates Ltd. was commissioned in May 2013 by JPB Ltd. to carry out a breeding bird survey and extended Phase I habitat survey of an area of land to the north of Crubenmore Quarry, Dalwhinnie, Highland. The Site lies immediately to the east of the A889 and immediately north of the active quarry and is currently an area of grazed wet heath/acid grassland. To provide a high due regard for the potential nature conservation value of the proposed extension area the survey focused on the potential presence of relevant breeding birds and notable habitats. Evidence of any species with enhanced statutory protection such as Otter, Badger, or Water Vole was also looked for during the Phase I survey. The surveys found that:

No evidence of Otter, Badger, and Water Vole was found so these species are not ecological constraints for the proposed development.

The proposed development will not displace any Schedule One-listed species but a small number of pairs of species of UK conservation concern may be disturbed by works activities (Skylark, Red Grouse, and Meadow Pipit) as they may nest within 100m of the works area. As a general principle for site enabling works such as ground clearance/stripping it is recommended that this takes place outwith the main bird breeding season (mid-April – end of July) to avoid potential destruction of active nests and/or dependent young, as it would be impractical to search for individual nests and establish protective buffer zones around them. Development is unlikely to directly impact any nesting birds if ground preparation/site clearance takes place between August and early-April. If ground clearance has to take place between early April and the end of July it is advised that the proposed extension area should be checked by an ecologist to determine if any active nests and/or dependent young are present, and if any are found then site preparation may be delayed until breeding is completed.

The area of moorland within the proposed extension area has a history of grazing and muirburn, and the habitats are mostly degraded. The loss of the small area of moorland is not considered to be of any nature conservation significance either on a local basis or as part of the habitat resource for the National Park. Site restoration post-works may be an opportunity to restore to a higher quality of moorland for grazing if there are no plans to create an improved pasture. An appropriate seed mix for moorland areas could be established that will not only complement the surrounding moorland but could enhance it.

Contents

1. Introduction

Acorna Associates Ltd. was commissioned in May 2013 by JPB Ltd. to carry out a breeding bird survey and extended Phase I habitat survey of an area of land to the north of Crubenmore Quarry, Dalwhinnie, Highland (NN 63685 86403, Figure 1.). The Site lies immediately to the east of the A889 and immediately north of the active quarry and is currently an area of grazed wet heath/acid grassland.

2. Scope of Assessment and Survey

To provide a high due regard for the potential nature conservation value of the proposed extension area the survey focused on the potential presence of relevant breeding birds and notable habitats. Evidence of any species with enhanced statutory protection such as Otter, Badger, or Water Vole would also be recorded during the Phase I survey.

3. Relevant Policy and Guidance

This ecological assessment has been undertaken with regard to the legislative requirements given in the following:

- The Conservation (Natural Habitats &c) Regulations 1994 (The Habitats Regulations);
- The Conservation (Natural Habitats &c) Amendment (Scotland) Regulations 2007 and subsequent amendments;
- Nature Conservation (Scotland) Act, 2004;
- Wildlife and Countryside Act 1981 (and subsequent amendment through The Conservation (Natural Habitats &c) Amendment (Scotland) Regulations 2007);
- Protection of Badgers Act, 1992 (and subsequent amendment through The Nature Conservation (Scotland) Act 2004);
- Wild Mammals (Protection) Act, 1996;
- The Convention on the Conservation of European Wildlife and Natural Habitats (The Berne Convention), 1979;
- Scottish Executive (now Scottish Government) document: European Protected Species, Development Sites and the Planning System, 2001. Interim guidance for Local Authorities on Licensing Arrangements (October 2001);
- The Land Reform (Scotland) Act, 2003;
- Scottish planning policy (Feb 2010) replaces NPPG14;
- The UK Biodiversity Action Plan (BAP), revised priority list 2007;
- Cairngorms Nature Action Plan 2013-2018; and
- Scottish Biodiversity List 2007.

3.1. Biodiversity Status

The UK Biodiversity Action Plan (BAP) is the UK Government's commitment to the Convention on Biological Diversity signed in 1992. It is comprised of two types of Action Plans developed to set priorities for nationally and locally important habitats and wildlife:

Species Action Plans

- Produced for UK BAP Priority Species: information on the threats facing 382 species and action plan targets to achieve a positive conservation status;

- Grouped Species Action Plans - common policies, actions and targets for similar species, for example for Eyebrights, or Commercial Marine Fish. There are nine grouped action plans;

- Species Statements - overview of the status of species and broad policies developed to conserve them for two groups of species.

Habitat Action Plans

- Broad Habitat Statements - summary descriptions of 28 natural, semi-natural and urban habitats and the current issues affecting the habitat and broad policies to address them; and,

- UK BAP Priority Habitat Action Plans - detailed descriptions for 45 habitats falling within the Broad Habitat classification and detailed actions and targets for conserving these habitats.

Local Biodiversity Action Plans

Each Local Biodiversity Action Plan (LBAP) partnership, usually but not always at the local authority level identifies and establishes actions to conserve local priorities and also link this action to the delivery of national Species and Habitat Action Plan targets wherever possible. The Cairngorms Local Biodiversity Action Plan 2002 - 2012 has now breen replaced by the Cairngorms Nature Action Plan 2013-2018. The local Cairngorms Nature Action Plan habitat of relevance to this study was moorland.

3.2. The Conservation (Natural Habitats &c) Regulations 1994 (The Habitats Regulations)

Full consideration of European Protected Species (EPS) must be given as part of the planning application process, not as an issue to be dealt with at a later stage. The European Protected Species of potential relevance to this survey area was Otter.

European Protected Species are protected in Annex IVa in the EC Habitats and Species Directive, which is transposed into UK legislation by the Conservation (Natural Habitats &c) Regulations 1994 (Schedule II of The Habitats Regulations). The full details of this legislation can be viewed at:

http://www.opsi.gov.uk/SI/si1994/Uksi_19942716_en_4.htm

This legislation was amended on the 14th February 2007 (The Conservation (Natural Habitats &c) Amendment (Scotland) Regulations 2007.), and explanatory guidance on this was published by the Scottish Government in April 2007. The amendment removed all EPS from Schedule 5 of the Wildlife & Countryside Act 1981. There are therefore now no defences in the WCA 1981 whatsoever for any actions impacting on EPS, and protection is afforded by the following legislation only:

Under Regulation 39 of the Conservation (Natural Habitats &c) Regulations 1994 (The Habitats Regulations) it is now a criminal offence (subject to specific exceptions) to:

(a) deliberately or recklessly to capture, injure or kill a wild animal of a European protected species; (only defences are mercy killing, capture for tending a disabled animal or circumstances where the animal is captive bred and lawfully held).

(b) deliberately or recklessly–

(i) to harass a wild animal or group of wild animals of a European protected species;

(ii) to disturb such an animal while it is occupying a structure or place which it uses for shelter or protection;

(iii) to disturb such an animal while it is rearing or otherwise caring for its young;

(iv) to obstruct access to a breeding site or resting place of such an animal, or otherwise to deny the animal use of the breeding site or resting place;

(v) to disturb such an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs; or

(vi) to disturb such an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;

(c) deliberately or recklessly to take or destroy the eggs of such an animal; or

(d) to damage or destroy a breeding site or resting place of such an animal.

It should be noted that only the offence of damaging or destroying a breeding site or resting place of an EPS is a strict liability offence. The remaining offences are offences only where they are carried out "deliberately" or "recklessly".

In Scotland licenses may be granted by Scottish Natural Heritage (SNH) to permit certain activities that would otherwise be illegal due to their potential impact on EPS or their places of shelter/breeding, whether or not they are present in these refuges. This includes for developmental work. Under Regulation 44 of The Habitats Regulations, the provisions in Regulation 39 (protection of animals) do not apply to anything done for any of the purposes defined in Regulation 44 provided that any action is carried out "under and in accordance with the terms of a licence granted by the appropriate authority".

Three tests must be satisfied before a development licence for disturbance of an EPS or damage to a site/destruction of a site used by EPS will be granted. Note: A license application will fail unless all three tests are satisfied.

- Test 1 - the licence application must demonstrably relate to one of the purposes specified in Regulation 44(2). This regulation states that licences may be granted by Scottish Natural Heritage where the activities to be carried out under any proposed licence are for the purpose of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment";
- Test 2 - Regulation 44(3)(a) states that a licence may not be granted unless Scottish Natural Heritage is satisfied "that there is no satisfactory alternative"; and
- Test 3 - Regulation 44(3) (b) states that a licence cannot be granted unless Scottish Natural Heritage is satisfied "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range".

Note: Breach of Licensing Conditions
A new regulation 46A came into force on 15th May 2007. This now makes it an offence to breach any conditions attached to a licence. Licence conditions should therefore be adhered to at all times.

3.3. Additional Legal Protection for Otters

- Listed in Appendix I of the Convention on International Trade in Endangered Species (CITES), implemented in the UK through EC Directive 3626/82, which prohibits trade in the species except in exceptional circumstances; and

- Listed under Annex II of the Bern Convention. Article 2 of the convention which requires that measure be taken to maintain populations of listed wild flora and fauna, whilst taking account of economic and recreational requirements. Article 6 seeks to ensure special protection for species listed in Appendix II. Article 8 prevents the use of indiscriminate means of capture. The Bern Convention is implemented in England, Scotland and Wales for EPS by the Conservation (Natural Habitats, &c.) Regulations 1994.

It is also a legal obligation in Scotland to consult with SNH before you do anything that might affect Otters or their places of rest.

3.4. Badger

In the UK, Badgers are protected under the Protection of Badgers Act 1992 (c.51), which repeals the previous Badgers Acts of 1973 and 1991, and certain sections of other relevant acts such as The Wildlife and Countryside Act 1981, The Environmental Protection Act 1990, The Animals (Scientific Procedures) Act 1986, The Natural Heritage (Scotland) Act 1991, and The Criminal Justice Act 1991. The Protection of Badgers Act 1992 was further amended and strengthened through the Nature Conservation Act (Scotland) 2004.

The 1992 Act makes it an offence to:

- Wilfully kill, injure, catch, or take a Badger from the wild (or attempt to);
- Cruelly ill-treat a Badger, digging for Badgers, using Badger tongs, using a firearm other than permitted (under the exceptions regarding humane dispatch of an injured animal) within the Act;
- Damage, destroy or obstruct access to any part of a Badger sett (whether occupied or unoccupied);
- Disturb a Badger while it is occupying a sett, either by intent or by negligence;
- Dig a Badger sett;
- Cause a dog to enter a Badger sett;
- Sell or offer for sale a live Badger, have possession or control of a live Badger;
- Be in possession of a live or dead Badger or any part of one; and
- Mark a Badger or attach any ring, tag, or other marking device to a Badger.

Note: A Badger sett is defined within the Act as "any structure or place which displays signs indicating current use by a Badger" where current use means "any sett within an occupied Badger territory regardless of when it may have last been used".

It is also a legal obligation to obtain a licence from Scottish Natural Heritage before you do anything that might affect Badgers or their setts, for example for:

- Development purposes [as defined under the Town & Country Planning (Scotland) Act 1997]; and
- Alteration or maintenance of existing buildings where Badgers are found.

Despite the above legislative protection, Badgers are not a UK Biodiversity priority species for conservation but are only considered of UK conservation concern.

3.5. Water Voles

In Scotland, the Water Vole has had limited enhanced statutory protection under Schedule 5, section 9(4) of the Wildlife & Countryside Act 1981 since 1998. This section of the act protects habitat occupied by the species. Under the Nature Conservation (Scotland) Act 2004, the term "recklessly" has been added to the legislation, so now the protection makes it an offence to intentionally:

- "Recklessly" or "intentionally" damage or destroy structures or places used by Water Voles for shelter or protection; and

- Disturb Water Voles whilst they are using such a place.

In Scotland, it is not illegal under this Act to kill or injure Water Voles, take them from the wild or sell them but under animal welfare laws cruelty to Water Voles is an offence. The legislation in England was amended on the 6th April 2008, and the Water Vole now has full legal protection in that country.

It should be noted that there is no provision under the Wildlife & Countryside Act 1981 for licensing what would otherwise be offences for the purpose of development, maintenance or land management. Such activities must be covered by the defence in the Act that permits otherwise illegal actions if they are the incidental result of a lawful operation and could not reasonably be avoided.

3.6. Legal Protection for Breeding Birds

All breeding birds have basic statutory protection under the Wildlife & Countryside Act 1981. In addition, a number of species that are rare or uncommon are afforded enhanced statutory protection during the breeding season by inclusion on Schedule One of the Wildlife & Countryside Act 1981, which protects adults in places of rest, their eggs and young.

- All breeding birds in the UK are protected through Sections 1-8 (referring to Schedules 1 to 4) of the Wildlife & Countryside Act [WCA] (enacting the Bern Convention and the Birds Directive), and subsequent amendments through the Nature Conservation (Scotland) Act 2004. With certain exceptions, all wild birds, their eggs and dependent young are protected from intentional killing, injuring and taking; they cannot be in anyone's possession, whether live or dead, and nests (whilst being built or in use) cannot intentionally be taken, damaged or destroyed. A general licence permits control of some species with landowner consent;

- Schedule 1 of the WCA is a list of nationally rare breeding birds for which all offences carry special (higher) penalties. The legislation also makes it an additional offence to intentionally or recklessly disturb adults or the dependent young of these species, at any stage of their breeding;

- Schedule 2 is a list of traditionally hunted birds for which protection does not apply outside a "close season"; and

- European legislation provides additional legal protection as European Protected Species for a number of species of high conservation concern.

'The Population Status of Birds in the UK' was produced in 2002 and lists the UK status of 247 species of bird. Of these 40 were "red-listed" and 121 "Amber-listed" as species of conservation concern. This listing does not provide additional legal protection for these species but highlights those of concern for nature conservation purposes. The lists were updated in 2009 (Eaton et al. 2009), resulting in re-designation of the UK status of 246 species of bird: 52 are now "red-listed" and 126 "Amber-listed" as species of conservation concern.

3.7. Notable Plants

Several plant species are classed as European Protected Species and are listed in Annex IV of the EC Habitats Directive, and in the UK on Schedule IV of the Conservation (Natural Habitats &c) Regulations 1994 (The Habitats Regulations).

In addition, there are a number of species protected by the Wildlife & Countryside Act 1981, which makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants. It also contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9. It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

The most problematic invasive, non-native plants are listed on Schedule 9 of the Wildlife & Countryside Act 1981 (Appendix 1.). Under section 14(2) of the Act it is an offence to plant or otherwise cause to grow any species of plant listed on Schedule 9. Failure to appropriately dispose of any material containing Japanese Knotweed or several other invasive species may lead to prosecution under Sections 33 and 34 of the Environmental Protection Act 1990 and Section 14 of the WCA 1981. The Nature Conservation (Scotland) Act 2004 increased the penalties applicable to someone committing a Section 14 offence. Penalties on summary conviction were increased to include imprisonment for up to six months and/or a fine not exceeding £40,000. On conviction on indictment, the penalties are an unlimited fine (i.e. whatever the court feels to be commensurate with the offence) and/or a 2 year prison sentence.

4. Desk Study

4.1. Sites with Statutory Designation

Interrogation of the Scottish Natural Heritage SiteLink V3 database determined that the survey area contained no sites with a statutory nature conservation designation. The nearest ones were 2km to the south, and included Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Cairngorms National Park (CNP), and Special Area of Conservation (SAC) designations on the Drumochter Hills.

4.2. Notable Species

The NBN Gateway was checked for records indicating the presence of any notable species potentially relevant to the site:

Otter: Twelve records within 5km of the site but none closer than 1.5km on the River Truim (Highland Biological Recording Group, and JNCC).

Badger: One record >9km north of the site in 1965 (Biological Records Centre).

Water Vole: One record within 1km (Truim river valley floodplain southeast of the quarry, North East Biological Records Centre), and another seven records within 5km, mostly along the Truim river valley floodplain but some 2-3km northeast of the quarry in burns crossing the open moorland.

Survey Methods

4.1. Otters

The Otter survey followed NRA (1993) and RSPB et al. (1994) methodology. Otters are usually found in riparian habitats that include rivers, burns, ditches, lochs, ponds, marshes and canals. They are often nocturnal to avoid disturbance, so the best way to survey for them is to look for field signs:

- Sign heaps are usually small piles of sand or earth scraped up, and can often be found with spraints (droppings) on top of them;

- Anal jelly is a thick mucus secretion usually found on rocks in or by the water, and rapidly dries to a sticky blackish mess after a few hours. Really fresh signs of this and of spraint may have wet footprints and tail marks where the Otter has crouched and deposited them;

- Spraints are the most often encountered signs of Otters. They have a pleasant oily fresh fish aroma if less than a few weeks old, and if a few hours or less old have a mucous/watery fluid on and around them, which as the spraint ages becomes drier and slightly sticky to the touch. They usually have small fish scales and bones visible in them. They are often found in prominent places such as on rocks/boulders in water, by water or some distance from it, on ledges under bridges, and on fallen/overhanging tree limbs/roots, or on the ground by the water. They tend to be used traditionally over a number of months/years but with varying seasonal use. Higher numbers of spraint in a sprainting location are a good indication of the presence of a nearby holt or couch site;

- Shelters used by Otters that may be at the water's edge or some distance from it especially in woodland by water courses. They are often enlarged rabbit burrows, may be in Badger setts or Fox holes or may be cavities under tree roots or fallen trees. Rock piles and cavities under bridges may also be used;

- Couches are resting places above ground, usually in dense vegetation but they may also be found under bridges or in sheltered open cavities amongst tree roots;

- Feeding signs are usually either the turned out skins of frogs, sometimes with a number being brought back to the one location, or partially eaten fish kills. Otters will kill waterbirds, and again will turn the prey inside out as with frogs; and

- Footprints are very easy to recognise being rounded yet asymmetrical, which is one of the best identifiers for incomplete prints. Although Otters have five toes the footprints may only show four, dependent on the ground conditions.

The proposed extension area and a 100m buffer were searched for signs of Otter. The ecologist also looked for evidence of Water Vole presence (see section 4.3. below for Water Voles).

4.2. Badgers

Field survey methodology followed Harris et al. (1989). Badgers leave many different signs of their occurrence, so are relatively easy to detect, these include:

- Badger setts may be large networks of connected tunnels and chambers with several entrances that are usually shaped like a flattened arch and 20-30cm high and 25-35cm across, or have a single entrance to either a small burrow or large network of tunnels. Bones in and around the entrance, usually indicate Fox activity (rank fox smell may be noticeable). Fox earths have smaller entrances, but foxes may occupy Badger setts even when Badgers are in residence;
- Scraps of fresh bedding that have been dragged in (often grassy material) may be found around the sett entrance. There may also be scraps of old bedding that has been dragged out;
- Day nests are piles of bedding above ground that are used by Badgers occasionally;
- Badgers are clean animals and create spoil heaps outside the main sett, which may contain old bedding, bits of fur, and perhaps small bones. They also use latrines, and will have one or more that are used until the hole is full, and then they start another;
- Badger droppings are very varied depending on the diet (black and slimy means a diet rich in worms, but cereal grains, seeds, and hard parts of insects may be seen. The smell and texture are very distinctive; as is the usual deposition in small oblong latrines either by the sett or at strategic locations on the territory boundary (different individuals have different home ranges within the clan territory). Occasionally droppings are not deposited in latrines but left lying on the ground;
- Clear footprints will show a prominent central pad, either four or five toes and claw marks, and may be found leading to and from the sett, as well as on Badger trails. The front foot usually has

longer claws than the back foot, and the prints may overlap, with the back print partially obscuring the front;

- Badger Hairs may be found caught on fences, on brambles or other thorny plants as well as in old bedding outside setts. The guard hairs are 7.5-10cm long, distinctly wiry to the touch, and are mainly white/off-white with a distinctive black band near the white tip. Shorter belly hairs may also be found but are finer and less wiry so are harder to confirm as Badger unless guard hairs or another field sign is found;
- Scratch marks on trees and rocks, fence-posts, wooden greenhouses, barns, or even garden furniture. Scratch marks often show a series of four or five parallel deep gouges, but sometimes lighter parallel lines of scratches are left where Badger claws have clipped something they have scrambled over (such as logs obstructing a Badger trail);
- Badgers have their own traditional networks of regularly used trails both through woodland and across fields that may have been used for many years, and may be worn to a clearly visible rut in the soil, with any new plant growth flattened. Prints may be evident on these trails and where boundary features or obstacles cross the route, Badger hairs may be found caught (for example, on barbed wire, low thorny branches, wooden fences, etc. Closer to the sett, these trails may be muddy through constant use;
- Ground disturbance from foraging Badgers may include round/oval snuffle holes a few cm deep when they forage for worms (50% of lowland Badger diet (especially on lawns and golf-courses). Signs of digging for roots, bulbs such as pignut, and tubers. Beetles and grubs may also be eaten, and the remains of wasp nests torn out of the ground are a sign of Badgers in an area. Badgers usually dig down through the top to avoid getting stung. Bark ripped from rotting logs or tree trunks may also be signs of foraging and grub extraction; and
- On cold, still, winter days, steam may rise from active Badger sett entrances.

The proposed extension area and a 100m buffer zone were searched for signs of Badgers.

4.3. Water Voles

The main survey season for the presence of Water Voles is March–October (Strachan et al. 2011) when they are most active but field signs are easier to detect in early spring and late autumn. Signs of Water Voles were looked for within the proposed extension area and 100m buffer zone during the Otter survey.

Typical signs looked for included:

- Runs;
- Latrines on stones or debris in the water or on muddy shorelines with droppings approximately 10mm long and 4-5mm wide and blunt ended like a "tic tac";
- Burrows with entrances approximately 80mm wide are often apparent in burn margins occupied by Water Voles, although they will construct nests in vegetation where they are found in non-linear habitat or where the water table level remains at or near the surface of the ground most of the year;
- Footprints are not completely diagnostic for this species and may be confused to a degree with those of immature rats but are a useful supporting field sign in conjunction with other signs;
- Feeding lawns are distinctive areas often around burrow entrances where the voles graze the vegetation short early in the active season before vegetation growth increases too rapidly for this to be noticeable;

- Feeding stations are areas where the voles like to eat undisturbed and may leave lengths of cut vegetation approximately 80-100mm lying;

- Above-ground nests in wetlands where a high water table would prevent burrow excavation; and

Actual sightings of Water Voles or distinctive audible records (plopping sound as they dive).

4.4. Breeding Birds

A reduced Common Bird Census (CBC) methodology was used to record species and behaviour, with only one walkover survey during mid-May 2013 rather than the 10-12 recommended by the British Trust for Ornithology, or generally accepted 3-4 surveys between April and July. Reduced CBC is commonly used for proposed development sites and for general baseline data sets, and is more appropriate for use than the recently developed Breeding Bird Survey (BBS). The locations of all birds observed or heard were mapped and a list of species present recorded. Only birds physically using the site, or close enough at boundaries (within 100m) to potentially use the site were recorded, those flying over were omitted. The wider moorland within 2km was also scanned frequently with binoculars to look for species such as Hen Harrier, Merlin, and Short-eared Owl. Survey days were selected to follow survey method guidance, with weather conditions dry, and with light/no wind to optimise count data. Casual sightings were also noted.

A variety of cues may be used to assess residency and breeding based on the British Trust for Ornithology Common Bird Census and Breeding Bird Survey methodologies *(http://www.bto.org/birdtrends2004/).*

Class	**Category of Evidence**
Possible Breeding	Species observed in breeding season in possible nesting habitat
	Singing males present or breeding calls heard in breeding season – The number of singing males taken to be indicative of the number of breeding pairs
	Collection of nest material
Probable Breeding	Pairs observed in suitable nesting habitat in breeding season
	Permanent territory presumed through registration of territorial behaviour (song etc) on at least two different days, a week apart, at the same place
	Display and courtship
	Visiting probable nest site
	Agitated behaviour or anxiety calls from adults
	Building nest or excavating nest hole
Confirmed Breeding	Nest containing eggs
	Used nest or egg shells found (occupied or laid within the survey period)
	Nest with young seen or heard
	Adults carrying food for young or faecal sacs
	Distraction display/injury feigning/alarm calling by adults
	Downy young/recently fledged young or dependent young

4.5. Phase I Habitat Survey

An extended Phase I Habitat walkover survey update was completed during mid-May 2013 following the standard methodology and definitions used to map and describe habitats as per the Joint Nature

Conservancy Committee guidelines (JNCC, 2005/2007). All plant species encountered (native) were identified, with key non-native species also recorded. Key locations of botanical interest were identified and target notes recorded where appropriate.

The objectives of this Phase I survey were to:

i. Provide a baseline assessment of habitat distribution and extent within the boundaries of the area;

ii. Provide a preliminary evaluation of the ecological value of the habitats;

iii. Record any notable species; and

iv. Record any non-native plants listed on Section 14(2) of Schedule 9 of the Wildlife & Countryside Act 1981.

4.6. Survey Limitations

Weather conditions and time of year were acceptable for all surveys completed. Access to land was on the only constraint, with no access permission to enter land in other ownerships. A buffer distance of 100m was therefore only possible within the ownership, and public roadway areas/unfenced land.

5. Results

5.1. Otters

There was no evidence of Otter in the proposed extension area: there were no watercourses within the survey area and no resting places for Otter were found.

5.2. Badgers

There was no evidence of Badger in the proposed extension area or a 100m buffer zone around it.

5.3. Water Voles

There was no evidence of Water Voles in the proposed extension area or a 100m buffer zone around it.

5.4. Breeding Birds

No breeding birds were detected within the proposed extension area at all, and the only evidence of any bird within the proposed extension was an old Red Grouse dropping. A very small number of pairs of Meadow Pipit (5 pairs), Skylark (1 pair), and Red Grouse (1 male), and Swallow (one nest in a small shed on the moor) were found in the wider 100m around the proposed extension and existing quarry (Figure 1.). One of these species is listed within the National Birds of Conservation Concern 2009 "Red list" (Skylark) and the other two species as Amber-listed species of conservation concern. Such species may typically be listed due to a rapid decline (50% or more) in their UK breeding populations during the last 25 years but Eaton et al (2009) should be consulted for further justifications for listing. No Schedule 1-listed species of breeding bird were detected either within the proposed extension area or the surrounding wider area. Other species were present in the wider area but were woodland-dwelling species so would not use the proposed extension area (see Figure 1.)

5.5. Phase I Habitats

The entire proposed extension area was a mosaic of wet heath and acid grassland (Phase I habitat D6), with the heath badly damaged by intensive muirburn, or accidental fire that had not just scorched but had eaten through the vegetation into the bare peat. Some non-heath species were present near to the public roadway, where damage to the heath (bare areas) had allowed seed of non-peatland species to spread onto the damaged heath area (white clover, common mouse-ear, common ragwort, and broad-leaved dock, for example). Although moorland is a key habitat in the Cairngorms Nature Plan 2013 – 2018 the habitat (Figure 1.) in the proposed extension is not a notable example of such habitats. A total of 25 species (Appendix 1.) were present within the proposed extension area.

6. Conclusions

6.1. Otter, Badger, and Water Vole

It is considered that these species are not ecological constraints for the proposed development. Otter almost certainly occurs along the nearby Allt an t-Sluic as well as being known to be in the Truim river in the adjacent river valley but these are over 150m and 890m from the proposed extension area respectively, and the extension is on high ground with no open water or drainage networks nearby (active quarry is dry not ponded as on Ordnance Survey maps). The potential for Otter to enter the proposed extension area is therefore considered negligible.

6.2. Breeding Birds

The proposed development will not displace any Schedule One-listed species but a small number of pairs of species of UK conservation concern may be disturbed (low levels) by works activities (Skylark, Red Grouse, and Meadow Pipit) as they may nest nearby. As a general principle for site enabling works such as ground clearance/stripping it is recommended that this takes place outwith the main bird breeding season (mid-April – end of July) to avoid potential destruction of active nests and/or dependent young, as it would be impractical to search for individual nests and establish protective buffer zones around them. Development is unlikely to directly impact any nesting birds if ground preparation/site clearance takes place between August and early-April. If ground clearance has to take place between early April and the end of July it is advised that the proposed extension area should be checked by an ecologist to determine if any active nests and/or dependent young are present, and if any are found then site preparation may be delayed until breeding is completed.

6.3. Notable Habitats

The area of moorland within the study area has a history of grazing and muirburn and the habitats are mostly degraded. The loss of the area of moorland is not considered to be of any nature conservation significance either on a local basis or as part of the habitat resource for the National Park. Site restoration post-works may be an opportunity to restore to a higher quality of moorland for grazing if there are no plans to create an improved pasture. An appropriate seed mix for moorland areas could be established that will not only complement the surrounding moorland but could enhance it.

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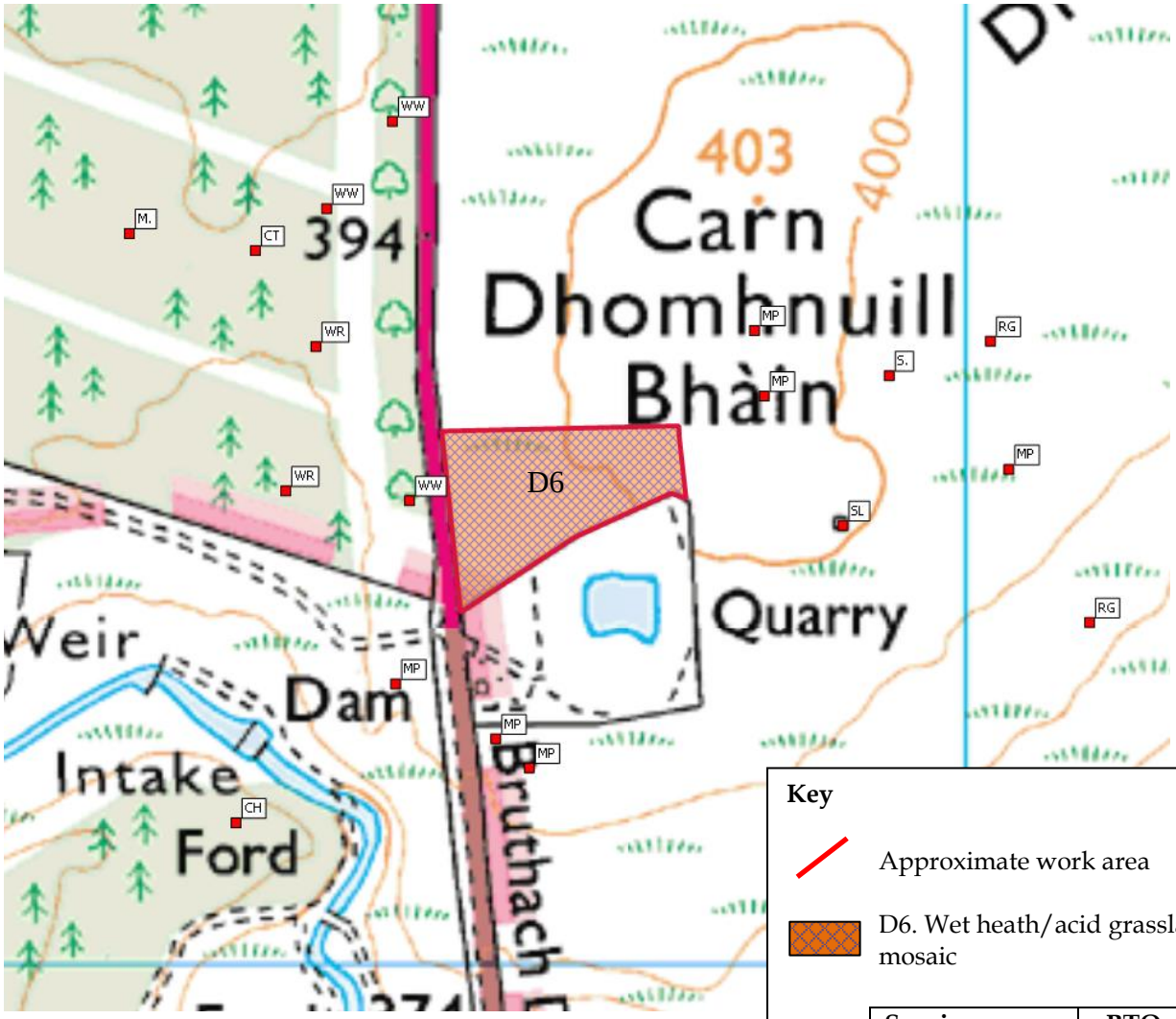
Figure 1. Site location, habitats present, and locations of displaying/calling birds



Key

Approximate work area

D6. Wet heath/acid grassland mosaic

Species	BTO species code
Chaffinch	CH
Coal Tit	CT
Mistle Thrush	M.
Meadow Pipit	MP
Red Grouse	RG
Skylark	S.
Swallow	SL
Willow Warbler	WW
Wren	WR

Key to bird species tabulated here
Red = Red-listed species of conservation concern
Orange = Amber-listed species of conservation concern

Appendix 1. Plant species list

Common name	Scientific name
Blaeberry	*Vaccinium myrtillus*
Broad-leaved Dock	*Rumex obtusifolius*
Broad-leaved Willowherb	*Epilobium montanum*
Common Cottongrass	*Eriophorum angustifolium*
Common Mouse-ear	*Cerastium fontanum*
Common Ragwort	*Senecio jacobaea*
Common Sedge	*Carex nigra*
Cowberry	*Vaccinium vitis-idaea*
Cross-leaved Heath	*Erica tetralix*
Frogbit	*Hydrocharis morsus-ranae*
Hare's-tail Cottongrass	*Eriophorum vaginatum*
Heath Dog-violet	*Viola canina*
Heath Rush	*Juncus squarrosus*
Heather	*Calluna vulgaris*
Mat-grass	*Nardus stricta*
Purple Moor-grass	*Molinia caerulea*
Sheep's Fescue	*Festuca ovina*
Soft Rush	*Juncus effusus*
Tormentil	*Potentilla erecta*
Wavy Hair-grass	*Deschampsia flexuosa*
White Clover	*Trifolium repens*
Common Haircap	*Polytrichum commune*
Red Bog-moss	*Sphagnum capillifolium*
Feathery Bog-moss	*Sphagnum cuspidatum*
Reindeer Moss	*Cladonia portentosa*

Technical Appendix 2: 2017 Ecology Report EnviroCentre