

For Marine Harvest Scotland Ltd

**For proposed Fish Feed Factory, at Allt Anavaig Quarry, Kyleakin, Isle of Skye
Phase 1 Terrestrial Habitat Survey in June 2016**

by Dr Mary Elliott



Looking westwards into part of the proposed development area in the existing Allt Anavaig Quarry. Current timber storage and lorry movements, existing buildings; and scrub woodland in and around the quarry edges such as the northern coastal boundary. Sea visible on right. 8th June 2016, photo 49.

Contents

- 1. Introduction*
- 2. Summary Site Description*
- 3. Methods*
- 4. Habitat Descriptions*
- 5. Discussion including a few recommended mitigations*

1. Introduction

Marine Harvest Ltd intends to build a fish feed plant at Allt Anavaig Quarry, Kyleakin, on the Isle of Skye. The development would involve modifications to the existing pier and other structures would be located mainly in what is open, sheltered (from the sea), ground in the existing quarry partly where timber is currently being stored for onward transportation.

The proposed development could have effects on natural heritage features : in the Lochs Duich, Long and Alsh Nature Conservation Marine Protected Area and Special Area of Conservation; Cetaceans in the Inner Hebrides and the Minches proposed Special Area of Conservation; and landscape and visual impacts relating to the Kyle – Plockton Special Landscape Area. These issues will be addressed in the Environmental Impact Assessment (EIA) as will potential impacts on existing terrestrial habitats.

As part of the preparation for the EIA for this development, *Marine Harvest Ltd* asked Dr Mary Elliott to provide a report on the terrestrial habitats for the proposed development area using the Phase 1 vegetation classification. This report contains the results and recommends specific mitigation measures to minimise disturbance to the adjacent habitats during the construction and operation of the fish feed plant development.

2. Summary Site Description of the Terrestrial Habitats in the Development area

The proposed fish feed plant development would involve modifications to the existing pier and quay, and the construction of various buildings and other structures such as a power generator plant, on the quarry floor and with some incursion into the scrub woodland on the seaward, northern boundary, steep remnant of coastal hillside.

Modifications to the existing pier and quay with a side extension would be accompanied by the rest of the development on stoney ground previously formed during quarrying. It would affect a small fraction of the scrub woodland which grows around the periphery of the areas where ongoing uses of the quarry occur; and a small section of the steep retained boundary coastal hillside between the quarry and the seashore to the north. There is a freshwater pond at the west end of the proposed development area in the middle of the present base of the quarry, and this has scrub woodland developing around it. The scrub woodland is composed of whin (gorse *Ulex europeaus*) shrubs and thickets, with some broom (*Cytisus scoparius*), and with a mixture of native trees such as birch (*Betula pubescens*), willow (*Salix* spp.) and rowan (*Sorbus aucuparia*) and self-seeded conifers (from nearby plantations – mainly spruces). Where there is ground flora, it contains remnants of the heath and coastal woodland vegetation which forming the quarry removed or destroyed or disturbed.

3. Survey Methods

Habitat types were noted during a walkover (ref SNH letter of 12th May 2016 to THC Planning and Development, Portree,) in and around the proposed development area using the standard methods and Phase 1 habitat codes described in the Nature Conservancy Council (1990) *Handbook for Phase 1 Habitat Survey* and the Joint Nature Conservation Committee [JNCC] (2003) *Handbook for Phase 1 Habitat Survey*. The main habitats, with their ‘boundaries’, are shown on a Habitat Sketch Map superimposed on the proposed development for easier reference, dated June 2016.

The extent of ground adjacent to the development included in the mapping, depended on location and the likelihood of its being affected by the construction works; this is explained in the Habitat Descriptions. Habitats which qualify as groundwater-dependent terrestrial ecosystems (GWDTEs) were recorded. Digital photographs were taken of pertinent features.

4. Habitat Descriptions

Phase 1 Habitat types were noted in and around the proposed development including areas where vegetation might be affected by the construction works, such as from dust drift. The distinct terrestrial Phase 1 habitats identified are described in the following section, and illustrated by digital photos taken in June 2016 in good visibility. These habitats are :

- *A1.1.1 Semi-natural woodland*
- *A 2.1 Scrub Woodland, that is scrub containing scattered trees*
- *F 2.1 Marginal vegetation in quarry pond*
- *G 1 Open freshwater in quarry pond*
- *G 2 Running water*
- *H 1.2 Inter-tidal shingle cobbles = natural, called H3 above high tide mark*
- *H 1.3 Inter-tidal boulders / rocks most man-placed by existing pier, H4 above high tide mark*
- *I 2.1 Artificial = Quarried rock faces*
- *J 3.4 Bare ground on Quarry floors*

Photo of A 1.1.1 Semi-natural Woodland & A 2.1 Scrub with scattered trees & J 3.4 Quarry floor



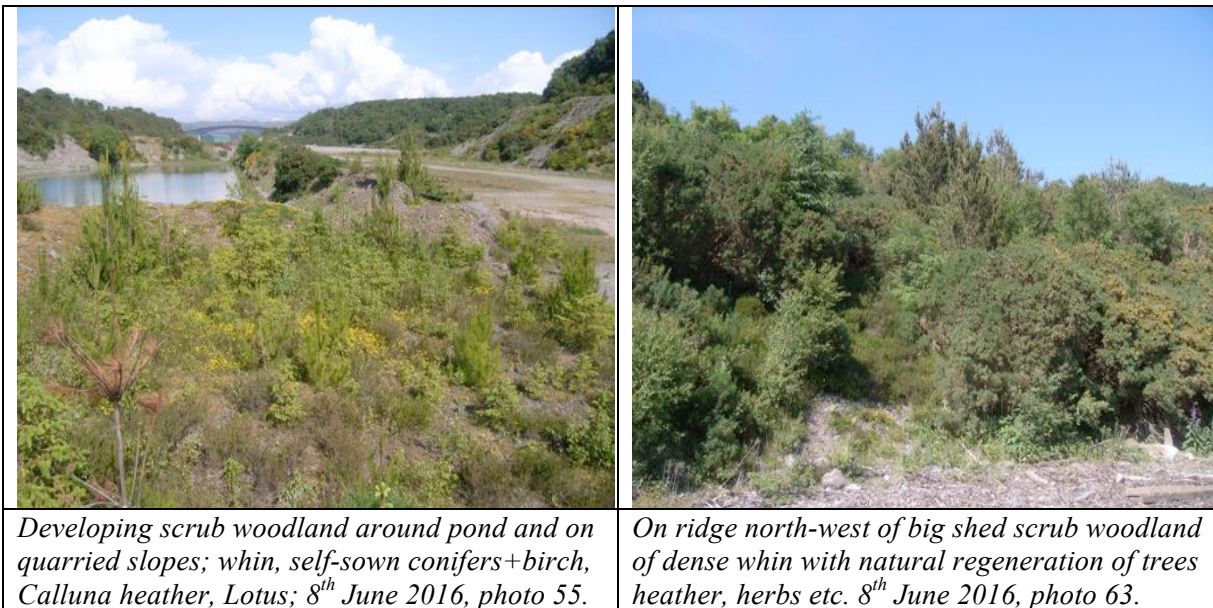
Looking southwards from lorry-turning area by pier. Semi-natural broad-leaved woodland remains to the west (left in photo) of the proposed development, and remnants are visible on cnoll tops behind the building. Whin scrub predominates on the disturbed open ground round the quarry edges & up slopes where vegetation colonisation is occurring. (Conifers on hill in distance, to south of A87.)

8th June 2016, photo 69.

A 1.1.1 Semi-natural Woodland

Semi-natural broad-leaved woodland occurs around some margins of the proposed development, especially to the west where continuous canopy abuts the quarry access track. As this woodland could be affected by impacts such as dust drift, it is included in the description of Phase 1 Habitats present although the proposed development, outlined in the sketch map, should not impinge into canopy woodland. This woodland has been modified particularly through the formation and operation of the Anavaig Quarry and for the A87 connection to the Skye Bridge. Oak (*Quercus petraea*) and birch (*Betula pubescens*) trees predominate in the canopy, with frequent young willow (*Salix* spp.) and rowan (*Sorbus aucuparia*) trees. The ground flora has been modified by developments and past stock grazing, and varies from heaths through to brambles (*Rubus fruticosus*) and mixed herb grassland, with ferns and rushes such as great wood-rush (*Luzula sylvatica*) in damper sheltered sectors.

A 2.1 Scrub Woodland



This habitat is described as scrub woodland, as the principal species is whin (gorse *Ulex europeaus*) found as discrete shrubs or dense thickets; with variable quantities of scattered self-sown young trees, saplings and seedlings growing amongst the scrub which includes broom (*Cytisus scoparius*) in some places. Ling heather (*Calluna vulgaris*) tends to be the most frequent ground cover plant. This is a habitat in transition, having developed by plants colonising from surrounding seed sources into bare ground formed during quarrying. It is a highly modified habitat.

The scrub woodland is composed of whin shrubs and thickets, amongst which grow a mixture of self-seeded native trees such as birch (*Betula pubescens*), willow (*Salix* spp.), rowan (*Sorbus aucuparia*) and conifers from nearby plantations – mainly spruces (*Picea* sp.) with Scots Pine (*Pinus sylvestris*). The habitat is classed as scrub as trees seem to cover less than 30% of the area in this habitat. Continuous tree canopy was not obvious in the ground where the development is due to be positioned.

Where there is ground flora, it contains remnants of the heath and coastal woodland vegetation which forming the quarry removed or destroyed or disturbed. Where scrub woodland is developing on steeper slopes in the quarry the ground may be partly bare or with a thin vegetation cover in which ling heather and whin bushes are usually present. In sections where more moisture can be retained a few mosses have colonised. On the shallower slopes and round the edges of the quarry floor, along with ling, the ground flora often contains Bird's-foot trefoil (*Lotus corniculatus*), bramble (*Rubus fruticosus*) and taller herbs such as foxgloves (*Digitalis purpurea*).

F 2.1 Marginal vegetation in quarry pond

At the east end of the freshwater quarry pond there is a small patch of marginal vegetation composed mostly of sedges with a little bogbean (*Menyanthes trifoliata*). This is a GWDTE as its plants require a high water table. It also provides a habitat for frog tadpoles in the shallow margin, and otter paddle through it. The rest of the pond has steep sides into much deeper water.



F2.1 Marginal vegetation in the shallow east end of the quarry pond. Tadpoles live amongst it and otter prints seen in its mud. June 2016, photo 56



G1. Open standing freshwater in a quarry pond. The western part of the development would be beside it. (A2.1 on slopes) June 2016, photo 54.

G 1 Open standing freshwater

A steep-sided quarry pond forms an open standing freshwater habitat. The only plants seen growing in it was the marginal vegetation at the shallow east end – see habitat type F2.1. This artificial pond supplies a reliable source of freshwater for otters to bathe in and this was evident from the set of otter prints heading into the deeper water from the shallow eastern margin.

G 2 Running fresh water



G2 Running freshwater exits from large culvert onto beach, to east of existing pier. Photo 81.



The diverted freshwater flows down the beach. (Rip-rap on pier approach.) June 2016, Φ 80

The only running fresh water encountered at the development area on 8th June 2016 was exiting from a large culvert, east of the pier approach. It runs in an inter-tidal channel into the sea. No signs of otter were found by, or in, this habitat in the June 2016 survey.

H 1.2 Inter-tidal shingle and cobbles = natural and called H3 above high tide mark

There is a natural inter-tidal shingle beach to the west of the existing pier. This beach and shoreline is popular for walking dogs (from local information and seen during site visit). It is not included in the development area. To the east of the pier the inter-tidal beach consists of seaweed-coated cobbles and naturally-placed boulders.



H1.2 & H3 Looking west from the pier along the natural shingle beach which is outwith the development area; June 2016, photo 13.



Looking west from pier track at part of the inter-tidal area with cobbles, where a new slipway would be built. June 2016, photo 71.

H 1.3 Inter-tidal Boulders / rocks = man-placed by existing pier, called H4 above high tide mark



H1.2 & H3 Looking northwards at the west side of the pier at the rip-rap placed to protect the pier – security fence visible at inner end of pier; June 2016, photo 12.



Looking at the east side of the pier at Intertidal area where new slipway would impinge. Cavities in the rip-rap by the willow tree are suitable for otter shelters. June 2016, photo 78.

Quarried rocks, referred to as rip-rap, have been placed to protect the inter-tidal and coastal ground on both sides of the inner end of the existing pier. This is a man-made habitat and there were otter spraints in several places on the rip-rap indicating that this mammal species is using this artificial habitat.

J 2.1 Artificial = Quarried rock faces



This photo 51, June 2016, is looking southwards from the south-east extremity of the proposed development, to show stored, crushed quarry stone and the re-vegetating quarry slopes.

Most of the quarried slopes surrounding the development area have some covering of vegetation (described as scrub woodland - habitat A 2.1) showing that these areas have not been disturbed for a number of years. This is a highly modified habitat which is presently undergoing vegetation regeneration where it is not being actively worked for stone.

J 3.4 Bare ground on Quarry stone floor



J 3.4 Bare ground on Quarry floor, looking westwards from eastern end of proposed development. June 2016, photo 48.



The timber storage and buildings on the Quarry floor would need to be moved for the development, June 2016, photo 49.

The man-made quarry stone floor supports very little vegetation where it is very dry or in current use. Where it is not disturbed, scrub woodland is starting to develop.

5. Discussion and some recommended mitigation measures

Most of the habitats within the imprint of the proposed development at the Allt Anavaig Quarry, Kyleakin, Isle of Skye, have been modified during the formation of the quarry and pier and from subsequent uses of the area, such as for rock and stone supplies and for temporary timber storage. The habitats which have been less affected are : remnants of semi-natural broadleaved woodland, mainly to the east and south of the proposed development area; and the inter-tidal beaches on both sides of the existing pier. The potential impacts of the development of a fish food plant on these habitats will be included in the EIA.

Mitigation measures should be implemented which include provisions to protect the semi-natural woodland such as preventing pollutants exiting the working area and adequate dust suppression during construction in dry weather. During the works, all relevant best practices, for example as in SEPA guidance, should be followed, such as : pollution prevention should be implemented, with effective filters or settlement containment to avoid contaminated run-off flowing into fresh or sea water. The site should be kept safe and tidy during construction and operation. Storage should be within defined areas and not allowed to spread onto adjacent habitats such as the shingle beach or developing scrub woodland.
