



**Arnish Road Upgrade
Development
Biodiversity Enhancement
Statement**



**Stornoway
Port**

Report No. 110_REP_04_1

Date: 02/04/2024

Document Control

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Effective Date:	02/04/2024
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Revision No:	Signature	Comments	Date
1	<i>F. Maguire</i>	For issue.	02/04/2024

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Executive Summary

- This Biodiversity Enhancement Statement has been produced to demonstrate positive effects from the development of the proposed Arnish Road Upgrade Development.
- Existing ecological survey data, the Peat Management Plan (PMP) and discussions with Stornoway Port Authority (SPA) were used to inform the statement.
- Effects on biodiversity have been minimised by avoiding most sensitive areas during the design process and mitigation has been developed to further reduce impacts.
- National planning policy, and other guidance has been followed when developing enhancement measures.
- Consideration has been given to linking with existing habitats and restoration projects in the area.
- Excavated peat will be used to re-instate the old road and the verges of the new road.
- Peatland habitat creation and enhancement will be undertaken in an area of approximately 2.8ha within the development boundary.
- Areas of shallow peat which will be temporarily disturbed will be enhanced to increase peat depth thereby improving connectivity with surrounding deeper peat habitats.
- Invasive rhododendron will be removed from the redline boundary (RLB) area of the development.
- It is proposed to re-seed suitable areas of bare ground with native wildflower mixes which would benefit pollinators including potentially the great yellow bumble bee.
- Otter-friendly culverts are suggested to reduce negative interactions between traffic and otters using the road.
- With these proposed enhancements, the development meets the requirements of National Planning Framework 4 (NPF4) Policy 3 to conserve, restore and enhance biodiversity, in accordance with national and local guidance.
- Management and monitoring have been proposed to ensure that habitat creation and enhancement is implemented effectively.

1 Introduction

This report has been produced in line with current 'Developing with Nature Guidance' (NatureScot, 2023) to demonstrate how the proposed development complies with Biodiversity Policy 3c of the NPF4 (The Scottish Government, 2023a) by including appropriate and proportionate measures to conserve, restore and enhance biodiversity.

1.1 The Proposed Development

The proposed Arnish Road Upgrade Development (ARUD) is situated approximately 1.7 kilometres (km) southwest of Stornoway.

The ARUD is proposed to improve traffic flow and road safety for users travelling to and from the Arnish Point Industrial Estate (APIE) and Stornoway Deep Water Port (SDWP). The ARUD comprises of the construction of a two-way asphalt road, with associated hard verges and drainage.

The proposed route of the upgraded road will generally follow the current Arnish Road but is realigned to provide a straighter road. The route is depicted in Maciver Consultancy Services Drawings: Horizontal Alignment Sheets 23/129/11 to 15.

1.2 Relevant Policies, Action Plans & Guidance Documents

1.2.1 National Planning Framework 4

The NPF4 sets out the spatial principles, regional priorities, national developments, and national planning policy for Scotland. Policy 3 sets out requirements for biodiversity enhancement for new developments and relevant sections of this Policy are noted below:

- a) *'Development proposals will contribute to the enhancement of biodiversity, including where relevant, restoring degraded habitats, and building and strengthening nature networks and the connections between them. Proposals should also integrate nature-based solutions, where possible;*
- b) *Proposals for local development will include appropriate measures to conserve, restore and enhance biodiversity, in accordance with national and local guidance. Measures should be proportionate to the nature and scale of development.; and*
- c) *Any potential adverse impacts, including cumulative impacts, of development proposals on biodiversity, nature networks and the natural environment will be minimised through careful planning and design. This will take into account the need to reverse biodiversity loss, safeguard the ecosystem services that the natural environment provides, and build resilience by enhancing nature networks and maximising the potential for restoration.'* (The Scottish Government, 2023a).

The ARUD is a 'local' development as defined in The Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009 Reg 2 (2), as the proposed works do not constitute as either National or Major, therefore, the proposal must meet the requirements set out above.

1.2.2 Western Isles Biodiversity Action Plan

The Western Isles Biodiversity Action Plan was developed by Comhairle nan Eilean Siar (CnES) (CnES, 2004) and identified specific habitats and species requiring Action Plans. These included bog and native woodlands along with the great yellow bumblebee.

1.2.3 Draft Scottish Biodiversity Strategy

Invasive species are described by Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES) as one of the five direct drivers of global biodiversity loss (The Scottish Government, 2023b). The removal of invasive non-native species (INNS) such as rhododendron (*Rhododendron ponticum*), particularly on the Western Isles, has been highlighted in the draft Scottish Biodiversity Strategic Plan, and within the Scottish Plan for Surveillance, Prevention and Control it is suggested as a key action.

The Scottish Biodiversity Strategy also aims to enable widespread peatland restoration to deliver benefits for carbon sequestration and biodiversity.

1.2.4 Developing With Nature Guidance

This Guidance was prepared by NatureScot (NatureScot, 2023) to support application of NPF4 Policy 3(c), and it was developed as the starting point for applying policy 3(c) of NPF4. It is expected that planning applicants and Planning Authorities give due consideration to the Developing With Nature Guidance through the site selection, design, and planning application process. It should be considered alongside the local development plan and any local guidance the Planning Authority may have prepared. The guidance describes a number of biodiversity measures proportionate to the nature and scale of development, and the considerations that should be taken into account when determining whether they are appropriate for the particular development.

1.3 Stakeholder Engagement

Consultation has been held between the client, the local planning authority and NatureScot with regards to the approach taken to meeting the requirements of NPF4 Policy 3 and the suitability of the proposed enhancements.

2 Ecological Baseline

2.1 Extended Phase I Survey

An Extended Phase I survey of the site was undertaken in February and March 2023 by Affric Limited (Affric) to understand the habitats present on site (Affric, 2023b). The survey area comprised of the ARUD footprint and a suitable buffer. The following habitat types are found in the survey area:

- Semi-natural broadleaved woodland;
- Coniferous woodland plantation;
- Scattered scrub;
- Continuous bracken;
- Unimproved acid grassland;
- Improved grassland;
- Marshy grassland;
- Dry dwarf shrub heath;
- Wet dwarf shrub heath;
- Dry heath/acid grassland mosaic;
- Blanket bog;
- Wet modified bog;
- Bare peat;
- Exposed rock;
- Standing water;

- Running water;
- Ephemeral/short perennial;
- Introduced shrub; and
- Bare ground.

Further details can be found in the Arnish Road Upgrade Development Preliminary Ecological Appraisal (PEA) Report reference 110_REP_02_01 (Affric, 2023b). The habitat types within the ARUD footprint have been subject to anthropogenic disturbance, degradation, and modification. Thus, none are considered to be of particularly high-quality or importance to protected species. A European Protected Species (EPS) survey found presence of otter (*Lutra lutra*) within the locality of the works (Tyler, 2024). Additionally, the PEA identified suitable habitat for roosting and foraging bats, although no potential roosting features were identified. Breeding bird surveys found presence of moorland species with a hen harrier (*Circus cyaneus*) having recently nested in the surrounding area (Tyler, 2023). Mitigation has been proposed to avoid disturbance to hen harrier (a Schedule 1 species under the Wildlife and Countryside Act 1981 (as amended)), but no species-specific mitigation is required for other bird species (although appropriate mitigation to minimise impacts to all wild birds will be implemented). Further information on the ecological baseline, and mitigation measures in place for the proposed development can be found in the Arnish Road Upgrade Development Environmental Supporting Document, Reference 110_REP_03_01 (Affric, 2024).

During the PEA it was identified that rhododendron to be a considerable problem within the local area and it is present throughout much of the survey area. Large patches of rhododendron shrub are apparent, particularly towards the northeast of the survey area in the direction of the Lews Castle grounds. Where rhododendron is dense, it has resulted in a complete lack of understorey. However, small patches still support the existing habitat structure (predominately wet heathland or marshy grassland). It is likely that the rhododendron is present as a result of windblown seeds from planted ornamentals within the grounds of Lews Castle. Patches of rhododendron are present throughout much of the heathland habitat and will likely continue to increase in size and spread with time. Areas of rhododendron removal have been undertaken recently in the local area as part of the SDWP development.

Five watercourses run through the proposed working corridor, with water flowing towards Stornoway Harbour in a northeasterly direction. Three of the watercourses headstream within the hills southwest of the working corridor, and pass under the Arnish Road in small culverts and flow into the River Creed. The fourth watercourse is a small stream which headstreams towards the southwest of the working corridor and flows northeast through Poll a' Choire Lochan and under Arnish Road before reaching Glumaig Harbour. The fifth watercourse is situated towards the south of the working corridor, the water flows easterly into Gulmaig Harbour. The RLB partially includes Poll a' Choire Lochan and borders Loch Arnish on its northern banks, although no works will conflict with either of these waterbodies.

Considering the generally poor condition of the habitats present and taking local context into account, the proposals are not anticipated to result in any significant habitat loss or degradation. Nonetheless, there are opportunities to further minimise disturbance by implementing appropriate mitigation to minimise habitat loss. In addition, habitat reinstatement opportunities have been considered to minimise likelihood of permanent habitat degradation in areas outside of the proposed built footprint.

2.2 Peat Survey and Management Plan

In Autumn 2023 a detailed peat survey was undertaken by 'Fluid Environmental Consulting' (known thereafter as 'Fluid'); the results of which were used to inform the Arnish Road Upgrade Peat Management Plan (PMP).

The surveys included intrusive site investigations with over 1200 peat probe locations at a minimum of 20m spacing. It was found that the site covers undulating terrain with a relatively continuous coverage of peat. Deeper pockets were located in topographical plateaus, hollows or watercourse valleys between Lewisian Gneiss rock outcrops or heathery mounds.

Within the RLB there is a predicted permanent loss of 7.6ha of habitat with additional maximum temporary losses of ca. 8.6ha associated with works compounds and general construction activity, largely comprised of degraded peatland habitats, or formerly peated areas.

The PMP addresses the management of peat during the construction period for the ARUD and the restoration of the site once construction has been completed. The Plan identifies areas of adjacent poor-quality peatland that could be enhanced. It is noted that the PMP will be further developed during site construction when actual peat volumes are known.

3 Mitigation and Enhancement Considerations

As the ARUD design largely follows the current Arnish Road, the proposals are not anticipated to result in any significant habitat loss or degradation. Nonetheless, there are opportunities to further minimise disturbance by implementing appropriate mitigation to minimise habitat loss. This is outlined below with regard to protection of existing habitats, and management of INNS. The Schedule of Mitigation is detailed within Section 7 of the Environmental Supporting Document, reference 110_REP_03_1 (Affric, 2024). With regards to peat management, specific mitigation measures have been identified through the development of a PMP (Fluid, 2023) which will be implemented throughout the construction phase of the ARUD. For details on the specific peat management mitigation, refer to the PMP (Fluid, 2023).

In addition, opportunities for habitat enhancement are available within the RLB, and described in detail in the following sections of this document.

3.1 Protection and Enhancement of Peatland Habitats on or Adjacent to the Site

3.1.1 Mitigation

The development has been designed to avoid sensitive habitats where possible, however as discussed in Section 2 permanent losses of habitat will occur due to the construction of the new road. Temporary habitat loss will also occur on the boundary of the infrastructure due to the construction works. The PMP (Fluid, 2023) has been produced to assess the impacts of the development on peat to ensure suitable reuse and minimise impacts where possible. The PMP sets out mitigation measures required to ensure successful restoration (Fluid, 2023). Disturbed ground will be reinstated back to its original type and condition where possible, for example by the reuse of turves (see Section 7 of the Environmental Supporting Document (Affric, 2024)). In areas of peatland, this will include the reuse of peat. It is estimated that ca. 0.65ha of the existing road will be removed and reinstated as peatland habitat which will improve

connectivity with surrounding peatland habitats. In addition, the area identified for rock winning will be re-instated with peat to recreate habitat as set out in the PMP and shown in Maciver Consultancy Services Drawings: Horizontal Alignment Sheets 23/129/11 to 15.

The temporary compound area was chosen due to the absence of peat, thus ensuring that temporary degradation of peatland habitats is minimised. On the completion of construction activity, peat obtained through construction will be placed within the area of the temporary compound area to a depth of 1m and revegetate using turves retained from the development site to create new peatland habitat (Fluid, 2023). This will also improve the hydrology of the adjacent areas of deeper peat which will benefit the ecological condition in the wider area.

The mitigation proposals will complement ongoing efforts to restore peatland and heathland habitats, such as those implemented by the SDWP , immediately adjacent to the eastern edge of the RLB

3.1.2 Enhancement

The PMP identifies areas of historic peat cutting within the RLB as suitable for enhancement (such as that of Figure 3.1). It is suggested that peat arising from the construction of the new road could be used to increase the peat depth to match that of adjacent uncut peatland. Details of the areas identified for restoration in the PMP are shown in Drawing 10_DRG_06_1.



Figure 3.1: Proposed Peatland Restoration Area

The creation and enhancement of peatland habitats will improve the hydrological conditions of adjacent habitats, enhancing and protecting the connectivity of the habitats to moorland species in the wider area.

Additional benefits are proposed for the removal of self-seeded exotic conifers from alongside the existing road where they have spread from nearby plantations. The growth of conifers can lead to the drying out of heathland with detrimental impacts on carbon sequestration and biodiversity. Afforestation can also have negative impacts on species such as hen harrier and other moorland specialists by reducing foraging areas and nesting habitat as the birds and their prey prefer deep heather rather than trees.

3.2 Protection and Enhancement of Other Habitat on the Site

3.2.1 Mitigation

The project has been designed to avoid impacts on high value habitats, and it has been determined via the ecological surveys works that the built footprint will not conflict with any habitats of conservation concern (Affric 2023a). Although most woodland is avoided, if any trees with a stem diameter of $\geq 75\text{mm}$ are felled (i.e. trees that fall under the British Standard 5837 (British Standards Institution, 2012)), they will be replaced with native trees such as rowan (*Sorbus aucuparia*), hazel (*Corylus avellana*), or willow (*Salix* spp.), that are unlikely to 'take over' peatland habitats due to extensive colonisation but will provide new opportunities for local populations of birds, bats and invertebrates for example. Where possible peatland habitats will be protected, and any loss or temporary degradation of peatland habitats will be mitigated, as per the PMP (Fluid, 2023).

As detailed in the PMP, where the road is realigned and the surrounding area has peat, the old road will be removed with the ground reinstated with retained turves and peat from the construction works to create new areas of peatland (Fluid, 2023). It is estimated that a total of 2.8ha of peatland habitat will be created or enhanced and this will also benefit the adjacent habitats by improving the hydrological conditions (Fluid, 2023).

3.2.2 Enhancement

In areas of grassland there are opportunities to reinstate areas of temporarily disturbed ground in such a way as to increase the potential biodiversity of the habitats. This includes opportunities such as the use of species-rich seed mixes. Any seed-mixes will be carefully considered to ensure appropriate species are present, avoiding the introduction of species outside their native range. The creation of wildflower-rich areas of grassland would benefit a wide range of invertebrates including pollinators, potentially including the great yellow bumblebee (*Bombus distinguendus*).

3.3 Protection and Enhancement of Connectivity Through the Site and with its Surroundings

The RLB does not intercept with the boundaries of any designated sites. However, potential ecological connectivity was identified between some of the ranging qualifying interests of the Lewis Peatlands Special Protection Area (SPA) Special Area of Conservation (SAC) and Ramsar site, Tong Saltings Site of Special Scientific Interest (SSSI) and Loch Laxavat Ard and Loch Laxavat Iorach SSSI, including otter and populations of breeding birds.

It was determined during the ARUD Environmental Impact Assessment (EIA) Screening Process that the proposed development is unlikely to result in any significant increase in permanent habitat fragmentation, as the route largely follows the existing Arnish Road (Affric, 2023a).

The otter survey completed in 2024 stated that two otter deaths occurred on the existing Arnish Road in 2023 due to collision with vehicles. Thus, it is evident that there is a collision risk for otter due to the presence of a road. Although this risk is not expected to increase as a result of the ARUD, an opportunity was identified to enhancement connectivity through the site for otter. Dedicated otter tunnels will be installed to provide safe routes under the road. The otter tunnels will be installed at a suitable level where the road crosses watercourses. This will reduce potential impacts on the species associated with collision risk and fragmentation of habitats, by retaining connectivity between the marine environment and freshwater waterbodies in the uplands and allowing a safe passage route between both sides of the road.

The removal of rhododendron from the RLB area will also contribute to improving the connectivity of the site by increasing the area of viable habitat for protected species. For further details refer to Section 3.5.

3.4 Enhancement for New Species

As discussed in Sections 3.1 and 3.2, the proposed habitat creation and enhancement is expected to benefit bats, birds, otter and invertebrates. Furthermore, it is anticipated that the proposed habitat creation and enhancement will have positive benefits for the general biodiversity of the local area, in particular flora and fauna which make use of peatland and associated habitat types.

3.5 Avoidance, Control and Removal of Invasive Species

3.5.1 Mitigation

The PEA (Affric, 2023b) found that rhododendron is a considerable problem within the local area and the species is present throughout much of the area of development. It is likely that rhododendron seeds are present within the soils and peat, and therefore ground disturbance has the potential to further spread the species. Control measures will be required during construction to prevent further spread of rhododendron, which are outlined within the Environmental Supporting Document (Affric, 2024).

Removal of all rhododendron within the working area is proposed to control the spread of the plant. It is expected that rhododendron removal will be undertaken using previously successful techniques implemented within the grounds of Lews Castle and by the SPA as part of the SDWP development.

3.5.2 Enhancement

In addition to areas of rhododendron directly impacted by the works (i.e. within the built footprint), it is proposed that rhododendron within the entire RLB area of the development be eradicated (see Drawing 110_DRG_06_1 and Figure 3.2). Whilst this will benefit local biodiversity allowing recovery of the underlying habitats, it will also reduce the potential for the spread of propagules from the eradicated stands. The removal will have a cumulative impact along with previous efforts to remove rhododendron from the sites nearby and will contribute to wider eradication efforts on Lewis.

A survey for otter should be carried out prior to removal of rhododendron along watercourses, to ensure that no otter holts are present within the foliage. Furthermore, it is advised that rhododendron clearance be undertaken outwith the breeding bird season (March to September inclusive) as some species, such as hen harrier, will make use of rhododendron

scrub where heathland habitats are limited. If removal works are completed within the breeding bird season, thorough breeding bird surveys will first be completed by a suitable competent and experienced ecologist to ensure that there are no active nests within potential disturbance distances of the works.



Figure 3.2: Photograph of Example Proposed Rhododendron Removal Location

3.6 Protecting Wildlife from Negative Interactions with People and/or Infrastructure

Mitigation measures to protect wildlife from potential negative interactions resulting from the construction, operation and maintenance of the development are detailed in the Environmental Supporting Document (Affric, 2024). This will include mitigation to avoid negative impacts on otter from vehicular traffic when they are crossing the road, including the installation of otter tunnels where the road crosses watercourses, otter fencing along the road at these locations, and signage to warn road users of otter crossings.

3.7 Promoting Awareness and Encouraging Further Actions for Nature

The removal of rhododendron, restoration of the peat cuttings and other enhancements detailed in this statement contribute to ongoing efforts by other projects in the local area to improve biodiversity. Demonstration of the long-term commitment to the enhancement for biodiversity will potentially encourage other efforts locally and opportunities for outreach to the local community should be considered.

3.8 Management and Monitoring

Management and monitoring of new and enhanced habitats is essential to ensure long-term success.

Peatland habitats are to be monitored as per the PMP (Fluid, 2023). Monitoring of restoration and enhancement sites is proposed in the PMP at intervals of 1, 3 and 5 years after works are complete (Fluid, 2023). Results of this monitoring should be used to inform adaptive management procedures to ensure successful implementation.

New trees are to be managed for a minimum period of five years post-planting. This is a critical period for tree establishment, and it is possible that new trees may perish during this time. Defects that become apparent during the five-year management period should be addressed by appropriate remedial works, including replacement planting where necessary. At a minimum, it is recommended that new trees be inspected at 1, 3 and 5 years post-planting (in line with peatland management and monitoring (Fluid, 2023), or after extreme weather events, such as storms. Management should include weed control (i.e. management of rhododendron shrub with the area of planting), watering (where necessary), inspection, adjustment and removal of support systems (ensuring that all support systems are fully removed prior to the conclusion of the post-planting monitoring period), monitoring of growth and formative pruning (if necessary).

4 Summary

As shown in Table 4.1, the area of proposed peatland creation and enhancement of 2.8ha in line with the PMP recommendations (Fluid, 2023) is greater than the area of permanent peatland habitat loss, due to the footprint of the upgraded road (2.4ha). Therefore, the project will provide enhancement and creation of peatland habitats. Furthermore, rhododendron will be removed from the entire 19ha of the RLB (noting that rhododendron will not be present within the entire area, hence this is the maximum possible area of eradication). These interventions will also enhance the condition of existing habitats increasing local biodiversity and restoring functioning ecosystems, therefore, benefits to the overall biodiversity of the site are expected.

Table 4.1: Summary of Actions to Improve Biodiversity

Target Habitat or Species	Action
Peatland	Excavated peat reused on site to restore areas of the old road and temporarily disturbed ground back to peatland. A total area of approximately 2.8ha of peatland restoration and creation proposed.
Woodland	Removal of non-native conifer regeneration from the working area.
Species-rich grassland	Seeding of suitable areas of disturbed ground.
Rhododendron scrub	Removal of all rhododendron from the RLB.
Otter	Installation of otter tunnels under the road where it crosses watercourses to avoid negative impacts on the species from traffic.

These actions will also contribute to Scotland-wide targets to help meet the ambitions set out in the Scottish Biodiversity Strategy and demonstrate that the project meets the requirements of Policy 3 of NPF4.

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Glossary

Acronym	Definition
APIE	Arnish Point Industrial Estate
ARUD	Arnish Road Upgrade Development
CnES	Comhairle nan Eilean Siar
ECOW	Environmental Clerk of Works
EIA	Environmental Impact Assessment
EPS	European Protected Species
ha	Hectare
INNS	Invasive Non-native Species
IPBES	Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services
NPF4	National Planning Framework 4
PEA	Preliminary Ecological Appraisal
PMP	Peat Management Plan
RAMS	Risk Assessment Method Statement
RLB	Red Line Boundary
SDWP	Stornoway Deep Water Port
SPA	Special Protection Area

Drawings

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Title: 110_DRG_06_1 Arnish Road
Upgrade Development
Biodiversity Enhancement Plan











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Legend

-  Red Line & Rhododendron
Removal Boundary
-  Contour Lines
-  Otter Culvert
- Peat Area's**
 -  Peat Restoration Areas
 -  Proposed New Road
 -  Foreshore
 -  Building
 -  Tidal Water
 -  Fresh Water
 -  Woodland

