

## **APPENDIX V2-5.5: SHADOW HABITATS REGULATIONS APPRAISAL FOR THE WEST INVERNESS-SHIRE LOCHS SPECIAL PROTECTION AREA**

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# 1. SHADOW HABITATS REGULATIONS APPRAISAL FOR THE WEST INVERNESS-SHIRE LOCHS SPECIAL PROTECTION AREA

## 1.1 Introduction

- 1.1.1 Whilst the 2017 Habitats Regulations provide that an assessment of whether there would be adverse effects from an electricity proposal on a Special Protection Area (SPA) is the responsibility of the competent authority, this Appendix provides a summary examination of the relevant issues to enable the competent authority to undertake the assessment in respect of the West Inverness-shire Lochs SPA. In particular, it provides relevant information pertaining to the potential effect of the Skye Reinforcement Project (“the Proposed Development”) on the West Inverness-shire Lochs SPA, classified for its breeding populations of black-throated diver *Gavia arctica* and common scoter *Melanitta nigra*.
- 1.1.2 There are two European Directives that are relevant, namely Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive) and Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the Habitats Directive). The Wildlife and Countryside Act 1981 transposed many parts of the Birds Directive into domestic legislation. The Habitats Directive was initially transposed through The Conservation (Natural Habitats & c.) Regulations 1994 (“the 1994 Habitats Regulations”) into UK law. Guidance for the implementation of the Directives in Scotland is provided in Scottish Executive Circular No. 6/1995 (revised June 2000). Subsequently, the application of regulations 48 and 49 of the 1994 Habitats Regulations to electricity projects for which consent is sought under sections 36 or 37 of the Electricity Act 1989, was revoked by The Conservation of Habitats and Species Regulations 2017 (hereafter “the Habitats Regulations”). The Habitat Regulations are expressly applied to Scotland for the assessment of implications for a European site located in Scotland that may be adversely affected by an electricity project. Post-Brexit Guidance by the Scottish Government (EU Exit: The Habitats Regulations in Scotland, December 2020) confirms the continuing relevance of the Habitats Regulations and related guidance.
- 1.1.3 Regulation 63 of the Habitats Regulations refers to three assessment steps: the outcome of the first two deciding whether or not the third needs to be implemented. The three steps, set out below as questions, are:
- Step 1: Is the proposal directly connected with or necessary to the management of the site?
  - Step 2: Is the proposal, alone or in combination, likely to have a significant effect on the site? If a significant effect is likely, then an appropriate assessment is necessary; and
  - Step 3: Can it be ascertained that the proposal will not adversely affect the integrity of any of the SPA, either by itself or in combination with other plans or projects?
- 1.1.4 With regards to Step 1, the Proposed Development is not directly connected to, or necessary for, the management of the West Inverness-shire Lochs SPA, and therefore the next step needs to be considered.
- 1.1.5 Step 2 requires an assessment of whether there is potential for a likely significant adverse effect, either alone or in combination, on the West Inverness-shire Lochs SPA. Black-throated diver and common scoter are the qualifying interests of the SPA relevant to the consideration of the Proposed Development. Due to parts of the Proposed Development being in close proximity the boundary of the SPA and the likely potential for disturbance, displacement and collision mortality to the species during construction and operation of the Proposed Development, as well as dismantling of the existing OHL, it is considered that there is a likelihood of significant effects. Figure 1 appended to **V2 – Appendix 5.1 in Volume 5**, shows the inter-relationship between the Proposed Development and the SPA.
- 1.1.6 With respect to the Proposed Development, which does not lie within the boundary of the SPA, the revised Scottish Executive Circular (6/1995) states that in order to determine their implications for the interest protected within the Natura 2000 site, the need for considering the assessment steps referred to by Regulation 48 (now Regulation 63 of the Habitats Regulations), also potentially extends to plans or projects outwith the boundary of

the site. Although the 1994 Habitats Regulations have been superseded, the Scottish Government still applies the Guidance in Circular 6/1995 for the purposes of carrying out appropriate assessments. Hence, it is a proposal's potential effect on the SPA's interest which is relevant, rather than its location with respect to the SPA boundary *per se*. Thus, the assessment steps need to be considered for the Proposed Development, even though it lies away from the SPA boundary.

- 1.1.7 As a likely significant effect cannot be ruled out at this stage, and following Step 3, an Appropriate Assessment is required to be undertaken by the competent authority on the implications for the SPA in view of the conservation objectives. This assessment provides information to inform the Appropriate Assessment.
- 1.1.8 To establish the effect of the Proposed Development on the integrity of the SPA, it is necessary to consider the relevant conservation objectives which may be affected.
- 1.1.9 The conservation objectives for SPAs are the same as for other Natura sites in Scotland in having an overarching conservation objective to avoid deterioration of the habitats of the qualifying interest, or significant disturbance to the qualifying interest, thus ensuring that the integrity of the site (SPA) is maintained. The component conservation objectives which encapsulate the maintenance of site (SPA) integrity in the long-term, are as follows:
1. ensure for the qualifying species that there is no significant disturbance in the long term;
  2. ensure for the qualifying species that the structure, function and supporting processes of habitats supporting the species are maintained in the long term;
  3. ensure for the qualifying species that the distribution and extent of habitats supporting the species are maintained in the long term;
  4. ensure for the qualifying species that the distribution of the species within the site is maintained in the long term; and
  5. ensure for the qualifying species that the population of the species is maintained as a viable component of the site.
- 1.1.10 As noted earlier, under Step 2 of the assessment process, it was considered reasonable to conclude that it was likely that the Proposed Development could have a significant effect on the site's interests. **Tables 1.1** and **1.2** provides the competent authority with the necessary information to undertake an assessment under the Habitats Regulations, with explicit reference to the relevant conservation objectives of the West Inverness-shire Lochs SPA.
- 1.2 Assessment of Effects on Conservation Objectives During Construction and Decommissioning Phases**

**Table 1.1: Summary of Potential Effects on the West Inverness-shire Lochs SPA During the Construction and Dismantling Phases**

<b><i>“To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and to ensure for the qualifying species that the following are maintained in the long term”:</i></b>	
<b>Conservation Objective</b>	<b>Potential Effect</b>
<b>1. No significant disturbance of the species</b>	None. All construction and dismantling works within 500 m of the SPA boundary will be undertaken during the non-breeding season (taken as being the period between the end of August to the end of March) when black-throated diver and common scoter are not present (or checked and confirmed by the ECoW that such activities can progress); therefore, no impacts on breeding SPA black-throated diver or common scoter are predicted. As such, there will be no significant disturbance to the SPA qualifying species.

<b>“To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and to ensure for the qualifying species that the following are maintained in the long term”:</b>	
<b>2. Structure, function and supporting processes of habitats supporting the species</b>	None. Construction and dismantling works are located outwith the SPA boundary; therefore, the existing distribution and extent of habitats supporting black-throated diver and common scoter will remain unchanged.
<b>3. Distribution and extent of habitats supporting species</b>	None. Construction and dismantling works are located outwith the SPA boundary; therefore, the existing structure, function and supporting processes of habitats supporting black-throated diver and common scoter will remain unchanged.
<b>4. Distribution of the species within site</b>	None. As construction and dismantling works will be undertaken during the non-breeding season (taken as being the period between the end of August to the end of March) the existing distribution of black-throated diver and common scoter within SPA will remain unchanged.
<b>5. Population of the species as a viable component of the site</b>	None. As construction and dismantling works will be undertaken during the non-breeding season (taken as being the period between the end of August to the end of March) (or checked and confirmed by the ECoW that such activities can progress) there will be no change to the SPA black-throated diver and common scoter populations which will remain as viable components of the site.

### 1.3 Assessment of Effects on Conservation Objectives During the Operational Phase

**Table 1.2: Summary of Potential Effects on the West Inverness-shire Lochs SPA During the Operational Phase**

<b>“To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and to ensure for the qualifying species that the following are maintained in the long term”:</b>	
<b>Conservation Objective</b>	<b>Potential Effect</b>
<b>1. No significant disturbance of the species</b>	Disturbance distances for various breeding birds have been reviewed by NatureScot (Whitfield <i>et al.</i> 2008) <sup>1</sup> . The relevant distances in relation to the Proposed Development are to maintain a minimum disturbance-free distance of 500 to 750 m for breeding black-throated diver and 300 to 500 m for breeding common scoter. Due to the nature of routine operation and maintenance activities, operational disturbance would be at a level which would not cause significant long-term disturbance. An exception may occur if maintenance activities replicate those during construction (e.g. replacement of a tower) and in such cases the temporal restrictions which would be enacted during the construction phase would also apply. Therefore, no impacts on breeding SPA black-throated diver or common scoter are predicted.
<b>2. Structure, function and supporting processes of habitats supporting the species</b>	None. The Proposed Development is located outwith the SPA boundary; therefore, the existing distribution and extent of habitats supporting black-throated diver and common scoter will remain unchanged.

<sup>1</sup> Whitfield, D.P., Ruddock, M. & Bullman, R. (2008). Expert Opinion as a Tool for Quantifying Bird Tolerance to Human Disturbance. *Biological Conservation*, 141:2708-2717.

<p><b><i>“To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and to ensure for the qualifying species that the following are maintained in the long term”:</i></b></p>	
<p><b>3. Distribution and extent of habitats supporting species</b></p>	<p>None. The Proposed Development is located outwith the SPA boundary; therefore, the existing structure, function and supporting processes of habitats supporting black-throated diver and common scoter will remain unchanged.</p>
<p><b>4. Distribution of the species within site</b></p>	<p>Consideration of the potential effects on the distribution of black-throated diver and common scoter within the SPA should be conditional on the outcome of assessment against Conservation Objectives 1 and 5 – no significant disturbance of the species and to maintain the population of black-throated diver and common scoter as a viable component of the SPA.</p> <p>It follows from the conclusions arrived at in respect of Conservation Objectives 1 above and Conservation Objective 5 below, that the distribution of the species within the SPA would be unaffected by the operation of the Proposed Development and, therefore, the distribution of the species within the SPA would not be impinged and the existing distribution of black-throated diver and common scoter within SPA would remain unchanged.</p>
<p><b>5. Population of the species as a viable component of the site</b></p>	<p>Loss of birds from an SPA through disturbance and adverse effects on mortality and (indirectly) on breeding success through collision, can potentially impact on the maintenance of a species as a viable component of the site, but as disturbance is considered under other conservation objectives, only the effects of collision mortality on the maintenance of species' viability is considered under this objective.</p> <p>Section 6 of the Proposed Development, that passes close to the SPA, would be underground, therefore there will be no long-term risk of collision mortality. The remaining above ground elements of the Proposed Development relate to Section 5. It is reasonable to assume that given the existing overhead line (OHL) is already present that black-throated diver and common scoter have become, at least partially, habituated to its presence.</p> <p>The design phase of the Proposed Development has been lengthy and has considered a number of different iterations. An alignment has been selected which avoids crossing valley bottoms and intersecting the component water bodies of the SPA where at all possible. The Proposed Development follows and lies close to the existing OHL and runs along the northern side of Loch Garry, which anecdotally is already the more disturbed shore of the loch with access by fishermen, vehicular traffic on the roads and more numerous human habitations. Following the route of the existing OHL minimises the 'novel' impact of the new line, and it also lies partly within forestry plantation which will encourage any flights to be at higher elevation. The alignment also avoids ridgelines and runs along the lower slopes of the hills on the northern shore following the public road, which again will encourage any flights to be at higher elevation, to allow birds to navigate up and over the intervening hill ground between Loch Garry and Loch Loyne.</p> <p>There were no indications from baseline surveys that black-throated diver or common scoter regularly commuted over the existing OHL. Indeed, no flights by black-throated diver or common scoter were recorded that would put them at risk of collision.</p>

**“To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and to ensure for the qualifying species that the following are maintained in the long term”:**

However, NatureScot and RSPB have suggested that black-throated diver and common scoter may fly between the component lochs of the SPA and are theoretically vulnerable to collision. If such flights were to occur, then these flights are more likely to be the most direct flight line between lochs where the intervening topography is lowest, as these species follow the lowest topography and avoid flying over high ground to minimise energetic cost and effort, and to minimise the risk of predation. Therefore, with mitigation measures significant effects on the qualifying interests of the SPA will be avoided.

Line marking remains the most common and practical form of wire collision mitigation worldwide, and research shows that it can reduce bird collisions by up to 94% (evidence reviewed in Prinsen *et al.*, 2012<sup>2</sup>). Therefore, it is proposed that line marking the earth wire along the length of two sections of the OHL will be undertaken.

**Figure 5.5.1** provides an overview of the local topography between Loch Garry and Loch Loyne and between Loch Garry and Loch Lundie. **Figures 5.5.2** and **5.5.3** illustrate ‘theoretical flight corridors’ for black-throated diver and common scoter, showing the shortest direct flight paths between lochs and avoiding higher ground. Both flight corridors utilise natural saddles in the landscape, i.e., a low-lying area between two areas of higher ground.

It has been recognised that nocturnally migrating common scoter normally cross land at high altitude (Pedersen, 1988<sup>3</sup>; Kahlert *et al.*, 2012<sup>4</sup>), typically common scoter fly low over water but very high when flying over land (Madge & Burn, 1988)<sup>5</sup>. If scoters move between the lochs in darkness, it is unlikely that they would purposefully choose a route away from a direct flight path that would necessitate navigating over higher ground. In addition, common scoters tend not to fly during particularly dark conditions at night, or in poor visibility weather conditions during the day (Anon 2006<sup>6</sup>; Petersen *et al.*, 2006<sup>7</sup>; Kuvlesky *et al.*, 2007<sup>8</sup>) which reduces the risk of collision further.

Therefore, it is proposed that line marking the earthwire along the length of two separate parts of the OHL within Section 5 will be undertaken. The earth wire will be marked using reflective Bird Flight Diverters<sup>9</sup> between Towers BF279 to BF306 inclusive and between Towers BF327 to BF337 inclusive. Markers will be spaced at 5 m intervals and maintained for the duration of the operational period.

<sup>2</sup> Prinsen, H.A.M., Smallie, J.J., Boere, G.C. & Pires, N. (Compilers). (2012). Guidelines on How to Avoid or Mitigate Impact of Electricity Power Grids on Migratory Birds in the African-Eurasian Region. AEWA Conservation Guidelines No. 14, CMS Technical Series No. 29, AEWA Technical Series No. 50, CMS Raptors MOU Technical Series No. 3, Bonn, Germany.

<sup>3</sup> Pedersen, M.B. (1988). Spring migration of common scoters across Southwest Jutland. Dansk Ornitologisk Tidsskrift 82, 51-53.

<sup>4</sup> Kahlert, J., Leito, A., Laubek, B., Luigujoe, L., Kuresoo, A., Aaen, K. & Luud, A. 2012. Factors affecting the flight altitude of migrating waterbirds in Western Estonia. Ornis Fennica 89: 241-253

<sup>5</sup> Madge, S. & Burn, H. (1988). Wildfowl. Christopher Helm (Publishers) Ltd. London.

<sup>6</sup> Anon. (2006). Danish Offshore Wind: Key Environmental Issues. DONG Energy, Vattenfall, The Danish Energy Authority, The Danish Forest and Nature Agency, Copenhagen.

<sup>7</sup> Petersen, I.K., Christensen, T.K., Kahlert, J., Desholm, M. & Fox, A.D. (2006). Final results of bird studies at the offshore wind farms at Nysted and Horns Rev, Denmark. NERI Report. National Environmental Research Institute, Ministry of the Environment, Denmark.

<sup>8</sup> Kuvlesky, M.P., Brennan, L.A., Morrison, M.L., Boydston, K.K., Ballard, B.M. & Bryant, F.C. (2007). Wind energy development and wildlife conservation: challenges and opportunities. Journal of Wildlife Management 71: 2487-2498.

<sup>9</sup> For example <https://pr-tech.com/product/firefly-hw-bird-diverter/>

1.3.1 Therefore, with mitigation, there will be no change to the SPA black-throated diver and common scoter populations which will remain as viable components of the site.

1.3.2 In evaluating the impact of the Proposed Development in isolation, with mitigation, there is no prospect that the Proposed Development could affect the integrity of the West Inverness-shire Lochs SPA.

#### **1.4 In Combination Effects**

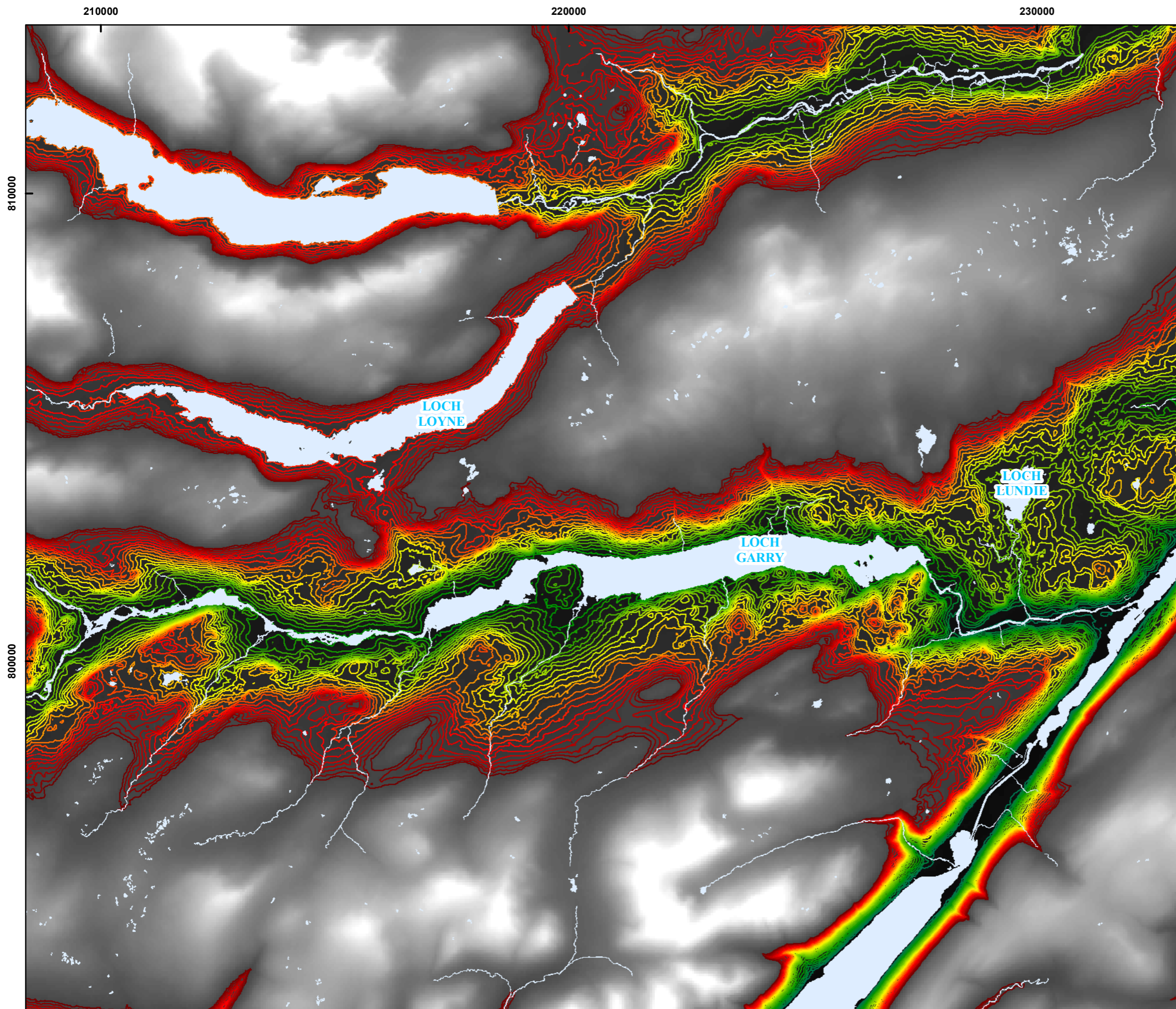
1.4.1 As noted above, it is necessary that the competent authority considers, within the assessment steps, the potential effect of the Proposed Development alone or “in combination” with other projects.

1.4.2 However, the predicted in-isolation effects of the Proposed Development are considered to have no potential to contribute to in-combination effects. Therefore, there is no prospect that the Proposed Development in-combination with other plans or projects could affect the integrity of the SPA.

#### **1.5 Conclusion**

1.5.1 In conclusion, none of the SPA’s conservation objectives will be compromised by the Proposed Development alone, or in combination with other plans or projects, and will, therefore, not affect the integrity of the SPA.





**Key**

Surface water

Contours	
50	130
60	140
70	150
80	160
90	170
100	180
110	190
120	200
	210
	220
	230
	240
	250
	260
	270
	280
	290
	300

Date produced: 19/04/2022  
Source: NRP LTD

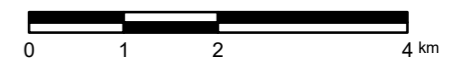
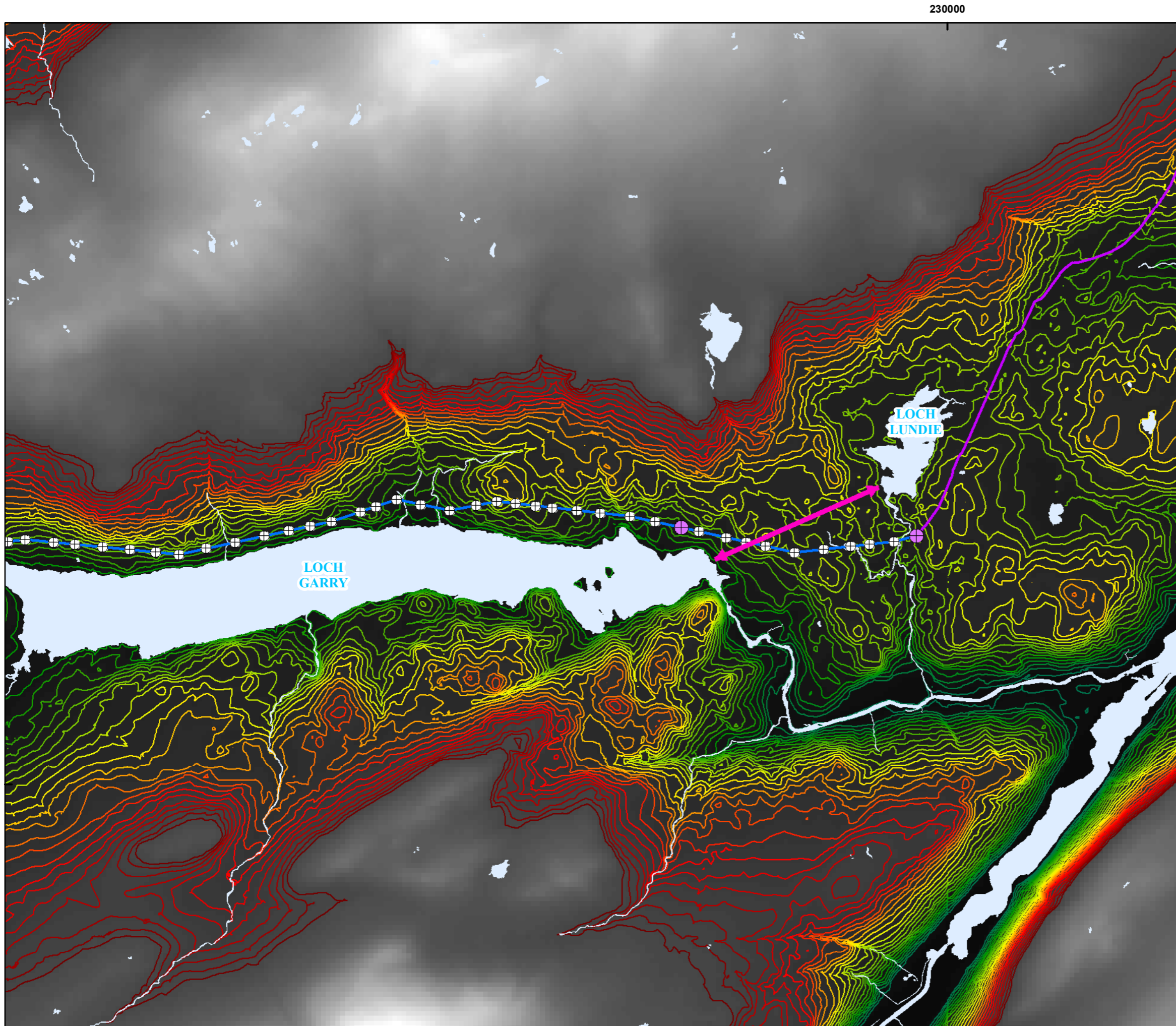








Figure 5.5.1.  
**Topography around Lochs Garry, Loyne and Lundie**



















Skye Reinforcement Project



**Key**

-  Theoretical flight corridor
-  Towers BF327 and BF337
-  Towers
-  Section 5 OHL
-  Section 6 underground cable
-  Surface water

**Contours**

	130		220
	50		230
	60		240
	70		250
	80		260
	90		270
	100		280
	110		290
	120		300

Date produced: 19/04/2022  
Source: NRP LTD

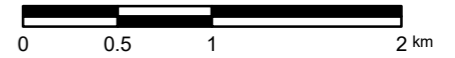
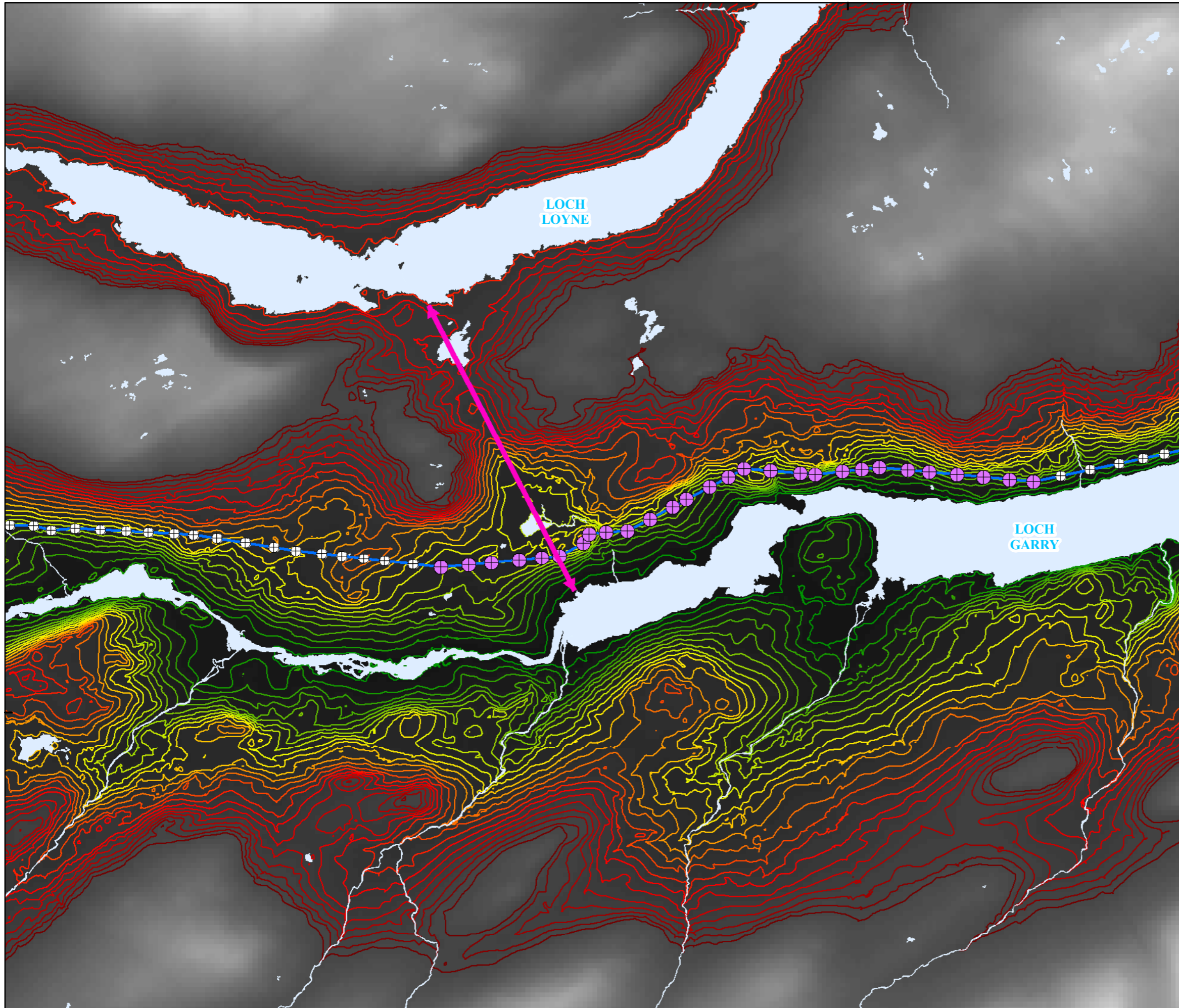







Figure 5.5.2.  
**Theoretical flight corridor between Lochs Garry and Lundie**  
Skye Reinforcement Project

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**n r p** NATURAL RESEARCH PROJECTS LIMITED

**Key**

-  Theoretical flight corridor
-  Towers BF279 to BF306
-  Towers
-  Section 5 OHL
-  Surface water

**Contours**

	130		220
	50		140
	60		150
	70		160
	80		170
	90		180
	100		190
	110		200
	120		210
			230
			240
			250
			260
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			300

Date produced: 19/04/2022  
Source: NRP LTD

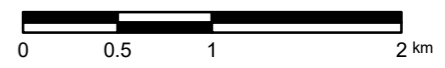


Figure 5.5.3.  
**Theoretical flight corridor between Lochs Garry and Loyne**

Skye Reinforcement Project