SEPA Reference: CAR/L/5011121
AECOM Project Number: 60570241

Aquatic Ecology Supplementary Information

Project name	Client	Subject	Date
Balliemeanoch Pumped Storage Hydro	ILI Pump Storage Hydro PLC	CAR Application Request for Further Information	27 February 2026

Prepared by	Checked by	Verified by	Approved by
[redacted]	[redacted]	[redacted]	[redacted]

1. Introduction

An application for the discharge and abstraction of water for the Balliemeanoch Pumped Storage Hydro Scheme (the Proposed Development), under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) (the Application), was submitted to the Scottish Environment Protection Agency (SEPA) in June 2025. Following an initial review of the application submitted by AECOM on behalf of Intelligent Land Investments Ltd (the Applicant), SEPA have formally written to the Applicant dated 17 December 2025, detailing their Request for Further Information.

Subsequently, a meeting was held between SEPA, AECOM and the Applicant on 22 January 2025. In this meeting, it was concluded that much of the information requested by SEPA is available as part of the Environmental Impact Assessment Report (EIAR).

This technical note (TN) sets out the Applicant's response to SEPA's queries raised in relation to aquatic ecology and signposts where this information can be found in the EIAR and, for ease of review, provides this information as per the following appendices.

- Appendix A: Balliemeanoch PSH EIAR Chapter 7: Aquatic Ecology (Volume 2: Main Report)
- Appendix B: Balliemeanoch PSH Appendix 7.1: Aquatic Ecology Baseline Report (Volume 5: Appendices)
- Appendix C: Balliemeanoch PSH Further Environmental Information (FEI)

2. SEPA Request – Aquatic Ecology

Table 1, below, details the Applicant's response to SEPA's response to the CAR application, specifically relating to aquatic ecology with supporting information provided in Section 2 of this TN. Clarification regarding salmonid spawning dates and the timing of in-river works is detailed in Section 3. The relevant documents (excluding the CAR License Supporting Document) cross referenced within AECOM responses can be found in Appendices Appendix A, Appendix B, and Appendix C.

Table 1. Aquatic Ecology Response to 'Request for Further Information'

Ref.	SEPA Comment	AECOM Response	Relevant Document Cross Reference	Actions / Notes
2.1	Fish surveys to identify which species are present, the current status of the populations and potential impacts to these from the proposed scheme.	The importance of fish species receptors present is set out in Table 6-1 of the CAR License Supporting document. Fish receptors are detailed in Section 6 of the CAR License Supporting document. Impacts on these receptors are assessed in Section 6 of the CAR License Supporting Document. 11 effects were identified, which are all negative in line with WAT-RM-34 (Refer to Assessing the Significance of the Effects). Impacts on fish receptors were also assessed within Section 7.9.3 of Chapter 7 Aquatic Ecology of the EIAR (Appendix A of this TN). Fish surveys undertaken as part of the EIAR for Proposed Development are set out in the EIAR Appendix 7.1 Aquatic Ecology Baseline Report (Appendix B of this TN). Since the assessment in the EIAR was completed, the size of the proposed headpond and associated infrastructure has been reduced (see Sections 2.2, 3.2 and 4.3 of the FEI document (Appendix C of this TN)), resulting in a decrease in the magnitude of the residual adverse effects on migratory fish species due to changes in water levels from Moderate and Significant to Minor and Not Significant. All other residual effects identified in the EIAR are unaffected by the changes outlined in the FEI report, and although the changes may have some beneficial effect, the overall conclusions in the EIAR still apply.	CAR License Supporting Document (Rev B September 2025) • Section 6: Effects on Biodiversity – Aquatic Ecology EIAR Chapter 7 Aquatic Ecology (Appendix A of this TN) • Section 7.9 Assessment of Effects EIAR Appendix 7.1 Aquatic Ecology Baseline Report (Appendix B of this TN) • Section 2.2 Survey Sites • Section 3.2 Field Survey Further Environmental Information Document (Appendix C of this TN) • Section 2.2 Summary of Key Development Changes • Section 3.2 Design Changes • Section 4.3 Aquatic Ecology (re: EIAR Chapter 7)	Table 1 of EIAR Appendix 7.1 Aquatic Ecology Baseline Report is included in Section 3 to provide clarity as to what aquatic ecology surveys were conducted.
2.2	A habitat survey to assess the impact associated with frequent changes to loch levels. This should demonstrate how these changes impact spawning and/or nursery habitat within loch margins and any associated habitat identified in the loch that is used by any species present. This should also consider changes in water chemistry and the thermal regimes within the loch. Details should also include any spawning areas/ habitat used by species present that will be impacted by the outflow/intake arrangement of the scheme.	Impact assessment on aquatic ecology due to the changes in loch levels has been assessed in Section 6 of the CAR License Supporting Document. Table 6-2 details the impacts and effect type (in relation to CAR) in line with WAT-RM-34. However, in line with SEPA comments, further comment has been provided in Section 3 of this TN. Further details of impact assessment on aquatic ecology due to changes in loch levels is assessed in Section 7.9.4.1 Effects on Water Levels in Loch Awe of the EIAR (Appendix A of this TN). Since the assessment in the EIAR was completed, the size of the proposed headpond and associated infrastructure has been	CAR License Supporting Document (Rev B September 2025) • Section 6: Effects on Biodiversity – Aquatic EIAR Chapter 7 Aquatic Ecology (Appendix A of this TN) • Section 7.9.4.1 Effects on water Levels in Loch Awe Further Environmental Information Document (Appendix C of this TN)	Further comment provided for clarity in Section 3.

Ref.	SEPA Comment	AECOM Response	Relevant Document Cross Reference	Actions / Notes
		reduced (see Section 2.2, 3.2 and 4.3 of the FEI document (Appendix C)), resulting in a decrease in the magnitude of the residual adverse effects on migratory fish species due to changes in water levels from Moderate and Significant to Minor and Not Significant. All other residual effects identified in the EIAR are unaffected by the changes outlined in the FEI report, and although the changes may have some beneficial effect, the overall conclusions in the EIAR still apply.	• Section 2.2 Summary of Key Development Changes • Section 3.2 Design Changes • Section 4.3 Aquatic Ecology (re: EIAR Chapter 7)	
2.3	An assessment of the potential impact of the scheme on all migratory fish species identified, information on mitigation you propose for any impacts identified and any potential residual impacts.	Operational effects on aquatic ecology are discussed in Section 6 of the CAR License Supporting Documentation. Table 6-2 details the impacts and effect type (in relation to CAR) in line with WAT-RM-34. Operational effects on aquatic ecology are also assessed in Section 7.12.2.1 of Chapter 7 Aquatic Ecology of the EIAR (Appendix A of this TN). Since the assessment in the EIAR was completed, the size of the proposed head pond and associated infrastructure has been reduced (see Sections 2.2, 3.2 and 4.6 of the FEI document (Appendix C of this TN)). Given that the magnitude of the changes in water level in Loch Awe are being reduced by two-thirds, and that negligible changes in flows are expected from Loch Awe into the River Awe due to the inclusion of compensation flow, the resulting Moderate adverse effect on migratory fish species in Loch Awe and River Awe is considered as being mitigated to a Minor adverse effect that is Not Significant. Operation of the development will not affect the River Orchy given its position upstream of Loch Awe and that there is a commitment for the scheme to maintain water levels within normal fluctuations. Additional mitigation in relation to the effects of the operation of the Scheme on water levels in Loch Awe are discussed in Section 7.11.3.2 of the EIAR (Appendix A of this TN) Further details are available in Section 4.3 Aquatic Ecology of the Further Environmental Information Report (Appendix C of this TN).	CAR License Supporting Document (Rev B September 2025) • Section 6: Effects on Biodiversity - Aquatic • Sub-section 6.6 Assessing the Effects on Aquatic Biodiversity EIAR Chapter 7 Aquatic Ecology (Appendix A of this TN) • Section 7.12.2.1 Effects on Water Levels in Loch Awe • Section 7.11.3.2 Additional Mitigation During Operation Further Environmental Information Report (Appendix C of this TN) • Section 2.2 Summary of Key Development Changes • Section 3.2 Design Changes • Section 4.3 Aquatic Ecology (re: EIAR Chapter 7)	Section 4.3 Aquatic Ecology of the FEI Report (Appendix C of this TN) has been excerpted in Section 3 below to provide clarity.
2.4	Details of how the increased rate of change in loch levels with regard to the potential impact this has on migration (upstream and downstream) at Loch Awe Barrage have been considered.	Operational effects on aquatic ecology are discussed in Section 6 of the CAR License Supporting Documentation. Table 6-2 details the impacts and effect type (in relation to CAR) in line with WAT-RM-34. Operational effects on aquatic ecology are also assessed in Section 7.12.2.1 of Chapter 7 Aquatic Ecology of the EIAR (Appendix A of this TN). Since the assessment in the EIAR was completed, the size of the proposed head pond and associated infrastructure has been reduced (see Sections 2.2, 3.2, and 4.6 of	CAR License Supporting Document (Rev B September 2025) • Section 6: Effects on Biodiversity - Aquatic • Section 6.6 Assessing the Effects on Aquatic Biodiversity	Section 4.3 Aquatic Ecology of the FEI Report (Appendix C of this TN) has been excerpted in Section 3 below to provide clarity.

Ref.	SEPA Comment	AECOM Response	Relevant Document Cross Reference	Actions / Notes
		the FEI document (Appendix C of this TN)). Given that the magnitude of the changes in water level on Loch Awe are being reduced by two-thirds, and that negligible changes in flows are expected from Loch Awe into the River Awe due to the inclusion of compensation flow, the resulting Moderate adverse effect on migratory fish species in Loch Awe and River Awe is considered as being mitigated to a Minor adverse effect that is Not Significant. Operation of the development will not affect the River Orchy given its position upstream of Loch Awe and that there is a commitment for the scheme to maintain water levels within normal fluctuations.	EIAR Chapter 7 Aquatic Ecology (Appendix A of this TN) • Section 7.12.2.1 Effects on Water Levels in Loch Awe Further Environmental Information Report (Appendix C of this TN) • Section 2.2 Summary of Key Development Changes • Section 3.2 Design Changes • Section 4.3 Aquatic Ecology (re: EIAR Chapter 7)	
2.5	Please provide details of the screen bar spacing and information on the proposed maintenance regime for the screening arrangement to ensure no damage/harm to fish.	As per section 5.7 of the CAR Licence Supporting Documentation, there will be a smolt screen at the Tailpond Inlet/Outlet, with a maximum inlet approach velocity of approximately 0.15 m/s. However, in line with SEPA comments, further comment has been provided in Section 3 of this TN. Residual effects due to the operation of the inlet / outlet structure on the Loch Awe Shoreline, including the screen are detailed in Section 7.12.2.2 of Chapter 7 Aquatic Ecology (Appendix A of this TN). Regular monitoring and maintenance of the inlet / outlet screen of the lower control works is detailed in Section 7.11.3.3 the EIAR (Appendix A of this TN).	CAR License Supporting Document (Rev B September 2025) • Section 4: The Proposed Development • Section 5.7: Details of the Controlled Activity – During Operation EIAR Chapter 7 Aquatic Ecology (Appendix A of this TN) • Section 7.11.3.3 Future Monitoring • Section 7.12.2.2 Inlet / Outlet structure on Loch Awe shoreline, including Screen during Operation	Further comment provided for clarity in Section 3.
2.6	Further details of the tributary diversion for the upper reservoir works, including species present, habitat present and the mitigation proposed.	Table 6-2 of the CAR License Supporting Documentation states that likely effects involving watercourse crossings for Temporary Access Tracks and temporary site compounds including diversion and culverting of watercourses, and temporary site drainage, including SuDs, settlement ponds, temporary ditches, and other drainage features are not included in the assessment as specified in the methodology, Supporting Guidance (WAT-SG-67). The loss of part of this watercourse is assessed as not resulting in the loss of habitat for notable aquatic species, see Section 7.9.3.3 of the EIAR Chapter 7 Aquatic Ecology.	CAR License Supporting Document (Rev B September 2025) • Section 6: Effects on Biodiversity – Aquatic EIAR Chapter 7 Aquatic Ecology (Appendix A of this TN) • Section 7.9.3.3 Construction of the Headpond and Headpond Embankments, Including Land Take and	Further comment provided for clarity in Section 3.

Ref.	SEPA Comment	AECOM Response	Relevant Document Cross Reference	Actions / Notes
		The area of the tributary to Allt Beochlich which will be diverted has been reduced since the Assessment carried out for the EIAR. A reduction in the overall scale of the scheme is detailed in the Sections 2.2 and 3.2 of the FEI report (Appendix C of this TN) and will result in the construction of a much smaller headpond and subsequently a smaller section of the Allt Beochlich tributary will be diverted. Further comment has been provided in Section 3 of this TN.	Transport of Excavated Materials Further Environmental Information Report (Appendix C of this TN) • Section 2.2 Summary of Key Development Changes Section 3.2 Design Changes	

3. Aquatic Ecology Supporting Information Requirements

3.1 Specific SEPA Response Ref 2.1

Fish surveys undertaken as part of the Proposed Development EIA are set out in the EIAR Appendix 7.1 Aquatic Ecology Baseline Report (Appendix B of this TN) and summarised in Table 2 below.

Table 2. Balliemeanoch Aquatic Survey Sites (Table 1 in the EIAR Appendix 7.1 Aquatic Ecology Baseline Report (Appendix B)).

Site ID	Watercourse Name	Grid Reference	Year	Macrophyte	Macroinvertebrate	Fish	INNS	eDNA
BL-01	Allt Criche (trib. of Erralich Water)	NN 08167 12302	2019	✓	✓	-	-	-
			2021	-	-	✓	-	-
			2023	-	✓	✓	-	-
BL-02	Erralich Water	NN 07790 11867	2019	✓	✓	-	-	-
			2021	-	-	✓	-	-
			2023	-	✓	✓	-	-
BL-03	Allt Blarghour	NN 02880 13037	2019	A	A	-	-	-
			2023	A	A	-	-	-
BL-04	Buinne Dhubh (Allt Beolich)	NN 03197 15552	2019	✓	✓	-	-	-
			2021	-	-	A	-	-
			2023	-	✓	A	-	-
BL-05	Allt Beolich	NN 01347 15431	2019	✓	✓	-	-	-
			2023	-	✓	-	-	-
BL-06	Unnamed (direct into Loch Awe)	NN 01175 15660	2019	-	✓	-	-	-
			2021	-	✓	-	-	-
BL-07	Allt a' Chrosaid River Aray	NN 01127 16082	2019	✓	✓	-	-	-
			2021	-	-	A	-	-
			2023	-	✓	A	-	-
BL-14	Loch Fyne Wharf (Brackish site)	NN 08537 07116	2019	✓	-	-	-	-
			2023	-	✓	-	-	-
BL-16	Loch Fyne (Brackish site)	NN 11301 09358	2019	✓	-	-	-	-
			2023	A	A	-	-	-
BL-17	Allt a' Gheataidh (outfall into Loch Awe)	NN 00960 16289	2019	✓	✓	-	-	-
			2023	-	✓	-	-	-
BL-18	Loch Awe	NN 00683 15657	2019	✓	✓	-	✓	-
			2021	-	-	-	-	✓
			2023	-	✓	-	✓	✓
BL-19	Loch Awe	NN 07693 26840	2019	✓	✓	-	✓	-
			2021	-	-	-	-	✓
			2023	-	✓	-	✓	✓
BL-20	Lochan Airigh	NN 04278 16416	2019	✓	✓	-	-	-
			2023	-	✓	-	-	-
BL-21	Lochan Breac-liath	NN 03430 16457	2019	✓	✓	-	-	-

Site ID	Watercourse Name	Grid Reference	Year	Macrophyte	Macroinvertebrate	Fish	INNS	eDNA
			2023	-	✓	-	-	-
BL-22	River Aray	NN 09062 18945	2019	✓	✓	-	-	-
			2021	-	-	✓	-	-
			2023	-	✓	✓	-	-
BL-23	Unnamed (trib. of River Aray)	NN 09795 19225	2019	✓	✓	-	-	-
			2021	-	-	✓	-	-
			2023	-	✓	✓	-	-
BL-24	Unnamed (tributary of Achan River)	NN 07687 19480	2019	✓	✓	-	-	-
			2021	-	✓	-	-	-
BL-25	Unnamed (tributary of Keppochan River)	NN 06895 19355	2019	✓	✓	-	-	-
			2021	-	-	✓	-	-
			2023	-	✓	✓	-	-
BL-26	Unnamed (tributary of Allt na Cuile Riabhaiche)	NN 05988 18950	2019	✓	✓	-	-	-
			2021	-	-	✓	-	-
			2023	-	✓	✓	-	-

A - Surveys were aborted due to health and safety concerns, either watercourses were in spate, storm conditions or unsafe to enter

3.2 Specific SEPA Response Ref 2.2

AECOM provided an impact assessment on aquatic ecology due to the changes in loch levels in Section 6 of the CAR License Supporting Document. However, considering SEPA's comments (Ref 2.2), further comment has been provided below.

Given that water level fluctuations will be within the current minimum and maximum levels for the loch, albeit more frequent, it is likely that marginal loch habitats will remain unaffected and likely wetter for longer than the current baseline. Atlantic salmon (Salmo salar) and brown trout (Salmo trutta) present within Loch Awe are very unlikely to spawn within the margins of Loch Awe, given the availability of upstream tributaries, including those listed as receptors within Section 6 of the CAR License Supporting Document Table 6-1, which are their preferred spawning habitat.

The available literature shows that brown trout which spawn in lakes do so in water below 3 m depth and in areas of groundwater upwellings (Brabrand et al. 2002) , and so would remain unaffected by more frequent water level fluctuations of a maximum of 0.4 m (see section 2.2 of the FEI report (Appendix C of this TN)). Arctic charr spawn within deeper water in Lochs and will also remain unaffected.

3.3 Specific SEPA Response Ref 2.3

Section 4.3 Aquatic Ecology of the FEI Report (Appendix C of this TN) has been excerpted below to provide clarity.

Section 4.3 Aquatic Ecology

Section 7.11.2.1 of Chapter 7: Aquatic Ecology concluded that due to regular generation cycles with water pumped up to the Headpond then returned to the loch, water levels in Loch Awe will fluctuate to a greater extent than in the baseline scenario, and with greater regularity. Due to fluctuating water levels there will be resulting effects on the Loch Awe Barrage, associated fish lift and fish passage. This would result in a Moderate effect on migratory fish species in Loch Awe and River Awe, including Atlantic salmon, brown/sea trout, European eel (*Anguilla anguilla*), and lamprey species, and in the context of the EIAR, this is Significant.

The maximum change in water level that can result from the operation of the Development is being reduced from 1.2 m to 0.4 m due to the revised design. Modelling of the outflow at the Awe Barrage with the operation of the revised Development shows that changes in flow will be negligible (<5%) over the course of the year (Figure 1 below). The

baseline outflow rating at the barrage is estimated based on the change in volume of the loch and the calculated inflow to determine the total outflow from the loch, but it is uncertain what proportion of outflow involves pumping into Cruachan Headpond, abstraction into the Barrage hydro-electric intake, flow through the fish pass or any other compensation flow arrangement. Given the results of the current modelling approach for the revised scheme, the upstream migration of fish from the River Awe into Loch Awe will not be affected.

Given that the magnitude of the changes in water level on Loch Awe are being reduced by two-thirds, and that negligible changes in flows are expected from Loch Awe into the River Awe, the resulting Moderate adverse effect on migratory fish species in Loch Awe and River Awe is considered as being mitigated to a Minor adverse effect that is Not Significant.

All other residual effects (pre-construction, construction, and operation) are unaffected by the proposed reduction in Headpond size and associated infrastructure changes. Although the changes identified may have some beneficial effect such as those described above, the overall conclusions of Chapter 7 in the EIAR still apply.

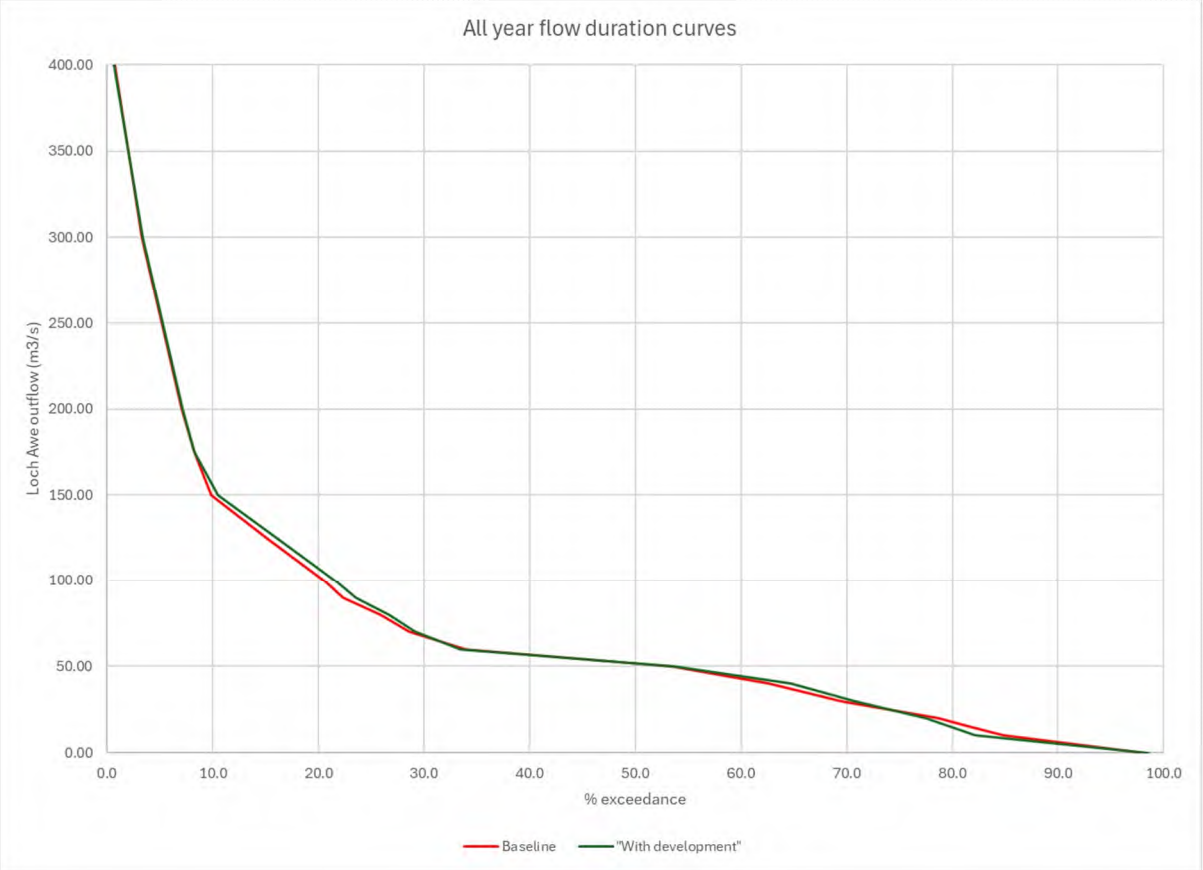

Figure 1. Modelled flow duration curve for the River Awe (Figure 4.3.1 of the FEI report (Appendix C)).

3.4 Specific SEPA Response Ref 2.4

Section 2.3 above (excerpt of Section 4.3 Aquatic Ecology of the FEI Report (Appendix C of this TN)) for details of how the increased rate of change in loch levels and the potential impact this has on migration (upstream and downstream) at Loch Awe Barrage has been considered.

3.5 Specific SEPA Response Ref 2.5

AECOM provided initial information relating to the screening of fish in Loch Awe in Section 4 and Section 5.7 of the CAR License Supporting Document. However, considering SEPA's comments, further information has been provided below.

The Applicant has made a commitment that the screening requirements at the Inlet/Outlet on Loch Awe will be finalised through discussion with SEPA / NatureScot. However, it is the Applicant's intention to install the screens as per SEPAs best-practice guidance, namely 12 mm spacing between screen bars, with the previously stated approach velocities of 0.3 m/s.

As per CAR Licence Supporting Documentation, Table 4-2 it is expected that the screens at the inlet/outlet will be cleaned routinely, with an inspection every 10 years and replacement every 20 years.

3.6 Specific SEPA Response Ref 2.6

AECOM provided initial information relating to tributary diversions for the upper reservoir or Headpond in Section 6 of the CAR License Supporting Document and Chapter 7 of the EIAR. However, considering SEPA's comments and the range of sources, further comment has been provided below.

Construction of the Headpond and Embankments will result in the loss of a proportion (approx. 342 m) of a tributary of Allt Beochlich. This will involve a temporary diversion during the construction of the headpond embankments, after which the downstream section of the tributary will receive compensation flow. The loss of part of this watercourse is assessed as not resulting in the loss of habitat for notable aquatic species (see Section 7.9.3.3 of the EIAR (Appendix A of this TN)); fish are largely excluded from this catchment due to the presence of the existing hydro-power plant downstream, the presence of natural and artificial barriers to migration downstream, and their generally steep and inaccessible nature. Therefore, the impact on this watercourse and the aquatic species therein is assessed as a Low magnitude Negligible effect.

Since the assessment included within the EIAR was completed, the size of the proposed headpond and associated infrastructure has been reduced (see FEI Report (Appendix C of this TN)), resulting in a reduction in the length of diversion necessary for the tributary of Allt Beochlich. This further decreases the magnitude of any residual effects that were already assessed as being Low magnitude, to Negligible magnitude.

Figure 2 shows the original and revised design. Figure 3 shows the reduced section of tributary to Allt Beochlich (LA6) that is being lost as a result of the construction of the revised smaller headpond.

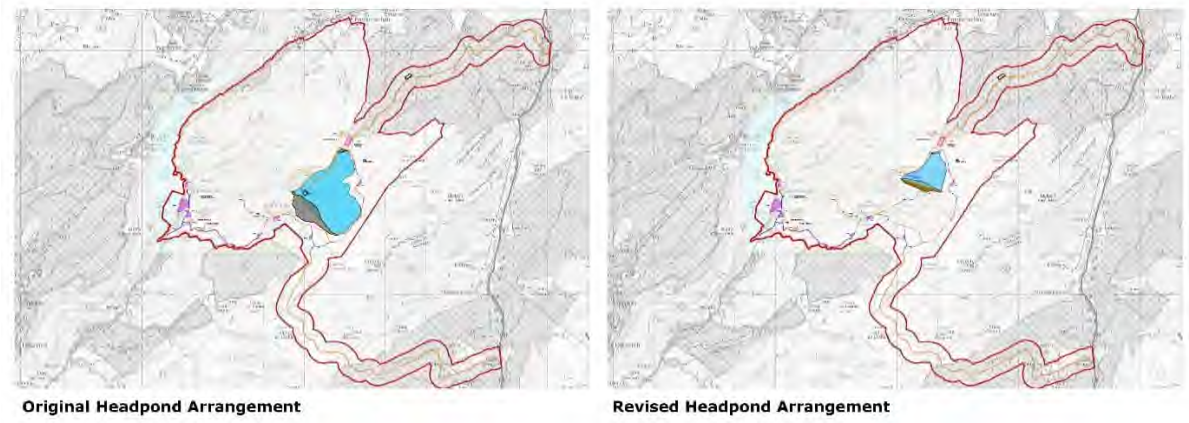

Figure 2. Maps showing the reduction in Headpond size (blue) as detailed in the FEI report (Appendix C of this TN)

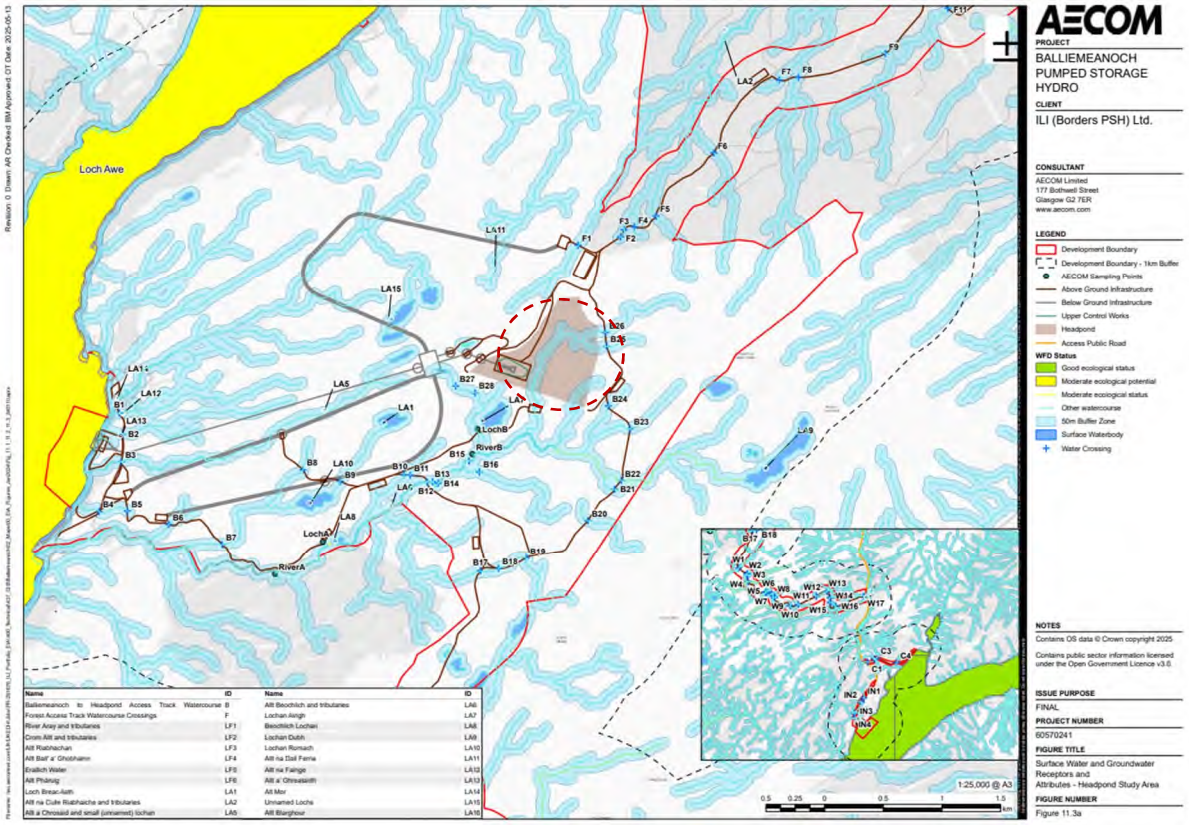

Figure 3. Surface Water Receptors in the Headpond Area. (Figure 11.3a of the FEI report (Appendix C of this TN). [Dashed circle shows the reduced section of tributary of Allt Beochlich (LA6) which is being lost as a result of the construction of the revised smaller headpond]

4. Clarification regarding salmonid spawning dates and the timing of in-river works.

In a meeting on 22 January 2026, SEPA noted that there was a spawning date anomaly on page 35 of the Rev B September 2025:

"Watercourse Crossings: Culverts for temporary access tracks will follow SEPA guidelines and the project Design Statement. The construction of watercourse crossings will avoid the migration and spawning seasons of resident brown trout and migratory Atlantic salmon, where those species are present (Atlantic salmon in Allt Criche (tributary of Erralich Water): BL-01; Brown/sea trout in four watercourses: Allt Criche (tributary of Erralich Water): BL-01; Erralich Water: BL02; River Aray: BL-22; Unnamed tributary of River Aray: BL-23). ***The seasons are January to March for brown trout spawning, and November to February for Atlantic salmon upstream migration and spawning."***

SEPA raised concerns about the specified dates (see bold text above) and the protection of salmonid fish and therefore the Applicant would like to clarify the following: The construction of watercourse crossings will occur in the default working window for all in-river works (1 June to 30 September), avoiding key salmonid (Atlantic salmon and brown/sea trout) life history events between spawning and emergence (October - May).

Appendix A Balliemeanoch Pumped Storage Hydro Environmental Impact Assessment Report Volume 2: Main Report Chapter 7: Aquatic Ecology

Please see accompanying document / folder.

Appendix B Balliemeanoch Pumped Storage Hydro Environmental Impact Assessment Report Volume 5: Appendices Appendix 7.1 Aquatic Ecology Baseline Report

Please see accompanying document / folder.

Appendix C Balliemeanoch Pumped Storage Hydro Further Environmental Information

Please see accompanying document / folder.