transport.gov.scot

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

Environmental Impact Assessment Environmental Statement A887 Allt Lagain Bhain Appendix D

Ecological Impact Tables

A887 Allt Lagain Bhain – Ecological Impact Assessment Tables

Resource **River Moriston SAC**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Aquatic SAC designated for Atlantic salmon and freshwater pearl mussel. Nature conservation value: International Policy/Legal context: Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora. Conservation (Natural Habitats, & c.) Regulations 1994 (as amended). Integrity/conservation status:	Biophysical change: 1. Pollution as a result of oils, chemicals, uncured concrete and/or particulates entering Allt Lagain Bhain watercourse.	SI: Adverse PO: Probable CO: Direct and indirect EC: Approx. 70m of watercourse and estimated 50-500m of river. SZ: Localised to Allt Lagain Bhain downstream of bridge and to River Moriston near entry of watercourse. Reach of River Moriston affected would be dependent on type and quantity of pollutant. RE: Not reversible DU: Short-term but with potential for long-term impacts	Significant / Not significant: Significant at County scale. Confidence of predictions: Medium	Mitigation: Pre-construction monitoring to evaluate baseline conditions of watercourse. Pollution prevention measures as described in Road Drainage and the Water Environment chapter. Quantification/Measure: Monitoring will be carried out during construction. Mechanism for delivery: Environmental Clerk of Works (ECOW) to inspect pollution prevention provision	Residual impacts: There will remain a residual risk of pollution. Significant / Not significant: Not significant Confidence of predictions: Medium

Resource **River Moriston SAC**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Atlantic salmon: Unfavourable No Change. Freshwater pearl mussel: Unfavourable No Change. Factors/Criteria: Annex II species that are the primary reason for the selection of this site: Freshwater pearl mussel. Annex II species present as a qualifying feature but not a primary reason for selection of this site: Atlantic salmon.		(e.g. deposition of particles on bed). TF: As flows likely to be lower in summer, impacts could be greater due to lower dilution capacity of watercourse and river. Atlantic salmon spawning season between October and May.			
	2. Disturbance of the bed and banks of Allt Lagain Bhain watercourse and adjacent designated habitat.	SI: Adverse PO: Probable CO: Direct EC: Approx. 40m of watercourse and an area of land approx. 20m by 20m.	Significant / Not significant: Significant at Local scale; not significant at SAC or County scale.	Mitigation: Pollution control measures as described in Road Drainage and the Water Environment chapter. Avoid unnecessary working in burn. Avoid machinery in burn as far as practicable. Restore bed and banks of burn using material from the watercourse.	Residual impacts: There will be a noticeable change as a result of the watercourse and area of land being within the working area. However, in

Resource River Moriston SAC	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		SZ: Localised to Allt Lagain Bhain downstream of bridge and adjacent habitat. RE: Reversible DU: Short-term / long-term impacts. TF: Atlantic salmon spawning season between October / November and May.	Confidence of predictions: High	Quantification/Measure: Visual inspection will be carried out during construction. Photographs of bed and banks upstream and downstream of bridge to be taken prior to, during and at end of construction. Mechanism for delivery: ECOW to visually inspect works within and on banks of watercourse and area of land within SAC designation prior to, during and at end of construction.	time, the aquatic and bankside habitat is anticipated to re-establish. Significant / Not significant: Not significant Confidence of predictions: High
Operational phase (including maintenance):	Biophysical change: 1. Potential change in pollution risk from routine road runoff. However, no change in traffic flow predicted	SI: Adverse PO: Probable CO: Direct and indirect. EC: 70m of Allt Lagain Bhain. SZ: Low concentrations localised to Allt Lagain Bhain.	Significant / Not significant: Not significant (because of little change from existing situation).	Mitigation: Two levels of Sustainable Drainage Systems (SUDS). Quantification/Measure: Water quality monitoring prior to and following construction. Mechanism for delivery: To be included in detailed design.	Residual impacts: Impact from routine road runoff pollutants is likely to be similar to existing situation i.e.

Resource River Moriston SAC	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	as a result of scheme.	RE: Generally reversible; deposition of particulates may not be reversible. DU: Long-term / short-term impacts. TF: Runoff will occur during rainfall events or due to snow-melt. Summer rainfall events can have more polluting potential due to build-up of pollutants on road surface during dry periods and likely lower dilution capacity of Allt Lagain Bhain. Winter runoff may contain road salt and grit.	Confidence of predictions: Medium		neutral impact. Potential for marginal benefit due to SUDS. Significant / Not significant: Not significant Confidence of predictions: High
	2. Potential change in risk of spillage from serious vehicular collision reaching watercourse. However, no	SI: Adverse PO: Unlikely CO: Direct and indirect. EC: 70m of Allt Lagain Bhain and undetermined length of River Moriston (dependent on	Significant / Not significant: Not significant (i.e. no change from existing situation);	Mitigation: SUDS to incorporate simple spillage containment. Quantification/Measure: Confirmation on site that design implemented.	Residual impacts: Risk of spillage causing pollution should be reduced compared

Resource River Moriston SAC	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	change in traffic flow predicted as a result of scheme.	type and quantity of spill reaching aquatic environment and dilution available in river). SZ: Likely to be localised to Allt Lagain Bhain and River Moriston near entry of burn. RE: Likely to be reversible but effects could be severe in short-term e.g. fish-kill. DU: Short-term but could have medium to long-term effects e.g. on fish populations locally. TF: N/A	note this does not mean that a major spillage reaching the burn would not be significant. Confidence of predictions: Medium	Mechanism for delivery: SUDS to be included in detailed design.	with existing situation. Significant / Not significant: Not significant Confidence of predictions: Medium
Decommissioning Phase:	Biophysical change: Potential destruction or major refurbishment of A887 bridge structure. Impacts will be dependent on	SI: Adverse PO: Probable CO: Direct and indirect. EC: Approx. 40m of burn and 100m of river.	Significant / Not significant: Potentially significant at Local scale. Confidence of	Mitigation: As above for Construction Phase (dependent on works). Quantification/Measure: Dependent on works – likely to be similar to Construction Phase.	Residual impacts: Likely to be similar to Construction Phase. Significant / Not significant:

Resource **River Moriston SAC**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	details of proposed works but are likely to be similar to the Construction Phase impacts identified above.	SZ: Localised to Allt Lagain Bhain downstream of bridge and River Moriston near entry of burn. RE: Not reversible DU: Short-term with potential for long-term TF: Atlantic salmon spawning season between October and May	predictions: Low	Mechanism for delivery: Similar to Construction Phase.	Not significant Confidence of predictions: Low

Resource Semi-natural broadleaved woodland	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Semi-natural broadleaved woodland (mainly birch). Part of woodland (to west of bridge) is on the Ancient Woodland Inventory (2.45 ha). Nature conservation value: County (Ancient Woodland); rest of woodland is Local value. Policy/Legal context: SNH: A guide to understanding the Scottish Ancient Woodland Inventory (AWI). The Scottish Government's Policy on the Control of Woodland Removal. Integrity/conservation status: N/A	Biophysical change: 1. Vegetation clearance within working area.	SI: Adverse PO: Certain CO: Direct EC: 0.55 ha approx.; 0.3 ha on Ancient Woodland Inventory (AWI). SZ: 1.5 % of woodland block; 0.3 ha is 12% of AWI block. RE: Partially reversible. Loss of Ancient Woodland not reversible. DU: Medium-term with small long-term impact. TF: N/A	Significant / Not significant: Significant effect on Ancient Woodland at Local Scale. Not significant effect on rest of woodland. Confidence of predictions: High	Mitigation: Re-planting with native tree species to reflect those currently present and retention of woodland soils. Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the Construction Environmental Management Plan (CEMP).	Residual impacts: There will be loss of native trees within the working area but planted native trees will in time grow to provide similar habitat. There will be a long-term loss where the road is to be widened. Significant / Not significant: Significant effect on Ancient Woodland at

Resource Semi-natural broadleaved woodland	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Factors/Criteria: N/A					a County scale. Not significant effect on rest of woodland. Confidence of predictions: High
	2. Inadvertent damage to trees which do not need to be removed as part of the scheme.	SI: Adverse PO: Probable CO: Direct EC: Within and on edges of working area. SZ: Variable RE: Not reversible DU: Medium-term, potentially long-term TF: N/A	Significant / Not significant: Not significant Confidence of predictions: Medium	Mitigation: Working area to be clearly defined with appropriate fencing or barrier tape. Root protections zones to be marked on site around specific trees. Quantification/Measure: Monitored by ECOW. Mechanism for delivery: Requirement in the Construction Environmental Management Plan (CEMP).	Residual impacts: The mitigation will reduce the risk of damage to such trees. Significant / Not significant: Not significant Confidence of predictions: High

Resource Semi-natural broadleaved woodland	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Operational phase (including maintenance):	Biophysical change: Loss of 0.4 ha of woodland.	SI: Adverse PO: Certain CO: Direct EC: 0.55 ha approx.; 0.3 ha on AWI. SZ: 1.5 % of woodland block; 0.3 ha is 12% of AWI block. RE: Partially reversible DU: Medium-term with small long-term impact. TF: N/A	Significant / Not significant: Significant effect on Ancient Woodland at Local Scale. Not significant effect on rest of woodland. Confidence of predictions: High	Mitigation: Re-planting with native tree species to reflect those currently present and retention of woodland soils. Quantification/Measure: Area from which trees lost to be replanted. Short-term to medium-term loss 0.2 ha; long-term loss 0.4 ha. Mechanism for delivery: Requirement in the Construction Environmental Management Plan (CEMP).	Residual impacts: There will be loss of native trees within the working area but planted native trees will in time grow to provide similar habitat. Significant / Not significant: Significant effect on Ancient Woodland at a Local scale. Not significant effect on rest of woodland.

Resource Semi-natural broadleaved woodland	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					Confidence of predictions: High
Decommissioning Phase:	Biophysical change: Potential loss of small area of woodland (working area likely to be smaller than Construction Phase as works would be confined to the bridge).	SI: Adverse PO: Probable CO: Direct EC: Within small working area adjacent to road bridge. SZ: 0.2 ha approx. RE: Partially reversible DU: Medium-term TF: N/A	Significant / Not significant: Not significant but noticeable effect on local scale. Confidence of predictions: Low	Mitigation: Re-planting with native tree species. Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the CEMP.	Residual impacts: There would be likely loss of native trees within the working area but planted native trees will in time grow to provide similar habitat. Significant / Not significant: Not significant

Resource Semi-natural broadleaved woodland	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					Confidence of predictions: Low

Resource **Juniper (*Juniperus communis*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: One of only three native conifers found in the UK. Nature conservation value: Local Policy/Legal context: UK Biodiversity Action Plan (BAP) Integrity/conservation status: N/A Factors/Criteria: N/A	Biophysical change: 1. Vegetation clearance within working area with resultant loss of two stands of juniper	SI: Adverse PO: Certain CO: Direct EC: Two areas of small stands of juniper SZ: A few plants RE: Potentially reversible DU: Long-term impact. TF: N/A	Significant / Not significant: Not significant Confidence of predictions: High	Mitigation: Possible translocation if appropriate Quantification/Measure: If translocation carried out it is to be undertaken during the vegetation clearance prior to main works. Mechanism for delivery: Requirement in the Construction Environmental Management Plan (CEMP).	Residual impacts: Dependent on whether successful translocation is undertaken. Significant / Not significant: Not significant Confidence of predictions: High
Operational phase (including maintenance):	Biophysical change: Potential loss of two small stands of juniper.	SI: Adverse PO: Probable CO: Direct	Significant / Not significant: Not significant	Mitigation: See above (Construction phase) Quantification/Measure: See above Mechanism for delivery: See above	Residual impacts: Dependent on whether successful translocation

Resource Juniper (*Juniperus communis*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		EC: Two areas of small stands of juniper SZ: A few plants RE: Potentially reversible DU: Long-term impact. TF: N/A	Confidence of predictions: High		is undertaken. Significant / Not significant: Not significant Confidence of predictions: High
Decommissioning Phase:	Biophysical change: N/A	N/A	N/A	N/A	N/A

Resource **Otter (*Lutra lutra*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Otters are active in the area and commute along the Allt Lagain Bhain. Otter resting places were found in the vicinity. Nature conservation value: County Policy/Legal context: Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora: included on Annex II and IV. Conservation (Natural Habitats, & c.) Regulations 1994 (as amended): included on Schedule 2. UKBAP species Included on Scottish Biodiversity List. Highland BAP species.	Biophysical change: 1. Construction works could result in disturbance of otter.	SI: Adverse PO: Probable CO: Direct EC: N/A SZ: N/A RE: Not reversible DU: Short-term to medium-term TF: Otters can breed at any time of year.	Significant / Not significant: Not significant Confidence of predictions: High	Mitigation: EPS licence required from SNH. Pre-construction survey two weeks prior to works commencing. Protection / exclusion zone(s) to be established to protect otter resting places. One otter couch may need to be temporarily closed under licence to protect otters during the works. Quantification/Measure: Surveys for otter to be carried out during construction to assess continued usage of resting places. Mechanism for delivery: Mitigation to be confirmed by ECOW.	Residual impacts: Some disturbance is still likely to occur. Significant / Not significant: Not significant Confidence of predictions: High

Resource **Otter (*Lutra lutra*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Integrity/conservation status: Fairly widespread across UK including Scotland. International Union for Conservation of Nature (IUCN) Category: Near Threatened. Factors/Criteria: N/A					
	2. Otter passage under bridge and along watercourse corridor may be restricted within working area; risk of roadkill if otters use road instead of bridge.	SI: Adverse PO: Probable CO: Direct EC: N/A SZ: N/A RE: Not reversible DU: Short-term to medium-term. TF: Otters can breed at any time of year.	Significant / Not significant: Significant Confidence of predictions: Medium	Mitigation: "Working with Otters" toolbox talk to be given to site personnel. Machinery and excavations to be checked for otter prior to start of each shift. If otter seen on site, works to temporarily stop and a suitably experienced ecologist contacted for advice. Otter passage along watercourse corridor and under bridge to be maintained as far as practicable.	Residual impacts: Low risk of impact will remain. There will be times during specific activities when otter passage during daylight hours is prevented e.g. during demolition of

Resource Otter (*Lutra lutra*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
				Quantification/Measure: Surveys for otter to be carried out during construction to assess continued usage of resting places. Mechanism for delivery: Mitigation to be confirmed by ECOW.	the two bridges. Significant / Not significant: Not significant Confidence of predictions: Medium
Operational phase (including maintenance):	Biophysical change: Otter passage under bridge to be maintained and potentially improved.	SI: Beneficial PO: Certain CO: Direct EC: Allt Lagain Bhain watercourse. SZ: Allt Lagain Bhain watercourse. RE: N/A DU: Long-term	Significant / Not significant: Not significant Confidence of predictions: Medium	Mitigation: Improved provision for otter passage during high flows. Quantification/Measure: Survey for otter use under the bridge within 12 months of completion of construction. Mechanism for delivery: Survey following construction.	Residual impacts: Improved provision for otter passage during high flows. Significant / Not significant: Not significant

Resource **Otter (*Lutra lutra*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		TF: N/A			Confidence of predictions: Medium
Decommissioning Phase:	Biophysical change: Potential destruction or major refurbishment of A887 bridge structure with similar potential impacts to Construction Phase.	SI: Adverse PO: Probable CO: Direct EC: N/A SZ: N/A RE: Not reversible DU: Short-term to medium-term. TF: Otters can breed at any time of year.	Significant / Not significant: Not significant Confidence of predictions: Low	Mitigation: Dependent on proposals and whether otter resting places present in vicinity (survey needed). Quantification/Measure: Dependent on proposals and results of survey. Mechanism for delivery: Any required mitigation to be confirmed by Environmental specialist.	Residual impacts: If active resting places still present, some disturbance is still likely to occur. Significant / Not significant: Not significant Confidence of predictions: Low

Resource Daubenton's bat (*Myotis daubentonii*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Summer and hibernation roost in old bridge structure. Nature conservation value: County Policy/Legal context: Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora: included on Annex II and IV. Conservation (Natural Habitats, & c.) Regulations 1994 (as amended): Schedule 2. Included on Scottish Biodiversity List.	Biophysical change: 1. Destruction of old masonry arch bridge containing roost.	SI: Adverse PO: Certain CO: Direct EC: N/A SZ: Complete loss, 25-30 individuals affected. RE: Not reversible but potential for substitution (provision of artificial roosts). DU: Long-term impact but with potential to reduce to short-term impact if bats use proposed artificial roosts. TF: Summer and winter roost.	Significant / Not significant: Significant at County scale. Confidence of predictions: High	Mitigation: EPS licence required from SNH. Bat boxes to be placed on suitable nearby retained trees. Design of bridge to include provision for bat roosts. A proportion of the roosts to be suitable for hibernation. Quantification/Measure: Provision to be made for roosting of over 40 individual Daubenton's bats. Mechanism for delivery: Mitigation to be incorporated in liaison with licensed bat worker.	Residual impacts: Difficult to quantify as uptake of new artificial roosts is not known. Monitor use of artificial roosts. Significant / Not significant: Significant at County scale but with potential to be not significant. Confidence of predictions: Medium – the

Resource Daubenton's bat (*Myotis daubentonii*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Integrity/conservation status: Widespread; fairly common; stable. IUCN Category: Least Concern. Factors/Criteria: N/A					impact may not be significant if uptake of the new roost sites is high.
	2. Impact on foraging: Loss of trees and potential impact on foraging during construction period	SI: Adverse PO: Probable CO: Direct EC: 30 m of Allt Lagain Bhain corridor SZ: Allt Lagain Bhain corridor near bridge. RE: Reversible over time DU: Short term to medium term TF: N/A	Significant / Not significant: Not significant Confidence of predictions: High	Mitigation: Replanting Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the CEMP.	Residual impacts: Although the Allt Lagain Bhain corridor will be disturbed, Daubenton's bats are likely to be using the River Moriston to a greater extent and this will remain unaffected. Significant / Not

Resource Daubenton's bat (*Myotis daubentonii*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					significant: Not significant Confidence of predictions: High
Operational phase (including maintenance):	Biophysical change: 1. Use by traffic unlikely to have a significant impact as bats should be accustomed to vehicles and traffic levels not high. No change in traffic flow predicted as a result of scheme.	N/A	N/A	N/A	N/A
	2. It is likely that maintenance works will be required during the design life of	SI: Adverse PO: Probable CO: Direct	Significant / Not significant: Dependent on	Mitigation: Mitigation for maintenance works will be dependent on type and location of works. EPS licence may be required.	Residual impacts: Dependent on type and location of

Resource Daubenton's bat (*Myotis daubentonii*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	the bridge. Typical works could entail: scour repairs; concrete repairs; joint replacements. If bats are using the artificial roosts provided in the bridge, such maintenance could be a disturbance issue; works such as concrete repairs and joint replacement could have a direct physical impact.	EC: N/A SZ: Dependent on uptake of artificial roosts within or on bridge. RE: Likely to be reversible. DU: Temporary TF: Potentially summer and winter roost.	maintenance works – unlikely to be significant at County level. Confidence of predictions: Medium	Appropriate timing of works as far as practicable and taking account of other constraints (e.g. salmonid spawning season). Quantification/Measure: Dependent on works and requirements of any EPS licence. Mechanism for delivery: Dependent on maintenance works. Liaison with licensed bat worker likely to be required.	maintenance works. Significant / Not significant: Not significant Confidence of predictions: Medium
	3. Impact on foraging	SI: Adverse PO: Probable	Significant / Not significant:	Mitigation: Replanting	Residual impacts: Vegetation and trees

Resource Daubenton's bat (*Myotis daubentonii*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		CO: Direct EC: 30 m of Allt Lagain Bhain corridor SZ: Allt Lagain Bhain corridor near bridge RE: Reversible over time DU: Short term to medium term TF: N/A	Not significant Confidence of predictions: High	Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the CEMP.	along Allt Lagain Bhain corridor will re-establish assisted by planting; Daubenton's bats are likely to be using the River Moriston to a greater extent and this will remain unaffected. Significant / Not significant: Not significant Confidence of predictions: High
Decommissioning Phase:	Biophysical change:	SI: Adverse	Significant / Not	Mitigation: If bat roosts present in bridge, similar	Residual impacts:

Resource Daubenton's bat (*Myotis daubentonii*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	Potential destruction or major refurbishment of A887 bridge structure.	PO: Probable CO: Direct EC: N/A SZ: Potential loss of bat roost(s) provided within structure. RE: Not reversible but potential for substitution. DU: Long-term impact but potential for substitution. TF: Potentially summer and winter roost.	significant: Significant at County level if bats roosting in bridge. Confidence of predictions: Low	mitigation to that described for the Construction phase above. Quantification/Measure: Dependent on number of bats roosting in bridge. Mechanism for delivery: If bat roost present within or on bridge, mitigation to be incorporated in liaison with licensed bat worker.	Dependent on works – if bridge is demolished impact likely to be significant at County level. Significant / Not significant: Significant at County level if bats roosting in bridge but potential for reducing impact to not significant. Confidence of predictions: Low

Resource **Soprano pipistrelle (*Pipistrellus pygmaeus*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Summer roost in A82 road bridge. Likely hibernation roost in old bridge structure. Nature conservation value: Local Policy/Legal context: Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora: included on Annex II and IV. Conservation (Natural Habitats, & c.) Regulations 1994 (as amended): Schedule 2. UKBAP species Included on Scottish Biodiversity List. Highland BAP species.	Biophysical change: 1. Destruction of A82 road bridge and adjacent old arch masonry bridge containing roost.	SI: Adverse PO: Certain CO: Direct EC: N/A SZ: Complete loss of summer roost and likely hibernation roost. RE: Not reversible but potential for substitution (provision of artificial roosts). DU: Long-term impact but with potential to reduce to short-term impact if bats use proposed artificial roosts. TF: Summer and winter roost.	Significant / Not significant: Significant at Local scale Confidence of predictions: High	Mitigation: EPS licence required from SNH. Bat boxes to be placed on suitable nearby retained trees. Design of bridge to include provision for bat roosts. A proportion of the roosts to be suitable for hibernation. Quantification/Measure: Provision to be made for roosting of over 10 individual soprano pipistrelle bats. Mechanism for delivery: Mitigation to be incorporated in liaison with licensed bat worker.	Residual impacts: Difficult to quantify as uptake of new artificial roosts is not known. Monitor use of artificial roosts. Significant / Not significant: Significant at Local scale but with potential to be not significant. Confidence of predictions: Medium.

Resource **Soprano pipistrelle (*Pipistrellus pygmaeus*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Integrity/conservation status: Widespread; common; stable. IUCN Category: Least Concern. Factors/Criteria: N/A					
	2. Impact on foraging	SI: Adverse PO: Probable CO: Direct EC: 30 m of Allt Lagain Bhain corridor. SZ: Allt Lagain Bhain corridor near bridge. RE: Reversible over time DU: Short-term to medium-term. TF: N/A	Significant / Not significant: Not significant Confidence of predictions: High	Mitigation: Replanting Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the CEMP.	Residual impacts: Allt Lagain Bhain corridor will be disturbed and trees felled so there is likely to be an impact on the foraging corridor. However, there is other suitable habitat nearby and the impact is considered to

Resource Soprano pipistrelle (*Pipistrellus pygmaeus*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					be low and localised. Artificial roost provision should include sites south of the bridge to allow bats to easily access the River Moriston corridor. Significant / Not significant: Not significant Confidence of predictions: High
Operational phase (including maintenance):	Biophysical change: 1. Use by traffic unlikely to have	N/A	N/A	N/A	N/A

Resource Soprano pipistrelle (*Pipistrellus pygmaeus*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	a significant impact as bats should be accustomed to vehicles and traffic levels not high. No change in traffic flow predicted as a result of scheme.				
	2. It is likely that maintenance works will be required during the design life of the bridge. Typical works could entail: scour repairs; concrete repairs; joint replacements. If bats are using the artificial roosts provided in the bridge,	SI: Adverse PO: Probable CO: Direct EC: N/A SZ: Dependent on uptake of artificial roosts within or on bridge. RE: Likely to be reversible. DU: Temporary	Significant / Not significant: Not significant Confidence of predictions: Medium	Mitigation: Mitigation for maintenance works will be dependent on type and location of works. EPS licence may be required. Appropriate timing of works as far as practicable and taking account of other constraints (e.g. salmonid spawning season). Quantification/Measure: Dependent on works and requirements of any EPS licence.	Residual impacts: Dependent on type and location of maintenance works. Significant / Not significant: Not significant

Resource Soprano pipistrelle (*Pipistrellus pygmaeus*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	such maintenance could be a disturbance issue; works such as concrete repairs and joint replacement could have a direct physical impact.	TF: Potentially summer and winter roost.		Mechanism for delivery: Dependent on maintenance works. Liaison with licensed bat worker likely to be required.	Confidence of predictions: Medium
	3. Impact on foraging	SI: Adverse PO: Probable CO: Direct EC: 30 m of Allt Lagain Bhain corridor. SZ: Allt Lagain Bhain corridor near bridge. RE: Reversible over time.	Significant / Not significant: Not significant Confidence of predictions: High	Mitigation: Replanting Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the CEMP.	Residual impacts: Trees will have been removed from the Allt Lagain Bhain corridor for approximately 70m. However, the corridor will be usable during operation and

Resource **Soprano pipistrelle (*Pipistrellus pygmaeus*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		DU: Short-term to medium-term. TF: N/A			there is other suitable habitat nearby and the impact is considered to be low and localised. Artificial roost provision should include sites south of the bridge to allow bats to easily access the River Moriston corridor. Significant / Not significant: Not significant

Resource Soprano pipistrelle (*Pipistrellus pygmaeus*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					Confidence of predictions: High
Decommissioning Phase:	Biophysical change: Potential destruction or major refurbishment of A887 bridge structure.	SI: Adverse PO: Probable CO: Direct EC: N/A SZ: Potential loss of bat roost(s) provided within structure. RE: Not reversible but potential for substitution. DU: Long-term impact but potential for substitution. TF: Potentially summer and winter roost.	Significant / Not significant: Not significant Confidence of predictions: Low	Mitigation: If bat roosts present in bridge, similar mitigation to that described for the Construction phase above. Quantification/Measure: Dependent on number of bats roosting in bridge. Mechanism for delivery: If bat roost present within or on bridge, mitigation to be incorporated in liaison with licensed bat worker.	Residual impacts: Dependent on works and presence or absence of bats Significant / Not significant: Not significant Confidence of predictions: Low

Resource Freshwater pearl mussels (*Margaritifera margaritifera*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Live freshwater pearl mussels were not found in Allt Lagain Bhain or the River Moriston (to 200 m downstream of confluence). The River Moriston SAC is designated for freshwater pearl mussel (primary reason for designation). Nature conservation value: Local within Allt Lagain Bhain and River Moriston from confluence to 150 m downstream of confluence. Assumed to be International in River Moriston beyond this area. Policy/Legal context:	Biophysical change: Pollution as a result of oils, chemicals, uncured concrete and/or particulates entering Allt Lagain Bhain watercourse and being transported to the River Moriston.	SI: Adverse PO: Probable CO: Direct and indirect EC: River Moriston 200m downstream of confluence and beyond. SZ: Variable RE: Dependent on type of pollution DU: Short-term to long-term TF: N/A	Significant / Not significant: Significant at County scale Confidence of predictions: Low	Mitigation: Pollution prevention measures as described in Road Drainage and the Water Environment chapter. Quantification/Measure: Monitoring will be carried out during construction. Mechanism for delivery: ECOW to inspect pollution prevention provision.	Residual impacts: There will remain a residual risk of pollution. Significant / Not significant: Not significant Confidence of predictions: Medium

Resource Freshwater pearl mussels (*Margaritifera margaritifera*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora: Annex II and V. Bern Convention: Appendix III Wildlife and Countryside Act 1981 as amended: Schedule 5. IUCN Invertebrate Red List: Endangered. UKBAP species Scottish Biodiversity List. Highland BAP species. Integrity/conservation status: One of most critically endangered molluscs in the world. Up to half of the world's known populations with active recruitment are in Scotland. Factors/Criteria: N/A					

Resource Freshwater pearl mussels (*Margaritifera margaritifera*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Operational phase (including maintenance):	Biophysical change: 1. Potential change in pollutants risk from routine road runoff.	SI: Adverse PO: Unlikely CO: Direct and indirect. EC: No noticeable change to River Moriston anticipated. SZ: Unlikely to be noticeable in River Moriston due to dilution. RE: Generally reversible; deposition of particulates may not be reversible. DU: Long-term but with potential for short-term impacts. TF: Runoff will occur during rainfall events or due to snow-melt. Summer rainfall events can have more polluting potential due to build-up of pollutants on road surface during dry periods and likely lower dilution capacity of Allt	Significant / Not significant: Not significant (because of little change from existing situation). Confidence of predictions: Medium	Mitigation: SUDS Quantification/Measure: Water quality monitoring prior to and following construction. Mechanism for delivery: SUDS to be included in detailed design.	Residual impacts: Impact from routine road runoff pollutants is likely to be similar to existing situation i.e. neutral impact. Potential for marginal benefit due to SUDS. Significant / Not significant: Not significant Confidence of predictions: High

Resource Freshwater pearl mussels (*Margaritifera margaritifera*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		Lagain Bhain. Winter runoff may contain road salt and grit.			
	2. Potential change in risk of spillage from serious vehicular collision reaching watercourse.	SI: Adverse PO: Unlikely CO: Direct and indirect EC: Localised to Allt Lagain Bhain and River Moriston near entry of burn. SZ: Variable RE: Likely to be reversible but effects could be severe in short-term with consequent long-term impacts on populations. DU: Short-term but could have medium to long-term effects. TF: N/A	Significant / Not significant: Not significant (i.e. no change from existing situation); note this does not mean that a major spillage reaching the burn would not be significant. Confidence of predictions: Medium	Mitigation: SUDS to incorporate simple spillage containment. Quantification/Measure: Confirmation on site that design implemented. Mechanism for delivery: SUDS to be included in detailed design.	Residual impacts: Risk of spillage causing pollution should be reduced compared with exiting situation. Significant / Not significant: Not significant Confidence of predictions: Medium

Resource Freshwater pearl mussels (*Margaritifera margaritifera*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Decommissioning Phase:	Biophysical change: Potential destruction or major refurbishment of A887 bridge structure. Impacts will be dependent on details of proposed works but are likely to be similar to the Construction Phase impacts identified above.	SI: Adverse PO: Probable CO: Direct and indirect. EC: River Moriston 200 m downstream of confluence and beyond. SZ: Variable RE: Dependent on type of pollution. DU: Short-term to long-term TF: N/A	Significant / Not significant: Significant at County scale. Confidence of predictions: Low	Mitigation: As above for Construction Phase (dependent on works). Quantification/Measure: Dependent on works – likely to be similar to Construction Phase. Mechanism for delivery: Similar to Construction Phase	Residual impacts: Likely to be similar to Construction Phase. Significant / Not significant: Not significant Confidence of predictions: Low

Resource **Pine marten (*Martes martes*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Pine marten observed on island in River Moriston. Nature conservation value: County Policy/Legal context: Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora: Annex V. Listed in Conservation (Natural Habitats, & c.) Regulations 1994 (as amended) but not a European Protected Species: Schedule 3. Wildlife and Countryside Act 1981, as amended: included on Schedule 5. UKBAP Priority Species. Scottish Biodiversity List.	Biophysical change: 1. Construction works could result in disturbance of pine marten.	SI: Adverse PO: Unlikely CO: Direct EC: N/A SZ: N/A RE: Not reversible DU: Short-term to medium-term. TF: Pine martens tend to give birth to young in early spring.	Significant / Not significant: Not significant Confidence of predictions: Medium	Mitigation: Pre-construction survey. If any new dens found in close proximity and exclusion zone of at least 30 m (where possible) will be established. If necessary, advice will be taken from SNH. Quantification/Measure: Dependent on findings of pre-construction survey. Mechanism for delivery: Any required mitigation to be confirmed by ECOW.	Residual impacts: Dependent on findings of pre-construction survey. Significant / Not significant: Not significant Confidence of predictions: Medium

Resource **Pine marten (*Martes martes*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Highland BAP species. Integrity/conservation status: Population declined dramatically in the 19th century with relict population remaining in north west Scotland. This population has expanded towards the end of the 20th century and early 21st century. Still considered rare in the UK. IUCN Category: Least Concern. Factors/Criteria: N/A					
	2. Loss of some woodland habitat which could be currently used by pine marten for foraging.	SI: Adverse PO: Certain CO: Direct EC: 0.4 ha	Significant / Not significant: Not significant Confidence of	Mitigation: Re-planting with native tree species to reflect those currently present and retention of woodland soils. Quantification/Measure: Area from which trees lost to be replanted. Short-	Residual impacts: Long-term loss of approximately 0.2 ha of mainly woodland habitat.

Resource **Pine marten (*Martes martes*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		SZ: Small fraction of territory which can range from 5-25 km^2. RE: Partially reversible DU: Medium-term and long-term. TF: N/A	predictions: High	term to medium-term loss 0.4 ha (0.08 % of territory); long-term loss 0.2 ha. Mechanism for delivery: Requirement in the CEMP.	There will be loss of native trees within the working area but planted native trees will in time grow to provide similar habitat. Significant / Not significant: Not significant Confidence of predictions: High
Operational phase (including maintenance):	Biophysical change: Loss of some woodland habitat which	SI: Adverse PO: Certain CO: Direct	Significant / Not significant: Not significant	Mitigation: Re-planting with native tree species to reflect those currently present and retention of woodland soils.	Residual impacts: Long-term loss of approximatel

Resource **Pine marten (*Martes martes*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	could be currently used by pine marten for foraging.	EC: 0.2-0.4 ha SZ: Small fraction of territory which can range from 5-25 km^2. RE: Partially reversible DU: Medium-term and long-term TF: N/A	Confidence of predictions: High	Quantification/Measure: Area from which trees lost to be replanted. Short-term to medium-term loss 0.4 ha; long-term loss 0.2 ha (0.04 % of territory). Mechanism for delivery: Requirement in the CEMP.	y 0.2 ha of mainly woodland habitat. There will be loss of native trees within the working area but planted native trees will in time grow to provide similar habitat. Significant / Not significant: Not significant Confidence of predictions: High

Resource **Pine marten (*Martes martes*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Decommissioning Phase:	Biophysical change: Similar to Construction Phase.	SI: Adverse PO: Unlikely CO: Direct EC: N/A SZ: N/A RE: Not reversible DU: Short-term to medium-term. TF: Pine martens tend to give birth to young in early spring.	Significant / Not significant: Not significant Confidence of predictions: Low	Mitigation: Dependent on whether pine marten dens are present nearby (survey needed). Replanting as appropriate. Quantification/Measure: Dependent on proposals and results of survey. Mechanism for delivery: Any required mitigation to be confirmed by ECOW.	Residual impacts: Dependent on findings of pre-construction survey. Significant / Not significant: Not significant Confidence of predictions: Low

Resource **Atlantic salmon (*Salmo salar*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Numerous juvenile (0+) salmonid fry were observed in Allt Lagain Bhain and River Moriston. Nature conservation value: Regional Policy/Legal context: Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora: Annex II and V. Conservation (Natural Habitats, & c.) Regulations 1994 (as amended): Schedule 3. Bern Convention: Appendix III.	Biophysical change: 1. Disturbance of Allt Lagain Bhain bed within working area.	SI: Adverse PO: Certain CO: Direct EC: 40m of Allt Lagain Bhain. SZ: Allt Lagain Bhain in vicinity of road bridge. RE: Partially reversible DU: Short-term to medium-term TF: Salmon spawning season: November to May.	Significant / Not significant: Significant at Regional scale Confidence of predictions: Medium	Mitigation: Strict restriction of works to defined working area. Comply with CAR licence conditions. Fish rescue to safely remove fish prior to in-channel works. Implement pollution prevention measures. Keep disturbance of the watercourse bed and banks to the minimum required for the works. Quantification/Measure: Undertake fish habitat survey following completion of the works. Mechanism for delivery: ECOW to confirm mitigation on site.	Residual impacts: The works require in-channel working so some disturbance of the bed and banks at and near the bridge is unavoidable. There will be no disturbance of the River Moriston. Significant / Not significant: Not significant

Resource **Atlantic salmon (*Salmo salar*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
UKBAP (multi-sea-winter component of Atlantic salmon populations). Scottish Biodiversity List. Integrity/conservation status: Widespread across UK. Scottish rivers are a European stronghold. Factors/Criteria: N/A					Confidence of predictions: Medium
	2. Pollution as a result of oils, chemicals, uncured concrete and/or particulates entering Allt Lagain Bhain watercourse and being transported to the River Moriston.	SI: Adverse PO: Probable CO: Direct and indirect EC: 90 m of Allt Lagain Bhain and estimated 500 m reach of River Moriston to downstream of confluence. SZ: Variable RE: Dependent on type of pollution	Significant / Not significant: Potentially significant at Regional scale Confidence of predictions: Low	Mitigation: Pollution prevention measures as described in Road Drainage and the Water Environment chapter. Quantification/Measure: Monitoring will be carried out during construction. Mechanism for delivery: ECOW to inspect pollution prevention provision.	Residual impacts: There will remain a residual risk of pollution. Significant / Not significant: Not significant

Resource **Atlantic salmon (*Salmo salar*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		DU: Short-term to long-term TF: N/A			Confidence of predictions: Medium
Operational phase (including maintenance):	Biophysical change: 1. Potential change in pollution risk from routine road runoff.	SI: Adverse PO: Unlikely CO: Direct and indirect. EC: No noticeable change to Allt Lagain Bhain or River Moriston anticipated. SZ: 70 m of Allt Lagain Bhain. RE: Generally reversible; deposition of particulates may not be reversible. DU: Long-term but with potential for short-term impacts. TF: Salmon spawning season: November to May.	Significant / Not significant: Not significant (because of little change from existing situation). Confidence of predictions: Medium	Mitigation: SUDS Quantification/Measure: Water quality monitoring prior to and following construction. Mechanism for delivery: SUDS to be included in detailed design.	Residual impacts: Impact from routine road runoff pollutants is likely to be similar to existing situation i.e. neutral impact. Potential for marginal benefit due to SUDS. Significant / Not significant: Not significant

Resource **Atlantic salmon (*Salmo salar*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					Confidence of predictions: High
	2. Potential change in risk of spillage from serious vehicular collision reaching watercourse.	SI: Adverse PO: Unlikely CO: Direct and indirect EC: Localised to Allt Lagain Bhain and River Moriston near entry of burn. SZ: Variable RE: Likely to be reversible but effects could be severe in short-term with consequent long-term impacts on populations. DU: Short-term but could have medium to long-term effects. TF: N/A	Significant / Not significant: Not significant (i.e. no change from existing situation); note this does not mean that a major spillage reaching the burn would not be significant. Confidence of predictions: Medium	Mitigation: SUDS to incorporate simple spillage containment. Quantification/Measure: Confirmation on site that design implemented. Mechanism for delivery: SUDS to be included in detailed design.	Residual impacts: Risk of spillage causing pollution should be reduced compared with exiting situation. Significant / Not significant: Not significant Confidence of predictions: Medium

Resource **Atlantic salmon (*Salmo salar*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Decommissioning Phase:	Biophysical change: Potential destruction or major refurbishment of A887 bridge structure. Impacts will be dependent on details of proposed works but are likely to be similar to the Construction Phase impacts identified above (i.e. disturbance of bed and banks of Allt Lagain Bhain and pollution risk)	SI: Adverse PO: Certain CO: Direct and indirect. EC: 90 m of Allt Lagain Bhain and River Moriston to approx. 500m downstream. SZ: Allt Lagain Bhain and reach of River Moriston. RE: Potentially partially reversible. DU: Short-term to medium-term. TF: Salmon spawning season: November to May.	Significant / Not significant: Potentially significant at Regional scale (but more likely at County scale) Confidence of predictions: Low	Mitigation: Dependent on works but mitigation could be similar to Construction Phase. Quantification/Measure: Undertake fish habitat survey following completion of the works. Mechanism for delivery: Dependent on works.	Residual impacts: Dependent on works and specific mitigation. Significant / Not significant: Not significant Confidence of predictions: Low

Resource **Sea trout and brown trout (*Salmo trutta*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Numerous juvenile (0+) salmonid fry were observed in Allt Lagain Bhain and River Moriston. Nature conservation value: County Policy/Legal context: UKBAP Scottish Biodiversity List (sea trout). Integrity/conservation status: Widespread in UK. Factors/Criteria: N/A	Biophysical change: 1. Disturbance of Allt Lagain Bhain bed within working area.	SI: Adverse PO: Certain CO: Direct EC: 40 m of Allt Lagain Bhain. SZ: Allt Lagain Bhain in vicinity of road bridge. RE: Partially reversible DU: Short-term to medium-term TF: Salmonid spawning season: November to May.	Significant / Not significant: Significant at County scale. Confidence of predictions: Medium	Mitigation: Strict restriction of works to defined working area. Comply with CAR licence conditions. Fish rescue to safely remove fish prior to in-channel works. Implement pollution prevention measures. Keep disturbance of the watercourse bed and banks to the minimum required for the works. Quantification/Measure: Undertake fish habitat survey following completion of the works. Mechanism for delivery: ECOW to confirm mitigation on site.	Residual impacts: The works require in-channel working so some disturbance of the bed and banks at and near the bridge is unavoidable. There will be no disturbance of the River Moriston. Significant / Not significant: Not significant

Resource **Sea trout and brown trout (*Salmo trutta*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					Confidence of predictions: Medium
	2. Pollution as a result of oils, chemicals, uncured concrete and/or particulates entering Allt Lagain Bhain watercourse and being transported to the River Moriston.	SI: Adverse PO: Probable CO: Direct and indirect EC: 90 m of Allt Lagain Bhain and River Moriston to approx. 500m downstream of confluence. SZ: Variable RE: Dependent on type of pollution DU: Short-term to long-term TF: N/A	Significant / Not significant: Potentially significant at County scale Confidence of predictions: Low	Mitigation: Pollution prevention measures as described in Road Drainage and the Water Environment chapter. Quantification/Measure: Monitoring will be carried out during construction. Mechanism for delivery: ECOW to inspect pollution prevention provision.	Residual impacts: There will remain a residual risk of pollution. Significant / Not significant: Not significant Confidence of predictions: Medium
Operational phase (including maintenance):	Biophysical change: 1. Potential change in pollutants risk	SI: Adverse PO: Unlikely CO: Direct and indirect.	Significant / Not significant: Not significant	Mitigation: SUDS Quantification/Measure: Water quality monitoring	Residual impacts: Impact from routine road runoff

Resource **Sea trout and brown trout (*Salmo trutta*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	from routine road runoff.	EC: No noticeable change to Allt Lagain Bhain or River Moriston anticipated. SZ: 70 m of Allt Lagain Bhain. RE: Generally reversible; deposition of particulates may not be reversible. DU: Long-term but with potential for short-term impacts. TF: Salmonid spawning season: November to May.	(because of little change from existing situation). Confidence of predictions: Medium	prior to and following construction. Mechanism for delivery: SUDS to be included in detailed design.	pollutants is likely to be similar to existing situation i.e. neutral impact. Potential for marginal benefit due to SUDS. Significant / Not significant: Not significant Confidence of predictions: High
	2. Potential change in risk of spillage from serious vehicular collision	SI: Adverse PO: Unlikely CO: Direct and indirect	Significant / Not significant: Not significant (i.e. no	Mitigation: SUDS to incorporate simple spillage containment. Quantification/Measure: Confirmation on site that design implemented.	Residual impacts: Risk of spillage causing pollution should be

Resource **Sea trout and brown trout (*Salmo trutta*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	reaching watercourse.	EC: Likely to be localised to Allt Lagain Bhain and River Moriston near entry of burn. SZ: Variable RE: Likely to be reversible but effects could be severe in short-term with consequent long-term impacts on populations. DU: Short-term but could have medium to long-term effects. TF: N/A	change from existing situation); note this does not mean that a major spillage reaching the burn would not be significant. Confidence of predictions: Medium	Mechanism for delivery: SUDS to be included in detailed design.	reduced compared with exiting situation. Significant / Not significant: Not significant Confidence of predictions: Medium
Decommissioning Phase:	Biophysical change: Potential destruction or major refurbishment of A887 bridge structure. Impacts will be dependent on details of	SI: Adverse PO: Certain CO: Direct and indirect. EC: 90 m of Allt Lagain Bhain and River Moriston to approx. 500m downstream.	Significant / Not significant: Potentially significant at County scale. Confidence of	Mitigation: Dependent on works but mitigation could be similar to Construction Phase. Quantification/Measure: Undertake fish habitat survey following completion of the works.	Residual impacts: Dependent on works and specific mitigation. Significant / Not significant:

Resource **Sea trout and brown trout (*Salmo trutta*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	proposed works but are likely to be similar to the Construction Phase impacts identified above (i.e. disturbance of bed and banks of Allt Lagain Bhain and pollution risk)	SZ: Allt Lagain Bhain and reach of River Moriston. RE: Potentially partially reversible. DU: Short-term to medium-term. TF: Salmonid spawning season: October / November to May.	predictions: Low	Mechanism for delivery: Dependent on works.	Not significant Confidence of predictions: Low

Resource **Badger (*Meles meles*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Badgers active in area Nature conservation value: Local Policy/Legal context: Protection of Badgers Act 1992 Integrity/conservation status: Widespread and fairly common in Scotland but not supporting the high densities found in, for example, the south west of England Factors/Criteria: N/A	Biophysical change: 1. Works have potential to disturb badger.	SI: Adverse PO: Unlikely CO: Direct EC: N/A SZ: N/A RE: Not reversible DU: Short-term to medium-term. TF: Badger breeding season from 1st December to 30th June.	Significant / Not significant: Not significant Confidence of predictions: Medium	Mitigation: Pre-construction survey. Obtain licence from SNH if required. Mark exclusion area on site if required. Quantification/Measure: Dependent on findings of pre-construction survey. Mechanism for delivery: Any required mitigation to be confirmed by ECOW.	Residual impacts: Dependent on findings of pre-construction survey. Significant / Not significant: Not significant Confidence of predictions: Medium
	2. Loss of some woodland habitat which	SI: Adverse PO: Probable	Significant / Not significant:	Mitigation: Re-planting with native tree species to reflect those currently	Residual impacts: Long-term

Resource Badger (*Meles meles*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	could be currently used by badger for foraging.	CO: Direct EC: 0.4 ha SZ: Small fraction of territory which can range from 70-120 ha. RE: Partially reversible DU: Medium-term and long-term. TF: N/A	Not significant Confidence of predictions: Medium	present and retention of woodland soils. Quantification/Measure: Area from which trees lost to be replanted. Short-term to medium-term loss 0.4 ha (approx. 0.57 % of territory); long-term loss 0.2 ha. Mechanism for delivery: Requirement in the Construction Environmental Management Plan (CEMP).	loss of approximately 0.2 ha of mainly woodland habitat. There will be loss of native trees within the working area but planted native trees will in time grow to provide similar habitat. Significant / Not significant: Not significant

Resource **Badger (*Meles meles*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					Confidence of predictions: Medium
Operational phase (including maintenance):	Biophysical change: Loss of some woodland habitat which could be currently used for foraging.	SI: Adverse PO: Probable CO: Direct EC: 0.2-0.4 ha SZ: Small fraction of territory which can range from 70-120 ha. RE: Partially reversible DU: Medium-term and long-term. TF: N/A	Significant / Not significant: Not significant Confidence of predictions: Medium	Mitigation: Re-planting with native tree species to reflect those currently present and retention of woodland soils. Quantification/Measure: Area from which trees lost to be replanted. Short-term to medium-term loss 0.4 ha; long-term loss 0.2 ha (approx. 0.29 % of territory). Mechanism for delivery: Requirement in the CEMP.	Residual impacts: Long-term loss of approximately 0.2 ha of mainly woodland habitat. There will be loss of native trees within the working area but planted native trees will in time grow to provide similar habitat. Significant / Not

Resource Badger (*Meles meles*)	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					significant: Not significant Confidence of predictions: Medium
Decommissioning Phase:	Biophysical change: Similar to Construction Phase	SI: Adverse PO: Unlikely CO: Direct EC: N/A SZ: N/A RE: Not reversible DU: Short-term to medium-term TF: Badger breeding season from 1st December to 30th June.	Significant / Not significant: Not significant Confidence of predictions: Low	Mitigation: Pre-construction survey. If any new dens found in close proximity and exclusion zone of at least 30 m (where possible) will be established. If necessary, advice will be taken from SNH. Replanting as appropriate. Quantification/Measure: Dependent on findings of pre-construction survey. Mechanism for delivery: Any required mitigation to be confirmed by ECOW.	Residual impacts: Dependent on findings of pre-construction survey. Significant / Not significant: Not significant Confidence of predictions: Low

Resource Birds	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Habitat includes woodland and scrub suitable for common breeding bird species. Nature conservation value: Local Policy/Legal context: Wildlife and Countryside Act 1981 (as amended). All wild birds are protected particularly nests while they are being used or built. Integrity/conservation status: Varies according to species. Factors/Criteria: N/A	Biophysical change: 1. Potential impact on nesting birds e.g. destruction of active nests	SI: Adverse PO: Probable CO: Direct EC: 0.4 ha SZ: Habitat adjacent to road within working area RE: Not reversible in short-term DU: Short-term TF: Bird breeding season normally taken to be April to August inclusive. Some species can breed earlier or later.	Significant / Not significant: Significant at Local scale Confidence of predictions: High	Mitigation: Remove vegetation outside the bird breeding season. Quantification/Measure: Design team to confirm timing of vegetation clearance. Mechanism for delivery: Vegetation clearance to be arranged in advance of works between September and March (preferably October to February).	Residual impacts: No impacts on nesting activity anticipated if vegetation clearance undertaken outside the bird breeding season. Significant / Not significant: Not significant Confidence of predictions: High
	2. Impact on breeding birds through advance	SI: Adverse PO: Probable	Significant / Not significant: Not	Mitigation: Re-planting with native tree species to reflect those currently present.	Residual impacts: There will be loss of native

Resource Birds	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	removal of trees and scrub that could have been used for nesting.	CO: Direct EC: 0.4 ha SZ: Habitat adjacent to road within working area. RE: Not reversible in short-term DU: Medium-term TF: Bird breeding season normally taken to be April to August inclusive. Some species can breed earlier or later.	significant (there are other areas of suitable nesting habitat in the vicinity). Confidence of predictions: High	Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the CEMP.	trees and scrub within the working area but planted native trees will in time grow to provide similar habitat. There will be a period of a few years when potential for nesting is reduced but with eventual recovery in the medium-term to long-term to similar nesting potential to the existing

Resource Birds	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					situation. There will be marginal long-term loss of woodland where the road is widened slightly. Significant / Not significant: Not significant Confidence of predictions: High
	3. Impact on foraging birds.	SI: Adverse PO: Probable CO: Direct EC: 0.4 ha	Significant / Not significant: Not significant (there are other areas	Mitigation: Re-planting with native tree species to reflect those currently present.	Residual impacts: There will be loss of native trees and scrub within the working

Resource Birds	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		SZ: Habitat adjacent to road within working area. RE: Largely reversible in medium-term to long-term. DU: Short-term to medium-term. Marginal long-term loss. TF: N/A	of suitable foraging habitat in the vicinity). Confidence of predictions: High	Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the CEMP.	area but planted native trees will in time grow to provide similar habitat. There will be a period during the works but also following the works when potential for foraging is reduced but with eventual recovery in the medium-term to long-term to similar foraging potential to the existing

Resource Birds	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					situation. There will be marginal long-term loss of woodland where the road is widened slightly. Significant / Not significant: Not significant Confidence of predictions: High
Operational phase (including maintenance):	Impact on breeding birds through removal of trees and scrub that could have been used for nesting.	SI: Adverse PO: Probable CO: Direct EC: 0.4 ha	Significant / Not significant: Not significant (there are other areas	Mitigation: Re-planting with native tree species to reflect those currently present.	Residual impacts: Planted native trees will in time grow to provide

Resource Birds	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
		SZ: Habitat adjacent to road. RE: Largely reversible in medium-term to long-term. DU: Medium-term. Marginal long-term loss. TF: Bird breeding season normally taken to be April to August inclusive.	of suitable nesting habitat in the vicinity). Confidence of predictions: High	Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the CEMP.	similar habitat. There will be a period of a few years when potential for nesting is reduced but with eventual recovery in the medium-term to long-term to similar nesting potential to the existing situation. Marginal long-term loss. Significant / Not significant:

Resource Birds	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					Not significant Confidence of predictions: High
	Impact on foraging birds.	SI: Adverse PO: Probable CO: Direct EC: 0.4 ha SZ: Habitat adjacent to road within working area. RE: Largely reversible in medium-term to long-term. DU: Short-term to medium-term. Marginal long-term loss. TF: N/A	Significant / Not significant: Not significant (there are other areas of suitable foraging habitat in the vicinity). Confidence of predictions: High	Mitigation: Re-planting with native tree species to reflect those currently present. Quantification/Measure: Area from which trees lost to be replanted. Mechanism for delivery: Requirement in the CEMP.	Residual impacts: There will be loss of native trees and scrub within the working area but planted native trees will in time grow to provide similar habitat. There will be a period following the works when potential for foraging is

Resource Birds	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
					reduced but with eventual recovery in the medium-term to long-term to similar foraging potential to the existing situation. Marginal long-term loss. Significant / Not significant: Not significant Confidence of predictions: High
Decommissioning Phase:	Biophysical change:	SI: Adverse PO: Probable	Significant / Not significant:	Mitigation: Any removal of vegetation to be undertaken outside the	Residual impacts: No impacts on

Resource Birds	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	Impacts likely to be similar to those during construction.	CO: Direct EC: Not known SZ: Habitat adjacent to road bridge may be affected. RE: Not reversible in short-term DU: Short-term TF: Bird breeding season normally taken to be April to August inclusive. Some species can breed earlier or later.	Potentially significant at Local scale dependent on extent of works. Confidence of predictions: High	bird breeding season. Planting to replace lost trees. Quantification/Measure: Design team to confirm timing of vegetation clearance. Mechanism for delivery: If required, vegetation clearance to be arranged in advance of works between September and March (preferably October to February).	nesting activity anticipated if vegetation clearance undertaken outside the bird breeding season. Potential impact on foraging due to loss of vegetation. Significant / Not significant: Not significant Confidence of predictions: High

Resource **Wood ants: northern wood ant *Formica lugubris* / Scottish wood ant *Formica aquilonia*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
Construction phase: Description: Several wood ants nests found north of the scheme. Nature conservation value: Local Policy/Legal context: Nature Conservation (Scotland) Act 2004: Section 1(2)(b) Former UKBAP (Species Action Plan for *F. aquilonia*; Species Statement for *F. lugubris*) Integrity/conservation status: *F. Lugubris* is less widely distributed in Scotland than *F. aquilonia* IUCN Red List: Lower risk / near threatened. Factors/Criteria: N/A	Biophysical change: No impacts anticipated due to distance from scheme. Wood ants territories can be up to 1600 m^2 i.e. 40 m by 40m (SNH website). Sovari, 2009 has indicated wood ants foraging range can be between 20 m and 100 m: *Sovari, J. (2009). Foraging distances and potentiality in forest pest control: an example with two candidate ants*	SI: Potentially adverse PO: Unlikely CO: Potentially direct EC: Not known SZ: Not known RE: Potentially partially reversible DU: Potentially long-term TF: Ants actively foraging during warmer months	Significant / Not significant: Not significant Confidence of predictions: Medium	Mitigation: Further survey to be carried out prior to construction. If nests are found within the working area, then an exclusion zone of a minimum 10 m is to be erected around the nest. If this is not practicable, the nest(s) are to be translocated outside the working area to a suitable location in the general vicinity (with similar habitat) taking account of guidance given in *Cathrine, Chris: Wood Ant Nest Translocations, CIEEM In Practice Bulletin, Sept 2015*. Quantification/Measure: N/A Mechanism for delivery: N/A	Residual impacts: No impacts currently anticipated. Significant / Not significant: Not significant Confidence of predictions: Medium

Resource **Wood ants: northern wood ant *Formica lugubris* / Scottish wood ant *Formica aquilonia*)**	**Proposed activity, biophysical change, related to receptor structure and function**	**Characterisation of impact without mitigation**	**Summary of characterisation without mitigation**	**Mitigation proposals**	**Summary of characterisation with mitigation: Residual impacts**
	(Hymenoptera: Formicidae). Myrmecological News, 12: 211-215. Consequently, it is unlikely that the scheme working area would be used to any significant extent by wood ants.				
Operational phase (including maintenance):	Biophysical change: As above	As above	As above	As above	As above
Decommissioning Phase:	Biophysical change: As above	As above	As above	As above	As above

Key:
SI (sign): positive (beneficial (+ve)) or negative (adverse (-ve))
PO (probability of occurring): Certain, Probable, Unlikely
CO (complexity): Direct, Indirect, Cumulative
EC (extent): Area measures and percentage of total (e.g. area of habitat /territory lost)
SZ (size): Description of level of severity of influence (e.g. complete loss, number of animals affected)

RE (reversibility): Reversible or not reversible (can the effect be reversed, whether or not this is planned)
DU (duration): Permanent (P) or Temporary (T) in ecological terms. Where differing timescales are determined in relation to the life cycle of the receptor, these should be defined.
TF (Timing and Frequency): Important seasonal and/or life-cycle constraints and any relationship with frequency considered.

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

Further copies of this document are available, on request, in audio and visual formats and in community languages. Any enquiries regarding this document / publication should be sent to us at info@transport.gov.scot

This document is also available on the Transport Scotland website: www.transport.gov.scot

Published by Transport Scotland, March 2023

Follow us:

transcotland

@transcotland

transport.gov.scot

Scottish Government
Riaghaltas na h-Alba
gov.scot