6 Habitats Regulations Appraisal

6.1 Introduction

6.1.1.1 High level conservation objectives of Special Areas of Conservation (SACs) and Special Protection Area (SPAs) (together referred to as European sites) are identified by each of the European member states to ensure that the integrity of the site is maintained by avoiding deterioration of the habitats of qualifying species or significant disturbance to qualifying species. The conservation objectives for each SPA or SAC are designed to ensure that the qualifying interest of each site is maintained in the long term. Whilst these are specific to each site, there are some general principles including:

- Population of the species as a viable component to the site;
- Distribution of the species within the site;
- Distribution and extent of habitats supporting the species;
- Structure, function and supporting processes of habitats supporting the species; and
- No significant disturbance to the species.

6.1.1.2 This chapter takes into account the relevant information provided by MORL in support of the Habitats Regulations Appraisal (HRA) for modified Transmission Infrastructure (modified TI). This information will allow the competent authority (in relation to the offshore aspects it will be Marine Scotland and in relation to onshore aspects it will be Aberdeenshire Council) to carry out a HRA, including if necessary an Appropriate Assessment (AA) under the Conservation (Natural Habitats & c.) Regulations 1994 (as amended) (the 'Habitats Regulations') and the Offshore Marine Conservation (Natural Habitats & c.) Regulations 2007 (as amended) (the 'Offshore Habitats Regulations'). The AA will be undertaken with advice given from statutory stakeholders. This ES has been structured to allow all HRA information relevant to a particular receptor to be contained within a single ES chapter. A series of surveys and studies have been undertaken to inform both EIA and HRA. The potential for a significant adverse effect to occur as a result of the modified TI (alone, in its component parts and as a whole, and in-combination with other projects and activities) has been assessed and the results of assessment are presented in the relevant chapters (e.g. effects on SACs with migratory fish designated features are considered in the Fish and Shellfish Ecology chapter, and effects on SPAs and their designated bird species are considered in the Marine Ornithology and Terrestrial Ecology chapters). Potential direct, indirect and in-combination effects are assessed against the integrity of the sites, taking into account their Conservation Objectives (as obtained from the SNH sitelink website).

6.2 Methodology

6.2.1.1 Regulation 48 of the Habitats Regulations and Regulation 25 of the Offshore Habitats Regulations set out the procedure for the assessment of the implications of plans and projects on European sites. Under Regulations 48 and 25, if the proposed development is not directly connected with or necessary to the management of a European site and is likely to significantly affect the site, the competent authority must undertake an AA of the implications for that site in view of that site's conservation objectives (Regulation 48(1) and 25(1)). The assessment is undertaken as a four stage process:

- **Stage 1 Screening** - The process to identify the likely effects of a project upon a European site, either alone or in combination with other plans and projects, and consider whether the effects are likely to be significant.
- **Stage 2 Appropriate Assessment** - The consideration of the effects on the integrity of the European site, either alone or in combination with other plans and projects, with regard to the site's structure and function and its conservation objectives. Where adverse effects cannot be discounted, an assessment of mitigation options is carried out. If these mitigation options cannot avoid adverse effects on integrity then development consent can only be given if stages 3 and 4 are followed.
- **Stage 3 Assessment of Alternatives** - Examining alternative ways of achieving the objectives of the project to establish whether there are solutions that would avoid or have a lesser effect on European sites; and
- **Stage 4 Assessment of "imperative reasons of overriding public interest" (IROPI)** - This is the assessment where no alternative solution exists and where adverse effects remain. The process to assess whether the development is necessary for IROPI and, if so, the potential compensatory measures needed to maintain the overall coherence of the integrity of the European site network.

6.2.1.2 Three main approaches have been used to assess the likely effects of the modified TI (in isolation or in-combination with other projects/proposals) on European Sites:

- **HRA Approach 1:** Where the results of the EIA have indicated no significant effects on the species/habitats for which sites have been designated (and taking into account the relevant European site conservation objectives) it has been possible at the screening stage to discount any likely significant effects and it was not therefore necessary to go on to consider the second stage of the HRA (i.e. Appropriate Assessment);
- **HRA Approach 2:** Where an assessment has been undertaken for the three MORL consented wind farms and original TI in-combination with other developments/projects (MORL, 2012) and the assessment and conclusions remain valid, no additional information has been presented; and
- **HRA Approach 3:** Where it has not been possible to rule out a likely significant effect on a European Site at the screening stage, detailed information to support an AA has been presented.

6.2.2 HRA Approach 1 Assessments

6.2.2.1 For Marine Ornithology (Chapter 4.4) and Terrestrial Ecology (Chapter 4.6) the HRA approach followed was as detailed in HRA Approach 1 above.

6.2.2.2 As detailed within Section 4.4.4 in Chapter 4.4 Marine Ornithology the EIA conclusions have been used to inform an assessment of whether or not the likely effects on birds, resulting from the modified OfTI, could, alone or in combination, lead to a significant effect on any European Site. On the basis of the assessment undertaken and the minor predicted effects on relevant bird species (and taking account of the conservation objectives of the SPAs listed within Section 14.4.7 of the MORL ES (2012) and Section 1.3 of Technical Appendix 4.5 A of the MORL ES (2012)) it is concluded that there is no likely significant effect on any European Site as a result of the potential impact on birds of the modified OfTI either alone or in combination with other plans or projects. An Appropriate Assessment in relation to this topic area is therefore not considered to be required.

6.2.2.3 For terrestrial ecology, and for the purposes of the modified OnTI, it has been considered again that an AA of any designated site surrounding the development is not required. Likely effects on ornithology designated sites have been discounted based on advice from Scottish Natural Heritage (SNH) (see Table 4.6-1 within Chapter 4.6 Terrestrial Ecology). In addition, it has been considered that no sites of ecological designation are in close enough proximity to be affected by the route (i.e. there are no ecological links with any of the SACs within the surrounding area).

6.2.3 HRA Approach 2 Assessments

6.2.3.1 For marine mammals the approach followed was that described in HRA Approach 2. The assessment of potential effects on the bottlenose dolphin population of the Moray Firth SAC and on the harbour seal population of the Dornoch Firth and Morrich More SAC was presented within the MORL ES (2012). An AA was undertaken by Marine Scotland Licensing and Operations Team (MS-LOT) and Marine Scotland Science (MSS) on behalf of the Scottish Ministers which concluded that the three MORL consented wind farms and associated offshore transmission infrastructure (OfTI) (also consented) will not adversely affect the integrity of the SACs either alone or in combination with BOWL and other consented projects (Scottish Government, 2014). As described in Chapter 4.3, Section 4.3.1.58 the piling locations for the OSPs are within the Rochdale Envelope assessed within the original ES (MORL ES, 2012), and the only change that could result from the modification to the OfTI route is that of the proximity of cable landing point to seal haul outs and bottlenose dolphin feeding / transit habitat. The cable landing point remains out with the 30 nm and 4 nm for harbour seals and grey seals respectively, as outlined in Table 4.3-12, and the assessment against potential disturbance to bottlenose dolphin remains as described in the MORL ES (2012). Therefore the MORL Appropriate Assessment which has stated this development will not adversely affect the integrity of any SAC (Scottish Government, 2014) should be referred to.

6.2.3.2 It is considered that the change in the Rochdale Envelope of the OfTI will not change the conclusions of the AA.

6.2.4 HRA Approach 3 Assessments

6.2.4.1 For fish ecology a detailed assessment to investigate the likely effects on a number of SACs was undertaken as significant effects could not be discounted (approach as described in HRA Approach 3 above). Therefore Sections 6.3, 6.4 and 6.5 below provide the required information to support an AA.

6.3 Screening

6.3.1.1 As specified in the Joint Nature Conservation Committee (JNCC) and Scottish Natural Heritage (SNH) scoping responses (on the 28/10/2010 for the three consented wind farms and TI and on 29/05/2014 for the modified TI), the SACs which require assessment in relation to fish and shellfish resources are as follows:

- River Spey SAC;
- Berriedale & Langwell Waters SAC;
- River Evelix SAC;
- River Moriston SAC ;
- River Oykel SAC; and
- River Thurso SAC.

6.3.1.2 The qualifying status of the SAC species and the conservation objectives of each relevant SAC are given in Table 6.1-1 below.

Table 6.1-1 Qualifying status of SAC species and SAC conservation objectives (SNH, 2012)

SAC	Qualifying Species	Conservation Objective
River Spey	**Freshwater pearl mussel**; Primary reason for SAC selection **Atlantic salmon**: Primary reason for SAC selection **Sea lamprey**: Primary reason for SAC selection **Otter**: Primary reason for SAC selection	• To avoid deterioration of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying features. • To ensure for the qualifying features that the following are maintained in the long term: 1. Population of the species (including range of genetic types for Atlantic salmon only) as a viable component of the site; 2. Distribution of species within site; 3. Distribution of extent of habitats supporting the species; 4. Structure, function and supporting processes of habitats supporting the species; 5. No significant disturbance of the species; 6. Distribution and viability of the species' host species (for freshwater pearl mussel and sea lamprey); and 7. Structure, function and supporting processes of habitats supporting the species' host (for freshwater pearl and sea lamprey)
Berriedale & Langwell Waters	**Atlantic salmon**: Primary reason for SAC selection	• To avoid deterioration of the habitats of Atlantic salmon or significant disturbance to Atlantic salmon, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and • To ensure for the qualifying species that the following are maintained in the long term: 1. Population of the species, including range of genetic types for salmon, as a viable component of the site; 2. Distribution of the species within the site; 3. Distribution and extent of habitats supporting the species; 4. Structure, function and supporting processes of habitats supporting the species; and 5. No significant disturbance of the species.
River Evelix	**Freshwater pearl mussel**: Primary reason for SAC selection	• To avoid deterioration of the habitats of freshwater pearl mussels or significant disturbance to freshwater pearl mussels, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and • To ensure for the qualifying species that the following are maintained in the long term: 1. Population of the species as a viable component of the site; 2. Distribution of the species within the site; 3. Distribution and extent of habitats supporting the species;

SAC	Qualifying Species	Conservation Objective
		4. Structure, function and supporting processes of habitats supporting the species; 5. No significant disturbance of the species; 6. Distribution and viability of the species' host species; and 7. Structure, function and supporting processes of habitats supporting the species' host species.
River Moriston	**Freshwater pearl mussel**: Primary reason for SAC selection **Atlantic salmon**: Qualifying feature for SAC selection	• To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and • To ensure for the qualifying species that the following are maintained in the long term: 1. Population of the species, including range of genetic types for salmon, as a viable component of the site; 2. Distribution of the species within the site; 3. Distribution and extent of habitats supporting the species; 4. Structure, function and supporting processes of habitats supporting the species; 5. No significant disturbance of the species; 6. Distribution and viability of freshwater pearl mussel host species; and 7. Structure, function and supporting processes of habitats supporting fresh water pearl mussel host species.
River Oykel	**Freshwater pearl mussel**: Primary reason for SAC selection **Atlantic salmon**: Qualifying feature for SAC selection	As above
River Thurso	**Atlantic salmon**: Primary reason for SAC selection	Idem as for the Berriedale & Langwell Waters SAC

6.3.1.3 In section 6.4 below, the modified TI effects on relevant sites of international nature conservation importance (SACs) are assessed. In combination effects with other projects and activities are presented in section 6.5.

6.4 Assessment of Effects

6.4.1.1 For the SACs detailed in section 6.3, the effects on the relevant fish and shellfish qualifying species have been assessed based on the Conservation Objectives outlined previously in Table 6.1-1 as follows:

1. Deterioration of the habitats of the qualifying species.
2. Significant disturbance to the qualifying species.
3. Changes in the distribution of the species within the site.
4. Changes in the distribution and extent of habitats supporting the species.

6.4.1.2 In addition in the particular case of Atlantic salmon, sea lamprey and freshwater pearl mussel SAC populations, the following criteria have been also been taken into account for assessment:

5. Changes to the population of the species, including range of genetic types of salmon as a viable component of the site;
6. Structure, function and supporting processes of habitats supporting the species; and
7. Changes to the distribution of freshwater pearl mussel and sea lamprey host species and to the structure, function and supporting processes of habitats supporting fresh water pearl mussel and sea lamprey host species.

6.4.1.3 It should be noted that, as indicated by JNCC/SNH in their scoping response, in the case of salmon, it is not possible to conclusively identify from/to which SAC watercourses any particular individuals (post smolts or adults) are coming or going. The assumption that all individuals are SAC salmon should therefore be made. As a result the effects identified for salmon are considered to be applicable to any of the relevant SACs. In the case of freshwater pearl mussel, as any effect on the SAC populations could only be a result of their host species being adversely affected (salmon and sea trout) the same limitation applies. In order to assess likely effects on freshwater pearl mussel SAC populations it has therefore been assumed that the effects identified for Atlantic salmon apply to the freshwater pearl mussel's host species in the relevant SACs.

6.4.1.4 A summary assessment of the potential effect of the modified TI on the relevant Atlantic salmon, freshwater pearl mussel and sea lamprey SAC populations is given in Table 6.1-2 below. It should be noted that in terms of assessment methodologies in this ES for benthic and fish and shellfish ecology only effects above minor are considered significant in EIA terms.

Table 6.1-2 Assessment of Effects on Qualifying Species in the Relevant SACs per Criterion

Species	Criterion	Assessment
Atlantic Salmon	1	The habitat of the SACs will not be subject to any direct deterioration as a result of the construction/ decommissioning or operation of the modified OfTI as these are located in freshwater habitats. Deterioration of the marine habitats of Atlantic salmon could however theoretically occur. However, Chapter 4.1 (Benthic Ecology) predicts not significant to minor effects on benthic habitats associated with the modified OfTI. Chapter 4.2 (Fish and Shellfish Ecology) predicts no potential for effects above minor associated to changes to fishing activity to occur. Deterioration of the marine habitats of Atlantic salmon are therefore not expected to occur.
	2	Chapter 4.2 (Fish and Shellfish Ecology) predicts that disturbance through increased SSC, sediment re-deposition, noise during construction and EMFs will result in minor effects which would likely only occur at the level of individuals as opposed to population. Significant disturbance to the qualifying species population are therefore not expected to occur.
	3	Changes to the distribution of the species are not expected in the site as no significant disturbance to the species or its habitat has been identified
	4	As assessed for criteria 1
	5	As assessed in criteria 1, 2, 3 and 4
	6	Based on assessment for criteria 1, structure, function and supporting processes of habitats supporting the species are expected to be maintained.

Species	Criterion	Assessment
Freshwater Pearl Mussel	1	The freshwater pearl mussel SACs are located in-river, some distance from the modified OfTI. The habitat of the SACs will not be subject to direct deterioration as a result of the construction / decommissioning or operation of modified OfTI.
	2	Given the distribution of freshwater pearl mussel (restricted to freshwater habitats) direct disturbance to the species has no potential to occur.
	3	Given the distribution of the species (restricted to the freshwater habitat) direct changes to the distribution of the species in any of the SACs associated with the modified OfTI has no potential to occur.
	4	As assessed for criteria 1
	5	As freshwater mussel populations are located in freshwater habitats they will not be subjected to any direct effects relating to the modified OfTI which could potentially alter population structure. Furthermore, the established distribution and viability of the host species population (salmon) is not expected to be affected. Therefore, indirectly driven effects on freshwater pearl mussel populations are not expected to occur.
	6	Based on assessment for criteria 1, structure, function and supporting processes of habitats supporting the species are expected to be maintained.
	7	As assessed for criteria 1, 2, 3, 4 and 5 for Atlantic salmon
Sea Lamprey	1	The Spey SAC is located some distance from the modified TI. The habitat of the SAC will not be subject to any direct deterioration as a result of the construction/ decommissioning or operational phase of the modified OfTI. Deterioration of the marine habitats of sea lamprey could however theoretically occur: Chapter 4.1 (Benthic Ecology) predicts not significant to minor effects on benthic habitats. Chapter 4.2 (Fish and Shellfish Ecology) predicts no potential for effects above minor associated to changes to fishing activity to occur. Therefore no significant deterioration of the marine habitats of the qualifying species are expected to occur.
	2	There is no potential for disturbance to the qualifying species in Freshwater habitats. Chapter 4.2 (Fish and Shellfish Ecology) predicts that disturbance through increased SSC, sediment redeposition, noise during construction, and EMFs will result in minor effects. Significant disturbance to the qualifying species in the marine environment is therefore not expected occur.
	3	Changes to the distribution of the species are not expected in the site as no significant disturbance to the species or its habitats has been identified (See assessment against criteria 1 and 2 for sea lamprey).
	4	As assessed for criteria 1
	5	As assessed for criteria 1, 2, 3 and 4
	6	Based on assessment for criteria 1, structure, function and supporting processes of habitats supporting the species are expected to be maintained.
	7	As assessed for 1,2,3,4 and 5 for Atlantic salmon

6.4.1.5 On the basis of the assessment summarised above, it is considered that the conservation objectives for the SACs under consideration will not be affected as a result of the construction, operation and decommissioning of the modified OfTI. Similarly, it is anticipated that the favourable status of salmon, freshwater pearl mussel and sea lamprey will be upheld. Overall the conclusion of the assessment is that the integrity of the SACs under consideration will not be impacted.

6.5 Assessment of In-Combination Effects

6.5.1.1 HRA must consider whether the modified TI is likely to have a significant effect on designated sites, either alone (assessment results presented above) or in combination with other plans and projects (presented here).

6.5.1.2 Assessment of in-combination effects on the six SACs detailed in section 6.3 above has been undertaken. The effect of the modified TI in-combination with the following projects and activities has been considered (as detailed in Chapter 4.2, section 4.2.3):

- Three consented wind farms;
- MORL WDA;
- Beatrice Offshore Wind Farm (BOWL) and associated TI;
- Firth of Forth and Tay proposed offshore wind farms (Firth of Forth phase 1, Inch Cape and Neart na Gaoithe wind farms); and
- European Offshore Wind Development Centre.

6.5.1.3 A summary assessment of the potential effects of the modified TI in-combination with the developments outlined above on the relevant Atlantic salmon, freshwater pearl mussel and sea lamprey SAC populations is given below in Table 6.1-3.

Table 6.1-3 In-Combination Assessment of Effects on Qualifying Species in the Relevant SACs per Criterion

Species	Criterion	Assessment
Atlantic salmon	1	The salmon SACs are located in freshwater habitats that are a considerable distance from the Project, the BOWL site and associated TI, the EOWDC and other developments in the Firth of Forth and elsewhere. The habitat of the SACs will not be subject to any direct deterioration as a result of the in-combination effect of the construction/ decommissioning or operation of the modified OfTI. Deterioration of the marine habitats of Atlantic salmon could however theoretically occur: Chapter 4.1 (Benthic Ecology) predicts negligible to minor effects on benthic habitats. Chapter 4.2 (Fish and Shellfish Ecology) predicts minor effects associated to loss of habitat and introduction of new habitat and no potential for effects above minor associated to changes to fishing activity to occur. Therefore, in-combination deterioration of the marine habitats of Atlantic salmon are not expected to occur.
	2	Chapter 4.2 (Fish and Shellfish Ecology) predicts disturbance through increased SSC, sediment re-deposition and EMFs will results in a minor in-combination effect. Noise during construction, has however been considered to have potential to result in minor to moderate effects on Atlantic salmon. Significant disturbance to the qualifying species may therefore occur in-combination.
	3	Significant disturbance to the species has been identified in relation to in-combination construction noise. Significant disturbance to the habitat of the species is however not expected to occur (See assessment against criteria 1 and 2 above). Taking the above into account, there might be potential for changes to the distribution of the species in the site to occur. This will however depend on the degree of overlap between construction noise and migrating salmon.
	4	As assessed for criteria 1
	5	As assessed in criteria 1, 2, 3 and 4
	6	Based on assessment for criteria 1, structure, function and supporting processes of habitats supporting the species are expected to be maintained.

Species	Criterion	Assessment
Freshwater Pearl Mussel	1	The freshwater pearl mussel SACs are located at a considerable distance from the modified Project, the BOWL site and associated TI, the EOWDC, and those developments located in the Firth of Forth and elsewhere. The habitat of the SACs will not be subject to any direct deterioration as a result of the construction / decommissioning or operation of these developments.
	2	Given the distribution of freshwater pearl mussel (restricted to the freshwater habitat) direct disturbance to the species has no potential to occur in-combination.
	3	Given the distribution of the species (restricted to the freshwater habitat) direct changes to the distribution of the species in any of the SACs associated to modified OfTI has no potential to occur.
	4	As assessed for criteria 1
	6	Based on assessment for criteria 1, structure, function and supporting processes of habitats supporting the species are expected to be maintained.
	7	As assessed for criteria 1, 2, 3, 4 and 5 for Atlantic salmon
Sea Lamprey	1	The Spey SAC is located some distance from the three consented MORL wind farms modified TI, the BOWL site and associated TI, the EOWDC and other developments in the Firth of Forth and elsewhere. The habitat of the SAC will not be subject to any direct deterioration as a result of the construction/ decommissioning or operational phase of the modified OfTI or other projects under consideration. Deterioration of the marine habitats of sea lamprey could however theoretically occur: Chapter 4.1 (Benthic Ecology) predicts not significant to minor effects on benthic habitats. This chapter predicts no potential for effects above minor associated with changes to fishing activity to occur. Therefore no deterioration of the marine habitats of the qualifying species are expected to occur.
	2	The cumulative assessment predicts disturbance through increased SSC, sediment re-deposition, EMFs and noise will result in a minor effect on sea lamprey. Therefore significant disturbance to the qualifying species is not anticipated to occur.
	3	Changes to the distribution of the species are not expected to occur in-combination as no significant disturbance to the species or its habitats has been identified (See assessment against criteria 1 and 2 for sea lamprey).
	4	As assessed for criteria 1
	5	As assessed for criteria 1, 2, 3 and 4
	6	As assessed for criteria 1, 2, 3 and 4
	7	As assessed for 1,2,3,4 and 5 for Atlantic salmon

6.5.1.4 The above HRA relating to the relevant SACs for the modified OfTI have determined that there is potential for in-combination effects on the SAC populations of Atlantic salmon to occur. As a result, there may also be potential for indirect in-combination effects on freshwater pearl mussel and sea lamprey SAC populations.

6.5.1.5 It is important to consider that the assessment of the effects on Atlantic salmon necessitated a precautionary approach due to the limited information currently available in relation to the use that Atlantic salmon make of the Moray Firth area and other coastal waters around Scotland. In addition, it is not possible to conclusively identify which SAC watercourses individuals from any population originate from (post smolts or adults), the conservative assumption being that the natal habitats of all individuals are SAC rivers.

6.5.1.6 The AA undertaken by MS-LOT and MSS for the three consented MORL wind farms and associated transmission infrastructure as detailed in the MORL ES (MORL, 2012) concluded that the project would not adversely affect the site integrity of any of the Atlantic Salmon, Freshwater Pearl Mussel, or Sea Lamprey SACs assessed above, either alone, or in-combination with the BOWL development and other projects that have also been consented.

6.5.1.7 With respect to Atlantic Salmon SACs, MS-LOT considered that this was possible by agreement of working practice and mitigation that relate to the effects via conditions on any consents, as follows:

1. Soft start for piling work could be expected to help mobile fish move out of the area and thereby assist in mitigating against noise disturbance to individuals during construction.
2. Piling schedules and construction programmes should be further discussed, post-consent, between MS-LOT, MSS, the Association of Salmon Fishery Boards ("ASFB"), the SNCBs [Statutory Nature conservation Bodies, in this case SNH and JNCC] and developers, once turbine layouts, numbers and foundation choices and have been confirmed. It is noted that the zone of predicted noise impacts for Atlantic salmon is based on a 'worst case' scenario which may not occur.
3. Strategic monitoring and research will help to improve the knowledge base on salmon population ecology and migratory movements in Scottish waters and may help inform mitigation proposals.

6.5.1.8 MS-LOT further concluded that:

> *"The installation of the export cables close to shore could take a matter of days so that mitigation, or avoidance, of impacts to smolts could be possible by timing the work to avoid peak smolt runs (if the timing of these can be established). This mitigation should be progressed in post-consent discussions between MS-LOT, MSS, the ASFB, the SNCBs and developers. In relation to potential cumulative impacts arising from EMF around intra-array and export cables, proposed mitigation to shield / bury cables will help to reduce EMF. For Atlantic salmon, it is recommended that deeper burial depth or directional drilling removes the risk of any operational effect (the SNCBs advised up to 3m, where possible) i.e. for export cables in shallower water approaching landfall (water depths of up to ~20m). Where cable burial or directional drilling is not possible, rock armouring or a similar protective layer should be considered. It is considered that potential impacts from cable installation can be reduced or avoided and that while there may be some noise disturbance to individual salmon, the effects do not risk the integrity of SAC populations; but do merit further research and quantification. The SNCBs have advised that operational noise will not result in likely significant effects to salmon."*

6.5.1.9 In consultation with Marine Scotland, the District Salmon Fishery Boards (DSFBs) and other relevant stakeholders MORL has committed to undertake appropriate survey work and monitoring with the objective of increasing confidence in the impact assessment and identifying appropriate mitigation where required. Significance of likely effects will therefore be reduced to levels that are satisfactory to regulators. It is the intention of MORL to continue this cooperative consultation with regard to the modified OfTI to agree surveys/monitoring to be carried out by MORL.

6.5.1.10 With this commitment in mind, and in light of the conclusions of the Appropriate Assessment previously undertaken by MS-LOT in respect of the three consented MORL wind farms and associated export cable, it is expected that no adverse in-combination effects on any Conservation Objectives will occur, and no changes are expected to the population viability of Atlantic salmon, freshwater pearl mussel or sea lamprey in any of the SACs assessed above.

6.6 Concluding Statements

6.6.1.1 This ES presents data and impact assessment results that can usefully inform HRA. This chapter has summarised the results of assessment and can draw the following conclusions.

6.6.1.2 It was not been possible to rule out a likely significant effect on a European Site at the screening stage and detailed information to support an AA has been presented for fish ecology.

6.6.1.3 In combination with other projects and activities, the modified TI is predicted to result in the following effects:

- **Fish and Shellfish Ecology:** No adverse effects have been predicted on the integrity of any of the screened SACs designated for Atlantic salmon, freshwater pearl mussel or sea lamprey; and
- **Marine Mammals:** No adverse effects have been predicted on the integrity of the Moray Firth SAC (designated for bottlenose dolphin) and Dornoch Firth and Morrich More SAC (designated for harbour seal).

6.6.1.4 MORL's assessment of effects has been precautionary throughout this ES, and in line with Rochdale Envelope principles, in each instance is based upon realistic worst case scenarios.

6.7 References

MORL (2012) Moray Offshore Wind Farm Environmental Statement. Moray Offshore Renewables Ltd.

Scottish Government (2014) Telford, Stevenson and MacColl Appropriate Assessment. Available from http://www.scotland.gov.uk/Topics/marine/Licensing/marine/scoping/Moray3/TelfordAppropriateAssessment [accessed 06/06/2014]