



**Transport Scotland  
North West Unit**

**Statement to Inform Appropriate Assessment**



**A9 Kessock Bridge 5 year marine licence**

**Statement to Inform Appropriate Assessment**

	Name	Organisation	Signature	Date
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Client:	Transport Scotland			

<b>Distribution</b>		
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# 1. Habitats Regulations Appraisal Proforma

## APPRAISAL IN RELATION TO REGULATION 48 OF THE CONSERVATION (NATURAL HABITATS, &C.) REGULATIONS 1994 AS AMENDED<sup>1</sup> (HABITATS REGULATIONS APPRAISAL)

### NATURA SITE DETAILS

#### Name of Natura site(s) potentially affected:

1. Moray Firth SAC (UK0019808)
2. Moray Firth pSPA (TBC)
3. Inner Moray Firth SPA (UK9001624) and Ramsar Site (UK13025)
4. River Moriston SAC (UK0030259)
5. Dornoch Firth and Morrich More SAC (UK0019806)

#### Name of component SSSI if relevant:

##### Inner Moray Firth SPA

- Beaully Firth SSSI
- Longman & Castle Stuart Bays SSSI
- Munlochy Bay SSSI
- Whiteness Head SSSI

#### Natura qualifying interest(s) & whether priority/non-priority:

- 1. Moray Firth SAC:**  
Subtidal sandbanks, Favourable Maintained;  
Bottlenose dolphins (*Tursiops truncatus*), Favourable Recovered.
- 2. Moray Firth pSPA:**  
Shag (*Phalacrocorax aristotelis*) breeding;  
Common scoter (*Melanitta nigra*) non-breeding;  
Eider (*Somateria mollissima*) non-breeding;  
Goldeneye (*Bucephala clangula*) non-breeding;  
Great northern diver (*Gavia immer*) non-breeding;  
Long-tailed duck (*Clangula hyemalis*) non-breeding;  
Red-breasted merganser (*Mergus serrator*) non-breeding;  
Red-throated diver (*Gavia stellata*) non-breeding;  
Scaup (*Aythya marila*) non-breeding;  
Shag (*Phalacrocorax aristotelis*) non-breeding;  
Slavonian grebe (*Podiceps auratus*) non-breeding;  
Velvet scoter (*Melanitta fusca*) non-breeding.
- 3. Inner Moray Firth SPA and Ramsar Site:**  
Bar-tailed godwit (*Limosa lapponica*), non-breeding; Favourable Maintained;  
Common tern (*Sterna hirundo*), breeding; Unfavourable No Change;  
Cormorant (*Phalacrocorax carbo*), non-breeding; Unfavourable No Change;  
Curlew (*Numenius arquata*), non-breeding; Favourable Maintained;  
Goldeneye (*Bucephala clangula*), non-breeding; Favourable Maintained;  
Goosander (*Mergus merganser*), non-breeding; Unfavourable No Change;  
Greylag goose (*Anser anser*), non-breeding; Favourable Maintained;  
Osprey (*Pandion haliaetus*), breeding; Favourable Maintained;  
Oystercatcher (*Haematopus ostralegus*), non-breeding; Favourable Maintained;  
Red-breasted merganser (*Mergus serrator*), non-breeding; Unfavourable No Change;  
Redshank (*Tringa totanus*), non-breeding; Favourable Maintained;  
Scaup (*Aythya marila*), non-breeding; Favourable Maintained;  
Teal (*Anas crecca*), non-breeding; Favourable Maintained;  
Waterfowl assemblage, non-breeding; Favourable Maintained;  
Wigeon (*Anas penelope*), non-breeding; Favourable Maintained;  
Bar-tailed godwit (*Limosa lapponica*), non-breeding, **(Ramsar)**;  
Greylag goose (*Anser anser*), non-breeding, **(Ramsar)**;

<sup>1</sup> Or, where relevant, under regulation 61 of The Conservation of Habitats and Species Regulations 2010 as amended, or regulation 25 of The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 as amended.

Intertidal mudflats and sandflats, **(Ramsar)**;  
Red-breasted merganser (*Mergus serrator*), non-breeding, **(Ramsar)**;  
Redshank (*Tringa totanus*), non-breeding, **(Ramsar)**;  
Saltmarsh **(Ramsar)**;  
Sand dunes **(Ramsar)**;  
Shingle **(Ramsar)**;  
Waterfowl assemblage, non-breeding, **(Ramsar)**.

4. **River Moriston SAC:**

Atlantic salmon (*Salmo salar*); Unfavourable No Change;  
Freshwater pearl mussel (*Margaritifera margaritifera*), Unfavourable No Change.

5. **Dornoch Firth and Morrich More SAC:**

Atlantic salt meadows; Favourable Maintained;  
Coastal dune heathland; Unfavourable No Change; **(Priority habitat)**  
Dune grassland; Unfavourable No Change; **(Priority habitat)**  
Dunes with juniper thickets; Unfavourable Recovering; **(Priority habitat)**  
Estuaries;  
Glasswort and other annuals colonising mud and sand; Favourable Maintained;  
Harbour seal (*Phoca vitulina*); Unfavourable Declining;  
Humid dune slacks; Favourable Maintained;  
Intertidal mudflats and sandflats; Favourable Maintained;  
Lime-deficient dune heathland with crowberry; Unfavourable No Change; **(Priority habitat)**  
Otter (*Lutra lutra*); Favourable Maintained;  
Reefs; Favourable Maintained;  
Shifting dunes; Favourable Maintained;  
Shifting dunes with marram; Favourable Maintained;  
Subtidal sandbanks, Favourable Maintained.

None of the qualifying interest species are priority species.

### Conservation objectives for qualifying interests:

1. **Moray Firth SAC**

The Conservation Objectives for the qualifying habitat (subtidal sandbanks) of the Moray Firth SAC are as follows:

*To avoid deterioration of the qualifying habitat 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 habitat that the following are maintained in the long term:*

- *Extent of the habitat on site*
- *Distribution of the habitat within site*
- *Structure and function of the habitat*
- *Processes supporting the habitat*
- *Distribution of typical species of the habitat*
- *Viability of typical species as components of the habitat*
- *No significant disturbance of typical species of the habitat*

The Conservation Objectives for the qualifying species (Bottlenose dolphin) are as follows:

*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 established then maintained in the long term:*

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

2. **Moray Firth pSPA**

The pSPA is still at the consultation stage, therefore, draft conservation objectives have been set and they are detailed below. They will be finalised once the site is classified. The pSPA has been specifically selected to protect:

- Foraging habitat used by breeding shags;
- Areas used by wintering divers, grebes and sea ducks;
- Shag (*Phalacrocorax aristotelis*), breeding;
- Common scoter (*Melanitta nigra*), non-breeding;
- Eider (*Somateria mollissima*), non-breeding;
- Goldeneye (*Bucephala clangula*), non-breeding;
- Great northern diver (*Gavia immer*), non-breeding;
- Long-tailed duck (*Clangula hyemalis*), non-breeding;
- Red-breasted merganser (*Mergus serrator*), non-breeding;
- Red-throated diver (*Gavia stellata*), non-breeding;
- Scaup (*Aythya marila*), non-breeding;
- Shag (*Phalacrocorax aristotelis*), non-breeding;
- Slavonian grebe (*Podiceps auritus*), non-breeding;
- Velvet scoter (*Melanitta fusca*), non-breeding.

The draft conservation objectives for the proposed qualifying features (listed above) of the Moray Firth proposed SPA are:

*To avoid deterioration of the habitats of the qualifying species or significant disturbance to the proposed qualifying species, subject to natural change, thus ensuring that the integrity of the site is maintained in the long-term and it continues to make an appropriate contribution to achieving the aims of the Birds Directive for each of the qualifying species.*

*This contribution will be achieved through delivering the following objectives for each of the site's proposed qualifying features:*

- a) *Avoid significant mortality, injury and disturbance of the qualifying features, so that the distribution of the species and ability to use the site are maintained in the long-term;*
- b) *To maintain the habitats and food resources of the qualifying features in favourable condition.*

### 3. **Inner Moray Firth SPA and Ramsar Site**

- Bar-tailed godwit (*Limosa lapponica*), non-breeding;
- Common tern (*Sterna hirundo*) breeding;
- Cormorant (*Phalacrocorax carbo*) non-breeding;
- Curlew (*Numenius arquata*) non-breeding;
- Goldeneye (*Bucephala clangula*) non-breeding;
- Goosander (*Mergus merganser*) non-breeding;
- Greylag goose (*Anser anser*) non-breeding;
- Osprey (*Pandion haliaetus*) breeding;
- Oystercatcher (*Haematopus ostralegus*) non-breeding;
- Red-breasted merganser (*Mergus serrator*) non-breeding;
- Redshank (*Tringa totanus*) non-breeding;
- Scaup (*Aythya marila*) non-breeding;
- Teal (*Anas crecca*) non-breeding;
- Wigeon (*Anas penelope*) non-breeding.

The Conservation Objectives for the qualifying species (listed above) of the Inner Moray Firth SPA are as follows:

*To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*

*To ensure for the qualifying species that the following are maintained in the long term:*

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

### 4. **River Moriston SAC**

The Conservation Objectives for the qualifying species (Atlantic salmon and freshwater pearl mussel) of the River Moriston SAC are as follows:

*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:

- Population of the species, including range of genetic types for salmon, as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species
- Distribution and viability of freshwater pearl mussel host species
- Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species

5. **Dornoch Firth and Morrich More SAC**

- Atlantic salt meadows;
- Coastal dune heathland;
- Dune grassland;
- Dunes with juniper thickets;
- Estuaries;
- Glasswort and other annuals colonising mud and sand;
- Humid dune slacks;
- Intertidal mudflats and sandflats;
- Lime-deficient dune heathland with crowberry;
- Reefs;
- Shifting dunes;
- Shifting dunes with marram;
- Subtidal sandbanks.

The Conservation Objectives for the qualifying habitats (listed above) of the Dornoch Firth and Morrich More SAC are as follows:

*To avoid deterioration of the qualifying habitats 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 habitats that the following are maintained in the long term:

- Extent of the habitat on site
- Distribution of the habitat within site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat

The Conservation Objectives for the qualifying species (otter and harbour seal) of the Dornoch Firth and Morrich More SAC are as follows:

*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:

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

## STEP 1: WHAT IS THE PLAN OR PROJECT?

### Proposal title:

A9 Kessock Bridge 5 Year Marine Licence

### Name of consultee:

BEAR Scotland

### Name of competent authority:

Transport Scotland and Marine Scotland

### Details of proposal (inc. location, timing, methods):

BEAR Scotland are applying for a marine licence to cover a 5-year programme of maintenance works on the A9 Kessock Bridge, Inverness. The maintenance activities are broken down into 'scheme' and 'cyclic maintenance'. 'Scheme' represents those works that will be required over the next 5 years, whilst 'cyclic maintenance' represents those works which may be required over the same timeframe. Inspections will also be carried out to identify the degree of maintenance activity required. Following review of detailed bathymetric data obtained in August 2018, BEAR Scotland now anticipate that scour repairs at Kessock Bridge are not currently required, however the scour protection may require future maintenance within the next 5 five years; hence, this activity is considered cyclic maintenance.

The activities encompass the following:

#### Schemes

- Fender replacement;
- Superstructure painting; and
- Cable stay painting.

#### Cyclic maintenance

- Scour repairs;
- Drainage cleaning;
- Bird guano removal;
- Structural bolt and weld renewal;
- Mass damper re-tuning;
- Pendel bearing inspection;
- Cleaning and pressure washing superstructure
- Cable stay re-tensioning;
- Minor bridge maintenance.

All activities are highly localised and will take place within the immediate vicinity of the bridge. In most cases activity duration will be less than three months and, in several activities less than a few weeks. The exception is painting of the superstructure which will take approximately four years to complete, and cleaning and pressure washing of superstructure (maximum of six months to complete). There will be an overlap of painting with other maintenance activities, most notably structural bolt and weld removal which will be facilitated, as and when required, from the painting platform; however, all other maintenance activities are unlikely to be carried out simultaneously with any other activity, except painting of the superstructure.

Some of the schemes and cyclic maintenance activities will only take place from the bridge deck, including pendel bearing investigation, drainage cleaning, cable stay re-tensioning and painting. Other activities will require a degree of access beneath the bridge deck; including pressure washing, bird guano removal, structural bold and weld removal, mass damper re-tuning, minor bridge maintenance and inspections via the gantry.

With the exception of scour repairs and fender replacement, all maintenance activities will take place above mean high water spring. Fender replacement will be carried out in the intertidal areas of the bridge piers (between mean high water and mean low water spring) and be facilitated by boat access. Scour repairs will take place within the subtidal environment.

No hydrodemolition work is required for any of the maintenance activities at Kessock Bridge.

Further detail for each of the maintenance activities is contained below. A range of good practice and management measures will be adopted by the successful contractor. These are detailed for each activity; however, the following good practice and management measures will also be adopted throughout the maintenance programme irrespective of the activity:

- The site supervisor will give toolbox talks prior to work commencing. These talks will highlight any sensitive features, including the designated sites.

- In line with good practice, the contractor will follow the updated and relevant Guidance for Pollution Prevention (GPPs) including GPP 5 (Works and maintenance in or near water). Pollution Prevention Guidance (PPGs) will be followed if no corresponding GPP is available.
- Oils, fuels and chemicals will be stored in fully bunded areas.
- Spill kits will be available on site and workers trained in their use.
- The contractor will produce a contingency plan for dealing with spills or environmental incidents.
- Any waste generated will be removed from site and either recycled or disposed of in compliance with Waste Management Regulations.

### **Fender Replacement**

Fender replacement will involve replacing the original fenders like-for-like. Ensuring continual protection to the bridge from potential vessel strikes. It is now anticipated that these works will be completed within two months from commencement. Works will be carried out from a barge, using a crane to remove the old fenders and re-position and attach new fenders.

Drilling into the piers will be carried out at low tidal states. Fender replacement will not overlap with scour repair, should scour repair be required within the 5-year licence period.

#### Summary methodology

- Establish barge adjacent to piers.
- Barge will be fixed by anchors or spud-legs as opposed to thrusters.
- Old fenders removed with cranes and placed onto barge.
- Install new fenders.
- Demobilise from site.

In addition to the good practice and management measures already listed the following will be adopted:

- Production and implementation of a Biosecurity Management Plan (appended to the Site Environmental Management Plan (SEMP)) during the construction phase.
- Prior and during the construction phase, appropriate staff will be informed of relevant marine Invasive Non-Native Species (INNS). These staff will receive a copy of the Biosecurity Management Plan and understand how to implement the management measures. These staff will also be cognisant of guidance produced by SNH for the prevention of introduction of non-native species (Payne *et al.*, 2014).
- The Contractor will produce a Ballast Water Management Plan<sup>2</sup> (if relevant) to prevent the risk of introducing invasive non-native species into the Moray Firth.
- Prior to installation and immersion, all equipment will be washed and cleaned to ensure that no contaminants are brought into contact with the marine environment.
- New fenders will be cleaned prior to installation and immersion.

### **Superstructure Painting**

Highly localised and sequential painting of the superstructure will take place for approximately four years. The majority of the work will be carried out from the deck of the bridge; however, some areas will require access from a platform beneath the bridge. Structural bolt and weld renewal (if required) will be coincident with the painting works (see below).

Due to the duration of the painting it is assumed that this activity will occur simultaneously with fender replacement and has the potential to be simultaneous with each of the proposed cyclic maintenance activities over its duration.

#### Summary methodology

- Install temporary access platform underneath the bridge.
- Install containment on the platform.
- Grit blast the superstructure.
- Paint superstructure.
- Move access platform and repeat steps 2, 3 and 4.
- The superstructure above deck will also be complete and fixed scaffolds will be used for access.

The following good practice and management measures will be adopted:

<sup>2</sup> <http://www.imo.org/en/OurWork/Environment/BallastWaterManagement/Pages/Default.aspx>

- All painting/grit blasting will be carried out within protective shelters (above and below the bridge deck), ensuring that all overspray is enclosed.
- All grit will be recycled and either re-used or disposed of off-site by licenced waste carriers.

### **Cable Stay Painting**

Periodic cable stay painting is required to prevent corrosion. This will take place entirely from the deck and will take approximately three months to complete.

Summary methodology

- Establish traffic management as required.
- Use rope access to access the cable stays.
- Establish containment.
- Clean cable stay.
- Paint cable stay section.
- Repeat steps 1-5.

The following good practice measure will be adopted:

- All painting will be carried out within approved containment systems, ensuring that all overspray is enclosed.

### **Scour Repairs**

Scour repairs around the pile caps are not currently required, however, future monitoring may necessitate repairs to the scour protection. Should work be required over the next five years, bathymetric data suggests that it would be relatively minor repairs requiring, at most, three months of scour repair activity.

The substrata around the piers largely comprises coarse sandy gravels (see step 4 for more detail on the environment at location of the proposal). It is the intention to side-cast the excavated material, therefore the material will be redistributed in a similar location on the seabed during the activity. Following excavation, geotextile will be installed around the given pile cap. Rock armour will then be placed around the pier pile caps with backfill of voids between armour achieved by infilling of granular material (sand and gravel).

The scour repair activity will take place at sequential piers along the bridge; therefore, the activity of scour repair will be limited to the immediate area around each pier at any one time. As noted above, recent data suggests only minimal scour impacts at a limited number of piers. During the scour repair the material will be removed by an excavator mounted on a jack-up barge. Around the base of the piers (pile caps) the area affected by the excavation and then rock placement would be unlikely to exceed beyond a 5m radius. The diameter of each foot of the jack-up barge will be less than 2m<sup>2</sup>.

Should scour repairs be required during the 5-year Marine Licence, they will not overlap with fender replacement.

Summary methodology of scour repairs:

- Install jack up barge to required pier location.
- Excavate around pier(s).
- Side-cast of material.
- Install geotextile.
- Place rock armour around piers.
- Demobilise from site

In addition to the good practice and management measures already listed the following will be adopted:

- Production and implementation of a Biosecurity Management Plan (appended to the SEMP) during the construction phase.
- Prior and during the construction phase, appropriate staff will be informed of relevant marine Invasive Non Native Species (INNS). These staff will receive a copy of the Biosecurity Management Plan and understand how to implement the management measures. These staff will also be cognisant of guidance produced by SNH for the prevention of introduction of non-native species (Payne *et al.*, 2014).
- The Contractor will produce a Ballast Water Management Plan (if relevant) to prevent the risk of introducing invasive non-native species into the Moray Firth.
- All rock armour will be washed and cleaned prior to immersion to ensure that no contaminants are brought into contact with the marine environment.
- All equipment to be washed down and cleaned prior to immersion



### **Drainage Cleaning**

The drainage gullies and pipes on the bridge require periodic maintenance to ensure they are effective for draining water from the carriageway. This activity will take up to two days to complete. These works will be carried out on the surface of the bridge.

#### Summary methodology

- Establish traffic management as required.
- Open kerb gully.
- Clean debris from gully using vacuum truck or hand tools.

The following good practice measure will be adopted:

- Vacuum trucks will be emptied at licensed facilities.

### **Bird Guano Removal**

Bird guano on the crosshead beams requires periodic cleaning and removal to prevent build up. This activity will be carried out below the bridge deck. This activity will take several days to complete.

#### Summary methodology

- Establish traffic management as required.
- Establish underbridge access unit (lorry mounted or fixed).
- Clean crosshead beams using hand tools.

The following good practice measure will be adopted:

- Bird guano will need to be double-bagged to prevent spillage.
- Guano will be taken to a licensed facility for disposal.

### **Structural Bolt and Weld Renewal**

There are a large number of structural bolted and welded connections that require periodic renewal on the bridge due to corrosion or damage. During the painting works, as bolts and/or connections are identified that require maintenance, this work will be carried out. It is not expected that the work would take any more than one day each time it is required.

#### Summary methodology

- Establish safe system of work. This may be facilitated from the gantry, underbridge unit or lorry mounted underbridge unit.
- Traffic management to be established if required.
- Renew required bolts to design torque.
- Grind out defective weld, test and measure, restore weld and test.
- Demobilise from site.

The following good practice measure will be adopted:

- Install protective barrier around working area to prevent loss of materials (bolts).

### **Mass Damper Re-Tuning**

Tuned mass dampers are devices mounted in bridge structures that reduce the amplitude of mechanical vibrations. In the case of Kessock this deals with traffic and seismic vibrations, preventing discomfort, damage or structural failure. This work would take up to two weeks to complete.

#### Summary methodology

- Access mass dampers via temporary access platform/gantry.
- Adjust counterweight/springs on dampers.
- Remove access platform/gantry from over the sea.

The following good practice measure will be adopted:

- Install protective barrier around working area to prevent loss of materials.

### **Pendel Bearing Inspection**

These works will be carried out within the concrete box on the bridge deck that contains the pendel bearings, which need to be inspected for periodic wear and tear.

#### Summary methodology

- Enter pendel chamber.
- Check levels at various location of the pendel bearings.
- Exit chamber.

As this is purely an enclosed inspection, there are no materials which could enter the marine environment.

### **Cleaning and Pressure Washing Superstructure**

The soffit of the bridge deck is periodically cleaned by hand or with a pressure washer to remove atmospheric pollution, marine salts and minor bird guano from the soffit and guide rails of the gantry. Access beneath the deck will be required. This work will take approximately six months to complete, with up to three months of this duration being required to clean under the bridge.

#### Summary methodology

- Establish safe system of work on the gantry.
- Clean as required by hand or using pressure washer.
- Demobilise from site.

The following good practice measures will be adopted:

- Bird guano will be double-bagged to prevent spillage.
- Guano will be taken to a licensed facility for disposal.
- Clean potable water will be used for pressure washing.
- Testing of the steelwork will be carried out to confirm whether any pollutants are present in the marine salts.
- If pollutants are present in the marine salts then advice will be taken from SEPA if this is the case and before any pressure washing takes place.

### **Cable Stay Re-tensioning**

Cable stays are re-tensioned to maintain structure strength. All works will be carried out from the deck and will take approximately one month to complete.

#### Summary methodology

- Install safe system of work as required.
- Install cable stay stressing kit.
- Re-tension cable stays.
- Move to another cable stay location.
- Repeat steps 1-4.
- Demobilise from site.

As this is purely re-tensioning works, there are no materials which could enter the marine environment.

### **Minor Bridge Maintenance**

This entails greasing bridge components, refilling tuned mass dampers with nitrogen and cleaning the structure. These activities will all take place at or beneath the bridge deck, with duration of such works unlikely to exceed one week at any given time.

#### Summary methodology

- Establish safe system of work.
- Complete maintenance task.
- Demobilise from site.

The following good practice measure will be adopted:

- Containment of any working platform needed to access the underbridge area using debris netting and flooring layers.

**STEP 2: IS THE PLAN OR PROJECT DIRECTLY CONNECTED WITH OR NECESSARY TO SITE MANAGEMENT FOR NATURE CONSERVATION?**

The following points should be considered:

- i) Has the effect on all qualifying interests been considered?
  - ii) Is the proposal part of a fully assessed and agreed management plan?
  - iii) Is there a clear rationale to justify the connection with the conservation objectives?
  - iv) If there is a clear connection with the conservation objectives will any benefits arising from the proposal outweigh any negative effects?
  - v) Have any alternative methods of implementing the proposal been explored to demonstrate that this is the least damaging option?
  - vi) Give a YES/NO conclusion in terms of whether the plan or project is considered directly connected with or necessary to site management for nature conservation.
- If **YES** for all elements of a plan or project, for all the Natura qualifying interests (preferably as part of a fully assessed and agreed management plan), then consent can be issued. The rationale should be detailed below and no further appraisal is required (no need to proceed to step 3 or 4).
  - If **No** for all Natura qualifying interests then proceed to step 3.
  - **If a plan has multiple elements (e.g. a range of policies or management objectives)**, elements of the plan considered directly connected with or necessary to site management for nature conservation should be discussed below and a rationale given for this conclusion. No further appraisal is then required for those elements. All other elements of the plan must proceed to step 3.

No, none of the activities are directly connected with or necessary to site management for nature conservation.

**STEP 3: IS THE PLAN OR PROJECT (EITHER ALONE OR IN COMBINATION WITH OTHER PLANS OR PROJECTS) LIKELY TO HAVE A SIGNIFICANT EFFECT ON THE SITE?**

Each qualifying interest should be considered in relation to their conservation objectives. The following points should be considered:

- i) Briefly indicate which qualifying interest could be affected by the proposal and how; if none, provide a brief justification for this decision, and then proceed to v), otherwise continue;
  - ii) refer to other plans/projects with similar effects/other relevant evidence;
  - iii) consider the nature, scale, location, longevity, and reversibility of effects;
  - iv) consider whether the proposal contributes to cumulative or incremental impacts in combination with other plans or projects completed, underway or proposed;
  - v) Where the impacts of a proposal are the same for different qualifying interests these can be considered together however a clear conclusion should be given for each interest
  - vi) give Yes/No conclusion for each interest.
- **If yes, or in cases of doubt**, continue to step 4.
  - **If potential significant effects can easily be avoided**, record modifications required below.
  - **If no for all features**, a consent or non-objection response can be given and recorded below (although if there are other features of national interest only, the effect on these should be considered separately). There is no need to then proceed to step 4.

Advice was received from SNH (Redacted 4th April 2018). During initial consultation regarding the proposed maintenance activities at Kessock Bridge (Appendix A) SNH advised that the proposal could lead to a potential Likely Significant Effect (LSE) on a number of qualifying features of the designated conservation sites (see Appendix A and Table 1).

**Table 1: Qualifying features with potential for a LSE from the proposed works at Kessock Bridge.**

Broad Feature	Associated SAC, SPA and/or Ramsar site
Atlantic salmon	River Moriston SAC
Freshwater pearl mussels	River Moriston SAC
Bottlenose dolphin	Moray Firth SAC
Wintering birds	Moray Firth pSPA, Inner Moray Firth SPA and Ramsar
Harbour seal	Dornoch Firth and Morich More SAC

Since the initial consultation, a review of the proposal has confirmed that piling works are no longer required as part of the 5-year maintenance programme. Given that no piling is required then the likelihood of a significant effect from disturbance on marine mammals or fish is significantly reduced. Furthermore, the requirement for scour repair during the five-year period is no longer a certainty, bathymetric data (obtained in August 2018) revealing that any repairs would be minimal and thus reducing the duration of scour repair to a maximum of three months.

In addition, further detail has been provided on the good practice and management measures that will be adopted (see step 1), specifically to prevent the loss of materials and/or pollution in the marine environment.

### **Moray Firth SAC**

Following consultation with SNH (4<sup>th</sup> April 2018) it was advised that there was potential for a LSE on bottlenose dolphins, a qualifying feature of the Moray Firth SAC. SNH agreed that the reasons for this potential LSE were as provided in the HRA screening spreadsheet (see Appendix A and B). In line with the initial conclusions of the HRA screening (see Appendix B), SNH did not advise that there was any potential for a LSE on the subtidal sandbank qualifying feature.

In relation to bottlenose dolphin, the cause for a potential LSE were a result of underwater noise, and/or pollution (see Appendix B). The HRA screening (Appendix B) had identified the key cause of underwater noise as piling; however, piling works are no longer required for this proposal (see above). As there is a requirement for scour repair and fender replacement activities to take place within the subtidal environment, there is still potential for disturbance to bottlenose dolphins and therefore potential for a LSE on bottlenose dolphins. However, it is acknowledged that both these activities (scour repair and fender replacement) are short in duration (three months and two months respectively), with any disturbance effects considered temporary and reversible. Further consideration of the potential LSE from disturbance on bottlenose dolphins is detailed in step 4.

Since the initial consultation with SNH, additional detail has been provided on the good practice and management measures that will be adopted by the successful contractor (see step 1) which will prevent loss of materials and/or pollution to the marine environment. With implementation of these good practice and management measures it is concluded that there would be no potential for a LSE from pollution on populations of bottlenose dolphins.

### **In-combination effects**

#### **Intra**

The painting activity will likely overlap with each of the maintenance activities over the full duration (approximately four years). However, the adoption of the good practice and management measures (see step 1) leads to the conclusion that there is no reasonable pathway for painting to effect the qualifying features of the Moray Firth SAC, either separately or in-combination with other activities.

Although there is no overlap in timing with scour repair and fender replacement, it is considered that these two activities could lead to an in-combination effect from disturbance on bottlenose dolphins and therefore a potential LSE on this qualifying feature. This is considered further in step 4.

#### **Inter**

Other than the proposed maintenance works at Cromarty Bridge, there are no marine projects currently planned or recently completed that have the potential to contribute to in-combination effects on the qualifying features of the SAC; nor were any persisting impacts from past projects identified or advised during consultation (Redacted 4<sup>th</sup> April 2018).

There is a requirement for scour repairs at Cromarty Bridge which have the potential for LSE on bottlenose dolphin as a result of disturbance. Therefore, it is concluded that the scour repair at Cromarty could result in an in-combination disturbance effect on bottlenose dolphins with those activities at Kessock (scour repair and fender replacement) which have the potential to cause disturbance on this qualifying feature. This is considered further in step 4.

Transport Scotland have proposed improvements to the A9/A82 Longman junction and the options for this scheme are currently being assessed. For some options there may be piling of earthworks; however, the piling works would be several hundred metres from the nearest point of the mean high water mark with no waterborne piling required. Hence, there is no reasonable pathway for noise propagation, as a result of piling, through the water. It is therefore highly unlikely that the proposed works at Longman junction would lead to a potential LSE on the qualifying features of the Moray Firth SAC either as a direct consequence of the development or as an in-combination effect with the proposed maintenance works at Kessock Bridge.

### **Moray Firth pSPA**

Following consultation with SNH (4<sup>th</sup> April 2018) it was advised that there was potential for a LSE on the qualifying features of the Moray Firth pSPA (Appendix A). In line with the initial conclusions of the HRA screening (see Appendix B), a potential LSE on the qualifying features could occur as a result of either disturbance (noise, visual and light) or pollution effects.

Since the initial consultation with SNH, additional detail has been provided on the good practice and management measures that will be adopted by the successful contractor (see step 1); these will prevent loss of materials and/or pollutants from entering the marine environment. With implementation of these good practice and management measures it is concluded that there would be no potential for LSE from pollution on habitats of the qualifying species or the qualifying species themselves.

Foraging areas for breeding and non-breeding shag are located near Brora, to the north, and Portsoy to the east (SNH, 2016); both of which are more than 30km from Kessock Bridge. Therefore, there is no reasonable pathway to effect the main foraging habitats used by shag (breeding and non-breeding). Consequently, it is concluded that there is no potential for LSE on the qualifying feature 'foraging habitat used by breeding shag'.

Common scoter, velvet scoter and goldeneye are concentrated in numbers over 12km to the north east of Kessock Bridge, around Rosemarkie (SNH, 2016). Therefore, there is no reasonable pathway for a LSE on these species from visual, noise or light disturbance.

However, as the programme of maintenance activities at Kessock Bridge have the potential to disturb several non-breeding qualifying features, including eider, scaup, red-breasted merganser, long-tailed duck, Slavonian grebe, great northern diver and red-throated diver; it is concluded that there is potential for a LSE on these species, and the areas used by them, from disturbance. The fender replacement and scour repair activities both require work in or on the water, and it is these activities which have the greatest potential for a disturbance effect on the qualifying features. Both these activities (scour repair and fender replacement) are temporary and short in duration (three months and two months respectively), with any disturbance effect considered fully reversible following cessation of the activity.

### **In-combination effects**

#### **Intra**

The painting activity will overlap with each of the maintenance activities over the full duration (approximately four years). However, the adoption of the good practice and management measures (see step 1) leads to the conclusion that there is no reasonable pathway for painting to affect the qualifying features of the Moray Firth pSPA, either separately or in-combination with other activities.

Although there is no overlap in timing with scour repair and fender replacement, it is considered that these activities could lead to an in-combination effect from disturbance on wintering divers, grebes and sea ducks and therefore a potential LSE on these qualifying features. This is considered further in step 4.

#### **Inter**

Over the same timescale as the proposed works at Kessock, there are proposed maintenance works likely to occur at Dornoch Bridge and Cromarty Bridge. However, during consultation with SNH (Ben Leyshon, 21st June 2018), it was advised that as Dornoch Bridge was at a distance of 6km from the nearest part of the Moray Firth pSPA it was considered unlikely that any of the qualifying features would occur in significant numbers to the proposed works at this bridge. Hence, no adverse impacts on site integrity (of the Moray Firth pSPA) from the proposed works at Dornoch Bridge were anticipated by SNH. Furthermore, the scope of the proposed works at Dornoch does not include any subtidal activities (i.e. fender replacement or scour repair). Given this, it is concluded that maintenance works at Dornoch would not lead to an in-combination effect, with the works at Kessock Bridge, on the qualifying features of the Moray Firth pSPA.

Cromarty Bridge is more than 12 km from the Moray Firth pSPA, thus it is also considered unlikely that any of the qualifying features would occur in significant numbers to the proposed works at this bridge. However, as the proposed activities at Cromarty include subtidal works (i.e. scour repair), it is concluded that maintenance works at Cromarty could lead to an in-combination effect with the works at Kessock Bridge, and thus a potential LSE on the qualifying features of the Moray Firth pSPA.

Transport Scotland have proposed improvements to the A9/A82 Longman junction and the options for this scheme are currently being assessed. For some options there may be piling of earthworks; however, the piling works, and other key activities, would be several hundred metres from the nearest point of the mean high-water mark with no waterborne piling required. It is therefore unlikely that these works would lead to the potential for LSE on the qualifying features of the Moray Firth pSPA; either as a direct consequence of the proposal or as a contributing factor towards an in-combination effect with the proposed maintenance works at Kessock Bridge.

### **Inner Moray Firth SPA and Ramsar Site**

During initial consultation with SNH (4th April 2018) no specific advice was received in relation to the Inner Moray Firth SPA and Ramsar site. However, since the initial consultation with SNH, additional detail has been provided on the good practice and management measures that will be adopted by the successful contractor (see step 1); these will prevent loss of materials and/or pollutants from entering the marine environment. With implementation of these good practice and management measures it is concluded that there would be no potential for LSE from pollution on habitats of the qualifying species or the qualifying species themselves.

The nearest part of the Inner Moray Firth SPA and Ramsar to Kessock Bridge is over 2km distant, with designated woodland areas being considerably further away. Disturbance effects on breeding osprey and common tern (both qualifying features) are unlikely as osprey nest in woodland and the closest common tern colony is more than 8km north-east, at Avoch. It is concluded that there would be no potential for a LSE on breeding terns or osprey.

Although the bridge does not overlap with the SPA and Ramsar, it is considered that the works, specifically the fender replacement and scour repair activities, could disturb those qualifying species that are likely to utilise the waters adjacent to the bridge; such as scaup, teal, goosander and red-breasted merganser. Therefore, it is concluded that there is potential for a LSE on these species, and the areas used by them, from disturbance. Both these activities (scour repair and fender replacement) are temporary and short in duration (three months and two months respectively), with any disturbance effect considered fully reversible following cessation of the activity. This is considered further in step 4.

There is no sand dune, saltmarsh or shingle habitats within the vicinity of the bridge, these all being qualifying features of the Ramsar site. Given this, it is concluded that the Ramsar habitats would not be affected by the works.

### **In-combination effects**

#### **Intra**

The painting activity will overlap with each of the maintenance activities over the full duration (approximately four years). However, the adoption of the good practice and management measures (see step 1) leads to the conclusion that there is no reasonable pathway for painting to affect the qualifying features of the Inner Moray Firth SPA and Ramsar, either separately or in-combination with other activities.

Although there is no overlap in timing with scour repair and fender replacement, it is considered that these activities could lead to an in-combination effect from disturbance on wintering bird species that utilise the waters around the bridge, therefore this could lead to a potential LSE on these qualifying features. This is considered further in step 4.

#### **Inter**

Over the same timescale as the proposed works at Kessock, there are proposed maintenance works likely to occur at Dornoch Bridge and Cromarty Bridge. However, as Dornoch Bridge is more than 30 km away from the Inner Moray Firth SPA and Ramsar, and given the scope and nature of the works at Dornoch Bridge, it is concluded that the proposed works at Dornoch Bridge would not have potential for an in-combination LSE on the qualifying features of the Inner Moray Firth SPA and Ramsar.

There is a requirement for scour repair works at Cromarty Bridge, which is located <10km from the nearest point of the Inner Moray Firth SPA and Ramsar. Due to the requirement for scour repair at Cromarty Bridge and that the bridge is less than 10km from the Inner Moray Firth SPA and Ramsar, it is considered that there is potential for an in-combination LSE from disturbance on the broad qualifying feature 'wintering birds' of the Inner Moray Firth SPA; when considered in conjunction with the proposed scour repair and fender replacement works at Kessock Bridge. This is considered further in step 4.

Transport Scotland have proposed improvements to the A9/A82 Longman junction and the options for this scheme are currently being assessed. For some options there may be piling of earthworks; however, the piling works, and other key activities, would be several hundred metres from the nearest point of the mean high water mark with no waterborne piling required. It is therefore unlikely that these works would lead to the potential for LSE on the qualifying features of the Inner Moray Firth SPA and Ramsar Site; either as a direct consequence of the proposal or as a contributing factor towards an in-combination effect with the proposed maintenance works at Kessock Bridge.

### **River Moriston SAC**

This SAC is approximately 40km distant from Kessock Bridge. The qualifying features are freshwater pearl mussels and Atlantic salmon. These features are intrinsically connected as freshwater pearl mussels require the presence of salmonids

(salmon and trout) for the early steps of their lifecycle when they attach as glochidia to the fish's gills. Atlantic salmon migrate through the Moray Firth both as smolts, to spend part of their lifecycle at sea, and as adults, returning to their natal rivers to spawn. The Kessock Bridge is situated within the migratory pathway of Atlantic salmon heading either upstream or downstream from the River Moriston SAC.

Following initial consultation with SNH (4th April 2018) it was advised that there was potential for a LSE on the qualifying features of the River Moriston SAC (Appendix A). The initial conclusions of the HRA screening (see Appendix B), concluded that a potential LSE could occur on the qualifying features as a result of disturbance (noise, visual and light) or pollution effects.

Since the initial consultation with SNH, additional detail has been provided on the good practice and management measures that will be adopted by the successful contractor (see step 1); these will prevent loss of materials and/or pollutants from entering the marine environment. With implementation of these good practice and management measures it is concluded that there would be no potential for LSE from pollution on the qualifying features of the River Moriston SAC.

Fender replacement and scour repair activities require work within and upon the surface water around the bridge. It is concluded that these activities could lead to a potential LSE on Atlantic salmon from disturbance; thus also having the potential for an LSE on freshwater pearl mussel. Both these activities (scour repair and fender replacement) are temporary and short in duration (three months and two months respectively), with any disturbance effect considered fully reversible following cessation of the activity. This is considered further in step 4.

### **In-combination effects**

#### **Intra**

The painting activity will overlap with each of the maintenance activities over the full duration (approximately four years). However, the adoption of the good practice and management measures (see step 1) leads to the conclusion that there is no reasonable pathway for painting to affect the qualifying features of the River Moriston SAC, either separately or in-combination with other activities.

Although there is no overlap in timing with scour repair and fender replacement, it is considered that these activities could lead to an in-combination effect from disturbance on Atlantic salmon, therefore this could lead to a potential LSE on both Atlantic salmon and freshwater pearl mussel. This is considered further in step 4.

#### **Inter**

Over the same timescale as the proposed works at Kessock, there are proposed maintenance works likely to occur at Dornoch Bridge and Cromarty Bridge. However, there is no reasonable pathway to affect the qualifying features of the River Moriston SAC from these works.

Transport Scotland have proposed improvements to the A9/A82 Longman junction and the options for this scheme are currently being assessed. For some options there may be piling of earthworks; however, the piling works, and other key activities, would be several hundred metres from the nearest point of the mean high water mark with no waterborne piling required. It is therefore unlikely that these works would lead to the potential for LSE on the qualifying features of the River Moriston SAC; either as a direct consequence of the proposal or as a contributing factor towards an in-combination effect with the proposed maintenance works at Kessock Bridge.

### **Dornoch Firth and Morrich More SAC**

Following initial consultation with SNH (4th April 2018) it was advised that there was potential for a LSE on harbour seal, a qualifying feature of the Dornoch Firth and Morrich More SAC (Appendix A). The initial conclusions of the HRA screening (see Appendix B), concluded that a potential LSE could occur on harbour seal as a result of disturbance (noise, visual and light) or pollution effects. This as a result of the connectivity between harbour seals in the Dornoch Firth and Beaully Firth.

In line with the initial conclusions of the HRA screening (see Appendix B), SNH did not advise that there was any potential for a LSE on any other qualifying feature (habitats and species) of the Dornoch Firth and Morrich More SAC from the proposed works at Kessock Bridge.

The HRA screening (Appendix B) had identified the key cause of underwater noise as piling; however, piling works are no longer required for this proposal (see above). As there is a requirement for scour repair and fender replacement activities

to take place within the subtidal environment there is still potential for disturbance to harbour seal and therefore potential for a LSE on harbour seal. However, it is acknowledged that both these activities (scour repair and fender replacement) are temporary and short in duration (three months and two months respectively), with any disturbance effects considered temporary and reversible. Further consideration to the potential LSE from disturbance on harbour seal is detailed in step 4.

Since the initial consultation with SNH, additional detail has been provided on the good practice and management measures that will be adopted by the successful contractor (see step 1) which will prevent loss of materials and/or pollution into the marine environment. With implementation of these good practice and management measures it is concluded that there would be no potential for LSE from pollution on populations of harbour seal.

### **In-combination effects**

#### **Intra**

The painting activity will overlap with each of the maintenance activities over the full duration (approximately four years). However, the adoption of the good practice and management measures (see step 1) leads to the conclusion that there is no reasonable pathway for painting to affect the qualifying features of the Dornoch Firth and Morrich More SAC, either separately or in-combination with other activities.

Although there is no overlap in timing with scour repair and fender replacement, it is considered that these activities could lead to an in-combination effect from disturbance on harbour seal, therefore this could lead to a potential LSE on this qualifying species. This is considered further in step 4.

#### **Inter**

Over the same timeframe as the proposed works at Kessock, proposed maintenance works at both the Dornoch Bridge and Cromarty Bridge are likely to occur. Unlike Kessock Bridge, there is no requirement for any maintenance activities at Dornoch Bridge to take place in the subtidal environment. However, there is a requirement for subtidal work (scour repair) at Cromarty Bridge; this activity having the potential for an LSE on harbour seal as a result of disturbance.

It is considered that the proposed maintenance activities at Kessock (scour repair and fender replacement) when combined with those at Cromarty (scour repair) have the potential for an LSE resulting from an in-combination disturbance effect on harbour seal. This is considered further in step 4.

Transport Scotland have proposed improvements to the A9/A82 Longman junction and the options for this scheme are currently being assessed. For some options there may be piling of earthworks; however, the piling works, and other key activities, would be several hundred metres from the nearest point of the mean high-water mark with no waterborne piling required. It is therefore unlikely that these works would lead to the potential for LSE on the qualifying features of the Dornoch Firth and Morrich More SAC; either as a direct consequence of the proposal or as a contributing factor towards an in-combination effect with the proposed maintenance works at Kessock Bridge.

### **Next steps**

In recognition that there is potential for an LSE on several of the qualifying features of the designated sites, step 4 will be considered.



## Mitigation or modifications required to avoid a likely significant effect & reasons for these:

Where there is a potential LSE for a given feature then consideration of mitigation (additional measures) specific to that feature is provided in step 4.

### STEP 4: UNDERTAKE AN APPROPRIATE ASSESSMENT OF THE IMPLICATIONS FOR THE SITE IN VIEW OF ITS CONSERVATION OBJECTIVES

(It is the responsibility of the competent authority to carry out the appropriate assessment. The competent authority must consult SNH for the purposes of carrying out the appropriate assessment. SNH can provide advice on what issues should be considered in the appropriate assessment, what information is required to carry out the assessment, in some circumstances carry out an appraisal to inform an appropriate assessment and/or provide comments on an assessment carried out. Where we are providing advice to a competent authority our appraisal of the proposal should be recorded here.)

*The following points should be considered:*

- i) Describe for each qualifying interest the potential impacts of the proposal detailing which aspects or effects of the proposal could impact upon them and their conservation objectives.*
- ii) Evaluate the potential impacts, e.g. whether short/long term, reversible or irreversible, and in relation to the proportion/importance of the interest affected, and the overall effect on the site's conservation objectives. This should be in sufficient detail to ensure all impacts have been considered and sufficiently appraised. Record if additional survey information or specialist advice has been obtained.*
- iii) Each conservation objective should be considered and a decision reached as to whether the proposal will affect achievement of this objective i.e. whether the conservation objective will still be met if the proposal is consented to.*

#### **Baseline Environment**

The bridge sits on the A9 and forms part of a class A trunk road. The most recent count of traffic at the northern end of Kessock Bridge (Traffic counter point ID 80013, Department for Transport, 2017) recorded 31,691 motor vehicles over the count period, of which 1,426 were heavy goods vehicles. The number of motor vehicles that use the bridge have increased significantly over the last decade, the count in 2017 representing the highest value recorded by the DfT for this counter point.

Immediately south of the bridge is Inverness Caledonian Thistle football stadium and the Longman Industrial Estate. The waters around the bridge form part of a busy navigation channel with 20 to 50 vessel transits a week (National Marine Plan interactive (NMPi), 2018). There is a harbour and marina just south west of the bridge. The Port of Inverness is one of Scotland's most sheltered natural deep harbours, with designated anchorage areas just over one kilometre west of Kessock Bridge. The River Ness provides access to the Caledonian Canal and is thus a busy thoroughfare, particularly for recreational vessels during the summer months.

It is reasonable to assume that animals that use the areas adjacent to the bridge are habituated to the regular and continual movement of motor vehicles, marine vessels and human traffic and also used to the noise and artificial light generated by ongoing activities. Chanonry Point, approximately 10 km to the northeast of Kessock Bridge, is probably the best location to view bottlenose dolphin in the UK. The dolphins are seen almost on a daily basis, particularly in the summer months when they tend to move inshore and can be seen hunting salmon. As with the bottlenose dolphin, harbour seals are commonly seen in the Moray Firth and Beaully Firth, with seals also recorded from the River Ness.

Throughout the Moray Firth and Beaully Firth are extensive areas of intertidal habitat that provide important foraging areas for wintering birds. As advised by SNH (16th April, 2018), the wintering period for these birds runs from October to March, and therefore the overwintering birds would be expected in significant numbers during this period. The birds feed on a range of items including polychaete worms, gastropods and flora such as eelgrass and glasswort. Near the bridge there is notably low density and size of wildfowl and wader roosts, as indicated in the SNH-commissioned Report 252 'Moray Firth Wildfowl and Wader Roosts' (Swann, 2007).

The physical environment around and under the bridge consists of a deep channel that is subject to strong currents, these resulting in a coarse sandy gravel substratum. Further afield, where the currents reduce in speed, the overlying substrata is a mix of muds and sands.

## Moray Firth SAC

### Bottlenose dolphin

The population of bottlenose dolphins in the Moray Firth is currently in Favourable Recovered condition and numbers are stable and increasing on the east coast (Cheney *et al*, 2018).

A potential LSE on bottlenose dolphin was identified as a result of disturbance effects from the proposed subtidal activities of fender replacement and scour repair. These works will increase activity under the bridge with a consequential increase in human activity, underwater noise and lighting. As already detailed (step 1) there would be no overlap in the timing of the subtidal activities i.e. scour repair works will not take place at the same time as fender replacement.

The maintenance works will be constrained to the bridge itself and therefore there would be limited overlap of the works with the SAC beyond a highly localised area. Both of the subtidal activities will require sequential work at piers along the bridge, therefore at any one time during either of these activities, work will be localised to a specific pier. Therefore, during these works, a high proportion of the channel under the bridge would remain unaffected, with no obstruction to passage under the bridge.

The activities of fender replacement and scour repair are both temporary and short in duration (two months and three months respectively), with potential disturbance effects being temporary and existing for the duration of the activity only.

The greatest amount of noise will be generated during excavation of the coarse material from the base of the pier (during the scour repair activity). Excavation would be intermittent rather than continuous; however, it is assumed that vessels facilitating the work would generate a continuous, albeit low level, noise from their engines. As excavation occurs the noise generated from this work, in tandem with the vessel noise, would be slightly higher than that of the vessel noise when no excavation is occurring.

Fuel oil tankers (up to 93m length) and cargo vessels (up to 125m length) regularly transit under the bridge as do tugs and numerous recreational craft. The sound generated by the proposed excavation activity (including the vessel noise) would be comparable to the engine noise of the oil tankers, cargo vessels and tugs expected in this area. However, the noise generated by the excavation activity would remain at a specific location, unlike the noise generated by the commercial and recreational vessels navigating through the waters and under the bridge.

During the scour repair works, rock armour will be placed carefully at the base of the piers to ensure that the effects of scour are minimised. Similarly, the granular infill will also be placed carefully to ensure that voids between the rock armour are filled.

A number of adopted good practice and management measures have already been detailed for the proposed maintenance activities, including scour repair and fender replacement (see step 1). The following represents additional measures that would reduce the potential for a LSE from disturbance on the bottlenose dolphin population:

- Fender replacement and scour repair works will be programmed to occur outside of the summer months (May to August inclusive) unless there is an urgent requirement for health and safety reasons or in the case of an emergency. Where these works do overlap with the summer months then they will be minimised as much as possible.
- Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations.
- The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.
- Following cessation of fender replacement or scour repair activities on any given day, works lighting will be directed away from the water, as much as practicable.
- Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.
- Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for transit between working areas and berth point.
- Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.

### Conclusion

The activities of fender replacement and scour repair are short in duration, two months and three months respectively, and highly localised. Scour repair activity will generate the greatest potential for disturbance of bottlenose dolphins, this being a result of the underwater noise from the excavation task and vessel noise of the working platform; however, the total noise

generated is comparable to the vessel noise from large commercial vessels that regularly transit under the bridge and through the Moray Firth.

Bottlenose dolphins will be habituated to the underwater noise generated by marine traffic throughout the Moray Firth including the area around the bridge; and the presence of humans along the shores of the Moray Firth, such as at Chanonry Point but also near to the bridge.

Given the above and acknowledging the additional measures that would be adopted to reduce effects from disturbance, it is concluded that all conservation objectives would be maintained in the long-term:

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

Consideration is also given to the potential for LSE from disturbance as a result of an ‘intra’ in-combination effect of both the fender replacement and the proposed scour repair activities. These activities will not take place simultaneously and it is considered that the worst case scenario for a potential in-combination effect would be if the activities ran consecutively. However, even if this occurred, the activities would be completed within one year (likely duration of both activities combined is five months). Upon completion of the activities there would be a return to baseline noise levels and thus any potential disturbance effects are considered temporary and reversible.

Acknowledging the additional measures that would be adopted to reduce effects from disturbance it is concluded that all conservation objectives of the Moray Firth SAC would be maintained in the long-term, even if the activities of fender replacement and scour repair were to run consecutively.

Consideration is also given to the potential for LSE from disturbance as a result of an ‘inter’ in-combination effect, from the proposed scour repair at Cromarty Bridge with fender replacement and/or scour repair at Kessock Bridge. The proposed activities at Kessock (scour repair and fender replacement) also requiring work within the subtidal environment.

However, following review of detailed bathymetric data obtained in August 2018, BEAR Scotland have confirmed that scour repairs at Kessock Bridge are not currently required, however the scour protection may require future maintenance in line with inspections being carried out within the next five years. Furthermore, if scour repair work is required within the next 5 years, it would be significantly reduced in scope and duration from that which was originally discussed with SNH (April, 2018). Hence, the scour repair at Kessock is now considered a cyclic maintenance activity (it may be required in the next five years) with a maximum duration of three months. The scour repairs at Cromarty are also anticipated to be a maximum of three months, in any one year.

Following consideration of the proposed subtidal activities (fender replacement and scour repairs) at Kessock and Cromarty bridges, a worst case programme is presented in table 4.1.

Table 4.1: Programme of subtidal activities as worst case scenario

Year	Year 1	Year 2	Year 3	Year 4	Year 5
Activities	Cromarty scour	Kessock scour and Cromarty scour carried out consecutively	Kessock fender and Cromarty scour carried out consecutively	No works	No works
Duration of combined activities (months)	3/12	6/12	5/12		

Although there is potential for the scour repair works at Cromarty and Kessock to be carried out within the same 12-month period, the works would not be carried out simultaneously. Furthermore, there would be a short break in operations between the scour repairs taking place at each bridge i.e. works would not be continuous.

Similarly, fender replacement works at Kessock will not take place simultaneously with scour repair at Cromarty. Neither will fender replacement works at Kessock take place within the same 12-month period as scour repairs at Kessock. However, there is potential for scour repair at Cromarty to be consecutive with fender replacement at Kessock.

It is concluded that within a single 12-month period the worst case scenario would be if scour repairs took place at both bridges, amounting to a maximum of six months of subtidal works, with several weeks break between operations after three months (Year 2, table 4.1). Following completion of the subtidal works in Year 2, there would be approximately six months where no subtidal works (fender replacement or scour repairs) would take place.

Given the implementation of good practice and management measures (see step 1), additional measures specific to reducing the potential for disturbance on this feature (see above) and the scope and nature of the works; there would be no LSE from disturbance on bottlenose dolphin as a result of an 'inter' in-combination effect. It is concluded that all conservation objectives of the Moray Firth SAC would be maintained in the long-term.

### **Moray Firth pSPA**

A potential LSE on the following qualifying species of the Moray Firth pSPA was identified as a result of potential disturbance effects from the subtidal activities (fender replacement and scour repair):

- Eider
- Scaup
- Red-breasted merganser
- Long-tailed duck
- Great northern diver
- Red-throated diver
- Slavonian grebe

The proposed fender replacement and scour repair activities will result in an increase in human activity, underwater noise and lighting.

The works will be constrained to the bridge itself and limited overlap of the works with the pSPA beyond a highly localised area. Both activities require sequential work at piers along the bridge, therefore at any one time during either of these activities, work will be localised to a specific pier. Hence, during these works, a high proportion of the channel under the bridge would remain unaffected, with no obstruction to passage under the bridge and no overlap of works with the pSPA.

The activities of fender replacement and scour repair are both short in duration (two months and three months respectively), with disturbance effects being temporary and only existing over the duration of the activity.

The greatest amount of noise will be generated during excavation of the coarse material from the base of the pier (during the scour repair activity). Excavation would be intermittent rather than continuous; however, it is assumed that vessels facilitating the work would generate a continuous, albeit low level, noise from their engines. As excavation occurs the noise generated from this work, in tandem with the vessel noise, would be slightly higher than that of the vessel noise when no excavation is occurring.

Fuel oil tankers (up to 93m length) and cargo vessels (up to 125m length) regularly transit under the bridge as do tugs and numerous recreational craft. The sound generated by the proposed excavation activity (including the vessel noise) would be comparable to the engine noise of the oil tankers, cargo vessels and tugs expected in this area. However, the noise generated by the scour repair or fender replacement activity would remain at a specific location, unlike the noise generated by the commercial and recreational vessels navigating under the bridge.

A number of adopted good practice and management measures have already been detailed for the proposed maintenance activities, including scour repair and fender replacement (see step 1). The following represents additional measures that would reduce the potential for a LSE from disturbance on the qualifying species:

- Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations.
- The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.
- Following daily cessation of fender replacement or scour repair activity in the bird overwintering period (October to March), works lighting will be directed away from the water and intertidal areas, as much as practicable.
- During the overwintering period (October to March) lighting will be kept to a minimum
- Works will be progressive and will thus avoid lighting the whole bridge at the same time.
- Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.
- Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for transit between working areas and berth point.

- Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.
- If works are required to be carried out overnight the most disruptive activities will be scheduled for the earlier part of the evening.
- Where reasonably practicable, workers will avoid accessing the intertidal shores around the bridge at all times of the year.

## Conclusion

The activities of fender replacement and scour repair are short in duration (two months and three months respectively), and highly localised. Scour repair activity will generate the greatest potential for disturbance of wintering bird species, this being a result of the underwater and air noise from the excavation task and the vessel noise from the working platform; however, the total noise generated would be comparable to the vessel noise from large commercial vessels that regularly transit under the bridge and through the Moray Firth.

Within the Moray Firth, Kessock Bridge and the immediate surrounding area account for the greatest combined activity of motor vehicles, marine vessels and humans. Therefore, noise, light and human activity is highest in this area. Given that the wintering birds would be used to such disturbance cues, particularly in this region of the Firth, it is considered unlikely that the short in duration works of fender replacement (two months) or scour-repair (three months) would lead to a LSE. With the adoption of additional measures to reduce effects from disturbance it is concluded that the draft conservation objectives would be maintained in the long-term.

Consideration is also given to the potential for LSE from disturbance as a result of an 'intra' in-combination effect of both the fender replacement and the scour repair activities. These activities will not take place simultaneously and it is considered that the worst case scenario for a potential in-combination effect would be if the activities ran consecutively. However, even if this occurred, the activities would be completed within one year.. Upon completion of the activities there would be a return to baseline noise levels and thus any potential disturbance effects are considered temporary and reversible.

Acknowledging the additional measures that would be adopted to reduce effects from disturbance, it is concluded that all draft conservation objectives of the Moray Firth pSPA would be maintained in the long-term, even if the activities of fender replacement and scour repair were to run consecutively.

Consideration is also given to the potential for LSE from disturbance as a result of an 'inter' in-combination effect, from the proposed scour repair at Cromarty Bridge with fender replacement and/or scour repair at Kessock Bridge. The proposed activities at Kessock (scour repair and fender replacement) also requiring work within the subtidal environment.

However, following review of detailed bathymetric data obtained in August 2018, BEAR Scotland have confirmed that scour repairs at Kessock Bridge are not currently required, however the scour protection may require future maintenance in line with inspections being carried out. Furthermore, if scour repair work is required within the next 5 years, it would be significantly reduced in scope and duration from that which was originally discussed with SNH (April, 2018). Hence, the scour repair at Kessock is now considered a cyclic maintenance activity (it may be required in the next five years) with a maximum duration of three months. The scour repairs at Cromarty are also anticipated to be a maximum of three months, in any one year.

Following consideration of the proposed subtidal activities (fender replacement and scour repairs) at Kessock and Cromarty bridges, a worst case programme is presented in table 4.1.

Although there is potential for the scour repair works at Cromarty and Kessock to be carried out within the same 12-month period, the works would not be carried out simultaneously. Furthermore, there would be a short break in operations between the scour repairs taking place at each bridge i.e. works would not be continuous.

Similarly, fender replacement works at Kessock will not take place simultaneously with scour repair at Cromarty. Neither will fender replacement works at Kessock take place within the same 12-month period as scour repairs at Kessock. However, there is potential for scour repair at Cromarty to be consecutive with fender replacement at Kessock.

It is concluded that within a single 12-month period the worst case scenario would be if scour repairs took place at both bridges, amounting to a maximum of six months of subtidal works, with several weeks break between operations after three months (Year 2, table 4.1). Following completion of the subtidal works in Year 2, there would be approximately six months where no subtidal works (fender replacement or scour repairs) would take place.

Given the implementation of good practice and management measures (see step 1), additional measures specific to reducing the potential for disturbance on this feature (see above) and the scope and nature of the works; there would be no LSE from disturbance on non-breeding qualifying species of the Moray Firth pSPA, as a result of an 'inter' in-combination effect. It is concluded that all draft conservation objectives of the Moray Firth pSPA would be maintained in the long-term.

## **Inner Moray Firth SPA and Ramsar Site**

Although the bridge does not overlap with the SPA and Ramsar, a potential LSE on the following qualifying species of the Inner Moray Firth SPA and Ramsar was identified as a result of potential disturbance effects from the subtidal activities (fender replacement and scour repair):

- Scaup
- Teal
- Goosander
- Red-breasted merganser

The proposed fender replacement and scour repair activities will result in an increase in human activity, underwater noise and lighting.

The works will be constrained to the bridge itself and therefore will not overlap with the Inner Moray Firth SPA and Ramsar. Both activities require sequential work at piers along the bridge, therefore at any one time during either of these activities, work will be localised to a specific pier. Hence, during these works, a high proportion of the channel under the bridge would remain unaffected, with no obstruction to passage under the bridge and only a highly localised area of the water within the shadow of the activity.

The activities of fender replacement and scour repair are both short. in duration (two months and three months respectively), with disturbance effects being temporary and only existing over the duration of the activity.

The greatest amount of noise will be generated during excavation as part of the scour repair activity. Excavation would be intermittent rather than continuous; however, it is assumed that vessels facilitating the work would generate a continuous, albeit low level, noise from their engines. As excavation occurs the noise generated from this work, in tandem with the vessel noise, would be slightly higher than that of the vessel noise when no excavation is occurring.

Fuel oil tankers (up to 93m length) and cargo vessels (up to 125m length) regularly transit under the bridge as do tugs and numerous recreational craft. The maximum sound generated by the proposed excavation activity (including the vessel noise) would be comparable to the engine noise of the oil tankers, cargo vessels and tugs expected in this area. However, the noise generated by the scour repair or fender replacement activity would remain at a specific location, unlike the noise generated by the commercial and recreational vessels navigating under the bridge.

A number of adopted good practice and management measures have already been detailed for the proposed maintenance activities, including scour repair and fender replacement (see step 1). The following represents additional measures that would reduce the potential for a LSE from disturbance on the qualifying species:

- Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations.
- The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.
- Following daily cessation of fender replacement or scour repair activity in the bird overwintering period (October to March), works lighting will be directed away from the water and intertidal areas, as much as practicable.
- During the overwintering period (October to March) lighting will be kept to a minimum
- Works will be progressive and will thus avoid lighting the whole bridge at the same time.
- Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.
- Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for transit between working areas and berth point.
- Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.
- If works are required to be carried out overnight the most disruptive activities will be scheduled for the earlier part of the evening.
- Where reasonably practicable, workers will avoid accessing the intertidal shores around the bridge at all times of the year.

## **Conclusion**

The activities of fender replacement and scour repair are short in duration (two months and three months respectively), and highly localised. Scour repair activity will generate the greatest potential for disturbance of wintering bird species, this being a result of the underwater and air noise from the excavation task and the vessel noise from the working platform; however, the total noise generated would be comparable to the vessel noise from large commercial vessels that regularly transit under the bridge and through the Moray Firth.

Within the Moray Firth, Kessock Bridge, along with the immediate surrounding area, account for the greatest combined activity of motor vehicles, marine vessels and humans. Therefore, noise, light and human activity is highest in this area. Given that the overwintering birds would be habituated to such disturbance cues, particularly in this region of the Moray Firth, it is considered unlikely that the short duration works of fender replacement and/or scour-repair would lead to a LSE.

Given the above and acknowledging the additional measures that would be adopted to reduce effects from disturbance it is concluded that all conservation objectives would be maintained in the long-term:

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

Consideration is also given to the potential for LSE from disturbance as a result of an 'intra' in-combination effect of both the fender replacement and the scour repair activities. These activities will not take place simultaneously and it is considered that the worst case scenario for a potential in-combination effect would be if the activities ran consecutively. However, even if this occurred, the activities would be completed within one year. Upon completion of the activities there would be a return to baseline noise levels and thus any potential disturbance effects are considered temporary and reversible.

Acknowledging the additional measures that would be adopted to reduce effects from disturbance, it is concluded that all conservation objectives of the Inner Moray Firth SPA and Ramsar would be maintained in the long-term, even if the activities of fender replacement and scour repair were to run consecutively.

Consideration is also given to the potential for LSE from disturbance as a result of an 'inter' in-combination effect, from the proposed scour repair at Cromarty Bridge with fender replacement and/or scour repair at Kessock Bridge. The proposed activities at Kessock (scour repair and fender replacement) also requiring work within the subtidal environment.

However, following review of detailed bathymetric data obtained in August 2018, BEAR Scotland have confirmed that scour repairs at Kessock Bridge are not currently required, however the scour protection may require future maintenance in line with inspections being carried out. Furthermore, if scour repair work is required within the next 5 years, it would be significantly reduced in scope and duration from that which was originally discussed with SNH (April, 2018). Hence, the scour repair at Kessock is now considered a cyclic maintenance activity (it may be required in the next five years) with a maximum duration of three months. The scour repairs at Cromarty are also anticipated to be a maximum of three months, in any one year.

Following consideration of the proposed subtidal activities (fender replacement and scour repairs) at Kessock and Cromarty bridges, a worst case programme is presented in table 4.1.

Although there is potential for the scour repair works at Cromarty and Kessock to be carried out within the same 12-month period, the works would not be carried out simultaneously. Furthermore, there would be a short break in operations between the scour repairs taking place at each bridge i.e. works would not be continuous.

Similarly, fender replacement works at Kessock will not take place simultaneously with scour repair at Cromarty. Neither will fender replacement works at Kessock take place within the same 12-month period as scour repairs at Kessock. However, there is potential for scour repair at Cromarty to be consecutive with fender replacement at Kessock.

It is concluded that within a single 12-month period the worst case scenario would be if scour repairs took place at both bridges, amounting to a maximum of six months of subtidal works, with several weeks break between operations after three months (Year 2, table 4.1). Following completion of the subtidal works in Year 2, there would be approximately six months where no subtidal works (fender replacement or scour repairs) would take place.

Given the implementation of good practice and management measures (see step 1), additional measures specific to reducing the potential for disturbance on this feature (see above) and the scope and nature of the works; there would be no LSE from disturbance on wintering birds as a result of an 'inter' in-combination effect. It is concluded that all conservation objectives of the Inner Moray Firth SPA and Ramsar would be maintained in the long-term.

## **River Moriston SAC**

A potential LSE on the following qualifying species of the River Moriston SAC was identified as a result of potential disturbance effects from the subtidal activities (fender replacement and scour repair):

- Atlantic salmon
- Freshwater pearl mussel

The proposed fender replacement and scour repair activities will result in an increase in human activity, underwater noise and lighting.

The works will be constrained to the bridge itself, which is approximately 40km away from the SAC. Both activities require sequential work at piers along the bridge, therefore at any one time during either of these activities, work will be localised to a specific pier. Hence, during these works, a high proportion of the channel under the bridge would remain unaffected, with no obstruction to passage by Atlantic salmon under the bridge.

The activities of fender replacement and scour repair are both short in duration (two months and three months respectively), with disturbance effects being temporary and only existing over the duration of the activity.

The greatest amount of noise will be generated during excavation of the coarse material from the base of the pier (during the scour repair activity). Excavation would be intermittent rather than continuous; however, it is assumed that vessels facilitating the work would generate a continuous, albeit low level, noise from their engines. As excavation occurs the noise generated from this work, in tandem with the vessel noise, would be slightly higher than that of the vessel noise when no excavation is occurring.

Fuel oil tankers (up to 93m length) and cargo vessels (up to 125m length) regularly transit under the bridge as do tugs and numerous recreational craft. The sound generated by the proposed excavation activity (including the vessel noise) would be comparable to the engine noise of the oil tankers, cargo vessels and tugs expected in this area. However, the noise generated by the scour repair or fender replacement activity would remain at a specific location, unlike the noise generated by the commercial and recreational vessels navigating under the bridge.

A number of adopted good practice and management measures have already been detailed for the proposed maintenance activities, including scour repair and fender replacement (see step 1). The following represents additional measures that would reduce the potential for a LSE from disturbance on the qualifying species:

- Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations. This will allow a minimum of 12 hours in every 24-hour period when no subtidal activities (scour repair and fender replacement) will be carried out.
- Fender replacement and scour repair works will be programmed, where feasible to do so, to take place outside the period March to June when the majority of migration takes place.
- Should fender replacement or scour repair work be required to take place during May and June then these activities will not take place during the weekend unless there is an urgent need to do so.
- The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.
- Following cessation of fender replacement or scour repair activities on any given day, works lighting will be directed away from the water, as much as practicable.
- Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.
- Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for transit between working areas and berth point.
- Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.

## **Conclusion**

The activities of fender replacement and scour repair are short in duration and highly localised. Scour repair activity will generate the greatest potential for disturbance of Atlantic salmon, this being a result of the underwater noise from the excavation task and the vessel noise from the working platform; however, the total noise generated would be comparable to the vessel noise from large commercial vessels that regularly transit under the bridge and through the Moray Firth.

Within the Moray Firth, Kessock Bridge and the immediate surrounding area account for the greatest combined activity of motor vehicles, marine vessels and humans. Therefore, noise, light and human activity is highest in this area. Given that



migrating Atlantic salmon regularly experience such disturbance cues, particularly in this region of the Moray Firth, it is considered unlikely that the short in duration works of fender replacement or scour-repair would lead to a LSE.

Given the above and acknowledging the additional measures that would be adopted to reduce effects from disturbance it is concluded that all conservation objectives of the River Moriston SAC would be maintained in the long-term:

- Population of the species, including range of genetic types for salmon, as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species
- Distribution and viability of freshwater pearl mussel host species
- Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species

Consideration is also given to the potential for LSE from disturbance as a result of an 'intra' in-combination effect of both the fender replacement and the scour repair activities. These activities will not take place simultaneously and it is considered that the worst case scenario for a potential in-combination effect would be if the activities ran consecutively. However, even if this occurred, the activities would be completed within one year. Upon completion of the activities there would be a return to baseline noise levels and thus any potential disturbance effects are considered temporary and reversible.

Acknowledging the additional measures that would be adopted to reduce effects from disturbance, it is concluded that all draft conservation objectives of the River Moriston SAC would be maintained in the long-term.

### **Dornoch Firth and Morrich More SAC**

A potential LSE on harbour seal was identified as a result of disturbance effects from the subtidal activities of fender replacement and scour repair. These works will increase activity under the bridge with a consequential increase in human activity, underwater noise and lighting.

The works will be constrained to the bridge itself and therefore there will no overlap of the works with the SAC, which is located more than 30km north-east of the bridge. However, as the harbour seals using the Beaully Firth are within 50 km of the Dornoch Firth and Moray More SAC, there is potential connectivity between these sites. Designated seal haul-out zones are located in the Beaully Firth, to the west of the Kessock Bridge.

The scour repair and fender replacement activities require sequential work at piers along the bridge, therefore at any one time during either of these activities, work will be localised to a specific pier. Therefore, during these works, a high proportion of the channel under the bridge would remain unaffected, with no obstruction to passage under the bridge.

The activities of fender replacement and scour repair are both short in duration (two months and three months respectively), with disturbance effects being temporary and only existing over the duration of the activity.

The greatest amount of noise will be generated during excavation of the coarse material from the base of the pier (during the scour repair activity). Excavation would be intermittent rather than continuous; however, it is assumed that vessels facilitating the work would generate a continuous, albeit low level, noise from their engines. As excavation occurs the noise generated from this work, in tandem with the vessel noise, would be slightly higher than that of the vessel noise when no excavation is occurring.

Fuel oil tankers (up to 93m length) and cargo vessels (up to 125m length) regularly transit under the bridge as do tugs and numerous recreational craft. The maximum sound generated by the proposed excavation activity (including the vessel noise) would be comparable to the engine noise of the oil tankers, cargo vessels and tugs expected in this area. However, the noise generated by the scour repair or fender replacement activity would remain at a specific location, unlike the noise generated by the commercial and recreational vessels navigating under the bridge.

A number of adopted good practice and management measures have already been detailed for the proposed maintenance activities, including scour repair and fender replacement (see step 1). The following represents additional measures that would reduce the potential for a LSE from disturbance on harbour seal:

- Fender replacement and scour repair works will be programmed to occur outside of the summer months (May to August inclusive) unless there is an urgent requirement for health and safety reasons or in the case of an emergency. Where these works do overlap with the summer months then they will be minimised as much as possible.
- Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations.

- The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.
- Following cessation of fender replacement or scour repair activities on any given day, works lighting will be directed away from the water, as much as practicable.
- Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.
- Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for transit between working areas and berth point.
- Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.

### Conclusion

The activities of fender replacement and scour repair are short in duration and highly localised. Scour repair activity will generate the greatest potential for disturbance of harbour seal, this being a result of the underwater noise from the excavation task and vessel noise of the working platform; however, the total noise generated is comparable to the vessel noise from large commercial vessels that regularly transit under the bridge and through the Moray Firth.

The harbour seals will be habituated to the underwater noise generated by marine traffic throughout the Moray Firth including the area around the bridge; and the presence of humans along the shores of the Moray Firth. It is also noted that harbour seals are regularly seen around the mouth of the River Ness, this area being adjacent to the Longman Industrial Estate, a marina and the harbour.

Given the above and acknowledging the additional measures that would be adopted to reduce effects from disturbance it is concluded that all conservation objectives would be maintained in the long-term:

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

Consideration is also given to the potential for LSE from disturbance as a result of an 'intra' in-combination effect of both the fender replacement and the scour repair activities. These activities will not take place simultaneously and it is considered that the worst case scenario for a potential in-combination effect would be if the activities ran consecutively. However, even if this occurred, the activities would be completed within one year. Upon completion of the activities there would be a return to baseline noise levels and thus any potential disturbance effects are considered temporary and reversible.

Acknowledging the additional measures that would be adopted to reduce effects from disturbance it is concluded that all conservation objectives of the Dornoch Firth and Morrich More SAC would be maintained in the long-term, even if the activities of fender replacement and scour repair were to run consecutively at Kessock Bridge.

Consideration is also given to the potential for LSE from disturbance as a result of an 'inter' in-combination effect, from the proposed scour repair at Cromarty Bridge with fender replacement and/or scour repair at Kessock Bridge. The proposed activities at Kessock (scour repair and fender replacement) also requiring work within the subtidal environment.

However, following review of detailed bathymetric data obtained in August 2018, BEAR Scotland have confirmed that scour repairs at Kessock Bridge are not currently required, however the scour protection may require future maintenance in line with inspections being carried out. Furthermore, if scour repair work is required within the next 5 years, it would be significantly reduced in scope and duration from that which was originally discussed with SNH (April, 2018). Hence, the scour repair at Kessock is now considered a cyclic maintenance activity (it may be required in the next five years) with a maximum duration of three months. The scour repairs at Cromarty are also anticipated to be a maximum of three months, in any one year.

Following consideration of the proposed subtidal activities (fender replacement and scour repairs) at Kessock and Cromarty bridges, a worst case programme is presented in table 4.1.

Although there is potential for the scour repair works at Cromarty and Kessock to be carried out within the same 12-month period, the works would not be carried out simultaneously. Furthermore, there would be a short break in operations between the scour repairs taking place at each bridge i.e. works would not be continuous.

Similarly, fender replacement works at Kessock will not take place simultaneously with scour repair at Cromarty. Neither will fender replacement works at Kessock take place within the same 12-month period as scour repairs at Kessock. However, there is potential for scour repair at Cromarty to be consecutive with fender replacement at Kessock.

It is concluded that within a single 12-month period the worst case scenario would be if scour repairs took place at both bridges, amounting to a maximum of six months of subtidal works, with several weeks break between operations after three months (Year 2, table 4.1). Following completion of the subtidal works in Year 2, there would be approximately six months where no subtidal works (fender replacement or scour repairs) would take place.

Given the implementation of good practice and management measures (see step 1), additional measures specific to reducing the potential for disturbance on this feature (see above) and the scope and nature of the works; there would be no LSE from disturbance on harbour seal as a result of an 'inter' in-combination effect. It is concluded that all conservation objectives of the Dornoch Firth and Morrich More SAC would be maintained in the long-term.

**STEP 5: CAN IT BE ASCERTAINED THAT THE PROPOSAL WILL NOT ADVERSELY AFFECT THE INTEGRITY OF THE SITE?**

*In the light of the appraisal, ascertain whether the proposal will not adversely affect the integrity of the site for the qualifying interests. Conclusions should be reached beyond reasonable scientific doubt. If more than one SAC and/or SPA is involved, give separate conclusions. If mitigation or modifications are required, detail these below.*

**Moray Firth SAC**

Acknowledging the implementation of mitigation (additional measures) specific to reducing the potential for effects on bottlenose dolphins, it is concluded that the works will not lead to an adverse effect on site integrity of the Moray Firth SAC. Consideration has been given to the proposal either alone or in-combination with other activities, projects or plans, with respect to the site's structure, function and conservation objectives.

As none of the conservation objectives of the site would be adversely affected by the proposal, the integrity of the Moray Firth SAC would thus be maintained and not adversely affected.

**Moray Firth pSPA**

Acknowledging the implementation of mitigation (additional measures) specific to reducing the potential for effects on wintering birds, it is concluded that the works will not lead to an adverse effect on site integrity of the Moray Firth pSPA. Consideration has been given to the proposal either alone or in-combination with other activities, projects or plans, with respect to the site's structure, function and conservation objectives.

As none of the draft conservation objectives of the site would be adversely affected by the proposal, the integrity of the Moray Firth pSPA would thus be maintained and not adversely affected.

**Inner Moray Firth SPA and Ramsar Site**

Acknowledging the implementation of mitigation (additional measures) specific to reducing the potential for effects on wintering birds, it is concluded that the works will not lead to an adverse effect on site integrity of the Inner Moray Firth SPA and Ramsar. Consideration has been given to the proposal either alone or in-combination with other activities, projects or plans, with respect to the site's structure, function and conservation objectives.

As none of the conservation objectives of the site would be adversely affected by the proposal, the integrity of the Inner Moray Firth SPA and Ramsar would thus be maintained and not adversely affected.

**River Moriston SAC**

Acknowledging the implementation of mitigation (additional measures) specific to reducing the potential for effects on Atlantic salmon and freshwater pearl mussel, it is concluded that the works will not lead to an adverse effect on site integrity of the River Moriston SAC. Consideration has been given to the proposal either alone or in-combination with other activities, projects or plans, with respect to the site's structure, function and conservation objectives.

As none of the conservation objectives of the site would be adversely affected by the proposal, the integrity of the River Moriston SAC would thus be maintained and not adversely affected.

**Dornoch Firth and Morrich More SAC**

Acknowledging the implementation of mitigation (additional measures) specific to reducing the potential for effects on harbour seal, it is concluded that the works will not lead to an adverse effect on site integrity of the Dornoch Firth and Morrich More SAC. Consideration has been given to the proposal either alone or in-combination with other activities, projects or plans, with respect to the site's structure, function and conservation objectives.

As none of the conservation objectives of the site would be adversely affected by the proposal, the integrity of the Dornoch Firth and Morrich More SAC would thus be maintained and not adversely affected.

**Mitigation or modifications required to ensure adverse effects are avoided, & reasons for these.**

<p>Mitigation:</p> <p><b><u>Moray Firth SAC</u></b></p> <ul style="list-style-type: none"> <li>• Fender replacement and scour repair works will be programmed, where feasible, to take place outside the summer months (June to August inclusive) to avoid the bottlenose dolphin breeding season.</li> <li>• Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations.</li> <li>• The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.</li> <li>• Following cessation of fender replacement or scour repair activities on any given day, works lighting will be directed away from the water, as much as practicable.</li> <li>• Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.</li> <li>• Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for transit between working areas and berth point.</li> <li>• Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.</li> </ul>	<p>Reason:</p> <p>To ensure that the Conservation Objectives for bottlenose dolphin are maintained:</p> <p><i>To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and</i></p> <p><i>To ensure for the qualifying species that the following are established then maintained in the long term:</i></p> <ul style="list-style-type: none"> <li>➤ <i>Population of the species as a viable component of the site</i></li> <li>➤ <i>Distribution of the species within site</i></li> <li>➤ <i>Distribution and extent of habitats supporting the species</i></li> <li>➤ <i>Structure, function and supporting processes of habitats supporting the species</i></li> <li>➤ <i>No significant disturbance of the species</i></li> </ul>
<p><b><u>Moray Firth pSPA</u></b></p> <ul style="list-style-type: none"> <li>• Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations.</li> <li>• The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.</li> <li>• Following daily cessation of fender replacement or scour repair activity in the bird overwintering period (October to March), works lighting will be directed away from the water and intertidal areas, as much as practicable.</li> </ul>	<p>To ensure the draft Conservation Objectives for the proposed qualifying features of the Moray Firth pSPA, specifically wintering bird populations, are maintained:</p> <p><i>To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, subject to natural change, thus ensuring that the integrity of the site is maintained in the long-term and it continues to make an appropriate contribution to achieving the aims of the Birds Directive for each of the qualifying species.</i></p> <p><i>This contribution will be achieved through delivering the following objectives for each of the site's qualifying features:</i></p>

<ul style="list-style-type: none"> <li>• During the overwintering period (October to March) lighting will be kept to a minimum</li> <li>• Works will be progressive and will thus avoid lighting the whole bridge at the same time.</li> <li>• Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.</li> <li>• Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for transit between working areas and berth point.</li> <li>• Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.</li> <li>• If works are required to be carried out overnight the most disruptive activities will be scheduled for the earlier part of the evening.</li> <li>• Where reasonably practicable, workers will avoid accessing the intertidal shores around the bridge at all times of the year.</li> </ul>	<ul style="list-style-type: none"> <li>a) <i>Avoid significant mortality, injury and disturbance of the qualifying features, so that the distribution of the species and ability to use the site are maintained in the long-term;</i></li> <li>b) <i>To maintain the habitats and food resources of the qualifying features in favourable condition.</i></li> </ul>
<p><b><u>Inner Moray Firth SPA and Ramsar</u></b></p> <ul style="list-style-type: none"> <li>• Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations.</li> <li>• The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.</li> <li>• Following daily cessation of fender replacement or scour repair activity in the bird overwintering period (October to March), works lighting will be directed away from the water and intertidal areas, as much as practicable.</li> <li>• During the overwintering period (October to March) lighting will be kept to a minimum</li> <li>• Works will be progressive and will thus avoid lighting the whole bridge at the same time.</li> <li>• Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.</li> <li>• Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for</li> </ul>	<p>To ensure the Conservation Objectives for the qualifying features of the Inner Moray Firth SPA, specifically wintering bird populations, are maintained:</p> <p><i>To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and</i></p> <p><i>To ensure for the qualifying species that the following are maintained in the long term:</i></p> <ul style="list-style-type: none"> <li>➤ <i>Population of the species as a viable component of the site</i></li> <li>➤ <i>Distribution of the species within site</i></li> <li>➤ <i>Distribution and extent of habitats supporting the species</i></li> <li>➤ <i>Structure, function and supporting processes of habitats supporting the species</i></li> <li>➤ <i>No significant disturbance of the species</i></li> </ul>

transit between working areas and berth point.

- Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.
- If works are required to be carried out overnight the most disruptive activities will be scheduled for the earlier part of the evening.
- Where reasonably practicable, workers will avoid accessing the intertidal shores around the bridge at all times of the year.

#### **River Moriston SAC**

- Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations. This will allow a minimum of 12 hours in every 24 hour period when no subtidal activities (scour repair and fender replacement) will be carried out.
- Fender replacement and scour repair works will be programmed, where feasible to do so, to take place outside the months of May and June when majority of migration takes place.
- Should fender replacement or scour repair work be required to take place during May and June then these activities will not take place during the weekend unless there is an urgent need to do so.
- The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.
- Following cessation of fender replacement or scour repair activities on any given day, works lighting will be directed away from the water, as much as practicable.
- Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.
- Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for transit between working areas and berth point.
- Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.

To ensure that the Conservation Objectives for Atlantic salmon and freshwater pearl mussel are maintained:

*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:*

- *Population of the species, including range of genetic types for salmon, as a viable component of the site*
- *Distribution of the species within site*
- *Distribution and extent of habitats supporting the species*
- *Structure, function and supporting processes of habitats supporting the species*
- *No significant disturbance of the species*
- *Distribution and viability of freshwater pearl mussel host species*
- *Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species*

#### **Dornoch Firth and Morrich More SAC**

<ul style="list-style-type: none"> <li>• Fender replacement and scour repair works will be programmed, where feasible, to take place outside the summer months (June to August inclusive) to avoid the harbour seal breeding season.</li> <li>• Normal working operations of the scour repair and fender replacement activities will take place between the hours of 07:00 to 19:00, unless there is an urgent need to extend operations.</li> <li>• The scour repair activity will be preceded by a 'soft start' in general activities, thus allowing a 'ramping-up' of noise levels.</li> <li>• Following cessation of fender replacement or scour repair activities on any given day, works lighting will be directed away from the water, as much as practicable.</li> <li>• Vessels used for the works are to maintain constant speed and direction when transiting between working areas and berth point, unless otherwise required for reasons of safe navigation.</li> <li>• Vessels used for the works will adhere to set routes (in accordance with the general requirements of the Port of Inverness) for transit between working areas and berth point.</li> <li>• Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code.</li> </ul>	<p>To achieve the Conservation Objectives for harbour seal are maintained:</p> <p><i>To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and</i></p> <p><i>To ensure for the qualifying species that the following are maintained in the long term:</i></p> <ul style="list-style-type: none"> <li>➤ <i>Population of the species a viable component of the site</i></li> <li>➤ <i>Distribution of the species within site</i></li> <li>➤ <i>Distribution and extent of habitats supporting the species</i></li> <li>➤ <i>Structure, function and supporting processes of habitats supporting the species</i></li> <li>➤ <i>No significant disturbance of the species</i></li> </ul>
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## References

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NMPi (2018). Marine Scotland - National Marine Plan Interactive. Available from <http://www.gov.scot/Topics/marine/seamanagement/nmpihome> [Accessed 02/07/18].

Scottish Natural Heritage (2016). Moray Firth proposed Special Protection Area: Advice to Support Management.

Swann, B., (2007). North of Scotland Ornithological Services. Moray Firth Wildfowl and Wader Roosts. Scottish Natural Heritage Commissioned Report No.252 (ROAME No. F098LG02).

## APPENDIX A

Copy of correspondence with Redacted following e-mail sent to SNH on 07/03/2018

**From:** Redacted  
**Sent:** 04 April 2018 17:13  
**To:** Redacted  
**Subject:** RE: A9 Kessock Bridge 5 year Marine Licence - pre-application HRA consultation

Dear Red

Many thanks for your e-mail below.

We offer the following advice:

- The [Moray Firth potential Special Protection Area](#) should be scoped in to the HRA. LSE, yes. Screen in, yes.
- Most of the proposed works will be carried out above MHWS and the mitigation measures described should ensure that no materials or pollution will enter the Moray Firth. For all works above MHWS the position outlined in the attached response dated 22 January 2016 apply.
- Two of the proposed operations (i.e. 4.1.1 Fender replacement and 4.1.5 Scour Repairs) will be carried out below MHWS. For these operations there is LSE for the Moray Firth SAC (dolphin interest) and the River Moriston SAC (Atlantic salmon and freshwater pearl mussel interest) for the reasons you have stated in the HRA screening spreadsheet. We advise that the Dornoch Firth and Morrich More SAC (common seal interest) is also LSE, yes and Screen in, yes for these operations. This is because there is connectivity between seals in the Dornoch Firth and the Beaully Firth.

I hope these comments are helpful but if you have any questions then please contact me.

Best regards,

Re

Redacted | **Operations Officer**  
Scottish Natural Heritage | Dingwall | Fodderty Way | Dingwall Business Park | Dingwall | IV15 9XB | t:  
Redacted | Redacted | Redacted  
Inbhir Pheofharain | Slighe Fhodhraitidh | Pàirc Gnothachais | Inbhir Pheofharain | Inbhir Pheofharain |  
IV15 9XB  
[nature.scot](#) – *Connecting People and Nature in Scotland* – [@nature\\_scot](#)

**From:** Redacted  
**Sent:** 07 March 2018 15:56  
**To:** SOUTH\_HIGHLAND  
**Subject:** A9 Kessock Bridge 5 year Marine Licence - pre-application HRA consultation

Good afternoon,

BEAR Scotland have been commissioned by Transport Scotland to apply for a 5 year Marine Licence to cover a 5 year programme of maintenance works on the A9 Kessock Bridge, Inverness. The Bridge spans and has connectivity with several Natura 2000 sites and a Ramsar site, listed below along with their qualifying interests. As part of the pre-application process, a Habitats Regulations Appraisal has been carried out to determine whether any of the activities planned could have a likely significant effect on any of the qualifying interests of the relevant sites.

### **Description of Works**

Various maintenance activities will take place over the next 5 years during all times of the year with some work possible being required during night-time hours (see attached programme). Different

activities will take place above and below MHWS with some required to be carried out in the sub-tidal zone, specifically piling and scour repair.



### **Designated sites**

1. Moray Firth Special Area of Conservation (SAC) – qualifying interests of:
  - Subtidal sandbanks,
  - Bottlenose dolphin (*Tursiops truncatus*)
  
2. Inner Moray Firth Special Protection Areas (SPA) – qualifying interests of:
  - Bar-tailed godwit (*Limosa lapponica*) non-breeding
  - Common tern (*Sterna hirundo*) breeding
  - Cormorant (*Phalacrocorax carbo*) non-breeding
  - Curlew (*Numenius arquata*) non-breeding
  - Goldeneye (*Bucephala clangula*) non-breeding
  - Goosander (*Mergus merganser*) non-breeding
  - Greylag goose (*Anser anser*) non-breeding
  - Osprey (*Pandion haliaetus*) breeding
  - Oystercatcher (*Haematopus ostralegus*) non-breeding
  - Red-breasted merganser (*Mergus serrator*) non-breeding
  - Redshank (*Tringa totanus*)
  - Scaup (*Aythya marila*) non-breeding
  - Teal (*Anas crecca*) non-breeding
  - Waterfowl assemblage non-breeding
  - Wigeon (*Anas Penelope*) non-breeding
  
3. Inner Moray Firth Ramsar Site – qualifying interests of:
  - Bar-tailed godwit (*Limosa lapponica*) non-breeding
  - Greylag goose (*Anser anser*) non-breeding
  - Intertidal mudflats and sandflats
  - Red-breasted merganser (*Mergus serrator*) non-breeding
  - Redshank (*Tringa totanus*) non-breeding
  - Saltmarsh
  - Sand dune
  - Shingle
  - Waterfowl assemblage, non-breeding
  
4. Dornoch Firth and Morrich More SAC – qualifying interests of:
  - Subtidal sandbanks

- Atlantic salt meadows
  - Glasswort and other annuals colonising mud and sand
  - Estuaries
  - Intertidal mudflats and sandflats
  - Otter (*Lutra lutra*)
  - Harbour seal (*Phoca vitulina*)
  - Dunes with juniper thickets
  - Shifting dunes
  - Dune grassland
  - Shifting dunes with marram
  - Coastal dune heathland
  - Humid dune slacks
  - Lime-deficient dune heathland with crowberry
5. River Moriston SAC – qualifying interests of:
- Atlantic salmon (*Salmo salar*)
  - Freshwater pearl mussel (*Margaritifera margaritifera*)

Please find attached a spreadsheet to show the screening stage for 'likely significant effect' for the above qualifying interests. I'd appreciate it if you could confirm whether SNH are in agreement with this. For information, the environment team at BEAR Scotland will produce a Statement to Inform Appropriate Assessment on behalf of Transport Scotland as the competent authority for roads projects.

If you need to discuss further, please do not hesitate to contact me on the number below. I look forward to hearing from you in due course.

Kind regards,  
Red

Redacted **MSc. CEnv MCIEEM**  
**Environmental Manager**  
**BEAR Scotland | North West Unit**

**Copy of correspondence with Redacted Ness District Salmon Fishery Board 19/04/2018**

**From:** Redacted  
**Sent:** 19 March 2018 12:12  
**To:** Redacted  
**Subject:** A9 Kessock Bridge 5-year Maintenance Activities Programme

Good morning Red

BEAR Scotland have been commissioned by Transport Scotland to carry out a 5-year programme of maintenance works at the A9 Kessock Bridge, Inverness (see below).



### **Description of Works**

Various maintenance activities will take place over the next 5 years during all times of the year with some work possible being required during night-time hours. Different activities will take place above and below MHWS with some required to be carried out in the sub-tidal zone, specifically scour repair. The specific activities are as follows:

- Bridge fender replacement and scour repair schemes;
- Cyclic maintenance activities of gully and drainage cleaning, joint renewal, pressure washing, cleaning and painting the bridge superstructure, bird guano removal;
- Investigations of the bridge via static and mobile access platforms beneath the bridge.

Scour repair works will entail excavating and side-casting sea bed material around the piers at the navigational channel and placing rock in these locations to maintain the bed integrity. BEAR are applying for a 5 year Marine Licence to authorise these works and we are also in consultation with SNH regarding Habitats Regulations Appraisal.

Programme details for the scour works are not currently known, but every effort will be made to programme these works to avoid the main salmon smolt run period. Could you confirm that for the Ness, Moriston and Beaully systems that the main run is in March?

Please do not hesitate to contact me with any further concerns/comments from a fisheries perspective and I'll feed these back to our engineers so that we can plan for minimal impact on migratory salmonids.

Kind regards,  
Red

Redacted **MSc. CEnv MCIEEM**  
**Environmental Manager**  
**BEAR Scotland | North West Unit**

**From:** Redacted  
**Sent:** 30 May 2018 14:18  
**To:** Redacted  
**Subject:** A9 Kessock Bridge 5-year Maintenance Activities Programme

Dear Red

Apologies for the delay getting back to you on this.

Salmon and sea trout smolts migrate through the Ness and Beaully systems from March through to June. We therefore ask that no instream works are carried out before the 1<sup>st</sup> July. This will minimise the potential for any adverse impacts on the smolts as they gather in the estuary and pass by the bridge.

All the best

Red

## APPENDIX B

Initial screening table sent to SNH in March 2018. Since this time further consideration of the potential for LSE has been made to acknowledge changes to the proposal scope along with good practice and management measures specific to pollution.

Likely Significant Effect screening - A9 Kessock Bridge 5 yr Marine Licence								
Natura Site	Distance from site	Qualifying feature/interest	Species/habitat potentially impacted	Nature of impact	LSE?	Screen in?	Comments	Potential in-combination effects from future projects/plans
Moray Firth SAC	Works span the designated site	Bottlenose dolphin ( <i>Tursiops truncatus</i> )	Bottlenose dolphin ( <i>Tursiops truncatus</i> )	Disturbance from underwater noise as a result of piling, presence of barges and other vessels. Pollution.	Yes	Yes	Bridge fenders will need to be removed and underwater piling works will be carried out as part of the 5 year maintenance programme for the bridge. LSE if dolphins are present in this area. An EPS licence to disturb cetaceans may be required for these works. Potential pollution of the marine environment during grit-blasting, pressure washing and painting the bridge.	None known but the channel is used for navigation. Inverness Port Authority do not dredge this channel.
	Works span the designated site	Subtidal sandbanks	Subtidal sandbanks	Pollution.	No	No	Scour repairs are planned as part of the 5 year maintenance programme. Some excavation around the bridge piers will be needed but will be confined to around the piers only. The focused nature and small scale of these activities is unlikely to cause LSE on the subtidal	Same as above.

Inner Moray Firth SPA	3 km west of bridge, 1.5 km east of bridge	Birds - aggregations of breeding birds	Common tern ( <i>Sterna hirundo</i> ), Osprey ( <i>Pandion haliaetus</i> )	Disturbance from noise and proximity of people, machinery, vessels. Pollution.	Uncertain	Yes	Maintenance programme will take place at all times of year for 5 years. Ospreys are unlikely to be breeding in the immediate surroundings of the Firth, more likely to be in locations on the Black Isle but they have been observed feeding in the Firth previously. Likelihood that birds will be accustomed to existing level of disturbance from traffic on the trunk road and vessels entering/leaving Inverness Harbour. LSE unlikely but screened in as a	None known.
		Birds - aggregations of non-breeding birds	Bar-tailed godwit ( <i>Limosa lapponica</i> ), Cormorant ( <i>Phalacrocorax carbo</i> ), Curlew ( <i>Numenius arquata</i> ), Goldeneye ( <i>Bucephala clangula</i> ), Goosander ( <i>Mergus merganser</i> ), Greylag goose ( <i>Anser anser</i> ), Oystercatcher ( <i>Haematopus ostralegus</i> ), Red-breasted merganser ( <i>Mergus serrator</i> ), Redshank ( <i>Tringa totanus</i> ), Scaup ( <i>Aythya marila</i> ), Teal ( <i>Anas crecca</i> ), Wigeon ( <i>Anas penelope</i> ), Waterfowl assemblage	Disturbance from noise, proximity of people, machinery, vessels. Pollution.	Uncertain	Yes	Maintenance programme will include painting, grit-blasting and pressure-washing the bridge. Containment measures will be used to prevent pollution reaching the aquatic environment and sediments. LSE on wading birds unlikely, but screened in as a precaution. Likelihood that birds will be accustomed to existing level of disturbance from traffic on the trunk road and vessels entering/leaving Inverness Harbour. LSE unlikely but screened in as a precaution.	None known.
Inner Moray Firth Ramsa	3 km west of bridge, 1.5 km east of bridge	Birds - aggregations of non-breeding	Bar-tailed godwit ( <i>Limosa lapponica</i> ), Greylag goose	Pollution.	Uncertain	Yes	Same as above.	None known.
		Habitats	Intertidal mudflats and sandflats	Pollution.	Uncertain	Yes	Scour repairs are planned as part of the 5 year maintenance programme. Some excavation around the bridge piers will be needed but will be confined to around the piers only. This is unlikely to have LSE on the habitats, but some uncertainty so it has been screened in as a	None known.
		Habitats	Saltmarsh, sand dune, shingle	Pollution.	Uncertain	Yes	Containment measures will be used to prevent pollution of aquatic environment but screened in as a precaution.	None known.
Dornoch Firth and Morrich More SAC	30 km north (straight line)	Marine mammals	Common (Harbour) seal ( <i>Phoca vitulina</i> )	Disturbance from underwater noise as a result of piling, presence of barges and other vessels. Pollution.	Yes	Yes	Connectivity with the Dornoch Firth and Morrich More SAC, screened in on advice of SNH.	None known but the channel is used for navigation. Inverness Port Authority do not dredge this channel.
		Habitats	Atlantic salt meadows, subtidal sandbanks, reefs	Pollution.	No	No	No LSE due to distance from the SAC.	None known.



River Moriston SAC	40 km south-west (straight line)	Fish	Atlantic salmon ( <i>Salmo salar</i> )	Pollution. Disturbance during salmon migration.	Yes	Yes	Salmon migrate through the Moray Firth to their natal rivers, therefore, there is connectivity with the River Moriston SAC. The maintenance programme will take place at all times of the year, including during salmon migration. LSE on salmon because of disturbance from underwater piling. Containment measures will be used to prevent pollution of aquatic environment, but screened in as a precaution.	None known.
		Invertebrates	Freshwater pearl mussel ( <i>Margaritifera margaritifera</i> )	Indirect effects as a result of numbers of salmon potentially not returning to River Moriston SAC.	Yes	Yes	Freshwater pearl mussels require the presence of salmon (and trout) for the early stages of their lifecycle. There is connectivity in this case since salmon migrate through the Moray Firth to return to their natal river to spawn. LSE on freshwater pearl mussel as an indirect result of lower numbers of salmon returning to the River Moriston because of potential pollution events and underwater disturbance during migration.	None known.
Moray Firth pSPA	Works span the proposed site	Birds, non-breeding	Common scoter ( <i>Melanitta nigra</i> ), Eider ( <i>Somateria mollissima</i> ), Goldeneye ( <i>Bucephala clangula</i> ), Great northern diver ( <i>Gavia immer</i> ), Long-tailed duck ( <i>Clangula hyemalis</i> ), Red-breasted merganser ( <i>Mergus serrator</i> ), Red-throated diver ( <i>Gavia stellata</i> ), Scaup ( <i>Aythya marila</i> ), Shag ( <i>Phalacrocorax aristotelis</i> ), Slavonian grebe ( <i>Podiceps auritus</i> ), Velvet scoter ( <i>Melanitta fusca</i> )	Disturbance from noise, proximity of people, machinery. Pollution.	Yes	Yes	Maintenance programme will include painting, grit-blasting and pressure-washing the bridge. Containment measures will be used to prevent pollution reaching the aquatic environment and sediments. Likelihood that birds will be accustomed to existing level of disturbance from traffic on the trunk road and they won't be displaced from the extensive foraging areas. Screened in on advice of SNH.	None known
		Birds, breeding	Shag ( <i>Phalacrocorax aristotelis</i> )	Disturbance from noise, proximity of people, machinery. Pollution.	Yes	Yes	Maintenance programme will potentially take place at all times of year for 5 years. Likelihood that birds will be accustomed to existing level of disturbance from traffic on the trunk road while foraging, but screened in on advice of SNH.	None known

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