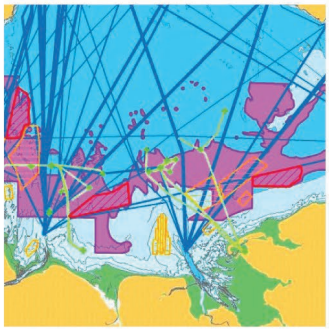
BT Technology

Decommissioning of Subsea Telecommunication Cables in UK Waters

Guidance on Environmental Impacts

December 2020

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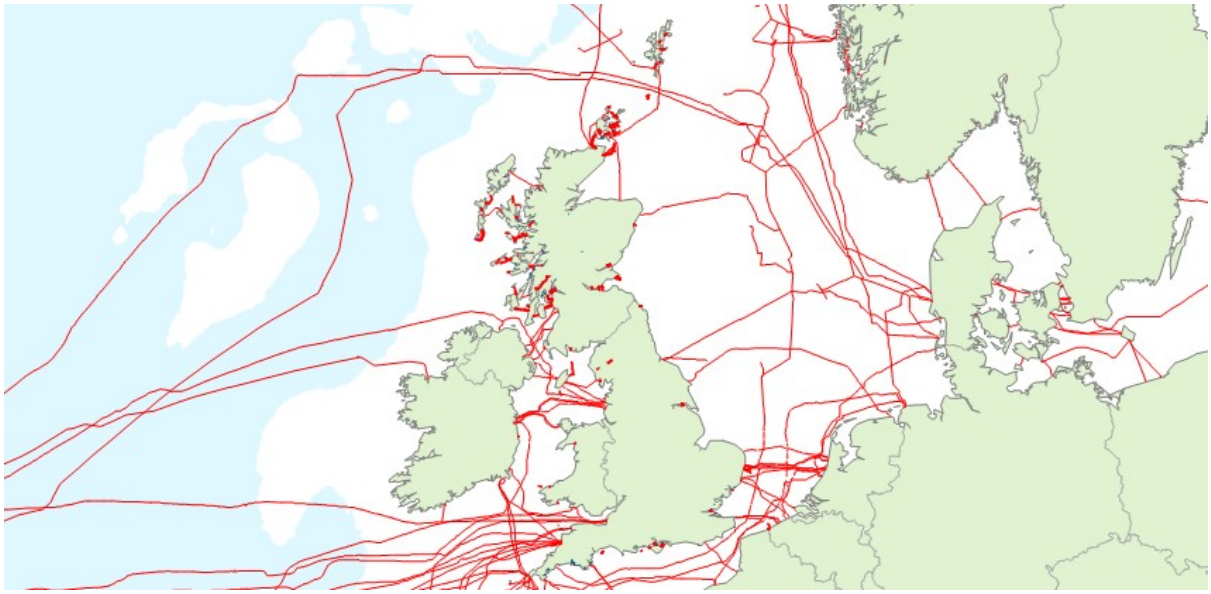
1 Introduction

British Telecommunications (BT) is the world's oldest communications company, tracing all the way back to The Electric Telegraph Company, incorporated in 1846. Today, BT is one of the world's leading communications services companies, supporting the needs of customers in the UK and in 180 countries worldwide. BT Technology is the internal technology unit responsible for creating and operating BT's networks, platforms and IT systems. This includes, among many other roles, the installation, monitoring, maintenance, repair and decommissioning of subsea telecommunication cables.

As described in the UK Marine Policy Statement, "Submarine telecommunication cables carry more than 95% of the world's international traffic including telephone, internet and data, as well as many services for the UK's local communities, major utilities and industries" (HM Government, 2011). The network of subsea telecommunication cables, providing critical routes of national/international communication, is clearly of profound importance. A significant proportion of subsea telecommunication cables in UK waters are owned or partially owned by BT, with numerous agreements to lease circuits along other subsea telecommunication cables to support BT's operations and service capabilities (Figure 1)[1].



Source: R. Hill, BT Technology

Figure 1. Network of BT subsea telecommunication cables in UK waters (owned, partially owned and lease of circuits from third-parties)

The lifespan of subsea telecommunication cables is approximately 20-25 years (Willey et al. 2007; Carter et al. 2009; Donovan, 2009), or longer with upgrades (e.g. up to 40 years; Burnett and Carter, 2017), after which the cable enters the decommissioning phase. The cable could be decommissioned earlier if it becomes redundant, potentially due to old technology, or the system is too expensive to maintain following recurrent and/or severe damage.

[1] Further details of subsea telecommunication cables in UK waters can be sourced from, among others:
Kingfisher Information Service – Offshore Renewable & Cable Awareness project (KIS-ORCA) (https://kis-orca.eu/map);
Submarine Cable Map (https://www.submarinecablemap.com);
The Crown Estate (https://opendata-thecrownestate.opendata.arcgis.com); and
Crown Estate Scotland (https://www.crownestatescotland.com/maps-and-publications).

While high-level options for decommissioning subsea telecommunication cables will be identified during the design stage, or conditions set as part of the consenting process, this aspect of the project is often considered in more detail towards the end of a cable lifespan. For example, a decision on whether to remove the decommissioned cable (or discrete sections) from the marine environment may be dependent on a wide range of other factors, including environmental risk posed by the removal activity. This is considered against the anticipated risk/benefit of leaving the subsea telecommunication cable in place indefinitely.

ABPmer was commissioned by BT Technology to update the information provided in a generic environmental appraisal document on subsea telecommunication cable decommissioning (Emu Ltd, 2004), specifically to reflect current legislation, policy, guidance, industry best practice and understanding of potential environmental effects. The area of interest for this study is the intertidal and subtidal area out to the UK's 12 nautical miles (nm) limit as well as within the Exclusive Economic Zone (EEZ) from 12 nm to the seaward limit of the UK marine area, as defined under Section 42 of the Marine and Coastal Access Act 2009.

The aim of the study is to review the environmental impacts associated with subsea telecommunications cable removal and to update the generic risk matrix previously produced (Emu Ltd, 2004) which highlighted the sensitivity to impacts associated with recovery for a range of seabed conditions. The report also aims to address the following:

- Identify areas for further investigation which emerge from the review;
- Consider potential environmental impact(s) of leaving subsea telecommunication cables *in situ*; and
- Compile a list of interested bodies and authorities with whom consultation is appropriate when planning the removal of subsea telecommunication cables.

This report has been structured as follows:

Section 2 **Background information**: provides an overview of subsea telecommunication cable installation and removal activities;

Section 3 **Legislative framework**: outlines the legislative and policy requirements associated with subsea telecommunication cable decommissioning;

Section 4 **Assessment approach**: describes the overarching assumptions on which the updated risk assessment is based; and

Section 5 **Risk assessment**: summarises the key findings of this high-level review, including recommendations for site-specific assessment and stakeholder consultation.

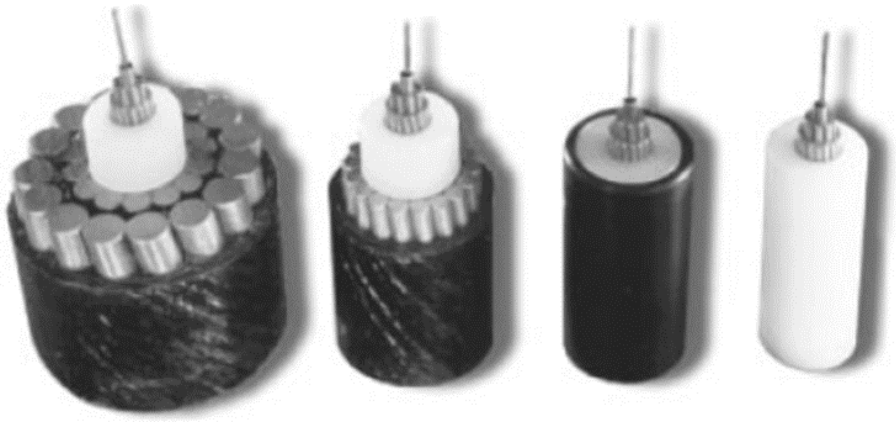
Guidance on the preparation of a Water Framework Directive (WFD) compliance assessment and Habitats Regulations Assessment (HRA) are provided in Appendix A and B, respectively. In addition, the report is supported by an accompanying Microsoft Excel spreadsheet (*R.3554_Draft_Telecom Decom Guidance_02Dec2020.xlsx*). This spreadsheet has been prepared to collate summary evidence of potential impacts to various receptors in a range of seabed habitats from telecommunication cable removal activities.

2 Background Information

This section introduces subsea telecommunication cables (Section 2.1) and provides an overview of techniques used during installation, including consideration of substrate types (Section 2.2), followed by methods and equipment used to recover decommissioned subsea telecommunication cables (Section 2.3). The removal techniques effectively summarise the 'project description' for the proposed activity of decommissioning subsea telecommunication cables.

2.1 Subsea Telecommunication Cables

Modern subsea telecommunication cables range from around 1.5 to 5 cm in diameter depending on the level of protection required (Figure 2). The cross-sectional profile includes the central optical fibres, used to transfer digital data, surrounded by a copper or aluminium conductor and polycarbonate sheath (dielectric). Where additional protection is required, either one or two layers of stranded steel wire armouring can be included. At less than 5 kg/m, subsea telecommunication cables are a much lighter (and smaller) product compared to subsea power cables (typically over 100 kg/m).



Source: Beaufils, 2000; cited in Donovan, 2009

Figure 2. Types of subsea telecommunication cable (left to right): double armoured, single armoured, lightweight protected and lightweight

2.2 Installation

There are two ways in which subsea telecommunication cables are installed; either surface laid or buried. In general, burial is the preferred option as it provides additional and immediate protection from natural and anthropogenic pressures (e.g. tidal currents, waves, fishing gear and anchors). However, burial is not attainable when installing a subsea telecommunication cable in certain habitats and conditions. For example, burial is not possible in areas of exposed bedrock due to the hard substrate and, therefore, the cable will be placed directly onto the seabed surface. In these situations, it is highly likely that a double or single armoured cable would be used to increase protection (see Figure 2). Subsea telecommunication cables are routinely laid on the seabed in water depths >2,000 m as these areas are beyond the main zone of human activities (Carter et al. 2014).

Where the seabed habitat type enables the successful burial of subsea telecommunication cables, such as clays, mud/silt, sand and gravel environments, a plough is commonly used to create a channel within which the cable can be laid. The sediment then infills behind the plough, burying the cable below the seabed surface. Ploughing can achieve depths greater than 1 m depending on the sediment type. The other main burial technique involves the use of jetting controlled by remotely operated vehicles (ROVs).

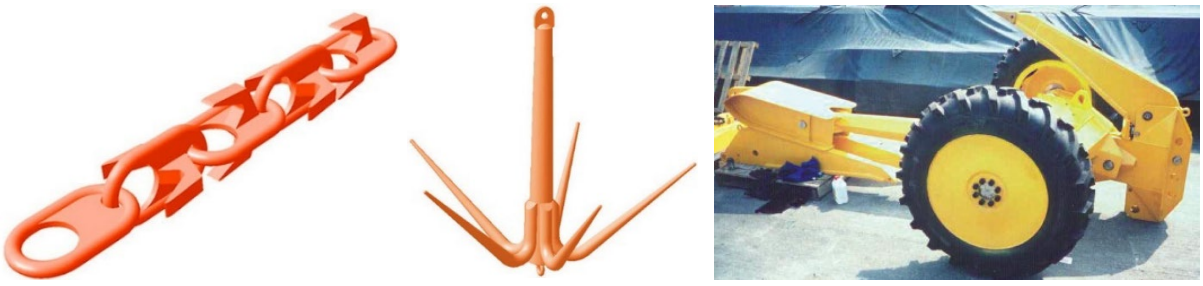
High pressure water jets liquefy seabed sediments to enable the cable to sink to a required depth. Along with repair/maintenance works, jetting techniques are used for substrates that are unsuitable for mechanical ploughing such as steep slopes, very soft muddy sediments and water depths greater than 1,000 m (Hoshina and Featherstone, 2001; cited in Carter et al. 2014; Carter and Burnett, 2015).

Surface laying of the subsea telecommunication cables can achieve an installation rate of between 150–250 km/day, while speed is reduced to 10–40 km/day for burial techniques (Beaufils, 2000; cited in Donovan, 2009). Where subsea telecommunication cables overlay other cables/pipelines, or where notable pressures exist (e.g. a surface laid cable in an area of high fishing activity), additional protection over very short lengths of the cable may be provided by laying concrete mats/bags or rock armour (Carter and Burnett, 2015). At the shore ends, where cables traverse intertidal areas, installation may be achieved either through excavation of a trench (and subsequent backfilling) or occasionally using Horizontal Directional Drilling (HDD) in sensitive environments.

2.3 Removal

Methods used to recover decommissioned subsea telecommunication cables typically involve the use of grapnels (hooks) to snare the cable and lift it to the recovery vessel. There is a wide range of grapnels available, each with tailored characteristics to support cable recovery in different seabed environments (e.g. see Figure 3). A rennie grapnel (10s of kg in weight) is used to recover surface laid cables, while a sand grapnel (100 – 250 kg) or a wheeled detrenching grapnel (2-3 tonnes) can be used to penetrate the seabed to recover buried cables (among many other designs). Clearance works along the cable route may be required to remove additional protection that was installed (e.g. concrete mats) before the subsea telecommunication cable can be recovered using the grapnel.

The grapnel is deployed on a weighted line and dragged in a perpendicular orientation towards the cable route. Depending on confidence in the exact position of the subsea telecommunication cable on/in the seabed, the grapnel lines may commence up to around 800 m prior to the actual position of the cable, although typically these are much short distances (approximately 50 m). A series of grapnel lines are run until recovery is successful, noting that a subsea telecommunication cable may have been surface laid but buried over time (e.g. several decades). The tension on the grapnel line is monitored and, once the cable is caught, it is slowly lifted to the water surface.



Source: Dynamic Load Monitoring (https://www.dlm-uk.com/grapnels)

Figure 3. Example images of a rennie grapnel (left), sand grapnel (centre) and wheeled detrenching grapnel (right)

The recovery of decommissioned subsea telecommunication cables is a controlled activity. Once lifted to the recovery vessel, the cable is cut, with one half returned to the seabed (weighted down). The recovery vessel then begins to gently reel in the other section of cable, moving along the cable route at approximately 1-2 m/s. Engineers onboard the vessel ensure the catenary (hanging angle) of the cable is maintained to minimise additional disturbance to the seabed, particularly where the cable was buried, and the recovery activity is peeling it out from the sediment.

3 Legislative Framework

This section introduces relevant legislation and policy to consider when planning for decommissioning of subsea telecommunication cables.

3.1 Seabed ownership

The Crown Estate owns a large proportion of the foreshore and seabed within 12 nm of the baseline (low water mark) in England, Wales and Northern Ireland, while also managing offshore energy, aggregates, cables and pipelines using the seabed within the UK's EEZ (i.e. from 12 nm to the seaward limit of the UK marine area). Crown Estate Scotland has similar functions for the seabed and foreshore around Scotland. Lease agreements will be in place between the owner of the subsea telecommunication cable and The Crown Estate and/or Crown Estate Scotland to cover the use of the seabed within the UK's territorial sea. Also, The Crown Estate and Crown Estate Scotland ask to be kept informed of cables and pipelines that transit the UK's EEZ.

It is strongly recommended that The Crown Estate and/or Crown Estate Scotland are consulted at an early stage of planning on decommissioning of subsea telecommunication cables. Third parties and other coastal landowners may also be important stakeholders that should be consulted, where appropriate.

3.2 The United Nations Convention for the Law of the Sea (UNCLOS)

The laying of cables (and pipelines) is one of the freedoms of the High Seas under the United Nations Convention on the Law of the Sea (UNCLOS), an international agreement signed in 1982 and which came into force in 1994. Amongst many other provisions, UNCLOS provides the freedom to lay, maintain and repair cables on and off the continental shelf and places obligations on owners of new cables to indemnify repair costs for any damage caused to existing cables/pipelines. Article 79 (Submarine cables and pipelines on the continental shelf) of UNCLOS states the following[2]:

1. *All States are entitled to lay submarine cables and pipelines on the continental shelf, in accordance with the provisions of this article.*
2. *Subject to its right to take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution from pipelines, the coastal State may not impede the laying or maintenance of such cables or pipelines.*
3. *The delineation of the course for the laying of such pipelines on the continental shelf is subject to the consent of the coastal State.*
4. *Nothing in this Part affects the right of the coastal State to establish conditions for cables or pipelines entering its territory or territorial sea, or its jurisdiction over cables and pipelines constructed or used in connection with the exploration of its continental shelf or exploitation of its resources or the operations of artificial islands, installations and structures under its jurisdiction.*
5. *When laying submarine cables or pipelines, States shall have due regard to cables or pipelines already in position. In particular, possibilities of repairing existing cables or pipelines shall not be prejudiced.*

[2] https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf (Accessed December 2020).

While the UK, as a coastal state, may not impede the laying of subsea telecommunication cables, or prevent their ongoing maintenance, it may take reasonable measures to prevent, reduce and control any associated pollution event. It is also still a requirement that the actual route, or delineation, of a proposed subsea telecommunication cable be approved by the appropriate authorities within the UK continental shelf, and these permissions can include standard conditions.

3.3 Marine licensing

The current process of marine licensing under the Marine and Coastal Access Act 2009 came into force on 6 April 2011 and covers the area from Mean High Water Springs (MHWS) out to 12 nautical miles. This process requires anybody wishing to undertake a defined range of works below MHWS to obtain a marine licence from the Marine Management Organisation (MMO) in England, Natural Resources Wales (NRW) in Wales and the Marine and Fisheries Division in Northern Ireland. In Scotland, similar provisions are provided under the Marine (Scotland) Act 2010 which received Royal Assent on 10 March 2010.

Part 4 (Marine Licensing), Section 66 (Licensable marine activities) of the Marine and Coastal Access Act 2009 states:

> *(1) For the purposes of this Part, it is a licensable marine activity to do any of the following—*
>
> […]
>
> *8. To use a vehicle, vessel, aircraft, marine structure or floating container to remove any substance or object from the sea bed within the UK marine licensing area.*

A similar description is provided in Part 4 (Marine Licensing), Section 21 (Licensable marine activities) of the Marine (Scotland) Act 2010. Therefore, the Marine and Coastal Access Act 2009 and Marine (Scotland) Act 2010 set out that a marine licence is required for the removal of a subsea telecommunication cable, both within the UK's territorial sea (<12 nm) and EEZ (>12 nm to the seaward limit of the UK marine area).

Once submitted, marine licence applications typically take at least three months to determine, and longer should complex issues arise where additional consultation and assessment is required. Therefore, it is recommended that the project programme for decommissioning a subsea telecommunication cable includes sufficient time to complete the assessment and consenting process.

3.4 Marine planning

The Marine and Coastal Access Act 2009 provides a statutory basis to help ensure clean, healthy, safe, productive and biologically diverse oceans and seas by putting in place a plan-led system for the improved management and protection of the UK marine and coastal environment. The UK Marine Policy Statement (HM Government, 2011)[3], prepared under Section 44 of the Marine and Coastal Access Act 2009 and adopted by the four UK devolved administrations in March 2011, provides the framework

[3] Guidance to the UK Marine Policy Statement from 1 January 2021 was published in September 2020 on behalf of all the UK Administrations by the Department of Environment, Food and Rural Affairs (Defra). It explains how references to European Union law in the UK Marine Policy Statement should be interpreted from 1 January 2021 following the UK's withdrawal from the European Union. https://www.gov.uk/government/publications/uk-marine-policy-statement/guidance-to-the-uk-marine-policy-statement-from-1-january-2021 (Accessed December 2020).

for preparing Marine Plans and taking decisions affecting the marine environment. It ensures that marine resources are used in a sustainable way in line with marine objectives and thereby:

- Promoting sustainable economic development;
- Enabling the UK's move towards a low-carbon economy, in order to mitigate the causes of climate change and ocean acidification and adapt to their effects;
- Ensuring a sustainable marine environment which promotes healthy, functioning marine ecosystems and protects marine habitats, species and our heritage assets; and
- Contributing to the societal benefits of the marine area, including the sustainable use of marine resources to address local social and economic issues.

To date, the following Marine Plans have been formally adopted in the UK:

- England:
  - East Inshore and Offshore Marine Plans (HM Government, 2014) in April 2014;
  - South Inshore and Offshore Marine Plans (HM Government, 2018) in July 2018;
- Scotland:
  - Scotland's National Marine Plan (The Scottish Government, 2015) in March 2015;
- Wales:
  - Welsh National Marine Plan (Welsh Government, 2019) in November 2019; and
- Northern Ireland:
  - A Draft Marine Plan for Northern Ireland (Inshore and Offshore) was published by the Department of Agriculture, Environment and Rural Affairs (DAERA) for public consultation in 2018, but it has not yet been formally adopted (DAERA, 2018).

In January 2020, the MMO opened consultation on the Draft Marine Plans for the following marine plan areas in England:

- North West Inshore and Offshore (MMO, 2019a);
- North East Inshore and Offshore (MMO, 2019b);
- South West Inshore and Offshore (MMO, 2019c); and
- South East Inshore (MMO, 2019d).

The four Draft Marine Plans in England, and the Draft Marine Plans in Northern Ireland, are due to be formally adopted at some point before March 2021. Certain activities in tidal waters up to the MHWS mark, as defined by the Marine and Coastal Access Act 2009 and Marine (Scotland) Act 2010, require a marine licence to be issued prior to commencement (see Section 3.3). During the marine licence application process, there is an increasing requirement to consider implications of the proposed activity on relevant Marine Plan policies. Therefore, going forward, there is likely to be an increased requirement to incorporate such considerations in marine licence applications for decommissioning (removal) of subsea telecommunication cables, potentially differing between regions based on the relevant Marine Plans and associated objectives, policies or topics. Where the Marine Plans have not yet been adopted for the respective marine plan area, reference should be made to the relevant Draft Marine Plans published for consultation.

3.5 Environmental Assessments

The Environmental Impact Assessment (EIA) Directive (2014/52/EU) requires plans, programmes or projects likely to have significant effects on the environment to undergo an environmental assessment, prior to their approval or authorisation. A wide range of Regulations transpose the EIA Directive into law in England, Wales, Scotland and Northern Ireland, referring either to the land-based development (above the low water mark) or in the marine environment (below the high water mark). The area

between high water and low water is covered by both sets of Regulations, with projects requiring a marine licence and planning permissions from the respective authorities.

The EIA Directive and Regulations identify those developments for which EIA is mandatory (described Annex 1/Schedule 1), as well as those developments that require EIA if they exceed specified thresholds, and/or if it is deemed the development may have likely significant effects on the environment by virtue of factors such as its nature, size or location (Annex II/Schedule 2). It is noted that decommissioning of subsea telecommunication cables is not described as an activity for which EIA is required.

While the removal of a decommissioned subsea telecommunication cables is not considered an EIA project, it is likely that an environmental report will need to be submitted to support the marine licence application/planning permission. In addition, as part of the determination process, the relevant marine licensing authority may also, as appropriate, give consideration to the following:

- Provisions of the Habitats and Birds Directive, and thus requirement for Habitats Regulations Assessment (HRA) for activities potentially affecting features associated with Special Areas of Conservation (SAC), Special Protection Areas (SPAs) or Ramsar sites;
- Protected habitat and species requirements in relation to:
  - European Protected Species protected under the Habitats Directive;
  - Species protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended),
  - Habitats and species protected under section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, section 7 of the Environment (Wales) Act 2017, section 2 of the Nature Conservation (Scotland) Act 2004, Wildlife and Natural Environment Act (Northern Ireland) 2011 and, more broadly, under Annex V of the OSPAR Convention;
- Any requirement to assess impacts to Marine Conservation Zones (MCZs) and Scottish Nature Conservation or Demonstration and Research Marine Protected Areas (MPAs);
- Consideration of other nature conservation designated sites, such as Sites of Special Scientific Interest (SSSIs), Areas of Special Scientific Interest (ASSIs) and United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserves;
- Any requirement to assess impacts in relation to the Water Framework Directive (WFD), including impacts to Protected Areas;
- Any considerations relevant to the achievement of Marine Strategy Framework Directive (MSFD) objectives and targets; and
- Consideration of legislation to protect marine archaeological features, such as the Protection of Wrecks Act (1973), Merchant Shipping Act (1995) and Protection of Military Remains Act (1986).

3.6 Habitats Regulations Assessment

Article 3 of the Habitats Directive (92/43/EEC as amended) requires the establishment of a European network of important high-quality conservation sites known as Special Areas of Conservation (SAC) that will contribute to conserving habitats and species identified in Annexes I and II of the Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds). In accordance with Article 4 of the Birds Directive (2009/147/EC), Special Protection Areas (SPA) are strictly protected sites classified for rare and vulnerable birds (Annex I of the Directive), and for regularly occurring migratory species. Ramsar sites are wetlands of international importance designated under the Ramsar Convention (adopted in 1971 and came into force in 1975), providing a framework for the conservation and wise use of wetlands and their resources.

Where a development project is located close to, or within, an area designated or proposed under the Habitats and Birds Directives (European Sites), the requirements of the relevant 'Habitats Regulations' in England, Wales, Scotland and Northern Ireland apply. As a matter of UK policy, the Habitats Regulations

also apply in relation to Ramsar sites. This requires the lead Competent Authority to determine whether the proposed works have the potential for a likely significant effect (LSE) on a European Site and, if so, to undertake an Appropriate Assessment (AA) of the implications of the proposals in light of the site's conservation objectives. The AA takes account of the in-combination effects of the proposal on the protected areas in association with other relevant projects and plans.

A wide range of European/Ramsar sites are designated in UK waters and, given the large spatial distribution of subsea telecommunication cables (albeit, noting the minimal direct footprint on the seabed), it is likely that decommissioning activities will need to consider the potential for significant impacts on the features of these sites to arise. Guidance on the Habitats Regulations Assessment (HRA) process is provided in Appendix B.

3.7 Protected habitats and species

Various species and habitats are protected from being killed, injured or disturbed under provisions of the Habitats Regulations and the Wildlife and Countryside Act 1981 (as amended; noting the Act has been supplemented over the past 40 years in response to devolution). The respective Habitats Regulations make it an offence to deliberately disturb wild animals of any 'European Protected Species'. This includes a range of terrestrial and marine species such as bats, otters, great crested newts and cetaceans (i.e. dolphins, porpoises and whales).

Statutory lists of priority habitats and species in England, Wales, Scotland and Northern Ireland have been prepared as required under Sections 41 and 42 of the Natural Environment and Rural Communities (NERC) Act 2006 (England), Section 7 of the Environment (Wales) Act 2016, Section 2(4) of the Nature Conservation (Scotland) Act 2004 and Section 3(1) of the Wildlife and Natural Environment Act (Northern Ireland) 2011, respectively. Each of these Acts places a general duty on relevant authorities to conserve biodiversity which includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) was adopted in September 1992 and entered into force in March 1998. Annex V of the OSPAR Convention (On the protection and conservation of the ecosystems and biological diversity of the maritime area) embraces the need for a more holistic responsibility for environmental protection in the region, including its biodiversity. The OSPAR list of threatened and/or declining species and habitats (Agreement 2008-6)[4] was prepared to guide the OSPAR Commission in setting priorities for protection of marine biodiversity in implementing Annex V.

In preparing the marine licence application, consideration should be made on the potential for the proposed works (i.e. decommissioning of a subsea telecommunication cable) to disturb any protected habitat and/or species, which may require a specific licence/permit requirement.

3.8 Marine Conservation Zones (MCZs) and Scottish Marine Protected Areas (MPAs)

The Marine and Coastal Access Act 2009, Marine (Scotland) Act 2010 and Marine Act (Northern Ireland) 2013 facilitate the establishment of an ecologically coherent network of Marine Protected Areas (MPAs). In England, Wales and Norther Ireland, this established a new type of MPA called a Marine Conservation Zone (MCZ) to protect nationally important marine wildlife, habitats, geology and geomorphology. In

[4] https://www.ospar.org/work-areas/bdc/species-habitats (Accessed December 2020).

Scotland, similar provisions are afforded to sites referred to as Nature Conservation Marine Protected Areas (NCMPAs) and Demonstration and Research (D&R) MPAs.

A wide range of MCZs/MPAs are designated in UK waters and, given the large spatial distribution of subsea telecommunication cables (albeit, noting the minimal direct footprint on the seabed), it is likely that decommissioning activities will need to consider the potential for significant impacts on the conservation objectives of these sites.

3.9 Other Nature Conservation Designated Sites

Sites of Special Scientific Interest (SSSIs) in England, Wales and Scotland, or Areas of Special Scientific Interest (ASSIs) in Northern Ireland, are the basic building block of site-based nature conservation legislation and most other legal nature/geological conservation designations in the UK. Where the cable route overlaps a SSSI/ASSI, it will be necessary to obtain permission from the landowner(s) to notify the relevant conservation authority to give their assent or consent in advance of the proposed works.

Launched by UNESCO in 1971, the Man and the Biosphere Programme (MAB) is an intergovernmental scientific programme aiming to establish a scientific basis for the improvement of relationships between people and their environments. Biosphere Reserves are areas comprising terrestrial, marine and coastal ecosystems, with each reserve promoting solutions to reconcile the conservation of biodiversity with its sustainable use. Biosphere Reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located. There are currently six Biosphere Reserves in the UK (this does not include the Isle of Man as a British Crown Dependency, for which the entire island and its territorial waters was identified as a Biosphere Reserve in 2016)[5].

3.10 Water Framework Directive (WFD)

The Water Framework Directive (WFD; 2000/60/EEC) establishes a framework for the management and protection of Europe's water resources. In Scotland, the Directive has been implemented through the Water Environment Water Services (Scotland) Act 2003 and the Water Environment (Controlled Activities) (Scotland) Regulations 2011, more commonly known as the Controlled Activity Regulations (CAR)[6]. It has been implemented in England and Wales through the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended), known as the Water Framework Regulations[7]. The WFD is transposed in Northern Ireland through the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017.

The overall objective of the WFD, as implemented by the respective Regulations, is to achieve "good ecological and good chemical status" in all inland and coastal waters by 2015 (now working towards revised objectives for 2021) unless alternative objectives are set or there are grounds for time limited derogation. For example, where pressures preclude the achievement of good status (e.g. navigation, coastal defence) in heavily modified water bodies (HMWBs), the WFD provides that an alternative objective of "good ecological potential" is set. Groundwater water bodies are included in the WFD and are assessed on quantitative and chemical status. There is also a general "no deterioration" provision to prevent decline in water body status.

As part of the marine licensing processes, including proposed decommissioning of subsea telecommunication cables, regulators are likely to request that a WFD compliance assessment is

5 http://www.unesco-mab.org.uk/uk-reserves.html (Accessed December 2020).
6 https://www.sepa.org.uk/regulations/water (Accessed December 2020).
7 These were modified by the Floods and Water (Amendment etc) (EU Exit) Regulations 2019 on 31 January 2020.

produced to support the application. Guidance on the preparation of WFD compliance assessments, following the Environment Agency's 'Clearing the Water for All' process[8], is provided in Appendix A.

Article 4.9 of the WFD notes that compliance with other community environmental legislation must be ensured, with WFD Protected Areas identified under the following Directives (described further below):

- Bathing Water Directive;
- Shellfish Waters Directive;
- Nitrates Directive; and
- Urban Waste Water Treatment Directive.

3.10.1 Bathing Water Directive

The revised Bathing Water Directive (2006/7/EC) was adopted in 2006, updating the microbiological and physico-chemical standards set by the original Bathing Water Directive (76/160/EEC) and the process used to measure/monitor water quality at identified bathing waters. The revised Bathing Water Directive focuses on fewer microbiological indicators, whilst setting higher standards, compared to those of the Bathing Water Directive. Bathing waters under the revised Bathing Water Directive are classified as excellent, good, sufficient or poor according to the levels of certain types of bacteria (intestinal enterococci and *Escherichia coli*) in samples obtained during the bathing season (May to September).

The Bathing Water Directive was repealed at the end of 2014 and monitoring of bathing water quality has been reported against revised Bathing Water Directive indicators since 2015. The new classification system considers all samples obtained during the previous four years and, therefore, data has been collected for revised Bathing Water Directive indicators since 2012. The UK Government's target under the revised Bathing Water Directive was to achieve 'sufficient' for all bathing waters by 2015, as described under the respective Bathing Water Regulations which transposes the revised Bathing Water Directive into UK law.

Where the proposed works associated with decommissioning of a subsea cable could impact (directly/ indirectly) a designated bathing water, further assessment should be provided as part of the marine licence application. For example, this could include the potential for decommissioning activities to impact water quality during the bathing season.

3.10.2 Shellfish Waters Directive

The Shellfish Waters Directive (2006/113/EC) was repealed in December 2013 and subsumed within the WFD. However, the Shellfish Water Protected Areas (England and Wales) Directions 2016 require the Environment Agency (in England) and Natural Resources Wales (NRW; in Wales) to endeavour to observe a microbial standard in all 'Shellfish Water Protected Areas'. The microbial standard is 300 or fewer colony forming units of *E. coli* per 100 ml of shellfish flesh and intravalvular liquid. The Directions also requires the Environment Agency/NRW to assess compliance against this standard to monitor microbial pollution (75% of samples taken within any period of 12 months below the microbial standard and sampling/analysis in accordance with the Directions). There are 137 Shellfish Water Protected Areas in England and Wales, plus a further two areas as part of the English component of the Solway Tweed River Basin District (RBD).

[8] https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters (Accessed December 2020).

In Scotland, the Shellfish Waters Directive has been replaced by the Water Environment (Shellfish Water Protected Areas: Designation) (Scotland) Order 2013 which came into force on 22 December 2013, and subsequently updated in 2016. There are 84 Shellfish Water Protected Areas in the Scotland RBD, with one area also protected in the Solway Tweed RBD (Scottish component). There are 10 Shellfish Water Protected Areas in Northern Ireland, as listed through Regulation 9 of the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017.

Where the proposed works associated with decommissioning of a subsea cable could impact (directly/ indirectly) a designated Shellfish Water Protection Area, further assessment should be provided as part of the marine licence application. For example, this could include the potential for decommissioning activities to impact water quality in the vicinity of a Shellfish Water Protection Area.

3.10.3 Nitrates Directive

The Nitrates Directive (91/676/EEC) aims to reduce water pollution from agricultural sources and to prevent such pollution occurring in the future (nitrogen is one of the nutrients that can affect plant growth). Under the Nitrates Directive, surface waters are identified if too much nitrogen has caused a change in plant growth which affects existing plants and animals and the use of the water body.

Overall, it is considered unlikely that the scale of effects associated with the decommissioning of subsea telecommunication cables would result in significant impacts to WFD water bodies designated under the Nitrates Directive, or Nitrate Vulnerable Zones (NVZs).

3.10.4 Urban Waste Water Treatment Directive

The Urban Waste Water Treatment Directive (91/271/EEC) aims to protect the environment from the adverse effects of the collection, treatment and discharge of urban waste water. It sets treatment levels on the basis of sizes of sewage discharges and the sensitivity of waters receiving the discharges. In general, the Directive requires that collected waste water is treated to at least secondary treatment standards for significant discharges. Secondary treatment is a biological treatment process where bacteria are used to break down the biodegradable matter (already much reduced by primary treatment) in waste water. Sensitive areas under the Urban Waste Water Treatment Directive are water bodies affected by eutrophication or elevated nitrate concentrations and act as an indication that action is required to prevent further pollution caused by nutrients.

Overall, it is considered unlikely that the scale of effects associated with the decommissioning of subsea telecommunication cables would result in significant impacts to Sensitive Areas designated under the Urban Waste Water Treatment Directive. However, the location of relevant Sensitive Areas in the vicinity of the cable route should be identified to support the marine licence application.

3.11 Marine Strategy Framework Directive (MSFD)

The aim of the Marine Strategy Framework Directive (MSFD) (2008/56/EC) is to protect more effectively the marine environment across Europe. It aims to achieve good environmental status of marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. The MSFD constitutes the vital environmental component of future maritime policy, designed to achieve the full economic potential of oceans and seas in harmony with the marine environment. It establishes European Marine Regions on the basis of geographical and environmental criteria.

Each Member State is required to develop strategies for its marine waters. A Statutory Instrument transposing the MSFD into UK law came into force on 15 July 2010 and puts in place a clear legal framework to enable the MSFD to be implemented in the UK.

There are 11 descriptors of good environmental status, as follows:

1. Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions;
2. Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems;
3. Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock;
4. All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity;
5. Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters;
6. Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected;
7. Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems;
8. Concentrations of contaminants are at levels not giving rise to pollution effects;
9. Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards;
10. Properties and quantities of marine litter do not cause harm to the coastal and marine environment; and
11. Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.

Good environmental status under the MSFD is assessed at the level of the European Marine Regions, of which there are two covering UK waters, namely:

- Greater North Sea; and
- Celtic Seas.

Overall, it is considered unlikely that the scale of effects associated with the decommissioning of subsea telecommunication cables would result in significant impacts to environmental status at the European Marine Region level. Therefore, it is considered unlikely that an MSFD compliance assessment would be needed to support the marine licence application.

3.12 Archaeology

There is a wide range of legislation related to the protection of marine archaeology. Below are short summaries of three key Acts which may require consideration as part of the decommissioning process for a subsea telecommunication cable, although additional legislation could also apply in UK waters depending on the respective devolved administration(s).

Under the **Protection of Wrecks Act (1973)**, wrecks and wreckage of historical, archaeological or artistic importance can be protected by way of designation. It is an offence to carry out certain activities in a defined area surrounding a wreck that has been designated, unless a licence for those activities has been obtained.

Within the context of the **Merchant Shipping Act (1995)**, 'wreck' refers to flotsam, jetsam, derelict and lagan found in or on the shores of the sea or any tidal water. It includes a ship, aircraft or hovercraft, parts of these, their cargo or equipment. It may be of antique or archaeological value such as gold coins, or a yacht or dinghy abandoned at sea or items such as drums of chemicals or crates of foodstuffs. The ownership of 'wreck' is decided according to procedures set out in the 1995 Act. If any such finds are brought ashore, the salvor is required to give notice to the Receiver of Wreck that he/she has found or taken possession of them and, as directed by the Receiver, either hold them pending the Receiver's order or deliver them to the Receiver.

Under the **Protection of Military Remains Act (1986)**, all aircraft that have crashed in military service are protected and the Ministry of Defence has powers to protect ships that were n military service when they were wrecked. The Ministry of Defence can designate named vessels as 'Protected Places', even if the position of the wreck is not known. In addition, the Ministry of Defence can designate 'Controlled Sites' around wrecks whose position is known. In the case of 'Protected Places', the vessel must have been lost after 4 August 1914, whereas in the case of a wreck protected as a 'Controlled Site' no more than 200 years must have elapsed since the loss.

4 Assessment Approach

This section describes the approach to environmental assessment for the removal of subsea telecommunication cables, forming part of the bigger process of understanding what should be done with a particular decommissioned cable. The report is supported by an accompanying Microsoft Excel spreadsheet (*R.3554_Draft_Telecom Decom Guidance_02Dec2020.xlsx*), used to present the updated risk matrix on potential impacts to receptors in different habitat types from decommissioning of subsea telecommunication cables.

The following main receptors are assessed in this review:

- Physical processes;
- Water and sediment quality;
- Benthic ecology;
- Fish and shellfish;
- Marine mammals;
- Marine ornithology;
- Nature conservation;
- Commercial fisheries and shellfish production;
- Commercial and recreational navigation;
- Marine archaeology;
- Leisure and recreation; and
- Other cables, pipelines and structures.

The above receptors focus on those likely to be most relevant to subsea telecommunication cable decommissioning, thus reflecting the receptors for which environmental assessment may be required.

In combination with the above receptors, the following habitat types are assessed to form the risk matrix (see habitat type descriptions in the accompanying Microsoft Excel spreadsheet; *R.3554_Draft_Telecom Decom Guidance_02Dec2020.xlsx*):

- Exposed bedrock;
- Chalk;
- Stiff clay;
- Clay;
- Gravel;
- Coarse sand;
- Silty sand;
- Sand waves;
- Intertidal mudflats; and
- Beach sands.

The risk matrix has collated information on potential impacts to receptors in relation to the different seabed habitat types, presented using the following standard considerations:

- Example impact pathway(s);
- Summary of evidence;
- Key considerations;
- Data sources;
- Scale of effects – spatial/temporal;

- Significance;
- Confidence; and
- High-Level decommissioning recommendation.

4.1 Example Impact Pathway(s)

Generic impact pathways which could result from the decommissioning of subsea telecommunication cables are provided for each receptor. These have been based on typical impact pathways identified for subsea cable installations, maintenance and repair, noting the anticipated similarities with the decommissioning phase.

4.2 Summary of Evidence

Based on the generic impact pathways identified, evidence is provided to outline the high-level effects relating to decommissioning of subsea telecommunication cables in each habitat type for the respective receptors, building on Emu Ltd (2004) where new evidence is available. The summary evidence aims to provide an indication of the likely scale of effects for decommissioning a subsea telecommunication cable 'on balance' for each habitat type. While the risk matrix considers general issues in accordance with habitat type, which could be used to review a particular stretch of a cable route, it is noted that some issues will be largely the same regardless of habitat type (e.g. marine archaeology, leisure and recreation and other cables, pipelines and structures).

4.3 Key Considerations

This report provides a high-level review of the risks posed by activities associated with decommissioning a subsea telecommunication cable. However, it will be necessary to consider these risks in greater detail on a case-by-case basis. Therefore, a number of key questions are included to consider the likely scale of effect for a specific project.

4.4 Data Sources

To support environmental reporting as part of the marine licence application process, several key data sources have been suggested for each receptor. This has included peer-reviewed literature, monitoring data, environmental assessment guidance and maps, advice documents from Statutory Nature Conservation Bodies (SNCBs) and ABPmer experience of key marine environmental effects. Where possible, weblinks to data sources have been provided. However, it is important to recognise that data used to consider the potential environmental effects should be tailored to the specific project (i.e. an individual subsea telecommunication cable being decommissioned) and, therefore, these data sources should not be considered exhaustive.

4.5 Scale of Effects

The scale of an effect on a receptor can vary in terms of spatial and temporal change, leading to an adverse or positive (beneficial) impact.

4.5.1 Spatial

The spatial scale of effects is considered using the following general descriptions:

- **Immediate** – Effects are small scale and limited to the immediate vicinity of the activity;

- **Local** – Effects are small-to-medium scale, with potential to be observed in the wider locality of the activity footprint (i.e. indirect effects);
- **Regional** – Effects are medium-to-large scale, resulting in changes that are observed over a large area (e.g. entire estuary, WFD water body, marine plan area); or
- **National** – Effects are observed over a very large spatial extent, both direct and indirect (e.g. physical damage to another subsea cable resulting in loss of power/communication).

4.5.2 Temporal

The temporal scale of effects is considered using the following general descriptions:

- **Duration** – Consideration of effects duration (e.g. in days, weeks or months);
- **Frequency** – Consideration of the observed impact within the duration of an activity (e.g. infrequent, frequent or continuous occurrence); and
- **Reversibility** – Potential of impact(s) to be reversed over time (e.g. temporary, long-term or permanent).

4.6 Significance

The spatial and temporal scale of effects, as well as the anticipated magnitude of effects, are reviewed as a basis for assessing the level of the impact and its significance. The key significance levels for either beneficial or adverse impacts are described as follows:

- **High** – Effects are highest in magnitude, over a regional/national scale, with potential to result in permanent/long-term changes, reflecting the high vulnerability and importance of a receptor (e.g. to nature conservation);
- **Medium** – Effects are anticipated to be local/regional in scale, with potential to recover over the medium-term;
- **Low** – Localised effects are expected, typically over the short-term. The effects tend to be discernible but tolerable; or
- **Negligible** – Insignificant change not having a discernible effect.

4.7 Confidence

To consider the high-level significance assigned to potential impacts from decommissioning of subsea telecommunication cables, a simple confidence score has been provided, with categories described as follows:

- **High** – Effects on receptors via impact pathways identified are well-documented. Available evidence includes peer-reviewed studies, modelling and/or robust monitoring of effects;
- **Medium** – Effects on receptors generally understood, based on a mixture available evidence, including expert judgement, outdated information and proxy measures (e.g. impact pathways for similar projects); or
- **Low** – Limited and often anecdotal evidence of anticipated effects, with variable outcomes, and thus poorly understood.

4.8 High-Level Decommissioning Recommendation

Guidelines prepared by the European Subsea Cables Association (ESCA, 2016) provide a general recommendation to remove subsea telecommunication cables from beach areas (i.e. between the high and low water mark) and seaward to the territorial sea limit (i.e. 12 nm). Beyond 12 nm to the EEZ limit,

it suggests the decommissioned subsea telecommunication cable should, in general, be left in place (Figure 4). However, in practice, there is no material difference in habitat sensitivity between the territorial sea and the EEZ; therefore, this high-level review has not differentiated in terms of preference between these two areas of sea.

	Location	Guideline
1	Beach, area between land and Low Water Mark	Generally **Recover** cable to leave beach clear from potential exposed cables in the future. Please refer to section 4.1.1
2	Low Water Mark to 12 Nautical Mile Limit (or Median Line if less than 12 miles)	Investigate on a case by case basis. Generally **Recover** cable if it is on seabed surface, burial is marginal or the cable presents a hazard to other seabed users. Cable may be left if it is well buried in a stable seabed. Reference shall be made to the terms of the Crown Estate licence.
3	12 Nautical Mile Limit to Median Line or EEZ or Continental Shelf Edge	Reference should be made to ICPC Recommendation No 1. Investigate on a case by case basis. Generally **Leave** cable, but can recover if cable on seabed surface, burial marginal or presents a hazard to other seabed users.
4	Deep water, beyond Median, EEZ or Continental Shelf Edge	Please refer to ICPC Recommendation No 1

Source: ESCA, 2016

Figure 4. General guidelines for cable recovery

To support the consideration of environmental issues/potential impacts, the risk matrix provides a high-level recommendation on decommissioning subsea telecommunication cables referring to the following options:

- Remove;
- Leave in place; or
- No preference.

These three options were reviewed on the general assumption that returning the seabed to pre-installation condition would be preferential from an environmental perspective (albeit, this is not always the case), thus removing the subsea telecommunication cable. Where the high-level evidence indicates that removal activities could cause a significant impact, including permanent/irreversible impacts, it may be preferable to leave the decommissioned subsea telecommunication cable in place (i.e. remaining in/on the seabed indefinitely). However, it must be stressed that these high-level recommendations are based on generic project impacts only, and a case-by-case assessment should be undertaken. It is recognised that other factors, including socio-economic, health and safety, waste hierarchy, technical feasibility and legislation/policy, are also important considerations in determining the fate of decommissioned subsea telecommunication cables (beyond the scope of this review).

5 Risk Assessment

This section provides a summary of the updated risk matrix and how it can be applied (Section 5.1), followed by a generic list of authorities and key stakeholders to consult with respect to environmental issues as part of the consenting process for decommissioning subsea telecommunication cables in UK waters (Section 5.2). Section 5.3 provides a generic contents list which could be used to support a marine licence application/planning permission for the proposed removal of a decommissioned subsea telecommunication cable, populated using information in this report and the risk matrix.

5.1 Summary and Process

Table 1 provides a summary of the risk matrix; see accompanying Microsoft Excel spreadsheet for full details (*R.3554_Draft_Telecom Decom Guidance_02Dec2020.xlsx*). The table summarises the generic risk to the environment of recovering decommissioned subsea telecommunication cables in UK marine area. It presents the potential significance described for each habitat type. It is important to note that the significance described in the summary table (and elsewhere) is part of a high-level review and relative to other receptors/habitat types, as opposed to a detailed assessment against the respective impact pathways for a specific project. The significance scores provided aim to focus environmental considerations in support of marine licence applications/planning permission, as well as other permissions/consents where required.

Overall, the significance of impacts is likely to be low/negligible and, therefore, the level of detail required to inform the assessment may be minimal. However, impacts to nature conservation designated sites within certain habitat types have been assessed as medium significance given the potential sensitivity of qualifying features. In addition, given the likely sensitivity of feeding waterbirds and waders in the area, and the generally high nature conservation importance of these sites, the potential impact for ornithology within intertidal mudflats is also considered to be of medium significance.

Figure 5 provides a simple flow chart outlining how the updated risk matrix could be incorporated as part of the environmental reporting/consenting process.

Table 1. Generic risk assessment for potential impacts associated with decommissioning/recovery of subsea telecommunication cables

Receptor	Habitat Type									
	A. Exposed Bedrock	B. Chalk	C. Stiff Clay	D. Clay	E. Gravel	F. Coarse Sand	G. Silty Sand	H. Sand Waves	I. Intertidal Mud Flats	J. Beach Sands
1. Physical processes	Negligible	Low	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
2. Water and sediment quality	Negligible	Negligible	Low	Low	Negligible	Negligible	Low	Negligible	Low	Negligible
3. Benthic ecology	Low	Low	Low	Low	Low	Low	Low	Negligible	Low	Negligible
4. Fish and shellfish	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
5. Marine mammals	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
6. Marine ornithology	Low	Low	Low	Low	Low	Low	Low	Low	Low	Medium
7. Nature conservation	Medium	Medium	Low	Low	Medium	Low	Medium	Negligible	Medium	Medium
8. Commercial fisheries and shellfish production	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
9. Commercial and recreational navigation	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
10. Marine archaeology	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
11. Leisure and recreation	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Low	Low
12. Other cables, pipelines and structures	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low

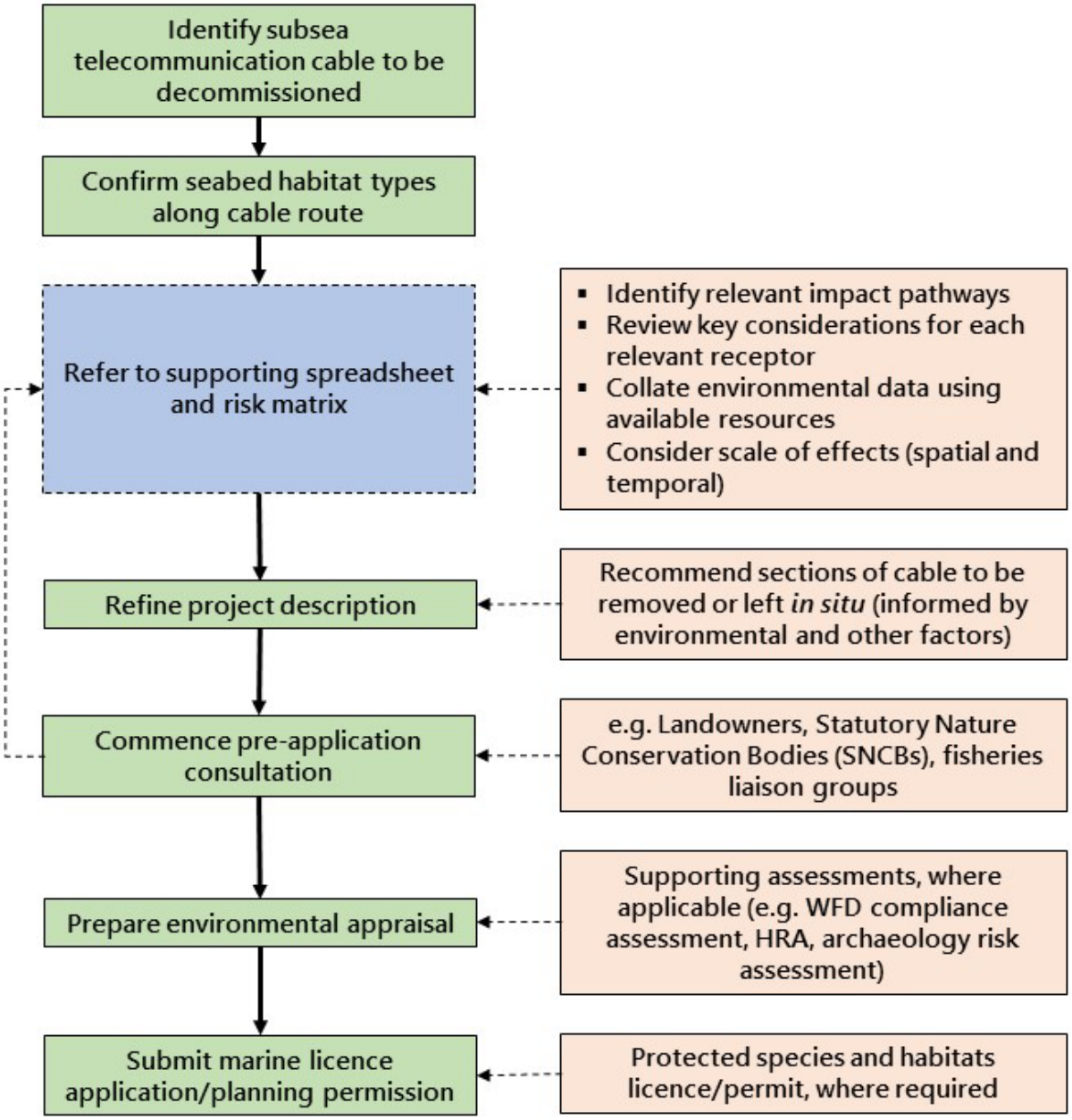


Figure 5. Simple flow chart on how to apply the risk matrix

5.2 Consultation

Key authorities and other stakeholders with which consultation may be appropriate when planning the removal of subsea telecommunication cables in UK waters could include:

- Marine Management Organisation (MMO);
- Natural Resources Wales (NRW);
- Marine Scotland Licensing Operations Team (MS-LOT);
- Marine and Fisheries Division, Department of Agriculture, Environment and Rural Affairs (DAERA);
- The Crown Estate;
- Crown Estate Scotland;
- Joint Nature Conservation Committee (JNCC);
- Natural England;

- NatureScot;
- Marine Scotland Science;
- Scottish Environment Protection Agency (SEPA);
- Royal Society for the Protection of Birds (RSPB);
- British Trust for Ornithology (BTO);
- Environment Agency;
- Centre for Environment, Fisheries and Aquaculture Science (Cefas);
- Inshore Fisheries and Conservation Authorities (IFCAs);
- Maritime and Coastguard Agency (MCA);
- Trinity House;
- Northern Lighthouse Board;
- Royal Yachting Association (RYA);
- Ministry of Defence (MoD);
- Historic England;
- Cadw;
- Royal Commission on the Ancient and Historical Monuments of Wales;
- Historic Environment Scotland;
- Department for Communities (Northern Ireland);
- European Subsea Cables Association (ESCA);
- Local council/authority and planning officers;
- Other cable operators/infrastructure owners;
- Respective international counterparts; and
- Landowners.

The above list includes potential consultees from all four UK devolved administrations for a range of receptors (e.g. nature conservation, archaeology and commercial/recreational navigation) and consenting authorities. It is recommended to engage in pre-application consultation at an early stage in the consenting process. This approach can help ensure the necessary documentation is prepared as part of the marine licence application/ planning permission, as well as arrangements for other permissions/consents (e.g. SSSI/ASSI assent, landowner agreements), helping to avoid delays and additional costs.

5.3 Example Contents List for Environmental Appraisal

It is anticipated that project-specific considerations of potential environmental impacts that could arise as a result of the proposed subsea telecommunication cable will need to be documented to support the marine licence application/planning permission. As a non-EIA project, the report is commonly referred to as Environmental Appraisal, and this could be structured as follows

- Introduction;
- Project description;
- Legislation and policy;
- Impact assessment methodology;
- Receptors;
- Audit of consultation;
- Conclusion; and
- Technical appendices.

It is recommended that figures are produced to illustrate the section(s) of subsea telecommunication cable recommended for removal, providing context to other receptors (e.g. nature conservation designated sites, bathing waters, Shellfish Water Protected Areas, shipping lanes and other cables/ pipelines).

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7 Abbreviations

AA	Appropriate Assessment
AEOI	Adverse Effect On Integrity
ASSI	Area of Special Scientific Interest
AWB	Artificial Water Body
BT	British Telecommunications
BTO	British Trust for Ornithology
CAR	Controlled Activity Regulations, known as the Water Environment (Controlled Activities) (Scotland) Regulations 2011
Cefas	Centre for Environment, Fisheries and Aquaculture Science
cSAC	candidate Special Area of Conservation
D&R	Demonstration and Research
DAERA	Department of Agriculture, Environment and Rural Affairs
Defra	Department of Environment, Food and Rural Affairs
DETR	Department of the Environment, Transport and the Regions
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EQS	Environmental Quality Standard
ESCA	European Subsea Cables Association
GCS	Good Chemical Status
GEP	Good Ecological Potential
GES	Good Ecological Status
HDD	Horizontal Directional Drilling
HMWB	Heavily Modified Water Body
HRA	Habitats Regulations Assessment
IFCA	Inshore Fisheries and Conservation Authority
INNS	Invasive non-native species
IROPI	Imperative Reasons of Over-riding Public Interest
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
MAB	Man and the Biosphere Programme
MCA	Maritime and Coastguard Agency
MCZ	Marine Conservation Zone
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
MoD	Ministry of Defence
MPA	Marine Protected Area
MS-LOT	Marine Scotland Licensing Operations Team
MSFD	Marine Strategy Framework Directive
NCMPA	Nature Conservation Marine Protected Area
NERC	Natural Environment and Rural Communities Act 2006
NRW	Natural Resources Wales
NVZ	Nitrate Vulnerable Zone
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PSD	Priority Substances Directive (2008/105/EC and 2013/39/EU)
pSPA	potential Special Protection Area

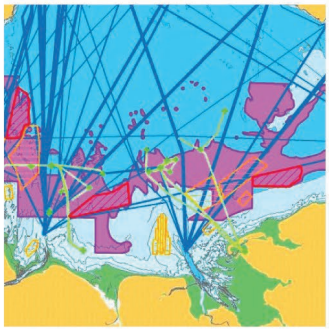
RBD	River Basin District
RBMP	River Basin Management Plan
RSPB	Royal Society for the Protection of Birds
RYA	Royal Yachting Association
SAC	Special Area of Conservation
SEPA	Scottish Environment Protection Agency
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UK	United Kingdom
UNCLOS	United Nations Convention on the Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
WFD	Water Framework Directive

Cardinal points/directions are used unless otherwise stated.

SI units are used unless otherwise stated.

Appendices




Innovative Thinking - Sustainable Solutions

ABP mer

A Water Framework Directive (WFD) Compliance Assessment Guidance

A.1 Introduction

The Marine and Coastal Access Act 2009 provides a statutory basis to help ensure clean, healthy, safe, productive and biologically diverse oceans and seas by putting in place a plan-led system for the improved management and protection of the United Kingdom (UK) marine and coastal environment. In Scotland this is supported by the Marine (Scotland) Act 2010. The process of marine licensing increasingly requires supporting documents including a Water Framework Directive (WFD) compliance assessment.

The WFD (2000/60/EEC) established a framework for the management and protection of Europe's water resources. In Scotland, the Directive has been implemented through the Water Environment Water Services (Scotland) Act 2003 and the Water Environment (Controlled Activities) (Scotland) Regulations 2011, more commonly known as the Controlled Activity Regulations (CAR)[9]. It has been implemented in England and Wales through the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended), known as the Water Framework Regulations[10]. The WFD is transposed in Northern Ireland through the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017.

The overall objective of the WFD, as implemented in the UK by the above Regulations, is to achieve "good ecological and good chemical status" in all inland and coastal waters by 2015 (now working towards revised objectives for 2021) unless alternative objectives are set or there are grounds for time limited derogation. For example, where human pressures from existing sustainable uses preclude the achievement of good status (e.g. navigation, coastal defence), the Regulations provide for such water bodies to be designated as Heavily Modified Water Bodies (HMWBs), for which an alternative objective of "good ecological potential" is set. This seeks to ensure that the ecological quality of the water body is as good as it can be given the sustainable use(s). Groundwater water bodies are included in the Regulations and are assessed on quantitative and chemical status. There is also a general "no deterioration" provision to prevent decline in water body status.

As part of the marine licensing processes, including proposed decommissioning of subsea telecommunication cables, regulators are likely to request that a WFD compliance assessment is produced to support the application. While the UK left the European Union on 31 January 2020, it remains committed to working to high environmental standards. At the point of departure, all UK regulations implementing existing EU environmental directives, including those relating to the WFD, were amended to reflect changes in governance but substantively remain in force. The following text therefore refers to the regulations implementing the Directive rather than to the Directive itself.

This appendix is structured as follows:

Section A.2 **Water Framework Directive (WFD)**: provides details on the requirements and legal context of the WFD; and

Section A.3 **Assessment and reporting guidance**: provides a typical structure of a WFD compliance assessment report following key guidance.

[9] https://www.sepa.org.uk/regulations/water (Accessed December 2020).

[10] These were modified by the Floods and Water (Amendment etc) (EU Exit) Regulations 2019 on 31 January 2020.

A.2 Water Framework Directive (WFD)

The WFD divides rivers, lakes, lagoons, estuaries, coastal waters (out to one nautical mile from the low water mark), man-made docks and canals into a series of discrete surface water bodies. It sets ecological as well as chemical targets (objectives) for each surface water body. For a surface water body to be at overall good status, the water body must be achieving good ecological status (GES) and good chemical status (GCS). Ecological status is measured on a scale of high, good, moderate, poor or bad, while chemical status is measured as good or fail (i.e. failing to achieve good).

Each surface water body has a hydromorphological designation that describes how modified a water body is from its natural state. Water bodies are either undesignated (i.e. natural, unchanged), designated as a HMWB or designated as an artificial water body (AWB). HMWBs are defined as bodies of water which, as a result of physical alteration by sustainable human use activities (such as flood protection and navigation) are substantially changed in character and cannot therefore meet GES. AWBs are artificially created through human activity. The default target for HMWBs and AWBs under the WFD is to achieve good ecological potential (GEP), a status recognising the importance of their human use while ensuring ecology is protected as far as possible.

The ecological status of surface waters is classified using information on the biological (e.g. fish, benthic invertebrates, phytoplankton, angiosperms and macroalgae), physico-chemical (e.g. dissolved oxygen and salinity) and hydromorphological (e.g. hydrological regime) quality of the body of water, as well as several specific pollutants (e.g. copper and zinc). Compliance with chemical status objectives is assessed in relation to environmental quality standards (EQS) for a specified list of 'priority' and 'priority hazardous' substances. These substances were first established by the Priority Substances Directive (PSD) (2008/105/EC) which entered into force in 2009. The PSD set objectives, amongst other things, for the reduction of these substances through the cessation of discharges or emissions.

As required by the WFD and PSD, a proposal to revise the list of priority (hazardous) substances was submitted in 2012. Subsequently, an updated PSD (2013/39/EU) was published in 2013, identifying new priority substances, setting EQSs for those newly identified substances, revising the EQS for some existing substances in line with scientific progress and setting biota EQSs for some existing and newly identified priority substances. The updated PSD has been transposed into UK legislation through the Water Environment (WFD) (England and Wales) (Amendment) Regulations 2015, The Water Environment and Water Services (Scotland) Act 2003 (Modification of Part 1) Regulations 2015 and The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015. These are explained in the WFD (Standards and Classification) Directions (England and Wales) 2015, The Scotland River Basin District (Standards) Directions 2014 (as amended) and The Solway Tweed River Basin District (Standards) (Scotland) Directions 2014 (as amended)[11].

In addition to surface water bodies, the WFD also incorporate groundwater water bodies. Groundwater is assessed against different criteria compared to surface water bodies since they do not support ecological communities (i.e. it is not appropriate to consider the ecological status of groundwater). Therefore, groundwater water bodies are classified as good or poor quantitative status in terms of their quantity (groundwater levels and flow directions), along with good or poor chemical (groundwater) status in terms of their pollutant concentrations. Tests of saline intrusion and effects on surface waters are relevant to both quantitative and chemical (groundwater) status.

River Basin Management Plans (RBMPs) are a requirement of the WFD, setting out measures for each river basin district to maintain and improve quality in surface and groundwater water bodies where necessary. In 2009, the first cycle (2009 to 2015) of RBMPs were published, reporting the status and

[11] There are currently no directions published relating to the implementation of the PSD in Northern Ireland.

objectives of each individual water body, with updated RBMPs published in 2015/2016 for the second cycle (2015 to 2021). Water body classification results are available from the following sources:

- Environment Agency – Catchment Data Explorer: https://environment.data.gov.uk/catchment-planning
- Natural Resources Wales – Water Watch Wales: https://waterwatchwales.naturalresourceswales.gov.uk/en
- Scottish Environment Protection Agency (SEPA) – Water Classification Hub: https://www.sepa.org.uk/data-visualisation/water-classification-hub
- Department of Agriculture, Environment and Rural Affairs (DAERA) – River Basin Map Viewer: https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/index.html?id=7e234827aa7a405d990359aa92c7c287

Consideration of WFD requirements is necessary for works which have the potential to cause deterioration in ecological, quantitative and/or chemical status of a water body or to compromise improvements which might otherwise lead to a water body meeting its WFD objectives. Therefore, it is necessary to consider the potential for the proposed works (i.e. decommissioning of subsea telecommunication cables) to impact WFD water bodies, specifically referring to the following environmental objectives of the WFD:

- Prevent deterioration in status of all surface water bodies (Article 4.1 (a)(i));
- Protect, enhance and restore all surface water bodies with the aim of achieving good surface water status by 2015 or later assuming grounds for time limited derogation (Article 4.1 (a)(ii));
- Protect and enhance all HMWBs/AWBs, with the aim of achieving GEP and GCS by 2015 or later assuming grounds for time limited derogation (Article 4.1 (a)(iii));
- Reduce pollution from priority substances and cease or phase out emissions, discharges and losses of priority hazardous substances (Article 4.1 (a)(iv));
- Prevent or limit the input of pollutants into groundwater and prevent deterioration of the status of all groundwater water bodies (Article 4.1 (b)(i));
- Protect, enhance and restore all groundwater water bodies and ensure a balance between abstraction and recharge of groundwater (Article 4.1 (b)(ii));
- Ensure the achievement of objectives in other water bodies is not compromised (Article 4.8); and
- Ensure compliance with other community environmental legislation (Article 4.9).

The WFD requires that activities are also in compliance with other relevant legislation, such as regulations implementing the following:

- Habitats Directive (92/43/EEC as amended);
- Birds Directive (2009/147/EC);
- Bathing Water Directive (2006/7/EC);
- Nitrates Directive (91/676/EEC);
- Urban Waste Water Treatment Directive (91/271/EEC); and
- The provisions of the Shellfish Waters Directive (2006/113/EC) (now repealed and integrated into the WFD).

Refer to Section 3 of the main report for further details on these Directives.

A.3 Assessment and Reporting Guidance

In 2016, the Environment Agency published guidance ("Clearing the Waters for All") regarding how to assess the impact of activities in transitional and coastal waters for the WFD[12]. The guidance sets out the following three discrete stages to WFD assessments:

1. **Screening**: excludes any activities that do not need to go through the scoping or impact assessment stages;
2. **Scoping**: identifies the receptors that are potentially at risk from an activity and need impact assessment; and
3. **Assessment**: considers the potential impacts of an activity, identifies ways to avoid or minimise impacts, and indicates if an activity may cause deterioration or jeopardise the water body achieving good status.

In order to complete a WFD compliance assessment in accordance with this guidance it is suggested the following sections are contained within a WFD compliance assessment document. In the absence of formal guidance for the preparation of WFD compliance assessments in Wales[13], Scotland and Northern Ireland, it is also recommended this process is used as a template for assessments.

A.3.1 Introduction

This section should provide an overview of the WFD compliance assessment process based on the generic information provided in Section A.2. Project specific reference should be made to the proposed works as outlined within the supporting marine licence application. A figure showing the extent of the proposed works (e.g. cable route for the subsea telecommunication cable being decommissioned) along with the boundaries of relevant WFD water bodies would be useful to provide context.

A.3.2 Screening

It is recommended the screening section of the WFD compliance assessment provides the following information:

- Project Description: A detailed overview of the proposed works as provided within the supporting marine licence application.
- Identification of potentially affected water bodies: Reference should be made to the to the transitional and coastal water bodies overlapping or in proximity to the proposed works. It is recommended that details of applicable water bodies are provided as summary tables (example provide in Table A.1).
- Identification of overlaps with protected areas: Reference should be made to the following protected areas in the vicinity of the proposed works:
  - International nature conservation designations overlapping or in close proximity to the proposed works;
  - Adjacent bathing waters and latest classification;
  - Proximity to Shellfish Water Protected Areas;

[12] https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters (Accessed December 2020).

[13] It is noted that NRW's internal 'Operational Guidance Note (OGN) 72' (Guidance for assessing activities and projects for Compliance with the Water Framework Directive) is often cited as part of WFD compliance assessments for projects in Wales. This guidance document could be requested from NRW to support the marine licence application; however, the principles are similar to the Environment Agency's Clearing the Waters for All.

- Confirmation of designation of the relevant water bodies under the Nitrates Directive and the nearest Nitrate Vulnerable Zones (NVZs); and
- Confirmation of designation of the associated water bodies under the Urban Waste Water Treatment Directive.

Table A.1. Example water body summary to support the WFD compliance assessment

Water Body Name	Sussex East
Water Body Type	Coastal
Water Body ID	GB640704540002
Water Body Area	130.592 km^2 (surface area)
Hydromorphological Designation (Reasons for Designation)	HMWB (coastal protection)
Protected Area Designations	Habitats Directive; Birds Directive; Bathing Water Directive
Overall Status (2019)	Moderate
Ecological Status/Potential (2019)	Moderate
Chemical Status (2019)	Fail
Parameters not at Good Status/ Potential (2019)	Mitigation measures assessment; Polybrominated diphenyl ethers (PBDE); Mercury and its compounds
Higher Sensitivity Habitats	Mussel beds, including blue and horse mussel (1.84 km^2); Subtidal kelp beds (4.95 km^2)
Lower Sensitivity Habitats	Cobbles, gravel and shingle (22.87 km^2); Intertidal soft sediment (8.96 km^2); Rocky shore (1.79 km^2); Subtidal rocky reef (13.45 km^2); Subtidal soft sediments (77.05 km^2)
Phytoplankton Status (2019)	Not assessed (high in 2014)
History of Harmful Algae	Not Monitored

A.3.3 Scoping

The Environment Agency's "Clearing the Water for All" guidance provides a template to record findings and consider potential risks for key receptors, specifically for the following receptors:

- Hydromorphology;
- Biology:
  - Habitats;
  - Fish;
- Water quality;
- Protected areas; and
- Invasive non-native species (INNS).

Below is a short description of each of these receptors and the key questions that should be scoped in or out as part of scoping for a WFD compliance assessment. It is recommended the response to each question is tabulated and colour coded with each response clearly scoped in (highlighted red) or out (green) for further assessment. Potential risks scoped into the assessment should be considered within the subsequent assessment stage (Section A.3.4).

Hydromorphology

Hydromorphology is the physical characteristics of estuaries and coasts, including the size, shape and structure of the water body and the flow and quantity of water and sediment. The following hydromorphological considerations and associated risk issues should be addressed:

- Consider if your activity could impact on the hydromorphology (for example morphology or tidal patterns) of a water body at high status?
- Consider if your activity could significantly impact the hydromorphology of any water body?
- Consider if your activity is in a water body that is heavily modified for the same use as your activity?

Biology

Habitats

It is necessary to consider the impact of the physical footprint of an activity on nearby marine and coastal habitats. This specifically refers to habitats of higher sensitivity (e.g. intertidal seagrass, maerl and saltmarsh) and lower sensitivity (e.g. cobbles, gravel and shingle, subtidal rock reef and intertidal soft sediments like sand and mud). The following biology (habitat) considerations and associated risk issues should be addressed:

- Is the footprint of the activity 0.5 km^2 or larger?
- Is the footprint of the activity 1% or more of the water body's area?
- Is the footprint of the activity within 500 m of any higher sensitivity habitat[14]?
- Is the footprint of the activity 1% or more of any lower sensitivity habitat?

Fish

Activities occurring within an estuary could impact on normal fish behaviour such as movement, migration or spawning. The following biology (fish) considerations and associated risk issues should be addressed:

- Consider if your activity is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary?
- Consider if your activity could impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, chemical change or a change in depth or flow)?
- Consider if your activity could cause entrainment or impingement of fish?

Water quality

Consideration should be made regarding whether phytoplankton status and harmful algae could be affected by the proposed activity, as well as identifying the potential risks of using, releasing or disturbing chemicals. The following water quality considerations and associated risk issues should be addressed:

- Consider if your activity could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)?
- Consider if your activity is in a water body with a phytoplankton status of moderate, poor or bad?

[14] The location of higher and lower sensitivity habitat can be identified using the Department for Environment, Food & Rural Affairs (Defra) Magic Interactive Map: https://magic.defra.gov.uk (Accessed December 2020).

- Consider if your activity is in a water body with a history of harmful algae?
- If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if the chemicals are on the Priority Substances Directive list?
- If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if it disturbs sediment with contaminants above Cefas Action Level 1?
- If your activity has a mixing zone (like a discharge pipeline or outfall) consider if the chemicals released are on the Priority Substances Directive list?

Protected areas

Consideration should be made regarding whether WFD protected areas are at risk from your activity, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), as well as bathing waters, shellfish water protected areas and nutrient sensitive areas. The following protected area considerations and associated risk issues should be addressed:

- Consider if your activity is within 2 km of any WFD protected area?

Invasive non-native species (INNS)

Consideration should be made regarding whether there is a risk the activity could introduce or spread INNS. Risks of introducing or spreading INNS include materials or equipment that have come from, had use in or travelled through other water bodies, as well as activities that help spread existing INNS, either within the immediate water body or other water bodies. The following invasive non-native species and associated risk issues should be addressed:

- Consider if your activity could introduce or spread INNS?

A.3.4 Assessment

Within this section, an assessment should be conducted for each receptor scoped in during the scoping stage as being at risk from an activity. Each of these parameters should be evaluated in order to determine whether the proposed works (i.e. decommissioning of subsea telecommunication cables) might cause deterioration in the status of the relevant water body (defined as a non-temporary effect on status at water body level), or an effect that prevents the water body from meeting its WFD objectives including reference to any mitigation.

Marine licence applications are likely to be supported by other documentation which captures some or all considerations relevant to WFD compliance assessments. This may include the following:

- Environmental Statement (Environmental Impact Assessment (EIA) projects) or Environmental Appraisal (non-Environmental Impact Assessment projects); and
- Habitats Regulations Assessment (HRA; see Appendix B).

Reference should be made to these supporting documents where available, signposting to sections where relevant.

A.3.5 Conclusions

This section is recommended to provide a brief statement of the findings of the WFD compliance assessment and confirmation of compliance against the WFD objectives for each relevant water body.

B Habitats Regulations Assessment (HRA)

B.1 Introduction

As part of the process of marine licensing, a Habitats Regulations Appraisal (HRA) information report may be required where a proposed project (i.e. in this case, decommissioning of a subsea telecommunication cable) is located in or near to an area designated or proposed under the Council Directive 92/43/EEC on the conservation of natural habitats under wild fauna and flora ("the Habitats Directive") and Council Directive 2009/147/EC on the conservation of wild birds ("the Birds Directive" (Birds and Habitats Directives).

The requirements of these directives have been implements in England, Wales, Scotland and Northern Ireland through a range of 'Habitats Regulations'. These regulations require the lead Competent Authority[15] to determine whether the proposed works have the potential for a likely significant effect (LSE) on a European/Ramsar Site and, if so, to undertake an Appropriate Assessment (AA) of the implications of the proposals in light of the site's conservation objectives. An HRA information report provides a signposting document to support the Competent Authority with decision making.

While the UK left the European Union on 31 January 2020, it remains committed to working to high environmental standards. At the point of departure, all UK regulations implementing existing EU environmental directives, including those relating to the Habitats and Birds Directives, were amended to reflect changes in governance but substantively remain in force. The following text therefore refers to the 'Habitats Regulations' implementing the Directives rather than to the Directives themselves.

The scope of HRA will vary on a case-by-case basis. In particular, it is designed to meet the key requirements within the relevant Habitats Regulations guidance, such as:

- Habitats Regulations Assessment Standard (Natural England, 2017); and
- Conservation Advice for Marine Protected Areas: guidance and supporting material (Natural England, 2019).

The Habitats Regulations provide for the protection of European designated sites including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). In addition, Natural England (2017) advice suggests that these regulations apply to Ramsar sites (designated under the 1971 Ramsar Convention for their internationally important wetlands), candidate SACs (cSAC), potential Special Protection Areas (pSPA), and proposed and existing European offshore marine sites. Collectively, these sites are referred to as European/Ramsar sites.

This report is structured as follows:

Section B.2 **HRA process**: provides details on the requirements and legal context of HRA information report; and

Section B.3 **HRA information report structure**: provides a structure of a HRA information report following key guidance.

[15] in England, the Marine Management Organisation (MMO) through consultation with Natural England; In Wales, Natural Resources Wales (NRW); in Scotland, Marine Scotland through consultation with NatureScot (formerly Scottish Natural Heritage); and in Northern Ireland, the Marine and Fisheries Division of the Department of Agriculture, Environment and Rural Affairs (DAERA). Where proposed works and designated sites are beyond 12 nautical miles, consultation with the Joint Nature Conservation Committee (JNCC) will also be required.

B.2 HRA Process

An outline of the HRA process is shown in Figure B.1, with the two main stages as follows:

- **Stage 1 (Screening)**: determine whether the project is likely to have a significant effect on any European/Ramsar site (the LSE test); and
- **Stage 2 (Appropriate Assessment)**: if it is concluded that the project is likely to have a significant effect, then produce an AA which determines whether the project could or will adversely affect the integrity of any European/Ramsar site.

Under Stage 1 of the HRA process, known direct and potential indirect impact pathways should be 'screened in' for Stage 2 (AA) on the basis that they represent an LSE on designated sites overlapping or adjacent to the proposed works. Each of the Habitats Regulations state that:

"A competent authority, before deciding to undertake, or give any consent, permission, or other authorisation for a plan or project which:

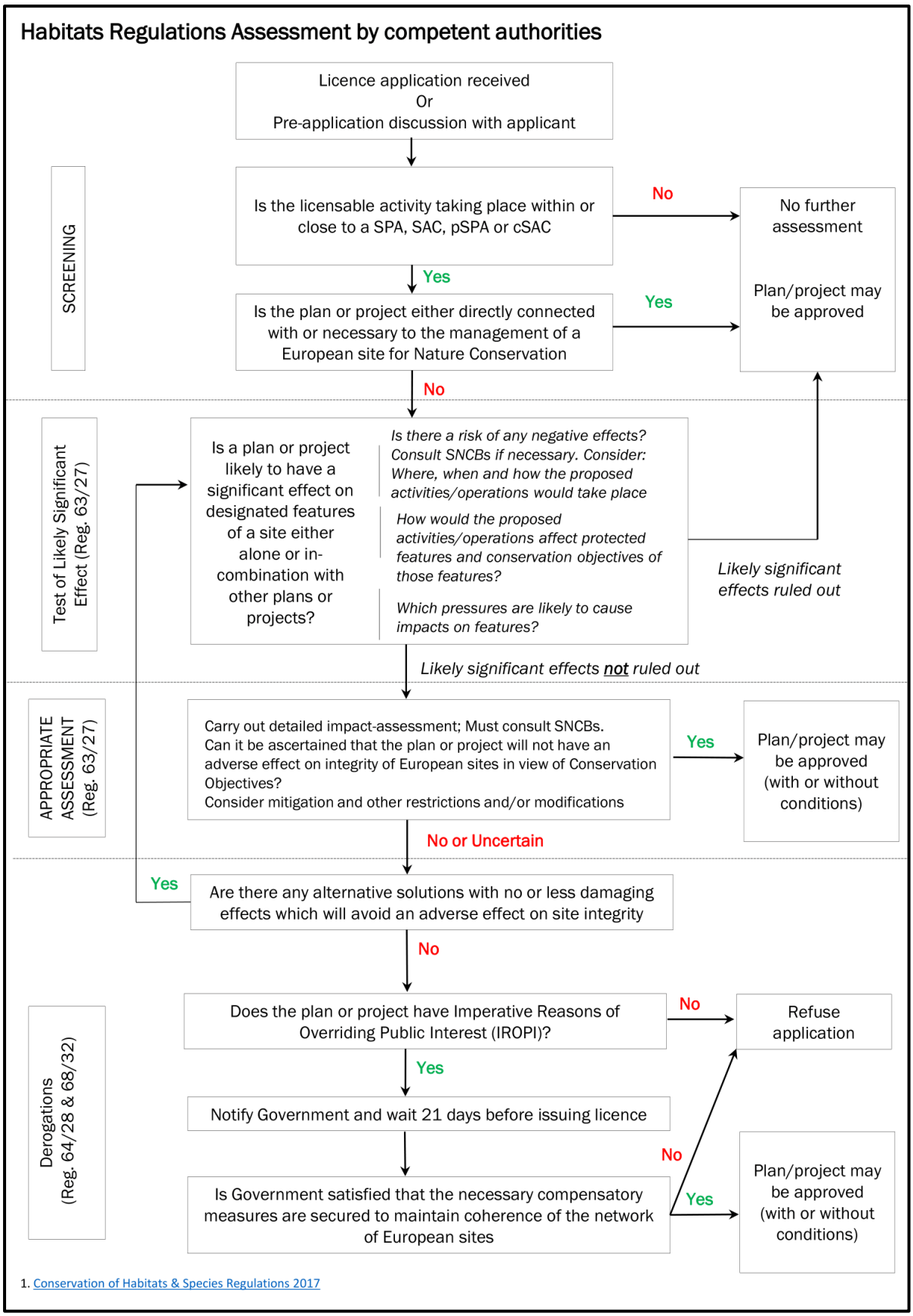
a) is likely to have significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects); and
b) is not directly connected with or necessary to the management of the site

must make an appropriate assessment of the implications for the site in view of that site's conservation objectives".

The decision as to whether a 'Stage 2' AA is required is based on a 'Stage 1' assessment of LSE (see Figure B.1). LSE is recognised as being a 'coarse filter' judgement or a statement that the anticipated effects of the proposal will be more than trivial (i.e. that the anticipated changes resulting from a proposal have the potential to impact on an interest feature of a European/Ramsar site). If a project (or plan) could have an LSE on a European/Ramsar site, it does not automatically follow that an impact will occur. The decision of LSE is purely an indication of the need for an AA.

In an AA (as Stage 2 of the HRA process), it is necessary to determine whether the project or plan would result in an adverse effect on the integrity (AEOI) of the European/Ramsar site(s) in view of the site's conservation objectives. The integrity of a site has been defined as the coherence of its ecological structure and function, across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified (Department of the Environment, Transport and the Regions (DETR), 1994).

Where it cannot be demonstrated that a project will not have an AEOI, or there is insufficient certainty of an avoidance of an adverse effect, the activities can only proceed if it can be demonstrated that there are no more suitable (less damaging) alternatives, and that there are Imperative Reasons of Over-riding Public Interest (IROPI) sufficient to justify the proposed project. In certain circumstances, the Secretary of State may be required to ensure that adequate compensation, usually in the form of replacement habitat, has been provided to protect the overall coherence of the Natura 2000 network (i.e. European sites). The decision on whether integrity is affected will be made by the Competent Authority.



Source: Natural England, 2019

Figure B.1. Summary of the key stages comprising an HRA

B.3 HRA Information Report Structure

The purpose of an HRA information report is to assist the Competent Authority with its review under the respective Habitats Regulations and, if required, with the production of an Appropriate Assessment (AA). An HRA information report is designed to achieve the following key goals:

1. **Act as an auditable checklist of AA information**. The report is designed to provide a confirmatory checklist, which ensures that all the relevant information that is needed for an AA is provided; and
2. **Assist the Competent Authority and its consultees**. The overall aim of the report is to provide a concise and readable document that will make it easier for the Competent Authority to consult on, and produce, an AA where required.

This HRA information report should be presented in the form of a 'Signposting Document' which identifies those sections of Environmental Appraisal (and supporting documents) where necessary details can be found. This signposting approach has been adopted as best practice. It is designed to avoid unnecessary repetition/replication of information and make it easier for the project's Competent Authorities to access and audit the information they need to carry out the assessments.

In order to undertake and prepare an HRA information report, it is suggested the following sections are completed as detailed below:

- Introduction;
- Need for HRA;
- Likely Significant Effect on Interest features; and
- Conclusions.

B.3.1 Introduction

This section should provide an overview of the HRA process based on the generic information provided in Section B.2. Project specific reference should be made to the proposed works as outlined within the supporting marine licence application. A figure showing the extent of the proposed works (e.g. cable route for the subsea telecommunication cable being decommissioned) along with the boundaries of relevant nature conservation designated sites would be useful to provide context.

B.3.2 Need for HRA

This section aims to provide an overview of the project specific needs for an HRA based on the potential impacts on relevant interest features of associated European/Ramsar sites. It is recommended this includes identification of European/Ramsar sites overlapping or in close proximity to the proposed works and the qualifying features and conservation objectives.

B.3.3 Likely Significant Effect on Interest features

Identification of key potential pathways that could result in an LSE on the interest features of the designated sites previously identified should be presented here. This section should review the potential for the proposed works to result in an LSE on the interest features of European/Ramsar sites, including in-combination effects. Consideration should be given to the context of the nature and scale of the proposed works, their geographic location relative to European/Ramsar sites and the sensitivities of the interest features.

Marine licence applications are likely to be supported by other documentation which captures some or all considerations relevant to HRA information reports. This may include the following:

- Environmental Appraisal; and
- Water Framework Directive (WFD) compliance assessments (see Appendix A).

Reference should be made to these supporting documents where available, signposting to sections where relevant.

B.3.4 Conclusions

This section should present a brief summary of the findings of the HRA. It should also clarify any potential for an AEOI on the interest features of the specific European/Ramsar site(s), either alone and/or in combination with other plans and projects. It is recommended the concluding statement clearly recognises whether the proposed works can be undertaken in adherence with the requirements of the Habitats Directive.

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