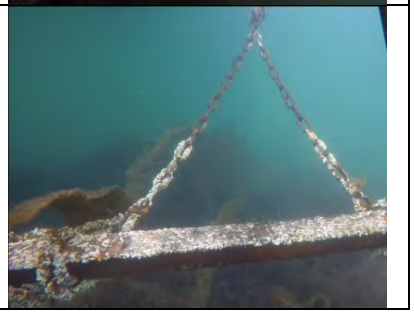
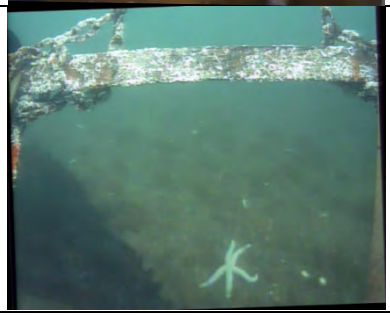
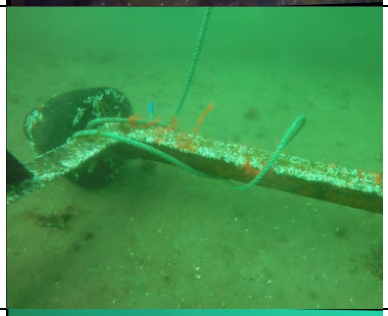
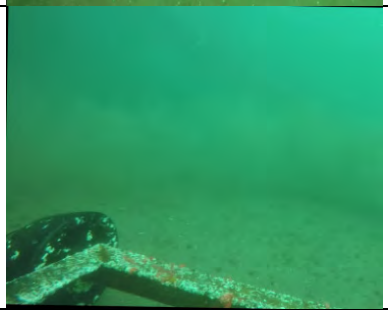
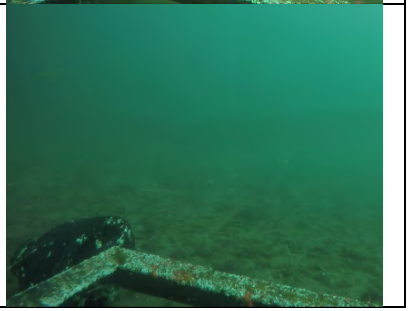
Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
T1-c		S-A	Mixture of SS.SMp.KSwSS.LsacR (*Laminaria saccharina* and red seaweeds on infralittoral sediments) and IR.LIR.K.Lsac.Ldig (*Laminaria saccharina* and *Laminaria digitata* on sheltered sublittoral fringe rock)	Boulder field with dense sugar kelp coverage. Oarweed *Laminaria digitata* attached to larger bouderes and cobbles.	
T1-d		S-A	SS.SMp.KSwSS.LsacR (*Laminaria saccharina* and red seaweeds on infralittoral sediments)	Sand with gravel and cobbles and occational boulders. Dense coverage of sugar kelp. Brown and red seaweeds. Spiny starfish, common sea urchin.	
T2-a		S-A	SS.SMp.KSwSS.LsacR (*Laminaria saccharina* and red seaweeds on infralittoral sediments)	Sand with gravel and cobbles Dense coverage of sugar kelp. Red and brown seaweeds including dead man's rope and wireweed *Sargassum muticum*. Spiny starfish abundant.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
T2-b		S-A	SS.SMp.KSwSS.LsacR (*Laminaria saccharina* and red seaweeds on infralittoral sediments)	Sand with gravel and cobbles. Dense coverage of sugar kelp. Brown, green and red seaweeds. Spiny starfish and common sea urchin common.	
T2-c	8 m	F-O	SS.SMp.KSwSS.LsacR.S (*Laminaria saccharina* and filamentous red algae on infralittoral sand)	Sand with gravel and cobbles. Patches of sugar kelp along with spiny starfish, occational common starfish *Asteria rubens* and common sea urchin. Evidence of dead man's fingers (*Alcyonium digitatum*) attached to larger cobbles.	
T2-d	8 m	F-O	SS.SMp.KSwSS.LsacR.S (*Laminaria saccharina* and filamentous red algae on infralittoral sand)	Sand with gravel and cobbles. Patches of sugar kelp. Red and brown algae. Spiny starfish.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
T2--e	8m	F-O	SS.SMp.KSwSS.LsacR.S (*Laminaria saccharina* and filamentous red algae on infralittoral sand)	Sand with gravel and cobbles. Patches of sugar kelp. Red and brown algae. Spiny starfish. Edible crab observed.	
T2-f	5-6 m	A	Mixture of SS.SMp.KSwSS.LsacR (*Laminaria saccharina* and red seaweeds on infralittoral sediments) and IR.LIR.K.Lsac.Ldig (*Laminaria saccharina* and *Laminaria digitata* on sheltered sublittoral fringe rock)	Boulder field with dense sugar kelp coverage. Oarweed attached to larger bouderes and cobbles. Sea urchins attached to rocks. Spiny starfish.	
T2-g	8 m	O	SS.SMp.KSwSS.LsacR.S (*Laminaria saccharina* and filamentous red algae on infralittoral sand)	Sand with gravel and cobbles. Sparse patches of sugar kelp along with starfish and urchins.	

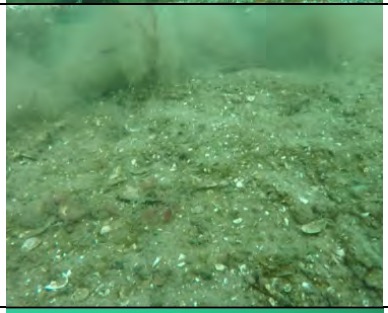
Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
T2-h	8 m	R	SS.SSa.IMuSa (Infralittoral muddy sand) *Note: kelp in drop-down video still frame was attached to the frame (i.e. not from locality).	Sand with shell debris. Very occasional sugar kelp fronds. Starfish and sea urchins.	
8	Drop-down. 11 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris.	
9	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
10	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand with spiny starfish evident.	
11	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand with sea beard *Nemertesia antennina*.	
12	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand with sea beard *Nemertesia antennina*.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
13	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand with shell debris.	
14	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand. Common starfish. Single sugar kelp frond.	
15	9-10 m	O	SS.SMp.KSwSS.LsacR.S (*Laminaria saccharina* and filamentous red algae on infralittoral sand)	Silty sand. Common starfish. Occasional sugar kelp fronds.	

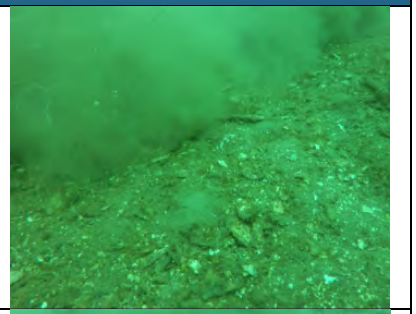
Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
16	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand with no starfish.	
17	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand with sea beard *Nemertesia antennina*. Sparse algae.	
18	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Frame upside down.	

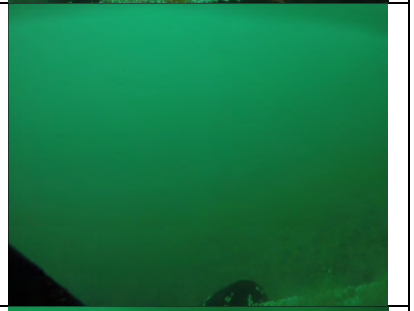
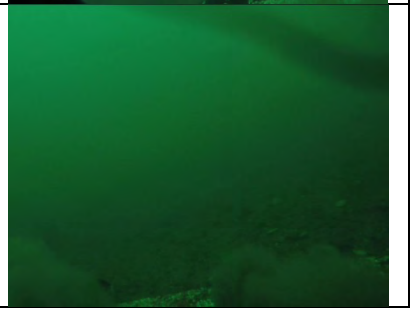
Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
19	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	
20	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	
21	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	

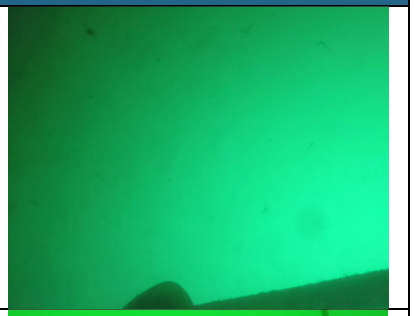
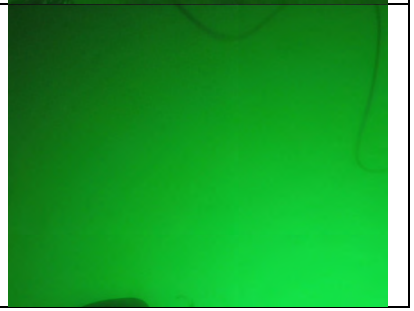
Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
22	9-10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Mixed sand and shell debris with occasional common starfish.	
23	11 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Mixed sand and shell debris including razor shells.	
24	12 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Mixed sand and shell debris including razor shells.	

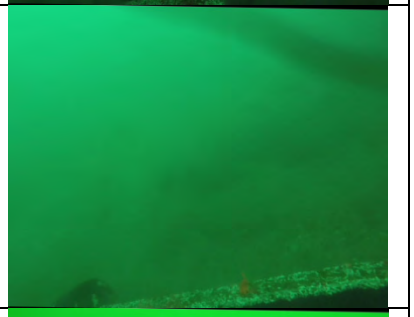
Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
25	12 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand and shell debris with a spiny starfish.	
26	14 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand and shell debris. Starfish and a flatfish (species undetermined).	
27	14 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand with sea beard *Nemertesia antennina*.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
28	14 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand and shell debris.	
29	14 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Shore crab *Carcinus maenas* and starfish species.	
30	14 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand and shell debris.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
31	14 m	R	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand and shell debris. Single frond of sugar kelp recorded.	
32	14.3 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand and shell debris. Spiny starfish.	
33	13 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand and shell debris.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
34	18.5 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand and shell debris.	
35	18.5 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand and shell debris.	
36	20 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand and shell debris.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
37	21 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Frame upside down.	
38 New SD Card	23 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	
39	22 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Frame upside down.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
40	23 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	
41	20 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	
42	20. 5 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
43	21.5 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	
44	23 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Silt.	
45	25 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Silt.	
46	45 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)		Not enough light to view sediment.

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
47	28 m		SS.SMu.ISaMu (Infralittoral sandy mud)	Silt.	
48	26 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Silty sand with starfish.	
49	26 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
50	28 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	
51	28 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Upside down.	
52	28 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
53	29 m	L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	
54		L	SS.SMu.ISaMu (Infralittoral sandy mud)	Sandy silt.	
55	6 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris and occasional algae.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
56	7 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris and gravel. Single frond of sugar kelp, spiny starfish.	
57	7 m	R	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris and gravel. Single frond of sugar kelp, common starfish.	
58	7 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris and gravel. Red and brown algae and spiny starfish. Kelp stuck on wheel.	

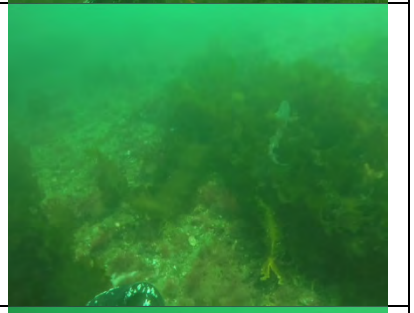
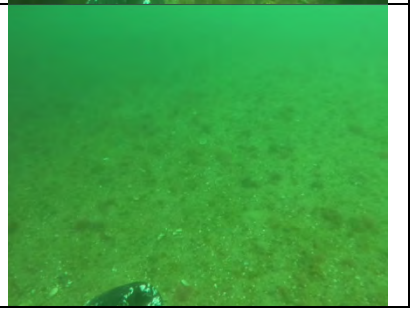
Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
59	7 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris and gravel. Red and brown algae.	
60	7 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris and gravel. Red and brown algae. Spiny starfish and common starfish.	
61	6.6 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris and gravel. Red and brown algae. Spiny starfish and common starfish.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
62	6.6 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris and gravel. Red and brown algae. Lots of starfish and occasional sea urchins. Algae.	
63	7.3 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris and gravel. Red and brown algae. Starfish.	
64	7.4 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris. Red and brown algae. Starfish.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
65	8 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	
66	8 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	
67	8 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand with gravel.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
68	8 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris. Red and brown algae. Occasional sugar kelp fronds.	
69	9 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris. Sparse algae.	
70	9. 5 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris. Sparse algae.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
71	10 m	O	SS.SMp.KSwSS.LsacR.S (*Laminaria saccharina* and filamentous red algae on infralittoral sand)	Sand with shell debris. Very occasional sugar kelp frond and starfish.	
72	11 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris.	
73	11 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
74	10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Sand with shell debris. Shore crab *Carcinus maenas*.	
75	9 m	F-C	SS.SMp.KSwSS.LsacR.S (*Laminaria saccharina* and filamentous red algae on infralittoral sand)	Sand with shell debris. Frequent sugar kelp fronds, catshark, spiny starfish and common urchins. Red algae. Dead man's rope *Chorda filum*.	
76	10 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
77	10.5 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	
78	11 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	
79	11 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand with occasional cobble debris. Dead man's fingers *Alcyonium digitatum*. Sponge *Suberites carnosus* and spiny starfish.	

Site	Approx. Depth	Kelp Coverage[1]	Biotope	Survey Notes	Drop-Down Video Still Frame
80	11 m	L	SS.SSa.IMuSa (Infralittoral muddy sand)	Silty sand.	

[1] Seabed kelp coverage based on SACFOR scale (http://www.marlin.ac.uk/glossary/typicalabundance; Accessed June 2017):
S = Super-abundant (>80%); A = Abundant (40-79%); C = Common (20-39%); F = Frequent (10-19%); O = Occasional (5-9%); R = Rare (1-5%);
L = Less than rare indicated by extrapolation (<1%).

B Water Framework Directive (WFD) Compliance Assessment

B.1 Introduction

B.1.1 Project Overview

ABPmer has been commissioned by Hunterston B Power Station, owned and operated by EDF Energy, to undertake an environmental appraisal of the potential marine environmental effects of seaweed clearance from the vicinity of its cooling water intake (see Main Report). To support the marine licence application, a Water Framework Directive (WFD) compliance assessment has been undertaken to determine whether the proposed works at Hunterston complies with the objectives of the WFD. This information together with the environmental appraisal will be submitted to Marine Scotland as part of the marine licensing process. Figure B.1 shows the location of the proposed works and surrounding WFD water bodies.

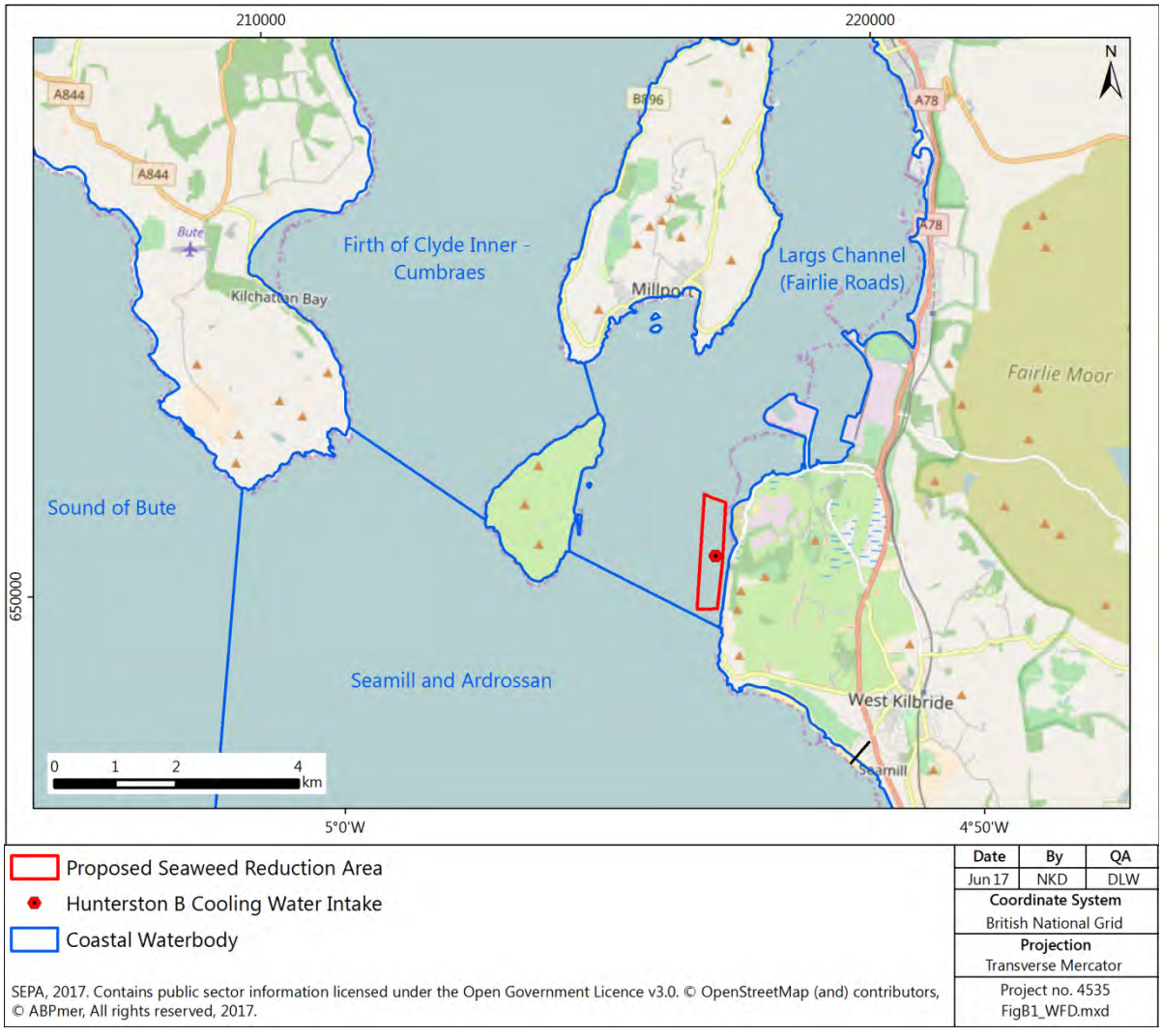


Figure B.1. Location of Hunterston B Power Station, cooling water intake, proposed seaweed reduction area and surrounding water bodies

B.1.2 Water Framework Directive (WFD)

The WFD (2000/60/EC) came into force in 2000 and establishes a framework for the management and protection of Europe's water resources. It is implemented in Scotland 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). The overall objective of the WFD is to achieve good status (GS) in all inland, transitional, coastal and ground waters by 2015, unless alternative objectives are set and there are appropriate reasons for time limited derogation.

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 GS, 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 heavily modified water body (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 sets 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.

In addition to surface water bodies, the WFD also incorporates groundwater water bodies. Groundwaters are assessed against different criteria compared to surface water bodies since they do not support ecological communities (i.e. it is not appropriate to consider ecological status of a groundwater). Therefore, groundwater water bodies are classified as good or poor quantitative status in terms of their quantity (groundwater levels and flow directions) and quality (pollutant concentrations and conductivity), along with 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 Scottish Environment Protection Agency (SEPA) published the first cycle (2009 to 2015) of RBMPs for Scotland, reporting the status and objectives of each individual water body. SEPA subsequently published updated RBMPs for Scotland as part of the second cycle (2015 to 2021).

The proposed works at Hunterston are located within the Largs Channel (Fairlie Roads) coastal water body (see Figure B.1) in the Scotland river basin district which is reported in the Scotland RBMP (SEPA, 2015).

Consideration of WFD requirements is necessary for developments 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 at Hunterston 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).

In the absence of formal guidance for the preparation of WFD compliance assessments in Scotland, the Environment Agency's "Clearing the Waters for All" process has been used as a template for the assessment[11]. This guidance outlines how to assess the impact(s) of activities in transitional and coastal waters in relation to WFD objectives, setting out the following three discrete stages:

- **Screening**: excludes any activities that do not need to go through the scoping or impact assessment stages (Section B.2);
- **Scoping**: identifies the receptors that are potentially at risk from an activity and need impact assessment (Section B.3); and
- **Impact 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 GS (Section B.4).

B.2 Screening

B.2.1 Project Description

Hunterston B Power Station utilises the sea as a source of cooling water for plant systems. The cooling water enters the station by passing through a coarse screen located at the cooling water intake jetty (see Figure B.1). On a number of occasions, the station has experienced high levels of seaweed ingress onto the cooling water intake screens. The high levels of impingement have reduced water flow through the screens requiring the station to reduce energy generation.

[11] https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters (Accessed June 2017).

The station undertook a limited programme of seaweed clearance in 2016 from within the vicinity of the cooling water intakes with the approval of Marine Scotland. This is considered to have led to a subsequent reduction in seaweed impingement. The station therefore proposes to undertake similar works in 2017. Based on drop-down camera surveys in 2016 and 2017, the main species of seaweed present within the proposed seaweed reduction area is the kelp *Saccharina latissima* (formerly *Laminaria saccharina*). This is also the main type of seaweed that collects on the cooling water intake screens (Hunterston B Power Station, *pers. comm.*).

Hunterston B Power Station is seeking a one year marine licence for seaweed removal within the proposed seaweed reduction area. Table B.1 provides a summary of the proposed works at Hunterston.

Table B.1. Summary of proposed works

Location of Proposed Works	See Figure B.1.
Area of Proposed Works	0.64 km^2 (64 hectares).
Duration and Timing of Proposed Works	Up to three campaigns during the one year licence period (expected to be conducted in July/August 2017, September/October 2017 and April/May 2018; up to approximately ten days per campaign; subject to weather conditions, the working pattern will involve 12-hour working days.
Seaweed Removal Methodology	The removal technique will consist of using a standard fishing net supplemented with a mobile chain mat were practicable, deployed from a suitable commercial fishing vessel. The fishing net is a standard nephrops trawl 460 meshes in circumference made with 80 mm braided netting. This is mounted on 24 m of standard 250 mm rock hoppers rigged to have minimum bottom contact to reduce the disturbance of the seabed and associated marine life. The net will have an approximate weight in the water of 400 kg. The deployment of the net involves a pair of No. 5 Bison trawl doors producing an opening net of approximately 12 to 15 m. The mobile chain mat is made of 12 m of 16 mm chain mounted in a U-shape onto a 100 mm pipe with 450 mm wheels. The mobile mat is designed to reduce ground contact and disturbance to a minimum. For each campaign, it is envisaged that a visual survey of the proposed seaweed reduction area would be undertaken using a drop-down camera to identify the distribution and density of seaweed growth. Based on this survey, a plan would be developed by EDF Energy prior to the removal activity taking place, targeting areas of denser seaweed growth. Daily monitoring of the amounts of seaweed entering the cooling water intakes will also be undertaken to assess the effectiveness of the activity with a view to reducing the area over time.
Quantity of Seaweed to be Removed	150 tonnes (wet weight; three campaigns at 50 tonnes wet weight) of seaweed from within the proposed seaweed reduction area, primarily comprising the kelp *S. latissima*.
Seaweed Disposal Methodology	Seaweed collected during the activity will be stored on the vessel and contained within 1 tonne rubble style sacks or an open bunded 1,000 litre pallet tank; the contained seaweed would then be craned ashore for disposal using an approved method.

A teleconference between EDF Hunterston, ABPmer and Marine Scotland on 19 May 2017 confirmed that the works did not require a formal environmental impact assessment (EIA), but that an environmental appraisal would be required to support marine licence application with specific consideration of the potential impacts on WFD objectives (discussed here).

B.2.2 Potentially Affected Water Bodies

To determine which water bodies would potentially be affected by the proposed works, all surface and groundwater water bodies located within 2 km of the site were recorded (see Figure B.1). The following water bodies were initially screened in:

- Largs Channel (Fairlie Roads) coastal water body;
- Firth of Clyde Inner – Cumbraes coastal water body;
- Seamill and Ardrossan coastal water body;
- West Kilbride groundwater water body; and
- North Ayrshire Coastal groundwater water body.

Based on the location and scale of the proposed works at Hunterston, it is considered unlikely to cause a significant non-temporary effect on the Firth of Clyde Inner – Cumbraes coastal water body (ID: 200028) or the West Kilbride (ID: 150534) and North Ayrshire Coastal (ID: 150785) groundwater water bodies, or cause deterioration in status at the water body level. Therefore, these three water bodies have been screened out of the assessment and will not be discussed further.

Table B.2. Largs Channel (Fairlie Roads) coastal water body summary

Water Body Name	Largs Channel (Fairlie Roads)
Water Body ID	200026
Water Body Type	Coastal
Water Body Area	29.87 km^2
Hydromorphological Designation	N/A
Protected Area Designations	Bathing Water Directive, Shellfish Waters Directive
Overall Status	Good
Ecological Status	Good
Chemical Status	Good (Pass)
Parameters Not At Good Status	N/A

Table B.3. Seamill and Ardrossan coastal water body summary

Water Body Name	Seamill and Ardrossan
Water Body ID	200024
Water Body Type	Coastal
Water Body Area	98.02 km^2
Hydromorphological Designation	N/A
Protected Area Designations	Bathing Water Directive, Shellfish Waters Directive
Overall Status	Good
Ecological Status	Good
Chemical Status	Good (Pass)
Parameters Not At Good Status	N/A

Table B.2 and Table B.3 provide a summary of the Largs Channel (Fairlie Roads) (ID: 200026) and Seamill and Ardrossan (ID: 200024) coastal water bodies respectively, including current water body status (overall, ecological and chemical). The proposed works at Hunterston are located within the Largs Channel (Fairlie Roads) coastal water body (Figure B.1).

The Largs Channel (Fairlie Roads) and Seamill and Ardrossan coastal water bodies are both currently classified as being at overall good status, based on good ecological potential and good (pass) chemical status. The overall, ecological and chemical status/potential is determined by the "one-out, all-out" principle, whereby the poorest individual parameter's classification defines the assessment level. Therefore, if any parameter is assessed as less than good (e.g. moderate), then the status for that water body is reported at that level. An overall good status confirms that each individual parameter measured within these two coastal water bodies is achieving at least the standard required to report good status.

B.2.3 Protected Areas

The WFD requires that activities are also in compliance with other relevant legislation, such as the Habitats Directive (92/43/EEC as amended), Birds Directive (2009/147/EC), Ramsar Convention, Bathing Water Directive (2006/7/EC), Nitrates Directive (91/676/EEC), Urban Waste Water Treatment Directive (UWWTD) (91/271/EEC) and the provisions of the Shellfish Waters Directive (2006/113/EC).

Nature Conservation Designations

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.

There are no international nature conservation protected areas located within 2 km of the proposed works at Hunterston (see Figure B.2). The Renfrewshire Heights and Arran Moors SPAs are located greater than 10 km from Hunterston; however, these two sites are designated for terrestrial features and thus unlikely to be affected by the proposed works. The nearest nature conservation protected areas which are designated for marine features are the Inner Clyde SPA and Ramsar site, located more than 25 km to the northeast of Hunterston, while the Inner Hebrides and the Minches SAC is located approximately 42 km to the west.

Bathing Water Directive

The revised Bathing Water Directive (rBWD) (2006/7/EC) was adopted in 2006, updating the microbiological and physico-chemical standards set by the original Bathing Water Directive (BWD) (76/160/EEC) and the process used to measure/monitor water quality at identified bathing waters. The rBWD focuses on fewer microbiological indicators, whilst setting higher standards, compared to those of the BWD. Bathing waters under the rBWD 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 BWD was repealed at the end of 2014 and monitoring of bathing water quality has been reported against rBWD indicators since

2015. The new classification system considers all samples obtained during the previous four years and, therefore, data has been collected for rBWD indicators since 2012.

There are no designated bathing waters situated within 2 km of the proposed works at Hunterston. As shown in Figure B.3, the closest bathing waters to the proposed works are Seamill and Millport Bay at approximately 3 km to the southeast and north, respectively (both bathing waters assessed as good in 2016; SEPA, 2016).

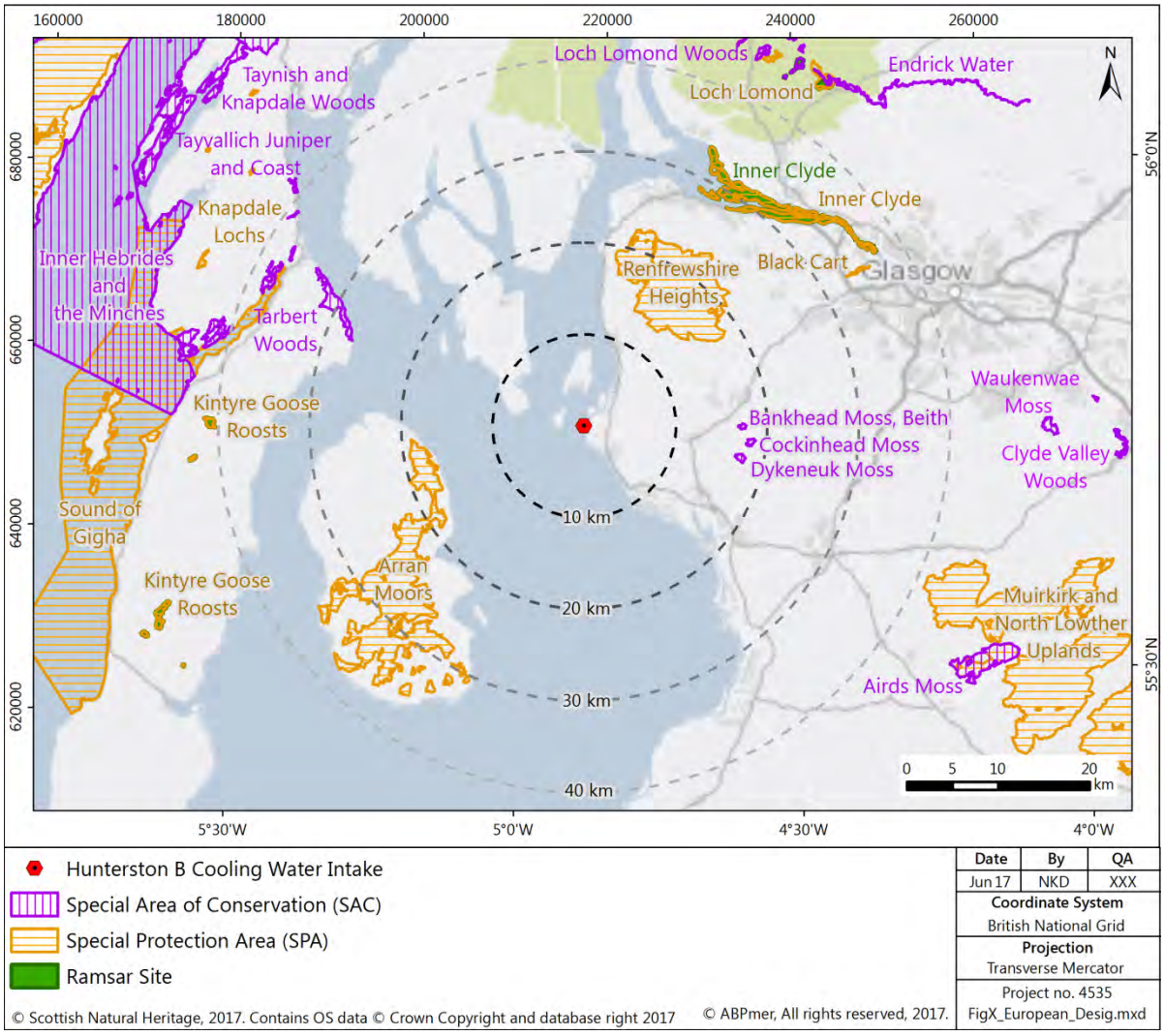


Figure B.2. Location of nature conservation protected areas in the vicinity of the proposed works at Hunterston

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.

The Largs Channel (Fairlie Roads) and Seamill and Ardrossan coastal water bodies are not designated under the Nitrates Directive and there are no surface water Nitrate Vulnerable Zones (NVZs), designated as being at risk from agricultural nitrate pollution, located in the vicinity of the proposed

works at Hunterston. The nearest NVZ is Stranraer Lowlands, located greater than 100 km to the south[12].

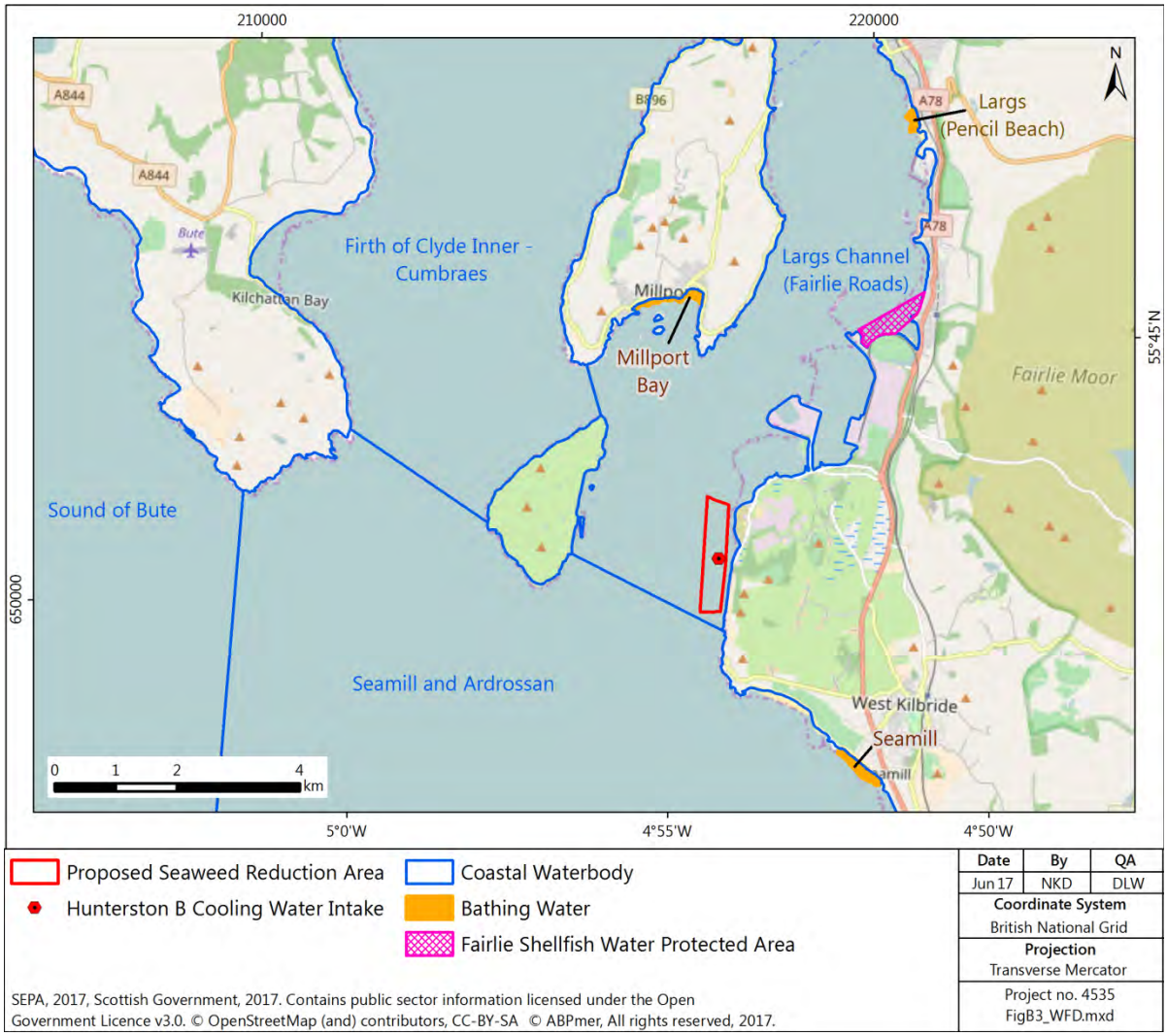


Figure B.3. Location of Bathing and Shellfish Water Protected Areas

Shellfish Waters Directive

The Shellfish Waters Directive (2006/113/EC) was repealed in December 2013 and subsumed within the WFD. In Scotland, it 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. The Order identifies 85 coastal areas as shellfish waters, which are identified on a series of maps.

The closest Shellfish Water Protected Area to Hunterston is Fairlie at approximately 4 km to the northeast[13] (Figure B.3). The Fairlie production area is designated for Pacific oyster (Crassostrea gigas). Food Standards Scotland is responsible for ensuring that shellfish from designated harvesting areas meet the health standards laid down in European Commission (EC) Regulation 853/2004. The latest classification report categorised the site as Class B for the period April 2017 to March 2018, whereby 90% of samples collected during the review period must present less than 4,600 *E. coli* per

12 http://www.gov.scot/Resource/0049/00490702.pdf (Accessed June 2017).

13 http://www.gov.scot/Topics/Environment/Water/15561/ShellfishWaters/LocationMaps (Accessed June 2017).

100 g of the flesh and intravalvular liquid. The remaining 10% of samples must present less than 46,000 *E. coli* per 100g of flesh and intravalvular liquid. Harvested products must be subject to purification, relaying in an approved Class A area or cooked (heat treated) by an approved method[14].

Urban Waste Water Treatment Directive

The UWWTD (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 UWWTD 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 UWWTD are water bodies affected by eutrophication of elevated nitrate concentrations and act as an indication that action is required to prevent further pollution caused by nutrients.

There are no designations under the UWWTD located within 2 km of the proposed works at Grays (Defra, 2012). The nearest designated areas are the River Irvine (Cessnock confluence to Tidal Weir) and Lugton Water "Sensitive Area (Eutrophic and Freshwater Fish) Rivers" which are approximately 20 km to the southeast of Hunterston at the mouth to Irvine Bay.

B.3 Scoping

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

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

Each receptor is considered in the following sections for the two water bodies potentially affected by the proposed works (i.e. Largs Channel (Fairlie Roads) and Seamill and Ardrossan coastal water bodies; see Section B.2.2). Potential risks that have been scoped into the assessment are highlighted in green and considered within the impact assessment stage (Section B.4), while those scoped out of the assessment are highlighted in red.

B.3.1 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. Table B.4 presents a summary of hydromorphological considerations and associated risk issues for the proposed works at Hunterston. As at least one hydromorphological consideration indicates that a risk could be associated with the proposed works within the Largs Channel (Fairlie Roads) coastal water body, this receptor has been scoped into the impact assessment (Section B.4).

[14] http://www.foodstandards.gov.scot/sites/default/files/Final%202017-18%20Annual%20Classification%20Document_0.pdf (Accessed June 2017).

Table B.4. Hydromorphology scoping summary

Hydromorphology Considerations	Hydromorphology Risk Issue(s)	
	Largs Channel (Fairlie Roads)	Seamill and Ardrossan
Consider if your activity could impact on the hydromorphology (for example morphology or tidal patterns) of a water body at high status?	No (hydromorphology at good status). Impact assessment not required.	No (hydromorphology at high status, but unlikely to be impacted by the proposed works). Impact assessment not required.
Consider if your activity could significantly impact the hydromorphology of any water body?	Yes (potential changes to hydromorphology as a result of works). Requires impact assessment.	No (hydromorphology unlikely to be impacted by the proposed works). Impact assessment not required.
Consider if your activity is in a water body that is heavily modified for the same use as your activity?	No (the water body is not heavily modified). Impact assessment not required.	No (the water body is not heavily modified). Impact assessment not required.

B.3.2 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). Table B.5 presents a summary of biology (habitat) considerations and associated risk issues for the proposed works at Hunterston. As at least one biology (habitats) consideration indicates that a risk could be associated with the proposed works within the Largs Channel (Fairlie Roads) coastal water body and the adjacent Seamill and Ardrossan coastal water body, this receptor has been scoped into the impact assessment (Section B.4).

Table B.5. Biology (habitats) scoping summary

Biology (Habitats) Considerations	Biology (Habitats) Risk Issue(s)	
	Largs Channel (Fairlie Roads)	Seamill and Ardrossan
Is the footprint of the activity 0.5 km^2 or larger?	Yes (0.64 km^2). Requires impact assessment.	
Is the footprint of the activity 1% or more of the water body's area?	Yes (2.1%). Requires impact assessment.	No (0.7%). Impact assessment not required.
Is the footprint of the activity within 500 m of any higher sensitivity habitat?	Yes (saltmarsh habitat within 500 m; Gardline Environmental Ltd, 2007). Requires impact assessment.	
Is the footprint of the activity 1% or more of any lower sensitivity habitat?	Yes (cobbles, gravel and shingle, intertidal soft sediments like sand and mud, rocky shore, subtidal soft sediments; Gardline Environmental Ltd, 2007). Requires impact assessment.	

Fish

Activities occurring within an estuary could impact on normal fish behaviour such as movement, migration or spawning. Table B.6 presents a summary of biology (fish) considerations and associated risk issues for the proposed works at Hunterston. As at least one biology (fish) consideration indicates that a risk could be associated with the proposed works, this receptor has been scoped into the impact assessment (Section B.4).

Table B.6. Biology (fish) scoping summary

Biology (Fish) Considerations	Biology (Fish) Risk Issue(s)	
	Largs Channel (Fairlie Roads)	Seamill and Ardrossan
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?	Yes. "Continue with questions".	
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)?	Yes (disturbance of potential nursery habitat). Requires impact assessment.	
Consider if your activity could cause entrainment or impingement of fish?	No (not applicable). Impact assessment not required.	

B.3.3 Water Quality

Consideration should be made regarding whether phytoplankton status and harmful algae could be affected by the proposed works, as well as identifying the potential risks of using, releasing or disturbing chemicals. Table B.7 presents a summary of water quality considerations and associated risk issues of the proposed works at Hunterston. As at least one water quality consideration indicates that a risk could be associated with the proposed works, this receptor has been scoped into the impact assessment (Section B.4).

Table B.7. Water quality scoping summary

Water Quality Considerations	Water Quality Risk Issue(s)	
	Largs Channel (Fairlie Roads)	Seamill and Ardrossan
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)?	No (duration of proposed works up to approximately ten days per campaign; temporary and minor effects on water quality anticipated). Impact assessment not required.	
Consider if your activity is in a water body with a phytoplankton status of moderate, poor or bad?	No (phytoplankton classification is good). Impact assessment not required.	No (phytoplankton classification is high). Impact assessment not required.
Consider if your activity is in a water body with a history of harmful algae?	No (there is no known history of harmful algae). Impact assessment not required.	
If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if the chemicals are	No (not applicable). Impact assessment not required.	

Water Quality Considerations	Water Quality Risk Issue(s)	
	Largs Channel (Fairlie Roads)	Seamill and Ardrossan
on the Environmental Quality Standards Directive (EQSD) 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?	Yes (potential for sediments to be disturbed). Requires impact assessment.	
If your activity has a mixing zone (like a discharge pipeline or outfall) consider if the chemicals released are on the Environmental Quality Standards Directive (EQSD) list?	No (not applicable). Impact assessment not required.	

B.3.4 Protected Areas

Consideration should be made regarding whether WFD protected areas are at risk from an proposed activity, including SACs and SPAs (Natura 2000 sites), as well as bathing waters, shellfish waters and nutrient sensitive areas. Table B.8 presents a summary of protected area considerations and associated risk issues of the proposed works at Hunterston. As the protected areas considerations indicate that a risk could be associated with the proposed works, this receptor has been scoped into the impact assessment (Section B.4).

Table B.8. Protected areas scoping summary

Protected Areas Considerations	Protected Areas Risk Issue(s)	
	Largs Channel (Fairlie Roads)	Seamill and Ardrossan
Consider if your activity is within 2 km of any WFD protected area?	No (there are no protected areas within 2 km of the proposed works). Impact assessment not required.	

B.3.5 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. Table B.9 presents a summary of INNS considerations and associated risk issues of the proposed works at Hunterston. As the INNS considerations indicate that a risk could be associated with the proposed works, this receptor has been scoped into the impact assessment (Section B.4).

Table B.9. Invasive non-native species (INNS) scoping summary

INNS Considerations	INNS Risk Issue(s)	
	Largs Channel (Fairlie Roads)	Seamill and Ardrossan
Consider if your activity could introduce or spread INNS?	Yes (potential for introduction or spread of INNS). Requires impact assessment.	

B.4 Impact Assessment

An impact assessment should be conducted for each receptor identified during the scoping stage as being at risk from an activity. As highlighted in Section B.3, the following receptors have been scoped into the impact assessment:

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

Each of these WFD parameters has been evaluated in order to determine whether the proposed activities 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. Where possible, the assessment has drawn on information presented in the environmental appraisal (see Main Report).

B.4.1 Hydromorphology

The coastline at Hunterston B Power Station is west facing and, therefore, wave action from the south would impact littoral habitats/sediments through refraction towards the coast while wave action from a southwest direction could directly impact the coastline at Hunterston. It is these wave conditions, combined with low water tidal states, which are considered to push seaweed towards the Hunterston B cooling water intake.

The presence of seaweed within the proposed seaweed reduction area, predominantly *S. latissima*, is largely seasonal in nature and thus highest densities are likely to occur during the spring and summer months. In contrast, reduced densities of seaweed are likely to be present during winter storm events. Therefore, it is unlikely that the presence of seaweed within the proposed seaweed reduction area has a major attenuation effect on wave action against the adjacent coastline. As removal of seaweed from within the proposed seaweed reduction area is unlikely to change the prevailing wave conditions and given the rocky/hard coastline at Hunterston which is highly resistant to wave impact, the impact on kelp removal is therefore assessed as minor (see Section 4.1 of the main report).

In conclusion, the proposed works at Hunterston are not expected to lead to a deterioration of the assessed hydromorphological elements within the Largs Channel (Fairlie Roads) or Seamill and Ardrossan coastal water bodies, nor prevent these water bodies from meeting future WFD objectives.

B.4.2 Biology

Habitats

The proposed works will remove some but not all of the kelp from the areas within which the activity occurs. Immediately following the removal, the habitat will support less kelp/less dense kelp than prior to the activity, but the habitat type will not change. Rather some of the ecological functioning of the area could be reduced. The nearest saltmarsh habitat is adjacent to the site along the Hunterston coastline, while seagrass beds are located to the north of the proposed seaweed reduction area as part of Hunterston Sands. However, the saltmarsh and seagrass habitat is unlikely to be indirectly effected by the proposed works as wave action will not be significantly altered by seaweed removal.

Furthermore, all seaweed removed from within the proposed seaweed reduction area will be disposed to land, as opposed to disposal at sea. This mitigation measure avoids potential adverse impact pathways between the disposed material and other marine habitats (e.g. smothering of saltmarsh).

In conclusion, the proposed works at Hunterston are not expected to lead to a deterioration of seabed habitats within the Largs Channel (Fairlie Roads) or Seamill and Ardrossan coastal water bodies, nor prevent these water bodies from meeting future WFD objectives.

Fish

Kelp forests also serve as a nursery for many fish species, including Atlantic Cod (*Gadus morhua*) and pollack (*Pollachius pollachius*). They are also feeding grounds for fish species such as ballan wrasse (*Labrus bergylta*) and Goldsinny wrasse (*Ctenolabrus rupestris*), which prey on kelp associated invertebrates (Norderhaug et al. 2005), as well as attracting commercially important species such as European sea bass (*Dicentrarchus labrax*), pollack (*P. pollachius*) and conger eels (*Conger conger*) (Smale et al. 2013). In turn, elevated fish densities in kelp forests attract large piscivores, such as large fish, seals and otters.

However, as highlighted above, the proposed works will remove some but not all of the kelp from the areas within which the activity occurs. Immediately following the removal, the habitat will support less kelp/less dense kelp than prior to the activity, but the habitat type will not change. Rather some of the ecological functioning of the area could be reduced. Smale et al. (2013) noted that the biodiversity of *S. latissima* beds did not change significantly across the SACFOR scale, suggesting that some aspects of ecological functioning may not be significantly impaired (e.g. fish nursery). *S. latissima* is likely to regrow rapidly in the targeted areas. This regrowth may offset some of the lost function of the affected habitat. Given the relatively small area over which the activity may occur in relation to the overall scale of the resource within the Clyde Sea, the limited impact on ecological structure/functioning and the scope for rapid recovery, the impact on kelp habitat is therefore assessed as minor (see Section 4.3.1 of the main report).

In conclusion, the proposed works at Hunterston are not expected to lead to a deterioration of fish within the Largs Channel (Fairlie Roads) or Seamill and Ardrossan coastal water bodies, nor prevent these water bodies from meeting future WFD objectives.

B.4.3 Water Quality

The proposed seaweed reduction activity could lead to small quantities of sediment being raised into suspension through contact with the seabed, although any disturbance will be temporary and sediment will quickly disperse. Given the nature and small scale of the proposed works, water quality will not be affected and no impact pathway has been identified in Section 4.2 of the marine report. Therefore, the proposed works at Hunterston are not expected to lead to a long-term deterioration of water quality elements within the Largs Channel (Fairlie Roads) or Seamill and Ardrossan coastal water bodies, nor prevent these water bodies from meeting future WFD objectives.

B.4.4 Invasive Non-Native Species

As with most activities which occur in the marine environment, there is potential risk that the proposed works at Hunterston could result in the introduction or spread of INNS. For example, this could include the movement of vessels (and ballast) from differing water bodies and the transfer of organisms attached to the vessel hulls. However, given the scale of the proposed works and the typical locality of the vessel to be commissioned to undertake the works, the risk in terms of introducing or transferring INNS is minimal. Therefore, the proposed works are not expected to lead

to a deterioration of nearby WFD water bodies in terms of INNS, nor prevent any nearby water bodies from meeting their WFD objectives.

B.5 Conclusion

Based upon the information presented within this WFD compliance assessment, and considering the additional information presented in the environmental appraisal (see Main Report), it is concluded that the proposed works at Hunterston are not likely to have a permanent (i.e. non-temporary) effect on the status of WFD parameters that are significant at water body level. The proposed works are therefore not predicted to cause either deterioration to the current status of the Largs Channel (Fairlie Roads) or Seamill and Ardrossan coastal water bodies, nor prevent these water bodies from achieving future WFD objectives.

B.6 References

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B.7 Abbreviations/Acronyms

AWB	Artificial Water Body
BWD	Bathing Water Directive
CAR	Water Environment (Controlled Activities) (Scotland) Regulations 2011 (commonly known as the Controlled Activity Regulations)
Defra	Department for Environment, Food and Rural Affairs
EC	European Commission
EQS	Environmental Quality Standard
EQSD	Environmental Quality Standards Directive
GEP	Good Ecological Potential
GES	Good Ecological Status
GCS	Good Chemical Status
GS	Good Status
HMWB	Heavily Modified Water Body
INNS	Invasive Non-Native Species
NVZ	Nitrate Vulnerable Zone
PSD	Priority Substances Directive
RBMP	River Basin Management Plan
rBWD	Revised Bathing Water Directive
SAC	Special Area of Conservation
SEPA	Scottish Environment Protection Agency
SPA	Special Protection Area
UWWTD	Urban Waste Water Treatment Directive
WFD	Water Framework Directive

Cardinal points/directions are used unless otherwise stated.

SI units are used unless otherwise stated.

Contact Us

ABPmer

Quayside Suite,
Medina Chambers
Town Quay, Southampton
SO14 2AQ

T +44 (0) 23 8071 1840
F +44 (0) 23 8071 1841
E enquiries@abpmer.co.uk

www.abpmer.co.uk