BERWICK BANK WIND FARM

REPORT TO INFORM APPROPRIATE ASSESSMENT

APPENDIX 2A: EUROPEAN SITES SUMMARIES FOR SPECIAL AREAS OF CONSERVATION

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1.1. BERWICKSHIRE AND NORTH NORTHUMBERLAND COAST SAC

1.1.1. SITE OVERVIEW

1. The Berwickshire and North Northumberland Coast Special Area of Conservation (SAC) spans an extensive and diverse stretch of coastline in north-east England and south-east Scotland, extending from St Abb's Head to Alnwick (Figure 1.1). It is designated for Annex I habitats and one Annex II species. The site covers 115 km of coastline, extending out to four nm to encompass 645 km^2 of shore and sea.

2. Key literature sources are as follows:

- Berwickshire and Northumberland Coast SAC Standard Data Form (JNCC, 2015a);
- Natural England and NatureScot Conservation Advice for Marine Protected Areas – Berwickshire and North Northumberland Coast SAC (Natural England, NatureScot, 2020);
- Berwickshire and North Northumberland Coast Designated SAC (JNCC, 2015b);
- European Site Conservation Objectives for Berwickshire and North Northumberland Coast SAC (UK0017072) (Natural England, 2014a); and
- Berwickshire and North Northumberland Coast Citation for SAC (Natural England, 2014a).

1.1.2. QUALIFYING FEATURES

3. The site is designated for the following interest features:

- mudflats and sandflats not covered by seawater at low tide;
- intertidal mudflats and sandflats;
- large shallow inlets and bays; Shallow inlets and bays;
- reefs;
- submerged or partially submerged sea caves; and
- grey seal *Halichoerus grypus*.

1.1.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

4. The site encompasses a rocky shoreline and several embayment's, namely Budle Nay, Beadnell Bay and Embleton Bay. The SAC also overlaps with several Site of Special Scientific Interest (SSSI) Bamburgh Coast and Hills SSSI, Burnmouth Coast SSSI, Howick to Seaton Point SSSI, Lindisfarne SSSI, Northumberland Shore SSSI, St Abb's Head to Fast Castle SSSI and the Farne Islands SSSI.

5. Stretches of the coast in England support an extensive range of intertidal mudflats and sandflats which support rich infaunal communities, including the largest eelgrass beds (*Zostera angustifolia* and *Zostera noltei*) on the east coast of England and large beds of *Mytilus edulis*. Open bays support populations of sand eels *Ammodytes* sp., small crustaceans and *polychaetes*, while more sheltered sediments support bivalve and burrowing heart-urchin *Echinocardium cordatum* communities.

6. The site is considered to be one of the best areas in the UK for mudflats and sandflats not covered by seawater at low tide, large shallow inlets and bays, reefs, submerged or partially submerged sea caves and grey seal. The area ranging from Budle Bay to the north forms an extensive area of sandflats which is one of the richest sandflat biotopes in North-East England.

7. Moderately exposed reef habitats occur throughout the site, including littoral and subtidal reefs. The varied range of rock types (limestone, volcanic rock) and physical conditions (from more sheltered reefs to open/exposed conditions and strong tidal streams), has led to rich and diverse reef communities, known to be the most diverse on the North Sea coast. The Farne Islands are among the few rocky islands with extensive reefs in the North Sea.

8. Caves occur throughout the site in both the intertidal and the subtidal zones in a range of different hard rock exposures and support a range of distinct biological communities. Depending on the depth of the cave and its morphology, the site supports a range of distinct biological communities. The cliffs north of Berwick and the limestone at Howick contain partially submerged sea caves, whereas submerged sea caves, tunnels and arches are located in the Farne Islands and around St Abb's Head. Caves occur in association with reefs.

9. The section of the site in north-east England is representative of grey seal breeding and supports around 3% of annual UK pup production. It is one of the largest breeding colonies on the North Sea coast, with the area around the Farne Islands being the preferred food source for grey seals in this area.

1.1.4. CONSERVATION ADVICE

10. Advice on operations and management measures can be found within: :

- Northumberland Coastal Site Improvement Plan (April 2015) (Natural England, 2015a);
- Advice on Operations (dated March 2021) (Natural England, NatureScot, 2022) ; and
- Conservation Objectives (Natural England, 2015b).

11. The Conservation Objectives for the site are to ensure that the integrity of the site is maintained or restored as appropriate, and to ensure that the site contributes to achieving the favourable conservation status (FCS) of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of qualifying species;
- the structure and function (including typical species) of qualifying natural habitats;
- the structure and function of the habitats of qualifying species;
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- the populations of qualifying species; and
- the distribution of qualifying species within the site.

12. Supplementary Advice on Conservation Objectives provide site-specific attributes and targets for the qualifying features (Nature England, NatureScot, 2020). Qualifying features relevant to the assessment of adverse effect on site integrity are grey seals, large shallow inlets and bays, mudflats and sandflats not covered by seawater at low tide, reefs, and submerged or partially submerged sea caves and Supplementary Advice on Conservation Objectives for these features are provided in Table 1.1.

Table 1.1: Supplementary Advice on Conservation Objectives Site-specific Attributes and Targets for the Qualifying Features of the Berwickshire and Northumberland Coast SAC

Feature/Sub-feature Name	Attribute	Target
Grey Seal (*Halichoerus gypus*)	Disturbance caused by human activity	N/A
	Population: population size	Maintain the population size within the site.
	Population: recruitment and reproductive capability	Maintain the reproductive and recruitment capability of the species.

Feature/Sub-feature Name	Attribute	Target
	Presence and spatial distribution of the species	Maintain the presence and spatial distribution of the species and their ability to undertake key life cycle stages and behaviours.
	Structure and function: biological connectivity	Maintain connectivity of the habitat within sites and the wider environment to ensure recruitment, and/or to allow movement of migratory species.
	Structure: non-native species and pathogens (species)	Restrict the introduction and spread of non-native species and pathogens, and their impacts.
	Supporting habitat: extent and distribution	Maintain the extent and spatial distribution of the haul out sites.
	Supporting habitat: food availability (species)	Maintain the cover/abundance of preferred food items required by the species.
	Supporting processes: physico-chemical properties (species)	Maintain the natural physico-chemical properties of the water.
	Supporting processes: sediment movement and hydrodynamic regime (species)	Maintain all hydrodynamic and physical conditions such that natural water flow and sediment movement is not significantly altered or constrained.
	Supporting processes: water quality - contaminants (species)	Reduce aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive (WFD)(Council Directive 2000/60/EC), avoiding deterioration from existing levels.
	Supporting processes: water quality - nutrients (species)	Maintain water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from existing levels.
	Supporting processes: water quality - turbidity (species)	Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) in areas where this species is, or could be, present.
Large shallow inlets and bays	Distribution: presence and spatial distribution of biological communities	Maintain the presence and spatial distribution of large shallow inlet and bay communities.
	Extent and distribution	Maintain the total extent and spatial distribution of large shallow inlets and bays to ensure no loss of integrity, while allowing for natural change and succession.
Large shallow inlets and bays	Function: connectivity	Maintain the connectivity of large shallow inlets and bays to surrounding estuaries, rivers, freshwater, marine and coastal habitats, to ensure larval dispersal and recruitment, maintain nursery grounds for mobile species, and to allow movement of migratory species.
	Structure: habitat zonation	Maintain habitat zonation, which is affected by both salinity gradient and tides in the feature, from fresh water sources to the sea (horizontally) and with shore height (vertically) from terrestrial to subtidal.
	Structure: sediment movement, sources and sinks	Maintain sediment regime and budget within large shallow inlets and bays, including sediment sources, sinks, and movement.
	Structure: substrate composition and distribution	Maintain the distribution, composition and character of substrate across the feature (and each of its sub-features).
	Structure: tidal regime	Maintain the tidal range, currents and circulation patterns across the feature (and each of its sub-features).
	Structure: topography	Maintain the characteristic physical form and topographic features of large shallow inlets and bays, and the overall topography on which the morphology relies.
	Structure: water density	Maintain the natural water density or gradient across the feature (and each of its sub-features).
	Supporting processes: energy/exposure	Maintain the natural physical energy resulting from waves, tides and other water flows, so that the exposure does not cause alteration to the biotopes, natural disturbance levels and stability, across the feature/sub-feature.
Mudflats and sandflats not covered by seawater at low tide	Distribution: presence and spatial distribution of biological communities	Maintain the presence and spatial distribution of mudflat and sandflat communities.
	Extent and distribution	Maintain the total extent, spatial distribution and types of mudflats and sandflats.
	Structure: sediment composition and distribution	Maintain the distribution of sediment composition across the feature.
	Structure: sediment total organic carbon content	Maintain Total Organic Carbon (TOC) content in the sediment at existing levels.
	Structure: topography	Maintain the presence of topographic features, while allowing for natural responses to hydrodynamic regime, by preventing erosion or deposition through human-induced activity.
	Supporting processes: sediment contaminants	Restrict surface sediment contaminants (<1cm from the surface) to below the OSPAR Environment Assessment Criteria (EAC) or Effects Range Low (ERL)
	Supporting processes: sediment movement and hydrodynamic regime (habitat)	Maintain sediment transport pathways to and from the feature to ensure replenishment of the feature, and/or replenishment of habitats that rely on the sediment supply from the feature.
Reefs	Distribution: presence and spatial distribution of biological communities	Maintain the presence and spatial distribution of reef communities
Reefs	Extent and distribution	Maintain the total extent, spatial distribution and types of reef (and each of its sub-features) (subject to natural variation in sediment veneer).
	Structure: physical structure of rocky substrate	Maintain the surface and structural complexity, and the stability of the reef structure.
Submerged or partially submerged sea caves	Distribution: presence and spatial distribution of biological communities	Maintain the presence and spatial distribution of sea cave communities
	Extent and distribution	Maintain the total extent of all caves at 1.84 ha, and individual dimensions of each cave (height, length, width).
	Structure: morphology	Maintain the characteristic morphology of the habitat.
	Structure: physical structure of rocky substrate	Maintain the surface and structural complexity, and the stability of the rocky structure within the cave.
	Supporting processes: light levels (habitat)	Maintain the natural light availability to the caves.

Feature/Sub-feature Name	Attribute	Target
Large shallow inlets and bays; • mudflats and sandflats not covered by seawater at low tide; • reefs; and • submerged or partially submerged sea caves.	Structure: non-native species and pathogens (habitat)	Restrict the introduction and spread of non-native species and pathogens, and their impacts.
	Structure: species composition of component communities	Maintain the species composition of component communities.
	Supporting processes: water quality - contaminants (habitat)	Reduce aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X to the Water Framework Directive (Directive (2000/60/EC)), avoiding deterioration from existing levels.
	Supporting processes: water quality - dissolved oxygen (habitat)	Maintain the Dissolved Oxygen (DO) concentration at levels equating to High Ecological Status (specifically ≥ 5.7 mg/l (at 35 salinity) for 95% of year), avoiding deterioration from existing levels.
	Supporting processes: water quality - turbidity (habitat)	Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat.
• mudflats and sandflats not covered by seawater at low tide; • reefs; and • submerged or partially submerged sea caves.	Structure and function: presence and abundance of key structural and influential species	Maintain/recover/restore the abundance of listed species, to enable each of them to be a viable component of the habitat.
	Supporting processes: energy/exposure	Maintain the natural physical energy resulting from waves, tides and other water flows, so that the exposure does not cause alteration to the biotopes and stability, across the habitat.
	Supporting processes: physico-chemical properties (habitat)	Maintain the natural physico-chemical properties of the water.
• large shallow inlets and bays; and • mudflats and sandflats not covered by seawater at low tide.	Supporting processes: water quality - nutrients (habitat)	Restore water quality to mean winter dissolved inorganic nitrogen levels at which biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features.
• large shallow inlets and bays; and • submerged or partially submerged sea caves.	Supporting processes: sediment contaminants	Restrict surface sediment contaminant levels to concentrations where they are not adversely impacting the infauna of the feature.
• reefs; and • submerged or partially submerged sea caves.	Supporting processes: sedimentation rate	Maintain the natural rate of sediment deposition.
	Supporting processes: water quality - nutrients (habitat)	Maintain water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from existing levels.

1.1.5. CURRENT CONDITION STATUS

13. A feature condition assessment was undertaken in 2014 and concluded the following (Nature Scot, 2014a):

- grey seal was assessed as "*favourable maintained*"; and
- sea caves were assessed as "*favourable maintained*".

14. Reefs were not assessed[1].

[1] Whilst 'reefs' are reported as "Condition not assessed", 'mudflats and sandflats not covered by seawater at low tide' and 'large shallow inlets and bays' are not referred to in the feature assessments SiteLink (nature.scot) and are assumed to also not have been assessed.

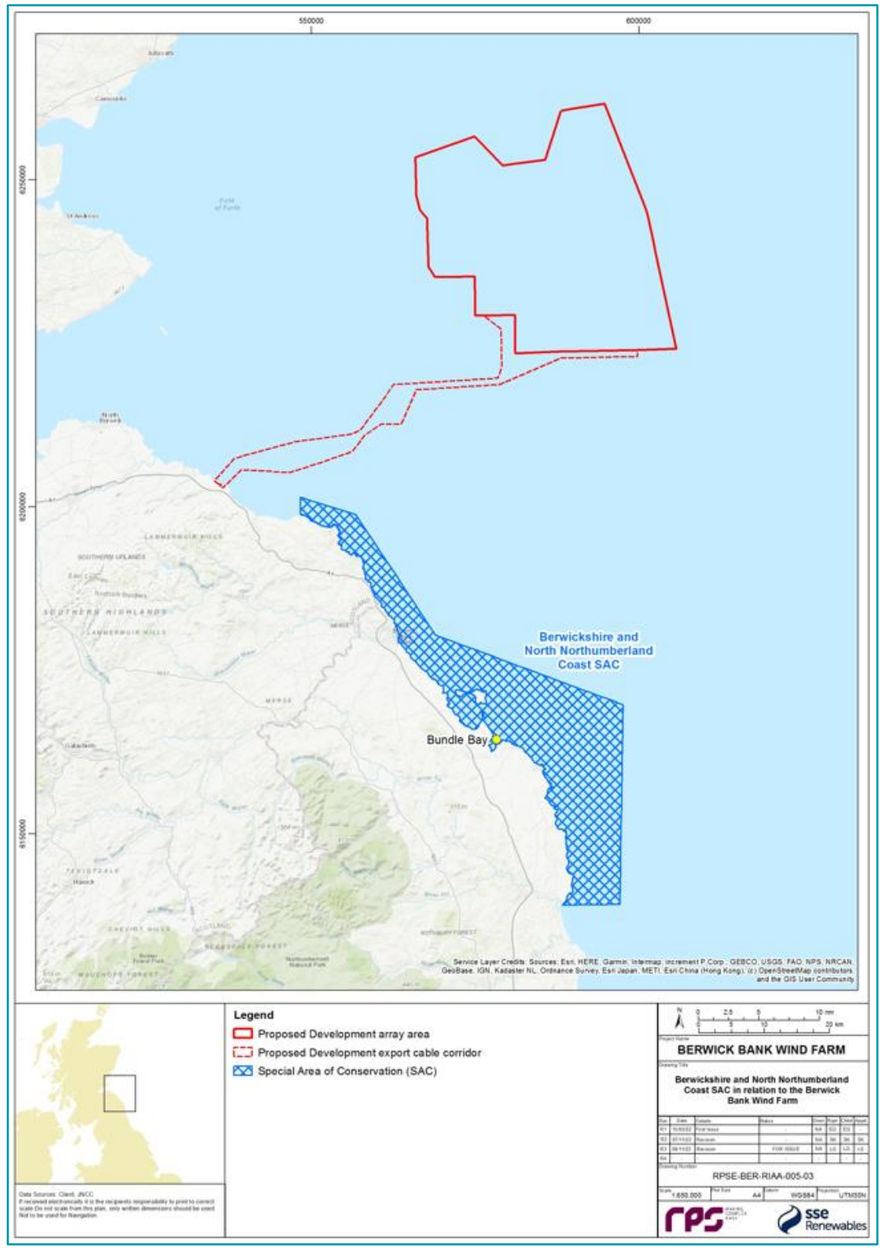

Figure 1.1: Berwickshire and North Northumberland Coast SAC in Relation to Berwick Bank Wind Farm

1.2. TWEED ESTUARY SAC

1.2.1. SITE OVERVIEW

15. The Tweed Estuary SAC in Northumberland encompasses the Tweed Estuary, a long and narrow estuary discharging into the North Sea (Figure 1.2). The site is designated for Annex I habitats and Annex II species.

16. Key literature sources are as follows:

- Tweed Estuary Citation for Special Area of Conservation (Natural England, 2014b).

1.2.2. QUALIFYING FEATURES

17. The site is designated for the following interest features:

- estuaries;
- mudflats and sandflats not covered by seawater at low tide;
- river lamprey *Lampetra fluviatilis*; and
- sea lamprey *Petromyzon marinus*.

1.2.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

18. The Tweed Estuary SAC is a long narrow estuary that forms the border between England and Scotland and flows downstream to meet the North Sea. The estuary mouth encompasses both rocky and sandy substrates, whilst further upstream the estuary is characterised by finer sediment flats and large areas of estuarine boulders and cobbles extending into subtidal areas of the channel. Intertidal areas of the estuary are characterised by finer sediment mud and sand flats which support a diverse community of invertebrate species. Species and habitat diversity rise with increasing shelter, until increasingly low-salinity estuarine conditions lead to lower natural infaunal diversity, characterised by species tolerant of brackish water conditions.

19. Rare species such as the anadromous Allis Shad *Alosa alosa* and migratory Atlantic salmon *Salmo salar* are present within the estuary. There are occasional records of river lamprey, and sea lamprey are present upstream in spring months during spawning.

20. The estuary contains a wide variety of intertidal mudflat and sandflat communities. In exposed areas such as Sandstell Point, a wide spit of mobile sand, infauna is characterised by mobile species (mainly crustaceans and a few polychaetes) reflecting the dynamic nature of this area, subject to wave and river action. The west-facing shore of Sandstell Point and Calot Shad are more sheltered areas with reduced sand mobility and characterised by polychaetes occurring with crustacean species. Further upstream (Yarrow Slake) the sheltered muddy sand is characterised by a range of species tolerant of brackish conditions (polychaetes, amphipods, oligochaetes and enchytraeids).

1.2.4. CONSERVATION ADVICE

21. Advice on operations can be found within the following documents:

- Supplementary Advice On Conservation Objectives (March 2020) (Natural England, 2020a);
- Advice on Operations (March 2021) (Natural England, 2020a); and
- Site improvement plan was also updated in April 2015 (Natural England, 2015a).

22. The Conservation Objectives for the site are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the FCS of its qualifying features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of the qualifying species;
- the structure and function (including typical species) of qualifying natural habitats;
- the structure and function of the habitats of the qualifying species;
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- the populations of each of the qualifying species; and
- the distribution of qualifying species within the site.

23. Supplementary Advice on Conservation Objectives provides site-specific attributes and targets for the qualifying features. Qualifying features relevant to the assessment of adverse effect on site integrity are sea lamprey and river lamprey, and Supplementary Advice on Conservation Objectives for these features are provided in Table 1.2.

Table 1.2: Supplementary Advice on Conservation Objectives Site-specific Attributes and Targets for the Qualifying Features of the Tweed Estuary SAC

Feature/Sub-feature Name	Attribute	Target
Sea lamprey	Population: Estuarine population	Maintain the unrestricted usage of the estuary by adult and juvenile sea lamprey including for migratory passage and juvenile development.
	Population: recruitment and reproductive capability	Maintain the reproductive and recruitment capability of the species.
	Presence and spatial distribution of the species	Maintain the presence and spatial distribution of the species and their ability to undertake key life cycle stages and behaviours.
	Structure and function: biological connectivity	Maintain connectivity of estuarine features to surrounding rivers, freshwater, marine and coastal habitats, to ensure larval dispersal and recruitment, maintain nursery grounds for mobile species, and to allow movement of migratory species.
	Supporting habitat: extent and distribution	Maintain the extent and spatial distribution of the following supporting habitats: water column.
	Supporting habitat: food availability (species)	Maintain the abundance of preferred food items required by the species.
	Supporting processes: physico-chemical properties (species)	Maintain the natural physico-chemical properties of the water.
	Supporting processes: sediment movement and hydrodynamic regime (species)	Maintain all hydrodynamic and physical conditions such that natural water flow is not significantly altered or constrained.
	Supporting processes: water quality - contaminants (species)	Restrict aqueous contaminants to levels equating to High/Good Status according to Annex VIII and X of the Water Framework Directive (Directive 2000/60/EC) avoiding deterioration from existing levels.
	Supporting processes: water quality - dissolved oxygen (species)	Maintain the DO concentration at levels equating to High Ecological Status (specifically ≥ 5.7 mg per litre (at 35 salinity) for 95% of the year), avoiding deterioration from existing levels.
	Supporting processes: water quality - nutrients (species)	Maintain water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from existing levels.
	Supporting processes: water quality - turbidity (species)	Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) in areas where this species is, or could be present.
River lamprey	Population: Estuarine population	The population including adult and juvenile components should be maintained as a viable component of its natural habitats within the site.
	Population: recruitment and reproductive capability	Maintain the reproductive and recruitment capability of the species.
	Presence and spatial distribution of the species	Maintain the presence and spatial distribution of the species and their ability to undertake key life cycle stages and behaviours.
	Structure and function: biological connectivity	Maintain connectivity of estuarine features to surrounding rivers, freshwater, marine and coastal habitats, to ensure larval dispersal and recruitment, maintain nursery grounds for mobile species, and to allow movement of migratory species.
	Supporting habitat: extent and distribution	Maintain the extent and spatial distribution of the following supporting habitats: water column.
	Supporting habitat: food availability (species)	Maintain the abundance of preferred food items required by the species.
	Supporting processes: physico-chemical properties (species)	Maintain the natural physico-chemical properties of the water.
	Supporting processes: sediment movement and hydrodynamic regime (species)	Maintain all hydrodynamic and physical conditions such that natural water flow is not significantly altered or constrained.
	Supporting processes: water quality - contaminants (species)	Restrict aqueous contaminants to levels equating to High/Good Status according to Annex VIII and X of the WFD, avoiding deterioration from existing levels.
	Supporting processes: water quality - dissolved oxygen (species)	Maintain the DO concentration at levels equating to High Ecological Status (specifically ≥ 5.7 mg per litre (at 35 salinity) for 95% of the year), avoiding deterioration from existing levels.
	Supporting processes: water quality - nutrients (species)	Maintain water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic

Feature/Sub-feature Name	Attribute	Target
		macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from existing levels.
	Supporting processes: water quality - turbidity (species)	Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) in areas where this species is, or could be present.

1.2.5. CURRENT CONDITION STATUS

24. The condition of the SAC's features has not been assessed.

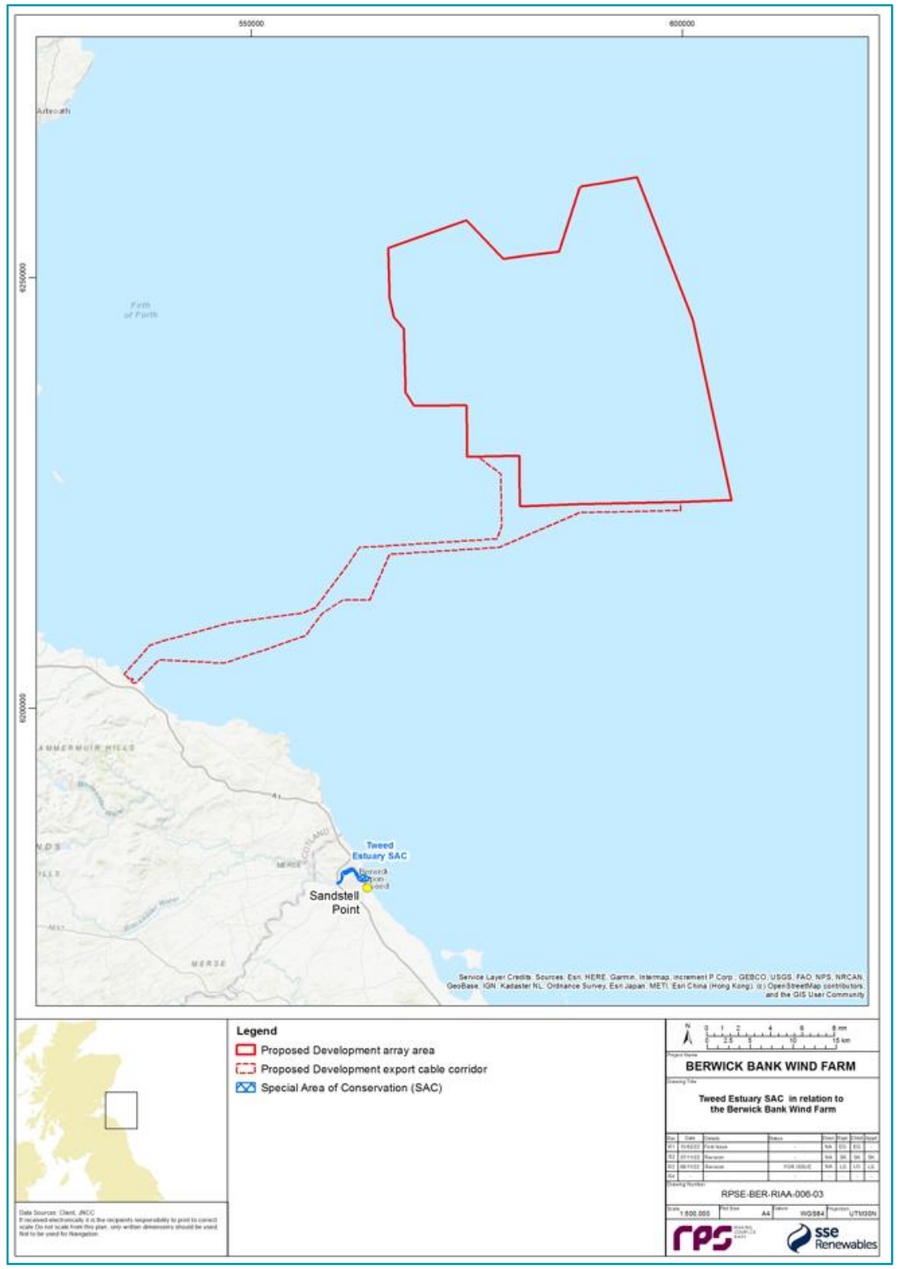

Figure 1.2: Tweed Estuary SAC in Relation to Berwick Bank Wind Farm

1.3. RIVER TWEED SAC

1.3.1. SITE OVERVIEW

25. River Tweed SAC is located in Eastern Scotland, Northumberland and Tyne and Wear and spans 3797.41 ha (Figure 1.3). The site is designated for one Annex I habitat and five Annex II species.

26. Key literature sources include:

- Citation for SAC – River Tweed (Natural England, 2014c);
- River Tweed Designated Special Area of Conservation (JNCC, 2015c);
- River Tweed SAC Conservation Advice Package (Nature Scot, 2018); and
- River Tweed SAC Feature Condition Assessment (Nature Scot, 2018).

1.3.2. QUALIFYING FEATURES

27. The site is designated for the following features:

- water courses of plain to montane levels with *Ranunculus fluitans* and *Callitricho-Batrachion* vegetation;
- sea lamprey;
- brook lamprey, *Lampetra planeri*;
- river lamprey;
- Atlantic salmon *Salmo salar;* and
- otter, *Lutra lutra*.

1.3.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

28. The river Tweed SAC encompasses 3,745 ha of the River Tweed's catchment and 1,285 km of watercourse and extends across north-east Northumberland and the Border Uplands of Scotland. The River Till is the main English tributary, joining the River Tweed near Twizel. The River Tweed catchment has varied geology which supports a diverse range of species and habitats. The river Tweed shows a strong nutrient gradient along its length and high ecological diversity, reflecting the mixed geology of the catchment.

29. The fish fauna is one of the richest in Great Britain. the river supports a very large, high-quality salmon population with large seasonal migrations (spring and autumn). The high proportion of accessible habitat, and the variety of habitat conditions in the river has resulted in it supporting the full range of salmon life-history types, with sub-populations of spring, summer salmon and grilse all present. Brook lamprey, river lamprey and sea lamprey are also present within the catchment. Adults utilise the lower gradient, fast flowing rivers with boulders as spawning grounds and juveniles show preference for slower flowing silty areas. The extensive range of habitats of the River Tweed also provide suitable habitat for all aspects of otter's life cycles. The extensive tributary burns provide good feeding habitat for otter.

30. The site is also designated for Annex I habitat water courses of plain to montane levels with *Ranunculus fluitans* and *Callitricho-Batrachion* vegetation (rivers with floating vegetation often dominated by water-crowfoot). The SAC is the most species-rich example, by far, of a river with *Ranunculus* in Scotland.

1.3.4. CONSERVATION ADVICE

31. Advice on operations can be found within the following documents:

- Conservation Advice Package (March, 2020) (Nature Scot, 2018).

32. The Conservation Objectives for the site are to ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the FCS of its Qualifying Features, by maintaining or restoring;

- the extent and distribution of qualifying natural habitats and habitats of qualifying species;
- the structure and function (including typical species) of qualifying natural habitats;
- the structure and function of the habitats of qualifying species;
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- the populations of qualifying species; and
- the distribution of qualifying species within the site.

33. The site's attributes and targets are summarised in Table 1.3 (Natural England, 2020b) .

Table 1.3: Supplementary Advice on Conservation Objectives Site-specific Attributes and Targets for the Qualifying Features of the River Tweed SAC

Feature Name	Attribute	Target
Sea lamprey	Population: estuarine population	Maintain the unrestricted usage of the estuary by adult and juvenile sea lamprey including for migratory passage and juvenile development.
River lamprey	Population: estuarine population	The population including adult and juvenile components should be maintained as a viable component of its natural habitats within the site.
Sea lamprey	Population: Recruitment and reproductive capability	Maintain the reproductive and recruitment capability of the species.
River lamprey	Population: Recruitment and reproductive capability	Maintain the reproductive and recruitment capability of the species.
Sea lamprey	Presence and spatial distribution of the species	Maintain the presence and spatial distribution of the species and their ability to undertake key life cycle stages and behaviours.
River lamprey	Presence and spatial distribution of the species	Maintain the presence and spatial distribution of the species and their ability to undertake key life cycle stages and behaviours.
• sea lamprey; and • river lamprey.	Structure and function: biological connectivity	Maintain connectivity of estuarine features to surrounding rivers, freshwater, marine and coastal habitats, to ensure larval dispersal and recruitment, maintain nursery grounds for mobile species, and to allow movement of migratory species.
• sea lamprey; and • river lamprey.	Supporting habitat: extent and distribution	Maintain the extent and spatial distribution of the following supporting habitats: water column.

Feature Name	Attribute	Target
	Supporting habitat: food availability (species)	Maintain the abundance of preferred food items required by the species.
	Supporting processes: physico-chemical properties (species)	Maintain the natural physico-chemical properties of the water.
	Supporting processes: sediment movement and hydrodynamic regime (species)	Maintain all hydrodynamic and physical conditions such that natural water flow is not significantly altered or constrained.
	Supporting processes: water quality - contaminants (species)	Restrict aqueous contaminants to levels equating to High/Good Status according to Annex VIII and X of the WFD, avoiding deterioration from existing levels.
	Supporting processes: water quality - dissolved oxygen (species)	Maintain the DO concentration at levels equating to High Ecological Status (specifically ≥ 5.7 mg per litre (at 35 salinity) for 95% of the year), avoiding deterioration from existing levels.
	Supporting processes: water quality - nutrients (species)	Maintain water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from existing levels.
	Supporting processes: water quality - turbidity (species)	Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) in areas where this species is, or could be present.

1.3.5. CURRENT CONDITION STATUS

34. The most recent feature condition assessments are outlined in Table 1.4 (Nature Scot, 2018).

Table 1.4: River Tweed Feature Condition Assessment

Qualifying Feature	Site Condition Monitoring Assessed Condition	Site Condition Monitoring Date	UK Overall Conservation Status
Water courses of plain to montane levels with *R. fluitantis*	Unfavourable No change	27 September 2013	N/A
Sea Lamprey	Unfavourable, declining	22 November 2018	N/A
River lamprey	Favourable, maintained	22 November 2018	N/A
Atlantic salmon	Favourable, maintained	5 August 2011	N/A
Otter	Favourable, maintained	11 December 2011	N/A

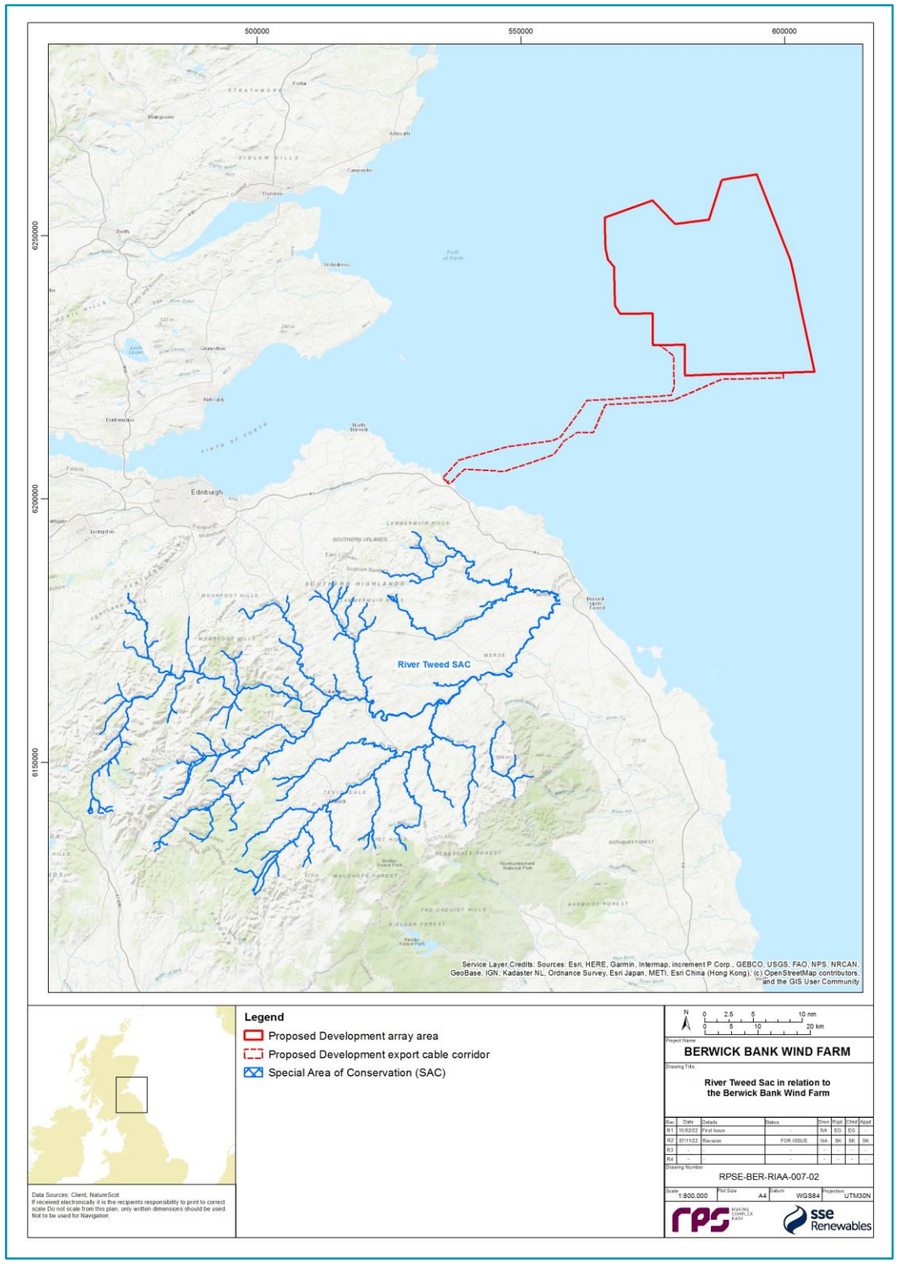

Figure 1.3 River Tweed SAC in Relation to Berwick Bank Wind Farm

1.4. RIVER SOUTH ESK SAC

1.4.1. SITE OVERVIEW

35. The River South Esk SAC is located in Angus, Scotland and spans 471.85 ha (Figure 1.4). The site is designated for two Annex II species.

36. Key literature sources include:

- River South Esk JNCC Special Area Conservation Site Details (JNCC, 2015d);
- River South Esk Nature Scot Conservation Advice Package (Nature Scot, 2011a); and
- River South Esk Special Area Conservation Qualifying Interest List (Nature Scot, 2011a).

1.4.2. QUALIFYING FEATURES

37. The site is designated for the following features:

- freshwater pearl mussel *Margaritifera margaritifera*; and
- Atlantic salmon *Salmo salar.*

1.4.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

38. The source of the river is located in the Grampian Mountains at Loch Esk in Glen Doll and flows through Glen Clova to Strathmore at Cortachy, before meeting the North Sea at Montrose. The River South Esk is a haven for wildlife including the qualifying interests for which the site is designated Atlantic salmon and freshwater pearl mussel.

39. The South Esk is one of the Scottish Environment Protection Agency's (SEPA) priority catchments, the main stem of the South Esk, where mussels are found, is at good status for its physical condition. The feature has been assessed through NatureScot's site condition monitoring programme as being in unfavourable condition due to the low number and density of freshwater pearl mussels present, low levels of juvenile recruitment, biological oxygen demand (fine sediments), and disturbance of mussel beds through largely historical illegal pearl fishing.

1.4.4. CONSERVATION ADVICE

40. Advice on operations may be found within the following documents:

- Conservation Advice Package (October 2020) (NatureScot, 2011a).

41. Conservation Objectives for all qualifying features are as follows:

- to ensure that the qualifying features of the River South Esk SAC are in favourable condition and make an appropriate contribution to achieving FCS; and
- to ensure that the integrity of the River South Esk SAC is restored by meeting objectives for each qualifying feature (and for freshwater pearl mussel).

42. Conservation Objectives for freshwater pearl mussel include the following:

- restore the population of freshwater pearl mussel as a viable component of the site;
- restore the distribution of freshwater pearl mussel throughout the site;
- restore the habitats supporting freshwater pearl mussel within the site and availability of food; and
- restore the distribution and viability of freshwater pearl mussel host species and their supporting habitats.

43. Conservation Objectives for Atlantic salmon include the following:

- restore the population of Atlantic salmon, including range of genetic types, as a viable component of the site;
- restore the distribution of Atlantic salmon throughout the site; and
- restore the habitats supporting Atlantic salmon within the site and availability of food.

1.4.5. CURRENT CONDITION STATUS

44. The most recent feature condition assessments are outlined in Table 1.5 (NatureScot, 2011a).

Table 1.5: River Dee SAC Feature Condition Assessment

Qualifying Feature	Site Condition Monitoring - Assessed Condition	Site Condition Monitoring Date	UK Overall Conservation Status
Freshwater pearl mussel	Unfavourable No change	13 September 2009	Unfavourable - bad
Atlantic salmon	Unfavourable Recovering	29 July 2011	Unfavourable - inadequate

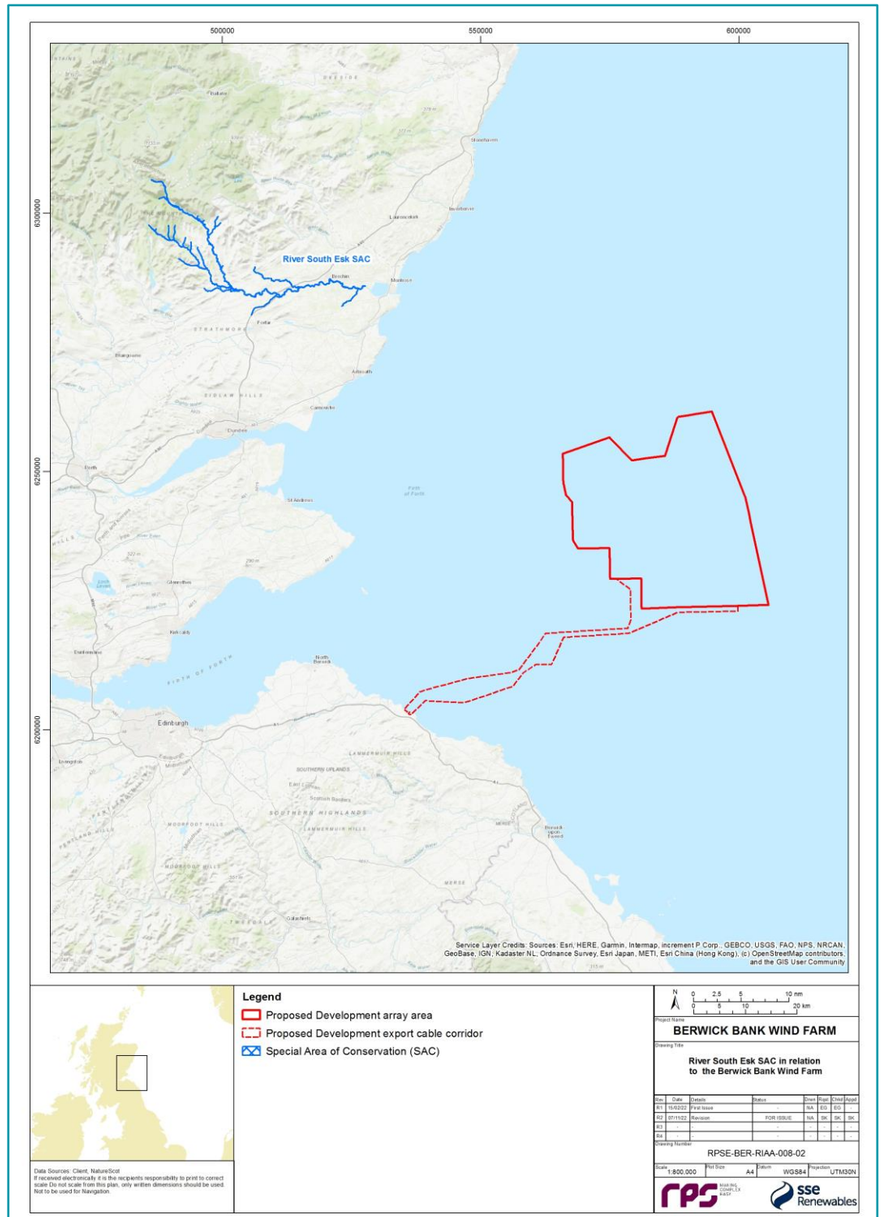

Figure 1.4: River South Esk SAC in Relation to Berwick Bank Wind Farm

1.5. RIVER TAY SAC

1.5.1. SITE OVERVIEW

45. The River Tay is the longest river in Scotland originating in western Scotland and then flowing easterly across the Highlands, through Strath Tay and Perth before becoming tidal, to its mouth at the Firth of Tay (Figure 1.5). It covers an area of 9,461.63 ha. The river has a high biodiversity and is both a SAC and Site of Special Scientific Interest (SSSI). The SAC designation notes the rivers importance for salmon, otters, brook lampreys, river lampreys, and sea lampreys. The Tay also maintains flagship population of freshwater pearl mussel.

46. Key literature sources include:

- River Tay SAC Qualifying Interest List (Nature Scot, 2012a);
- River Tay SAC Conservation Advice Package (Nature Scot, 2012a);
- River Tay JNCC SAC Site Details (JNCC, 2015e); and
- River Tay JNCC SAC Data Form (JNCC, 2015e).

1.5.2. QUALIFYING FEATURES

47. The site is designated for the following features:

- river lamprey;
- brook lamprey;
- otter;
- clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*;
- sea lamprey; and
- Atlantic salmon.

1.5.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

48. Atlantic salmon are found throughout the Tay SAC and there are also sea, river and brook lamprey present, with the Tay supporting one of the most important sea lamprey populations in Scotland. The SAC also hosts a thriving population of otters due to the abundance of food supply and high-water quality associated with the river and its tributaries. Freshwater pearl mussels, one of Scotland's most endangered species are also present throughout the River Tay SAC.

1.5.4. CONSERVATION ADVICE

49. Advice on operations is located within the following documents:

- Conservation Advice Package (Nature Scot, 2012a); and
- River Tay SAC Advice to Developers (Nature Scot, 2016a).

50. Conservation Objectives for clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels (Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*) are to ensure that the qualifying feature of the River Tay SAC is in favourable condition and makes an appropriate contribution to achieving FCS and to ensure that the integrity of the River Tay is maintained by meeting objectives:

- maintain the extent and distribution of clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels within the site;
- maintain the structure, function and supporting processes of clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; and
- maintain the distribution and viability of typical species of clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels.

51. Conservation Objectives for all species features:

- to ensure that the qualifying features of River Tay SAC are in favourable condition; and
- to ensure that the integrity of the River Tay is maintained by meeting objectives for each qualifying feature and make an appropriate contribution to achieving FCS.

52. Conservation Objectives for sea lamprey, brook lamprey and river lamprey are as follows:

- maintain the population of the lamprey species' as viable components of the site;
- maintain the distribution of the lamprey species' throughout the site; and
- maintain the habitats supporting the lamprey species' within the site, and availability of food.

53. Conservation Objectives for Atlantic salmon are as follows:

- maintain the population of Atlantic salmon, including range of genetic types, as a viable component of the site;
- maintain the distribution of Atlantic salmon throughout the site; and
- maintain the habitats supporting Atlantic salmon within the site and availability of food.

54. Conservation Objectives for otter are as follows:

- maintain the population of otter as a viable component of the site;
- maintain the distribution of otter throughout the site; and
- maintain the habitats supporting otter within the site and availability of food.

1.5.5. CURRENT CONDITION STATUS

55. The most recent feature condition assessments are outlined in Table 1.6 (Nature Scot, 2012a).

Table 1.6: River Tay SAC Feature Condition Assessment

Qualifying Feature	SCM Assessed Condition	SCM Visit Date	UK Overall Conservation
Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels (oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*	Favourable - maintained	12 August 2009	Unfavourable-bad
Sea lamprey	Favourable - maintained	30 November 2007	Unknown
Brook lamprey	Favourable - maintained	30 November 2007	Unknown

Qualifying Feature	SCM Assessed Condition	SCM Visit Date	UK Overall Conservation
River lamprey	Favourable - maintained	30 November 2007	Favourable
Atlantic salmon	Favourable - maintained	19 September 2011	Unfavourable - adequate
Otter	Favourable - maintained	3 September 2012	Favourable

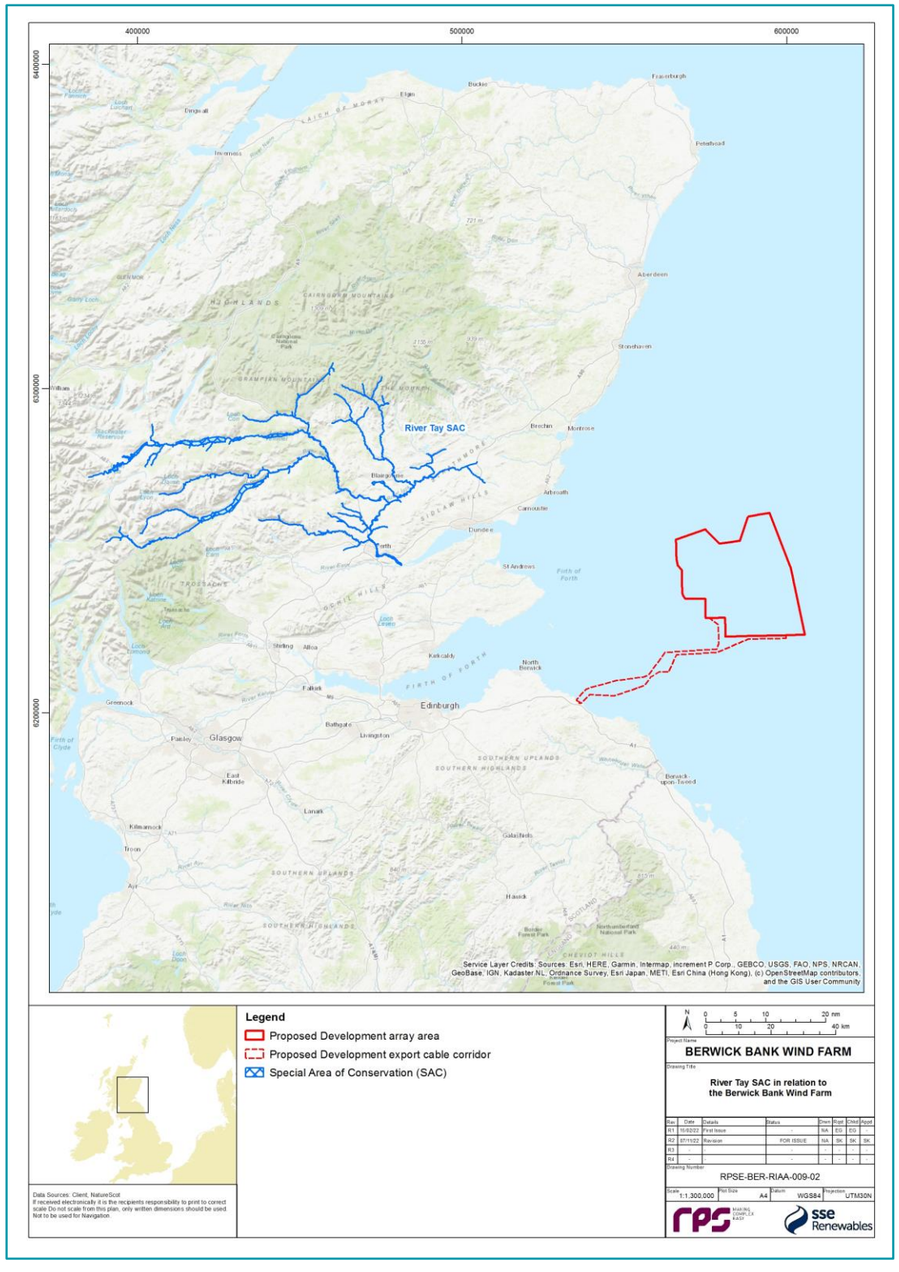

Figure 1.5: River Tay SAC in Relation to Berwick Bank Wind Farm

1.6. RIVER DEE SAC

1.6.1. SITE OVERVIEW

56. The river Dee rises in the Cairngorms and flows through southern Aberdeenshire to reach the North Sea at Aberdeen and covers an area of 2,334.48 ha (Figure 1.6). The Dee is important for nature conservation and the area has many designated sites. The upper catchment down to Inverey is within the Mar Lodge Estate, owned by the National Trust for Scotland and has been classified as a nature reserve since 2017. Cairngorms National Park covers the whole catchment of the Dee, including tributaries. The entire length of the Dee is defined as an SAC due to its importance for salmon, otters and freshwater pearl mussel.

57. Key literature sources include:

- River Dee SAC Qualifying Interest List (Nature Scot, 2012b);
- River Dee SAC Conservation Advice Package (Nature Scot, 2012b);
- River Dee JNCC SAC Site Details (JNCC, 2015f); and
- River Dee JNCC Data Form (JNCC, 2015f).

1.6.2. QUALIFYING FEATURES

58. The site is designated for the following features:

- otter;
- freshwater pearl mussel; and
- Atlantic salmon.

1.6.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

59. The river Dee and its tributaries are designated as an SAC because they support internationally important populations of otter, freshwater pearl mussel and Atlantic salmon. The River Dee is located in Aberdeenshire and originates in the Cairngorms, flows through southern Aberdeenshire and meets the North Sea at Aberdeen. The SAC overlaps with the following sites: Cairngorms SAC and SPA, Ballochbuie SAC and SPA, Muir of Dinnet SAC, SPA and Ramsar site, Glen Tanar SAC and SPA, Morven and Mullachdubh SAC, Cairngorms Massif SPA, and Caenlochan SPA.

1.6.4. CONSERVATION ADVICE

60. Advice on operations is located within the following documents:

- Conservation Advice Package (Nature Scot, 2012b).

61. The overarching Conservation Objectives for all features are as follows:

- to ensure that the qualifying features of the River Dee SAC are in favourable condition and make an appropriate contribution to achieving FCS; and
- to ensure that the integrity of the River Dee SAC is restored by meeting objectives.

62. Conservation Objectives for otter:

- maintain the population of otter, as a viable component of the site; and
- maintain the distribution of otter throughout the site.

63. Conservation Objectives for freshwater pearl mussel;

- restore the population of freshwater pearl mussel as a viable component of the site;
- restore the distribution of freshwater pearl mussel throughout the site;
- restore the habitats supporting the freshwater pearl mussel within the site and availability of food; and
- maintain the distribution and viability of freshwater pearl mussel host species and their supporting habitat.

64. Conservation Objectives for Atlantic salmon:

- maintain the population of Atlantic salmon, including range of genetic types, as a viable component of the site;
- maintain the distribution of Atlantic salmon throughout the site;
- maintain the habitats supporting Atlantic salmon within the site and availability of food; and
- maintain the habitats supporting otter within the site and availability of food.

1.6.5. CURRENT CONDITION STATUS

65. The most recent feature condition assessments are outlined in Table 1.7 (Nature Scot, 2012b).

Table 1.7: River Dee SAC Feature Condition Assessment

Qualifying Feature	SCM Assessed Condition	SCM Visit Date	UK Overall Conservation
Otter	Favourable - declining	6 October 2012	Favourable
Atlantic salmon	Favourable - maintained	21 July 2011	Unfavourable - inadequate
Freshwater pearl mussel	Unfavourable - declining	July 2014	Favourable

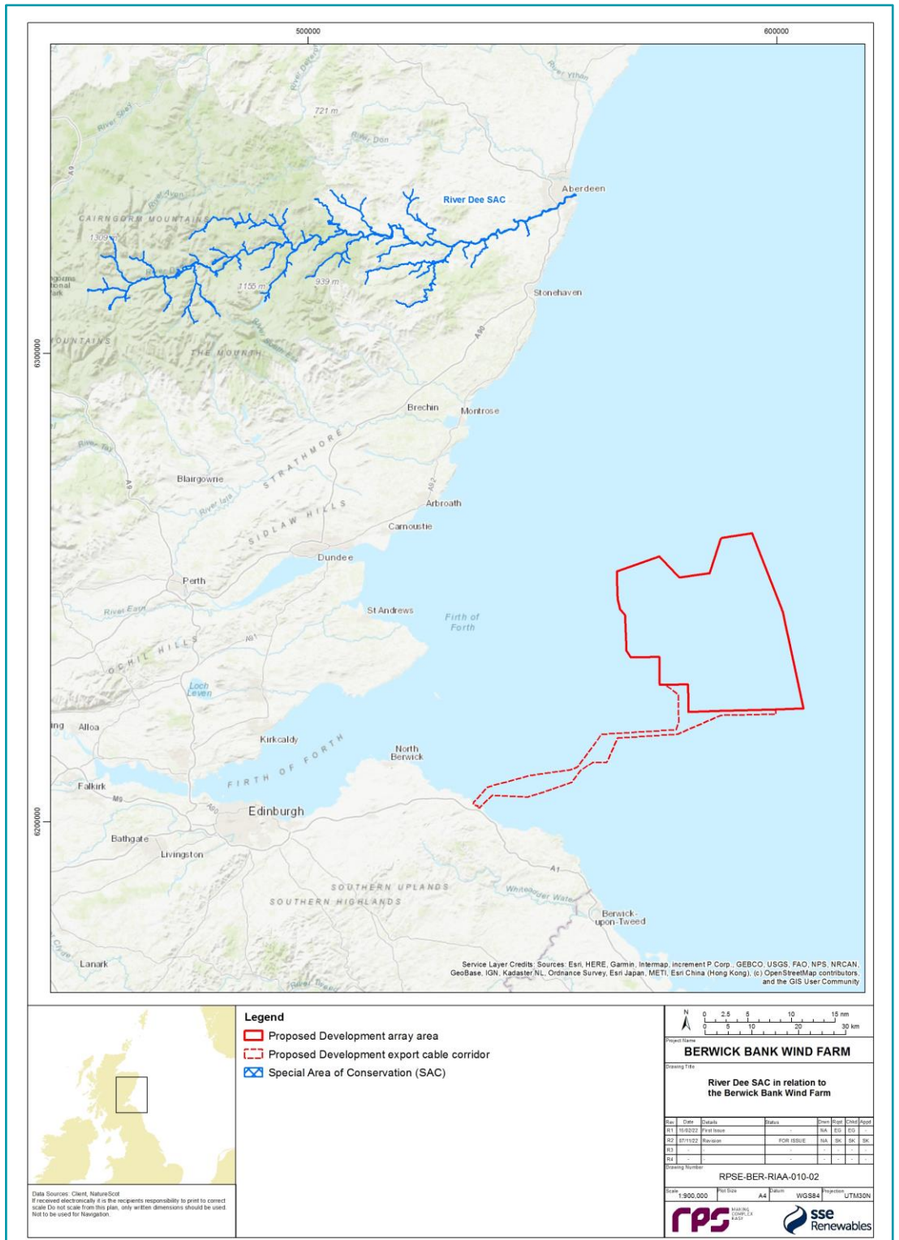

Figure 1.6: River Dee SAC in Relation to Berwick Bank Wind Farm

1.7. RIVER TEITH SAC

1.7.1. SITE OVERVIEW

66. The river Teith is a large river that flows eastwards through central Scotland, it rises and flows through upland areas before crossing the Highland Boundary Fault, a major geological feature in Scotland, at the Falls of Leny and meandering through central lowlands to the east coast (Figure 1.7). It covers an area of 1289.33 ha. The river Teith is the most significant tributary of the river Forth which supports young sea lampreys which have been recorded throughout the lower reaches of the main river. The river system supports a strong brook lamprey population. Brook lampreys have been recorded from the headwaters downstream to the lower reaches. The river provides excellent habitat with usually pristine water quality, well-vegetated banks and a substantially unaltered river channel. The river Teith supports high densities of brook/river lamprey *ammocoetes* and also supports a healthy population of sea lamprey. The river lacks any significant artificial barriers to migration, has good water quality and the necessary habitat types (extensive gravel beds and marginal silt beds) to support the river lamprey's full life-cycle. All three British lamprey species are supported within the river.

67. Key literature sources include:

- River Teith JNCC SAC Site Details (JNCC, 2105g);
- River Teith SAC Qualifying Interest List (Nature Scot, 2011b); and
- River Teith Conservation Objectives (Nature Scot, 2011b).

1.7.2. QUALIFYING FEATURES

68. The site is designated for the following features:

- river lamprey;
- brook lamprey;
- sea lamprey;
- Atlantic salmon.

1.7.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

69. The river Teith is formed from the confluence of two smaller rivers, the Garbh Uisge and Eas Gobhain at Callander, Stirlingshire. It flows into the River Forth near Drip north-west of Stirling. The catchment originates in the Trossachs at the braes of Balquhidder and has a number of inline lochs. The total catchment covers roughly 579 km² with the main tributaries of the catchment including the Ardoch, Annet, Keltie, Drunkie, Calair and Leny Burn. The river provides excellent habitat with usually pristine water quality, well-vegetated banks and a substantially unaltered river channel. These habitat conditions support a high density of brook, river and sea lamprey.

1.7.4. CONSERVATION ADVICE

70. Information is not available on advice on operations for the SAC.

71. The Conservation Objectives for the site are to avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving FCS for each of the qualifying features and to ensure for the qualifying species that the following are maintained in the long term:

- population of the species, including range of genetic types for salmon, as a viable component of the site;
- distribution of the species within site;
- distribution and extent of habitats supporting the species;
- structure, function and supporting processes of habitats supporting the species; and
- no significant disturbance of the species.

1.7.5. CURRENT CONDITION STATUS

72. Information not available as to the current condition status of the designated features.

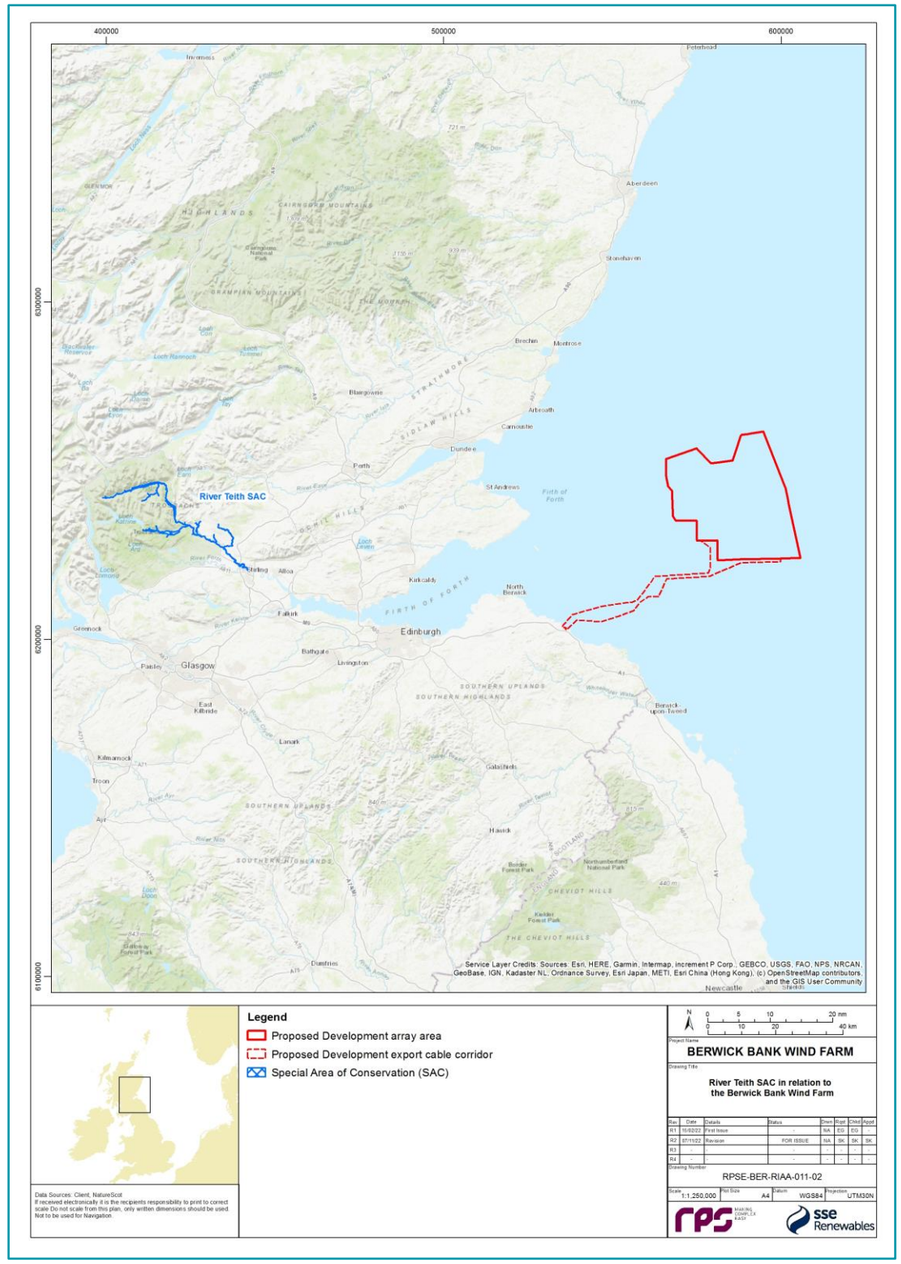

Figure 1.7: River Teith SAC in Relation to Berwick Bank Wind Farm

1.8. ISLE OF MAY SAC;

1.8.1. SITE OVERVIEW

73. The Isle of May is located in the north of the outer Firth of Forth, approximately 8 km off the coast of mainland Scotland (Figure 1.8). It covers an area of 356.64 ha. The western coast of the island consists of cliffs, and the land tilts from here down to the eastern shore which is mostly rocky with three small beaches. Both harbour seals *Phoca vitulina* and grey seals can be seen on the island all year round and it hosts the second largest east cast breeding colony of grey seals in Scotland. The island is also host to several species of seabirds including puffins, black-legged kittiwakes, razorbills, guillemots, shags, fulmars, oystercatchers, eider ducks, and various species of tern and gull due to the lack of predators on the island making it a safe breeding site compared to the mainland.

74. Key literature sources include:

- Isle of May SAC Qualifying Interest List (Nature Scot, 2014b);
- Isle Of May JNCC SAC Site Details (JNCC, 2015h); and
- Isle Of May SAC Conservation Objectives (Nature Scot, 2014b).

1.8.2. QUALIFYING FEATURES

75. The site is designated for the following features:

- grey seal; and
- reefs.

1.8.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

76. The Isle of May, lying at the entrance to the Firth of Forth is located approximately 8 km off the east coast of Scotland. The SAC supports a breeding colony of grey seals. The site is the largest east coast breeding colony of grey seals in Scotland and the fourth largest breeding colony in the UK. The colony contributes to approximately 4.5% of annual UK pup production. The Isle of May SAC overlaps with Forth Islands Special Protection Area.

1.8.4. CONSERVATION ADVICE

77. Information is not available on Advice on operations for the SAC.

78. Conservation Objectives for grey seal are to avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving FCS for each of the qualifying features, and to ensure for the qualifying species that the following are maintained in the long term:

- three quarters of population of the species as a viable component of the site;
- distribution of the species within site;
- distribution and extent of habitats supporting the species;
- structure, function and supporting processes of habitats supporting the species; and
- no significant disturbance of the species.

79. Conservation Objectives for reefs are to avoid deterioration of the qualifying habitat (listed below) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving FCS for each of the qualifying features, and to ensure for the qualifying habitat that the following are maintained in the long term:

- extent of the habitat on site;
- distribution of the habitat within site;
- structure and function of the habitat ;
- processes supporting the habitat;
- distribution of typical species of the habitat;
- viability of typical species as components of the habitat; and
- no significant disturbance of typical species of the habitat.

1.8.5. CURRENT CONDITION STATUS

80. The most recent feature condition assessments are outlined in Table 1.8 (NatureScot, 2014b)**Error! Reference source not found.**.

Table 1.8: Isle of May SAC Feature Condition Assessment

Qualifying Feature	SCM Assessed Condition	SCM Visit Date	UK Overall Conservation
Grey seal	Favourable - maintained	24 November 2014	N/A
Reefs	Favourable - maintained	5 September 2007	N/A

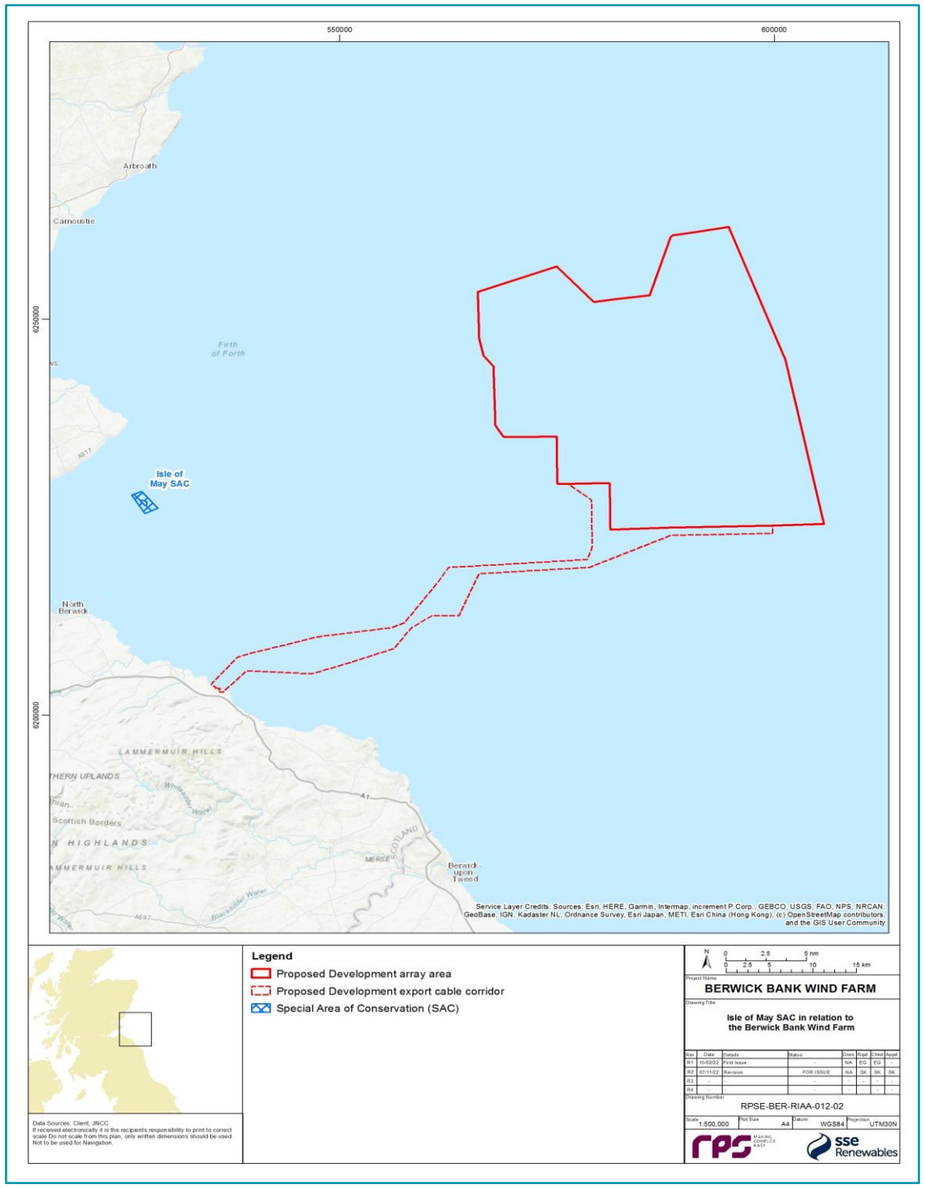

Figure 1.8: Isle of May SAC in Relation to Berwick Bank Wind Farm

1.9. FIRTH OF TAY AND EDEN ESTUARY SAC;

1.9.1. SITE OVERVIEW

81. The Firth of Tay and the Eden estuary are two high-quality estuarine areas, which cover an area of 15441.63 ha. The two estuaries have been proposed within a single site because they are integral components of a large, geomorphologically complex area that incorporates a mosaic of estuarine and coastal habitats. The Tay is the least-modified of the large east coast estuaries in Scotland, while the Eden estuary represents a smaller 'pocket' estuary (Figure 1.9). The inner parts of the estuaries are largely sheltered from wave action, while outer areas, particularly of the Tay, are exposed to strong tidal streams, giving rise to a complex pattern of erosion and deposition of the sandbank feature at the firths' mouth. The sediments within the site support biotopes that reflect the gradients of exposure and salinity and are typical of estuaries on the east coast of the UK. The abundance, distribution and composition of the associated plant and animal communities are ecologically representative of northern North Sea estuaries. The Firth of Tay and Eden estuary supports a nationally important breeding colony of common seal, part of the east coast population of common seals that typically utilise sandbanks. Around 600 adults haul-out at the site to rest, pup and moult, representing around 2% of the UK population of this species.

82. Key literature sources include:

- Firth Of Tay and the Eden Estuary JNCC SAC Site Details (JNCC, 2015i);
- Firth Of Tay and the Eden Estuary SAC Conservation Objectives (Nature Scot, 2013); and
- Firth Of Tay and the Eden Estuary SAC Qualifying Interest List (Nature Scot, 2013).

1.9.2. QUALIFYING FEATURES

83. The site is designated for the following features:

- estuaries;
- mudflats and sandflats not covered by seawater at low tide;
- common seal *Phoca vitulina*; and
- sandbanks which are slightly covered by seawater all the time.

1.9.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

84. The site overlaps with Firth of Tay and Eden Estuary Special Protection Area.

1.9.4. CONSERVATION ADVICE

85. Information is not available on advice on operations for the SAC.

86. The Conservation Objectives for estuaries, intertidal mudflats and sandflats and subtidal sandbanks are to avoid deterioration of the qualifying habitats (listed below) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving FCS for each of the qualifying features, and to ensure for the qualifying habitats that the following are maintained in the long term:

- extent of the habitat on site;
- distribution of the habitat within site;
- structure and function of the habitat;
- processes supporting the habitat;
- distribution of typical species of the habitat;

- viability of typical species as components of the habitat; and
- no significant disturbance of typical species of the habitat.

87. The Conservation Objectives for common seal are to avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving FCS for each of the qualifying features; and To ensure for the qualifying species that the following are maintained in the long term:

- population of the species as a viable component of the site;
- distribution of the species within site;
- distribution and extent of habitats supporting the species;
- structure, function and supporting processes of habitats supporting the species; and
- no significant disturbance of the species.

1.9.5. CURRENT CONDITION STATUS

88. Information not available as to the current condition status of the designated features.

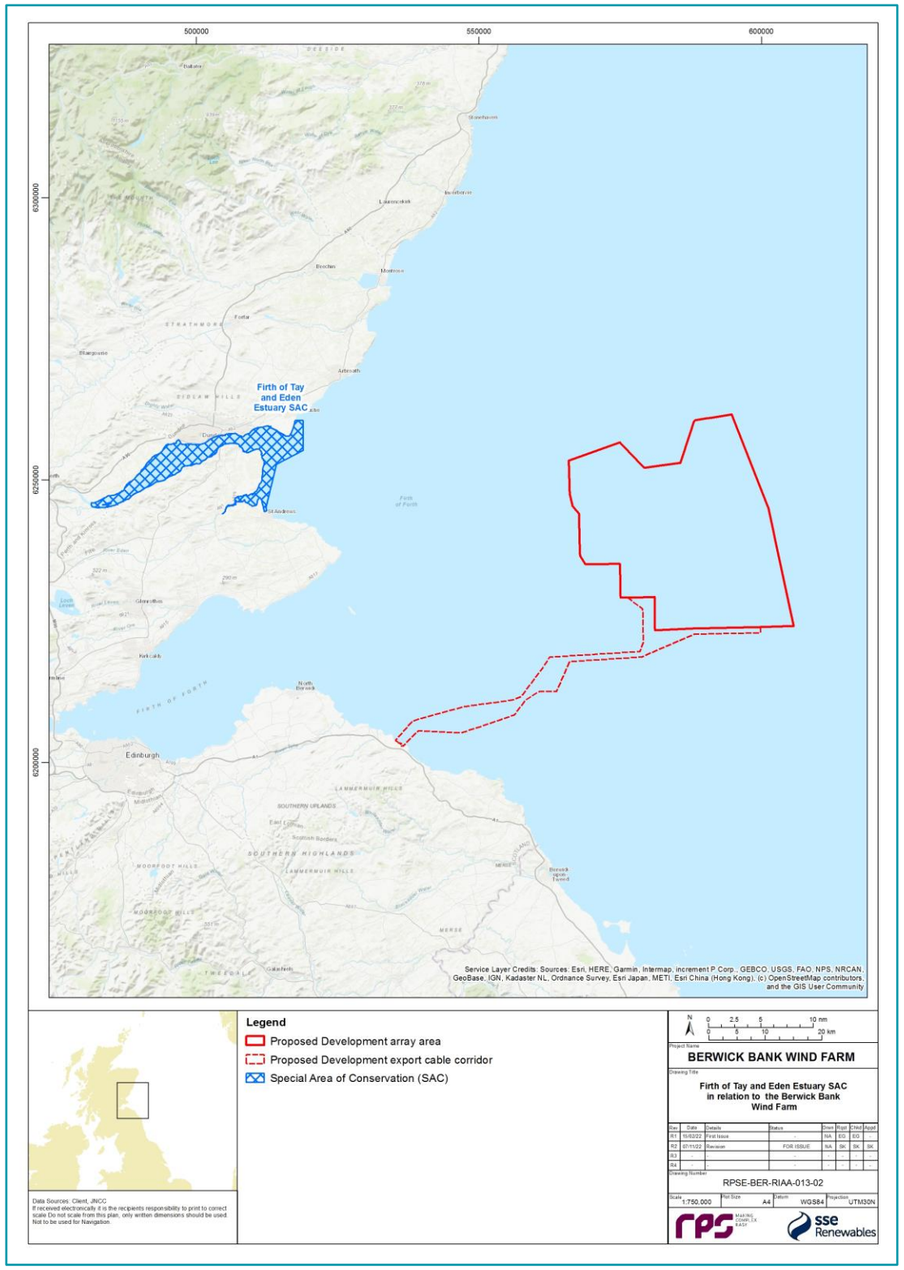

Figure 1.9: Firth of Tay and Eden Estuary SAC in Relation to Berwick Bank Wind Farm

1.10. SOUTHERN NORTH SEA SAC

1.10.1. SITE OVERVIEW

89. The Southern North Sea SAC lies along the east coast of England, predominantly in the offshore waters of the central and southern North Sea, from north of Dogger Bank to the Straits of Dover in the south (Figure 1.10). It is designated for the protection of harbour porpoise *Phocoena phocoena*. This area supports an estimated 17.5% of the UK North Sea Management Unit (MU) population. Approximately two thirds of the site, the northern part, is recognised as important for porpoises during the summer season, whilst the southern part supports persistently higher densities during the winter.

90. Key literature sources include:

- Southern North Sea JNCC SAC Site Details (JNCC, 2019a); and
- Southern North Sea MPA, JNCC Adviser To Government (JNCC, 2019b).

1.10.2. QUALIFYING FEATURES

91. The site is designated for the following features:

- harbour porpoise.

1.10.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

92. The Southern North Sea SAC covers an area of 36,951 km^2 stretching from the central North Sea southwards to the Straits of Dover. The site is designated for harbour porpoise and hosts high densities of the species year-round due to the presence of key winter and summer habitats. The site comprises a range of habitats including sandbanks and gravel beds. Overlapping sites include the Dogger Bank SAC, Haisborough, Hammond and Winterton SAC and North Norfilk Sandbanks and Saturn Reef SAC.

1.10.4. CONSERVATION ADVICE

93. Advice on operations and management can be found within:

- the Southern North Sea Conservation Objectives and Advice on Operations (March 2019) (JNCC, 2019c); and
- standard data form for sites within the 'UK National Site Network of European sites (March 2019) (JNCC, 2019a).

94. The Conservation Objectives for the site are to ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining FCS for harbour porpoise in UK waters

95. In the context of natural change, this will be achieved by ensuring that:

- harbour porpoise is a viable component of the site;
- there is no significant disturbance of the species; and
- the condition of supporting habitats and processes, and the availability of prey is maintained.

1.10.5. CURRENT CONDITION STATUS

96. The site assessment assigns a grade of A conservation to the harbour porpoise, which is deemed 'excellent'.

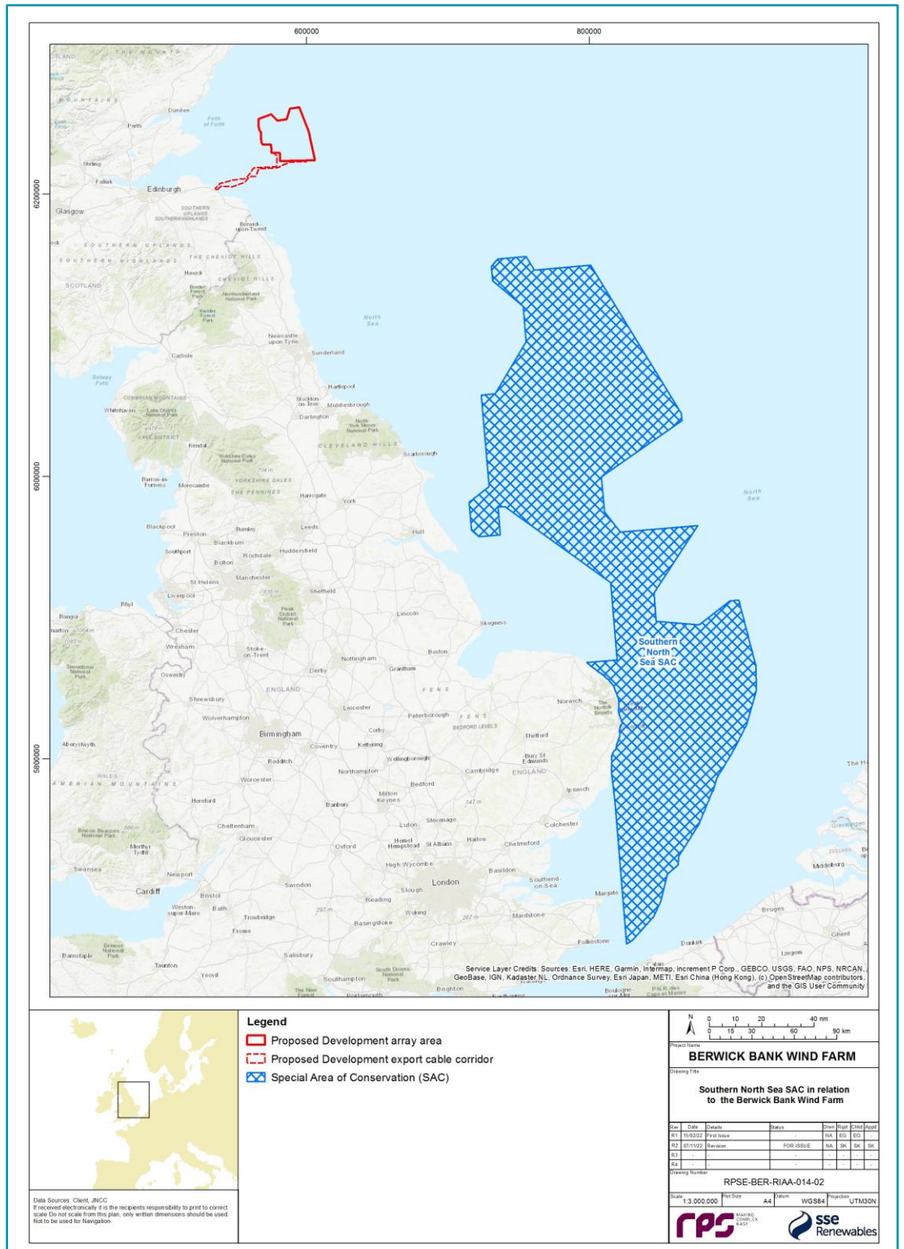

Figure 1.10: Southern North Sea SAC in Relation to Berwick Bank Wind Farm

1.11. MORAY FIRTH SAC

1.11.1. SITE OVERVIEW

97. The Moray Firth is an inlet of the North Sea, north and east of Inverness and covers an area of 356.64 ha. It is the largest firth in Scotland, stretching from Duncansby Head (near John o' Groats) in the north, in the Highland council area, and Fraserburgh in the east, in the Aberdeenshire council area, to Inverness and the Beauly Firth in the west (Figure 1.11). The Moray Firth is one of the most important places on the British coast for observing dolphins and whales. It is also an important oil field and fishing ground. The Beatrice oil field in the Outer Moray Firth is the closest of the North Sea oil fields; it is also the site of the Beatrice Wind Farm. Much of the fishing industry focuses on scallops and Norway lobsters.

98. Key literature sources include:

- Moray Firth SAC Qualifying Interest List (Nature Scot, 2016b);
- Moray Firth Conservation And Management Advice (Nature Scot, 2016b); and
- Moray Firth JNCC SAC Site Details (JNCC, 2015j).

1.11.2. QUALIFYING FEATURES

99. The site is designated for the following features:

- subtidal sandbanks which are slightly covered by seawater all the time; and
- bottlenose dolphin *Tursiops truncates.*

1.11.3. THE CHARACTERISTICS OF THE EUROPEAN SITE

100. The Moray Firth SAC is a complex site which has resulted in the development of diverse marine habitats that support a variety of natural resources. The fish and shellfish (including juveniles), and seaweeds living within the MPA that can be harvested by humans or utilised by other marine species, are the most obvious resource. The MPA supports wildlife including bird and mammal species, in particular bottlenose dolphins, which are a protected feature of the site.

1.11.4. CONSERVATION ADVICE

101. Advice on operations and management of the site is covered in:

- Conservation and Management Advice Moray Firth SAC (March 2021)(Nature Scot, 2016b).

102. Conservation Objectives for the site are to ensure that the qualifying features of Moray Firth SAC are in favourable condition and make an appropriate contribution to achieving FCS, and to ensure that the integrity of Moray Firth SAC is maintained or restored in the context of environmental changes by meeting objectives for each qualifying feature.

103. For subtidal sandbanks:

- extent and distribution of the habitat within the site;
- structure and function of the habitat and the supporting environment on which it relies; and
- distribution and viability of typical species of the habitat.

104. For bottlenose dolphin:

- the population of bottlenose dolphin is a viable component of the site;
- the distribution of bottlenose dolphin throughout the site is maintained by avoiding significant disturbance; and
- the supporting habitats and processes relevant to bottlenose dolphin and the availability of prey for bottlenose dolphin are maintained.

1.11.5. CURRENT CONDITION STATUS

105. The most recent feature condition assessments are outlined in Table 1.9 (NatureScot, 2016b).

Table 1.9: Moray Firth SAC Feature Condition Assessment

Qualifying Feature	SCM Assessed Condition	SCM Visit Date	UK Overall Conservation
Subtidal sandbanks	Favourable - maintained	2004	UK: Unfavourable-bad European Region: Unfavourable - bad
Bottlenose dolphin	Favourable - maintained	2016	UK: Unknown European Region: Unknown

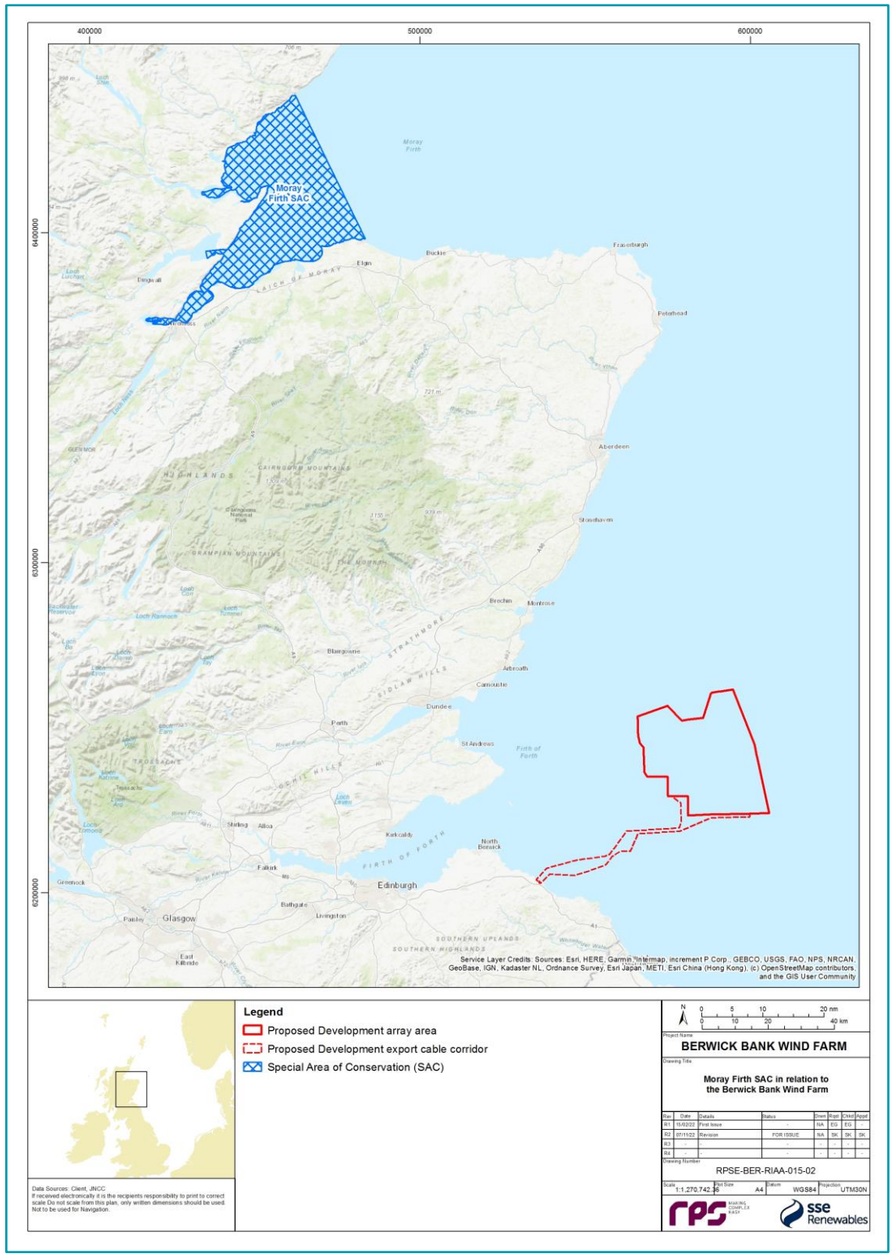

Figure 1.11: Moray Firth SAC in Relation to Berwick Bank Wind Farm

1.12. REFERENCES

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