

DEFINING ASSI/SSSIs WITH 'MARINE BIOLOGICAL COMPONENTS' AND SETTING OUT A PROCESS FOR DETERMINING THEIR CONTRIBUTION TO THE UK MPA NETWORK

Paper by Pete Chaniotis, Alice Cornthwaite and Amy Ridgeway:

1. Background

Sites of Special Scientific Interest (SSSIs)¹ are intended to provide statutory protection for areas that are considered to be of special interest by reason of their flora, fauna, geological, or physiographical features. Under The UK Marine and Coastal Access Act 2009 (Clause 123(4b)), The Marine (Scotland) Act 2010 (Clause 79(4c)) and The Marine Act (Northern Ireland) 2013 (Clause 20(c)), SSSIs will legally form part of the marine protected area (MPA) network where they are considered to protect marine features. For the purposes of reporting under this legislation and assessing progress towards international and national obligations to establish MPA networks, it is necessary to set out a process for determining the contribution of SSSIs to the MPA network.

It is important to note that for SSSIs submitted to the OSPAR Commission for consideration as OSPAR MPAs, their boundaries may only extend to Mean High Water Mark (MHWM) or Mean High Water Springs (MHWS). As such, any feature occurring wholly above MHWS in a SSSI would not contribute to the OSPAR network of MPAs.

2. Purpose

This present paper sets out a process that allows each Country Agency to identify those SSSIs that include marine components in a consistent manner so that a UK level list of SSSI marine features can be generated. As part of this process, it is critical not to lose the detail around the nomenclature of specific protected features within individual SSSIs as this will be the information included in the UK MPA database. The intended outcome is that each Country Agency will be able to supply JNCC with a list of their SSSIs, the marine feature(s) considered to be afforded protection (as listed within the site documentation) and those UK MPA network feature(s) with which these listed features are considered to correlate.

It is important to note that new SSSIs may be notified in the future for marine features outwith the scope of those included in this current paper. As such, the features list presented may need updating in the future to ensure that it remains comprehensive. Features of geological importance are also included on the notification orders of SSSIs. JNCC will work with the Country Agencies in due course to provide an overview and process to determine the contribution of SSSIs to marine and coastal geodiversity features.

3. Rationale for a feature-based approach to defining SSSIs with marine biological components

In England and Wales, Part 5 of the UK Marine and Coastal Act 2009 formally amends the Wildlife and Countryside Act 1981 (as amended) by clarifying the normal seaward limits of SSSIs as being Mean Low Water Mark (MLWM) or Mean Low Water Springs (MLWS) (Lowest Astronomical Tide (LAT) in Wales), or the seaward limits of estuarine waters, as well as setting out the circumstances in which SSSIs may extend beyond those limits into the subtidal zone. As such, the seaward limit of a SSSI may extend into the subtidal zone in England and Wales if:

¹ Referred to as Areas of Special Scientific Interest in Northern Ireland. For simplicity, where the term SSSI is used in this paper it refers to both SSSIs and ASSIs.

- features span above and below MLWM;
- notified features are wholly or in part dependent on anything which takes place or is present within the subtidal area; or
- the identification of the boundary of the SSSI is impossible or impracticable without the inclusion of a subtidal component
- the SSSI is within an estuary and MLWM is found at the entrance of the estuary

The text above is adapted from part 5 of the UK Marine and Coastal Access Act 2009.

In Scotland, areas eligible for inclusion as a SSSI must be above MLWS. However areas below MLWS but within the marked boundary of a local authority in an estuary or firth for example have been included in some SSSIs.

ASSIs in Northern Ireland are designated under article 28 of the Environment (Northern Ireland) Order 2002 by reference to land, which under the Interpretation Act (Northern Ireland) 1954 includes land covered by water. Terrestrial planning, by convention, extends to the MLWM and ASSIs can also extend to this seaward boundary.

Highest Astronomical Tide (HAT) depicts the landward limit of the marine environment; however HAT has not been extensively mapped throughout the UK and so defining marine components of SSSIs using geographical extent may under represent some features found above MHWm or MHWS such as saltmarsh that are influenced, at least in part, by seawater.

There is, therefore, a difference in approach between countries for defining the geographical extent of SSSIs and lack of a consistent data layer to help us define marine biological components of SSSIs on geographical grounds. This paper proposes a feature-based approach to determining the marine biological components of SSSIs rather than simply use a geographical approach of selecting all SSSIs that overlap with intertidal areas.

4. Proposed definition of SSSI with marine biological features

JNCC and the Country Agencies determine that a SSSI with a marine biological component can be defined by the presence of either one or more marine features that represent a habitat, mammal, plant, invertebrate, fish or bird that is listed in Section 5 of this paper. These features may be formally notified² features on the SSSI citation or qualifying features that may not be formally notified on the citation orders but are specifically listed on the management plans for the notified SSSIs.

5. Marine biological features of SSSIs

Work is ongoing at the UK level to revise guidelines for the selection of biological SSSIs; notably the individual chapters that comprise detailed guidelines for selecting SSSIs for habitats and species (referred to collectively as Part 2 of the guidelines for the selection of biological SSSIs). Draft versions of these guidelines are available on the JNCC website³ and are referred to in the sections that follow. A rolling programme of updating individual chapters is underway. At the present time, the approach adopted to identify marine features currently used in SSSI documents are set out below.

² Meaning: for which the site qualifies under JNCC Guidelines for selection of biological SSSIs (see - <http://www.jncc.gov.uk/page-2303> and subsequent supplements) and those qualifying features that have been formally listed in the notification papers to the relevant parties

³ Available here: <http://jncc.defra.gov.uk/page-2303>

5.1 Habitats

For the purposes of this paper, a 'marine' habitat is considered to be one that appears in either the Marine Habitat Classification for Britain and Ireland (Connor *et al.*, 2004) or under the marine habitats section of the EUNIS Habitat Classification (Davies *et al.*, 2004). Chapter 1 in Part 2 of the revised guidelines for the selection of biological SSSIs⁴ details the habitat selection units relevant to marine habitats. These are summarised in Box 1:

In collaboration with the Country Agencies, JNCC led on an exercise to collate a list of marine habitats considered to be afforded protection by SSSIs within England, Wales, Scotland and Northern Ireland. Generally, these features fall within, or are equivalent to, the broader-scale selection units detailed in Box 1. In addition, the majority of the habitats listed in Table 1 are sufficiently equivalent to, characteristic of, or may include features on existing conservation listings such as Annex I of the EC Habitats Directive, or as Habitats of Principal Importance (Section 41 and Section 42 of the NERC Act 2006, the Scottish Biodiversity List for the Nature Conservation (Scotland) Act 2004, and the Priority Habitats list for the Wildlife and Natural Environment Act (Northern Ireland) 2011). However, there are some habitats specifically listed in Chapter 1, Part 2 of the revised guidelines for the selection of biological SSSIs that are deemed to be Nationally and More Than Nationally important. Whilst some of these correspond directly with the marine SSSI component (e.g. Sand influenced biogenic reefs) others do not (e.g. soft-piddock bored rock and tide-swept algae). Other exceptions include special features (specialised habitats) that are not sufficiently represented by the listed equivalent broad-scale habitat types (e.g. rockpools, overhangs and surge gullies). In these situations they are listed under the most relevant marine SSSI component. There are a number of features that are found in Wales that are not included in Table 1 due to the breadth of possible equivalent marine SSSI components. These include the feature 'intertidal' and Area of Search (AoS) rare and scarce biotopes.

Nomenclature of the habitats listed in Table 1 has been cross-checked and aligned with Chapter 1, Part 2 of the coastal and marine habitats chapter of the revised biological SSSI guidelines, and the rationalised list of benthic habitats for monitoring, assessment and reporting purposes produced by JNCC (Robson, 2014)⁵.

⁴ Available here: http://jncc.defra.gov.uk/pdf/SSSIs_Chapter01.pdf

⁵ Robson, L. 2014. *Monitoring, assessment and reporting of UK benthic habitats: A rationalised list*. JNCC Report 449.

SSSI marine selection units

Coastal saltmarsh

Estuaries (including tidflats and saltmarsh)

Rocky shore (and associated communities)

1) – Exposed rocky shores

(Lichens, *mytilus edulis* and/or barnacles, Furoid algae, *Himanthalia*, red algae, kelps, rockpools)

2) – Moderately exposed rocky shores

(Lichens, ephemeral red and green algae, Furoid algae, *Himanthalia*, red algae, upper shore chalk, piddock-bored rock, sand-scoured rock, mussels and barnacles, kelps, rockpools, overhangs/vertical faces/underboulders)

3) – Sheltered rocky shores

(Lichens, green algae, Furoid algae, kelps, rockpools, overhangs/vertical faces/underboulders)

4) – Shores of mixed substrata

(Green and red algae, Furoid algae, fauna and algae, mussels)

Special features may include: surge gullies, rockpools, caves, overhangs and underboulders.

Sediment shore (and associated communities)

1) – Wave exposed sandy shores (with burrowing crustaceans and polychaetes)

2) – Moderately exposed sandy shores (with polychaetes and bivalves)

3) – Sheltered muddy shores (including estuarine muds)

4) – Muddy gravel shores

Saline lagoons

1) – Isolated saline lagoon

2) - Percolation saline lagoon

3) - Sluiced saline lagoon

4) - Silled saline lagoon

5) - Saline lagoon inlets

Vegetated shingle beaches

Box 1 – Biological SSSI habitat selection units relevant to marine habitats (adapted from Chapter 1, Part 2 of the revised guidelines for the selection of biological SSSIs) ^{See 4}

Table 1 – The proposed SSSI Marine Biological Components for those habitat features of current SSSIs used by each country, together with their correlation with existing conservation listings. Note, SPI refers to Species of Principle Importance; HPI refers to Habitat of Principle Importance (formally UK Biodiversity Action Plan features)

Marine biological component ⁶	Name of SSSI feature used by country				Correlation with existing conservation listings
	England	Scotland	Wales ⁷	Northern Ireland	
Vegetated shingle beaches	Annual vegetation on drift lines, coastal vegetated shingle		Shingle/boulders above high water mark	Annual vegetation on drift lines	- EC Habitats Directive - Annual vegetation on drift lines
Egg-wrack (<i>Ascophyllum nodosum</i>) beds				Egg-wrack beds	- SPI
Estuarine rocky habitats	Estuarine rocky habitats, Estuaries, Littoral Rock, Inshore sublittoral rock		Estuaries (in part), Sheltered rock (in part), Moderately exposed rock (in part), Mixed substrata (in part)	Estuarine rocky habitats	- EC Habitats Directive – Reefs, typical of estuaries/large shallow inlets and bays - HPI - Estuarine rocky habitats
<i>Salicornia</i> and other annuals colonising mud and sand	Estuaries, Intertidal mud and sandflats		Saltmarsh (in part), Estuaries (in part), Sheltered mud (in part)	<i>Salicornia</i> and other annuals colonising mud and sand	- EC Habitats Directive - <i>Salicornia</i> and other annuals colonising mud and sand, typical of estuaries - HPI – Coastal saltmarsh
Coastal saltmarsh and saline reedbeds	Coastal saltmarsh and saline reedbeds, Cordgrass swards, Atlantic		Saltmarsh, Estuaries (in part), Sheltered mud (in part)	Coastal saltmarsh	- EC Habitats Directive – Atlantic salt meadows, <i>Salicornia</i> and other annuals colonising mud and sand, typical of estuaries

⁶ This column gives the generic term to explain how the SSSI feature(s) used by country with similar terms are grouped.

⁷ The predominant selection unit relating to each broad habitat type is noted. Each selection unit (shore type) can comprise a number of habitats e.g. broad habitat type intertidal rock could include all of the rock exposure selection units, but also various sediments. The sediments have not been listed here for simplicity. Where a broad habitat type is more specific e.g. honeycomb worm reef the direct equivalent is given and not the selection unit where it is predominantly found. For some Welsh SSSI features such as rockpools, caves and overhangs, these can occur in many different selection units, but they have only been included in the corresponding broad habitat type where they are typically found.

Marine biological component ⁶	Name of SSSI feature used by country				Correlation with existing conservation listings
	England	Scotland	Wales ⁷	Northern Ireland	
	salt meadow, Mediterranean salt meadow				- HPI – Coastal saltmarsh
Submerged or partially submerged sea caves	Seacaves	Seacaves	Caves and overhangs (in part)	Seacaves	- EC Habitats Directive - Submerged or partially submerged sea caves
Blue mussel (<i>Mytilus edulis</i>) beds			Moderately exposed sand (in part), Mixed substrata (in part), Estuaries (in part), Rockpools (in part)	Blue mussel (<i>Mytilus edulis</i>) beds	- EC Habitats Directive – reef; udf flats and sandflats not covered by seawater at all times, Typical of estuaries/large shallow inlets and bays - OSPAR - Intertidal <i>Mytilus edulis</i> beds on mixed and sandy sediments - HPI – Blue mussel beds on sediment
Intertidal chalk/Littoral chalk communities	Littoral chalk communities, Littoral Rock, Inshore sublittoral rock, Reef		Chalk and very soft rock	Intertidal chalk	- EC Habitats Directive - may occur in reef (if connected to sublittoral rock reef); or may be a component of submerged or partially submerged sea caves - OSPAR – Littoral chalk communities - HPI - Intertidal chalk
Intertidal rock	Littoral Rock, Exposed rocky shore, Moderately exposed rocky shore, Sheltered Rocky shore, Shores of mixed	Rocky shore	Exposed rock; Sheltered rock; Moderately exposed rock; Estuaries (in part); Mixed substrata (in part); Rockpools (in part); Surge gullies (in part), Caves and overhangs (in part); Tide-swept algae (in part); soft	Intertidal rock	- EC Habitats Directive - may occur in reef (if connected to sublittoral rock reef), typical of estuaries/large shallow inlets and bays HPI – Estuarine rocky habitats, intertidal

Marine biological component ⁶	Name of SSSI feature used by country				Correlation with existing conservation listings
	England	Scotland	Wales ⁷	Northern Ireland	
	substrata, Estuaries, Reef		pidcock bored substrata (in part)		underboulders, tideswept channels
Intertidal mudflats	Intertidal mud; Intertidal mudflats, Estuaries, Littoral sediment, sheltered muddy shore, Muddy gravel shore	Mudflats	Sheltered mud, Estuaries (in part), muddy gravel	Mudflats	- EC Habitats Directive - Mudflats and sandflats not covered by seawater at all times; typical of large shallow inlets and bays; estuaries - OSPAR – intertidal mudflats - HPI – Intertidal mudflats
Intertidal sand, muddy sand and sandflats	Intertidal sand and muddy sand, wave-exposed sandy shore, moderately wave-exposed sandy shore, Estuaries, Littoral sediment	Sandflats	Moderately exposed sand (in part), Exposed sand (in part), Estuaries (in part)	Sandflats	- EC Habitats Directive - Mudflats and sandflats not covered by seawater at all times; typical of large shallow inlets and bays; estuaries
Intertidal underboulder communities			Under boulders	Intertidal underboulder communities	- EC Habitats Directive - may occur in Annex I reef (if connected to sublittoral rock reef), HPI - Intertidal underboulder communities
Intertidal coarse sediment	Intertidal coarse sediment, Estuaries, Littoral sediment		Exposed sand (in part), Moderately exposed sand (in part)		- EC Habitats Directive - Mudflats and sandflats not covered by seawater at all times; typical of large shallow inlets and bays; estuaries
Intertidal mixed sediments	Intertidal mixed sediments, Estuaries, Littoral Sediment		Muddy gravel, Mixed substrata (in part), Estuaries (in part), examples can also be found in rock selection units		- EC Habitats Directive - Mudflats and sandflats not covered by seawater at all times; typical of large shallow inlets and bays; estuaries

Marine biological component ⁶	Name of SSSI feature used by country				Correlation with existing conservation listings
	England	Scotland	Wales ⁷	Northern Ireland	
Infralittoral rock	Infralittoral rock, Inshore sublittoral Rock, Reef		in part for Exposed rock; Sheltered rock; Moderately exposed rock; Mixed substrata (in part) Rockpools (in part); Surge gullies (in part); Caves and overhangs (in part); Tide-swept algae (in part); soft piddock bored substrata (in part)		- EC Habitats Directive – reef; Submerged or partially submerged sea caves; characteristic of large shallow inlets and bays; estuaries - HPI – may include tide swept channels, intertidal underboulder communities, saline lagoons
Oyster (<i>Ostrea edulis</i>) beds			Muddy gravel (in part)	Oyster (<i>Ostrea edulis</i>) beds	- HPI – May occur within sheltered muddy gravels. - OSPAR - <i>Ostrea edulis</i> and <i>Ostrea edulis</i> beds
Peat and clay exposures			Soft piddock bored substrata (in part)	Peat and clay exposures	- EC Habitats Directive - may occur in reef (if connected to sublittoral rock reef), may also occur in estuaries or large shallow inlets and bays - HPI - Peat and clay exposures
<i>Sabellaria alveolata</i> reefs	Reef		Sand influenced biogenic reefs	<i>Sabellaria alveolata</i> reefs	- EC Habitats Directive - reef; may also be a component of large shallow inlets and bays - HPI - <i>Sabellaria alveolata</i> reefs
Saline (coastal) lagoons	Saline coastal lagoon	Saline lagoon	Isolated, percolation and silled saline lagoon	Saline lagoon	- EC Habitats Directive – may occur within reef; typical of lagoons - HPI - Saline lagoons
Seagrass beds (including <i>Zostera marina</i> and <i>Zostera nolti</i>)	Seagrass beds, intertidal sediments dominated by aquatic	Eel grass beds	Eel grass (habitat) and seagrass species features	Seagrass beds	- EC Habitats Directive – may occur on mudflats and sandflats not covered by seawater at all times; and if the feature spans the

Marine biological component ⁶	Name of SSSI feature used by country				Correlation with existing conservation listings
	England	Scotland	Wales ⁷	Northern Ireland	
	angiosperms				intertidal and subtidal zone then potentially also sandbanks which are slightly covered by seawater at all times. Typical of estuaries/large shallow inlets and bays - HPI - seagrass beds - OSPAR - Zostera beds
Sea-loch egg-wrack beds				Sea-loch egg-wrack beds	- SPI
Sheltered muddy gravels	Sheltered muddy gravels, Estuaries		Muddy gravel, Mixed substrata (in part), Estuaries (in part).	Sheltered muddy gravels	- EC Habitats Directive - typical of estuaries; large shallow inlets and bays - HPI - Sheltered muddy gravels
Subtidal mud	Subtidal mud, Estuaries		Sheltered mud, Estuaries (in part)		- OSPAR – Seapen and burrowing megafauna communities - HPI – Mud habitats in deep-water
Subtidal sand	Subtidal sand, Estuaries		Exposed sand (in part); Moderately exposed sand (in part), Estuaries (in part)		- EC Habitats Directive – sandbanks which are slightly covered by seawater at all times, typical of estuaries/large shallow inlets and bays - HPI – Subtidal sands and gravels
Tide swept channels		Tidal rapids	Tide-swept algae (in part)	Tide-swept channels	- EC Habitats Directive - may occur in reef (if connected to sublittoral rock reef); characteristic of estuaries or

Marine biological component ⁶	Name of SSSI feature used by country				Correlation with existing conservation listings
	England	Scotland	Wales ⁷	Northern Ireland	
					large shallow inlets and bays - HPI - Tide swept channels

5.2 Invertebrates

The list of marine invertebrate species was derived from SSSI feature listings provided by the Country Agencies. The conservation status of these features is included in Table 2.

5.3 Plants

The list of marine plant species was derived from SSSI feature listings provided by the Country Agencies. The conservation status listings of these features are included in Table 3. Note that seagrass bed communities, *Ascophyllum nodosum* and saltmarsh species are considered under the relevant habitats in Table 1, apart from *Ascophyllum nodosum* ecad. *Mackii*.

5.4 Fish

Those fish species that are listed as estuarine and/or anadromous and native to the UK in Chapter 16 of Part 2⁸ of the revised guidelines for the selection of biological SSSIs are considered to represent marine features of SSSIs and are listed in Table 4. Note that sturgeon (*Acipenser sturio*) has not been included on the list as it is considered to be very rare in UK waters.

For fish to be considered as a marine component of a SSSI, there should be a clear link between the species and the marine habitat (i.e. below MHW or MHWS where appropriate) within the SSSI. This may be an independently notified or qualifying habitat feature, or notified based on functional interdependence.

5.5 Mammals

Those marine mammals that utilise the marine environment for all or part of their life cycle that are listed in the drafted Chapter 13 of Part 2⁹ of the revised guidelines for the selection and evaluation of SSSIs are considered to represent marine features of SSSIs and are listed in Table 5. For seals, this relates to SSSIs where coastal breeding colonies and haul-out areas are present. For other marine mammals, the species needs to be associated with marine areas (below MHW or MHWS where appropriate) in the SSSI in which they are found to be defined as a marine component of the site. Bottlenose dolphin are not included under Chapter 13 part 2 of the revised SSSI guidelines but are included as a notified feature of a SSSI by Wales under guideline 2.9.2.6 in the intertidal supplement as it is listed under schedule 5 of the Wildlife and Countryside Act.

5.6 Birds

A list of birds dependent on the marine environment has been drawn up by JNCC and the Country Agencies as part of work to determine a standardised list of UK MPA Network Features. This will be published by JNCC in due course and the same list will be used to determine those bird features of SSSIs are considered to be marine.

⁸ Available here: http://jncc.defra.gov.uk/pdf/SSSIs_Chapter16.pdf

⁹ Available here: [http://jncc.defra.gov.uk/pdf/SSSIs_Chapter13\(a\)\(b\).pdf](http://jncc.defra.gov.uk/pdf/SSSIs_Chapter13(a)(b).pdf)

Table 2 – Invertebrate species proposed as marine biological components of SSSIs, as currently used by countries, together with their listed conservation status. Note, SPI refers to Species of Principle Importance (formally UK Biodiversity Action Plan species)

Invertebrate marine biological component	Current use of SSSI/ASSI feature by country				Conservation listing
	England	Scotland	Wales	Northern Ireland	
<i>Alkmaria romijni</i> (Tentacled lagoon worm)	Yes		Yes		- Schedule 5 Wildlife & Countryside Act
<i>Armandia cirrhosa</i> (Tentacled lagoon worm)	Yes				
<i>Gammarus chevreuxi</i> (A sand shrimp)			Yes		- Nationally rare and scarce species - Potentially occur in habitats in various conservation listings.
<i>Ophelia bicornis</i> (Polychaete worm)			Yes		
<i>Pectenogammarus planicrurus</i> (an amphipod)			Yes		
<i>Thyrosia guernei</i> (a sponge)			Yes		
<i>Cerastoderma lamarki</i> (brackish water) cockle		Yes			
<i>Nematostella vectensis</i> (Starlet sea anemone)	Yes				- Potentially occur in habitats in various conservation listings.
<i>Victorella pavidata</i> (Trembling sea-mat)	Yes				- Schedule 5 Wildlife & Countryside Act - SPI
<i>Caecum amoricum</i> (Defolin's lagoon snail)	Yes				- Schedule 5 Wildlife & Countryside Act
<i>Gammarus insensibilis</i> (Lagoon sand shrimp)	Yes				- Schedule 5 Wildlife & Countryside Act; - SPI

Table 3 – Plants proposed as Marine Biological Components of SSSIs as currently used by countries, together with their listed conservation status.¹⁰ Note, SPI refers to Species of Principle Importance; HPI refers to Habitat of Principle Importance (formally UK Biodiversity Action Plan species)

Plant marine biological component	Current use of SSSI/ASSI feature by country				Conservation listing
	England	Scotland	Wales	Northern Ireland	
<i>Ascophyllum nodosum</i> ecad. <i>Mackii</i> (sea loch egg wrack)		Yes			- SPI
<i>Gigartina pistillata</i> (a red alga)			Yes		- Nationally Scarce Marine Species
<i>Ruppia cirrhosa</i> (Spiral tasselweed)	Yes		Yes	Yes	- Northern Ireland Priority Species - Potentially found within EC Habitats Directive - Saline lagoon and HPI - Saline lagoons - IUCN Red List 'Least Concern'
<i>Ruppia maritima</i> (Beaked tasselweed)				Yes	- Potentially found within EC Habitats Directive - Saline lagoon and estuaries; HPI - Saline lagoons - IUCN Red List 'Least Concern'
Vascular plant assemblage		Yes			None
<i>Lamprothamnium papulosum</i> (Foxtail stonewort)	Yes	Yes			- Schedule 8 Wildlife & Countryside Act; - SPI
Non-vascular plant assemblage - Algae Assemblage	Yes				None
<i>Peucedanum officinale</i> (Sea Hog's Fennel)	Yes				- Primary food source for SPI Fisher's Estuarine Moth (<i>Gortyna borelii lunata</i>)

¹⁰ *Zostera noltei* and *Zostera marina* not included as they are considered captured by the habitat listing seagrass beds in Table 1. The same is the case for *Puccinellia* sp which are considered covered under saltmarsh.

Table 4 – Fish proposed as Marine Biological Components of SSSIs as currently used by countries, together with their listed conservation status. Note, SPI refers to Species of Principle Importance (formally UK Biodiversity Action Plan species)

Fish marine biological component	Current use of SSSI/ASSI feature by country				Conservation listing
	England	Scotland ¹¹	Wales	Northern Ireland*	
Allis shad (<i>Alosa alosa</i>)	Yes		Yes	Yes	- Schedule 5 Wildlife & Countryside Act - EC Habitats Directive – Annex II & V - SPI - OSPAR T&D Species
Atlantic Salmon (<i>Salmo salar</i>)	Yes		Yes	Yes	- EC Habitats Directive – Annex V - SPI - OSPAR T&D Species
Brown sea trout (<i>Salmo trutta</i>)				Yes	- SPI
Pollan (<i>Coregonus autumnalis pollan</i>) ¹²				Yes	- SPI - Irish Red Data Book – endangered
River lamprey (<i>Lampetra fluviatilis</i>)	Yes		Yes	Yes	- EC Habitats Directive – Annex V - SPI
Sea lamprey (<i>Petromyzon marinus</i>)	Yes		Yes	Yes	- EC Habitats Directive – Annex II - SPI - OSPAR T&D Species
Smelt/Sparling (<i>Osmerus eperlanus</i>)		Yes	Yes	Yes	- SPI
Twaite shad (<i>Alosa fallax</i>)	Yes		Yes	Yes	- Schedule 5 Wildlife & Countryside Act - EC Habitats Directive – Annex II & V - SPI
European Eel (<i>Anguilla anguilla</i>)			Yes	Yes	- OSPAR T&D Species - SPI

¹¹ In Scotland, the only fish species where SSSIs have been designated to protect the marine component of their life-cycle is for Smelt/Sparling (*Osmerus eperlanus*). This fish is a notified feature within The Cree Estuary SSSI and Lower River Cree SSSI.

¹² This species has been included as a marine feature of ASSIs in Northern Ireland, but does not feature in Part 2 (detailed guidelines for habitats and species of SSSIs) Chapter 16 (freshwater and estuarine fish) of the SSSI selection guidelines. Guidelines for the selection of freshwater and estuarine fish are available here: http://jncc.defra.gov.uk/pdf/SSSIs_Chapter16.pdf

Table 5 – Mammals proposed as Marine Biological Components of SSSIs as currently used by countries, together with their listed conservation status. Note, SPI refers to Species of Principle Importance (formally UK Biodiversity Action Plan species)

Mammal marine biological component	Current use of SSSI/ASSI feature by country				Conservation listing
	England	Scotland	Wales	Northern Ireland	
Bottlenose dolphin (<i>Tursiops truncatus</i>)			Yes		- EC Habitats Directive: Annexes II & IV - Schedule 5 Wildlife & Countryside Act - SPI - Bern Convention; Convention on Migratory Species
Common seal (<i>Phoca vitulina</i>)	Yes	Yes		Yes	- EC Habitats Directive: Annexes II & V - SPI - Bern Convention; Convention on Migratory Species
Grey seal (<i>Halichoerus grypus</i>)	Yes	Yes	Yes	Yes	- EC Habitats Directive: Annexes II & V - Bern Convention; Convention on Migratory Species
Otter (<i>Lutra lutra</i>)	Yes	Yes	Yes	Yes	- EC Habitats Directive: Annexes II & IV - Schedule 5 Wildlife & Countryside Act - SPI - Bern Convention