

Severn Estuary European Marine Site Management Scheme



Severn Estuary Special
Area of Conservation

Severn Estuary Special
Protection Area

Severn Estuary Ramsar
Site

2018 – 2025

ASERA



Severn Estuary European Marine Site Management Scheme 2018 - 2025

Compiled by Lucy Taylor on behalf of the Association of Severn Estuary Relevant Authorities (ASERA).

Edited in 2023 by Katie Havard-Smith on behalf of the Association of Severn Estuary Relevant Authorities (ASERA).

Acknowledgements

The production of this Management Scheme has involved extensive consultation with Relevant and Competent Authorities, members of the Advisory Group and other interests. The support received and time given by particular officers and members of these organisations was fundamental to the production of this document. Cover image © Natural Resources Wales.

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Record of Amendments

Over time this Management Scheme will be updated to reflect changing conditions, management and information known about the site. To ensure the contents of this document remain up-to-date, an annual report will be produced which will provide details of changes to the Management Scheme. When these reports are circulated, please use the table below as a record.

Summary of Changes	Pages Affected	Author	Date of Change
Amendment to legislation after EU exit.	5, 9, 30, 32, 33	K. Havard-Smith	28.11.23
Links updated: <ul style="list-style-type: none">- Conservation Objectives (page 10)- High Tide Roost Data (page 11)- Regulation 33 (page 12)	10	K. Havard-Smith	28.11.23
Text re-phrased to avoid confusion between Reg 33 and Conservation Objectives.	12	K. Havard-Smith	28.11.23
Management Group and Working Group members updated to reflect changes since 2018	14	K. Havard-Smith	28.11.23
Relevant Authority list updated to reflect changes since 2018	15	K. Havard-Smith	28.11.23
Updated to reflect the 2023-25 Management Scheme extension.	17	K. Havard-Smith	28.11.23
F-Code table added for clarity	19	K. Havard-Smith	28.11.23
Information on the 2023 Land-Based Recreation study added	24	K. Havard-Smith	28.11.23
Habitat creation and restoration key concerns updated	49	K. Havard-Smith	28.11.23

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1. Introduction

1.1 Who is the Management Scheme for?

This Management Scheme is for authorities with statutory powers to manage activities within the marine and coastal environment of the Severn Estuary. Competent and Relevant Authorities bordering the Estuary have a statutory duty to manage their activities adjacent to and within the Severn Estuary European Marine Site (EMS) to minimise impacts on the designated features. The Association of Severn Estuary Relevant Authorities (ASERA) facilitates these authorities in discharging their statutory duties in the most efficient and cost-effective way possible.

This scheme is the tool chosen by Relevant Authorities with a remit for managing activities within the Severn Estuary EMS, to ensure their compliance with UK law (see Section 1.3). The area covered by this scheme is regarded and managed as the Severn Estuary EMS (Figure 1).

1.2 How should the Management Scheme be used?

This scheme identifies Relevant Authorities and the tools available to them to regulate and manage (where needed) particular activities across the Severn Estuary EMS. The management responsibilities of Relevant Authorities are translated into clear actions grouped by activity and, to help authorities with their individual duties, actions are also grouped by authority. This scheme is the primary tool for providing coordinated management for the Severn Estuary EMS.

Our Spectacular Severn

The Severn Estuary is one of the largest coastal plain estuaries in the UK, its immense tidal range (the highest in Europe) and classic funnel shape make it unique in Britain and rare worldwide. It lies on the south-west coast of Britain at the mouth of four major rivers; the Severn, the Wye, the Usk and the Avon. Dynamic and diverse, it has fascinating natural, cultural and geographical features, managed and used by many organisations and individuals.

Our estuary supports nationally and internationally important habitats and species and is a key migratory route for salmon and internationally rare fish species. The extensive mudflats, saltmarshes and coastal grazing marshes make it one of the most important estuaries in the UK for its numbers of wildfowl and wading birds with over 80,000 birds visiting every winter. It is a key refuelling stop for important spring and autumn passage birds. Reefs of the tube-forming worm *Sabellaria alveolata* are also found here.

Working together, we can reduce disturbance to the habitats and species of the Severn Estuary that keep our site special.

Figure 1: Ringed Plover, Eurasian Wigeon, Curlew and Shelduck



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1.3 What is a European Marine Site (EMS)?

An EMS such as the Severn Estuary will have marine areas of either or both [Special Areas of Conservation](#) (SACs) and [Special Protection Areas](#) (SPAs) that protect some of our most valuable marine and coastal species and habitats. Pre-Brexit, these were designated under the Habitats and Birds Directives. Since the exit, they are designated under The Conservation of Habitats and Species Regulations 2017 (as amended). It is important to note that the Regulations still contain reference to the Habitats Directives, therefore the Directives are referred to throughout this document where appropriate. The designations form part of the national site network of nationally important sites across the UK. EMSs are *not* statutory designations in themselves but act as a 'management unit' within the larger national site network. The Severn Estuary EMS is comprised of the following sites:

- [Severn Estuary SAC](#)
- [Severn Estuary SPA](#)
- [Severn Estuary Ramsar Site](#)

1.4 What is a SAC?

Special Areas of Conservation (SAC) are highly protected sites designated under [The Conservation of Habitats and Species Regulations 2017 \(as amended\)](#). SACs are designated for their habitats and species of wild flora and fauna that are of 'community interest'. The Regulations require Competent Authorities to take a variety of measures to maintain and restore protected habitats and species to *favourable conservation status*. The Severn Estuary was classified as an SAC in 2009.

1.5 What is a SPA?

[Special Protection Areas](#) (SPAs) are highly protected sites designated under the [The Conservation of Habitats and Species Regulations 2017 \(as amended\)](#). SPAs are protected for their rare, vulnerable, and regularly occurring migratory bird species. They also protect the supporting habitats within the SPA boundary. Competent Authorities have a responsibility under the Regulation to safeguard the habitats that support these populations of wild bird species. The Severn Estuary was classified as an SPA in 1995.

The entire suite of SPAs and SACs are collectively known across the UK as the national site network.

1.6 What is a Ramsar Site?

The Convention on Wetlands of International Importance, known as the Ramsar Convention, was signed in Ramsar, Iran, in 1971. The overarching objectives of the Convention are to stem the loss and progressive encroachment on wetlands now and in the future. It recognises the importance of wetlands for human well-being, as well as biodiversity conservation. The Severn Estuary was classified as a Ramsar site in 1995. It is government policy to treat these wetland sites as though they are European Marine Sites to assist in meeting obligations under the Ramsar Convention (Ramsar Policy Statement November 2000).

Figure 2: Redshank, Pochard, Whimbrel and Tufted Duck © John Coleman & Adrian Plant.



1.8 The Severn Estuary EMS

Figure 3 shows the extent and relationships of the SAC, SPA and Ramsar site designations in the Severn Estuary. The table in [Appendix 2](#) shows a summary of the features by designation and the interrelationship between them. The detailed descriptions of these designations and their qualifying features are laid out in full in the [Regulation 33 \(35\) Advice](#).

The key habitat features for which the Severn Estuary is designated as an SAC are: estuaries, subtidal sandbanks, intertidal mudflats and sandflats, Atlantic salt meadow, reefs, as demonstrated in Figure 4.

The key features for which the Severn Estuary is designated as an SPA are: overwintering Bewick's swan, Greater white-fronted goose, dunlin, common redshank, common shelduck and gadwall. It also regularly supports at least 20,000 waterfowl, and includes the intertidal mudflats and sandflats, saltmarsh and hard substrate as habitats which support these species.

The key features for which the Severn Estuary is designated as a Ramsar are: estuaries, the assemblage of migratory fish species, Bewick's swan, European white-fronted goose, dunlin, redshank, shelduck, gadwall and the internationally important assemblage of waterfowl.

Figure 3: The extent and relationships of the SAC, SPA and Ramsar site designations (ASERA 2016).

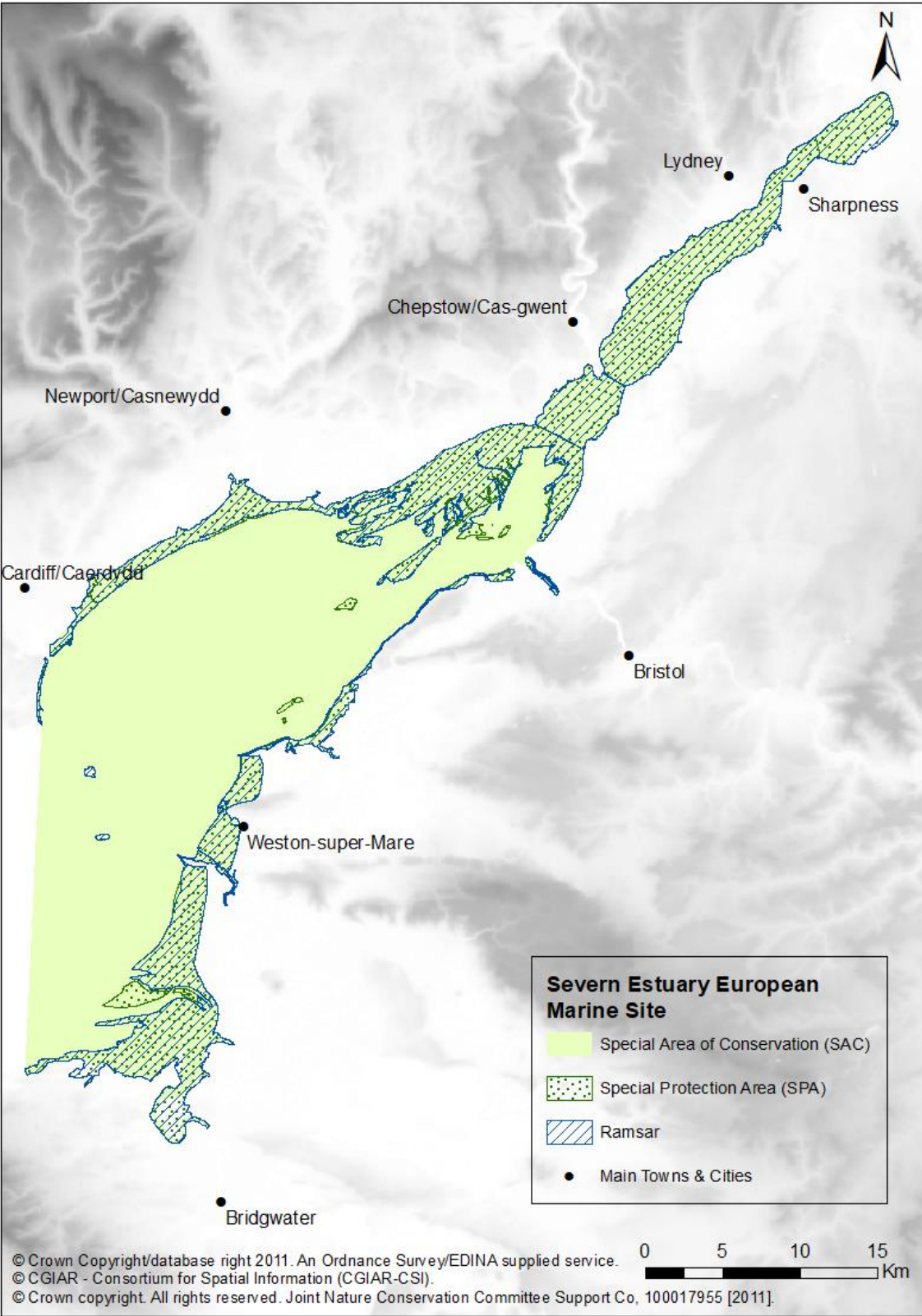
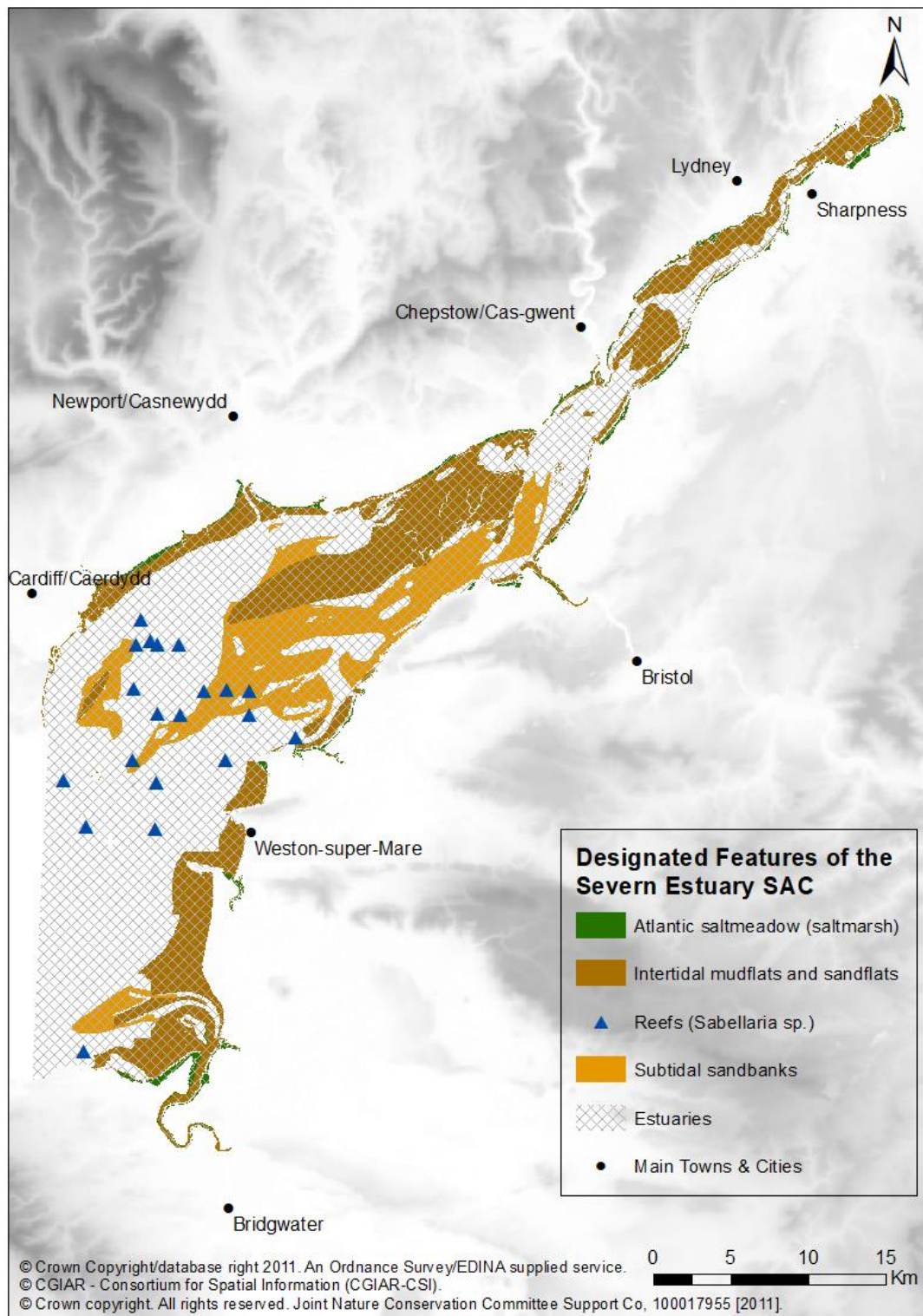


Figure 4: Designated Annex I habitat features of the Severn Estuary SAC (ASERA 2018).



2.0 What is the Management Scheme?

Management Schemes make a significant contribution to the implementation of [The Conservation of Habitats and Species Regulations 2017 \(as amended\)](#) for EMSs.

Article 6 of the Habitats Directive defines the requirements for the management of EMSs, specifically with Articles 6(1) and 6(2) of the [Habitats Directive](#)¹, which require Member States (including the UK) to establish and implement appropriate measures to conserve and avoid deterioration of the natural habitats and species for the areas that have been designated.

Articles 6(1) and 6(2) of the Habitats Directive

(1) For special areas of conservation, Relevant Authorities shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.

(2) Relevant Authorities shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Regulation.

2.1 A Management Scheme for EMSs

Relevant Authorities must, within their areas of jurisdiction, have regard to both direct and indirect effects on an interest feature of the site. This may include consideration of issues beyond the boundary of the EMS. Under UK law Regulation 38 of the [Conservation of Habitats and Species Regulations 2017](#)² states that Relevant Authorities may establish a Management Scheme for EMSs within their jurisdiction. This document provides the Management Scheme for the Severn Estuary SAC, SPA and Ramsar sites and should be used to guide the Relevant Authorities in the exercise of their functions as they relate to these sites.

This Management Scheme has been prepared following the advice given in the Department of Environment Transport and the Regions (DETR) Guidance for preparing and applying Management Schemes for EMSs in England and Wales under the Habitats Regulations 1994.

2.2 The Management Scheme Process

The Management Scheme sets out the management needs for the EMS. The process of defining the Management Scheme enables Relevant Authorities to understand the interest features of the EMS and activities that may affect them. The process involved in developing the Management

Regulation 38 - Conservation of Habitats and Species Regulations 2017

(1) The Relevant Authorities, or any of them, may establish for a European marine site, a Management Scheme under which their functions (including any power to make byelaws) are to be exercised so as to secure in relation to that site compliance with the requirements of the Habitats Directive.

(2) Only one Management Scheme may be made for each European marine site.

(3) A Management Scheme may be amended from time to time.

(4) As soon as a Management Scheme has been established, or is amended, a copy of it must be sent by the Relevant Authority or authorities concerned to the appropriate nature conservation body.

1 <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043>

2 <https://www.legislation.gov.uk/uksi/2017/1012/regulation/38/made>

Scheme clearly identifies appropriate management options and an implementation Action Plan.

The Management Scheme for the Severn Estuary EMS will draw upon the Conservation Objectives defined for each of the features of the SAC, SPA and Ramsar sites as advised by Natural Resources Wales (NRW) and Natural England (NE).

2.2.1 Conservation Advice – Regulation 33(37)

The Statutory Nature Conservation Bodies, Natural England and Natural Resources Wales have a duty to provide advice to Relevant Authorities on the Conservation Objectives for the SAC and SPA, as well as advice on activities and pressures that might cause deterioration or disturbance to designated features. This advice informs the development of management measures for the Severn Estuary EMS and informs decisions on the impact of proposed activities.

[NE and CCW's advice under Regulation 33\(2\)\(a\) of Habitats Regulations 1994.](#)

NE and CCW (now NRW) developed the Conservation Advice for the Severn Estuary EMS in June 2009. The Conservation Advice package will be updated when new evidence is available.

Section 2.2.3 and 2.2.4 of this document outlines the [Conservation Objectives](#) for the SAC and SPA.

This document is the single integrated Management Scheme for the Severn Estuary EMS, comprises of the following designations:

- Severn Estuary Special Area of Conservation (SAC)
- Severn Estuary Special Protection Area (SPA)
- Severn Estuary Ramsar Site

Figure 5: View from Brean Down © Azmath Jaleel.



2.2.2 Summary of Indicative Condition Assessments of the Severn Estuary SAC Features

EMS Feature	Summary of Feature Condition
Estuary	Currently unassessed
Intertidal mudflat and sandflat	Currently unassessed
Atlantic salt meadow / saltmarsh	Currently unassessed
Subtidal sandbanks	Currently unassessed
Reefs	Currently unassessed
Migratory fish species and assemblage	Currently unassessed
Migratory waterfowl species and assemblage	Currently unassessed

Although there is no current formal joint assessment available for the EMS features (Table 2.2.2), there is work ongoing within the estuary to inform feature condition assessments in the future. Such work includes the high tide roost studies being carried out by NE (new evidence reports [available online](#)), updating of NRW high tide roost information ([available online](#)), saltmarsh monitoring and *Sabellaria* reef monitoring. A report on indicative site level feature condition assessment for the Severn Estuary SAC³ was published by NRW in January 2018 as requested by Welsh Government. This indicative condition assessment is based on information collated and interpreted by NRW and therefore represents NRW's opinion only. Discussion between NRW and NE is planned to inform a formal condition assessment for the SAC in the future.

Other useful information to help inform assessments can be found in [SSSI condition assessments](#) and in [WFD classifications](#).

³ Severn Estuary Special Area of Conservation. 2018. Indicative site level feature condition assessments 2018. NRW Evidence Report No: 235. <https://naturalresources.wales/media/684391/severn-sac-ica-2018.pdf>

The Conservation Objectives for the [SAC](#) and [SPA](#) (2.2.3, 2.2.4) should be read in conjunction with the Reg 33(35) Conservation Advice document, which provides more detailed advice and information. The [Severn Estuary Site Improvement Plan](#) provides a high-level overview of the issues (both current and predicted) affecting the condition of the national site network features on the site(s) and outlines the priority measures required to improve the condition of the features. The [Designated Site System](#) provides a map, links to the Regulation 33 document and a summary of the site, its designated features and links to supporting/further information. It covers the Severn Estuary SAC, SPA and Ramsar sites.

2.2.3 Severn Estuary SAC Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the ‘Qualifying Features’), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status 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.

2.2.4 Severn Estuary SPA Conservation Objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the ‘Qualifying Features’), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

3.0 Who is Responsible for Implementing the Management Scheme?

This Management Scheme has been prepared by the Relevant Authorities for the Severn Estuary that are members of the Association of Severn Estuary Relevant Authorities (ASERA). Relevant Authorities are defined in [Regulation 6](#) of the Habitats Regulations. They are those authorities, from the list given below, that have functions relating to land or waters within or adjacent to a EMS.

3.1 Who are Relevant Authorities? (Regulation 6 – Habitats Regulations)

For the purposes of these Regulations the Relevant Authorities, in relation to a marine area or European marine site, are such of the following as have functions in relation to land or waters within or adjacent to that area or site:

- (a) a nature conservation body;
- (b) a county council, county borough council, district council or London borough council;
- (c) the Environment Agency;
- (d) the Marine Management Organisation;
- (e) a water undertaker or sewerage undertaker, or an internal drainage board;
- (f) a navigation authority within the meaning of the Water Resources Act 1991(b);
- (g) a harbour authority within the meaning of the Harbours Act 1964(c);
- (h) a lighthouse authority;
- (i) an inshore fisheries and conservation authority established under Part 6 of the Marine Act(d) (management of inshore fisheries);
- (j) a local fisheries committee constituted under the Sea Fisheries Regulation Act 1966(e) or any authority exercising the powers of such a committee; and
- (k) a National Park authority.

Although not specifically mentioned above, the Welsh Government has equivalent responsibilities in Welsh waters for functions of the Marine Management Organisation and Inshore Fisheries and Conservation Authority in English waters. [Section 9 of ASERA's Constitution](#) details the membership structure of ASERA's Management Group that are involved in either English or Welsh functions.

3.2 About the Association of Severn Estuary Relevant Authorities

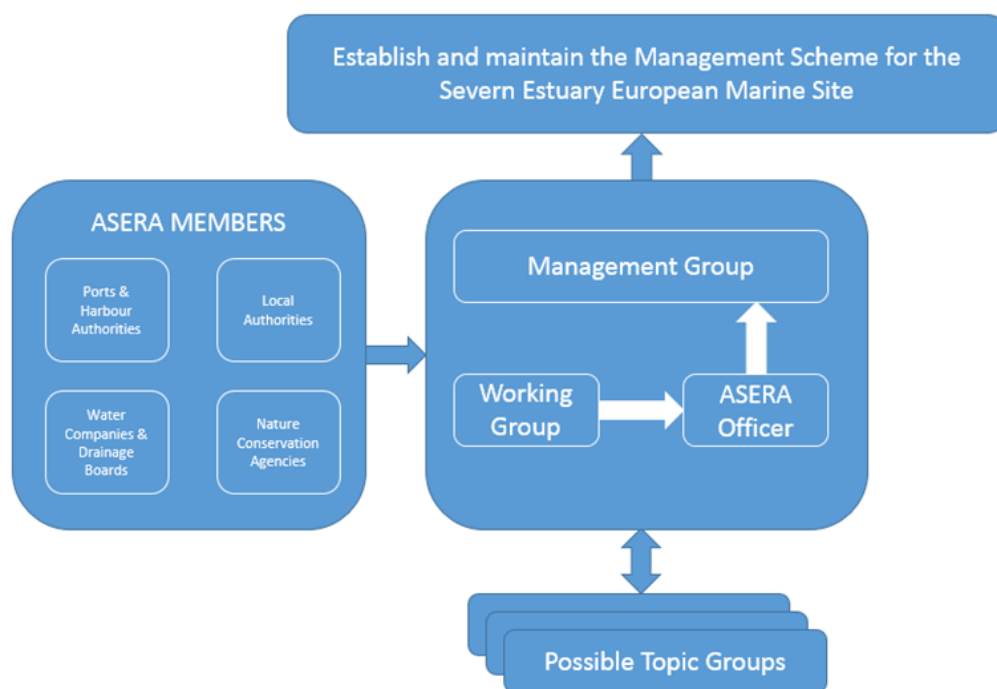
3.2.1 Who is ASERA?

ASERA was formed in 1998 in recognition of the practical and resourcing difficulties which would be experienced by many organisations if they were to individually attempt to discharge their statutory duties for nature conservation designations in and around the Severn Estuary. The objective of ASERA is to establish and implement a Management Scheme under which the functions of the Relevant Authorities can be exercised so as to secure compliance with the requirements of UK law and the Habitats and Birds Directives for the Severn Estuary EMS. Given the statutory duties that all Relevant Authorities share, and the benefits of sharing costs for discharging them, ASERA represents the large majority of Relevant Authorities on the Severn Estuary.

3.2.2 Structure of ASERA

ASERA Management Group representatives are drawn from the four main groups of Severn Estuary Relevant Authorities (see Figure 6). This group facilitates and directs the development and implementation of the Management Scheme. It may also establish specific sub-groups to consider the development and subsequent operation of the Management Scheme with relevance to various parts of the EMSs or to address particular topics.

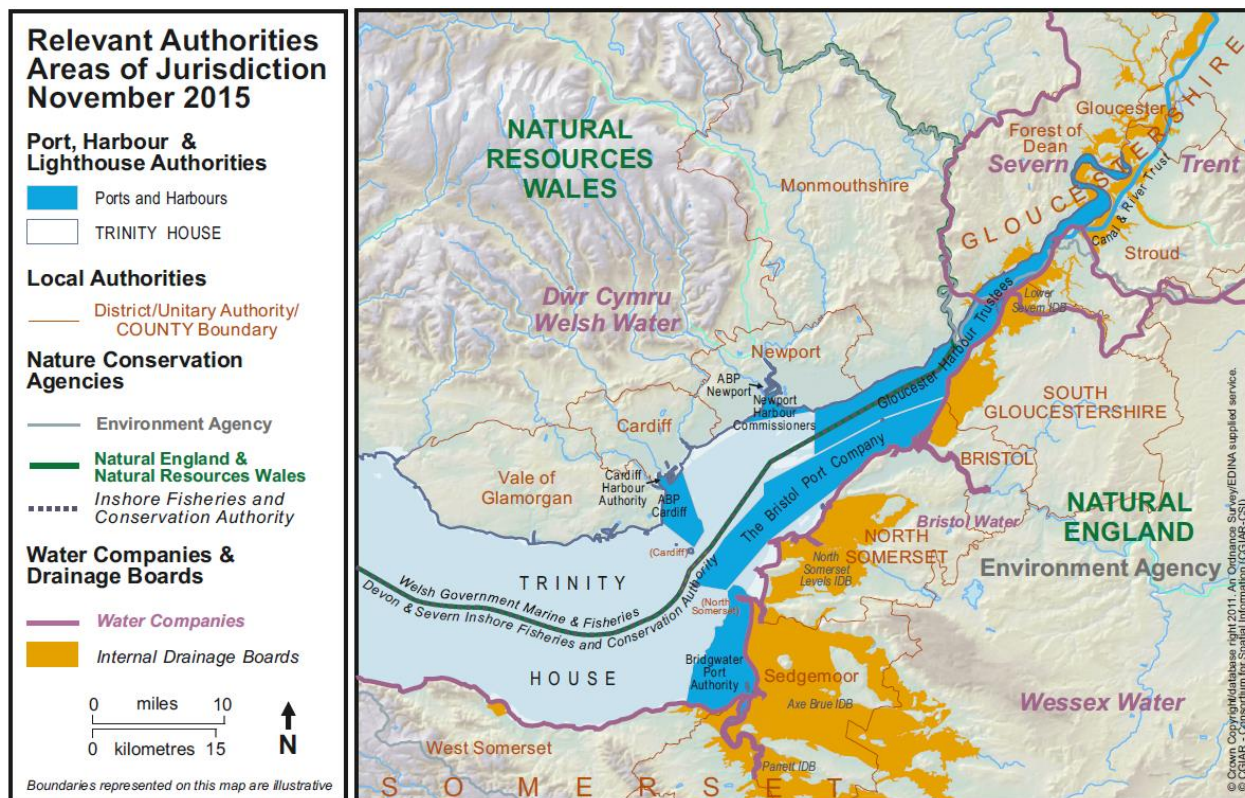
Figure 6: Management structure of ASERA.



The Working Group was set up as sub-group of the Management Group to assist the ASERA Officer with delivery of the ASERA work plan, including the provision of detailed comments on the Management Scheme. The ASERA Officer undertakes and facilitates the preparation, implementation and monitoring of the Management Scheme by and on behalf of ASERA members. The ASERA Advisory Group includes non-Relevant Authorities that provide advice to ASERA, enabling the Management Scheme to take full account of users' views and foster support for the scheme. Members are directly approached for consultation on developments of the Management Scheme.

Management Group Members	Working Group Members
Associated British Ports Devon & Severn IFCA Gloucester Harbour Trustees Gloucestershire County Council Monmouthshire County Council Natural England Natural Resources Wales Newport City Council North Somerset Council Stroud District Council The Bristol Port Company	Devon & Severn IFCA Gloucestershire County Council Natural England Natural Resources Wales North Somerset Council The Bristol Port Company
	*This is correct as of November 2023

Figure 7: Map of Relevant Authorities and their areas of jurisdiction (ASERA 2015).



3.2.3 The Severn Estuary Relevant Authorities (as of November 2023)

Ports/Harbour/Lighthouse Authorities

- Associated British Ports (ABP) *
- Bridgwater Port Authority (BPA) (c/o Somerset Council)*
- Canal & Rivers Trust (CRT)
- Cardiff Harbour Authority (CHA) *
- Gloucester Harbour Trustees (GHT)*
- Newport Harbour Commissioners (NHC)*
- The Bristol Port Company (TBPC)*
- Trinity House (TH)*

Water Companies and Drainage Boards

- Dwr Cymru/Welsh Water (WW-DC)
- Lower Severn Internal Drainage Board (LS IDB)
- Somerset Drainage Consortium (SDC) (incl. Axe Brue IDB, Parrett IDB and North Somerset Levels IDB)
- Severn Trent Water Ltd. (STW)
- Wessex Water (WW)

Local Authorities

- Bristol City Council (BCC)
- Cardiff Council (CC)*

- Forest of Dean District Council (FoDDC)*
- Gloucester City Council (GICC)
- Gloucestershire County Council (GCC)*
- Monmouthshire County Council (MCC)*
- Newport City Council (NCC) *
- North Somerset Council (NSC)*
- Somerset Council (SC) *
- South Gloucestershire Council (SGC)*
- Stroud District Council (StDC)*
- Vale of Glamorgan County Council (VoGCC)*
- West Somerset District Council (WSDC)

Environmental Regulators and Nature Conservation Agencies

- Natural Resources Wales (NRW) *
- Environment Agency (EA)*
- Devon and Severn Inshore Fisheries and Conservation Authority (D&S IFCA)*
- Marine Management Organisation (MMO)
- Natural England (NE) *
- Welsh Government Fisheries

*Indicates a member of ASERA (in 2023/24)

NRW was established on 1 April 2013 and brings together the work of the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales, as well as some functions of Welsh Government. Welsh Internal Drainage Board (IDB) functions were transferred into NRW in 2015.

Figure 8: Mudflats and sandflats, SAC habitat features © Devon & Severn IFCA.



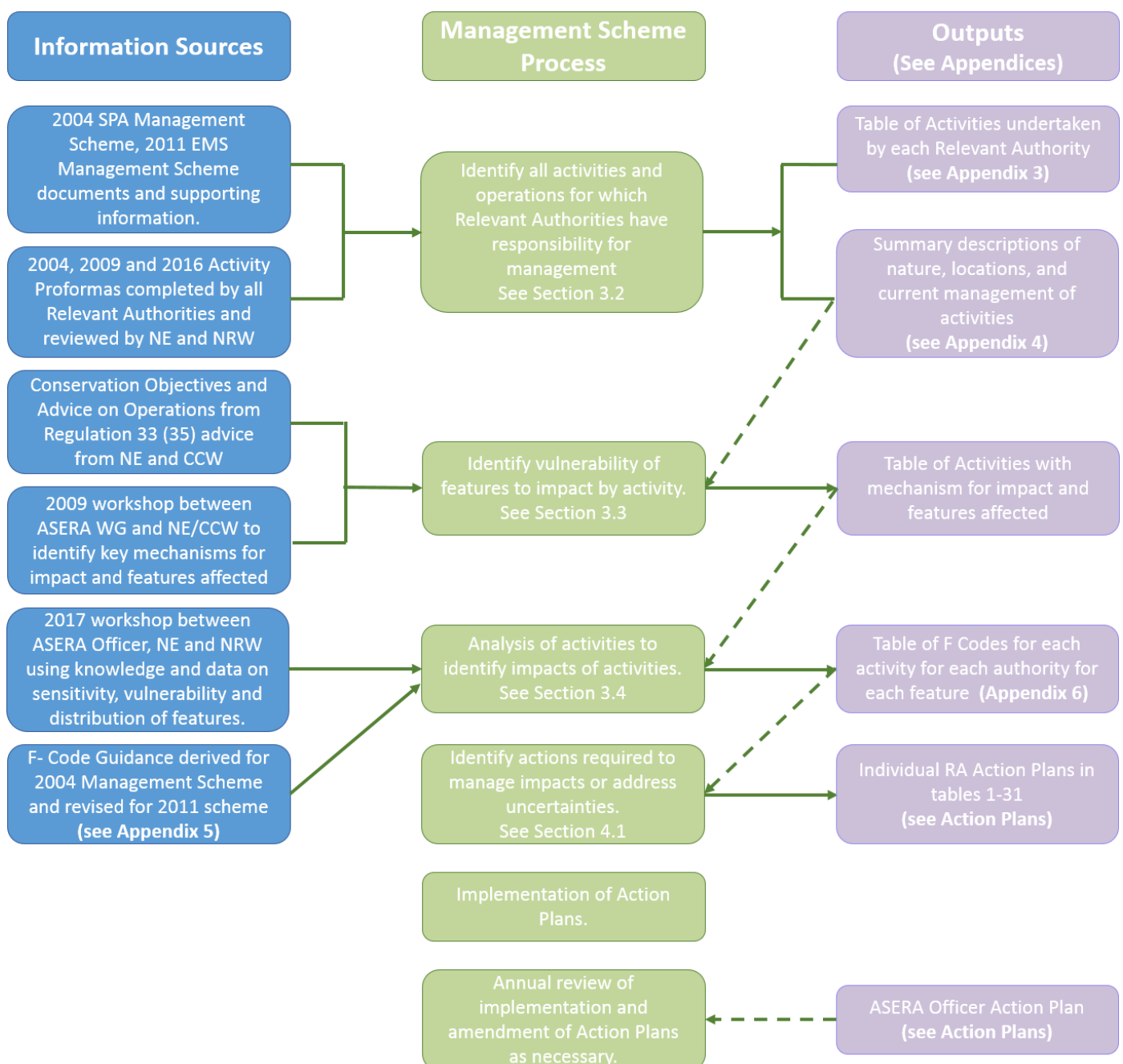
4.0 The Management Scheme

This document supersedes the 2018, 2011 and 2004 Management Schemes prepared for the Severn Estuary EMS. In 2023, the ASERA group agreed to extend the 2018-2023 Management Scheme to cover the next two years to 2025. This extension was agreed to align timelines with funding obtained to update site management documents via the 'Partnership Delivery of MPA Improvements' project (Nature Networks 2 Heritage Lottery Fund). This document has been updated to reflect changes in policy and ASERA members. A list of changes can be found on the first page of the document.

4.1 How has the Management Scheme been prepared?

Figure 9 gives a summary of the process of assembling the Management Scheme for the Severn Estuary EMSs. This identifies the key steps in the process and key outputs that provide valuable background and reference information.

Figure 9: The Management Scheme process.



4.3 Identification of activities and operations for which Relevant Authorities have responsibility for management

The activities and operations undertaken by each Relevant Authority during 2004, 2011 and in those that have been reported in 2016-17 are defined in [Appendix 3](#). For each activity undertaken or managed by Relevant Authorities, an activity proforma has been completed. Details include information on the location, frequency, management and monitoring of activities.

Activities and operations undertaken or managed by Relevant Authorities

FISHING-related: Recreational Angling (estuarine/marine), Recreational Angling (freshwater), Bait digging, Eel and Elver fishing, Fishing (commercial), Fishing (recreational).

BOAT/SHIP-related: Anchoring (recreational), Anchoring (commercial), Boat Repairs (recreational), Boat Repairs (commercial), Moorings, Navigation

INFRASTRUCTURE: Cable Laying and Maintenance, Coastal Protection and Flood Defence Improvement and Maintenance Works, Development, Outfall Maintenance, Pipeline Maintenance

LAND MANAGEMENT: Agricultural Run-off, Beach Cleaning, Grazing, Habitat Creation and Restoration, Property and Estate Maintenance, Estate Discharge

MISCELLANEOUS: Emergency Planning, Low-flying Aircraft, Managing Unauthorised Waste

PORT-related: Commercial Shipping/Cargo Operations, Discharge/Exchange of Water Ballast, Lockgate and Dock Water Management, Maintenance Dredging and Disposal, Port Waste Management (inc. ship generated waste)

RECREATION: Airborne Recreation (including drones), Events/Festivals, Land and beach based Recreation, Water based Recreation, Wildfowling.

SCIENCE and EDUCATION: Archaeology (Studies and Protection), Collection of Scientific Data (including drones), Educational Field Trips

WATER MANAGEMENT: Barrage and Sluice Operation, Highways Discharge, Release of Contamination through Historic Industry, Water Channel Maintenance.

Figure 10: Saltmarsh habitat feature of Severn Estuary SAC © SEP.

The information contained within the individual RA Proformas was reviewed by the ASERA Officer and Nature Conservation Agencies, collated by activity and summarised. Links to the key mechanisms for potential impacts were made. The results of this collation are shown in Appendix 4 and 6.



Figure 11: *Sabellaria alveolata*, SAC habitat feature © Devon & Severn IFCA.



4.4 Identification of vulnerability of features to impact by activities

The Nature Conservation Agencies identified the relationships between the activities, the sites' nature conservation features and their relative vulnerabilities to impacts. This information was drawn from a combination of the Advice on Operations contained within the Regulation 33(37) Advice and the information obtained through the Relevant Authorities' activity proformas.

4.5 Analysis of activities to identify impacts

Having identified the activities for each Relevant Authority and the vulnerability of the features to the various activities, the impact for every feature from every activity undertaken by each Relevant Authority was assessed by the Nature Conservation Agencies (see Appendix 4). This was carried out in accordance with the guidance in Appendix 5. This is a system for giving each activity an 'F' code for its impacts.

The impact of an activity can depend upon its scale, location and frequency as well as the vulnerability of a feature. This means that an activity may have a different impact for different Relevant Authorities.

Each activity for each Relevant Authority was given three codes; one for impact on the habitats, one for impacts (including disturbance) on birds and one for impacts on fish. The results of the assessment have been summarised in a combined matrix for each of the activities, Relevant Authorities and features. Further information about this matrix can be found below and in Appendix 6.

Code	Assessment (used by the countryside agencies to provide assessment advice on the activity proformas)
F1	The activity constitutes a plan or project .
F2	No impact possible There is no known mechanism(s) for the activity to cause deterioration or significant disturbance to a feature(s). Activity is not known by the RA to have an effect in its area of jurisdiction.
F3	Impact unknown There is a known mechanism(s) for the activity to cause deterioration or significant disturbance to a feature(s), but there is insufficient current information to determine whether or not it is causing deterioration or significant disturbance.
F4	No impact identified There is a known mechanism(s) for the activity to cause deterioration or significant disturbance to a feature(s), but no current information shows that it is causing deterioration or significant disturbance at present. Activity is not known by the RA to have an effect in its area of jurisdiction.
F5	Significant impact (managed) There is current information to suggest that an activity is causing deterioration or significant disturbance to a feature(s) and the mechanism(s) is known. Activity is known by a Relevant Authority to be having an effect in its area of jurisdiction and a single Relevant Authority is responsible or has power for that activity.

	Activity is known by a Relevant Authority to be having an effect in its area of jurisdiction and a number of Relevant Authorities have powers or are responsible for that activity around the EMS.
F6	Significant impact (unmanaged) There is current information to suggest that an activity is causing deterioration or significant disturbance to a feature(s), but it is outside management control, or there is no current mechanism for management). Activity is having an effect and no one has responsibility for the activity.

4.5.1 F1 Activities identified as ‘Plans or Projects’

An F1 code indicates that an activity is, or should be considered as, a ‘plan or project’ under the Habitats Regulations. Plans or projects are operations which require some form of consent, licence or other decision or authorisation by a public body and should be subjected to a ‘Habitats Regulations Assessment’ by the Competent Authority (rather than the Relevant Authority). Regulations 7, 9, 63 – 85 (and potentially other Regulations e.g. 105) of the Habitats Regulations 2017 apply.

Although it is *not* the role of ASERA or the Management Scheme to apply Habitats Regulations Assessments to the determination of plans and projects, it is considered helpful to include reference to these types of operations in the Management Scheme for several reasons. There is no clear statutory definition of the term ‘plan or project’ and thus no clear statutory basis on which to determine the limits of functional jurisdiction of the Management Scheme. The effects of past, ongoing and future plans and projects on the features of the Severn Estuary EMS may affect the way in which Relevant Authorities approach the taking of action under the Management Scheme. All the Relevant Authorities are also considered to be ‘Competent Authorities’ under the Habitats Regulations, therefore have duties to consider plans or projects.⁴ Natural Resources Wales and Natural England have advisory functions in relation to both the Management Scheme and the consideration of plans and projects. Indeed the Conservation Objectives in the Regulation 33(37) Advice support both processes. On that basis, it is considered appropriate for the Management Scheme to make reference to plans and projects, noting that this does not affect the statutory regime under which plans and projects are assessed and determined. Activities that constitute plans or projects have been submitted on activity proformas by the Relevant Authorities.

4.5.2 F2 Activities identified as having no possible impact

F2 activities have no mechanism to cause an effect and have no possible impact upon the features of the Severn Estuary EMS.

No action is required under the Management Scheme for Relevant Authorities carrying out these activities.

4.5.3 F3 Activities identified as having an unknown impact

All F3 activities have the potential to cause deterioration or significant damage to a feature(s), but there is currently insufficient information to determine if it is causing deterioration or significant disturbance at this time.

⁴ Competent authorities are defined in Regulation 7 of the Habitats Regulations. The term essentially means any public body or statutory undertaker.

Action is required under the Management Scheme by the Relevant Authorities carrying out these activities and Appendix 5 provides a list of options.

Selection of the appropriate management option will be considered on a case-by-case basis, depending on the likelihood of an impact occurring and the magnitude of that possible impact. Effort and costs associated with researching or addressing “unknown impacts” should be proportional to the risk of damage and environmental improvement likely to result from those actions.

The most likely action, therefore, is surveillance of the activity by the Relevant Authority to provide information (to ASERA, NRW and NE) in order to better understand the nature of the effects on sensitive features which are exposed to the activity.

Activities where features have an F3 include airborne sports, angling (recreational), bait digging, barrage and sluice operations, land based recreation and low flying aircraft. These activities are all location specific.

4.5.4 F4 Activities identified as not having an impact

All F4 activities have the potential to cause deterioration or significant damage to a feature(s), but current information shows that it is not causing deterioration or significant disturbance at present in the Severn Estuary EMS.

No action is required under the Management Scheme for Relevant Authorities carrying out these activities.

4.5.5 F5 Managed activities identified as having a significant impact

All F5 activities have been identified as causing known deterioration or significant disturbance to a feature(s), and the mechanism(s) for this impact is known.

Action is required under the Management Scheme by the Relevant Authorities carrying out these activities and a range of measures have been identified in Appendix 5.

The activities which have been identified as having a significant impact (F5) on some of the features of the EMS are barrage and sluice operations. The impact of these activities is considered to be significant only at specific locations.

4.5.6 F6 Unmanaged activities identified as having a significant impact

All F6 activities have been identified as causing deterioration or significant disturbance to a feature(s), but it is outside management control (i.e. natural process, or there is no current mechanism for management).

At the time of writing, none of the activities carried out by the Relevant Authorities within the Severn Estuary EMS falls into this category.

Figure 12: Newport Wetlands © Natural Resources Wales.



5.0 Action Plans

5.1 Action Plans

This section identifies the management measures (actions) required by Relevant Authorities to address known and possible impacts on the features of the EMS from their activities.

In identifying measures for inclusion in the Action Plans, the following have been considered:

- Actions in respect of F1 activities (plans or projects) which will need to be dealt with in a Competent Authority role (see Section 4.5.1)
- Actions for Relevant Authorities where the impacts of their activities have been identified as F3 (unknown impact) and F5 (significant impact)
- Addressing uncertainties, such as the F4 (no impact) activities which give concern over their assessment as insufficient information was provided by the Relevant Authority
- The ongoing provision of information about the activities. Essentially expanding and updating the knowledge and information gaps and informing the Nature Conservation Agencies and ASERA of any changes in circumstances
- The voluntary approach, actions to be based on co-operation and consensus between organisations wherever possible
- Mechanisms to update the Action Plans.

Action Plans provide the mechanism for Relevant Authorities to address the following:

- Activities identified as likely to be causing deterioration or significant disturbance to the site
- Activities, the effects of which are unknown (i.e. there is insufficient information available at present to determine whether they are actually causing deterioration or significant disturbance to the site or not)
- Certain plans and projects of an ongoing and repetitive nature for which ASERA may facilitate the production of guidance notes.

Figure 13: Severn Estuary © Devon & Severn IFCA.



Individual Action Plans have also been produced, specifically for each Relevant Authority in order to manage their activities in a way that assists the achievement of the Conservation Objectives for the EMS.

Actions fall into two categories, those to be undertaken by Relevant Authorities or centrally by ASERA, and 'other actions required' to be undertaken by members of ASERA in their 'Competent Authority' role⁵. All the Relevant Authorities are also 'Competent Authorities' under the Habitats Regulations, with duties in relation to the consideration of plans or projects.

5.2 ASERA Action Plan

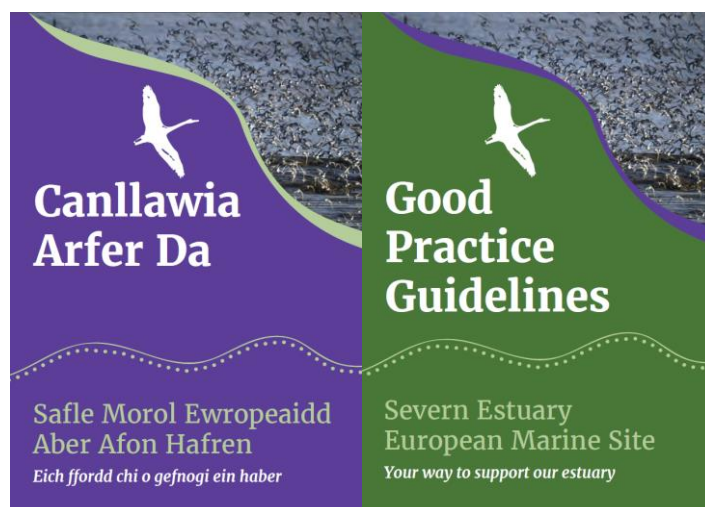
Some actions are most efficiently undertaken centrally by ASERA. These include assisting the Relevant Authorities in the implementation of their Action Plans and end of year reporting, co-ordinating the production of guidance notes for certain activities (and plans and projects if ASERA feel this is appropriate), servicing the ASERA members and generally raising awareness of users about the importance of the site and the implications for Relevant Authorities. A specific Action Plan for ASERA is outlined in the Action Plans. Some recent examples of these actions include the 2016 Recreational Boating Report (Section 5.2.2) and, in 2017, the ASERA Officer worked with the Management Group and other estuary stakeholders to produce Good Practice Guidelines (Section 5.2.1).

Progress with implementing ASERA's Action Plan is reported on bi-annually at the ASERA Management Group meetings, and again annually in ASERA's Annual Report where progress on all the Action Plans will be published. A summary of the progress of ASERA since the last Management Scheme is available on the Members' Area of the website.

Following recommendations by the ASERA Management Group and Working Group it was agreed that ASERA has a key supporting role in improving awareness of the designations and the requirements for Relevant Authorities and are reflected where relevant in the ASERA Action Plan.

5.2.1 ASERA Severn Estuary EMS Good Practice Guidelines

Good Practice Guidelines have been produced by ASERA to act as a voluntary management action supported by the Management Scheme to help reduce disturbance to the designated features of the EMS. They have been developed in partnership with representatives from various sectors and has followed best practice from other EMSs across the UK.



⁵ Competent authorities are defined in Regulation 7 of the Habitats Regulations. The term essentially means any public body or statutory undertaker.

Recreational disturbance has been identified by ASERA as one of the key issues affecting the conservation status of the Severn Estuary EMS. Disturbance is any activity or noise that could change behaviour of an animal (feeding, resting or breeding) or habitat structure. Repeated disturbance can threaten the survival of some of the key species and habitats designated under the Severn Estuary EMS.

The purpose of these guidelines is to encourage the sustainable use of the estuary and its coastline, providing an enhanced and safer environment for recreational users and visitors to enjoy. Individuals and clubs are encouraged to respect, support and promote these guidelines. They can be found on the ASERA website [here](#). They cover a range of activities, that are illustrated below.

The activities/topics covered are:

- Walking, dog walking and cycling
- Bird watching
- Field study, data collection and educational fieldtrips
- Horse riding
- Recreational boating
- Wildfowling
- Recreational angling
- Bait digging
- Drones
- Airborne recreation
- Safety on the estuary
- Invasive Non-Native Species (INNS)

Figure 15: Activities covered by Severn Estuary EMS Good Practice Guidelines.

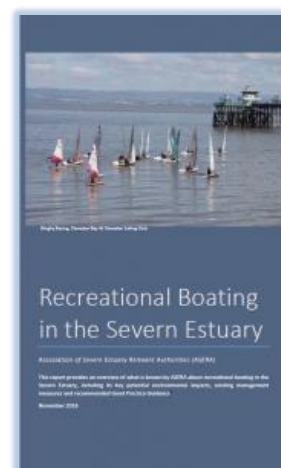


The aims of the Good Practice Guidelines are:

- To raise awareness of the Severn Estuary EMS and the designated features that are protected
- To avoid and minimise potential environmental risk to the protected features of the site
- To encourage the sustainable use of the estuary and its coastline, providing an enhanced and safer environment for recreational users
- To improve understanding of the protected features of the site and the reasons why it is important to protect and manage them

5.2.2 ASERA Recreational Boating in the Severn Estuary Report (2016)

As mentioned in Section 5.2.1, recreational disturbance has been identified by ASERA as potentially having an impact on the EMS. This study started in 2012 and the final report was published in October 2016. The report provides an overview of what is known by ASERA about recreational boating in the Severn Estuary, including its key potential environmental impacts, existing management measures and recommended Good Practice Guidance. Overall, it is considered unlikely that recreational boating is causing significant disturbance to overwintering feeding or roosting birds in the Severn Estuary EMS, under current levels of activity with existing management measures in place (November 2016). The ASERA Severn Estuary EMS Good Practice Guidelines also cover recreational boating as an activity, providing guidance to reduce disturbance to feeding, roosting and breeding birds and marine mammals.



It was published following consultation with recreational boat clubs and associations, ASERA members and the various Conservation Agencies and Environmental Regulators. Recreational boating remains as an action in the ASERA Action Plan to ensure the information within the report stays up-to-date and accurate.

5.2.3 ASERA Land Based Recreation Review 2023

ASERA was successful in receiving funding in 2023 for a Cardiff University student to study land-based recreation in the Severn Estuary and its impact on the EMS. This was a short study which collated data already held by ASERA members and mapped the location of relevant activities including cycling, fireworks displays and walking, using GIS, against known high tide roost locations. The study included key potential environmental impacts from specific activities and recommended management measures to tackle these impacts. It also identified data gaps and recognised the difficulty in monitoring recreational activities on the coast. Overall, the study found that 'hot spots' for recreational activities tended to be located close to urban and tourist areas around the estuary like Newport, Cardiff, Bristol and Weston-Super-Mare. Overall, the report indicates that land-based recreation is likely to be having an impact on the EMS, particularly the bird assemblages. This report can be found on the ASERA website.

Following this report, land-based recreation has remained a priority in the ASERA Action Plan to ensure the report is kept up to date.

5.3 Implementation of ASERA and individual Relevant Authority Action Plans

The Management Scheme does not set out to be a static document. It is an ongoing process that aids decision-making and continually evolves to take account of changing issues and legal obligations. This will be achieved by reporting on the implementation of the scheme and updating the Action Plans electronically as well as using the website (www.asera.org.uk) to signpost and link to existing plans, initiatives and other relevant documentation.

It is the responsibility of the Relevant Authorities to implement their individual actions and inform the ASERA officer of any material changes. In this way, the Management Scheme may be maintained as an up-to-date and living document that reflects the local conditions of sites and takes account of good practice from other EMS in the UK. Relevant Authorities also need to have regard to changing circumstances of the EMS and therefore, may need to modify the Management Scheme and/or the way in which they exercise their functions so as to maintain the long term *favourable condition* of interest features.

The preparation of the Management Scheme undertaken by ASERA has helped to raise Relevant Authorities' awareness of their responsibilities to the EMS under the Habitats Regulations. The Nature Conservation Agencies, together with ASERA, have suggested general management measures where necessary, to address activities where there is an unknown or significant impact on the designated features. The individual responsible Relevant Authority, or group of Relevant Authorities, will consider, agree and implement specific actions, in consultation with the Nature Conservation Agencies, to address the potential effects of those activities indicated in the Action Plan.

In certain cases when more than one Relevant Authority is responsible for managing an activity with a known or unknown effect on the site, or where there are gaps in management, Relevant Authorities have agreed to work co-operatively to address the issues. A partnership approach will be achieved by setting up topic groups and if appropriate, Advisory Group members or other relevant organisations may be invited to participate. Discussions will then take place to determine further possible management actions and solutions.

During the implementation of the Management Scheme more specific management actions may be identified by individual or groups of Relevant Authorities in order to address certain activities. These management actions may derive from existing procedures/initiatives or may be specifically written for the Management Scheme.

There is no requirement for Relevant Authorities to take any actions beyond their statutory functions. Under certain circumstances, where another Relevant Authority is unable to act for legal reasons, or where there is no other Relevant Authority, Natural England and Natural Resources Wales have powers to use their byelaw-making powers under [Regulation 32](#) of Habitats Regulations to enforce the Management Scheme.

There are several bodies concerned with the management of the Severn Estuary that offer coordination and collaboration between different sectors of the community. These include groups that represent the views and opinions of individuals and organisations and are both statutory and non-statutory. These may be geographically based and associated with particular initiatives such as estuary management plans, or sectoral and based on areas of interest, such as the [Severn Estuary Partnership](#), [Severn Estuary Coastal Group](#) and the [Bristol Channel Standing Environment Group](#). Relevant Authorities and ASERA need to have due regard to other plans around the Severn Estuary when they are undertaking their activities e.g. Local Authority plans, Catchment Plans, Shoreline Management Plans (SMP2), Counter-Pollution Plans and others. They should also ensure that all their plans for the area integrate with the Management Scheme for the EMS. Such plans may include the [Severn Estuary Strategy](#), [Severn Estuary SMP2](#), [Severn Estuary Flood Risk Management Strategy](#), Local Development Plans and Frameworks, Sites of Special Scientific Interest Management Plans, Management Plans for River SACs, Local Biodiversity Action Plans, Catchment Plans (e.g. [Bristol Avon Catchment Plan](#)), [Severn River Basin Management Plan](#) and the adjacent [South West River Basin Management Plan](#) (covers Bridgwater Bay). Such an approach will ensure that there is one Management Scheme through which all Relevant Authorities exercise their duties under the Habitat Regulations.

Figure 16: Bewicks's Swan, SPA Annex I species © Peter Orr.



5.4 Review and Reporting

As required previously by the Habitats Directive and now by UK legislation, NE and NRW have to report on the implementation of the Habitats Regulations and the condition of features (habitats and species). A part of the report looks at protected sites and their management, evaluating the impact of these conservation measures.

Relevant Authorities will be responsible for reporting to ASERA on their progress with implementing Action Plans. Such reporting by the Relevant Authorities will allow a review of progress of the following:

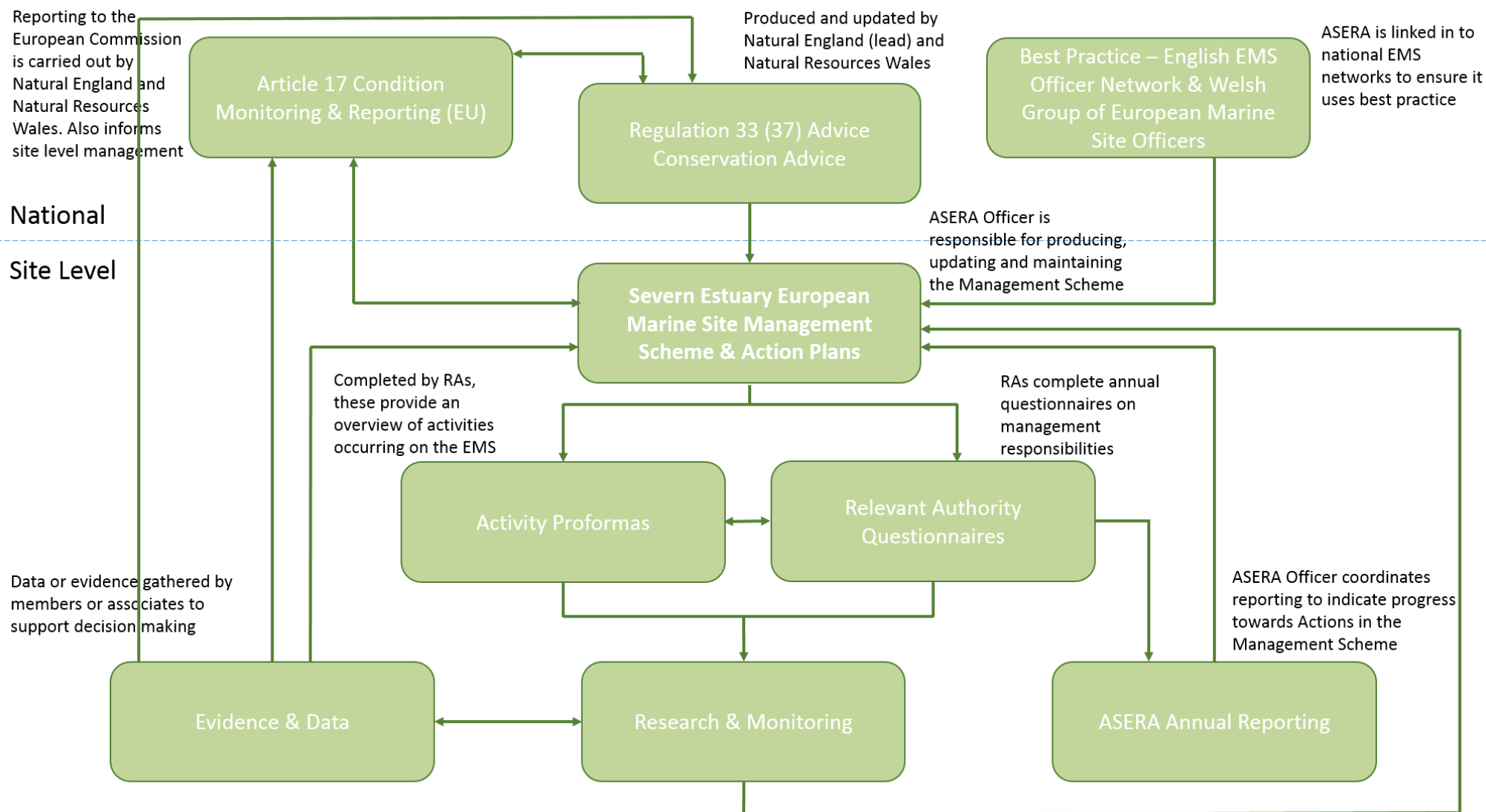
- a. the progress with implementation of individual actions within their Action Plans
- b. any changes to activities (e.g. location, extent or frequency) or to management practices
- c. any changes to plans or initiatives (F1 activities) used to construct the Management Scheme
- d. any new activities being undertaken within the EMSs within or outside of the jurisdiction of the Relevant Authority.

Where there is a change in management, or in light of further information, the impact of the activities will be reviewed by ASERA and re-assessed by NE and NRW. Management options may be reviewed in the light of revised advice from the Conservation Agencies.

Discussion and reporting on progress of the Management Scheme, monitoring and actions will take place on a regular basis at ASERA's bi-annual Management Group Meetings. The ASERA annual report will formally summarise the progress of the Relevant Authorities as indicated by their annual reporting responses. This will be presented each year at the ASERA Annual General Meeting (AGM).

ASERA aims to review the Management Scheme for the EMS every 5 years.

Figure 17: Summary of the ASERA Management Scheme monitoring and reporting process.



6.0 Glossary

ABP: Association of British Ports

Advisory Group: The body of the representatives from local interests, user groups and conservation groups, formed to advise the Management Group

ASERA: Association of Severn Estuary Relevant Authorities

ASERA MG: Association of Severn Estuary Relevant Authorities Management Group

ASERA WG: Association of Severn Estuary Relevant Authorities Working Group

BASC: The British Association for Shooting and Conservation

Birds Directive: The abbreviated term of Council Directive 79/409/EEC of 1979 on the Conservation of Wild Birds

CC: Cardiff Council

CCW: Countryside Council for Wales (now Natural Resources Wales)

CHA: Cardiff Harbour Authority

Competent Authority: Any Minister, government department, public or statutory undertaker, public body or person holding a public office that exercises legislative powers

Conservation Objective: A statement of the nature conservation aspirations for a site, expressed in terms of the favourable condition that we wish to see the species and/or habitats for which the site has been selected to attain. Conservation Objectives for EMSs relate to the aims of the Habitats Directive

CSO: Combined Sewer Overflows

D&S IFCA: Devon and Severn Inshore Fisheries and Conservation Authority

EA: Environment Agency

EC: European Commission

EU: European Union

European Marine Site (EMS): A European site which consists of, or in so far as it consists of, areas covered intermittently or continuously by seawater

European Site: A classified SPA, designated SAC, site of Community importance (a site selected as a candidate SAC, adopted by the European Commission but not yet designated), a candidate SAC (in England only) or a site hosting a priority species in respect of which Article 5 of the Habitats directive applies

Favourable condition: The condition represented by the achievement of the Conservation Objectives, in other words the desired condition for a designated habitat or a species on an individual site

Favourable conservation status (FCS): A range of conditions for a natural habitat or species at which the sum of the influences acting upon that habitat or species are not adversely affecting its distribution, abundance, structure or function throughout the EC in the long term. The condition in which the habitat or species is capable of sustaining itself on a long-term basis

FRMS: Flood Risk Management Strategy

FoDDC: Forest of Dean District Council

GCC: Gloucestershire County Council

GHT: Gloucester Harbour Trustees:

Habitat: The place in which a plant or animal lives

Habitats Directive: The abbreviated term of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora. This Directive has been recently revised and is now referred to as The Conservation of Habitats and Species Regulations 2017 (SI 2017 No. 1012). It is the aim of this Directive to promote the conservation of certain habitats and species within the European Union

Habitats Regulations: The Conservation (Natural Habitats &c.) Regulations 1994. This Directive has been revised and is now referred to as The Conservation of Habitats and Species Regulations 2017 (as amended) (SI 2017 No. 1012). This Directive was amended after EU exit and the amendments are The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

HRA: Habitats Regulations Assessment

IDB: Internal Drainage Board

Interest feature: A natural or semi-natural feature for which a European site has been selected. This includes any Habitats Directive Annex I habitat, or any Annex II species and any population of a bird species for which an SPA has been designated under the Birds Directive

JNCC: Joint Nature Conservation Committee

LPAs: Local Planning Authority

Maintain: The action required for an interest feature when it is considered to be in favourable condition

MCC: Monmouthshire County Council

Management Group: The body of Relevant Authorities formed to manage the EMS

Management Scheme: The framework established by the Relevant Authorities at an EMS under which their functions are exercised to secure, in relation to that site, compliance with the requirements of the Habitats Directive

MCA: Maritime Coastguard Agency

MHWM: Mean High Water Mark

NE: Natural England

NCC: Newport City Council

NHC: Newport Harbour Commissioners

NNR: National Nature Reserve

NRW: Natural Resources Wales

NSC: North Somerset Council

Operations which may cause deterioration or disturbance: Any activity or operation taking place within, adjacent to, or remote from a EMSs that has the potential to cause deterioration to the natural habitats for which the site was designated, or disturbance to the species and its habitats for which the site was designated.

Plan or project: Any operation that is within a Competent Authority's (including Relevant Authorities) function to control, or over which a Competent Authority (including Relevant Authorities) has a statutory

function to decide on applications for consents, authorisations, licences or permissions. There is no generally accepted definition of the term “plan or project”. This definition may be subject to review and may require further discussion in the context of developing a Management Scheme for the Severn Estuary SPA

PROW: Public Rights of Way

Ramsar: Site designated under the 1971 Ramsar Convention as a wetland of international importance

RA: Relevant Authority: The specific Competent Authority which has powers or functions which have, or could have, an impact on the marine environment, or adjacent to, a EMS

RYA: Royal Yachting Association

SAC: Special Area of Conservation

SCC: Somerset Council

SEP: Severn Estuary Partnership

SgDC: Sedgemoor District Council (*now part of Somerset Council*)

SMP: Shoreline Management Plan

SPA: Special Protection Area for birds

SSSI: Site of Special Scientific Interest

StDC: Stroud District Council

TH: Trinity House

TBPC: The Bristol Port Company

Supporting Habitats: The key habitats within the EMSs necessary to support the interest feature

VoGCC: Vale of Glamorgan County Council

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- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (SI 2017 No. 1013)

8.0 Appendices

Appendix 1 - Legislative Background

The European designated sites of the Severn Estuary are protected by law as part of the UK Government's commitment to delivering a network of sites of conservation and biodiversity importance and in compliance with UK's obligations under the EU treaty.

The Conservation of Habitats and Species Regulations 2017 (as amended)

The 2017 Regulations are one of the pieces of domestic law that transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Council Directive 2009/147/EEC) 'Nature Directives'.

The Regulations aims to 'contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of member states to which the Treaty applies', and also to 'take account of economic, social and cultural requirements and regional and local characteristics'. 'Measures taken pursuant to this Directive shall be designated to maintain or restore, at favourable condition status, natural habitats and species of wild fauna and flora of Community interest.'

The Birds Directive aims to protect wild birds and their habitats within the European Union, especially migratory birds and those considered rare or vulnerable.

The Habitats and Birds Directives include requirements for the designation of sites for conservation. In the case of the Habitats Directive these are Special Areas of Conservation (SACs) which support certain natural habitats or species, and in the Birds Directive, Special Protection Areas (SPAs) which support wild birds of European Union significance. SACs and SPAs form a network of conservation areas across the UK, known as the national site network.

The Convention on Wetlands of International Importance (Ramsar sites)

The Convention on Wetlands of International Importance was finalised at a conference of countries concerned about wetland and waterfowl conservation in Ramsar, Iran in 1971. The broad objectives of the convention are to stem and reverse the loss and progressive encroachment on wetlands, now and in the future, including through the designation of Ramsar sites. An area can qualify as a Ramsar site for its representation of a wetland, the plant or animal species that it supports, and for its role in supporting internationally important waterfowl. Interest features are identified with these criteria. Ramsar sites are often coincident with European sites, particularly SPAs.

UK Government policy states that Ramsar sites are to be treated in the same way as European sites although they are not covered by the Habitats and Birds Directives or Habitats Regulations.

The Severn Estuary is a designated Ramsar site.

Appendix 2 - Summary of features of each designation and the interrelationship between them.

Feature	SAC	SPA	Ramsar Site	SSSI (Nationally important feature)
Estuary	Yes	<i>Supporting habitat to designated bird interests</i>	Yes	(Yes)
Subtidal sandbanks	Yes	No – outside boundary of SPA	No – outside boundary of Ramsar Site	No – outside SSSI boundary

Intertidal Mud and Sand	Yes	Supporting habitats to designated bird interests	Components of Ramsar "estuaries" feature and supporting habitat to designated bird interests	Yes
Atlantic salt meadow / salt marshes	Yes			Yes
Reefs	Yes	No	Intertidal Sabellaria contiguous with subtidal reefs is a component of the hard substrates subfeature of the Ramsar "estuaries" feature	No – outside boundary of SSSI
Migratory fish (river and sea lamprey and twaite shad)	Yes	No	Yes	(Yes)
Migratory fish (salmon, eel, sea trout and Allis Shad)	Part of notable species sub-feature of estuary feature	No	Yes	(Yes)
Assemblage of fish species (>100 species)	Notable species sub-features of estuary feature	No	Notable species sub-feature of estuary feature)	(Yes)
Internationally important populations of migratory bird species		Yes	Yes Internationally important populations of waterfowl	Yes
Internationally important populations of wintering bird species		Yes		Yes
Assemblage of nationally important populations of waterfowl		Yes	Yes	Yes
Hard substrate habitats (Rocky shores)		Supporting habitat to designated bird interests	Component of Ramsar "estuaries" feature and supporting habitat to designated bird interests	Yes
Freshwater grazing marsh / Neutral grassland	No	Supporting habitat to designated bird interests within SPA but outside EMSs and therefore not addressed in the Regulation 33 (37) advice document*		Yes (currently England only)

*This table is adapted from the Natural England and Countryside Council for Wales' advice given under Regulation 33(2)(a) of the Conservation (Natural Habitats &c.) Regulations 1994, as amended.

Note: This table includes features of national importance for which the Severn Estuary has been designated as a Site of Special Scientific Interest (SSSI) but which form an intrinsic part of the Severn ecosystem and contribute to the overarching "estuary" feature of the SAC and Ramsar Site) and that therefore need to be considered by the Management Scheme. For further information on sub-features and EUNIS classifications, visit: <https://eunis.eea.europa.eu/habitats.jsp>.

Appendix 3 - Table of activities undertaken by each Relevant Authority.

	Relevant Authorities																				
	Nature Cons			Ports					County Councils					District Councils			City Councils		Other		
	Natural Resources Wales	Environment Agency	Natural England	ABP	Cardiff Harbour Authority	Gloucester Harbour Trustees	Newport Harbour Commissioners	Port of Bridgwater	The Bristol Port Company	Gloucestershire County Council	Monmouthshire County Council	North Somerset Council	Somerset County Council	Vale of Glamorgan County Council	Forest of Dean District Council	Sedgemoor District Council	Stroud District Council	Cardiff Council	Newport City Council	Devon & Severn IFCA	Trinity House
Airborne sports																					
Agricultural Run-off																					
Anchoring (recreational)																					
Anchoring (commercial)																					
Angling (recreational)																					
Archaeology (studies & protection)																					
Bait digging																					
Barrage and sluice operation																					
Beach cleaning																					
Boat repairs (commercial)																					
Boat repairs (recreational)																					
Cable laying & maintenance																					
Coastal protection & flood defence																					
Outfall & pipeline maintenance																					
Commercial shipping/cargo operations																					
Discharge/exchange of ballast water																					
Collection of scientific data																					
Educational fieldtrips																					
Eel & elver fishing																					
Emergency planning																					
Events/festivals																					
Fishing (commercial)																					
Fishing (recreational)																					
Grazing																					
Habitat creation & restoration																					
Highways discharge																					
Land and beach-based recreation																					
Lockgate & dockwater management																					
Low flying aircraft																					
Maintenance dredging & disposal																					
Managing unauthorised waste																					
Moorings																					
Navigation																					
Port waste management (inc ship generated waste)																					
Property & estate maintenance																					
Release of contamination through historic industry																					
Water-based recreation																					
Water channel maintenance																					
Wildfowling																					

Appendix 4 - Summary descriptions of nature, locations, and current management of activities

There are many activities in this table that come under the category of a 'Plan or Project'. Nevertheless, because these activities have been identified by the Relevant Authorities as taking place within the Severn Estuary EMSs, they have been included within ASERA's Management Scheme.

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
RECREATION ACTIVITIES			
<p><u>Airborne sports</u></p> <p>This activity covers the informal use of mainly beaches for kite flying, kite surfing, para-motoring, model aircraft flying. This activity also covers the recreational use of drones e.g. for taking photos etc. While a component of these activities is linked with "land based recreation" it is the potential for the airborne component to disturb birds that sets these activities apart.</p> <p>(Note: Any formalised arrangements for the running and promotion of these activities would be expected to be subject to planning and consenting arrangements. They would therefore be 'Plans and Projects' and would require a Habitat Regulation Assessment (HRA) under the Habitats Regulations rather than action under this Management Scheme.)</p> <p><i>Linked activities: Land based recreation</i></p>	<p>Mechanism: Noise, visual presence.</p> <p>Potential impact: Disturbance to feeding and roosting birds in winter and on passage, but impact dependent upon location and time of year.</p>	<p>Location: Local. This is a restricted activity within the estuary with the key area identified as the beaches of N.Somerset /Sedgemoor.</p> <p>Key Concerns: The potential for bird disturbance and uncertainty about the impact of the current levels of activity.</p> <p>Management: The ASERA Severn Estuary EMS Good Practice Guidelines cover this activity.</p>	<p>NSC, SgDC</p> <p>Relevant RA dept: Recreation, Property, Leisure and Tourism, Environment, Planning.</p>
<p><u>Land based recreation</u></p> <p>This activity includes many forms of informal recreation occurring on beach areas and Rights of Way (e.g. England and Wales Coastal Path) within or adjacent to the estuary (beach use, walking, bird watching, dog walking, cycling, horse riding, sand yachting) and some specific facilities immediately adjacent to the estuary e.g. golf courses.</p> <p>It also takes account of some motorised vehicle access to beach and foreshore areas and seasonal beach car parking.</p>	<p>Mechanism: Abrasion, noise, visual presence.</p> <p>Potential impact: 1) Damage to habitats from trampling. 2) Disturbance to feeding and roosting birds in winter and on passage. Birds are highly sensitive to disturbance from people movement, land yachting/motor cycling/hovercraft etc. Impact dependent upon duration of activity, location and</p>	<p>Location: These are widespread activities with RAs identifying high levels of use particularly close to urban centres and at key beach/resort locations at Burnham, Berrow, Brean, Cardiff, Newport and Penarth but with significant levels of activity occurring throughout and adjacent to the EMS on the Public Rights of Way (PROW) network.</p> <p>Key Concerns: Physical impacts on habitats and disturbance of birds, particularly at key roosting and feeding areas. Wintering waterfowl high tide roosts were reported on and mapped by Natural England</p>	<p>NE, CHA, GCC, NSC, SCC, VoGCC, FoDDC, SgDC, StDC, CC, NCC, NRW, ABP, CHA, MCC, SDC</p> <p>Relevant RA dept: Planning (Licences and Consents), Recreation, Leisure and Tourism, Environment (ecology), Property, Highways.</p>

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
<p>(Note: Any planned and formalised new facilities would require consents and authorisations. They would therefore be 'Plans and Projects' and would require a HRA under the Habitats Regulations rather than action under this Management Scheme)</p> <p><u>Coastal Access</u></p> <p>The Welsh side of the Severn Estuary makes up part of the Wales Coast Path and attracts many visitors throughout the year. Progress has been made with the England Coast Path with full access to the paths scheduled in 2018. These initiatives are 'projects' and subject to HRA. High tide bird roost area studies have recently been published by NE which have provided evidence to inform decisions regarding path routes.</p> <p><i>Linked activities :</i></p> <p><i>Motor sports events - covered by "events and festivals"</i></p> <p><i>Associated infrastructure e.g. car parks management - covered by "Property and estate management "</i></p> <p><i>Grazing – impacts on practical management of sites (stock grazing, dogs)</i></p>	<p>time of year. 3) Litter, pollution damaging habitats and birds. Birds may become entangled/ingest plastic). 4) The presence of people, dogs and litter reducing the willingness of landowners to graze saltmarsh, leading to a decline in its condition.</p>	<p>(2015-2017). Progress is underway reviewing the high tide roosts on the Welsh side which were mapped in 2011 to inform the Wales Coast Path Appropriate Assessment.</p> <p>There is encouragement of some of these activities, particularly through the England and Wales Coast Paths. Dog walking has been identified as an activity of key concern.</p> <p>Management: In England there is some management and control through planning, byelaws/seasonal wardens. In Wales there is little management control other than at Newport Wetlands reserve. Coastal Path management for both the England Coast Path and Wales Coast Path is covered and there are often diversions inland in areas of concern. The ASERA Severn Estuary EMS Good Practice Guidelines also cover several of the sub-activities within land based recreation.</p>	
<p><u>Water based recreation</u></p> <p>This activity covers recreational boating, canoeing, jet skiing, windsurfing and water-skiing. ASERA carried out a review of recreational boating activity which was published in 2016.</p> <p>(Note: Any planned and formalised new facilities would require consents and authorisations. They would therefore be 'Plans and Projects' and would require a HRA under the Habitats Regulations rather than action under this Management Scheme)</p> <p><i>Linked activities:</i></p>	<p>Mechanism: Abrasion, noise, visual presence, introduction of non-synthetic materials.</p> <p>Potential impact: 1) Disturbance to feeding and roosting birds in winter and on passage. Birds can be sensitive to water based recreation and there can also be disturbance/damage if boat users go ashore in certain locations. Impact is dependent upon location and timing of activity 2) Possible erosion/damage of habitats. 3)</p>	<p>Location: Overall, there is a relatively moderate/low level of recreational boating activity in the estuary, with Cardiff Bay and Portishead Quays Marina attracting the highest numbers of boats. The cruising routes between Cardiff Bay and Portishead are used heavily in the summer. Sites with medium levels of boating in the summer include Penarth seafront, River Usk/Ebbw, River Avon, Weston-super-Mare, River Axe, Burnham on Sea and River Brue. In general, all other locations have a low level of activity.</p> <p>Key Concerns: Physical impacts on habitats and disturbance of birds, particularly at key roosting and</p>	<p>EA, ABP (Cardiff), CHA, GHT, NHC, PoB, TBPC, MCC, NSC, SCC, VoGCC, FoDDC, SgDC, BCC, CC, NCC, NE, NRW, ABP</p> <p>Relevant RA dept: Recreation, Leisure and Tourism, Operational (Harbour Master, Marina Manager), Planning (Licences and Consents), Environment (ecology), Property.</p>

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
<i>Associated infrastructure e.g. slipways is covered by "Property and estate management " and "Anchoring (recreational)" and "Moorings"</i>	Possible contamination of mud/sand sediments. 4) Litter and pollution damaging habitats and birds. Birds may become entangled/ingest plastic). 5) Introduction of synthetic materials.	feeding areas. Areas of unregulated moorings such as in the River Usk and River Banwell. Management: There is some regulation through control of slipways and launch points, landing permits and resort officers, role of clubs and associations e.g. RYA and via Harbour authorities through byelaws, licences, codes and safety guidelines. The ASERA Severn Estuary EMS Good Practice Guidelines cover this activity. These Guidelines are also referred to in the Bristol Channel Tide Timetable and are supported by the Bristol Channel Yachting Association. Local boat clubs and marinas are being encouraged to adopt and promote them.	
Events/festivals This activity covers all organised events including public beach based events, angling events, sail club events/races, water ski and power boat races, music festivals, firework displays. (Note: Any large planned event would require consents and authorisations. They would therefore be 'Plans and Projects' and would require a HRA under the Habitats Regulations rather than action under this Management Scheme)	Mechanism: Abrasion, noise, visual presence. Potential impact: 1) Damage to habitats from trampling. 2) Disturbance to feeding and roosting birds in winter and on passage. Although exposure is low in some areas as long as events do not extend/ take place into the winter season (Oct-March). 3) Litter and pollution damaging habitats and birds. Birds may become entangled/ingest plastic).	Location: RAs have identified numerous small single day events and a few large ones around the estuary. Although large events are often linked to centres of population (Newport, Cardiff, Bristol) other events such as fishing competitions and charity events may take place at numerous locations. Key Concerns: Physical impacts on habitats and disturbance of birds, particularly at key roosting and feeding areas. Management: LAs have: <ul style="list-style-type: none"> - a licensing role for large events - a promotional role for certain activities - partnerships with stakeholders and parish councils to run events Regulation is possible through byelaws, licensing and events officers and through clubs. Monitoring of events and impacts is limited. Harbour Authorities have range of measures to manage events including byelaws, codes of conduct, requirement for an	ABP (Cardiff), CHA, GHT, NHC, PoB, GCC, MCC, NSC, VoGCC, FoDDC, SgDC, CC, NCC, SDC, NE Relevant RA dept: Planning (Licences and Consents), Environment (waste), Recreation, Leisure and Tourism, Communications (PR, Marketing).

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
		environmental appraisal, and water use zoning strategies.	
<p>Wildfowling</p> <p>This activity covers shooting, rough shooting by owners or others authorised by them.</p> <p>Wildfowling by clubs is a 'project' regulated by licence either consented directly or via leases issued by NE, the Crown Estate (usually involving BASC) and NRW.</p> <p>It is therefore a Project (F1) and requires an HRA under the Habitats Regulations.</p>	<p>Mechanism: Visual presence, noise, abrasion, selective extraction of species.</p> <p>Potential impact: 1) Presence of wildfowling could disturb birds. 2) Potential for trampling of habitat. 3) Litter damaging habitats and birds may become entangled/ingest plastic). 4) Mortality - the shooting of more than 1% of the SPA population of a target species (e.g. Teal or Wigeon) would require an assessment of likely significant effect.</p>	<p>Location: Wildfowling is primarily undertaken on the foreshore (saltmarsh and mudflats), the majority leased off the Crown Estate or other land owners. 5 wildfowling groups operate in Somerset, Avon and Gloucestershire. In Wales there are 3 clubs with leases from Crown Estates and NRW.</p> <p>Key Concerns: Adverse impacts on the bird features of the Severn Estuary. This could be direct impacts through killing or injuring. It could be indirect impacts through disturbance to the birds and/or to the supporting habitats. Rough shooting by non-club members is uncontrolled and unpredictable. No details of how much or where this takes place, but clear from discussions with land owners and wildfowling clubs that it is occurring. Issues of implementation and "policing".</p> <p>Management: Shooting by club members controlled through licences. Some policing of rough shooting also carried out by wildfowling clubs and BASC.</p> <p>Peterstone wildfowl refuge is policed by Wentlooge Wildfowling. At Newport Wetlands NRW control shooting in front of the Reserve. Natural England's approach to assessing and responding to wildfowling notices on Sites of Special Scientific Interest (SSSIs) and European Sites. This is likely to change in light of the current review of wildfowling. The ASERA Severn Estuary EMS Good Practice Guidelines cover this activity.</p>	<p>NRW, NE, StDC, EA</p> <p>Relevant RA dept: Property, Environment (ecology, conservation), Recreation, Leisure and Tourism, Health and Safety, Licensing and Permits.</p>
FISHING RELATED ACTIVITIES			

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
<p><u>Angling (recreational)</u></p> <p>This activity covers angling for pleasure (i.e. no selling of fish) from land and includes some events/competitions. i.e. that part which is not covered by required consents under Wildlife and Countryside Act to landowners. The later are 'projects' and require an HRA under the Habitats Regulations.</p> <p>This activity covers only estuarine/marine recreational angling, which does not require a license. Freshwater angling for salmon, trout, freshwater fish, smelt or eel with a rod and line is covered through the EA licensing process. The EA also manage this for the Welsh part of the estuary on behalf of NRW.</p> <p><i>Linked to "water based recreation" which covers angling from charter or private boats.</i></p>	<p>Mechanism: Visual presence, introduction of non-synthetic materials, selective extraction of species.</p> <p>Potential impact: 1) Presence of anglers could disturb birds. 2) Potential for trampling of habitat and 3) Litter damaging habitats and birds. Birds may become entangled/ingest plastic).</p>	<p>Location: This is a widespread ad hoc activity throughout the estuary, taking place along the shoreline and from boats. Angling hotspots are well documented for the English side of the estuary through D&S IFCA.</p> <p>Key Concerns: physical impacts on habitats and disturbance of birds, particularly at key roosting and feeding areas particularly from large angling events/competitions.</p> <p>Management: The ASERA Severn Estuary EMS Good Practice Guidelines cover this activity. The D&S IFCA have set up a Sea Angling Zone – Burnham Slipway to Brean Down (ratified 2014), which promotes angling by voluntary agreement of no netting and longlining. A Code of Conduct has been agreed for The Burnham, Berrow and Brean Angling Zone. Devon and Severn IFCA RSA Strategy (2014-2016). Wales: The only management occurs at managed structures e.g. Cardiff Bay Barrage and Penarth Pier but is not fully known. Angling at Penarth Pier is restricted to the times the structure is open and is currently banned June - August. Angling club competition rules also apply for locations such as Penarth and Cardiff. The ASERA review of key angling locations against the findings of the High Tide Roost study will inform relevant management actions.</p>	<p>D&S IFCA, NRW, NE, EA, ABP (Cardiff and Newport), CHA, NHC, MCC, NSC, SgDC, CC, NCC, PoB, VoGCC, ABP</p> <p>Relevant RA dept: Recreation, Leisure and Tourism, Operational (Harbour Master, Marina Manager), Planning (Licensing and Consents), Environment.</p>
<p><u>Bait digging</u></p> <p>This activity covers bait digging for personal use in recreational angling, not for purposes of selling. Bait species (Lugworms <i>Arenicola</i> spp. and rag worms <i>Nereis</i> and <i>Nephtys</i> spp) are traditionally collected by people digging up the lower shore (usually with a fork or spade) to expose the worm beds.</p>	<p>Mechanism: Visual presence, introduction of synthetic and non-synthetic materials, selective extraction of species.</p> <p>Potential impact: Noise and visual presence of bait diggers could</p>	<p>Location: Occurs on sandy and muddy-sand habitats throughout the EMS. Key areas are Burnham, Brean, Berrow, Weston-Super-Mare and Sand Bay. Year round but often peaks in Autumn and Winter when cod stocks are targeted.</p> <p>Key Concerns: Occasional anglers who are usually less experienced or well informed tend to dig numerous</p>	<p>NRW, SgDC, D&S IFCA, VoGCC, NSC</p> <p>Relevant RA dept: Recreation, Leisure and Tourism, Planning (Licensing and Consents), Environment (ecology, fisheries).</p>

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
Commercial bait digging would be a 'project' requiring an HRA under the Habitats Regulations rather than action under this Management Scheme <i>Linked to "Land based recreation".</i>	disturb birds, dependent on time and location.	scattered holes and tend to leave them open with mounds of spoil adjacent to them. Evaluation in Wales in 1990s determined no significant impact. Management: The ASERA Severn Estuary EMS Good Practice Guidelines cover this activity. D&S IFCA will begin developing a 'hand gathering permit byelaw' in 2017/18 which will provide a mechanism for activities if they are deemed to be impacting the EMS.	
<u>Eel and elver fishing</u> This activity covers informal unregulated fishing and trapping of eels and elvers. There are commercial elver fisheries on the River Wye. EA licences are required for eel fishing along part of both the Welsh and English coast. These are 'projects' requiring HRA under the Habitats Regulations.	Mechanism: Abrasion, noise, visual presence. Potential impact: 1) Disturbance to habitats from trampling and 2) Disturbance to feeding and roosting birds, particularly from access to fishing areas. 3) Over exploitation of stock.	Location: Elver and eel fishing can occur potentially at any gout, pill or other outfall on the estuary. No known eel fishing on Welsh side. Key Concerns: Physical impacts on habitats and disturbance of birds, particularly at key roosting and feeding areas. Management: Covered by license.	NRW, EA, CC, SgDC
<u>Fishing (commercial)</u> This 'activity' includes a variety of commercial fishing occurring in the estuary, including the Horse Mussel fishery, draft, seine, larval, dip, gill and stake netting and putchers. Commercial fishing requires permission is therefore a 'project' (F1) requiring an HRA under the Habitats Regulations rather than action under this Management Scheme.	Mechanism: Noise, visual presence. Potential impact: 1) Birds sensitive to encroachment within 200m. 2) loss of fish features.	Location: This is a restricted 'activity' within the estuary. Locations recorded by Competent Authority. Key Concerns: Loss and damage to fish features and disturbance of birds, particularly at key roosting and feeding areas. Damage to subtidal reefs is also a major concern hence the English part of the estuary is closed to demersal trawling by D&S IFCA. Management: Covered by licence.	EA, NE, D&S IFCA, NRW, Welsh Government
BOAT/SHIP RELATED (BOTH COMMERCIAL AND RECREATIONAL) ACTIVITIES			
<u>Anchoring</u> This activity covers the temporary fixing of boats or ships to the sea bed using anchors The activity is composed of two main parts:	Mechanism: Abrasion, noise, visual presence. Potential impact: 1) Erosion and increased rate of loss of saltmarsh and mud/sandflat habitats. 2) Potential disturbance to birds at	Location: Anchoring takes place in many locations within the estuary, depending on suitable water depths and conditions. There are reported anchorage areas marked on Admiralty Charts, which can be used by commercial and recreational vessels. These are generally located in the outer estuary, but is not	ABP (Cardiff), EA, GHT, NHC, PoB, TBPC, NSC, FoDDC, SDC, CC, TH, D&S IFCA, NE, NRW, MCC

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
<ul style="list-style-type: none"> - Anchoring of commercial vessels awaiting suitable conditions for entry to port - Anchoring of recreational vessels <p><i>Linked to " Moorings "</i></p>	<p>some locations. 3) There is a possibility that some components of this activity could detrimentally affect the <i>Sabellaria</i> reef feature of the SAC which would be highly vulnerable to abrasion impact but there is currently no indication that this is occurring at a significant frequency.</p>	<p>restricted to these areas and boat owners are free to seek out their own sites to anchor. Emergency anchoring can occur throughout the estuary, subject to prohibited areas (shown on Admiralty Charts), e.g. the approaches to Avonmouth and Royal Portbury Docks and in the vicinity of underground cables and other obstructions on the seabed. See Recreational Boating in the Severn Estuary Report (2016) for a map of reported anchorage sites.</p> <p>Key Concerns: Physical impacts on habitats and disturbance of birds, particularly at key roosting and feeding areas. There is no significant impact identified to features of EMS at existing activity levels (see Recreational Boating in the Severn Estuary Report (2016)).</p> <p>Management: Ports and Harbours in the estuary have their own management measures and byelaws, which include identifying areas where anchoring is prohibited for the purposes of navigational safety. In areas of the estuary outside the statutory harbour areas the Maritime and Coastguard Agency (MCA) is responsible for the management of anchoring. The ASERA Severn Estuary EMS Good Practice Guidelines also cover this activity.</p>	
<p><u>Boat repairs (recreational)</u></p> <p>This activity covers locations where individual boat owners undertake maintenance where boats are moored e.g. yacht/ sailing clubs and marinas</p>	<p>Mechanism: Introduction of synthetic and non-synthetic materials.</p> <p>Potential impact: The main potential impact is through toxic contamination of the water body by cleaning fluids, oil, paint etc. These compounds can have deleterious</p>	<p>Location: Repairs are being undertaken in existing locations where recreational boats are moored. (e.g. Cardiff and Portishead Marinas).</p> <p>Key Concerns: Increased nutrient levels, copper and heavy metal pollution, introduction of harmful and toxic chemicals to the environment. Assessed as unlikely to cause significant impact to features of EMS in Recreational Boating in the Severn Estuary Report (2016).</p>	<p>EA, CHA, NSC, CC, ABP, PoB, MCC, SgDC, NE</p> <p>Relevant RA dept: Operational (Harbour Master, Marina Manager), Recreation, Leisure and Tourism, Planning (Licensing and Consents), Environment (waste).</p>

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
	effects on the bird, fish and biotope features.	Management: Relevant Authorities do not currently manage this activity. It is already addressed through RYA and other codes of conduct (Green Blue) and related legislation. In Cardiff Bay, water quality is monitored continuously to identify and address any problems.	
<u>Boat repairs (commercial)</u> This activity covers small informal yards where boats are repaired as part of a business (rather than individuals undertaking maintenance on their own boats in marinas etc). Any planned and formalised new facilities require planning or other permission and is therefore a 'project' requiring an HRA under the Habitats Regulations rather than action under this Management Scheme.	Mechanism: Introduction of synthetic and non-synthetic materials. Potential impact: The main potential for an impact is through toxic contamination of the water body by cleaning fluids, oil, paint etc. These compounds can have deleterious effects on the designated sub features of the Severn Estuary.	Location: There are currently no commercial boat yards reported by the RAs but it is believed that there are some small commercial yards operating on or directly linked to some of the feeding rivers e.g. on the lower River Ely at Cardiff. Key Concerns: A commercial boatyard would require a number of consents or permissions and should therefore be regarded as a plan or project. Management: None at present.	CHA, CC, EA Relevant RA dept: Operational (Harbour Master, Marina Manager), Recreation, Leisure and Tourism, Planning (Licensing and Consents), Environment (waste).
<u>Moorings</u> This activity covers the tying up of boats to permanent fixed points. The activity is composed of two parts: <ul style="list-style-type: none"> - Mooring of commercial vessels at dockside in ports - Mooring of recreational vessels to river bed attachments/buoys/pontoons at existing club facilities in inlets and marinas. Any new mooring locations or expansion of provision at existing facilities require planning or other permission and are therefore 'projects' requiring an HRA under the Habitats Regulations rather than action under this Management Scheme.	Mechanism: Abrasion, Noise Potential impact: 1) Potential risk to intertidal habitats. 2) Disturbance to birds, particularly from moorings and large numbers of boat movements near roosts during winter and on passage.	Location: A number of marinas with moorings for recreational craft are located around the estuary and moorings are also found within the estuary's many rivers and pills. The majority of boats are moored in fixed pontoon berths within the enclosed waters of marinas, docks and harbours located outside the EMS (e.g. Cardiff and Portishead). Smaller numbers of boats are moored on buoys or pontoons within the EMS in creeks/pills, rivers and other sheltered area. These include St. Pierre Pill, the River Ebbw at Newport, Oldbury Pill, Knightstone Harbour in Weston Bay, River Axe and River Brue. See Recreational Boating in the Severn Estuary Report (2016) for map. Key Concerns: Potential risk to intertidal habitats and overwintering and passage birds from moorings and boat movements near roosts. Existing moorings are not considered to be having an impact, with the	ABP (Cardiff), CHA, PoB, TBPC, NE, NRW, GHT, NHC, MCC, NSC, CC, THLS, NSC Relevant RA dept: Recreation, Leisure and Tourism, Operational (Harbour Master, Marina Manager), Planning, Environment (ecology), Property

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
		<p>exception of unknown regulation, management and control of mooring areas (wooden jetties/pontoons) in the Rivers Ebbw and Usk in Newport (see Recreational Boating in the Severn Estuary Report (2016) for more information).</p> <p>Management: Recreational boat clubs manage and maintain the majority of mooring areas location within the EMS, usually under lease or license from the seabed owner, and permission from the Local Authority and/or the Harbour Authority. Commercial port moorings and any recreational moorings within port or harbour authority jurisdiction are controlled by the ports through byelaws and licensing (safety to navigating traffic as prime consideration). The ASERA Severn Estuary EMS Good Practice Guidelines also cover this activity.</p>	
<p>Navigation</p> <p>This activity covers only the movement of vessels (both commercial and recreational) through the estuary and the maintenance of marker buoys/ structures for navigational safety. The activity of navigation includes clearing of water borne rubbish that could impair navigation.</p> <p>The provision of new navigational aids would require authorisations. It would therefore be a 'plan or project' and would require a HRA under the Habitats Regulations rather than action under this Management Scheme</p> <p><i>Linked to "Commercial shipping/cargo operations", "Anchoring (commercial and recreational)" and "Moorings"</i></p>	<p>Mechanism: Noise, visual presence.</p> <p>Potential impact: Vessels in performance of their normal activity (proceeding from A to B) will introduce to the environment; noise and vibration in the water column, and also visual presence. This could disturb fish features, and in winter and on passage also bird features. The activity however is restricted to limited areas of safe passage and has therefore, over the years established its own environment.</p>	<p>Location: Described in proformas. Recreational cruising routes outlined in Recreational Boating in the Severn Estuary Report (2016).</p> <p>Key Concerns: No known impacts on the EMS have been identified.</p> <p>Management: This activity is managed by the port and harbour authorities, MCA and Trinity House - through provision of pilotage services, vessel traffic management systems, navigation aids, advice and codes of practice and use of byelaws where required. Trinity House also have a role in authorising local aids to navigation provided by port authorities, wind farms, and anywhere else that they are required.</p>	<p>ABP (Cardiff), GHT, NHC, PoB, TBPC, TH, CHA, NSC, NE</p> <p>Relevant RA dept: Recreation, Leisure and Tourism, Operations (Harbour Master, Marina Manager), Environment (ecology), Planning, Property.</p>
PORT RELATED – COMMERCIAL ACTIVITIES			

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
<p><u>Commercial shipping/cargo operations</u></p> <p>This activity covers only the transfer of goods at portside. <i>Linked to "Navigation" which covers the actual movement of ships through estuary.</i></p>	<p>Mechanism: Abrasion, noise, visual presence, introduction of non-synthetic materials</p> <p>Potential impact: 1) Disturbance to habitats and 2) potential disturbance to birds depending on the time of year.</p>	<p>Location: Currently, all cargo operations occur within enclosed (albeit connected) docks. This activity takes place largely outside the EMS.</p> <p>Key Concerns: There is the potential for disturbance to habitats and to birds (dependant on the time of year). There is currently no known significant impact to features of the EMS.</p> <p>Management: The management of this activity is largely by the ports under existing established safety plans and codes.</p>	<p>ABP (Cardiff and Newport), GHT, NHC, PoB, TBPC</p> <p>Relevant RA dept: Operational (Harbour Master, Marina Manager), Environment (ecology, waste).</p>
<p><u>Maintenance dredging and disposal</u></p> <p>Maintenance dredging involves the regular removal of accumulated sediments from navigation channels, docks and waterways. It is a statutory duty for many Ports and Harbours to ensure safe navigation.</p> <p>Maintenance dredging and disposal operations are highly regulated. Where this is licensed under the Marine and Coastal Access Act 2009 or under local port and harbour Acts the Government considers maintenance dredging proposals to be 'Plans and Projects' which require a HRA under the Habitats Regulations rather than action under this Management Scheme.)</p>	<p>Mechanism: Abrasion, selective abstraction of species, noise, visual presence.</p> <p>Potential impact: Maintenance dredging and the disposal of dredged material can potentially disturb marine wildlife and subtidal and intertidal habitats by causing the following possible impacts; 1) Removal of benthic animals at dredge site and smothering of benthos at or near the disposal site (may result in selective extraction of species). 2) Increased suspended sediments and siltation with potential impacts for fish, 3) Release of contaminants (such as heavy metals, organic matter and nutrients) again with potential impacts for benthos, fish and birds 4) Removal of sediment from the estuary sediment transport system (depending on type and location of</p>	<p>Location: Maintenance dredging is undertaken at the Ports of Bristol, Cardiff, Newport, and Sharpness and in Cardiff Harbour. Localised dredging of some dock entrances and immediate approaches takes place in the EMS, with much dredging activity occurring outside (but adjacent to) the EMS within the enclosed docks and river berths. The main navigation channel in the estuary is not dredged as it is naturally deep and scoured by strong currents. There are 7 licensed disposal sites within the EMS (which receive an average of around two million m³ of dredged material a year).</p> <p>Key Concerns: Concerns regarding maintenance dredging are uncommon as maintenance dredging and disposal licences generally only permit the removal of 'recently' deposited estuary sediments on which a chemical analysis has been undertaken and have been deemed suitable for placement back in the estuary. Temporary reduced water quality remains a potential impact, but is generally not a concern given the naturally very high suspended sediment loads, and associated contaminants, in the Severn Estuary. Key concerns relate to the potential to disturb migratory</p>	<p>ABP (Cardiff and Newport), GHT, NHC, TBPC, CHA, PoB, EA</p> <p>Relevant RA dept: Operational (Harbour Master), Planning (Licences and Permits), Environment (waste), Property.</p>

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	disposal site) with potential impacts for the habitat features 5) Visual presence and noise disturbance to birds and fish features.	<p>fish when dredging in restricted areas, such as river mouths, during sensitive times of the migratory season. This would take place where the dredge site is within a restricted area such as a river mouth (and only largely during sensitive times of the migratory season). Maintenance dredging and disposal has been taking place at Ports in the Severn Estuary for over a century and does not remove sediment from the estuary system.</p> <p>Management: Maintenance dredging and disposal is a highly regulated activity and mitigation of environmental impacts is an integral part of the licencing process. In English and Welsh waters this activity is largely regulated by Marine Licences (under the Marine and Coastal Access Act). Licensed activities are therefore a plan covered by HRA.</p> <p>In England, a maintenance dredging protocol has been developed that allows the effects of maintenance dredging to be assessed under the Habitats Regulations through the preparation of a Baseline Document without placing disproportionate burden on operators and regulators. Bristol Port's Baseline Document has been approved by Natural England and concludes that BPC's maintenance dredging and disposal activities do not have a significant adverse effect on the EMS. In Wales, maintenance dredging requires a Marine Licence every 3 years, and a HRA is undertaken.</p>	
<p><u>Discharge/exchange of ballast water</u></p> <p>This activity covers the discharge of ballast water from ships. Although it mostly takes place in Docks outside EMS potential impacts are via water connections.</p>	<p>Mechanism: Introduction of synthetic and non-synthetic materials, and non-native species.</p> <p>Potential impact: 1) The discharge of ballast water from ships can</p>	<p>Location: This activity can take place in the estuary, although largely occurs outside the EMS at sea and within enclosed docks.</p> <p>Key Concerns: Deterioration of native marine and saltmarsh communities. There is a risk of introducing</p>	<p>ABP (Cardiff and Newport), CHA, GHT, NHC, PoB, TBPC</p> <p>Relevant RA dept: Operational (Harbour</p>

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	potentially introduce non-native species into the estuary, which may in turn have a range of effects. The majority of non- natives have an undetectable effect, however they can cause the serious deterioration of native marine and saltmarsh communities. 2) There is also the potential for the release of contaminated waters or sediments during the discharge of ballast waters which can in turn have a deleterious impact on benthos, fish and birds.	non-native species which must be managed. Currently, there are no known impacts in the Severn Estuary EMS as a result of ballast water exchange. Management: The management of this activity is largely undertaken by the ships themselves and Port State Control (or the MCA). The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention) came into force in September 2017, formalising previously voluntary management measures. Under the Convention, all ships in international traffic are required to manage their ballast water and sediments to a certain standard, according to a ship-specific ballast water management plan. All ships will also have to exchange ballast water at sea (where safe to do so), carry a ballast water record book and an international ballast water management certificate. Ballast water treatment standards are being phased in over time, with new ships required to meet standards now and eventually most ships will need to install an on-board ballast water treatment system.	Master), Environment Manager (conservation).
<u>Lockgate and dock water management</u> This activity covers the management of water levels in the locks and docks of the Severn Estuary Ports (principally to enable entry and exit of vessels) <i>Linked to "Barrage and sluice operations" where relevant to port and Harbour Authority facilities.</i>	Mechanism: Noise, introduction of non-synthetic materials. Potential impact: potential impact on migrating fish, depending on the time of year and individual species. Exiting water can act as an attraction to migrating fish that may subsequently enter the lock and the enclosed dock system (therefore preventing successful migration).	Location: Severn Estuary Ports and Docks, including Cardiff, Cardiff Barrage, Newport, Barry, Avonmouth, Portbury, Sharpness, Lydney and Portishead Docks. Key Concerns: Potential impact on migrating fish, depending on the location, time of year and individual species. It is considered that lock gate and dock water management in the Severn Estuary Ports and Docks is not having a known impact on fish or any EMS features. The locks at Cardiff Bay Barrage are known to be used by salmon. Whilst in the locks, fish are likely to become stressed, nevertheless onward migration is	EA, ABP (Cardiff), CHA, TBPC Relevant RA dept: Planning (Licences and Consents), Operations (Harbour Master, Marina Manager), Environment (fisheries).

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		<p>possible. A concern at Cardiff Barrage is that at times of low river there is 'competition' for the limited volume of water. Sufficient flow must be provided for the fish passage facility at all times, but in order to maintain bay level whilst also providing boat passage through the barrage via the locks, the allocation of water for fish passage is reduced (See also Barrage and sluice operations).</p> <p>Management: This activity is exempt from EA and NRW licensing when undertaken by a harbour authority for navigation purposes and is managed directly by the ports.</p> <p>At Cardiff Barrage, the water allocation arrangement is covered by an Agreement between NRW and CHA.</p>	
<p><u>Port waste management</u></p> <p>This activity includes the management of all waste materials generated by the port and ship generated waste taken from ships docking at the port</p> <p>This 'activity' is highly regulated with port waste management plans being a statutory requirement by the Maritime and Coastguard Agency. It is therefore a 'project' requiring an HRA under the Habitats Regulations rather than action under this Management Scheme.</p>	<p>Mechanism: Accidental introduction of synthetic and non-synthetic materials.</p> <p>Potential impact: Ship generated wastes, such as litter and oil, into the estuary could potentially 1) Cause toxic contamination to birds, fish, benthos, 2) Damage to habitats through smothering and 3) Can have adverse effects on birds as a result of entanglement or ingestion.</p>	<p>Location: Ports, harbours and waterways along the Severn Estuary.</p> <p>Key Concerns: Accidental introduction of hazardous wastes and litter with potential impacts on birds, marine wildlife and saltmarsh. There is currently no known significant impact on the features of the EMS from this activity.</p> <p>Management: The management of waste at ports occurs mainly outside the EMS and is highly regulated with waste plans for ship-generated waste being a statutory requirement by the Maritime and Coastguard Agency. The purpose of Port Waste Management Planning is to avoid and minimise marine pollution from ships.</p>	<p>ABP (Cardiff), CHA, PoB, TBPC, NHC</p> <p>Relevant RA dept: Environment (waste), Planning, Critical infrastructure, Licenses and Permits, Operations (Harbour Master and Marina Manager).</p>
LAND MANAGEMENT ACTIVITIES			
<p><u>Habitat creation and restoration</u></p> <p>This activity is undertaken by RAs and third parties with landholdings on or adjacent to the estuary or as part of</p>	<p>Mechanism: Habitat removal, noise, visual presence, introduction of synthetic materials.</p>	<p>Location: Potentially anywhere around the estuary where RAs or third parties have landholdings, or land is part of a strategic plan.</p>	<p>MCC, NE, NSC, SCC, SgDC, CC, NCC, NRW, EA, ABP, CHA, VoGCC, StDC</p>

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<p>planned programmes to deliver strategic objectives e.g. local or national biodiversity targets in partnership with land owners.</p> <p>These are 'plans or projects' requiring an HRA under the Habitats Regulations rather than action under this Management Scheme.</p>	<p>Potential impact: 1) Disturbance to habitats from trampling and 2) Disturbance to feeding and roosting birds in winter and on passage, although low level works are not a significant issue.</p>	<p>Key Concerns: It is considered that there are no key concerns for this activity. Impacts are likely to be largely positive. Site specific constraints will be considered as part of the HRA process.</p> <p>Management: Such activity is usually associated with management plans, planning applications and will have multiple approvals involved.</p>	<p>Relevant RA dept: Environment (Ecology, Conservation), Planning (licences and consents), Property.</p>
<p><u>Beach cleaning and tidal debris management</u></p> <p>This activity covers the management of waste accumulations (natural or manmade) within the EMS either washed ashore or deposited by users. It includes regular beach cleaning operations (by hand or by vehicle), removal of accumulations from flood defences structures and one-off events to tackle unexpected flotsam or jetsam items. Works which could have impacts on the Severn Estuary SSSI require consent from NE/NRW .</p> <p>This activity does not include mechanical beach cleans or dead animals as these are classified as an F1.</p> <p><i>Linked to "Managing unauthorised waste".</i></p>	<p>Mechanism: Selective extraction, visual presence, noise.</p> <p>Potential impact: Impacts can be both diffused and concentrated and each beach area requires a specific appraisal to inform tailored management. 1) Disturbance to breeding birds and roosting birds at high tide. 2) Loss of strandline food supply. 3) Loss of ground stability. 4) Damage to habitats, particularly from access to remove material. The lack of removal of material can lead to 1) Smothering of habitats, 2) Damage to the flood defences/ operation of sluices, 3) Toxic contamination entering the food chain.</p>	<p>Location: Beach cleaning takes place at varying levels on public beaches around the estuary. Material requiring removal can occur anywhere around the estuary, including Weston Bay, Burnham, Berrow and Brean.</p> <p>Key Concerns: Regular beach cleaning operations on public beaches includes hand litter picking of manmade debris, removal of strandline vegetation (mixed natural and manmade) and "deep cleaning" of beaches with specialised machines. Tidal debris is also removed from the saltmarsh and flood defence earth banks to prevent smothering and die back of vegetation or physical abrasion damage of the defence. At infrequent intervals specialised operations may be required to remove out of the ordinary debris such as dead farm animals, stranded cetaceans, chemical drums etc. Key issues for the EMS are the methods of cleaning, removal and disposal of waste on or off site which may impact physically directly on habitats and their dependant species or through disturbance. Additionally the intrinsic value of some of the natural waste (e.g. spartina seaweed and woody debris strandlines) means that its removal may also impact on invertebrate and bird populations in particular.</p>	<p>NRW, EA, NSC, SgDC, NE, MCC, VoGCC, NCC</p> <p>Relevant RA dept: Recreation, Leisure and Tourism, Environment (ecology, waste), Health and Safety, Incident Planning.</p>

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		Management: This activity is managed as a plan or project.	
<p><u>Grazing</u></p> <p>Grazing is a land management tool which is used to restore or maintain saltmarshes in favourable condition. However, overgrazing or loss of grazing can result in damage and deterioration of saltmarsh. This activity covers unauthorised grazing, for example by horses.</p> <p>Grazing is a potentially damaging operation for the Severn Estuary SSSI. Landowners /tenants require consent from NRW/NE under the Wildlife and Countryside Act for both introduction of grazing or changes to grazing regime, i.e. changes to grazing type, intensity, seasonality or cessation of grazing.</p> <p>It is therefore a project requiring an HRA under the Habitats Regulations rather than action under this Management Scheme.</p> <p><i>Linked to "Practices resulting in agricultural run-off."</i></p>	<p>Mechanism: Abrasion, selective extraction of species.</p> <p>Potential impact: 1) Grazing of previously un-grazed marshes can lead to loss of plant diversity if not sensitively managed. 2) Overgrazing can damage the saltmarsh habitat feature and 3) Reduce food resource for birds. 4) Lack of grazing of previously grazed marshes could possibly result in reduced plant diversity.</p> <p>Grazing activity outside the EMS boundary is not likely to lead to significant impact and the recent EA Review of Consents has not identified any significant water quality issues related to agricultural runoff in respect of the estuary designated features.</p>	<p>Location: Potentially all saltmarsh around the estuary.</p> <p>Key Concerns: Grazing of previously un-grazed marshes can lead to loss of plant diversity if not sensitively managed. Overgrazing can damage the saltmarsh feature and reduce food resource for birds. Lack of grazing can be damaging too. No summary of grazing on the estuary has been produced.</p> <p>Management: Illegal fly-grazing or unauthorised grazing is not managed. Authorised grazing is managed by consent (e.g. SSSI consent has been issued for TBPC's grazing activities). Some grazing is managed as part of countryside stewardship agreements.</p>	<p>NRW, EA, NE, GCC, MCC, NSC, SgDC, TBPC, NCC, TBPC, CC</p> <p>Relevant RA dept: Planning (Licences and Consents), Environment (Conservation), Property and Estates.</p>
<p>Practices resulting in <u>Agricultural run-off</u></p> <p>This activity covers any farming practices undertaken on RA owned land which may result in the run-off of polluted, nutrient enriched or sediment rich water in to the estuary (via hinterland ditch/stream systems).</p>	<p>Mechanism: Mechanism is nutrient input via water discharge at certain points. Changes in nutrient loading, most sensitive intertidal mudflats and sandflats.</p> <p>Potential impact: 1) Enrichment of saltmarshes; 2) Contamination of sediments with knock on impacts on birds, via feeding.</p>	<p>Location: Activity proformas are largely from RAs with farm holdings adjacent to (but outside of) the EMS.</p> <p>Key Concerns: Nutrient enrichment of habitats.</p> <p>Management: EA and NRW have a regulatory function in respect of pollution incidents and new farming agricultural waste storage facilities. Regulation of potentially harmful practices is via good agricultural practice in accordance with established Codes of Practice, Nitrate Vulnerable Zones and Cross Compliance requirements and through positive incentives such as Catchment Sensitive Farming, etc.</p>	<p>NRW, NE, EA, GCC, MCC, SCC, SgDC, StDC</p> <p>Relevant RA dept: Environment, Property, Estates, legal, Reserves managers/wardens, Critical Infrastructure and Planning (drainage), Transport (waterways).</p>

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WATER MANAGEMENT ACTIVITIES			
<u>Water channel maintenance</u> This activity covers the regular management of water courses (vegetation cutting and de-silting).	Mechanism: Abrasion, noise, visual presence. Potential impact: The work involved in water channel maintenance causes noise and visual presence. A further mechanism for impact is via the outflows i.e. changes in sediment patterns. There is little scope for direct impact on EMS habitats and species unless contaminated land is involved.	Location: This activity is largely outside EMS boundary. Key Concerns: The work involved in water channel maintenance causes noise and visual presence. A further mechanism for impact is via the outflows i.e. changes in sediment patterns. Management: In Wales this work is subject to Consent from NRW as it takes place within the Gwent Levels SSSIs.	NE, NRW, CHA, NSC, SCC, VoGCC, EA Relevant RA dept: Environment (ecology, conservation), Planning, Critical Infrastructure, Licensing and Permits, Property.
<u>Barrage and sluice operation</u> This activity covers the management of water by <ul style="list-style-type: none"> - sluice and barrage structures into the estuary - sluices on drainage ditches outside the EMS (principally by IDBs and EA) as part of <ul style="list-style-type: none"> - everyday management of drainage for agriculture - flood risk control measures This activity does not include Water Level Management Plans as these are classified as F1. <i>Linked to "Lock and dock water management" in respect of ports and harbour authorities at Cardiff and Newport</i>	Mechanism: Introduction of synthetic and non-synthetic materials and physical impact on habitats. Potential impact: 1) Disturbance to feeding and roosting birds and migrating fish 2) Scouring and disturbance to sediments leading to changes to habitats, and possible short term change in salinity (localised). 3) Tidal flaps on outfalls – maintenance can cause disturbance to habitats and 4) Disturbance to birds if carried out in winter. 5) The sluices in Cardiff Bay are painted with anti-fouling paint with potential impacts for benthos.	Location: At Cardiff Barrage, outfalls operated by Cardiff Harbour Authority. Key Concerns: Using sluice to evacuate water into the estuary can be an issue in respect of possible erosion of habitats seaward of defences if flow is severe and not controlled to protect habitats (e.g. at Purton). Evacuation of water may also be an issue in respect of the migratory fish where close to fish passes (Cardiff Bay Barrage/CHA see Lock and Dock Water Management). Management: Operation the responsibility of and controlled by IDBs, EA and CHA in light of land drainage requirements and flood prevention.	EA, CHA, ABP, TBPC, SgDC, NRW, NE, NSC, SgDC Relevant RA dept: Critical Infrastructure and Planning (waterways), Environment (flooding, ecology).
<u>Highways discharge</u>	Mechanism: Introduction of synthetic and non-synthetic materials.	Location: Generally there are sea defences around the estuary and therefore this is only an issue where roads drain directly into the estuary i.e. at Bridgwater Bay,	GCC, MCC, NSC, SCC, VoGCC, CC, NCC, ABP

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<i>This activity includes both direct drainage of surface water from roads and active discharges from road maintenance/emergency operations</i>	Potential impact: Untreated road run-off discharges directly onto habitats and therefore into the food chain. NB: Highways and estates discharges were raised as an issue in the Strategy for the Severn Report, but realistically all discharges end up in designated water courses, rhines, pills and are covered by a consent. The impacts would be a release of hydrocarbons, lead, particulates and radionuclide's.	Burnham, Weston Super Mare, Clevedon, Portishead, Severn Bridge. On the Welsh coast this is only an issue around Usk. Key Concerns: The EA Review of Consents for the Severn Estuary EMSs did not identify any significant water or sediment quality issues related to highways discharge. Management: LPAs have statutory duty to provide drainage for safety reasons. Highways Maintenance Operation Manual provides the statutory requirements in respect of highways discharge EA have some regulatory control. RA's have Emergency Plan procedures for spills.	Relevant RA dept: Planning (Licences and Consents), Environment (waste), Critical Infrastructure (Highways, Drainage, Flooding, Housing).
INFRASTRUCTURAL ACTIVITIES			
<u>Property and estate maintenance</u> This activity includes the maintenance of existing facilities and management of land owned or operated by RAs it covers repair of existing infrastructure but not replacement or provision of new facilities.	Mechanism: Abrasion, noise, visual presence, introduction of non-synthetic materials Potential impact: Noise from machinery used and presence of people could disturb birds.	Location: Very few of the activities described by RAs on the activity forms lie within the boundary of the EMS. Key Concerns: Noise from machinery used and presence of people could disturb birds. Management: Any works within EMS, or works outside the EMS that could have water borne impacts (pollution or increase in nutrient loading) within the EMS should be regarded as a plan or project - F1.	ABP (Cardiff), CHA, TBPC, GCC, MCC, NSC, VoGCC, FoDDC, SgDC, CC, TH, NRW, NE Relevant RA dept: Property, Environment (Conservation, Ecology), Planning, Critical Infrastructure, Estate.
<u>Outfall & pipeline maintenance</u> This activity includes the maintenance of all types of outfalls and pipelines in and adjacent to the estuary (including Sewage, Combined Sewer Overflows (CSO), private, domestic and industrial, and surface water discharges). These are 'plans or projects' requiring an HRA under the Habitats Regulations rather than action under this Management Scheme.	Mechanism: Abrasion, noise, visual presence, introduction of non-synthetic materials. Potential impact: Disturbance to habitats from trampling and disturbance to feeding and roosting birds in winter and on passage.	Location: Sewage and CSO, private - domestic and industrial, and surface water discharges. Key Concerns: Disturbance to habitats from trampling and disturbance to feeding and roosting birds in winter and on passage. Management: Any works within EMS, or works outside the EMS which could have water borne impacts (pollution or increase in nutrient loading)	EA, CHA, NRW, SgDC, IDB. Relevant RA dept: Environment (ecology, conservation), Planning, Critical Infrastructure, Licensing and Permits, Incident Planning, Property.

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		within the EMS should be regarded as a plan or project (F1).	
<u>Cable laying, hanging and maintenance</u> This activity includes the installation or maintenance of electricity and telecommunication cables. These are 'plans or projects' requiring an HRA under the Habitats Regulations rather than action under this Management Scheme.	Mechanism: Abrasion, noise, visual presence, introduction of non-synthetic materials. Potential impact: Disturbance to feeding and roosting birds in winter and on passage. Disturbance to habitat.	Location: To date, this activity has only been reported by the English Relevant Authorities. Key Concerns: Disturbance to habitats from trampling and disturbance to feeding and roosting birds in winter and on passage. Management: Any such works within the Severn Estuary EMS should be regarded as a plan or project (F1).	NE, PoB, SgDC Relevant RA dept: Planning, Critical Infrastructure, Licensing and Permits
<u>Coastal protection, flood defence improvement and maintenance works</u> This activity includes <ul style="list-style-type: none"> - Strategic level planning of coast and flood defences (e.g. SMP, FRMS) - Implementation of capital works – both improvements to existing defences and creation of new defences - Management and maintenance of existing defences <i>(Linked to “collection of scientific data” in respect of monitoring and surveillance work on defences)</i>	Mechanism: Abrasion, noise, visual presence. Potential impact: Disturbance to roosting birds at high tide and breeding birds, especially if machinery is used.	Location: Coastal protection and flood defence improvement and maintenance works take place along the length of the Severn Estuary. Key Concerns: Disturbance to birds, especially if machinery is used. Potential damage to saltmarsh. Management: Due to the regulated and variable nature of this activity it should be regarded a plan or project (F1).	EA, CHA, TBPC, GCC, MCC, NSC, VoGCC, FoDDC, SgDC, StDC, CC, NCC, NRW, ABP Relevant RA dept: Planning, Environment (ecology), Critical Infrastructure (highways, estate and housing, flooding), Health and Safety.
EDUCATION AND SCIENCE ACTIVITIES			
<u>Collection of scientific data</u> This activity includes: <ul style="list-style-type: none"> - both land and water based survey and sampling - by foot and with the use of vehicles, vessels, aircraft and equipment Collection of scientific data can include methods such as drones, hovercraft and light aircraft.	Mechanism: Abrasion, noise, visual presence. Potential impact: Impacts vary depending upon the timing, location and type of techniques used. They could include: Disturbance to birds through noise intrusion, trampling/erosion of habitats due to monitoring/foot traffic, loss of habitat through removal or	Location: This activity takes place around most of the estuary by many Relevant Authorities. Key Concerns: Disturbance to birds if undertaken in winter and impact on habitats if active sampling of habitats is required. No known impacts of routine data collection activities in the EMS. Management: Depending on the type of survey/data collection, this is sometimes a plan or project and sometimes a routine activity (for example scientific data collection is carried out as an everyday function	NRW, EA, NE, ABP (Cardiff and Newport), CHA, NHC, TBPC, GCC, MCC, SCC, VoGCC, FoDDC, SgDC, CC, TH, D&S IFCA, NSC, StDC Relevant RA dept: Environment (ecology, conservation), Education, Planning (licensing and

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Certain data collection is a 'plan or project' (e.g. sediment/borehole sampling) and requires an HRA under the Habitats Regulations rather than action under this Management Scheme. However, the vast majority is an ongoing activity (e.g hydrographic survey) and is considered under the Scheme.	disturbance from boats in shallow waters. Certain invasive sampling techniques (e.g. sediment coring) undertaken in or near to intertidal feeding or roosting areas and during the winter months could cause noise and visual disturbance to birds and potentially cause damage to intertidal habitats by abrasion or direct removal of the habitat.	of many of the RAs, such as water sampling or bathymetric survey). The ASERA Severn Estuary EMS Good Practice Guidelines cover this activity.	permits), Recreation Leisure and Tourism.
<u>Archaeology (studies and protection)</u> This activity includes: <ul style="list-style-type: none"> - access activities such as some survey, surveillance and monitoring - physical impact activities such as some survey, excavation studies and implementation of protection measures. 	Mechanism: Visual presence, introduction of non-synthetic materials, selective extraction of species. Potential impact: Impact concentrated on specific sites. Disturbance to birds (roosting and feeding) could be temporary or permanent depending on restoration of land. Possible loss of f habitat. If major archaeological find - may become a tourist attraction with consequential impacts (dealt with under land based recreation).	Location: This activity could be undertaken around most of the estuary by many Relevant Authorities. Key Concerns: Disturbance to birds if undertaken during winter and impacts on habitats if excavation is required. Management: This activity is carried out as an everyday function of the LPAs and by universities and specialist groups. Activities by universities and specialist groups within the EMS require consent from the relevant country conservation agency. Due to the variable nature of this activity it should be regarded a plan or project (F1).	GCC, MCC, NSC, SCC, VoGCC, StDC, CC, NCC, NE Relevant RA dept: Recreation, Leisure and Tourism, Heritage, Planning (Licensing and Consents), Environment.
<u>Educational fieldtrips</u> The purpose of field trips is usually observation for education, non-experimental research or to provide students with experiences outside their everyday classroom-based activities. It enables students to observe the subject in its natural state. (An assumption has been made here that this activity relates to low-level access within the EMS and does not	Mechanism: Abrasion, Noise, Visual presence. Potential impact: The impact is likely to depend upon the type of educational field visits. There are likely to be specific areas that attract most of the activity and the impact may therefore be concentrated at these sites. The impacts are	Location: Key reported locations for educational field trips are Cardiff Bay, Slimbridge, Newport Wetlands, Wentlooge, Bridgwater Bay NNR, WSM STW (Axe), Burnham/Berrow, Flat Holm, Penarth – some are subject to controlled access by conservation organisations or other RAs and others are open public access sites. Key Concerns: Disturbance to birds and habitat is the key concern, however given the locations involved and	NE, CHA, GCC, MCC, NSC, SCC, SGC, VoGCC, SgDC, CC, NCC, NRW, ABP, SDC Relevant RA dept: Education, Planning (Licences and Consents), Tourism and Recreation, Health and Safety and

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
involve any significant active removal or displacement of habitats and species).	disturbance to birds, damage to habitats by erosion or compaction. Removal of specimens may also deplete certain species.	intensity of this activity it is not considered to be of concern. Management: Local Planning Authorities report an unknown number of events take place annually but there is little information on the timing of this activity. Schools and colleges are empowered to make their own arrangements as LPAs have an advisory role only but there is currently no formal arrangement for reporting or monitoring. The ASERA Severn Estuary EMS Good Practice Guidelines cover this activity.	Incident Planning, Environment (Conservation).
MISCELLANEOUS			
Emergency planning This activity includes several types of emergency planning associated with the accidental release of harmful substances into the environment. Emergency planning can be split into several different phases; preparing the plan, training exercises to test the plan, implementation in an emergency, monitoring of effectiveness post event and review. The focus is on planning preparedness and the act of responding to an emergency event (e.g. shoreline clean-up operations in the event of an oil spill). Each stage requires appropriate consideration of the potential or actual impact on the EMS.	Mechanism: Noise, visual presence, Introduction of synthetic and non-synthetic materials, changes in nutrient loading changes in organic loading. Potential impact: Impacts can be caused both by the emergency event and during the response to it, including long term damage to species and habitats by disturbance, toxic contamination through the introduction of toxic substances and/or smothering by contaminants. Extent of impact can be increased due to tidal range, current, wind and waves. Clean-up operations can also cause impacts (including use of dispersants, and mechanical large scale operation). There is also the potential for air borne pollution and physical loss of habitat.	Location: The activity includes the whole of the Severn Estuary. Areas of industrial activity are considered a higher risk and may have specific emergency planning requirements. Key Concerns: Disturbance to birds if undertaken in winter and impact on habitats. Management: Responding to actual emergency incidents is very rare within the Severn Estuary. Nevertheless plans are continuously being prepared and rehearsed and there is the Severnside Siren arrangement. This activity is therefore regarded as a plan or project (F1).	EA, ABP (Cardiff and Newport), GHT, NHC, PoB, TBPC, GCC, MCC, NSC, SCC, VoGCC, FoDDC, SgDC, StDC, NCC, NRW, NE. Relevant RA dept: Planning (Licences and Consents), Health and Safety, Incident Planning, Fire and Rescue.

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
<p><u>Managing unauthorised waste</u></p> <p>This activity covers only waste that is dumped / fly tipped.</p> <p><i>Note: some authorities have identified the disposal of waste washed up on the shore in this category but these have been assigned to “Beach Cleaning”</i></p>	<p>Mechanism: Noise, visual presence, introduction of synthetic and non-synthetic materials.</p> <p>Potential impact: 1) Toxic contamination to benthos, birds, fish and habitats, 2) Damage to habitats through smothering, 3) Impacts from litter (birds may become entangled/ingest plastic). Effects likely to be localised and directly related to vehicular access. Method of managing waste is the major (activity) issue, in that disposing of the waste could cause disturbance through noise, visual presence etc. and is dependent upon location and time of year.</p>	<p>Location: This activity could be undertaken around most of the estuary by many Relevant Authorities.</p> <p>Key Concerns: Toxic contamination, damage through smothering. Birds may become entangled/ingest plastic. Effects are likely to be localised and directly related to vehicular access. Method of managing waste is the major (activity) issue, in that disposing of the waste could cause disturbance through noise, visual presence etc. and is dependent upon location and time of year.</p> <p>Management: The EA/NRW will remove tipped waste below MHWM if there was a perceived impact on any flood defence/coastal erosion scheme and if the material was hazardous waste. The EA work in co-operation with LPAs in accordance with several agreed protocols to deal with fly tipping issues. Within their own areas ports use byelaws to control tipping. This activity is therefore regarded as a plan or project (F1).</p>	<p>EA, ABP (Cardiff), CHA, TBPC, GCC, MCC, NSC, VoGCC, FoDDC, SgDC, StDC, CC, NCC, NRW, NE, CHA</p> <p>Relevant RA dept: Recreation, Leisure and Tourism, Planning (Licences and Permits), Environment (Waste), Health and Safety, Incident Planning.</p>
<p><u>Activities that result in the release of contamination from historic industry</u></p> <p>This activity includes any excavation or disturbance of the ground/sediments that contain contaminants that could (via release into the water column) impact on the features of the EMS e.g. through dredging, channel maintenance, wash off from terrestrial industrial sites.</p>	<p>Mechanism: Introduction of synthetic and non-synthetic materials.</p> <p>Potential impact: Potential for contaminants to leak into the habitats and enter the food chain with impacts on benthos, fish and/or birds.</p>	<p>Location: Activities that can result in the release of historic contamination from soils and sediments can potentially occur in any location around the estuary. This is more likely to be an issue where historic land use has included heavy industry either directly affecting the area concerned or affecting a wider area by the dispersal and build-up of contaminated sediments.</p> <p>Key Concerns: Potential for contaminants to leak into the habitats and enter the food chain.</p> <p>Management: Existing pollution control measures should control potential impacts but may require appropriate evaluation and testing of areas of high risk in avoidance of works that may disturb sediments.</p>	<p>NRW, EA, all LAs in Wales and Unitary & District Councils in England.</p> <p>Relevant RA dept: Planning, Health and Safety, Incident Planning, Critical Infrastructure, Environment (ecology, waste).</p>

Activity	Mechanism(s) for/and potential impact (s)	Location, Key Concerns and Current Management	Relevant Authorities and Internal Dept/ Function to Whom this Applies
<p><u>Low flying aircraft</u></p> <p>This activity includes the movement of small aircraft and helicopters over the EMS at low levels e.g. the heliport at Cardiff, rescue and emergency service exercises, operation of microlights or helicopter ride events.</p>	<p>Mechanism: Noise, visual presence.</p> <p>Potential impact: Disturbance to feeding and roosting birds in winter and on passage. The Moulting Shelduck population in Bridgwater Bay SSSI between June and October is particularly prone to disturbance from helicopters.</p>	<p>Location: Helicopters in the vicinity of Cardiff heliport, and small aircraft in the vicinity of the coastline around the estuary. The Moulting Shelduck population in Bridgwater Bay SSSI between June and October is particularly prone to disturbance from helicopters.</p> <p>Key Concerns: The effects of this activity in respect to disturbance to the bird features (of the SPA and Ramsar and as a sub feature of the SAC) are unknown, especially during winter.</p> <p>Management: Where being undertaken as part of an authorised facility impacts on the EMS should be addressed by regulatory processes associated with approval of those facilities - through impact assessment and appropriate operating conditions. Use of such aircraft within the EMS as part of an organised event is likely to be subject to licensing by the local authority and regulated accordingly (See also “Events and festivals”). Use of such aircraft within the EMS as part of an organised exercise/training by a public service authority should take account of the possible impacts on the EMS in planning of the exercise. No regulation of ‘hobby’ aircraft with respect to the EMS</p>	<p>NSC, VoGCC, CC, NE, SgDC, EA, TH</p> <p>Relevant RA dept: Recreation, Leisure and Tourism, Environment (ecology), Planning (Licences and Permits).</p>

Appendix 5 - F-Code Guidance for the 2018-2023 Management Scheme

Code	Assessment (used by the countryside agencies to provide assessment advice on the activity proformas)	Guideline Management options
F1	The activity constitutes a plan or project .	Competent Authority to apply Conservation Regulations 63- 69. Maintain audit trail on decisions. ASERA to provide framework where appropriate.
F2	No impact possible There is no known mechanism(s) for the activity to cause deterioration or significant disturbance to a feature(s). Activity is not known by the RA to have an effect in its area of jurisdiction.	No action is required for activities that do not have an effect on the site, subject to the continuation of current management. Where there is a change in management, or in light of further information, the impact of the activities should be re-assessed.
F3	Impact unknown There is a known mechanism(s) for the activity to cause deterioration or significant disturbance to a feature(s), but there is insufficient current information to determine whether or not it is causing deterioration or significant disturbance.	One or more of the following management options may be considered for activities with an unknown effect on the site: a. No action, subject to the continuation of current management. Where there is a change in management, or in light of further information, the impact of the activities should be re-assessed. b. Increased monitoring of the condition of the feature/site c. Surveillance of the extent of activities d. Compile existing information or undertake research to better understand any cause and effect relationship and other relevant information gaps e. Input and provide data for central ASERA actions f. Precautionary management measures (see e-k below for examples) Selection of the appropriate management option above will be considered on a case-by-case basis depending on the likelihood of an impact occurring and the magnitude of that possible impact. Effort and costs associated with researching or addressing “unknown impacts” should be proportional to the environmental improvement likely to result from those actions.
F4	No impact identified There is a known mechanism(s) for the activity to cause deterioration or significant disturbance to a feature(s), but no current information shows that it is causing deterioration or significant disturbance at present. Activity is not known by the RA to have an effect in its area of jurisdiction.	No action is required for activities that are not known to have an effect. Where there is a change in management, or in light of further information, the impact of the activities should be re-assessed. Management options may be reviewed in the light of revised advice from the countryside agencies.
F5	Significant impact (managed) There is current information to suggest that an activity is causing deterioration or significant disturbance to a feature(s) and the mechanism(s) is known. Activity is known by a Relevant Authority to be having an effect in its area of jurisdiction and a single Relevant Authority is responsible or has power for that activity. Activity is known by a Relevant Authority to be having an effect in its area of jurisdiction and a number of Relevant Authorities have powers or are responsible for that activity around the EMS.	For activities with a known impact on the site, action must be taken. Actions may include one or more of the following: a. Increased monitoring of the condition of the feature/site b. Surveillance of the extent of activities c. Research to address gaps in information d. Provision of information to Relevant Authorities, interested parties, and the public as appropriate. e. Training of staff within Relevant Authorities. f. Liaison and improved communication with other Relevant Authorities, interested parties and the public g. Introduction of Voluntary Codes of Conduct h. Review and possibly amendment of existing management regimes/procedures i. Enforcement of byelaws j. Development and trialling of operational limits k. Zoning of activities l. No action required (further information indicates that adequate management measures are in place to avoid or minimise effects on the

		<p>feature/site; or in the absence of any alternative, cost-effective management solutions).</p> <p>Selection of the appropriate management option above will be considered on a case-by-case basis depending on the nature, magnitude and current management of that possible impact. Effort and costs associated with researching or addressing “impacts” should be proportional to the environmental improvement likely to result from those actions.</p>
F6	<p>Significant impact (unmanaged)</p> <p>There is current information to suggest that an activity is causing deterioration or significant disturbance to a feature(s), but it is outside management control, or there is no current mechanism for management). Activity is having an effect and no one has responsibility for the activity.</p>	<p>When an activity with a known effect on the site is outside management control, Relevant Authorities may set-up a working/topic group of appropriate organisations and interested parties to consider possible actions (see a-k above).</p>

Appendix 6 - Table of F Codes for each activity, Relevant Authority and feature.

F0 - code for activity in respect of the habitat features (of the SAC, Ramsar and of supporting habitats for birds) F0 - code for activity in respect of the bird features (of the SPA, Ramsar and as a sub feature of the SAC) F0 - Code for activity in respect of the fish features (of the SAC and Ramsar) F1 - Activity is a plan or project requiring regulatory consent by competent authority/ies F2 - No impact possible F3 - Impact unknown F4 - No impact identified F5 - Significant impact (managed) F6 - Significant impact (unmanaged)	Relevant Authorities																				
	Nature Conservation			Ports						County Councils				District Councils			City Councils		Other		
	Natural Resources Wales	Environment Agency	Natural England	ABP	Cardiff Harbour Authority	Gloucester Harbour Trustees	Newport Harbour Commissioners	Port of Bridgwater	The Bristol Port Company	Gloucestershire County Council	Monmouthshire County Council	North Somerset Council	Somerset Council	Vale of Glamorgan County Council	Forest of Dean District Council	Sedgemoor District Council	Stroud District Council	Cardiff Council	Newport City Council	Devon & Severn IFCA	Trinity House
Airborne sports												F3 F3 F2				F3 F3 F2					
Agricultural run-off	F4 F4 F4	F4 F4 F4	F4 F4 F4							F4 F4 F4	F4 F4 F4		F4 F4 F4			F4 F4 F4	F4 F4 F4				
Anchoring (recreational)	F4 F4 F2		F4 F4 F2	F4 F4 F2		F4 F4 F2	F4 F4 F2	F4 F4 F2	F4 F4 F2		F4 F4 F2	F4 F4 F2			F4 F4 F2			F4 F4 F2			F4 F4 F2
Anchoring (commercial)		F4 F4 F2		F4 F4 F2		F4 F4 F2		F4 F4 F2	F4 F4 F2			F4 F4 F2									F4 F4 F2
Angling (recreational)	F3 F3 F3	F3 F3 F3	F3 F3 F3	F3 F3 F3	F3 F3 F3		F3 F3 F3	F3 F3 F3			F3 F3 F3	F3 F3 F3		F3 F3 F3		F3 F3 F3		F3 F3 F3		F3 F3 F3	
Archaeology (studies & protection)	F1		F1							F1	F1	F1	F1	F1			F1		F1		
Bait digging	F3 F3 F4											F3 F3 F4		F3 F3 F4		F3 F3 F4				F3 F3 F4	
Barrage and sluice operation	F4 F2 F4	F4 F2 F4	F4 F2 F4	F4 F2 F4	F4 F2 F5				F4 F2 F4			F4 F2 F4				F4 F2 F4					
Beach cleaning	F4 F4 F2	F4 F4 F2	F4 F4 F2								F4 F4 F2	F4 F4 F2		F4 F4 F2		F4 F4 F2			F4 F4 F2		
Boat repairs (commercial)		F1			F1													F1			

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	Nature Conservation			Ports						County Councils					District Councils			City Councils		Other	
	Natural Resources Wales	Environment Agency	Natural England	ABP	Cardiff Harbour Authority	Gloucester Harbour Trustees	Newport Harbour Commissioners	Port of Bridgwater	The Bristol Port Company	Gloucestershire County Council	Monmouthshire County Council	North Somerset Council	Somerset Council	Vale of Glamorgan County Council	Forest of Dean District Council	Sedgemoor District Council	Stroud District Council	Cardiff Council	Newport City Council	Devon & Severn IFCA	Trinity House
Boat repairs (recreational)		F4 F4 F4		F4 F4 F4			F4 F4 F4			F4 F4 F4	F4 F4 F4				F4 F4 F4		F4 F4 F4				
Cable laying & maintenance			F1				F1								F1						
Coastal protection & flood defence	F1	F1		F1					F1	F1	F1		F1	F1	F1			F1	F1		
Outfall & pipeline maintenance	F1	F1			F1										F1						
Commercial shipping/cargo operations				F1		F1	F1	F1	F1												
Discharge/exchange of ballast water				F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4												
Collection of scientific data	F1	F1	F1	F1	F1				F1	F1	F1	F1	F1	F1			F1	F1	F1	F1	
	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4				F4 F4 F4											F4 F4 F4	
	F4 F4 F2		F4 F4 F2	F4 F4 F2	F4 F4 F2					F4 F4 F2	F4 F4 F2	F4 F4 F2	F4 F4 F2	F4 F4 F2		F4 F4 F2		F4 F4 F2	F4 F4 F2		
Eel & elver fishing	F1														F1		F1				
Emergency planning	F1	F1	F1	F1		F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1	F1		F1		
Events/festivals			F1	F1	F1	F1	F1	F1		F1	F1	F1		F1	F1	F1		F1	F1		
Fishing (commercial)	F1		F1																	F1	
Fishing (recreational)								F4 F4 F4												F4 F4 F4	

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Grazing	F1	F1	F1						F1	F1	F1	F1						F1	F1		
Habitat creation & restoration	F1	F1		F1								F1	F1	F1		F1	F1	F1	F1		
Highways discharge				F4 F4 F4						F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4				F4 F4 F4	F4 F4 F4		
Land and beach-based recreation	F3 F3 F3		F3 F3 F3	F3 F3 F3	F3 F3 F3					F3 F3 F3	F3 F3 F3	F3 F3 F3	F3 F3 F3	F3 F3 F3	F3 F3 F3	F3 F3 F3	F3 F3 F3	F3 F3 F3	F3 F3 F3		
Lockgate & dockwater management		F4 F4 F4		F4 F4 F4					F4 F4 F4												
Low flying aircraft		F4 F3 F4	F4 F3 F4									F4 F3 F4		F4 F3 F4		F4 F3 F4		F4 F3 F4			F4 F3 F4
Maintenance dredging & disposal		F1		F1	F1	F1	F1	F1	F1												
Managing Unauthorised Waste	F1	F1			F1				F1	F1	F1				F1	F1	F1	F1	F1		
Moorings	F4 F4 F4		F4 F4 F4	F3 F3 F4	F4 F4 F4	F4 F4 F4	F3 F3 F4	F4 F4 F4	F4 F4 F4		F4 F4 F4	F3 F3 F4						F4 F4 F4	F3 F3 F4		F4 F4 F4
Navigation				F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4			F4 F4 F4									F4 F4 F4
Port waste management (inc ship generated waste)				F1	F1		F1	F1	F1												
Property & estate maintenance	F4 F4 F4		F4 F4 F4	F4 F4 F4	F4 F4 F4				F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4		F4 F4 F4	F4 F4 F4	F4 F4 F4		F4 F4 F4			F4 F4 F4

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Release of contamination through historic industry	F1	F1									F1				F1	F1	F1	F1	F1		
Water-based recreation	F4 F4 F4		F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4	F4 F4 F4		F4 F4 F4			F4 F4 F4	F4 F4 F4	F4 F4 F4		F4 F4 F4			
Water channel maintenance	F4 F4 F4	F4 F4 F4	F4 F4 F4		F4 F4 F4							F4 F4 F4	F4 F4 F4	F4 F4 F4							
Wildfowling	F1	F1	F1														F1				