Fisheries in EMS Habitats Regulations Assessment for Amber and Green risk categories

European Marine Site: Exe Estuary SPA

Fishing activities assessed: Digging with forks

D&S IFCA Interaction ID	Fishing Activity	Feature(s)	Supporting habitat
HRA_UK9010081_AE39	Bait digging	• Non-breeding Avocet • Non-breeding Black-tailed godwit • Non-breeding Dark-bellied Brent goose • Non-breeding Dunlin • Non-breeding Grey plover • Non-breeding Oystercatcher • Non-breeding Slavonian grebe • Waterbird assemblage	Saltmarsh
HRA_UK9010081_AT39			Freshwater & Coastal grazing marsh
HRA_UK9010081_W39			Intertidal stony reef
HRA_UK9010081_H39			Intertidal rock
HRA_UK9010081_O39			Intertidal biogenic reef
HRA_UK9010081_Z39			Circalittoral rock
HRA_UK9010081_AC39			Infralittoral rock
HRA_UK9010081_AB39			Subtidal biogenic reef
HRA_UK9010081_AS39			Subtidal coarse sediment
HRA_UK9010081_Q39			Subtidal mixed sediment
HRA_UK9010081_B39			Subtidal sand
HRA_UK9010081_D39			Subtidal seagrass
HRA_UK9010081_Z39			Subtidal stony reef

Contents

1. Introduction

1.1 Need for an HRA assessment

In 2012, the Department for Environment, Food and Rural Affairs (Defra) announced a revised approach to the management of commercial fisheries in European Marine Sites (EMS). The objective of this revised approach is to ensure that all existing and potential commercial fishing activities are managed in accordance with Article 6 of the Habitats Directive.

This approach is being implemented using an evidence based, risk-prioritised, and phased basis. Risk prioritisation is informed by using a matrix of the generic sensitivity of the sub-features of EMS to a suite of fishing activities as a decision making tool. These sub-feature-activity combinations have been categorised according to specific definitions, as red, amber, green or blue.

Activity/feature interactions identified within the matrix as red risk have the highest priority for implementation of management measures by the end of 2013 in order to avoid the deterioration of Annex I features in line with obligations under Article 6(2) of the Habitats Directive.

Activity/feature interactions identified within the matrix as amber risk require a site-level assessment to determine whether management of an activity is required to conserve site features. Activity/feature interactions identified within the matrix as green also require a site level assessment if there are “in combination effects” with other plans or projects.

Site level assessments are being carried out in a manner that is consistent with the provisions of Article 6(3) of the Habitats Directive. The aim of this assessment is to determine whether management measures are required in order to ensure that fishing activity or activities will have no adverse effect on the integrity of the site. If measures are required, the revised approach requires these to be implemented by 2016.

The purpose of this site specific assessment document is to assess whether or not in the view of Devon and Severn Inshore Fisheries and Conservation Authority (D&S IFCA) the fishing activity of “bait digging” has a likely significant effect on the saltmarsh, rock and subtidal features of the Exe Estuary SPA, and on the basis of this assessment whether or not it can be concluded that bait digging will not have an adverse effect on the integrity of this EMS.

1.2 Documents reviewed to inform this assessment

- Natural England’s risk assessment Matrix of fishing activities and European habitat features and protected species
- Reference list (Annex 1)
- Natural England’s consultation advice (Annex 2)
- Site map(s) – sub-feature/feature location and extent (Annex 3)
- Fishing activity data (map(s), etc.) (Annex 4)

2. Information about the EMS

The Exe Estuary SPA includes both marine areas (i.e. land covered continuously or intermittently by tidal waters) and land which is not subject to tidal influence. Sub-features have been identified which describe the key habitats within the European marine site necessary to support the birds that qualify within the SPA. Bird usage of the site varies seasonally, with different areas being favoured over others at certain times of the year. The mussel beds in particular are important in supporting the wintering wader and wildfowl assemblage to enable them to acquire sufficient energy reserves to ensure population survival (English Nature, 2001 & Natural England, 2015). Figure 1 (Annex 3) shows the boundary of the Exe Estuary SPA.

2.1 Overview and qualifying features

The Exe Estuary SPA qualifies under Articles 4.1 and 4.2 of the EU Birds Directive by supporting the following interest features (Natural England, 2015):

- Non-breeding Avocet (*Recurvirostra avosetta*)
- Non-breeding Black-tailed godwit (*Limosa limosa islandica*)
- Non-breeding Dark-bellied Brent goose (*Branta bernicia bernicia*)
- Non-breeding Dunlin (*Calidris alpina alpina*)
- Non-breeding Grey plover (*Pluvialis squatarola*)
- Non-breeding Oystercatcher (*Haematopus ostralegus*)
- Non-breeding Slavonian grebe (*Podiceps auritus*)
- Waterbird assemblage

The key supporting habitats are:

- Circalittoral rock
- Freshwater and coastal grazing marsh
- Infralittoral rock
- Intertidal biogenic reef: mussel beds
- Intertidal coarse sediment
- Intertidal mixed sediments
- Intertidal mud
- Intertidal rock
- Intertidal sand & muddy sand
- Intertidal seagrass beds
- Intertidal stony reef
- Subtidal biogenic reefs: mussel beds
- Subtidal coarse sediment
- Subtidal mixed sediment
- Subtidal sand
- Subtidal seagrass beds
- Subtidal stony reef
- Water column
- Saltmarsh
    - Atlantic salt meadows (*Glauco-Puccinellietalla maritimae*)
    - Salicornia and other annuals colonising mud & sand
    - Spartina swards (*Spartinion maritimae*)

2.2 Conservation Objectives

The site's conservation objectives apply to the Special Protection Area and the individual species and/or assemblage of species for which the site has been classified.
The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the 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 populations of the qualifying features
- the distribution of the qualifying features within the site

3. Interest feature(s) of the EMS categorised as 'red' risk and overview of management measure(s)

None – this site has no gear-feature interactions categorised as "red" risk.

4. Information about the fishing activities within the site

A full description of D&S IFCA's current understanding of the levels and distribution of bait digging within the Exe Estuary SPA can be found in Stephenson (2019). Bait digging occurs on the intertidal sand and mudflats, with effort being highest on the eastern shore of the estuary, in the Cockle Sands & Shelley Bank area. Bait digging occurs on the Exe all year round, peaking in the summer on the eastern shore, but in the autumn on the western shore.

During May and June 2016 D&S IFCA conducted survey visits to the estuary to identify the level of intertidal handwork occurring (results can be found in Annex 6). The surveys looked at shellfish collection, crab tiling, and bait digging. Bait digging accounted for just over one third of the hand-gathering activity observed during the survey (35% of activity on the west shore, 38% on the east shore). Throughout the survey the estuary was visited 16 times, with bait diggers being seen on nine of these visits. 12 bait diggers were observed on five weekday visits, and six diggers were seen over four weekend visits. This suggests this activity occurs at slightly higher levels during weekdays, which is contrary to the general pattern of total hand-gathering activity (Figure 10). However, in line with the general pattern of hand-gathering activity (Figure 9), the majority of bait digging took place on spring tides, with 15 bait diggers observed over seven visits which occurred on spring tides, whereas diggers were only seen on two visits occurring on neap tides (a total of three diggers). Therefore, it seems this activity is largely temporally limited by spring tides.

Other fishing activities within the EMS are described in the Fishing Activity Report (Gray, 2015).

5. Test for Likely Significant Effect (LSE)

5.1 Table 1: Assessment of LSE

1. Is the activity/activities directly connected with or necessary to the management of the site for nature conservation?	**No**	
2. What pressures (such as abrasion, disturbance) are potentially exerted by the gear type(s)	• Above water noise (Bird features - Sensitive) • Visual disturbance (Bird features - Sensitive) • Abrasion & disturbance of the substrate on the surface of the seabed (Supporting habitat - Sensitive) • Penetration/disturbance of the substrate below the surface of the seabed, including abrasion (Supporting habitat – sensitive) • Physical changes (to another seabed type) (Supporting habitat – Sensitive) • Removal of non-target species (Bird feature & supporting habitat – Sensitive) • Removal of target species (Supporting habitat – Sensitive) See Annex 7 for Pressures Audit Trail	
3. Is the feature potentially exposed to the pressure(s)?	**Yes,** there are currently no management measures restricting bait digging in the Exe Estuary SPA.	
4. What are the potential effects/impacts of the pressure(s) on the feature, taking into account the exposure level?	Bait digging occurs on the intertidal mudflats and sediments only. Access points to the bait digging areas are not near saltmarsh (Magic, 2016). Therefore, the level of bird disturbance is not thought to affect population size or distribution. Additionally, trampling is not thought to be significant to affect the extent, distribution, species composition and communities of the supporting habitats. Bait digging does not take place on the reef or rock supporting habitats.	
5. Is the potential scale or magnitude of any effect likely to be significant?	**Alone**	**No**, there is no likelihood of significant adverse effect on the interest features, as a stand-alone project.
	In-combination	**No.**.
6. Have NE been consulted on this LSE test? If yes, what was NE's advice?	NE has not been consulted at this time.	

6. Appropriate Assessment

An Appropriate Assessment is not required as the TLSE concluded that this activity would not have a significant effect, either alone or in-combination.

6.1 Potential risks to features

Table 2: Summary of Impacts

Feature/ Supporting habitat(s)	**Target Attributes/Conservation Objectives**	**Potential pressure (such as abrasion, disturbance) exerted by gear type(s)**	**Potential ecological impacts of pressure exerted by the activity/activities on the feature** *(reference to conservation objectives)*	**Level of exposure of feature to pressure**	**Mitigation measures**

7. Conclusion

N/A

8. In-combination assessment

N/A

9. Summary of consultation with Natural England

N/A Natural England has not been consulted at this stage.

10. Integrity test

N/A

Annex 1: Reference list

EEMP (2014) Exe Estuary Management Partnership: Exe Estuary Recreational Framework 2014

English Nature (2001) EXE ESTUARY: European marine site. English Nature's advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994

Gray (2015) Devon & Severn IFCA Report: Fishing Activities Currently Occurring in the Exe Estuary SPA

MAGIC (2015) Multi-Agency Geographic Information for the Countryside interactive map http://magic.defra.gov.uk/magicmap.aspx?startTopic=magicall&chosenLayers=sacIndex&sggridref=SX472506&startscale=500000

Natural England (2015) Marine conservation advice for Special Protection Area: Exe Estuary (UK9010081)

Stephenson (2019) Devon & Severn IFCA Report: Bait Digging in the Exe Estuary European Marine Site. Data Analysis Report.

Annex 2: Natural England's consultation advice

Annex 3: Site Maps

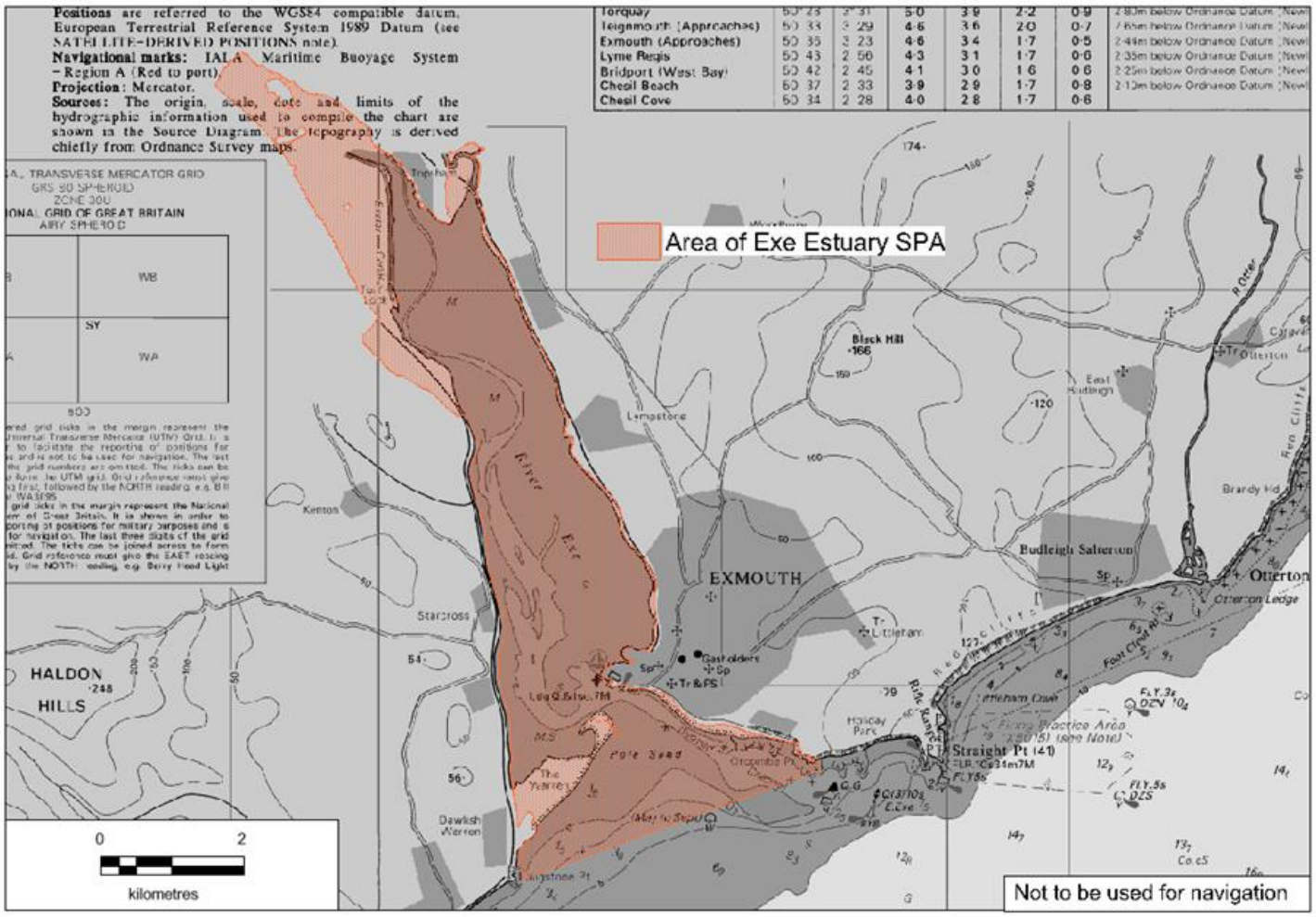


Figure 1 Exe Estuary SPA boundary (shown in red)

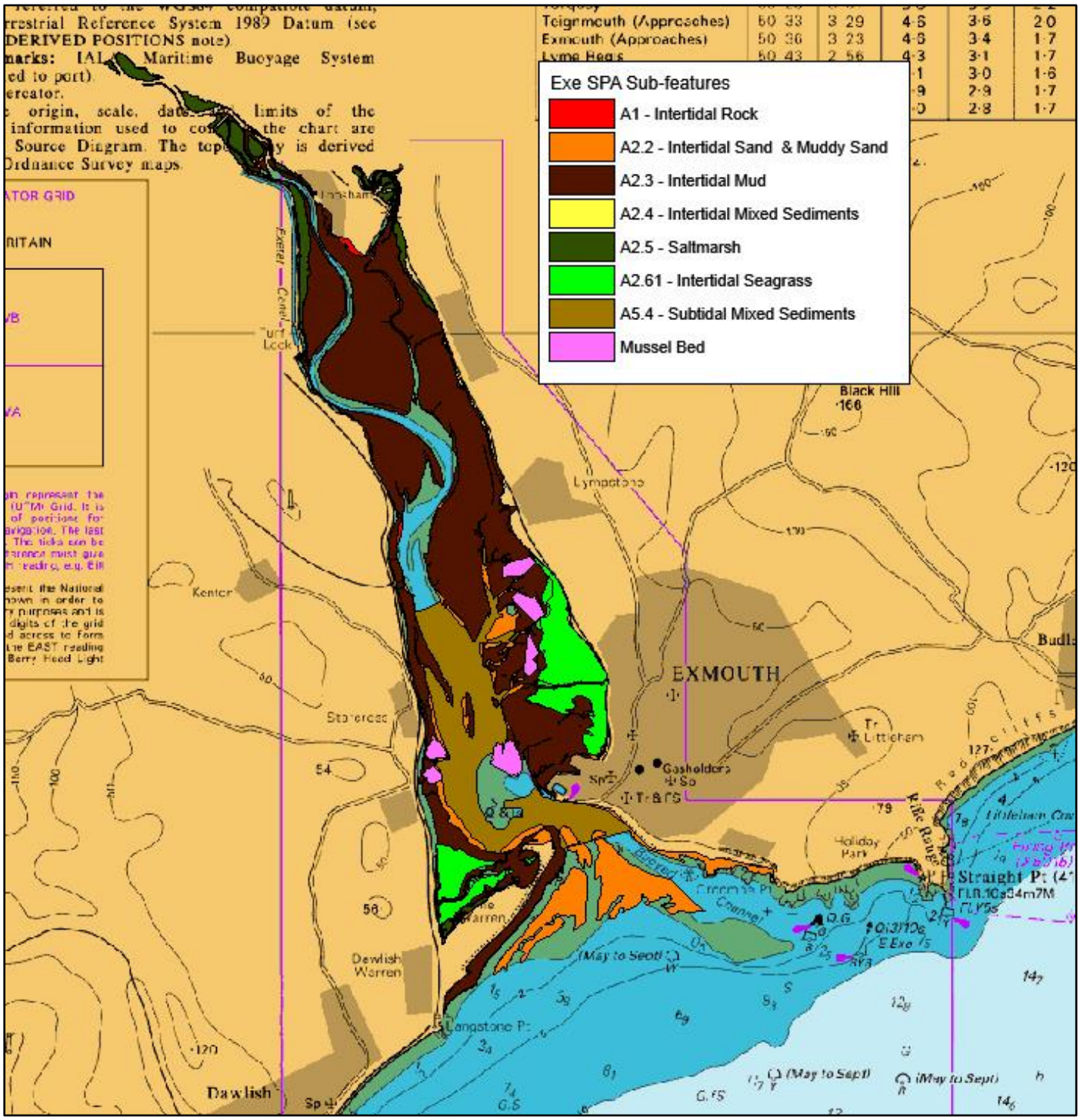


Figure 2 Exe Estuary SPA sub-features (Natural England, 2015)

Annex 4: Fishing activity maps

Annex 5: Bird usage of the Exe Estuary

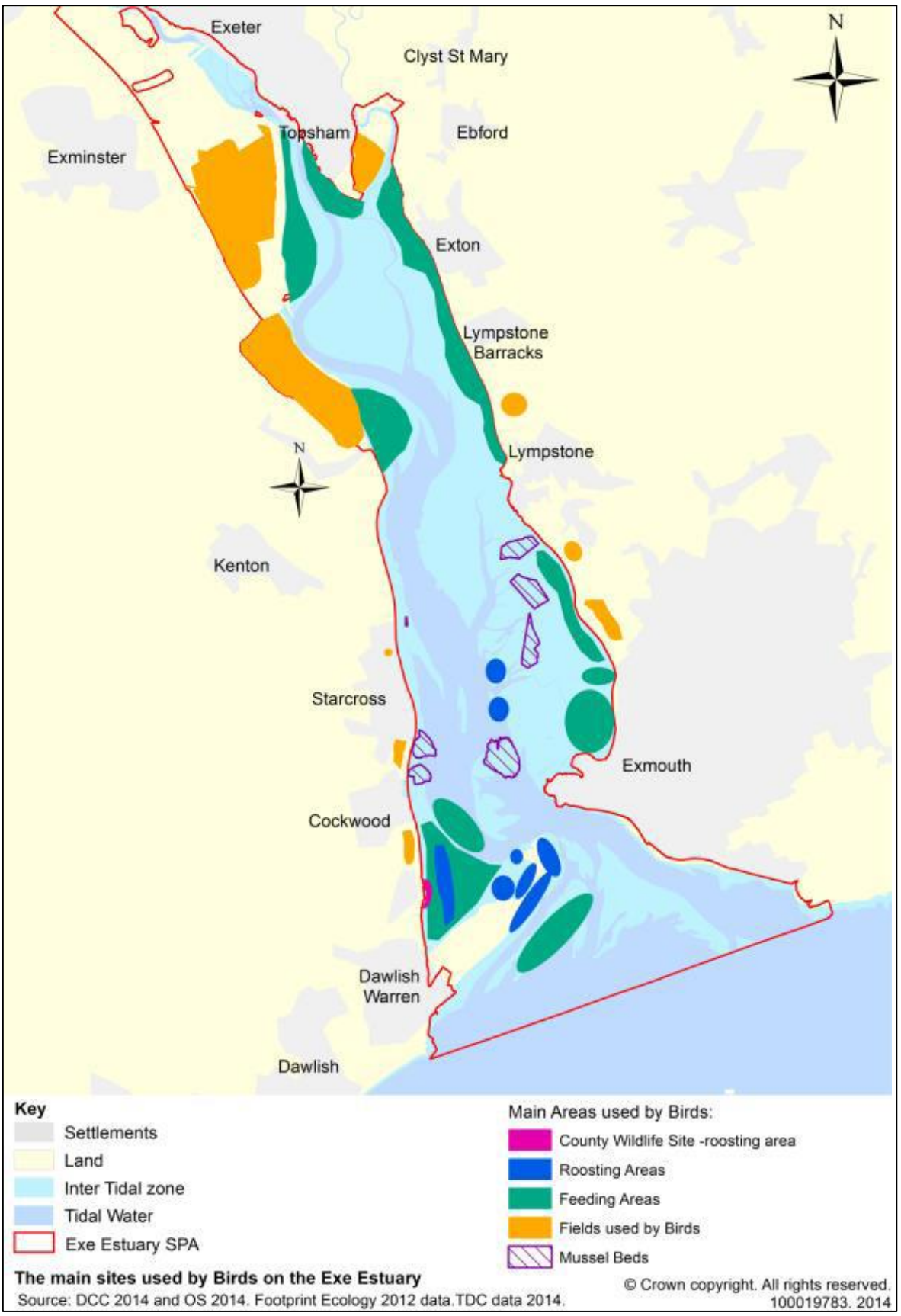


Figure 4 Main sites used by birds on the Exe Estuary (EEMP, 2014)

Annex 6: Summary of Results of the D&S IFCA Intertidal Handwork Survey

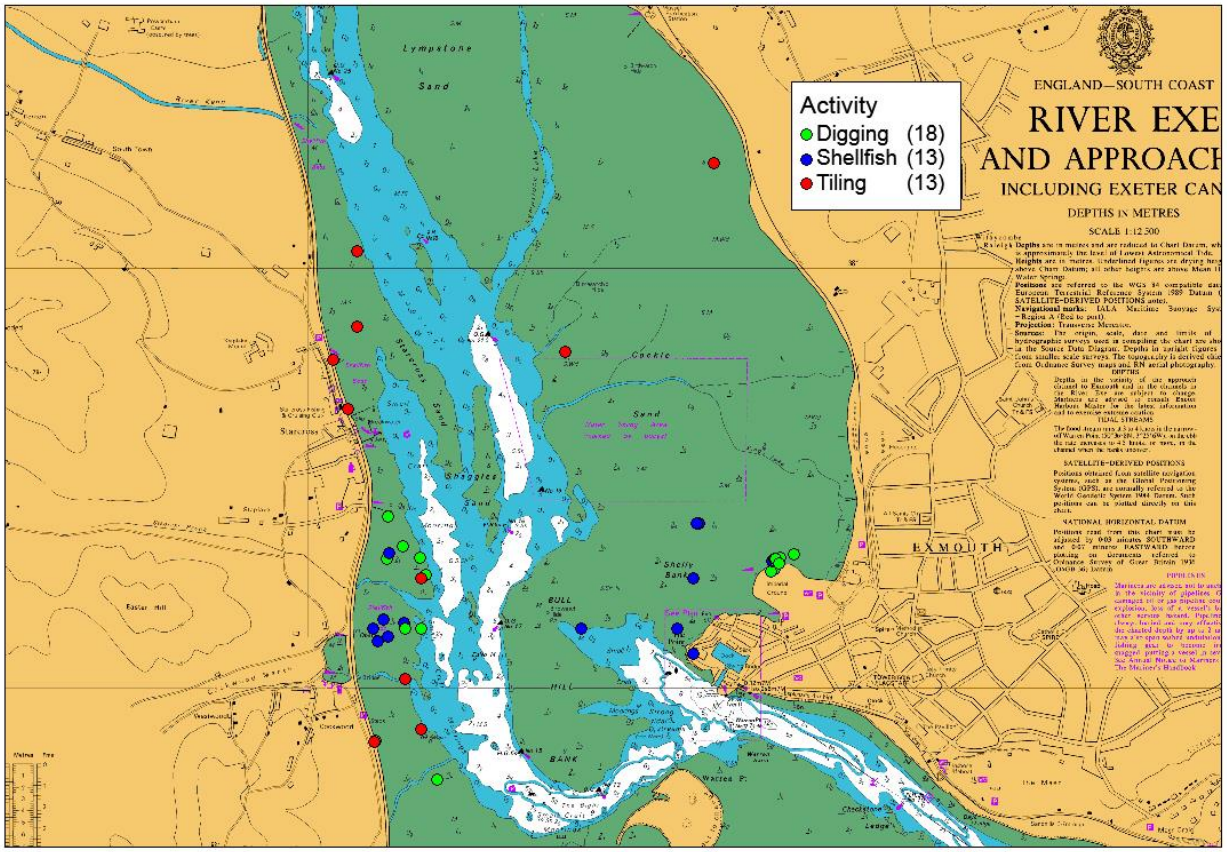


Figure 5 Total people observed (recreational & commercial) working in the intertidal area, shown by activity; bait digging, shellfish collection, and crab tiling.

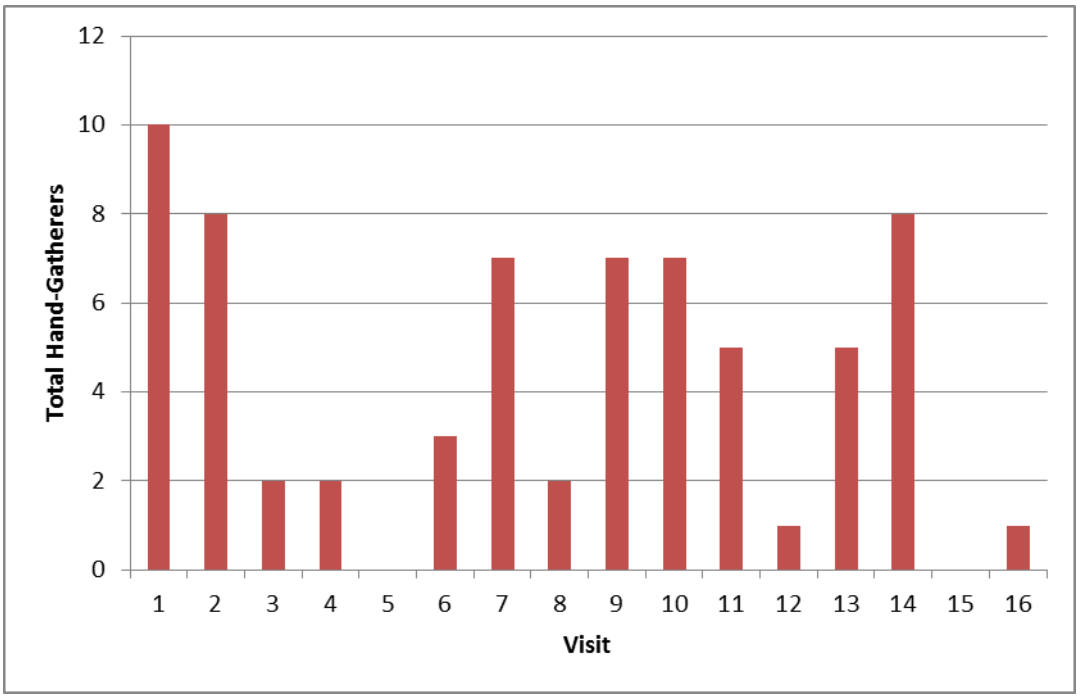
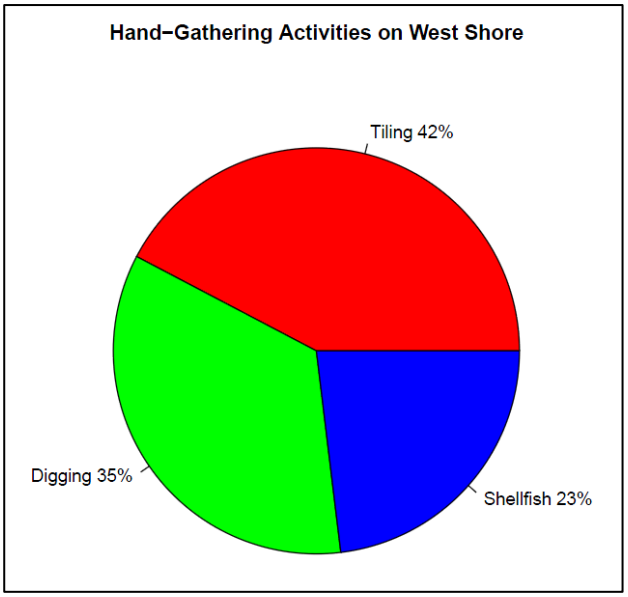


Figure 6 Total people observed (recreational & commercial) during each visit.

a)



b)

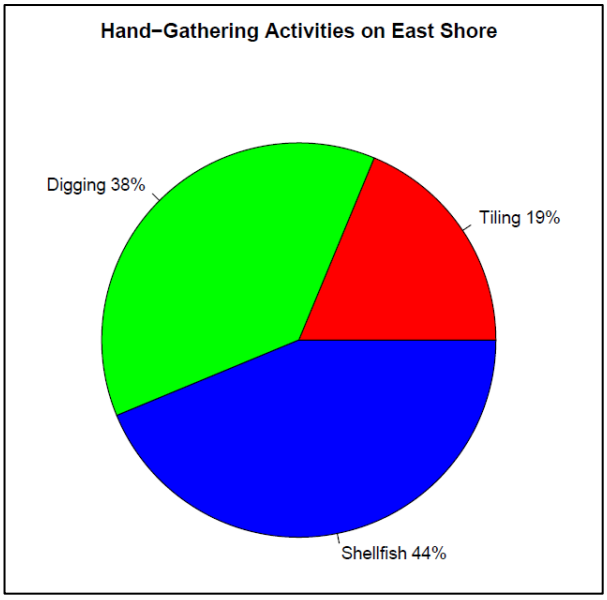


Figure 7 Proportions of each activity on the West Shore (a) and East Shore (b)

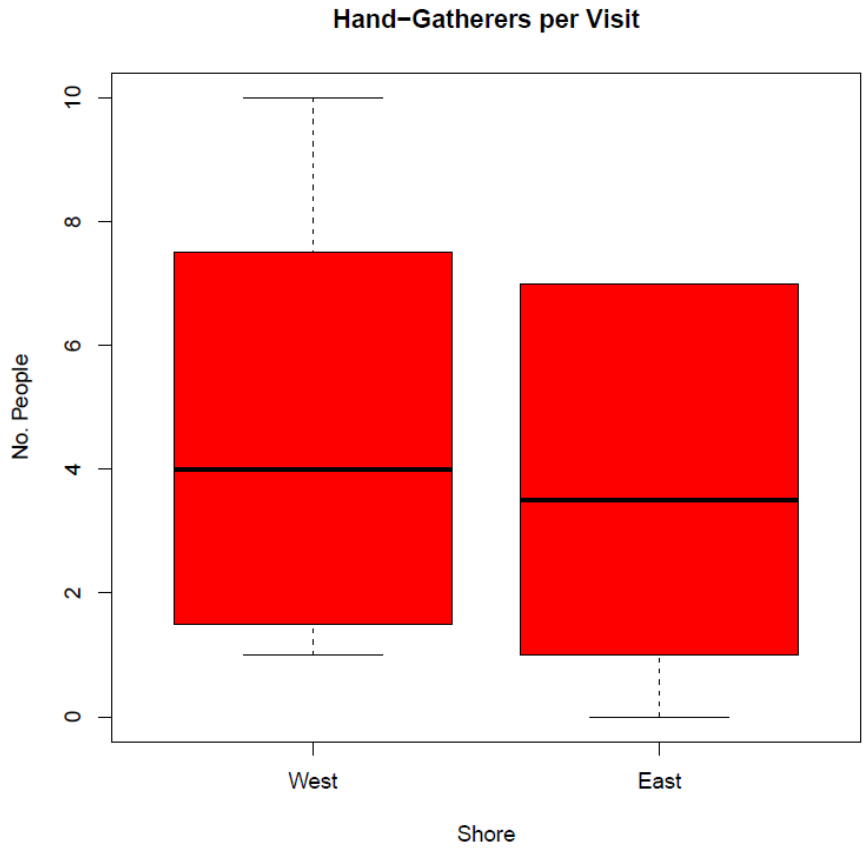


Figure 8 Numbers of people working on each shore per visit

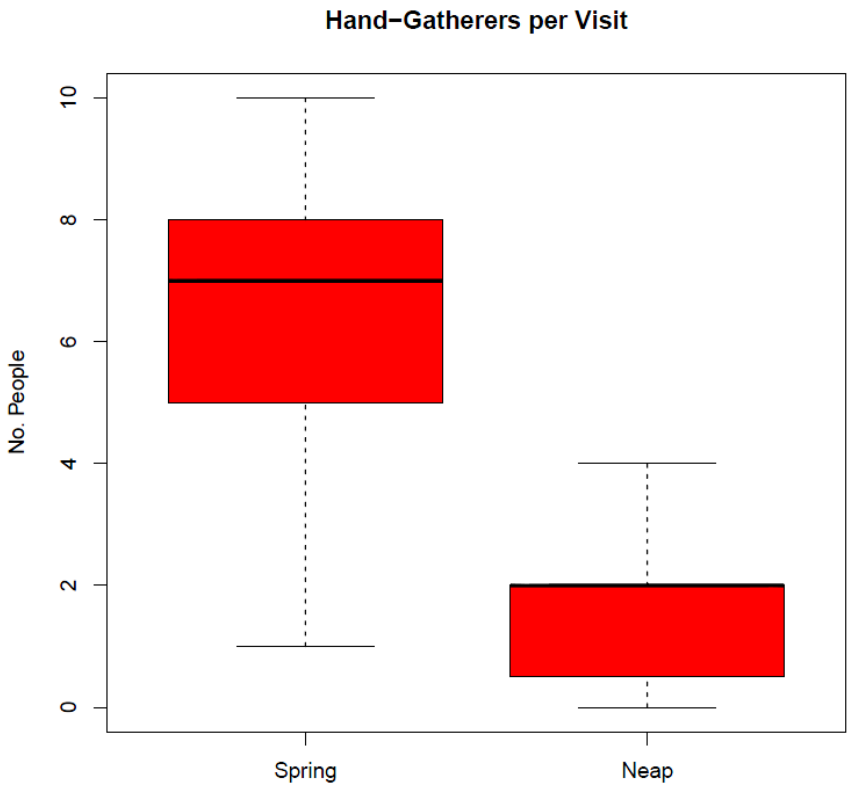


Figure 9 Numbers of people working during spring and neap tide visits

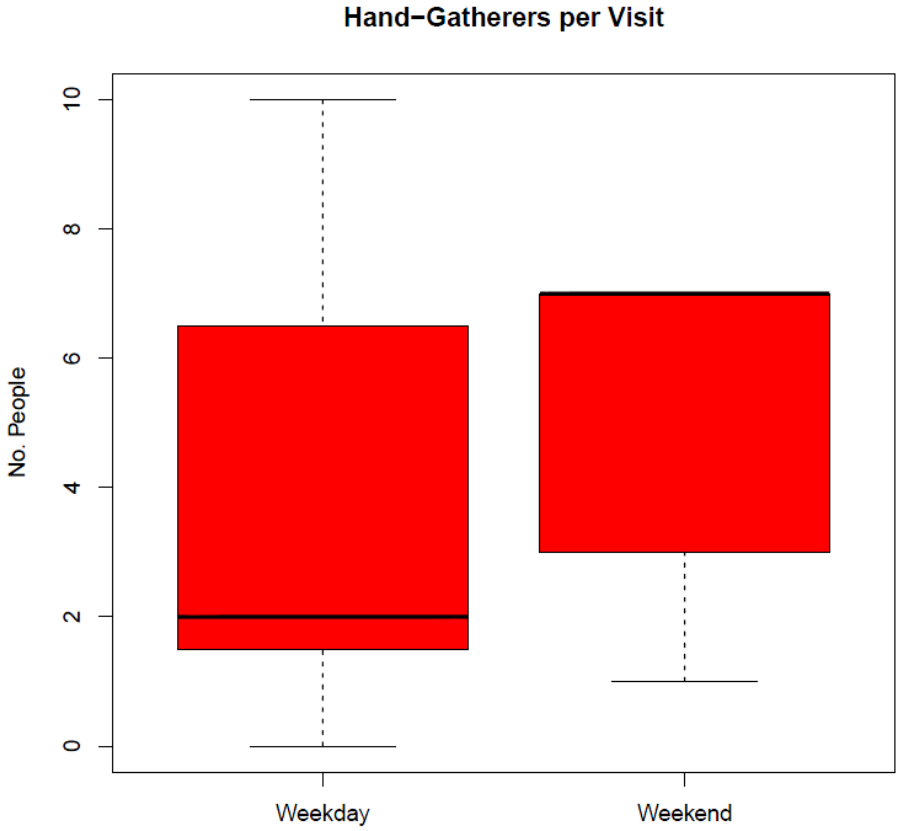


Figure 10 Numbers of people working during weekday and weekend visits

Annex 7: Pressures Audit Trail

Sensitivities based on Conservation Advice (Natural England, 2015)

Shore-based activities	Feature/Sub-feature & Screen Justification													
	Bird Feature	Saltmarsh	Freshwater & coastal grazing marsh	Intertidal stony reef	Intertidal rock	Intertidal biogenic reef	Circalittoral rock	Infralittoral rock	Subtidal biogenic reef	Subdtial coarse sediment	Subtidal mixed sediment	Subtidal sand	Subtidal seagrass	Subtidal stony reef
Above water noise	**Sensitivity: S** **IN -** Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure		**Sensitivity: N/A**											
Abrasion/disturbance of the substrate on the surface of the seabed		**Sensitivity: S** **IN -** Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure.	**Sensitivity: N/A**	**Sensitivity: S** **IN -** Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure.	**Sensitivity: S** **IN -** Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure.	**Sensitivity: S** **IN -** Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure.								
Collision BELOW water with static or moving objects not naturally found in the marine environment	**Sensitivity: S** **OUT -** This interaction was only sensitive for Slavonian grebe with shore-based activities, so is considered extremely low risk.		**Sensitivity: N/A**											

Deoxygenation		**Sensitivity: NS**	**Sensitivity: N/A**	**Sensitivity: IE** **OUT -** Insufficient activity levels within proximity to this habitat to pose risk.	**Sensitivity: IE** **OUT -** Insufficient activity levels within proximity to this habitat to pose risk.	**Sensitivity: NS**								
Genetic modification & translocation of indigenous species		**Sensitivity: S** **OUT** - Insufficient activity levels within proximity to this habitat to pose risk.	**Sensitivity: N/A**	**Sensitivity: IE** **OUT -** Insufficient activity levels within proximity to this habitat to pose risk.	**Sensitivity: IE** **OUT -** Insufficient activity levels within proximity to this habitat to pose risk.	**Sensitivity: IE** **OUT -** Insufficient activity levels within proximity to this habitat to pose risk.								
Hydrocarbon & PAH contamination.	**Sensitivity: IE** **OUT -** Insufficient activity levels to pose risk of large scale pollution event	**Sensitivity: NS**	**Sensitivity: N/A**	**Sensitivity: IE** **OUT -** Insufficient activity levels to pose risk of large scale pollution event	**Sensitivity: IE** **OUT -** Insufficient activity levels to pose risk of large scale pollution event	**Sensitivity: NS**								
Introduction of light	**Sensitivity: S** **OUT -** Insufficient activity levels within proximity to this habitat to pose risk.		**Sensitivity: N/A**											
Litter	**Sensitivity: IE** (S for Slavonian grebe) **OUT –** Low risk of litter from bait digging activities.	**Sensitivity: IE** **OUT** – Low risk of litter from bait digging activities.	**Sensitivity: N/A**	**Sensitivity: IE** **OUT** – Low risk of litter from bait digging activities.	**Sensitivity: IE** **OUT** – Low risk of litter from bait digging activities.	**Sensitivity: IE** **OUT** – Low risk of litter from bait digging activities.								
Penetration/ disturbance of the substrate below the surface of the seabed,		**Sensitivity: S** **IN** - Need to consider spatial scale/intensity of activity	**Sensitivity: N/A**	**Sensitivity: S** **IN** - Need to consider spatial scale/intensity of activity	**Sensitivity: S** **IN** - Need to consider spatial scale/intensity of activity to determine	**Sensitivity: S** **IN** - Need to consider spatial scale/intensity of activity to determine								

including abrasion		to determine likely magnitude of pressure.		to determine likely magnitude of pressure.	likely magnitude of pressure.	likely magnitude of pressure.								
Physical changes (to another seabed type)		**Sensitivity: S** **IN** - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure.	**Sensitivity: N/A**	**Sensitivity: S** **IN** - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure.	**Sensitivity: S** **IN** - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure.	**Sensitivity: S** **IN** - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure.								
Removal of non-target species	**Sensitivity: S** **IN –** Mortality of prey from trampling.		**Sensitivity: N/A**	**Sensitivity: S** **IN –** Mortality of prey from trampling.	**Sensitivity: S** **IN –** Mortality of prey from trampling.	**Sensitivity: S** **IN –** Mortality of prey from trampling.								
Removal of target species		**Sensitivity: S** **IN** - Removal of target species (crab) associated with fishing activity.	**Sensitivity: N/A**	**Sensitivity: S** **IN** - Removal of target species (crab) associated with fishing activity.	**Sensitivity: S** **IN** - Removal of target species (crab) associated with fishing activity.	**Sensitivity: S** **IN** - Removal of target species (crab) associated with fishing activity.								
Visual disturbance	**Sensitivity: S** **IN -** Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure		**Sensitivity: N/A**											