

**Principles of mitigation for the Wash and North Norfolk Coast SAC
Brown Shrimp Beam Trawl Fishery**



Eastern IFCA, May 2018

General mitigation principles:

1. Mitigation should remove the potential for the assessed activity to result in an adverse effect on site integrity.
2. Where the site can withstand the impacts of the activity without site integrity being adversely affected, the activity does not require mitigation.
3. If the habitats regulations assessment could not rule out an adverse effect on site integrity, regulators must take a precautionary approach in management of the activity until it can be shown that adverse effect on site integrity will not occur. This could mean the total exclusion of the activity within the site, or the activity being allowed with restrictions. The regulator must be confident that, if allowing the activity to continue, it will not result in an adverse effect on site integrity.
4. Whilst applying precaution, regulators must also take a pragmatic and enabling approach to activities within protected areas. Mitigation measures should be proportionate to the risks posed by activities, as identified through habitats regulations assessments.
5. Regulators must consider the advice of the statutory nature conservation body (Natural England) when identifying mitigation. When confident that mitigation will satisfy conservation needs, regulators should seek to minimise the socio-economic effects of mitigation if this is possible without putting conservation objectives at risk.
6. Mitigation should be reviewed periodically, to ensure it remains fit for purpose.

Mitigation for Brown Shrimp Beam Trawl Fishery in The Wash & North Norfolk Coast SAC

The following tables set out the features requiring protection (as identified in Eastern IFCA’s assessment of impacts of the shrimp fishery), mitigation principles and identified mechanism for implementation. In addition, measures are proposed for features not identified as being at risk from the shrimp fishery, but which would bring additional ecological benefits without disproportionately restricting fishing activities. Details of management measures (including a chart showing proposed closed area boundaries) are not included at this stage; these will be finalised following engagement with stakeholders and conservation advisers.

Spatial measures: habitat and environmental features		
The only practical method to ensure no adverse effect to the habitats most sensitive to abrasion and removal of non-target species is to exclude towed demersal fisheries from areas where those habitats occur. Such closed areas will not follow the exact boundaries of the vulnerable habitat but will be practical shapes which afford sufficient overall protection to the habitat.		
Habitat Regulations Assessment results: Feature for which adverse effect was identified or not ruled out	Mitigation principles	Mechanism
Subtidal mixed sediment, where it occurs: <ul style="list-style-type: none"> at depths deeper than 10m below chart datum, and as the more vulnerable type of this sub-feature, based on type of mixed sediments and associated species. 	<ul style="list-style-type: none"> Large areas of deeper subtidal mixed sediment habitat will be protected from all towed demersal fishing activity, via closures. Unlike “red risk” features, it is not necessary to close all this sub feature to shrimp fishing activity. Protective closures will be selected to include larger areas of this habitat, but will not include every occurrence within the site, because of the dispersed location of the feature and the dynamics of the site. Closures will not follow exact boundaries of vulnerable habitat. Boundaries will be set according to evidence of 	Marine Protected Areas Byelaw – requires amendment to existing byelaw

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<p>“Vulnerable” mixed sediment is defined as angular gravel with sand and mud, containing various epifauna, in water deeper than ten metres below chart datum. The other common type of mixed sediment within The Wash – mud or sandy mud with gravel rounded by constant movement, sometimes with a layer of broken shell on the surface – does not require such protection, as there is very little if any attached animal life.</p> <p>Mixed sediments of either type in waters shallower than 10 metres below chart datum do not require protection, as these areas are disturbed by natural forces such as waves so regularly that they are not rich in attached animals, and any animals found there are adapted to disturbance.</p>	<p>changes to non-vulnerable habitat such as the edge of sand banks, or the non-vulnerable type of mixed sediment.</p> <ul style="list-style-type: none"> • Closures will apply to those areas identified from Eastern IFCA surveys as being vulnerable mixed sediment, or a “mosaic” of different habitats where there is an appreciable amount of the vulnerable mixed sediment. • Closures will be selected to maximise ecological benefits, through targeted protection of multiple sensitive habitats as well as incidental protection of less sensitive habitats occurring in between sensitive habitats within closure areas. • There are obligatory closures to towed demersal gear for “Red Risk” features (biogenic reef and subtidal stony reef). In many but not all cases, closures for Red Risk features and those for mixed sediment will overlap. • Vulnerable mixed sediment is found in the deeper, central area of The Wash, extending in a band southwest-northeast. • Along the North Norfolk coast, the habitat is found to the east of Wells-next-the-Sea. The protected area will extend to the shoreline in this area, to provide protection to the sensitive areas and important nursery grounds of the estuaries. Following previous discussions with the shrimp fishing stakeholders, a fishing “corridor” will be included in waters between chart datum and ten metres below chart datum, at those times of the year when the area is not important as a fish nursery. 	
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<p>Mussel beds are intertidal biogenic reefs – important habitats because of the diversity and abundance of animal life associated with them. They can be damaged by contact with mobile fishing gear. Although shrimp trawling does not occur over intertidal mussel beds, formal closures demonstrate that these features are being protected in case of future activity.</p>	<ul style="list-style-type: none"> • Closures to towed demersal fishing gear are to be applied to intertidal mussel beds within the Wash and North Norfolk Coast SAC. • This will not preclude future dredge fisheries of mussels from intertidal beds, since they are subject to bespoke habitats regulations assessments and operated within strict conditions under the Wash Fishery Order and Eastern IFCA byelaws. • Please see chart at end of document for extent of intertidal mussel beds. 	<p>Marine Protected Areas byelaw – requires amendment to existing byelaw</p>
<p>Features not identified in HRA as requiring protection, but for which protection is recommended for additional ecological benefits</p>	<p>Mitigation principles</p>	<p>Mechanism</p>
<p>Soft mud habitats are potentially vulnerable to towed demersal fishing gear, which could dig into the seabed and displace buried animals. These soft mud habitats tend to be found in the low salinity, very sheltered sections of upper estuaries.</p> <p>Estuaries are very important nursery areas for many species of marine animals, including many commercially important species.</p>	<ul style="list-style-type: none"> • Upper estuary areas to be closed to towed demersal gear. • These areas to be identified through discussion with fishery and conservation stakeholders. 	<p>Marine Protected Areas Byelaw – requires amendment to existing byelaw</p>

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<p>Saltmarsh extent increases by “pioneering” plants becoming established in areas which are currently mudflats and sandflats, adjacent and close to existing saltmarsh areas. As these are isolated, quite fragile plants, they are vulnerable to damage from bottom towed gear.</p>	<ul style="list-style-type: none">• Closures to towed demersal gear to a strip of the mud / sandflats adjacent to existing salt marsh areas. This will be at the upper margin of the intertidal area, in what is either dry or very shallow water at almost all states of the tide.• These areas to be identified through discussion with fishery and conservation stakeholders	<p>Marine Protected Areas Byelaw – requires amendment to existing byelaw</p>
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Fishing Gear and Effort		
<p>Technical measures and effort controls can be applied to restrict the size and type of fishing gear used, and the level of effort applied in the parts of the site where the activity is allowed to continue, to limit impacts of the activity. It is important that the nature of the fishing activity is not permitted to change to the extent that impacts increase beyond those described in the Habitats Regulations Assessment of that activity.</p>		
Factor identified within the Habitats Regulation Assessment	Mitigation principles	Mechanism
<p>Shrimp beam trawl fishing gear is relatively lightweight. It does not penetrate or affect the seabed to the same extent that fish beam trawl gear does. The minimal penetration has been a major factor supporting the conclusion that shrimp fishing is not having an adverse effect on many subtidal and intertidal habitat features within The Wash and North Norfolk Coast SAC. Application of technical measures will ensure the scope of impacts remains as described in the HRA, preventing future changes increasing the risk to the site.</p>	<ul style="list-style-type: none"> • No tickler chains, or other gear component intended to penetrate or disturb the seabed, are to be used in the shrimp beam trawl fishery. • Beam shoes to be “flat”, with nothing to affect the overall straight profile of the underside of the shoe. Any “wear plate” or similar object is to be the same thickness along the whole of the shoe, so that this flat profile is not affected. 	<p>Shrimp Permitting byelaw conditions</p>
<p>The small mesh nets used in the shrimp fishery have the potential to catch large numbers of small fish as a</p>	<ul style="list-style-type: none"> • Veil nets are to be used in all shrimp nets. • Best practice for maximising survivability of bycatch is to be followed. Whilst this is not likely to be written in to a byelaw, it is 	<p>Shrimp Permitting</p>

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<p>bycatch. The assessment of the fishery has been carried out on the assumption that all practical efforts are made to minimise such bycatch – factors that go towards making this so must be assured for the future.</p>	<p>included in the shrimp fishery accreditation management plan, which all local shrimp fishers are required to sign up to in order to sell their catch to the local processors.</p>	<p>byelaw conditions; Shrimp fishery accreditation management plan</p>
<p>The assessment of the shrimp fishery was based on the levels of fishing effort as it has occurred over the past ten years, and with the same type and specification of gear as used over that period. For the findings of the assessment to remain valid, these conditions must be assured for the future.</p>	<p>Consideration will be given to setting controls on the following factors in the shrimp beam trawl fishery, so effort and impacts identified from the fishery over the last ten years do not increase:</p> <ul style="list-style-type: none"> • Fishing effort • Weight of fishing gear • Vessel power • Overall size of gear. <p>Limits are to be agreed through discussion with stakeholders and based on the activity evidence shown in the HRA.</p>	<p>Shrimp Permitting byelaw conditions</p>

Monitoring and Control

Monitoring is not proposed as mitigation of impacts, but to ensure the activity is conducted within the agreed limits. By setting out how the fishery will be monitored, reassurance is provided as far as possible that the mitigation measures will be adhered to by participants in the fishery. As well as monitoring activity, monitoring designated features is required to provide information to help understand the condition of features, and will be used with other relevant information to ascertain the effectiveness of mitigation measures.

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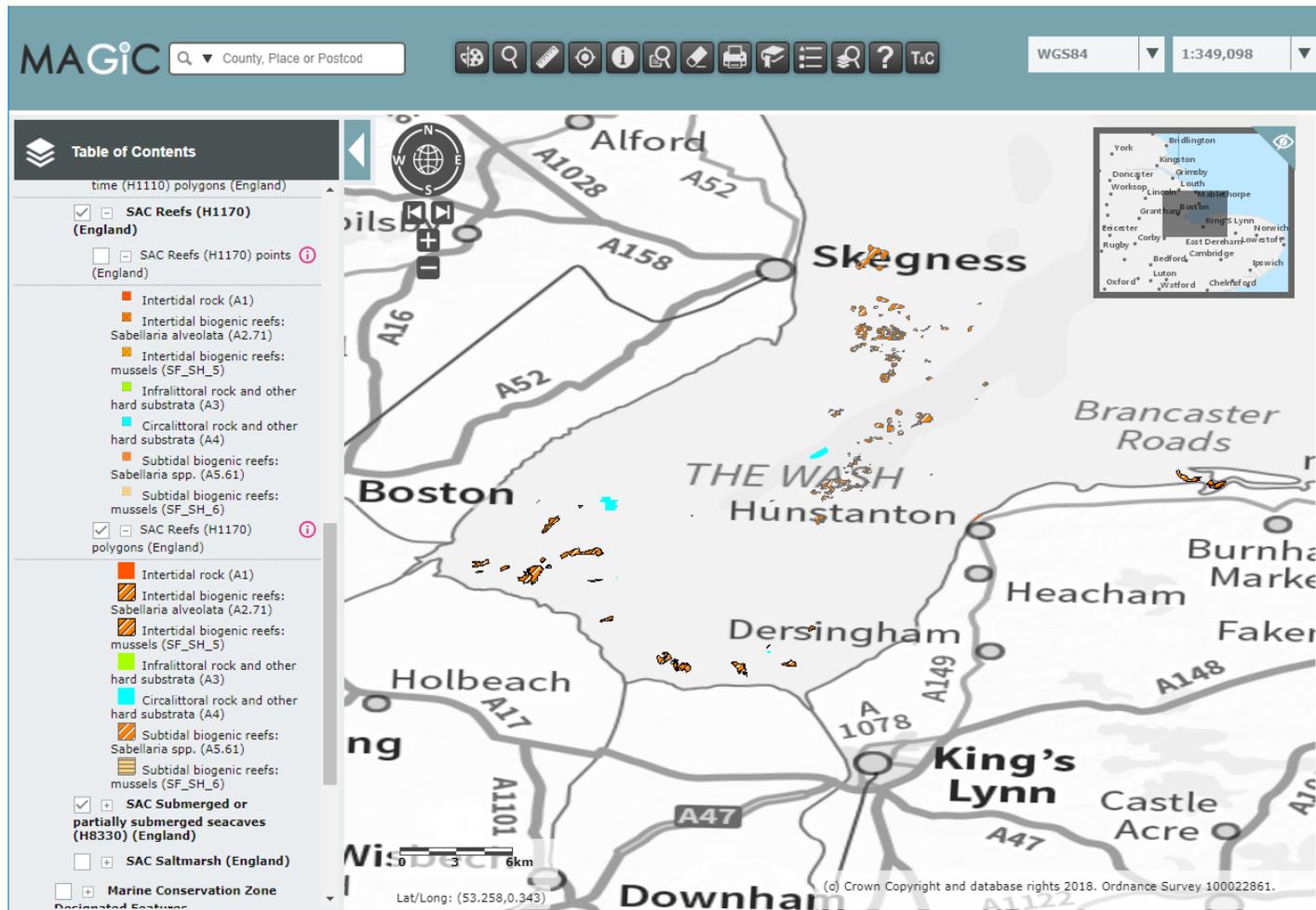
The following measures are proposed new monitoring measures to be applied in addition to the existing suite of measures (as described in the HRA). All monitoring and mitigation measures will be set out in Eastern IFCA’s Monitoring and Control Plan for this fishery.		
New monitoring measure	Points to consider	Mechanism
<p>iVMS (inshore vessel monitoring systems)</p>	<p>VMS is already required in commercial fishing vessels over 12m length. iVMS is an essential pre-requisite for full monitoring of the location of fishing activities within inshore areas. It will be required by all shrimp fishery permit holders [fishing within the Wash & North Norfolk Coast SAC]. The use of iVMS will:</p> <ul style="list-style-type: none"> • Reduce the need for large buffers around closures to accommodate the uncertainty of fishing location; • Reduce the need for effort to be capped at a lower level to accommodate the known under-reporting of fishing activity; • Allow the locations of active vessels to be closely and accurately monitored when required, particularly when near restricted areas. • Improve understanding of fishing activity in the Wash and North Norfolk Coast which will feed into the monitoring of protected features and their vulnerability to fishing activities. <p>Ping rate (the frequency with which the system records vessel location data):</p> <ul style="list-style-type: none"> • The maximum interval between pings is likely be no more than ten minutes. The shorter the intervals between pings the more accurate the information provided. 	<p>Shrimp permitting byelaw – permit condition</p> <p>N.B. A national Statutory Instrument is currently in development – will require all commercial fishing vessels (regardless of size) to use either VMS or iVMS.</p>

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<p>Biota sampling</p>	<ul style="list-style-type: none"> • Annual benthic surveys allow the collection of grab samples by the Environment Agency (EA) from areas within the Wash and along the North Norfolk Coast to monitor species abundance and diversity, sediment type and IQI (Infaunal Quality Index). However, samples are not always collected from every station every year, resulting in large gaps in the data set. • EIFCA plan to use and build on this sampling regime to ensure regular biota samples are collected across areas of low, medium and high shrimp fishing pressure (identified using shrimp returns and iVMS data). EA results will be used where locations match. EIFCA will collect further samples where additional locations are required, using standardised sampling and analysis. Sampling can be conducted in conjunction with EIFCA “business as usual” habitat surveys. It is proposed that the cost of processing the samples would be met via the shrimp permit scheme. Any sampling conducted by EIFCA would also include the biomass of taxa which EA data doesn’t already include. 	<p>EA benthic surveys</p> <p>Eastern IFCA habitat mapping surveys</p>
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Biogenic reef has been classified as ‘Red Risk’ feature requiring protection from towed demersal fishing gear.



Natural England have made feature extents publicly available via

<http://magic.defra.gov.uk>.

The orange shaded areas in the chart shows the latest extent for Biogenic reef which includes *Sabellaria* (core reef) and mussel beds.

Eastern IFCA brought in closures in 2014 which included restricted areas in the Wash and North Norfolk Coast SAC, from bottom towed gear, to protect *Sabellaria* (core reef). As the core reef extent has now changed, additional management will be introduced to protect this additional feature extent from bottom towed gear.