

Date: 06 August 2013
Our ref: Solway Firth EMS Advice
Your ref: Solway Firth EMS Byelaw



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Dear Abigail and NWIFCA,

Solway Firth EMS Review of Commercial Fisheries – Red Features

This letter provides Natural England's formal advice to North Western Inshore Fisheries and Conservation Authority (NWIFCA) on the measures needed to protect reef features within the Solway Firth European Marine Site (EMS) from the use of bottom towed fishing gear.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

As you are aware, in order to ensure that European Marine Sites (EMS) receive the requisite level of protection, and to ensure compliance with Article 6 of the EU Habitats Directive, Defra have revised the approach to the management of all existing and potential commercial fisheries within EMS. The revised approach is being applied on a risk-prioritised, phased basis. A generic matrix provides regulators with an indicator as to whether:

- the activity requires priority management measures to be introduced to protect that feature without further site level assessment on the impacts of that activity on that feature (a red risk);
- a further assessment may be necessary (an amber or green risk)

For red risk activities, scientific evidence suggests that the conservation objectives for a feature (or sub-feature) will not be achieved because of its sensitivity to a type of fishing, irrespective of feature condition, level of pressure, or background environmental conditions in all EMSs where that feature occurs. Appropriate management measures are expected to be introduced by the end of 2013 to protect these features (or sub-features) from these red risk activities.

The generic matrix¹ has identified that bottom towed fishing gear used over a reef feature (or sub-feature) should be considered a 'red risk'.

¹ Risk Matrix can be view and downloaded from here

http://www.marinemanagement.org.uk/protecting/conservation/ems_fisheries.htm . High Risk inshore European marine sites ad features and sub features pdf can also be downloaded from this site which identifies all Red sites with England

In response to your request for advice on the application of a fixed exclusion box around the reef feature, which would prohibit the use of any bottom towed gear, Natural England has reviewed the current available evidence base, undertaken site visits to assess the status of intertidal features, and sought guidance from internal specialists to maintain consistency and standards in our advice. We are now able to provide you with the following advice for you and your authority to consider as the accountable body for the implementation of fisheries management measures within the Solway EMS English sector.

Our advice is provided separately for 3 spatial sections where reef is known to occur within the site; this is a reflection of our current understanding of the best available evidence base and our consideration of an appropriate application of precaution. The boundaries of these 3 areas are shown at Annex 1 in Figures 1-4 of this document for reference.

Features under consideration within Solway Firth EMS –

Annex I Feature: Reefs, comprised of the following sub-features:

- Intertidal boulder and cobble skear (scar); *Sabellaria alveolata* reefs (characteristic attribute)
- Subtidal boulder and cobble skear scar communities, *Sabellaria alveolata* reefs

Identified red risk gear types

- **Towed (demersal)** (all types).
- **Dredges (towed) (Scallops; Mussels, clams, oysters)**

Area 1 – Sabellaria alveolata reef (Annex 1, Figure 1)

Best available evidence on feature extent: The IECS 2002 report and surveys conducted by NWIFCA 26/04/2013 and Natural England 28/05/2013.

This area referred to as Area 1 (Annex 1) is seen to consistently support *Sabellaria alveolata* reef (Red feature in the generic Matrix; *Sabellaria* spp. reefs) and its associated infauna and intertidal cobble and boulder scar (Amber feature in the generic Matrix; Intertidal boulder and cobble reef) of a variable extent. We understand that local fishermen also agree that this area is unsuitable for fishing activity due to the rocky nature of the substrate. As per the 'red evidence audit'², *Sabellaria* spp. reef is highly vulnerable to damage by interaction with towed bottom gear. In order to avoid damaging activities that could cause significant deterioration of the reef qualifying feature, in light of the conservation objectives³ (to maintain the extent of this biotope), and to meet the requirements of the revised approach, we advise that the gear types listed above should be excluded from this mapped area of *Sabellaria alveolata* reef (Annex 1 Fig 1.) and an appropriate buffer zone around the feature.

² Available here

http://www.marinemanagement.org.uk/protecting/conservation/documents/ems_fisheries/sabellaria.pdf

³ Conservation objectives have been identified from the interim revised Reg 33 package available for download from Natural England website

<http://publications.naturalengland.org.uk/publication/3189597?category=3212324>

We therefore advise that the current exclusion boundary (Annex 2) detailed within the proposed NWIFCA byelaw would provide adequate protection for the area of *Sabellaria alveolata* reef that has been mapped within the SAC boundary.

In addition, we welcome the NWIFCA's suggestion to include within the exclusion box the mapped area of *Sabellaria alveolata* reef in the area known as Dudmill Scar. Whilst this area falls outside of the SAC, the habitat would still be subject to damage by demersal fishing gear.

Area 2 – Subtidal boulder and cobble skear communities (Annex 1, Figure 2.)

Best available evidence base - IECS (2006b), MCA acoustic data (2010), ABP Acoustic Data (2013)

We have reviewed the available evidence base on the presence and extent of subtidal cobble and boulder scar ground within the Solway Firth EMS. The Cell Eleven Tidal and Sediment Study (CETaSS)⁴ has also been reviewed with regards to the background environmental conditions in the site, namely sediment movement and transport within the estuary.

The most recent data looking to identify scar ground boundaries within Area 2 was documented in the IECS 2006b study. This study sought to ground truth a survey that took place in 2002 which was found to be inconclusive in terms of defining the presence and nature of subtidal boulder and cobble scar ground within the southern region of the Solway Firth EMS. The IECS (2006b) report identifies areas of subtidal cobble and boulder scar ground through the use of drop down video and camera stills, including some exposed cobble and boulder and some associated fauna. However, due to the generally high level of turbidity, there were few photos that could be used to determine feature extent or condition, or to provide a full assessment of the associated fauna.

Sabellaria alveolata was observed in the IECS (2006b) study, but it was only seen to be present in small patches and was not considered to be reef-forming. Therefore, we currently have no evidence to suggest that the 'Red' feature *Sabellaria* spp. reef is present in this area of the EMS.

When the feature maps from the IECS (2006b) report are overlaid with the scar boundaries identified from previous surveys there is notable variability in the exposure (i.e. mapped extent and distribution) of the cobble and boulder habitat.

Although the MCA acoustic data (bathymetric and backscatter) that was obtained in 2010 have identified possible areas of reef like structures and strong reflection signals (backscatter) which is associated with hard substrate, we are unable to conclusively state that this is boulder and cobble scar ground. The data was not ground truthed at the time of its collection and false readings or artefacts of the data cannot be ruled out. These data therefore does not help us determine the current extent of any exposed scar ground.

This variability in feature exposure is supported by our understanding that the site is highly dynamic and subject to natural bathymetric changes particularly within the Silloth channel. The CETaSS report

⁴ CETaSS Report available to download here
<http://www.mycoastline.org/documents/CETaSS/AppAstudies.pdf>

shows Area 2 and surrounding areas within the Solway Firth to have yearly sediment transport rates of above 1000m³/m/year⁵.

We also acknowledge that the NWIFCA have received reports from local fishermen of the presence of sediment, as opposed to rocky substrate, in this area which enables them to fish for brown shrimp (Annex 3) during these periods of coverage (e.g. unlike area 1).

Due to the naturally dynamic nature of the area it is unlikely that species associated with subtidal cobble and boulder reefs would be abundant. Further, those species/ communities that are able to persist despite the naturally highly dynamic levels of sand abrasion and movement within this area are likely to have lower relative sensitivity to fishing activity, in comparison to those communities that are typically associated with boulder and cobble reef habitats.

In conclusion, we advise that the subtidal boulder and cobble skewer subfeature in Area 2 (Annex 1) of the Solway Firth EMS, and its associated communities, are not consistent with the Red 'Subtidal boulder and cobble reef' subfeature categorisation within the generic Matrix. This is due to the highly dynamic nature of the exposure of the habitat due to the high rates of sediment accretion, which suggests that the associated communities will be adapted to these high levels of natural disturbance. We therefore advise that this site-specific feature be categorised as 'Amber', thereby necessitating a site-level assessment of the potential impacts of fishing activities on the feature and the integrity of the site..

Area 3 –Intertidal boulder and cobble skewer; Sabellaria alveolata (Annex 1 Figure 3)

Best available evidence and data base- IECS (2002), IECS (2005), IECS (2006a), IECS (2011) Natural England (23/07/2013)

Following our review of the best available evidence outlined above, we have concluded that there is no evidence to support the presence of reef forming *Sabellaria alveolata* (and therefore the Red feature *Sabellaria* spp. reef) within the area identified as Area 3. We acknowledge that the species has been recorded to be present at this area, but we have found no substantive evidence in any of the reports, nor through our own surveys, that the *Sabellaria alveolata* found was or should be considered to be of a reef like structure or formation.

Whilst the reasons for this are uncertain, the most likely explanation appears to be the naturally high levels of sediment accumulation in this area. For example, the area known as Catherinehole Scar, in addition to other areas previous mapped as scar ground, remain covered in a significant layer of sand. Further, whilst there are some areas of persisting mussel beds (Amber feature in the Matrix – mussel beds on mixed and sandy sediments/on boulder and cobble skewers), they tend to be patchy in nature and accredited by sand, and the areas of exposed intertidal cobble and boulder skewer (Amber feature in the matrix – Intertidal boulder and cobble reef) are also patchy in distribution.

Given the absence of historical or contemporary evidence for the presence of reef-forming *Sabellaria* spp. in this area of the Solway Firth EMS we advise that the features associated with this area should be categorised as 'Amber' and should therefore be subject to a site-level assessment of the potential impacts of fishing activities.

⁵ Page 128 of CETaSS report <http://www.mycoastline.org/documents/CETaSS/AppAstudies.pdf>

If you wish to discuss this advice or clarify anything that has been provided within this document please feel free to contact myself.

Yours sincerely



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References

IECS 2002 – Mapping, Condition and Conservation Assessment of Honeycomb Worm Sabellaria alveolata Reefs on the Eastern Irish Sea Coast – report to English Nature. Institute of Estuarine and Coastal Studies, University of Hull. Authors JH Allen, I Billings, N. Cutts and M. Elliot. Report Z122-F-2002

IECS 2005 – Biological Survey of the Intertidal Sediments of the Solway Firth Estuary (FST20-18-017) Coast – report to English Nature. Institute of Estuarine and Coastal Studies, University of Hull. K.L. Hemmingway, N.D.Cutts, S. Thomson, D. Burdon and J.H. Allen. Report ZBB643-D-2005

IECS 2006a – Biological Survey of the Intertidal Sediments of the Solway Firth (FST20-18-017). Report to English Nature. Institute of Estuarine and Coastal Studies, University of Hull. Author: K.L. Hemmingway, N.D. Cutts, S. Thomson, J.H. Allen and D. Burdon. Report ZBB643-F-2006

IECS 2006b – Faunal survey of sub-tidal scar ground along the Cumbrian coast of the Solway Estuary European Marine Site. Contract No: JB139. Report to English Nature. Institute of Estuarine and Coastal Studies, University of Hull. Author: J.H. Allen. Report ZBB642-D-2006

IECS 2011 – Biological Survey of the Intertidal Sediments of the South Shore of the Solway Firth, 2011. Report to Natural England. . Institute of Estuarine and Coastal Studies, University of Hull. Authors: N.D. Cutts, K.L. Hemmingway and S. Thomson. Report YBB170-F-2011

SeaMap 1999 - Solway Firth – Marine SAC Mapping subtidal sediments and Scar Report January 15th 1999 for Scottish Natural Heritage. SeaMap Research Group

Annex 1

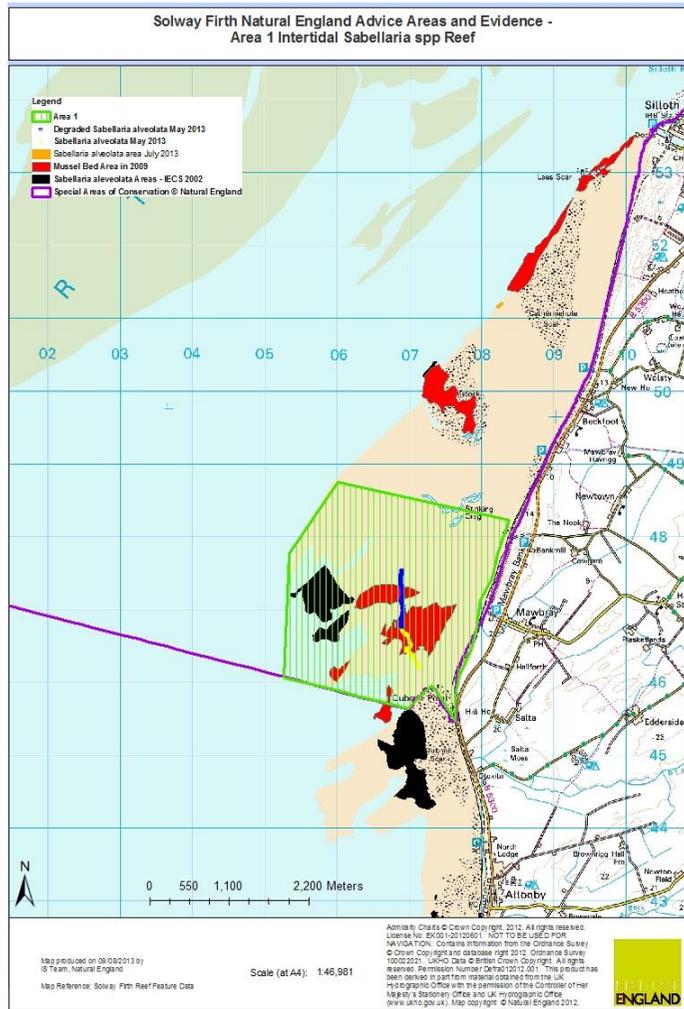


Figure 1 Area 1 Advice Map

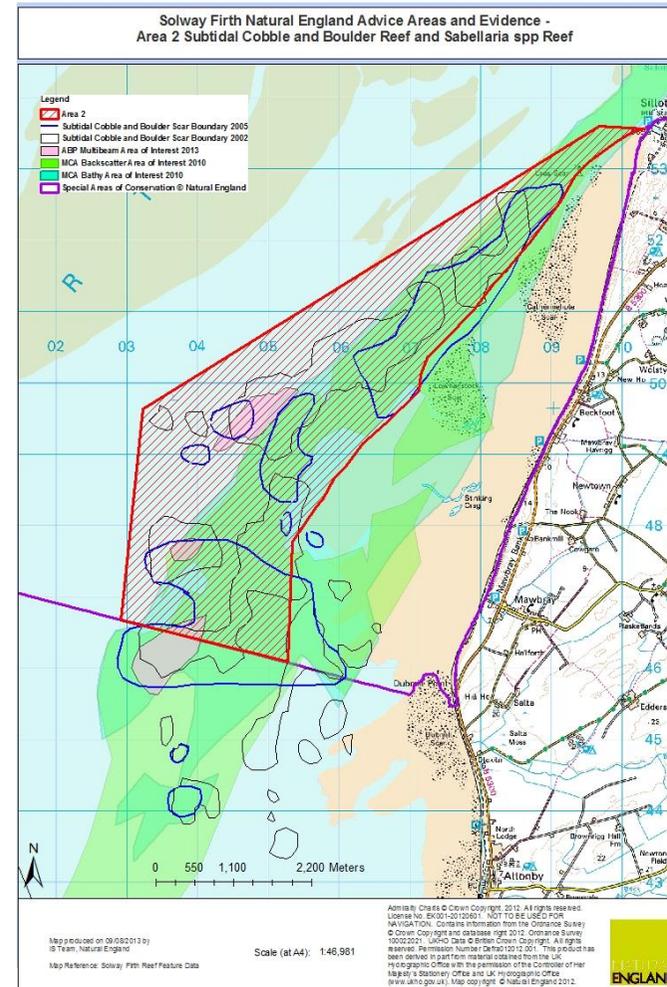


Figure 2 Area 2 Advice Map

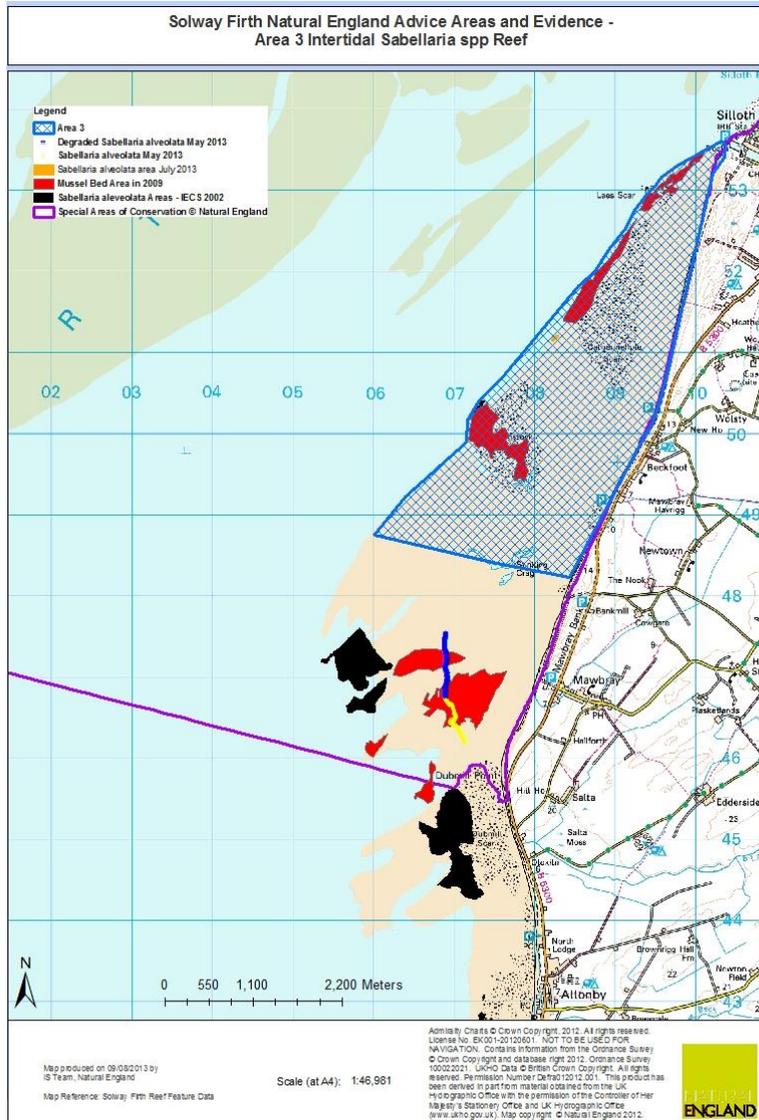


Figure 3 Area 3 Advice Map

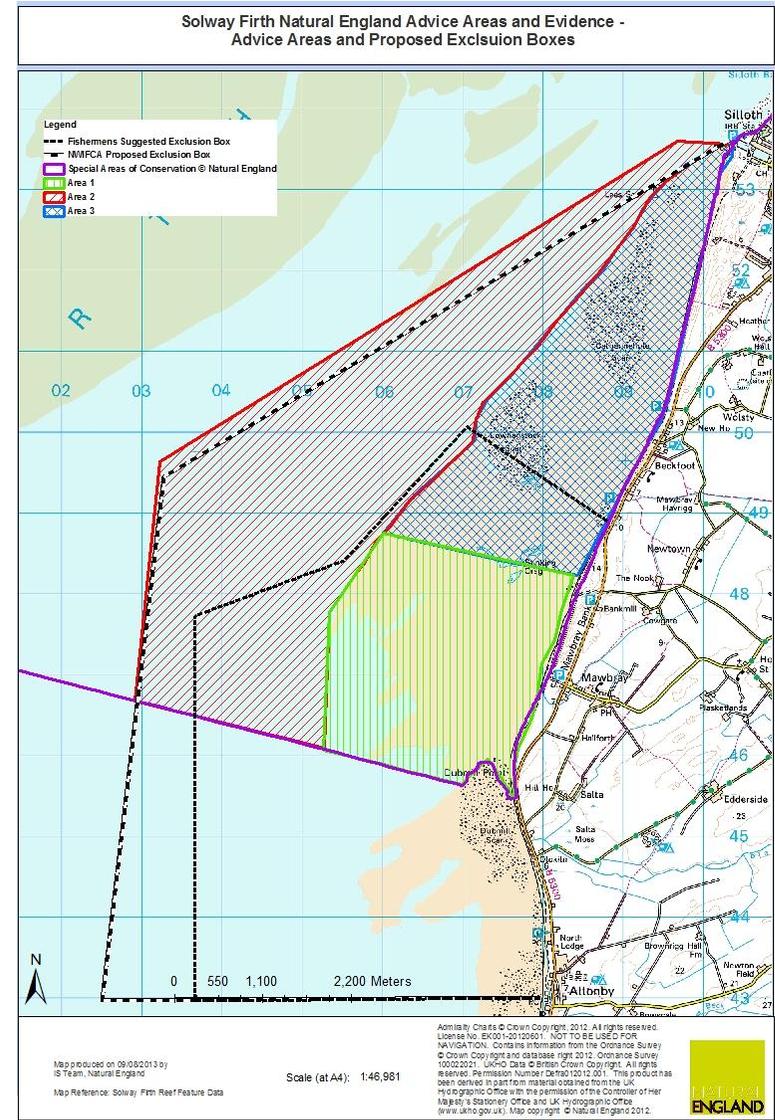


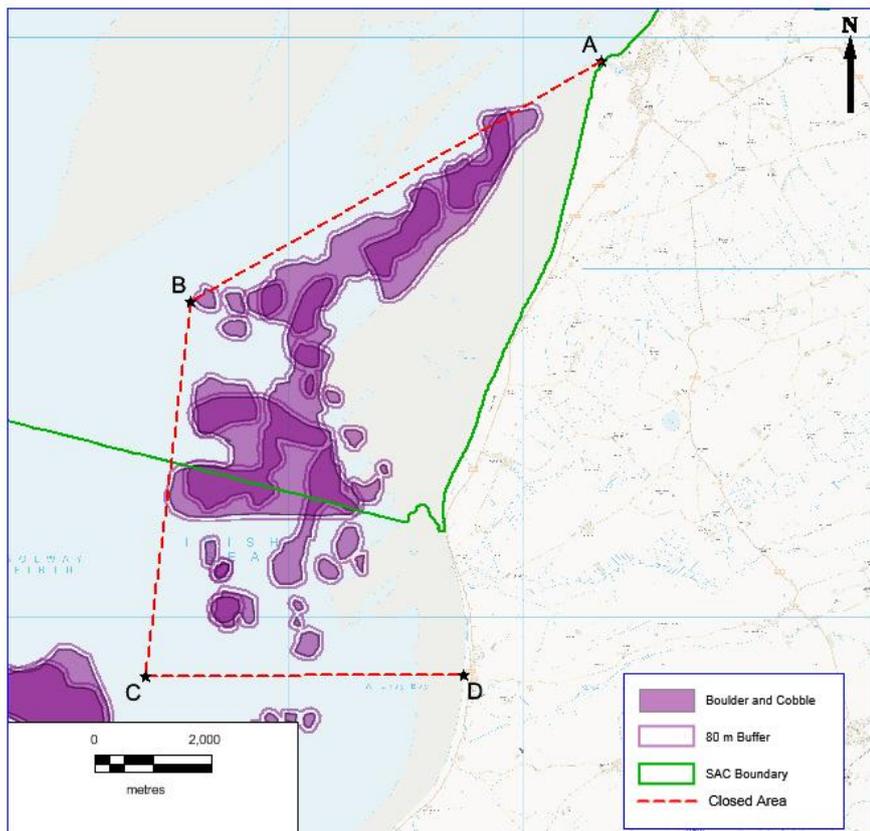
Figure 4 Solway Firth Advice Areas and Proposed Draft Exclusion Zones Map

Annex 2

NWIFCA Byelaw Map for Solway Firth

North Western Inshore Fisheries and Conservation Authority
Byelaw 6 Protection for European Marine Site Features

I. The Solway Firth EMS reef closed area



Contains Ordnance Survey data © Crown Copyright and database rights 2013

Coordinates	
A	54° 52'.15 3° 23'.92
B	54° 49'.83 3° 30'.42
C	54° 46'.33 3° 31'.00
D	54° 46'.41 3° 25'.92

This map is for illustrative purposes only
NOT TO BE USED FOR NAVIGATION
Created June 2013 NWIFCA

Figure 5 Solway Firth Byelaw Exclusion zone - June 2013

Annex 3

Fishing Map provided by local fishermen to NWIFCA

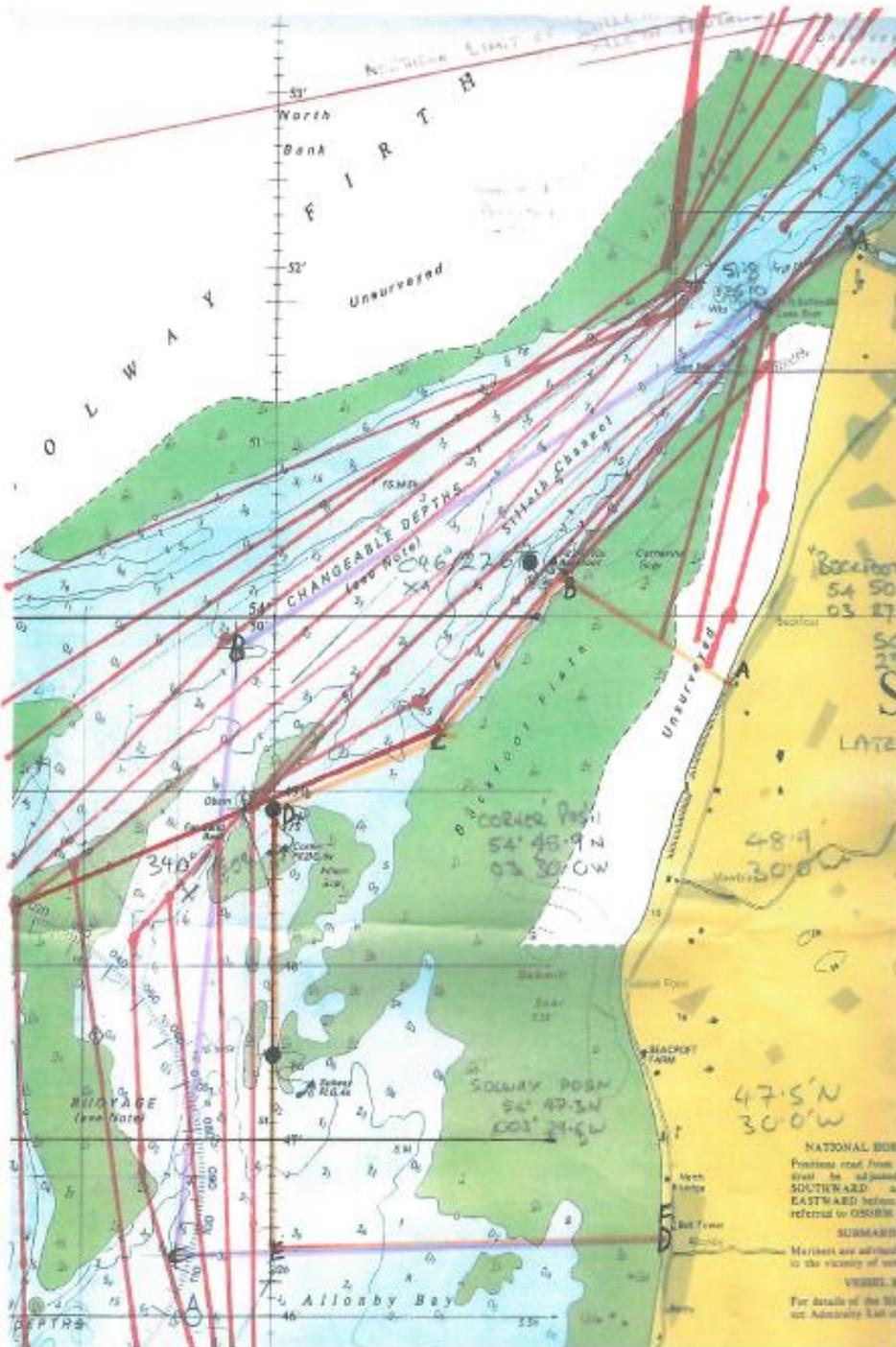


Figure 6 Fishing tracks provided by local fishermen within the Solway Firth