

# **Cleaver Bank proposal fishing industry**

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*This proposal is a production of a large group of Cleaver Bank fishermen, directors of the Dutch fisheries organisations (Nederlandse Vissersbond and VisNed), facilitated by the Dutch Fish Product Board, and consulting marine ecologist dr. G. van Moorsel of Ecosub. In establishing the proposal, fishermen independently constructed several maps representing their knowledge on the location of stony locations and provided information, all of which is combined into one habitat map (see attachment 3) that is used as a basis for this proposal. Some examples of separate maps indicating the position of stony areas are included as attachments (combined in attachments 6 and 7) to give an idea of the basic information used in constructing the habitat map in attachment 3. For more background information, please contact the Dutch Fish Product Board.*

## **Introduction**

In the Cleaver Bank session at FIMPAS 3 (25 January 2011) possible fishery measures for the Natura-2000 area Cleaver Bank were discussed. This included the total area notified to the European Community on 22 December, 2008 as Special Area of Conservation (SAC) by the Ministry of Agriculture, Nature and Food Quality. The area is not yet designated. The proposed management measures for active bottom trawl fisheries consisted of banning these techniques from the entire area with the exception of the Botney Cut. The Dutch fishing industry, however, put forward her own proposal of selective closures for bottom trawl fisheries of smaller areas of the Cleaver Bank, opposed to a full closure. For seining and gillnetting the proposal is along the lines of the proposed management measures from FIMPAS; we propose to maintain the effort at 2006-2010 level, to include the most recent data, and to reflect current fishing activities.

In this paper, the industry will present her proposal for closures and its rationale.

As can be seen in the booklet 'Maps of the fishing effort in the Dutch part of the North Sea 2006-2008 (Analysis within the framework of FIMPAS by IMARES, 2011)', the Cleaver Bank is mainly of interest to the Dutch and the UK fleet. The area is less frequently visited by other fleets (there is a little Danish, Belgian and French activity in certain periods).

Since this is a proposal by the Dutch industry, it cannot be seen as a proposal representing the whole of the fishing industry. However, since most of the UK vessels fishing in the area, are Dutch flag vessels, it is a fairly safe assumption that this proposal covers the majority of the fishing industry in the area.

## **Economic background**

The total value of the Cleaver Bank area produced by the Dutch sector was almost 2 million euro in 2009 (Bartelings 2011, attachment 5). One third of this value (€ 672.000) originated from the Botney Cut, opposed to 1,26 million originating from the rest of the Cleaver Bank. Over the last four years, the value of the Botney Cut was on average slightly over 50% of the total value of the Cleaver Bank. However, in 2009 this percentage lowered to 35%, making the rest of Cleaver Bank relatively more profitable. A substantial part of the catch value that is produced on the Cleaver Bank is produced by beam trawlers and otter trawlers: 91% for the Botney cut (89% otter and 2% beam) and 69% for the rest of the Cleaver bank (6% otter and 63% beam), data from 2009. Closing the entire area of the Cleaver Bank (with the exception of the Botney Cut) for otter and beam trawling, as was proposed in FIMPAS 3, would thus have severe economic effects for Cleaver Bank fishermen.

Hereafter, the proposed selective closures for the Cleaver Bank will be discussed. In the description of the proposed closures, a distinction is made between the Botney Cut and the rest of the Cleaver Bank (areas with habitat H1170: Open-sea reefs)

## **Botney Cut**

The Botney Cut is a muddy channel cutting through the Cleaver Bank (Fig. 1). It covers an area of 125 km<sup>2</sup>. Since it doesn't contain habitat H1170, this area will remain open for fishing and best available techniques should be used, especially in relation to the effect on turbidity. At present, fishing is mainly on *Nephrops* with otter trawl. No 'reduced impact techniques' are available yet, but the industry will commit itself to look into alternative fishing methods. The industry will contact and follow the progress of the Dutch 'Knowledge Circles': an initiative of fishermen working groups sharing knowledge on different subjects such as developing more sustainable fishing techniques. These knowledge circles are guided by the LEI and/or IMARES (for more information on these working groups, see: [www.kenniskringvisserij.wur.nl](http://www.kenniskringvisserij.wur.nl))

The industry will try to apply new developments in fishing techniques to the Botney Cut. In addition, the fishermen show willingness to draw together their own knowledge (as was also done for this proposal), collect new data and contact relevant institutions to further look into the application of alternative techniques in this specific area.

How to address this commitment in the setting of the Common Fishery Policy may pose a challenge (how to enforce 'best available techniques' on foreign fishermen) and will essentially be a governmental task. However, the industry considers this a shared responsibility and is willing to contact and co-operate with foreign colleagues that perform their fishery in the same area.

## **Rest of the Cleaver Bank**

### **Habitat description**

The areas north-east and south-west of the Botney Cut consist of a mosaic of sediment types (Fig. 1). A substantial part is sandy (gravel content <30%) and the area containing gravel (>30%) covers only a limited part of the area. Within the latter area sediment types like coarse sand, gravel, boulder clay, shell-dominated sea bed and areas with stones alternate. Sediments with a gravel content of >80% are hardly present: the map of the RGD and BGS (*RijksGeologische Dienst & British Geological Survey*) indicates that only in a limited area on the northeastern border of the Botney Cut such an area has been found (Fig. 1). The large range of sea-bed types, each with its own species, explains the high diversity of the Cleaver Bank area.

The area is characterized by high natural dynamics. During winter storms the effect of large waves reaches down to the sea bed, and water movement is able to reallocate sediments up to the size gravel (Van Moorsel 2003). As a result, gravel-dominated areas are inhabited by organisms adapted to such dynamics. To a certain degree such species may therefore not be considered vulnerable to sea-bed disturbance due to bottom fisheries.

In areas containing cobbles (64-256 mm) and boulders (> 256 mm) a higher substrate stability is present, as such substrates are not moved by natural water movement. As a result these areas offer suitable conditions for the growth of encrusting and long-living species. Some of these species even increase substrate stability by attachment of sedimentary units. In the context of H1170, this type of

sea-bed is essential for protection. It harbours typical animal species: sessile, such as sponges, soft corals (Dead men's fingers (*Alcyonium, digitatum*)), polychaete worms, bivalves and bryozoans as well as free roaming species: gastropods such as whelks, hermit crabs, and fish species with a preference for hard substratum. Stable hard substrate is also used for attachment of eggs, for example by gastropods, squid and rays. Also benthic algae may be present: especially in areas down to 40 m depth light conditions are suitable for the growth of crustose coralline algae.

### **Extent of habitat H1170**

The total area notified to the EC (1148 km<sup>2</sup>) was created by drawing a rectangle (obliquely cut at the Dutch/UK border) around gravel containing areas. We assume that the presence of stones is limited to these areas and therefore the SAC includes large areas without H1170. This not only applies to the above-mentioned Botney Cut: two more areas, indicated by white spots in Fig. 2 are considered by fishermen as 'clean grounds' – essentially sandy areas. They occupy an area of 39,6 km<sup>2</sup> west, and 235 km<sup>2</sup> east. Together with the Botney Cut they occupy an area of 400 km<sup>2</sup> and should be subtracted from the total area in order to get an impression of the total area with a stony potential. In order to assess proposed closures, we suggest to relate them to this area with stony potential of 748 km<sup>2</sup> (see table 1). It should be kept in mind that a large part of this area is still known to be sandy (Fig. 1), also in the experience of the industry (Fig.2), and that the actual area containing stones is much smaller. In the next section is explained how we propose to protect a significant part of these stony areas.

### **Proposed closures:**

For seining and gillnetting our proposal is along the lines of the proposed management measures from FIMPAS; maintenance of seining and gillnetting at the 2006-2010 fishing effort level.

The hereafter-mentioned closures thus only apply to beam and otter trawling.

The industry proposes to close four areas within the notified Cleaver Bank area and two more further North.

- Area 1 south-west of the Botney Cut

We propose to close a large part of the area south-west of the Botney Cut (66,2 km<sup>2</sup>) This area includes transect 7 in van Moorsel (2003), which is rich in shells and stones, although within transect 7 the latter are covered by sand. On the UK side of the NL/UK border a much larger area with stones is present.

North-east of the Botney Cut, 3 areas are proposed for closure:

- Area 2 bordering the eastern border of the Botney Cut

This area has a surface area of 112,3 km<sup>2</sup>. In the North it includes transect 10 of van Moorsel (2003) with a cover of stones up to 20%. It also contains transect 8 with locally high densities of stones. According to geological maps (Fig. 1) this is a location with the highest gravel content of the Cleaver Bank.

- Area 3 a rectangle in the north-east of the Cleaver Bank area

This area has a surface area of 70,6 km<sup>2</sup>. It is located near the crossing of gas pipes and in an area that has been used for an experimental excavation of gravel. The area has been investigated relatively well. Van Moorsel (2003) describes several transects among which transect 5 scores as one containing the highest stone concentrations. This area is relatively shallow and presents the only area known with benthic macro algal growth, represented by crustose coralline algae.

- Area 4 near the wreck PD43

This is a relatively small square area near the wreck PD43 (5,75 km<sup>2</sup>). It contains transect 4 of van Moorsel (2003) with a cover of stones of 5-10 %.

The total of these 4 areas is 255 km<sup>2</sup>, which is ~34 % of the area with stony potential (see above) and includes all areas presently known to contain stones. Admittedly the distribution of stones in the Cleaver Bank is inadequately known for our purpose, but the scarce scientific knowledge is in accordance with the experience of fishermen.

Using the same criteria, fisherman's knowledge indicates that other stony grounds are present to the north of the notified area. Although the fishing industry proposes to close only ~34% of the stony potential inside the notified area, the industry is able to increase the area essentially containing H1170 very efficiently. It proposes to include two more closed areas north of the current Cleaver Bank (Fig. 2).

- Area 5

A triangular area bordering the North of Area 3 (10,6 km<sup>2</sup>). No ecological data have been collected in this area, but considering the importance of the adjoining area 3, one might expect similar natural values. The northern border coincides with the southern border of an area suitable for sole fisheries. This kind of fisheries uses small-mesh sized nets - unsuitable for stony grounds, so this is an appropriate way to designate stony areas.

- Area 6, the most northern area

This has a surface area of 71,75 km<sup>2</sup>. It coincides partly with a gravel area on the geological map of the RGD and BGS. Moreover, like Area 5, the distribution of sole fisheries indicates the presence of stones. Also, like Area 3 it is a shallow area rising up to -35 m, so potentially this could be another area harbouring crustose coralline algae. Unfortunately, however, no scientific data have been collected in this area.

The areas the industry proposes as closed for active gears (bottom gears) inside the Cleaver Bank notified area add up to 255 km<sup>2</sup>. This is 34% of the potential stony area *within the* notified Cleaver Bank area. The two areas *outside* the notified Cleaver Bank area add up another 82 km<sup>2</sup>. This is 32% of the proposed closed areas inside area notified to EU. This increases the total protected area with stones to 337 km<sup>2</sup> (of which 76% is protected inside the Cleaver Bank and 24% outside of it). See Table 1 (attachment 5) for calculations.

Considering our limited knowledge this proposal includes the protection of all areas presently known to contain stones. Moreover, by offering similar areas to the North of the notified area, this may result in a total area of H1170 even higher than in the present case. The industry believes that in closing these areas, a substantial and diverse area of H1170 will be protected and that all important benthic species gain an appropriate level of protection.

## **Enforcement of proposed measures**

Enforcement of the closures is proposed through the use of the Automatic Identification System (AIS). Compared to VMS, AIS is a significant improvement since information on ship location is available in real time. This ensures precise data on fisheries activities as well as position. Therefore, it is not necessary to define closed areas as large rectangular areas.

AIS was originally implemented for safety reasons. However, the industry feels that this matter is highly important and AIS could therefore in this case be used for enforcement of the proposed closures on the Cleaver Bank. Enforcement of the proposed measures would be a governmental task. In principal, the whole Cleaver Bank is covered for AIS, details depending on weather conditions. Due to EU regulations, all vessels > 15 meters will have to be equipped with AIS from 2014 on.

## Literature

Bartelings, H., 2011. Economische waarde van de Botney Cut en de rest van de klaverbank 2006-2009. LEI, Wageningen UR, Den Haag. - Attachment 8

Jak, R.G., O.G. Bos, R. Witbaard & H.J. Lindeboom, 2009. Conservation objectives for Natura 2000 sites (SACs and SPAs) in the Dutch sector of the North Sea. IMARES report C065/09.

ICES 2011. Fisheries Measures in Protected Areas (FIMPAS) within the Exclusive Economic Zone (EEZ) of the Dutch part of the North Sea: areas outside the 12 nautical miles zone: Proposals, Dates, Venue. FIMPAS Steering Group. 33 pp.

IMARES, 2011. Maps of the fishing effort in the Dutch part of the North Sea 2006-2008 (Analysis within the framework of FIMPAS by IMARES, 2011)

Van Moorsel, G.W.N.M., 2003. Ecologie van de Klaverbank, Biotasurvey 2002. Ecosub, Doorn, 154 pp.

## Figures and tables

**Fig. 1.** Cleaver Bank. Sediment and depth map (adapted from van Moorsel 2003) – Attachment 1

**Fig. 2.** Cleaver bank with proposed areas – Attachment 2

**Fig 3.** Combined habitat map, composed by fishermen – Attachment 3

**Fig. 4.** Combination of Fig. 1 and Fig. 2: overlapping habitat with proposal – Attachment 4

**Table 1.** Summary of surface areas mentioned in text – Attachment 5

Attachment 6 and 7 contain several maps composed by fishermen.

These maps are classified and not for further distribution.

Attachment 6 contains Fig. 5 till Fig. 7

Attachment 7 contains Fig. 8 till Fig. 10

Attachment 1

Fig. 1. Cleaver Bank. Sediment and depth map (adapted from van Moorsel 2003)

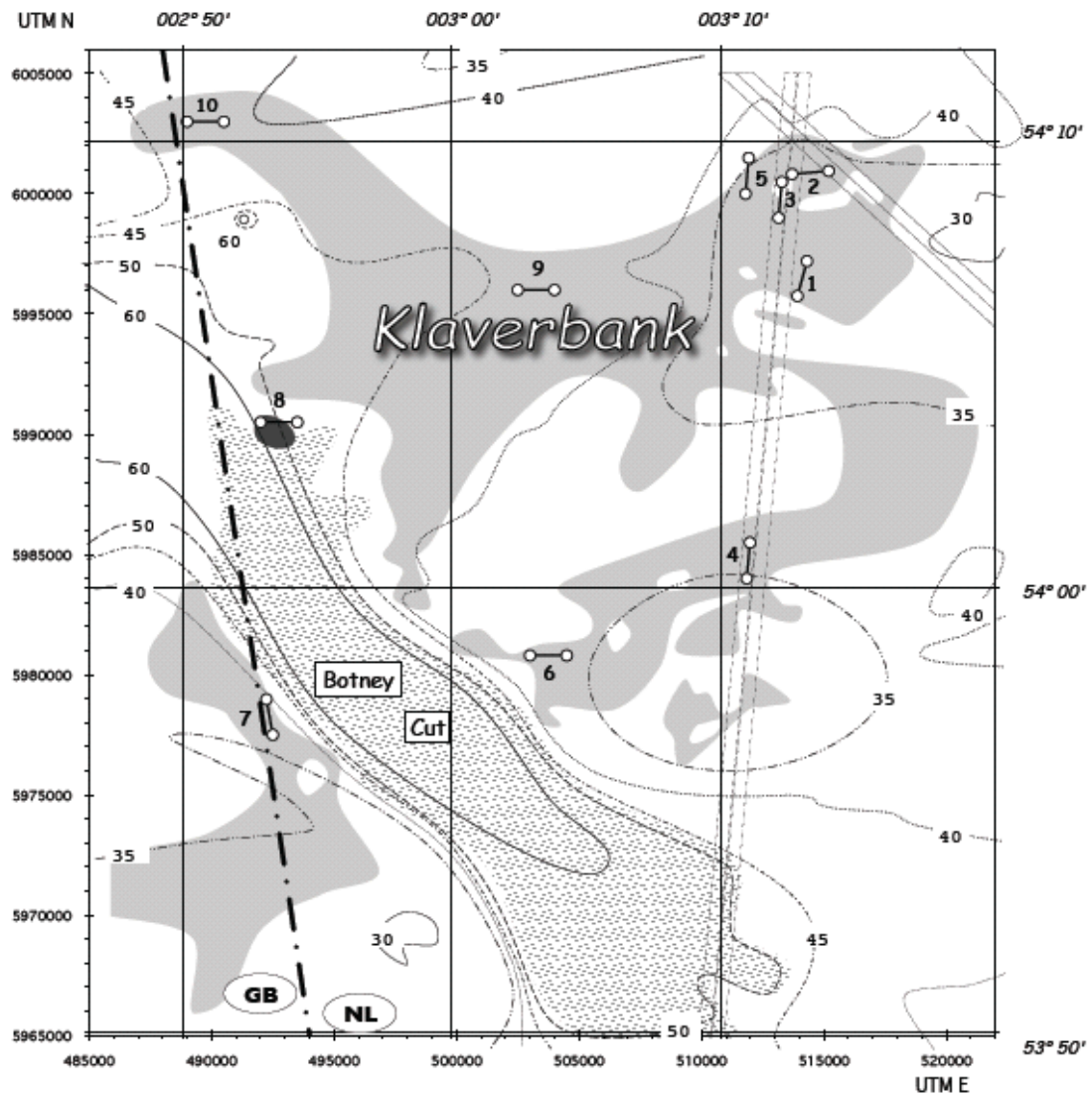
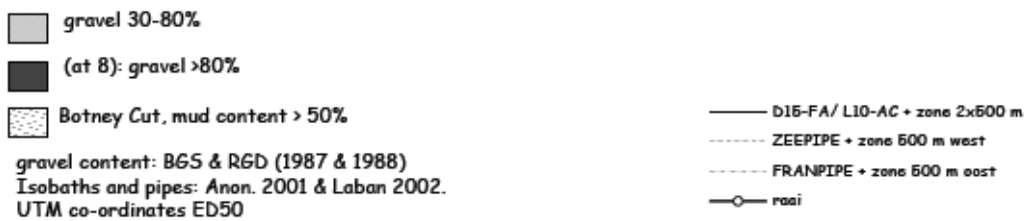
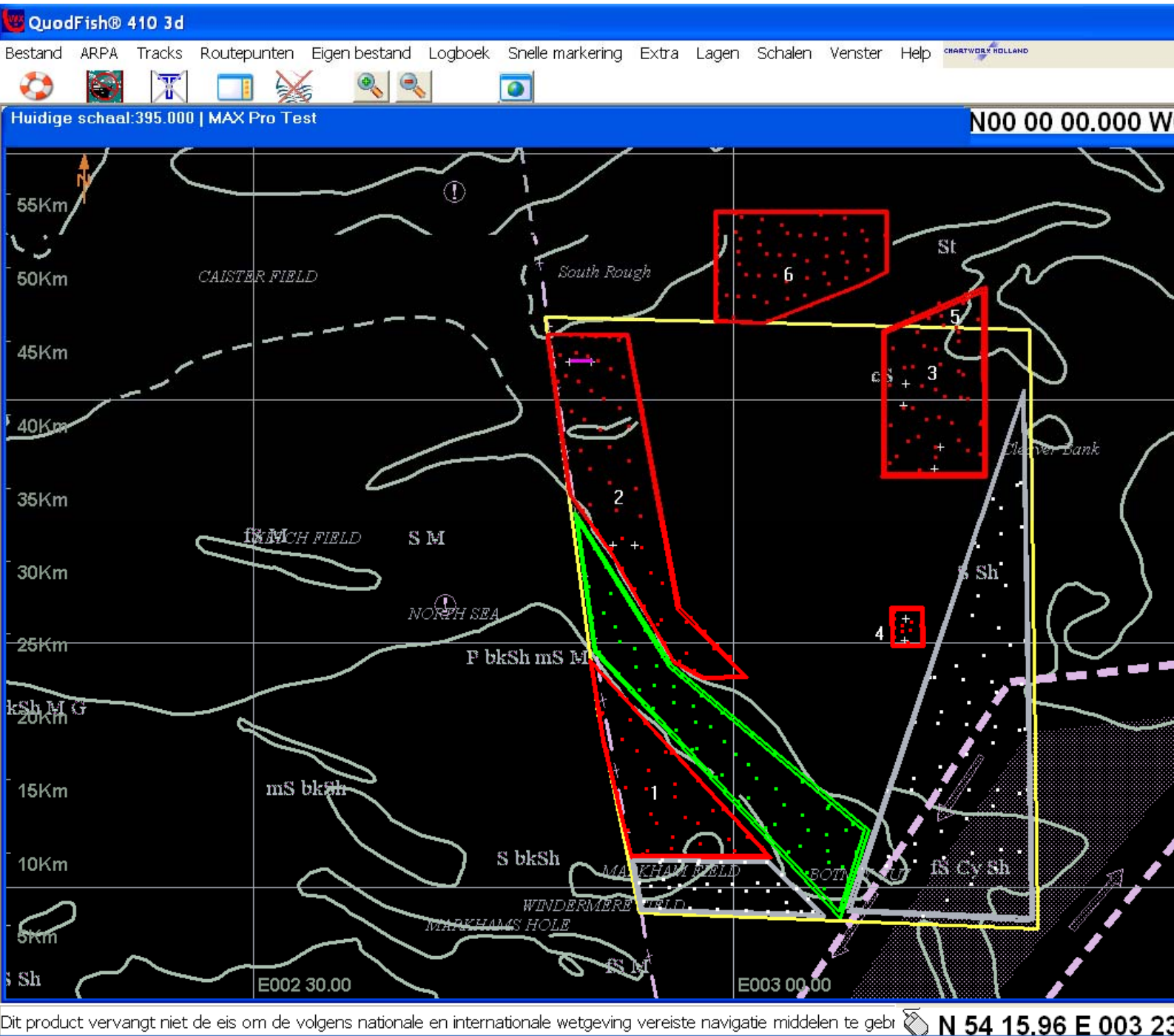


Figure 2. Map Klaverbank. Investigation tracks ('dumbbells'), pipes and isobaths.



Attachment 2:  
Fig.2. Cleaver bank with proposed areas

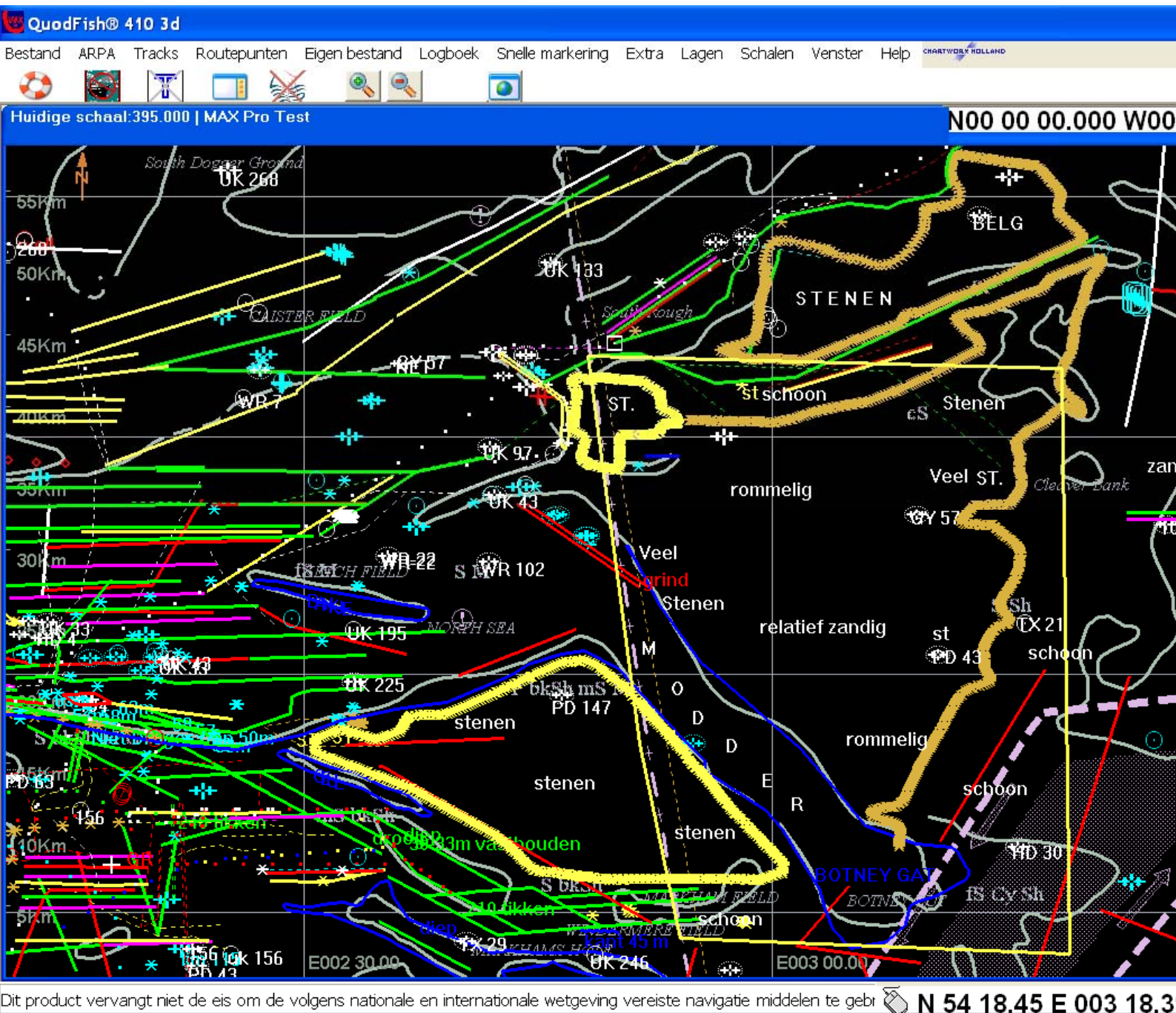


**Key to symbols:**

- Yellow 'rectangle': area notified as SAC to EC;
- Green area: Botney Cut;
- White-spotted areas: 'clean grounds' without stones;
- red areas: proposed closed areas in this paper.

Attachment 3:

Fig. 3. Combined sediment map, composed by fishermen



Key to symbols

Yellow 'rectangle': area notified as SAC to EC;

Fat yellow/orange lines: indicating areas and ridges with stones

Grind (North West of Botney Cut): Gravel

Modder (Botney Cut): Mud

Relatief zandig (North of Botney Cut, centre): relatively sandy

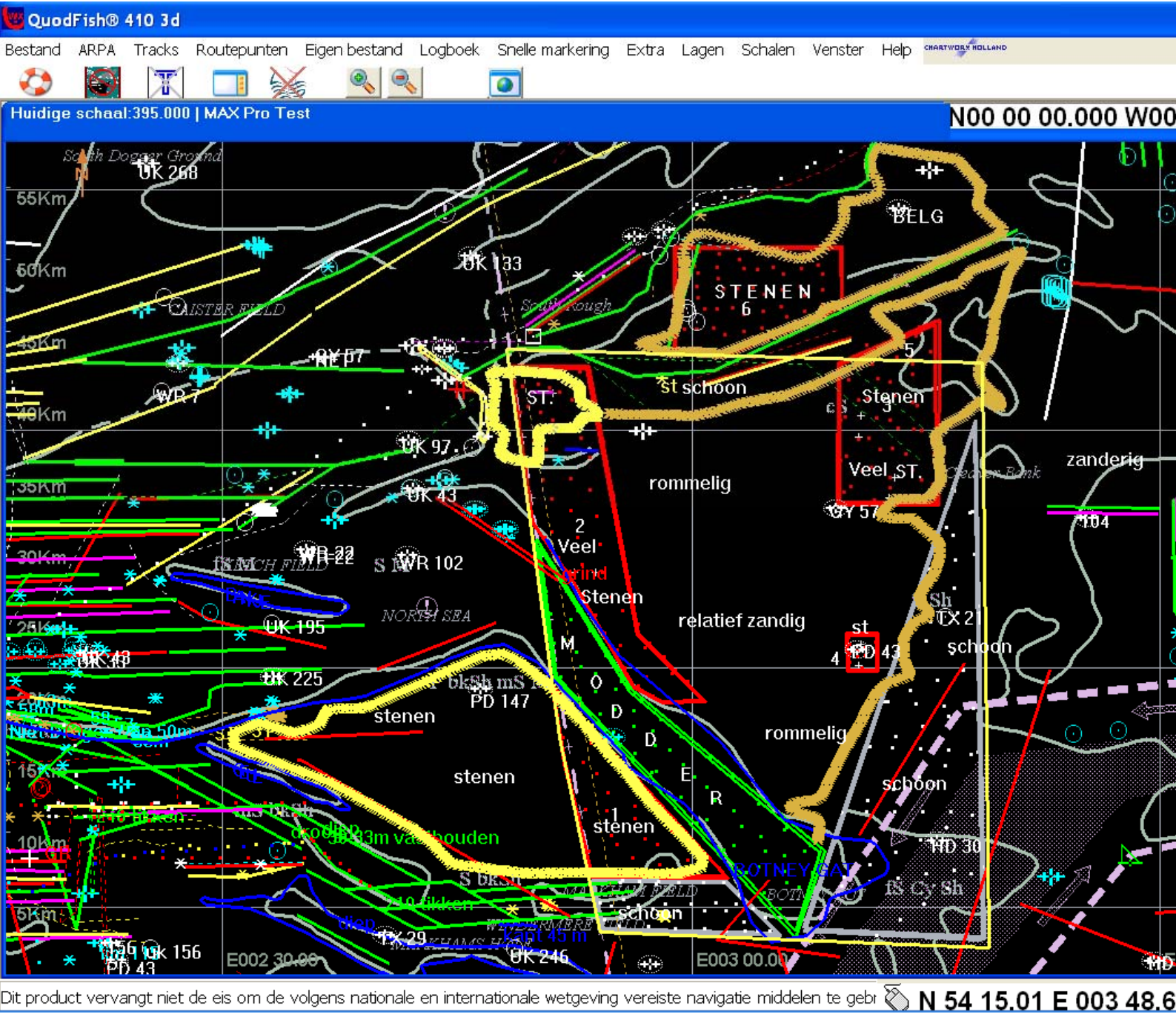
Rommelig (e.g. North East of Botney Cut): 'messy area' with different sediments: sand, gravel, stones

Stenen (e.g. North West of Botney Cut, North of Cleaver Bank) : Stones

Schoon (North West of Botney Cut): clean (sandy without stones)

Attachment 4

Fig. 4. Combination of Fig. 2 and Fig. 3: overlapping sediment with proposal



Attachment 5

Table 1. Summary of surface areas mentioned in text

The areas the industry proposes as closed for active gears (bottom gears) inside the Cleaver Bank notified area add up to 255 km<sup>2</sup>. This is 34% of the potential stony area *within* the notified Cleaver Bank area. The two areas *outside* the notified Cleaver Bank area add up another 82 km<sup>2</sup>. This is 32% of the proposed closed areas inside area notified to EU. This increases the total protected area with stones to 337 km<sup>2</sup> (of which 76% is protected inside the Cleaver Bank and 24% outside of it).

Table 1. Cleaver Bank. Summary of surface areas mentioned in text.

	km <sup>2</sup>	km <sup>2</sup>	%	
Total area notified to EU		1148		
Area without H1170				
Botney Cut	125			
White-spotted West	39,6			
White-spotted East	235			
		399,6		
Stony potential, partly contains H1170		748,4	100%	
Proposed closed areas inside area notified to EU				
Area 1	66,2			
Area 2	112,3			
Area 3	70,6			
Area 4	5,75			
total		254,85	34,05%	[A <sub>1-4</sub> ]
Proposed closed areas North of area notified to EU				
Area 5	10,6			
Area 6	71,75			
total		82,35	32,31%	of [A <sub>1-4</sub> ]
TOTAL		337,2		