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ENERGY ISLAND BORNHOLM
TECHNICAL REPORT - FISHERIES

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Client	
Description	**This technical report concerns the fisheries sector in relation to the Energy Island Bornholm. The report is a detailed investigation of the commercial fisheries in the pre-investigation area and its nearby surroundings.**

Ramboll
Hannemanns Allé 53
DK-2300 Copenhagen S
Denmark

T +45 5161 1000
F +45 5161 1001
https://ramboll.com

Rambøll Danmark A/S
DK reg.no. 35128417

CONTENTS

Abbreviations:

BH 1 nord	Bornholm I nord
BH I syd	Bornholm I syd
BH II	Bornholm II
BLE	The Federal Office of Agriculture and Food
BSAC	The Baltic Sea Advisory Council
CFP	Common Fisheries Policy
CPUE	Catch per unit effort
DFPO	Danish local fishermen PO
EEZ	Exclusive Economic Zone
EMF	Electromagnetic fields
FSK-PO	The Danish Association for Low Impact Coastal Fishery PO
GES	Good environmental status
GNS	Gillnets (standing)
GTR	Trammel nets
ICES	International Council for the Exploration of the Sea
LLD	Drifting longlines
LLS	Set longlines
OCC DK	Offshore cable corridor Denmark
OCC SE	Offshore cable corridor Sweden
OTB	Otter bottom trawls
OTM	Otter midwater trawls
OTT	Otter twin trawl
OWF	Offshore wind farm
PTB	Pair bottom trawls
PTM	Pair midwater trawls
SD	Subdivision
SLU	Swedish University of Agricultural Sciences
SSB	Spawning stock biomass
STECF	The European Commission’s Scientific, Technical and Economic Committee for Fisheries
TTS	Hearing threshold shift
VMS	Vessel Monitoring System

1. SUMMARY

The technical report includes a detailed investigation of the commercial fisheries in Denmark, Sweden, Poland, and Germany between 2010 and 2020. Vessel Monitoring System (VMS) and logbook data covering the past decade were included in the assessment.

The analysis concerns ICES rectangles that contain the planning areas for offshore wind farms (OWFs) and the surrounding rectangles i.e., 38G3, 38G4, 38G5, 39G2, 39G3, 39G4 and 40G2 (see Figure 1-1). Mapping and analysis of the baseline situation concerning fishery within and around the project area is based on data acquisition from relevant sources (i.e., the International Council for the Exploration of the Sea (ICES), the Danish Fisheries Agency, Swedish University of Agricultural Sciences (SLU), the Ministry of Agriculture and Rural Development in Poland (Fisheries Monitoring Centre) and the Federal Office for Agriculture and Food in Germany (BLE) and interviews of Danish local fishermen.

Baseline conditions
Baseline conditions are described for Denmark, Sweden, Poland, and Germany. Emphasis was placed on 38G4 and 39G4, as this is where the OWFs are bound to be placed.

Commercial fisheries of Poland and Germany have had close to no activity within ICES rectangle 39G4 both in terms of landings, but also when accounted for with VMS pings within Bornholm I nord and the offshore cable corridors. In contrast, Denmark and Sweden were active in 39G4, but it was estimated that 92 % and 97 % of the landed value was made outside the area designated for OWFs and cable corridors, respectively.

In ICES rectangle 38G4, approximately 70 % of the landings in terms of weight were made by commercial fisheries of Poland. In 38G4, it was estimated that 20 % of the Polish landings were made within Bornholm I nord, Bornholm I syd and Bornholm II, which would be equivalent to 7,629 tonnes from 2010 to 2020. The Polish fishing intensity occurred predominately in the south-eastern section of Bornholm II by midwater trawlers. In contrast, it was estimated that the commercial fisheries of Germany landed 650 tonnes in the same period within the areas designated for OWFs. It was estimated that the value of the landings amounted to a total of 11,353 [x1,000 DKK] within the areas designated for OWFs and the cable corridors by commercial fisheries of Denmark from 2010 to 2020 in 38G4. The activity of the commercial fisheries of Denmark was decreasing in the investigated period and occurred mainly outside the areas designated for OWFs and its corresponding cable corridors. It was estimated that a total of 3,954 [x1,000 DKK] were landed for within the areas designated for OWFs and its corresponding cable corridors by commercial fisheries of Sweden from 2010 to 2020 in 38G4.

The proportion of landings by Danish and Swedish fishermen in estimated value within the designated areas for OWFs and its corresponding cable corridors were in general limited over the investigated period. The DFPO (Danish local fishermen PO) has informed that under current circumstances, the commercial fishermen of Bornholm are moving their efforts to Kattegat and Skagerrak. A similar pattern was found for the Swedish commercial fisheries.

Potential impacts
Energy Island Bornholm can potentially interfere with the commercial fisheries both during the construction and operational phase. The potential impacts are described at an overall level, as the impacts depend on the final location and details of the planned construction work that will be determined in a subsequent design phase.

During the construction and operational phase safety zones are identified as a potential impact to the commercial fisheries.

Such safety zones will impact the commercial fisheries negatively as they limit the fishable area, increases travel expenses, and alter the fisheries pattern in the area. The fisheries that are impacted may become less profitable than they are today. According to the Fisheries Act (*fiskeriloven*) § 78, all fishermen who normally fish in the affected area must be compensated for the loss of income. The Developer has to negotiate compensation with every affected fisherman, and the licence to produce electricity from the OWF can be granted to the Developer only if an agreement has been made with all affected fishermen.

Conclusion
The commercial fisheries are prone to short-term losses that can derive from limited access to fishing grounds and changes in fish distribution in the south-eastern part of Bornholm II and in the northern part of Bornholm I nord. It is assessed that the activity from commercial fisheries within the areas designated for OWFs and its corresponding cable corridors is limited, because of the poor fish stock conditions.

Long-term losses are also expected for commercial fisheries operating in the south-eastern part of Bornholm II and in the northern part of Bornholm I nord. It was assessed that the activity from commercial fisheries within the areas designated to OWFs and their corresponding cable corridors are limited and decreasing, and it will most likely remain so due to the poor fish stock conditions. Since 2020, there has been huge cuts in the quota for multiple stocks. The effort of the commercial fisheries will be concentrated to areas outside the safety zones implemented due to the project, which may influence their catch per unit effort (CPUE). The impact of the safety zones can potentially have a spill-over effect to neighbouring areas.

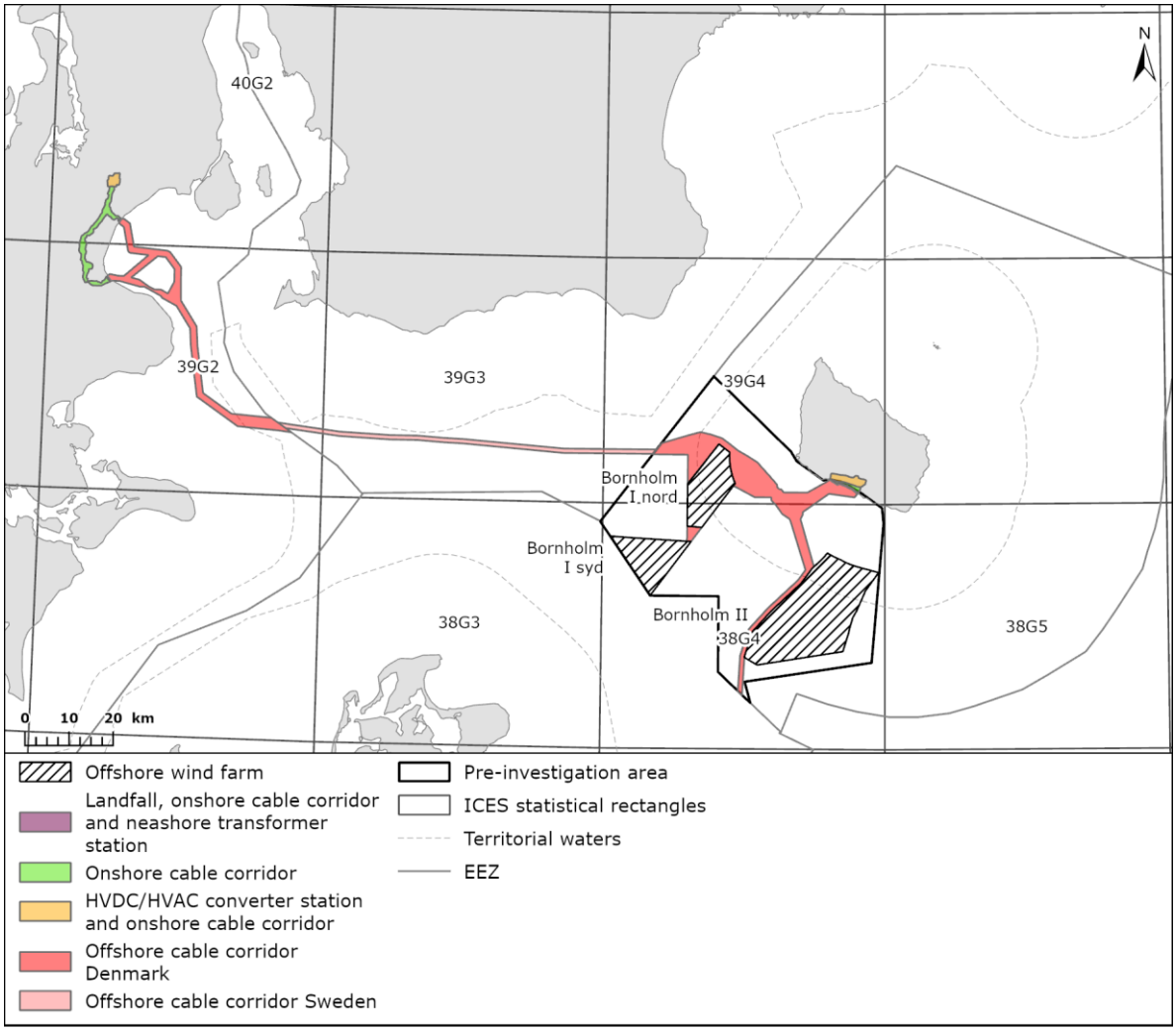

Figure 1-1 ICES rectangles included in the analysis.

2. INTRODUCTION

With the Climate Agreement for Energy and Industry of the 22nd of June 2020, the majority of the Danish Parliament decided that Denmark will become the first country in the world to develop two energy islands. One of these islands will be the island of Bornholm located in the Baltic Sea ("Energioe Bornholm"), with wind farms south-west of Bornholm with an installed capacity of up to 3.8 GW. The designated wind farm areas consist of Bornholm I South (118 km^2), Bornholm I North (123 km^2) and Bornholm II (410 km^2) (Figure 2-1). The wind farms areas will contain wind turbines with a maximum height of 330 m, maximum seven transformer platforms, as well as subsea cables. The island of Bornholm will house the transformer station and serve to distribute the produced energy.

As a consequence of these political decisions a series of biological and scientific investigations has to be carried out for a well-defined pre-investigation area as part of the baseline mapping of this part of the Baltic Sea. This also includes an investigation of the commercial fisheries. This report in addition to the pre-investigation area also analyzes the areas covered by cable corridors including the export cable corridor from Bornholm to Zealand.

The pre-investigation area for Energioe Bornholm OWF is located 15 from Bornholm and consists of the three before mentioned offshore windfarm areas (OWF).

This technical report includes a detailed investigation of the commercial fisheries in Denmark, Sweden, Poland, and Germany between 2010 and 2020. Vessel Monitoring System (VMS) and logbook data covering the past decade were included in the assessment.

The analysis concerns ICES rectangles that contain the pre-investigation area (the areas designated for OWFs) and cable corridors including the export cable corridor from Bornholm to Zealand) and the surrounding rectangles i.e., 38G3, 38G4, 38G5, 39G2, 39G3, 39G4 and 40G2 (see Figure 1-1). Mapping and analysis of the baseline situation concerning fishery within and around the pre-investigation area is based on data acquisition from relevant sources (i.e., the International Council for the Exploration of the Sea (ICES), the Danish Fisheries Agency, Swedish University of Agricultural Sciences (SLU), the Ministry of Agriculture and Rural Development in Poland (Fisheries Monitoring Centre) and the Federal Office for Agriculture and Food in Germany (BLE) and interviews of Danish local fishermen.

Energy Island Bornholm can potentially interfere with the commercial fisheries both during the construction and operational phase. The potential impacts are described at an overall level, as the impacts depend on the final location and details of the planned construction work that will be determined in a subsequent design phase.

This technical report also acts as background report for the environmental impact assessment of the concrete project related to the export cable between Bornholm and Zealand through Danish EEZ.

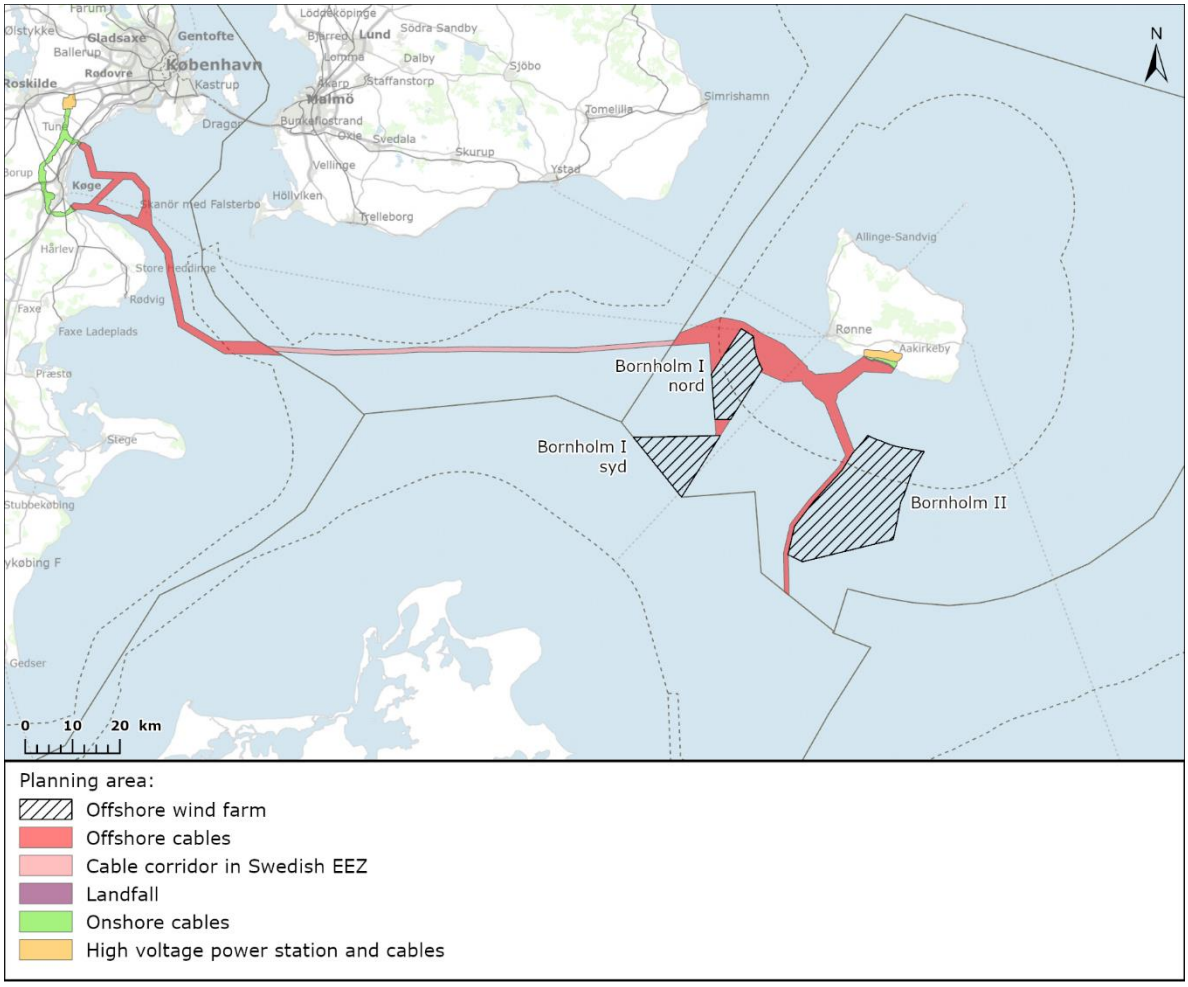

Figure 2-1 Energy Island Bornholm.

This technical report concerns the fisheries sector in relation to the Energy Island Bornholm. The report is a detailed investigation of the commercial fisheries in the pre-investigation area and its nearby surroundings.

The following analyses and interviews were conducted:

- Interviews with the Danish local Fishermen PO (DFPO) and The Danish Association for Low Impact Coastal Fishery PO (FSK-PO)
- VMS data for relevant ICES rectangle divided into gear and type of fishery
- Landings from ICES rectangles divided in weight/value by species or gear type
- Detailed mapping of sand eel fishing grounds for commercial fisheries in Denmark

2.1 Baltic Sea ecoregion governance

The commercial fisheries within the Baltic Sea are regulated under EU's Common Fisheries Policy (CFP) and bilaterally with Russia. Commercial fisheries advice is provided by the International Council for the Exploration of the Sea (ICES), the European Commission's Scientific, Technical and Economic Committee for Fisheries (STECF), the Baltic Sea Advisory Council (BSAC), and BALTFISH [1]. BALTFISH is a regional body involving the eight EU Member States bordering the Baltic Sea, which submits joint recommendations to the European Commission. BSAC is an advisory body composed of representatives from the commercial fisheries and other interest

groups, mainly environmental NGOs [1]. ICES is an intergovernmental marine science organization, that meets societal needs for impartial evidence on the state and sustainable use of seas and oceans. ICES uses statistical rectangles for the geospatial gridding of data to make simplified analysis and visualization of e.g., landed species and fishing intensity.

2.2 Environmental status and pressures

ICES has currently assessed that many species and habitats of the Baltic Sea are not in good condition [1]. This influences foodweb functionality, reduces the resilience and resistance against further environmental changes, and diminishes prospects for socioeconomic benefits, including fishing opportunities. The recent development is listed here [1]:

- Nutrient concentrations in the water column and sequestered in the sediments remain relatively high, and phosphorus is increasing in some areas.
- Poor or no oxygen deep-sea areas, caused by a combination of eutrophication and a reduced frequency of inflows of saline and oxygen-rich water from the North Sea, remains high.
- Climate-driven changes in water temperature and salinity will have an increasing influence on the ecosystem's structure and function.
- The overall contamination status has been at the same level for the past two decades, but many potential contaminants are not monitored.
- The introduction of non-indigenous species has more than doubled in the 21st century.
- Overall fishing effort fell by approximately 50 % from 2004 to 2012 and has decreased even further since. Discarding still exists, even though it is largely illegal.
    - The spawning-stock biomass (SSB) of most pelagic stocks has increased and is above or close to the biomass reference points. An exception is the Atlantic herring (*Clupea harengus*) i.e., the western Baltic stock. Both European sprat (*Sprattus sprattus*) and Atlantic herring are experiencing overfishing.
    - Atlantic cod (*Gadus morhua*), i.e., the Baltic stocks, are overfished. The SSB of western Baltic cod has been decreasing the least ten years. The SSB of Atlantic cod i.e., the eastern Baltic stock, is decreasing, with the value for 2018 being the lowest observed in the time-series. Its size structure and condition factor have deteriorated markedly without signs of improvement.
    - The status of European eel continues to be critical.
- Disturbance of seabed habitats due to physical abrasion from mobile bottom-contacting fishing gears occurs mostly in the southern Baltic Sea, where Energy Island Bornholm is located, and may reduce benthic diversity and biomass depending on the substrate type.
- Structural shifts in the open-sea foodweb has been observed during the last decade. The open-sea system has been dominated by small pelagic fish, such as European sprat.
- Changes in coastal fish communities over the past decades have been linked to increasing water temperatures, decreasing salinities, and eutrophication.
- In general, those seabird species eating Europpean sprat and Atlantic herring have increased in number.
- Grey seal (*Halichoerus grypus*) populations have had a high growth rate over the past few decades. The growth rate of the southern Baltic harbour seal (*Phoca vitulina*) lpopulation has also been high.

2.3 The fisheries and exploited fish species

Both marine and freshwater species are landed in the Baltic Sea. The most important species for the commercial fisheries are marine. Atlantic cod, Atlantic herring and European sprat represent about 95 % of the total catch in landed weight [2]. The fish is mainly used for human consumption, but industrial use represents a large share too e.g., fish meal, oil, and animal

fodder. Flatfish species are increasingly becoming important to the commercial fisheries e.g., European plaice (*Pleuronectes platessa*), European flounder (*Platichthys flesus*), Common dab (*Limanda limanda*), brill (*Scophthalmus rhombus*), turbot (*Scophthalmus maximus*) [2].

The overall objective of the management of Baltic Sea fisheries is to ensure economically, environmentally and socially sustainable use of fisheries resources in alignment with the ecosystem-based approach [1]. Long term management plans for the internationally managed fish stocks aim to ensure that these are capable of producing a maximum sustainable yield, which mainly is regulated by exploitation rates.

Commercial fisheries are typically focused on specific species and larger fish. This can cause structural changes to populations and the food web. Such changes in overall species composition, and a decreased size and age structure of populations, have been observed in the Baltic Sea [2]. The overfishing has affected long term fishing opportunities and food provision in the Baltic Sea, as the depleted stocks are less productive and more vulnerable to pressures, see pressures in 2.2. Yearly management plans and advices are made at a species specific level and by ICES subdivision, Figure 2-2.

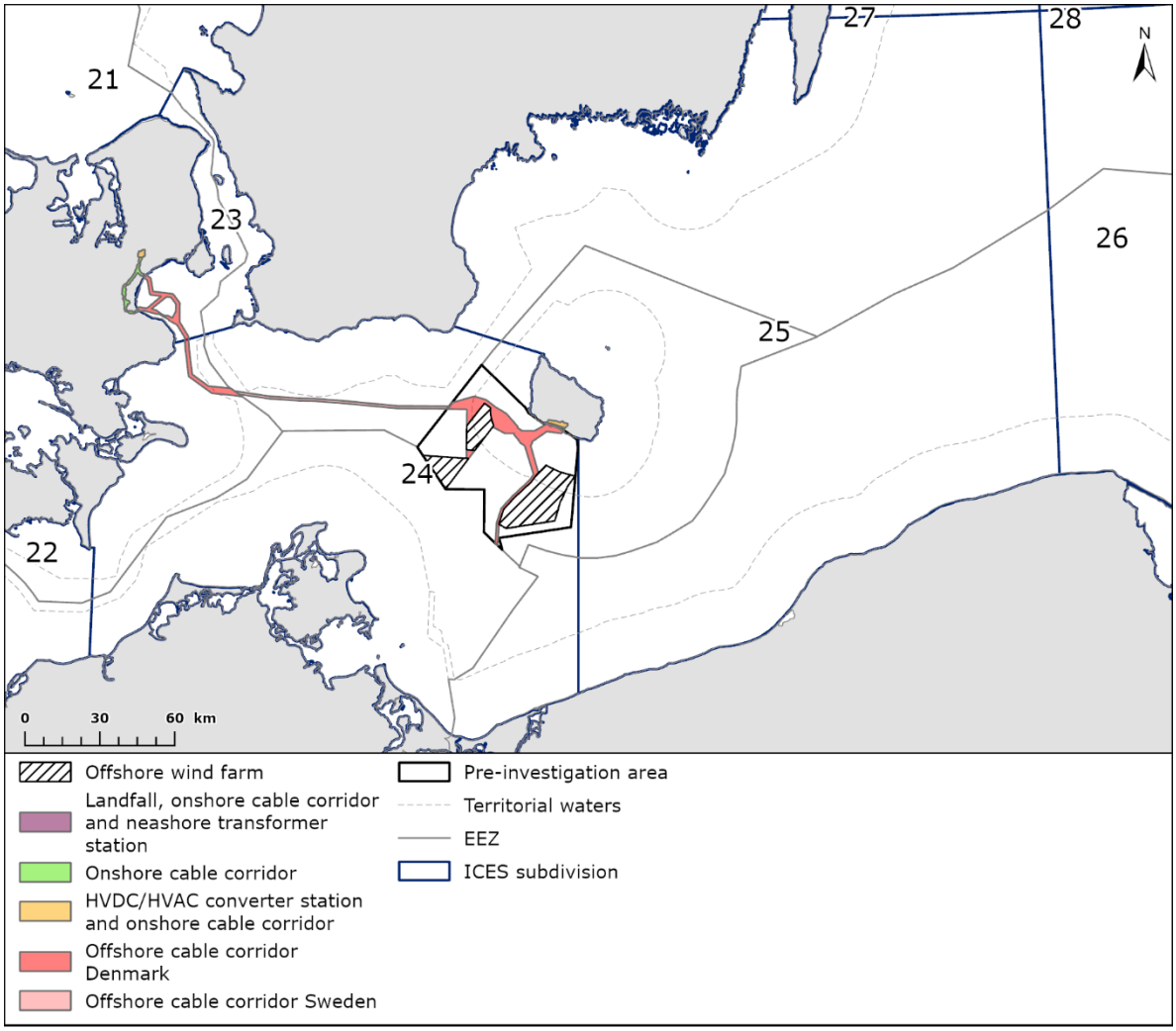

Figure 2-2 Energy Island Bornholm and ICES subdivisions.

To emphasize the recent development for the fish stocks, the advice for total allowable catch (TAC) for Atlantic cod, Atlantic herring, European sprat and European plaice has been gathered and presented for the period 2010 to 2022, Table 2-1.

Table 2-1 ICES advice on TACs from 2010 to 2022 for western Baltic cod, eastern Baltic cod, herring, sprat and plaice [2]. All weights are in tonnes.

Year	Atlantic cod - Western Baltic stock (22-24)	Atlantic cod - Eastern Baltic stock (24-32)	Atlantic herring (20-24)	European sprat (22-32)	European plaice (24-32)
2010	17700	56100	22700	380000	No advice
2011	18800	64500	15800	322700	3041
2012	21300	74200	20900	255100	2889
2013	20000	68700	25800	278000	3409
2014	17000	73400	19800	267900	3409
2015	15900	55800	22200	240200	3409
2016	12720	46900	26274	243000	4034
2017	5597	36957	28401	303593	7862
2018	5597	34288	17309	304900	7076
2019	9515	29912	9001	313100	10122
2020	3806	7500	3150	256700	6894
2021	4000	3595	1575	268458	7240
2022	489	2595	788	295300	9050

Given the lack of improvement for several fish stocks the TACs of Atlantic cod, i.e. the western and the eastern Baltic stocks, and Atlantic herring are only allowed as by-catch in 2022.

2.4 Marine Strategy Framework Directive

2.4.1 Introduction

The Marine Strategy Framework Directive (MSFD) aims to protect the marine environment through an ecosystem-based approach where the overall objective is to achieve good environmental status (GES) in the Member States' sea areas. The directive is implemented in Danish legislation through The Marine Strategy Act, LBK no. 1161 of 25/11/2019, which defines 11 descriptors which collectively assess GES for the North Sea (including Kattegat) and the Baltic Sea. GES is determined based on a set of criteria set forth by the EU-commission in the GES-decision from 2017.

In Table 2-2 descriptor 3, commercially exploited fish stocks, is described with relevant environmental targets, criteria, and the current environmental status in the Baltic Sea. The environmental status was last assessed in April 2019 under the Marine Strategy II [3].

2.4.2 Status

If fishing pressure is too heavy, stocks might become too small to be able to maintain themselves in the long term. A sustainable fishing pressure is therefore important for maintaining a healthy fishing industry. Fish play a key role in the food chain, both as predators and prey. High fishing pressure can therefore influence the ecosystem that fish are part of.

The majority of the commercially exploited fish stocks in Danish marine areas are managed under the EU.

Common Fisheries Policy. Overall, sustainable exploitation of the individual stocks is therefore managed through quotas and management plans at EU level in cooperation with other member states.

The environmental targets in the Marine Strategy for commercially exploited fish stocks are determined with reference to the Common Fisheries Policy, which stipulates that catches and reproduction of fish stocks must be sustainable.

Table 2-2 Relevant environmental targets and current status of descriptor 3 in the Baltic Sea [3].

Descriptor	Relevant environmental target	Current environmental status
Commercial fish and shellfish: Populations of commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.	**3.1** The number of commercially exploited fished stocks regulated pursuant to the MSY principles in the Common Fisheries Policy is increasing. **3.2** Within the framework of the Common Fisheries Policy, fish mortality (F) is at levels that can ensure a maximum sustainable yield (Fmsy). **3.3** Within the framework of the Common Fisheries Policy, spawning biomass (B) exceeds the level that can ensure a maximum sustainable yield (MSY Btrigger).	Baltic Sea show good environmental status for two populations and not good status for three populations, while the status cannot be determined for one population. Fish mortality has been assessed as too high in three of the six populations and undetermined in one. The spawning biomass is too low in two populations and undetermined in one.

An overview on the individual stock and status can be seen in, Table 2-3.

Table 2-3 Overview of relevant environmental target for descriptor 3 in the Baltic Sea [3].

Stock	Habitat	Status		
		D3C1 (F)	D3C2 (SSB)	Condition
European Sprat	Pelagic	Good	Good	Good
Atlantic herring - Western Baltic stock	Pelagic	Not good	Not good	Not good
Atlantic cod - Eastern Balticstock	Benthic	Not good	Good	Not good
Atlantic cod - Western Baltic stock	Benthic	Not good	Not good	Not good

Stock	Habitat	Status		
Sandeel	Benthic	Undefined	Undefined	Undefined
Atlantic herring - Eastern Baltic stock	Pelagic	Good	Good	Good

3. MATERIAL AND METHODS

3.1 Data – Denmark

To properly assess impacts from an offshore wind farm on fisheries, it is necessary to describe the existing fishery patterns in and around the pre-investigation area. Mapping and analyses of the baseline situation concerning fishery within and around the pre-investigation area was based on data acquisition from relevant sources (The Danish Fisheries Agency, ICES, and the Danish fishermen associations) and interviews with the DFPO.

Vessel Monitoring System (VMS) and logbook data was purchased for the past decade from the Danish Fisheries Agency and included in the assessment. Baseline data from the commercial fisheries included official data from the ICES rectangles (39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2). These datasets were acquired, as they offer the best resolution in terms of analysing the distribution and extent of the fisheries within and near the pre-investigation area, including the cable corridors. Possible cumulative and transboundary impacts on fishery were investigated at an overall level.

The Danish logbook data includes anonymized vessel ID, home country, vessel length, vessel power, tonnage, departure country, departure harbour, departure date, departure time, landing country, landing harbour, arrival date, arrival time, catch date, gear, mesh size, ICES rectangle of the catch, ICES division, landed species, landing weight estimate of species and estimated landing of value of species. The Danish VMS-data includes country of origin, anonymized vessel ID, latitude, longitude, date, hour of set ping, vessel speed, heading, harbour status; (0) in harbour, (1) not in harbour.

3.1.1 VMS data for relevant ICES squares divided into gear and type of fishery

Logbook and VMS data can yield information on fishing activity from fishing vessels of ≥ 12 meters of length. Vessels above 15 meters of length (since 2009) and vessels above 12 meters of length (since 2012) has been obliged to have a VMS installed. The two datasets together provide information on e.g., the development in fisheries during the past decade, the economically most important fish species and where they are caught, but also when and where the different fishing gears are used. This information is relevant when assessing the impact of a windfarm on the fisheries, both in terms of the positioning of the windfarm but also the timing of the construction of project.

The VMS positions were filtered based on estimated speed and the type of gear the vessel was using, see Table 3-1. Fishing activity i.e., if the vessel is floating/being in harbour, fishing or steaming were determined with the *R* package *VMStools*. *VMStools* is specifically developed for the processing, analysis and visualisation of landings and vessel location data from commercial fisheries and used by ICES. *VMStools* can create segmented regression on the speed profile and automatic detect fishing versus no-fishing. Some gear types needed fixed vessel-speeds as there were insufficient information/data points to estimate the different peaks statistically.

Table 3-1 List of used fishing gear from the period 2010 to 2020 in the ICES rectangles with VMS installed. SI_SP is the instant speed of the vessel in knots. The activity i.e., floating, fishing and steaming was either determined by segmented regression on the speed profile, with automatic detection of fishing versus no-fishing or by fixed speed rules from literature [4], [5].

Gear code	Gear	Floating	Fishing	Steaming
FIX	Traps (not specified)	#	SI_SP>=0&<6	SI_SP>=6
FPN	Stationary uncovered pound nets	#	SI_SP>=0&<6	SI_SP>=6
GN	Gillnets	#	SI_SP>=0&<6	SI_SP>=6
GNS	Gillnets (standing)	#	SI_SP>=0&<6	SI_SP>=6
GTR	Trammel nets	#	SI_SP>=0&<6	SI_SP>=6
LL	Long lines	#	SI_SP>=0&<6	SI_SP>=6
LLD	Drifting longlines	#	SI_SP>=0&<6	SI_SP>=6
MIS	Miscellaneous gear	#	SI_SP>=0&<6	SI_SP>=6
OTB	Otter bottom trawls	SI_SP<2	SI_SP>=2&<5	SI_SP>=5
OTM	Otter midwater trawls	SI_SP<2	SI_SP>=2&<5	SI_SP>=5
OTT	Otter twin trawl	SI_SP<2	SI_SP>=2&<5	SI_SP>=5
PTB	Pair bottom trawls	SI_SP<2	SI_SP>=2&<5	SI_SP>=5
PTM	Pair midwater trawls	SI_SP<2	SI_SP>=2&<5	SI_SP>=5
SDN	Danish seines	SI_SP<1.5	SI_SP>=1.5&<4	SI_SP>=4
SSC	Scottish seines	SI_SP<1.5	SI_SP>=1.5&<4	SI_SP>=4
TB	Bottom trawl (not specified)	SI_SP<2	SI_SP>=2&<5	SI_SP>=5
TBN	Nephrops bottom trawl	SI_SP<2	SI_SP>=2&<5	SI_SP>=5

The distribution of the fishing activity was then presented by gear type (e.g., single boat bottom otter trawls, twin bottom otter trawls, midwater pair trawls) and type of fishery (e.g., bottom trawl, pelagic trawl, gillnets). The VMS points were averaged over the investigated period and the frequency was plotted in a grid. The grid is a 0.05 × 0.05-degree grid, which is equivalent to what ICES uses in their C-square geocode system. The analysis concerned the ICES rectangles that contain the pre-investigation area and the surrounding rectangles i.e., 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2, see Figure 1-1.

The VMS positions was then accumulated and presented in a table showing the number of points within and outside the pre-investigation area by ICES rectangle and type of fishery.

3.1.2 Landings from ICES rectangles divided in weight/value by species

Larger vessels

Logbook data were used to divide weight/value by species for vessels ≥ 12 meters of length. The analysis concern ICES rectangles that contain the pre-investigation area and the surrounding rectangles i.e., 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2. The data was analyzed in the computational statistical software *R*. Here the package *dplyr* was used to solve the beforementioned task. *Dplyr* is a grammar of data manipulation, that provides a consistent set of verbs that can solve common data manipulation challenges. Once data was processed, it was presented as figures created with the *R* package *ggplot2*. *Ggplot2* is a system for declaratively creating graphics. Tables related to the plots was presented as tables in an appendix.

Smaller vessels

The analysis includes mapping of landings of fish species by weight and value for vessels < 12 meters of length. Vessels < 12 meters of length are not obliged to hand in VMS data; therefore, the analysis was set to a spatial resolution of ICES rectangles. The dataset included the ICES rectangles 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2. Processing and manipulation of data

followed the same procedures presented for larger vessels. Tables related to the plots were presented in an appendix.

3.1.3 Detailed mapping of sandeel fishing grounds

Once the logbook and VMS data were coupled with the *R* package *VMStools*, we were able to make a detailed mapping of sandeel fishing grounds. This was done as sandeels are considered an important commercial species, and the fact that the fishing grounds tend to be highly localized due to the habitat preferences and behavior of sandeels. Figures of sandeel fisheries activities were produced in *ArcGIS Pro*. The dataset included the ICES rectangles 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2. The analysis only concerned vessels ≥ 12 meters of length, as they have a VMS installed.

3.1.4 Interviews

Interviews were carried out in agreement with the DFPO and FSK-PO, who provided supplemental information about the distribution and characteristics of the different fisheries in the pre-investigation area and its region. Rambøll delivered a short presentation about the project.

3.2 Data - Sweden

A single dataset for vessels < 12 meters of length, were acquired from the Swedish University of Agricultural Sciences (SLU), see Table 3-2 for parameters. As vessels < 12 meters of length, are not obliged to hand in VMS data, the data were set to a spatial resolution of ICES rectangle. The dataset included the ICES rectangles 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2 for a ten-year period.

Table 3-2 Parameters, variables and their formats for the Swedish dataset. Vessels < 12 m.

Parameter	Variable	Format/Unit
Year	Year	YYYY
Month	Month	MM
ICES_Square	ICES rectangle	4-character string
Effort_FishingDays	Fishing effort hours	##
Gear_type	Gear	3-character string. DCF metiér level 4.
EU_Level6_metier	Under the DCF, fishing activity (metier) by region follows the aggregation at various levels. The complete schema is reported in Appendix IV of Commission Decision 2010/93/EU.	String. DCF metiér level 6.
Landed_weight_kg	Landed weight	Kg
Landed_value_EURO	Landed value	EUR
Target_species_group	Demersal or pelagic fisheries	String.

A similar request was made for vessels ≥ 12 meters of length, but this dataset included VMS data, Table 3-3. Unlike the Danish dataset, the coupling of VMS and logbook data had been done.

Table 3-3 Parameters, variables and their formats for the Swedish dataset. Vessels ≥ 12 m.

Parameter	Variable	Format/Unit
Lat	Latitude	Decimal degrees
Lon	Longitude	Decimal degrees
Year	Year	YYYY
Month	Month	MM

Parameter	Variable	Format/Unit
Effort_Hour	Fishing effort in hours	##
Gear_type	Gear	3-character string. DCF metiér level 4.
EU_Level6_metier	Under the DCF, fishing activity (metier) by region follows the aggregation at various levels. The complete schema is reported in Appendix IV of Commission Decision 2010/93/EU.	String. DCF metiér level 6.
Landed_weight_kg	Landed weight	kg
Landed_value_EURO	Landed value	EUR
Target_species_group	Demersal or pelagic fisheries	String.

1. A fishing trip in the VMS–data is identified by departure and arrival dates for the corresponding trip in the fishermen logbook.
2. The VMS data is filtered to identify potential fishing by a speed filter 1.4-4 knots and a spatial filter, deselecting "fishing speeds" within 3 nm from any harbour (corresponds well to Swedish trawling limit), see Table 3-4.
3. Price for each species is calculated from sales notes, if the trip is not identified different averages are sequentially applied.
4. Price information is added to the logbook trip and total value and weight is aggregated over a fishing trip.
5. Total weight and values are distributed evenly on the remaining "fishing activity" VMS pings for a trip (actually weighted by time difference between consecutive VMS pings – but typically one hour between pings).
6. All pings are aggregated over, in this case, the factors ICES rectangles // months // gear classification.

Table 3-4 List of used fishing gear from the period 2010 to 2020 in the ICES rectangles with VMS installed. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was determined by fixed speed rules by the Swedish University of Agricultural Sciences (SLU).

Gear code	Gear	Floating	Fishing	Steaming
GNS	Gillnets (standing)	SI_SP<1.4	SI_SP>=1.4&<4.1	SI_SP>=4.1
GTR	Trammel nets	SI_SP<1.4	SI_SP>=1.4&<4.1	SI_SP>=4.1
LLS	Set longlines	SI_SP<1.4	SI_SP>=1.4&<4.1	SI_SP>=4.1
LLD	Drifting longlines	SI_SP<1.4	SI_SP>=1.4&<4.1	SI_SP>=4.1
OTB	Otter bottom trawls	SI_SP<1.4	SI_SP>=1.4&<4.1	SI_SP>=4.1
OTM	Otter midwater trawls	SI_SP<1.4	SI_SP>=1.4&<4.1	SI_SP>=4.1
OTT	Otter twin trawl	SI_SP<1.4	SI_SP>=1.4&<4.1	SI_SP>=4.1
PTB	Pair bottom trawls	SI_SP<1.4	SI_SP>=1.4&<4.1	SI_SP>=4.1
PTM	Pair midwater trawls	SI_SP<1.4	SI_SP>=1.4&<4.1	SI_SP>=4.1

3.2.1 Landings from ICES rectangles divided in weight/value by gear type

Larger vessels

Logbook data were used to divide weight/value by gear type for vessels ≥ 12 meters of length. Note that the difference from the Danish analysis is that the presented data is by gear type (e.g., OTT, OTB, GNS etc.). The analysis concern ICES rectangles that contain the pre-investigation area and the surrounding rectangles i.e., 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2. Processing

and manipulation of data followed the same procedures presented in section 3.1.2. Tables related to the plots were presented as tables in an appendix.

Smaller vessels

The analysis includes mapping of landings by weight/value and gear type for vessels < 12 meters of length. Vessels < 12 meters of length are not obliged to hand in VMS data; therefore, the analysis was set to a spatial resolution of ICES rectangles. The dataset includes the ICES rectangles 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2. Processing and manipulation of data follows the same procedures presented in 3.1.2. Tables related to the plots were presented as tables in an appendix.

3.2.2 VMS data for relevant ICES rectangles divided into gear and type of fishery

Logbook and VMS data can yield information on fishing activity from fishing vessels of ≥ 12 meters of lengths. Vessels ≥ 15 meters of length since 2009 and vessels ≥ 12 meters of length since 2012 has been obliged to have a VMS installed.

The Swedish VMS data has been filtered to identify potential fishing by a speed filter 1.4-4 knots and a spatial filter, deselecting "fishing speeds" within 3 nautic miles (nm) from any harbour (corresponds well to Swedish trawling limit).

The distribution of the fishing activity was presented by gear type (e.g., single boat bottom otter trawls, twin bottom otter trawls, midwater pair trawls) and type of fishery (e.g., pelagic or demersal fisheries). The VMS points were averaged over the investigated period and the frequency was plotted in a grid. The grid is a 0.05 × 0.05-degree grid, which is equivalent to what ICES uses in their C-square geocode system. The analysis concern ICES rectangles that contain the pre-investigation area and the surrounding rectangles i.e., 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2, see Figure 1-1.

The VMS positions were accumulated and presented in a table showing the number of points within and outside the pre-investigation area by ICES rectangle and type of fishery.

3.3 Data – Poland

Polish data were acquired from the Ministry of Agriculture and Rural Development (Fisheries Monitoring Centre). The dataset includes the ICES rectangles 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2 for a ten-year period. Rambøll made an enquiry for both VMS and logbook data. A table with the enquired logbook data can be seen in Table 3-5.

Table 3-5 Parameters, variables and their formats for the Polish logbook dataset. The listed parameters may differ once data is delivered.

Parameter	Variable	Format/Unit
YEAR	Year	YYYY
MONTH	Month	MM
ICES	ICES rectangle	4-character string
UNIT	Vessel ID (Pseudonymized ID)	Jednostka-### (Vessel-###)
FISHING DATA	Log event start time	DD/MM/YYYY HH:MM
DURATION OF FISHING	Duration of trip	HH:MM
GEAR	Gear	3-character string. DCF Metiér level 4.
MESH SIZE	Mesh size	Mm stretched mesh
CATCHES LIVE WEIGHT KG	Landed weight	Kg

Parameter	Variable	Format/Unit
CATCHES (PIECES)	Applicable for species with a quota on pieces rather than t.	Pieces

A table with enquired VMS data can be seen in Table 3-6.

Table 3-6 Parameters, variables and their formats for the Polish VMS dataset. The listed parameters may differ once data is delivered.

Parameter	Variable	Format/Unit
UNIT	Vessel ID (Pseudonymized ID)	Jednostka-### (Vessel-###)
UTC Time	Date and time	DD/MM/YYYY HH:MM
Course	Instant heading delivered	Degrees
Speed	Instant speed delivered	DD/MM/YYYY
Latitude	Time	HH:MM
Longitude	Instant speed delivered	Knots
ICES	Instant heading delivered	Degrees
EEZ	EEZ Zone	3-character string

3.3.1 Landings from ICES rectangles divided in weight by gear type

Logbook data was used to divide weight by gear type for each ICES rectangle. Note that the difference from the Danish analysis is that the presented data is by gear type (e.g., OTT, OTB, GNS etc.). The analysis concern ICES rectangles that contain the pre-investigation area and the surrounding rectangles i.e., 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2. Processing and manipulation of data followed the same procedures presented in section 3.1.2. Tables related to the plots were presented as tables in an appendix.

3.3.2 VMS data for relevant ICES rectangles

Logbook and VMS data can yield information on fishing activity from fishing vessels of ≥ 12 meters of length. Vessels ≥ 15 meters of length since 2009 and vessels ≥ 12 meters of length since 2012 has been obliged to have a VMS installed.

The Polish VMS data was filtered manually with a speed filter. Rambøll used a similar filter used by Swedish authorities i.e., 1.4-4 knots. Note that there can be no analysis of gear type or type of fishery due to data limitations.

The VMS points were averaged over the investigated period and the frequency was plotted in a grid. Processing and manipulation of data followed the same procedures presented in 3.2.2.

The VMS positions were also accumulated and presented in a table showing the number of points within and outside the pre-investigation area by ICES rectangle and type of fishery.

3.4 Data – Germany

A request for data was sent to the Federal Office for Agriculture and Food in Germany (BLE). The dataset includes the ICES rectangles 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2 for a ten-year period, see Figure 1-1. The level of parameters available from German authorities are quite limited, especially concerning the vessel metiérs, due to data protection. Rambøll made an enquiry for VMS and logbook data. A table with the enquired logbook data and its parameters can be seen in Table 3-7.

Table 3-7 Parameters, variables and their formats for the German logbook dataset.

Parameter	Variable	Format/Unit
LE_CDAT	Catch date	DD/MM/YYYY
LE_GEAR	Gear	3-character string. DCF Metiér level 4.
LE_MSZ	Mesh size	Mm stretched mesh
LE_RECT	ICES rectangle	4-character string.
SPECIES	Species	3-character string.
LE_KG	Landing weight estimate of species SP1 (FAO species codes)	Kg
LE_EURO	Landing value of species SP1 (FAO species codes)	EURO

A table with enquired VMS data can be seen in Table 3-8.

Table 3-8 Parameters, variables and their formats for the German VMS dataset.

Parameter	Variable	Format/Unit
Vessel_ID	Vessel ID (Pseudonymized ID)	String
LATITUDE	Latitude	Decimal degrees
LONGITUDE	Longitude	Decimal degrees
DATE	Date	DD/MM/YYYY
TIME	Time	HH:MM
INSTANT SPEED	Instant speed delivered	Knots
INSTANT HEADING	Instant heading delivered	Degrees
Rectangle	ICES rectangle	4-character string
YEAR	Year	YYYY

3.4.1 Landings from ICES rectangles divided in weight/value by species

Logbook data will be used to divide weight/value by species for each ICES rectangle. Due to data protection in Germany, there are no vessel information stored in the logbook data. There was therefore no option of dividing data into groups based on vessel size. The analysis concern ICES rectangles that contain the pre-investigation area and the surrounding rectangles i.e., 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2, see Figure 1-1. Processing and manipulation of data follows the same procedures presented in section 3.1.2. Tables related to the plots will be presented as tables in an appendix.

3.4.2 VMS data for relevant ICES rectangles

Logbook and VMS data can yield information on fishing activity from fishing vessels of ≥ 12 meters of length. Vessels above 15 meters of length since 2009 and vessels ≥ 12 meters of length since 2012 has been obliged to have a VMS installed.

The German VMS data was filtered manually with a speed filter. Rambøll suggests a similar filter used by Swedish authorities i.e., 1.4-4 knots. Note that there can be no analysis of gear type or type of fishery due to data limitations.

The VMS points were averaged over the investigated period and the frequency was plotted in a grid. Processing and manipulation of data follows the same procedures presented in 3.3.2.

The VMS positions was accumulated and presented in a table showing the number of points within and outside the pre-investigation area by ICES rectangle and type of fishery.

3.5 Mapping of harbours, potential impacts, summary, and conclusion

A mapping of home harbours has been made based on the Danish logbook data for the Danish commercial fisheries. This was done to get an understanding of where impacted vessels stem from. The datasets from Sweden, Germany and Poland did not have home harbour included as a parameter in the datasets.

The potential impacts were described at an overall level, as the impacts are dependent of the planned construction work that will be determined in a subsequent design phase e.g., offshore wind turbine types, size, number, and positioning patterns.

The data was also used to conduct a summary on the potential impacts on fishery activities within and around the pre-investigation area i.e., the ICES rectangles 38G3, 38G4, 38G5, 39G2, 39G3, 39G4 and 40G2, see Figure 1-1. This was done by assessing which types of fisheries gears are used in the pre-investigation area and mapping of VMS-points.

In the conclusion the data served as input to investigate the economic loss in short terms and within a longer timeframe from the pre-investigation area. Short term losses can derive from limited access to fishing grounds and changes in fish distribution. Long term losses were expected because of restricted access to fishing grounds. The assessment of potential economic losses was based on the estimated landings in weight and value thereof within the pre-investigation area and cable corridors. Derived from the identification of potential impacts, an analysis of the impact to fisheries was created for the construction and operational phase.

4. BASELINE – DENMARK

This section describes the baseline for Danish fisheries in the southern Baltic Sea.

4.1 Interview

Thomas Thomsen, chairman of Bornholm's & Christiansø's Fisheries Association and board member of the Danish Fishermen PO (DFPO), was invited for an interview concerning the potential impacts of the project to the commercial fisheries. At the time of interview in 2022, there were 41 members with 27 active vessels. If fishermen outside the DFPO is accounted for, then it was assessed that there are 34 active vessels on Bornholm. DFPO informed that the most important fish species caught within the areas designated for OWFs were European flounder, European plaice, turbot, European sprat, sandeel (*Ammodytes spp.*) and Atlantic cod. Vessels that operate within the areas designated for OWF used gears like entangling nets, hooks, and trawl, where the latter primarily was considered as midwater trawling. DFPO was asked to assess which impacts the realization of the project would pose to the commercial fisheries. DFPO was concerned about the reduction in area for fishing and the potential impact on fish stocks from the OWF e.g., underwater noise, changed current patterns, and shadow effects. It was added that sandbanks are important nursery areas and that a reduction would indirectly have an effect to the fisheries. Especially fishermen with hooks and entangling nets from Bakkerne harbour were highlighted as susceptible to the impacts of the project. The DFPO does not foresee much fishing activity in the planned area for the OWF the coming 10 years but expressed that the situation can change with time. The DFPO added that under current circumstances, the commercial fishermen of Bornholm are moving their efforts to Kattegat and Skagerrak, as they are limited from fishing in the Baltic Sea as a result of the reduced quotas in subdivision 24 (see Figure 2-2) for e.g., Atlantic cod and Atlantic herring. The DFPO considers the reductions in the quota due to e.g., parasites (anisakid nematodes) related to Atlantic cod, predation from seals, and that the Action Plan for the Aquatic Environment have not been followed leading to oxygen depletion in the Baltic Sea. The DFPO would like a possibility to get technical retraining, for those in the commercial fisheries that are interested, to service the OWFs. This could secure jobs in the maritime industry in the future.

The Danish Association for Low Impact Coastal Fishery PO (FSK-PO), also contributed with a comment concerning Energy Island Bornholm. In FSK-PO, they take the position that the construction of wind farms entails general and, sometimes, specific challenges for commercial fisheries. FSK-PO believes that the general challenges stem from the construction phase itself, where the physical disturbance of and activity at the seabed can cause severe disturbances, sediment transport, and reduced visibility with associated ecological and biological problems with impact on bottom dwelling life and fish stocks. In addition, the construction of facilities on the scale of a wind farm requires natural resource extraction, which has serious impacts for the biological life in the areas where the resources are extracted. In this case, with natural resource extraction in the Baltic Sea, it is an accumulative circumstance that the commercial fish stocks are in a historically bad condition with associated critically low stock sizes. FSK-PO indicated that a realization of the project would potentially be a challenge for the members of FSK-PO that use gillnets (standing). Gillnets (standing) are repositioned annually by driving the pole into the seabed, and some of which, are potentially located in the cable corridor close to land. FSK-PO stated that it is difficult to assess if there will be a direct conflict with its members due to the lack of a selected cable corridor, but that the potential is there if there is an overlap and if they are not allowed to fish in the cable corridor.

4.2 VMS data for relevant ICES rectangles divided into type of fishery and gear

4.2.1 Fishery types

The distribution of the fishing activity is presented here by type of fishery (e.g., bottom trawl, pelagic trawl, and gillnets). A similar analysis has been conducted for the individual type of fisheries, and the figures of distribution patterns can be found in Appendix 1. Please note that, miscellaneous gear and traps (not specified) was only observed and used in 40G2 further up in the Sound, outside of both the offshore cable corridor and the wind farm area, therefore these fishery types have been sequestered from the following analysis.

VMS pings considered as active fishing has been filtered from pings that are either deemed as floating or steaming and presented by ICES rectangle for the period 2010 to 2020 in Figure 4-1. As seen in Figure 4-1, the highest activity was registered in 38G5 and 39G4. Except for 39G2 and 40G2, the fishing intensity mainly stems from bottom trawlers. The areas designated for the OWFs are located in 39G4 and 38G4, with the highest areal uptake in 38G4. 38G4 and 39G4 are heavily fished in the investigated period, mostly by bottom trawlers, but fisheries with midwater trawlers; and hooks and lines are also widely used in both rectangles. The offshore cable corridor is planned through 38G4, 39G4, 39G3, 39G2 and 40G2. The fishing intensity is, based on Figure 4-1, relatively small along the route towards Zealand. In 39G2 and 40G2 the dominating fisheries are midwater trawls, and gillnets and entangling nets, respectively.

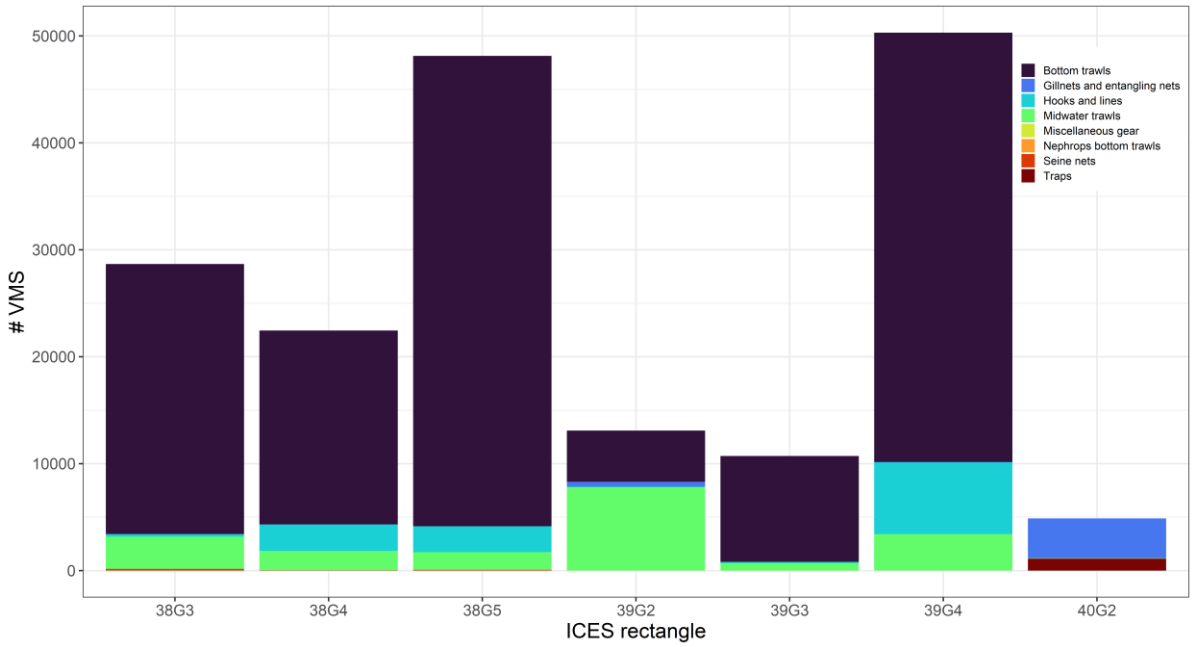

Figure 4-1 VMS pings from 2010 to 2020 by fishery types (i.e., bottom trawls (dark blue); gillnets and entangling nets (light blue); hooks and lines (teal); midwater trawls (light green); miscellaneous gear (orange); seine nets (red) and traps (brown)) and ICES rectangle. Only pings that are considered as active fishing has been included in the analysis.

To increase the knowledge of the impacted fleet, an analysis was done to understand which types of fisheries were operating within and outside the proposed OWF and the cable corridors in ICES rectangle 39G4 and 38G4 over the period 2010 to 2020, Figure 4-2. In 39G4 it is primarily bottom trawling that takes place, but mainly in the pre-investigation area outside the areas designated for OWF. Hooks and lines, and midwater trawls were also used in 39G4, but these fisheries occurred mostly outside the OWF designated areas. 38G4 had less activity than what

was observed in 39G4. Bottom trawls were also the main type of fisheries used in 38G4 with limited activity from both hooks and lines, and midwater trawls.

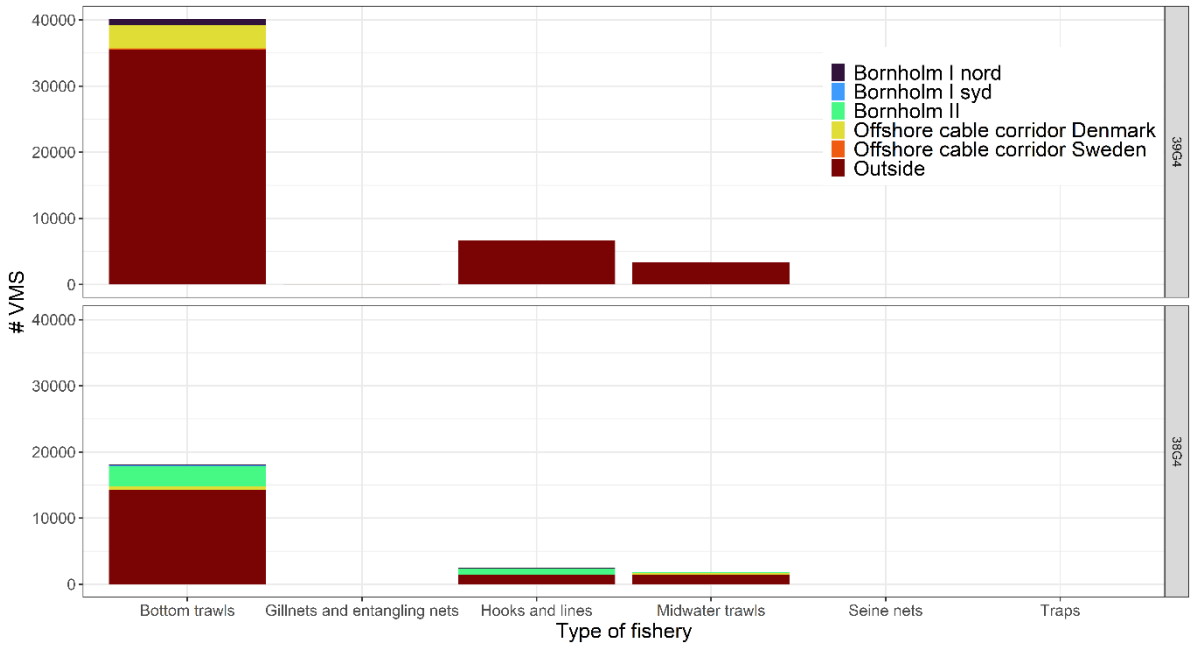

Figure 4-2 VMS pings from 2010 to 2020 by fishery types (i.e., bottom trawl, gillnets and entangling nets, hooks and lines, midwater trawls, miscellaneous gear, seine nets, and traps) and ICES rectangle 39G4 or 38G4. Only pings that are considered as active fishing has been included in the analysis. Bornholm I OWF North (dark blue), Bornholm I OWF South (light blue), Bornholm II OWF (teal) are VMS pings set within the individual offshore wind farm (OWF) area. Offshore cable corridor Denmark (yellow) and offshore cable corridor Sweden (orange) are VMS pings set within the two cable corridors. Outside (brown) are VMS pings outside the OWF.

In 39G4 the fishing activity varied between 1,082 and 9,273 pings per year, Figure 4-3. The fishing intensity of the Danish fleet has steadily decreased since 2014 and VMS pings set within Bornholm I nord and syd has also decreased in proportion over time. In 38G4 the VMS pings varied between 271 and 4,838, and the amount of VMS pings has been decreasing over time, Figure 4-3.

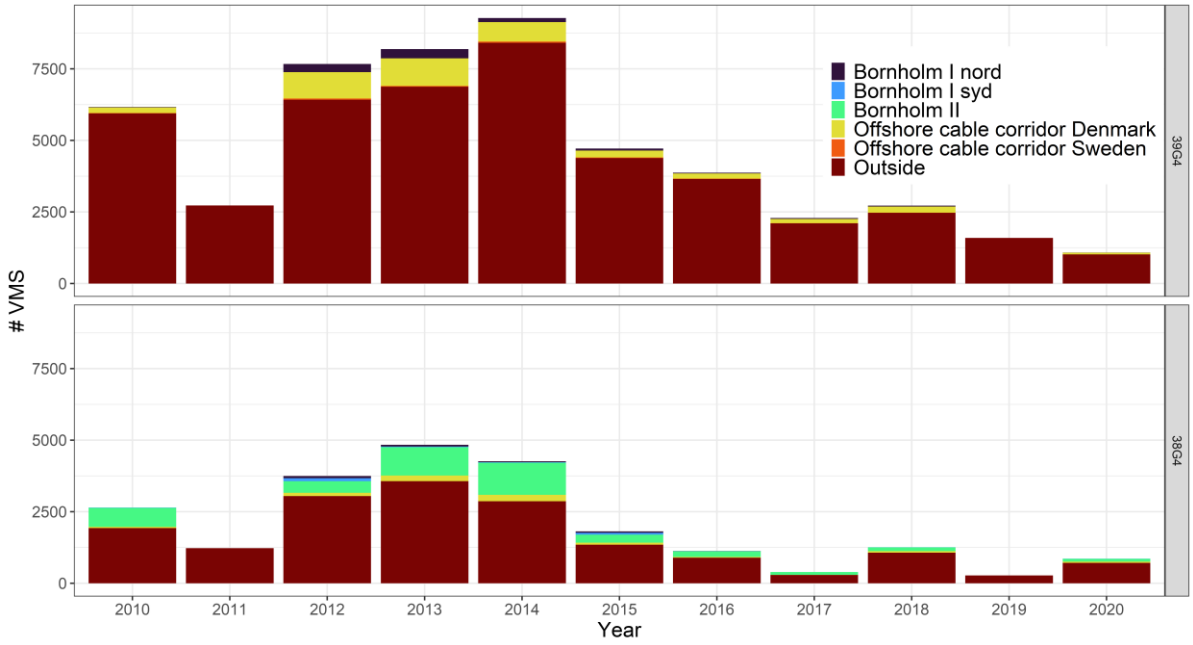

Figure 4-3 VMS pings from 2010 to 2020 by ICES rectangle 39G4 or 38G4. Only pings that are considered as active fishing has been included in the analysis. Bornholm I OWF North (dark blue), Bornholm I OWF South (light blue), Bornholm II OWF (teal) are VMS pings set within the individual offshore wind farm (OWF) area. Offshore cable corridor Denmark (yellow) and offshore cable corridor Sweden (orange) are VMS pings set within the two cable corridors. Outside (brown) are VMS pings outside the OWF.

4.2.2 Bottom trawl

Over the last decade, fishing with bottom trawling has happened in all of the Southern Baltic Proper. The intensity was largest in 39G4 and 38G4, when compared to the distribution of the other investigated ICES rectangles, Figure 4-4. There has been little fishing intensity within the areas designated for OWFs due to the hard bottom habitats and reef formations in the area, but with some intensity in the northern part of Bornholm I nord and the south-eastern part of Bornholm II. The intensity of bottom trawling has particularly been high just north of Bornholm I nord and east of Bornholm II. The offshore cable corridor is located in areas with high intensity of bottom trawling, especially north and west of Bornholm I nord. The intensity of bottom trawling was decreasing along the western part of the offshore cable corridor towards the landfall at Zealand. Bottom trawling has occurred in all parts of the areas designated for OWFs, whereas some parts of the cable corridor in the Køge Bay has been left untrawled.

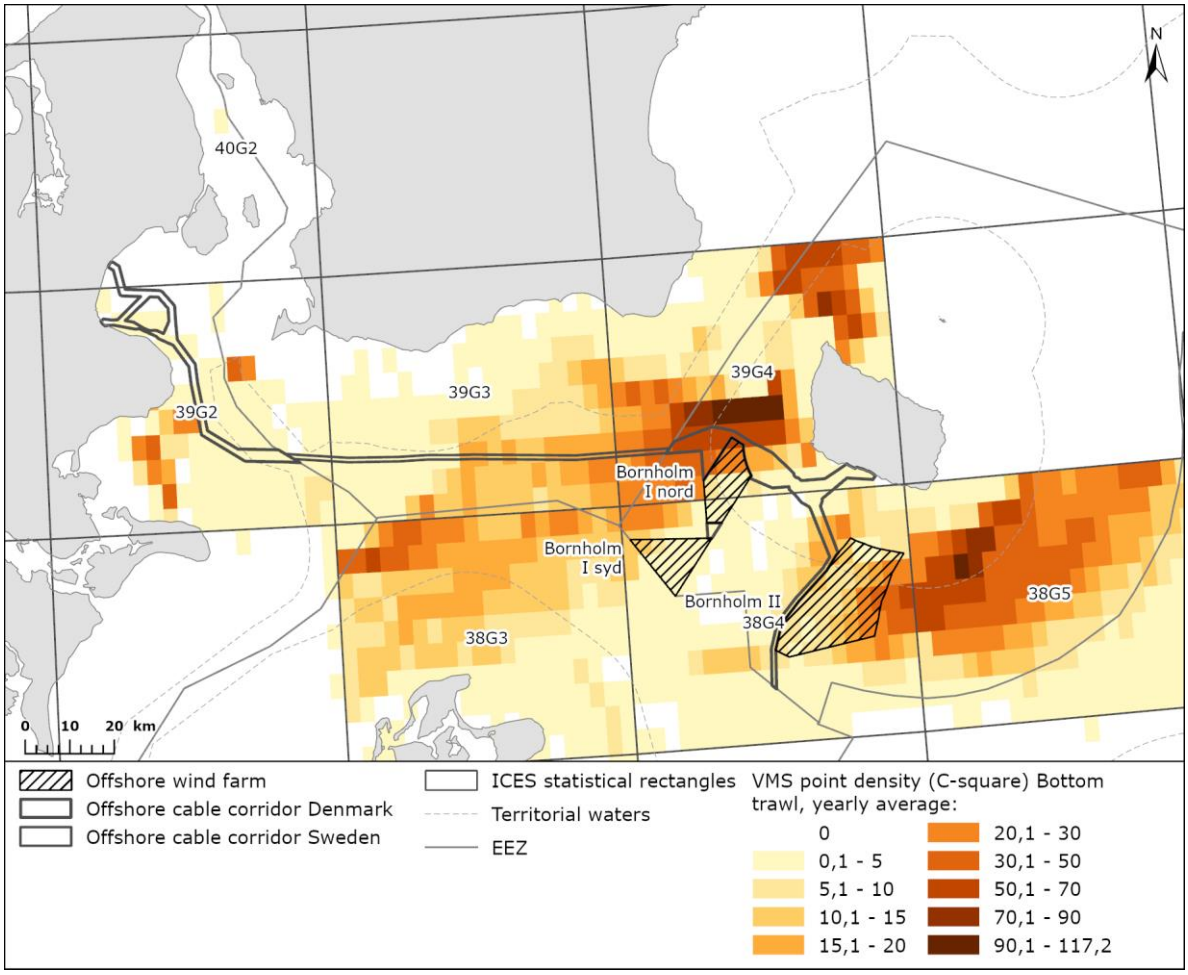

Figure 4-4 The distribution of bottom trawling by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The gears presented in Table 3-1, that are considered as bottom trawls, include otter bottom trawls, otter twin trawls, pair bottom trawls, bottom trawls (not specified) and nephrops bottom trawl. The distribution of the beforementioned bottom trawls can be found in Appendix 1. Otter bottom trawl is the gear type which contributes most to the VMS point density of the bottom trawls.

4.2.3 Midwater trawl

Fishing with midwater trawls has been somewhat scattered over the last decade in the Southern Baltic Proper, Figure 4-5. The intensity of midwater trawls was largest in Faxe Bay located in ICES rectangle 39G2. ICES rectangle 39G2 was also the area where the intensity was highest compared to the rest of the investigated ICES rectangles. In 38G4, which includes a section of the pre-investigation area (Bornholm II), there has been some activity, especially north of the wind farm area. The intensity of midwater trawls within Bornholm I nord, Bornholm I syd, and Bornholm II has been limited in the investigated period. The intensity of midwater trawling in the offshore cable corridor is highest north of Bornholm II and near the entry to the Sound.

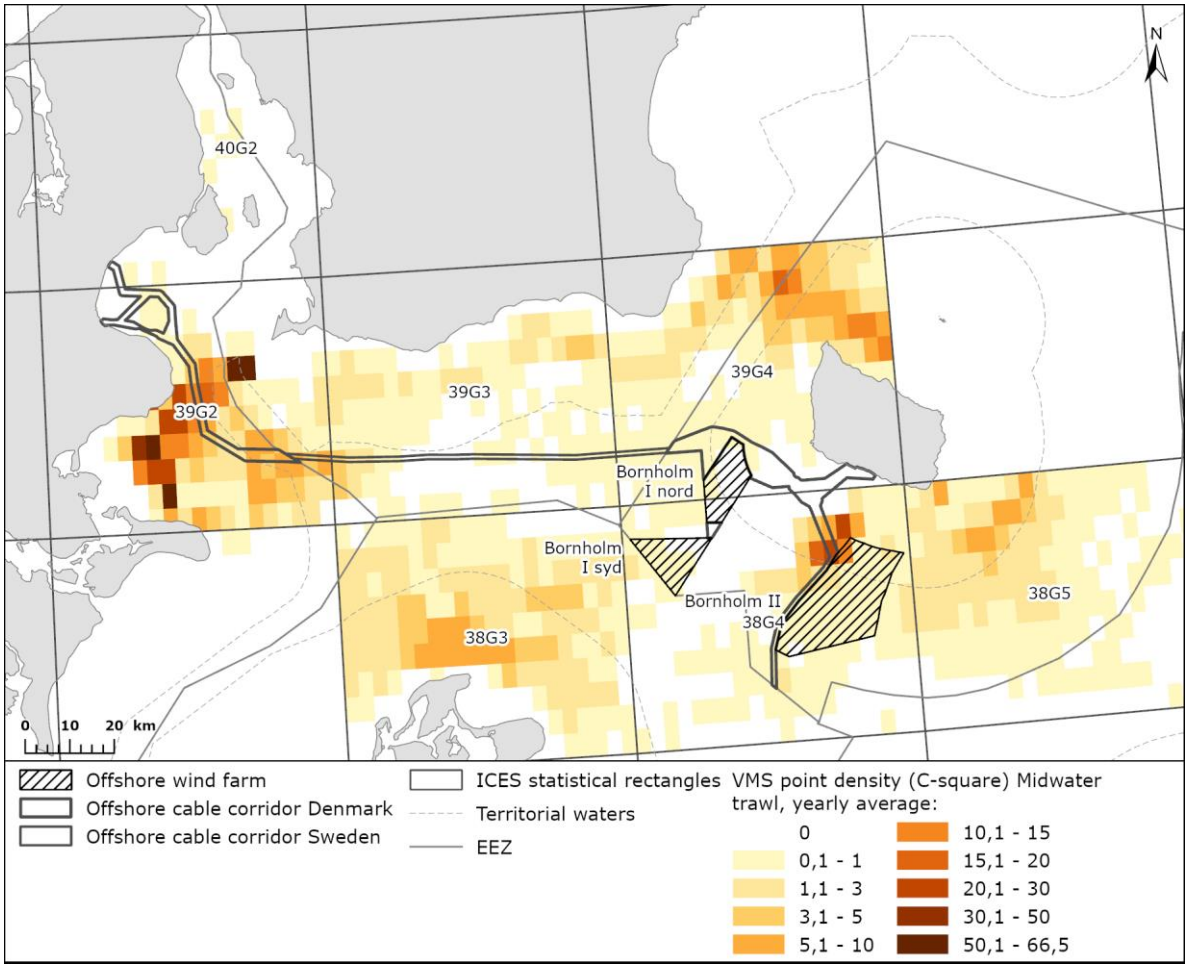

Figure 4-5 The distribution of midwater trawl by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The gears presented in Table 3-1, that are considered as midwater trawls, include otter midwater trawls and pair midwater trawls. The distribution of the beforementioned midwater trawls can be found in Appendix 1. Pair midwater trawls were more frequently used over otter midwater trawls. There has been an overlap in where the two gear types was used and where the VMS point density was the highest.

4.2.4 Gillnets and entangling nets

The usage of gillnets and entangling nets has been very limited during the analysed period. As it is a static type of fishery, it has been used somewhat locally and nearshore. According to the design, ballasting and buoyance, these nets may be used to fish near the surface, in midwater or at the bottom, either in inland or sea waters. There has been some activity from gillnets and entangling nets within the eastern part of Bornholm II, Figure 4-6. As for the offshore cable corridor, there has been some overlapping activity from gillnets and entangling nets in Køge Bay.

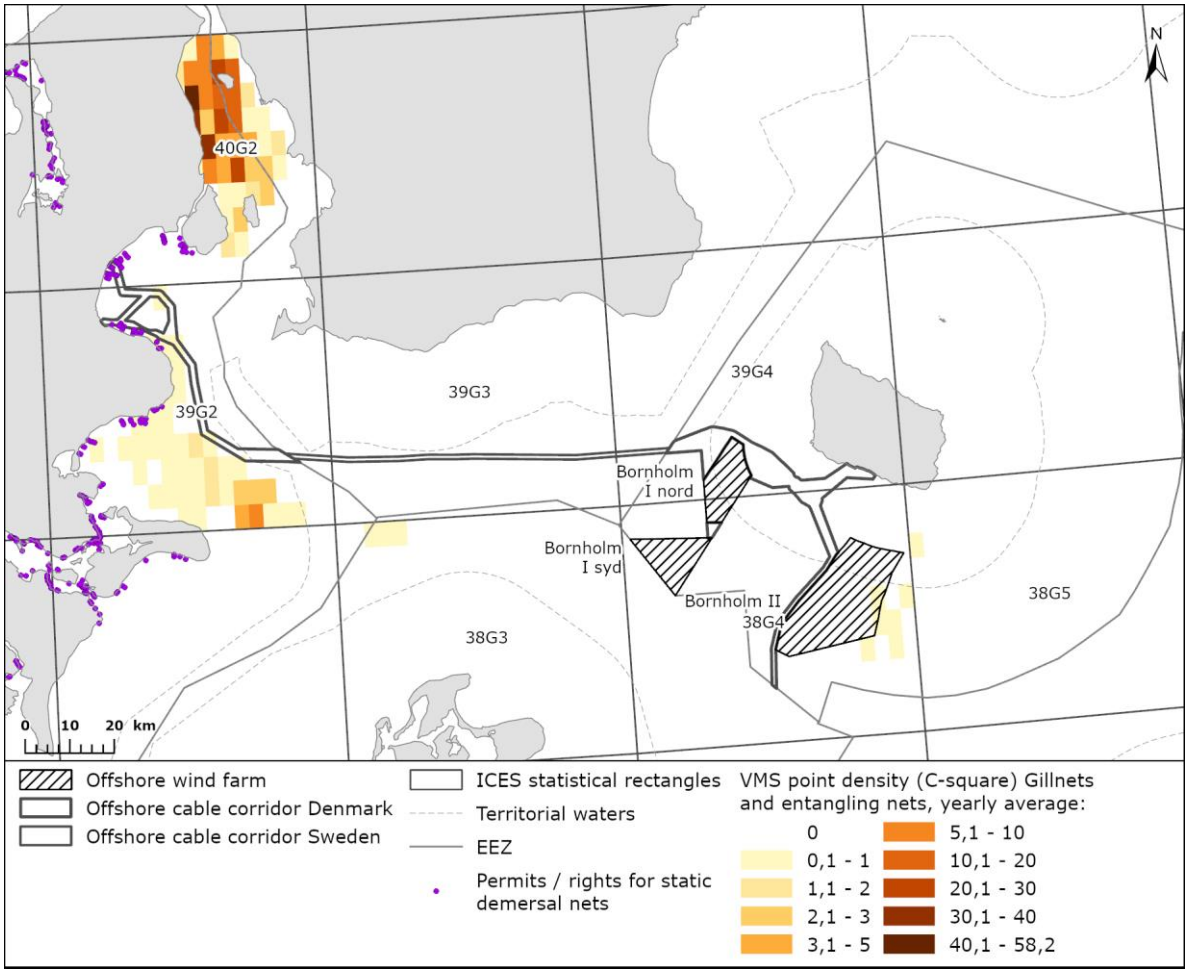

Figure 4-6 The distribution of gillnets and entangling nets by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The gears presented in Table 3-1, that are considered as gillnets and entangling nets, include gillnets, gillnets (standing), stationary uncovered pound nets and trammel nets. The distribution of the beforementioned gillnets and entangling nets can be found in Appendix 1. Unlike both bottom and midwater trawls, gillnets and entangling nets are usually operated by smaller vessels (< 12 m), that are not obliged to have a VMS installed. Therefore, the distribution pattern of gillnets and entangling nets illustrated in Appendix 1 and Figure 4-6 is not the complete picture and should be concluded upon with some caution. As indicated by Figure 4-6, there are activities from gillnets and entangling nets in Faxe Bay and Køge Bay. The analysis of gillnets and entangling nets should be seen in connection with current permits / rights for static demersal nets in both areas as the permits indicates where activity from smaller vessels may be, Figure 4-7.

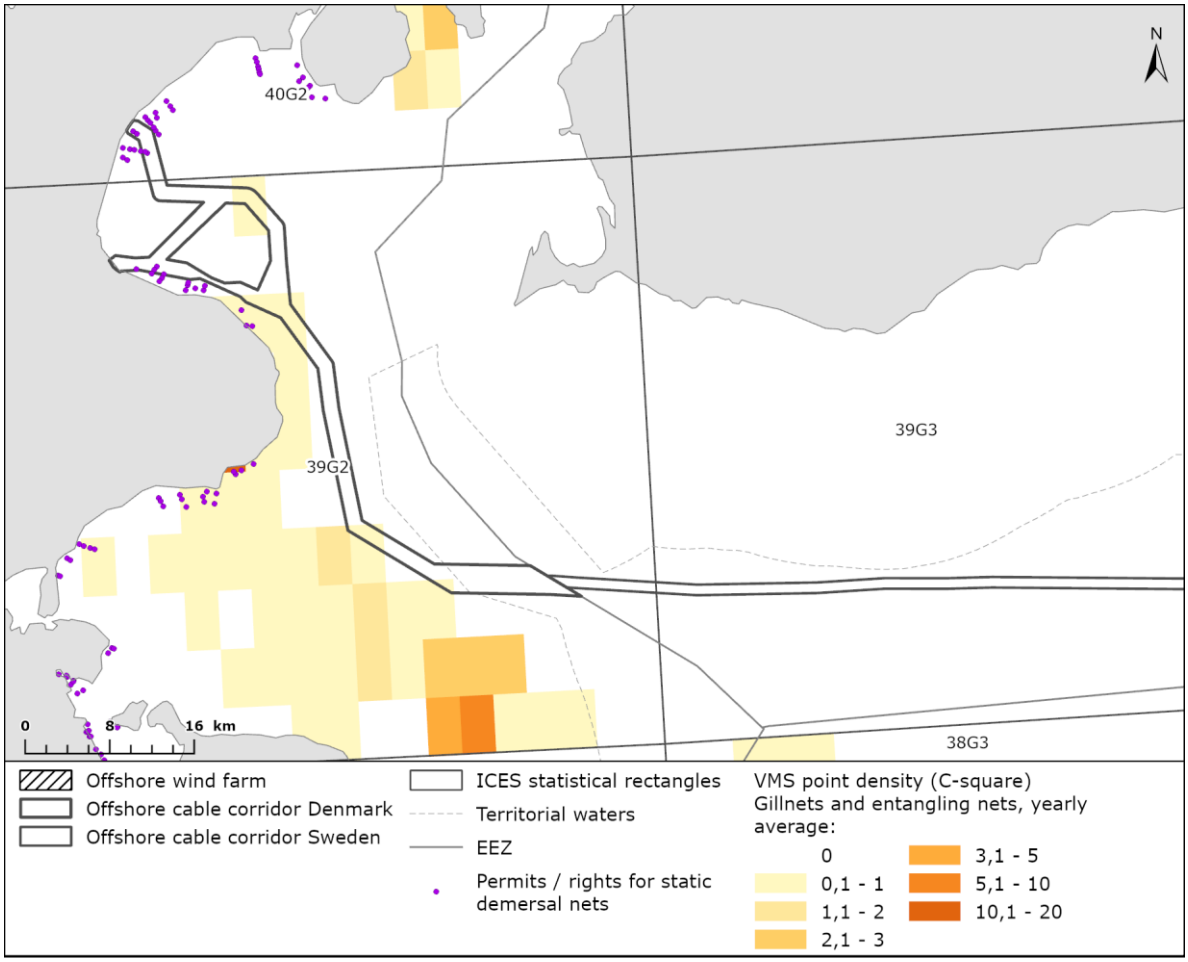

Figure 4-7 The distribution of gillnets and entangling nets by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. Permits / rights for static demersal nets are shown as dots and based on data from the Danish Fisheries Agency.

4.2.5 Hooks and lines

In the investigated period hooks and lines were used, especially in the eastern part of the Baltic Proper within the pre-investigation area of the OWFs, Figure 4-8. Except for the south-western part of Bornholm II, the fishery was conducted in the entirety of the areas designated for OWFs. Areas with high fishing intensity included Bornholm II and east of this area. The fishing activity was also high in the offshore cable corridor, but mainly within 38G4, 39G4 and 39G3.

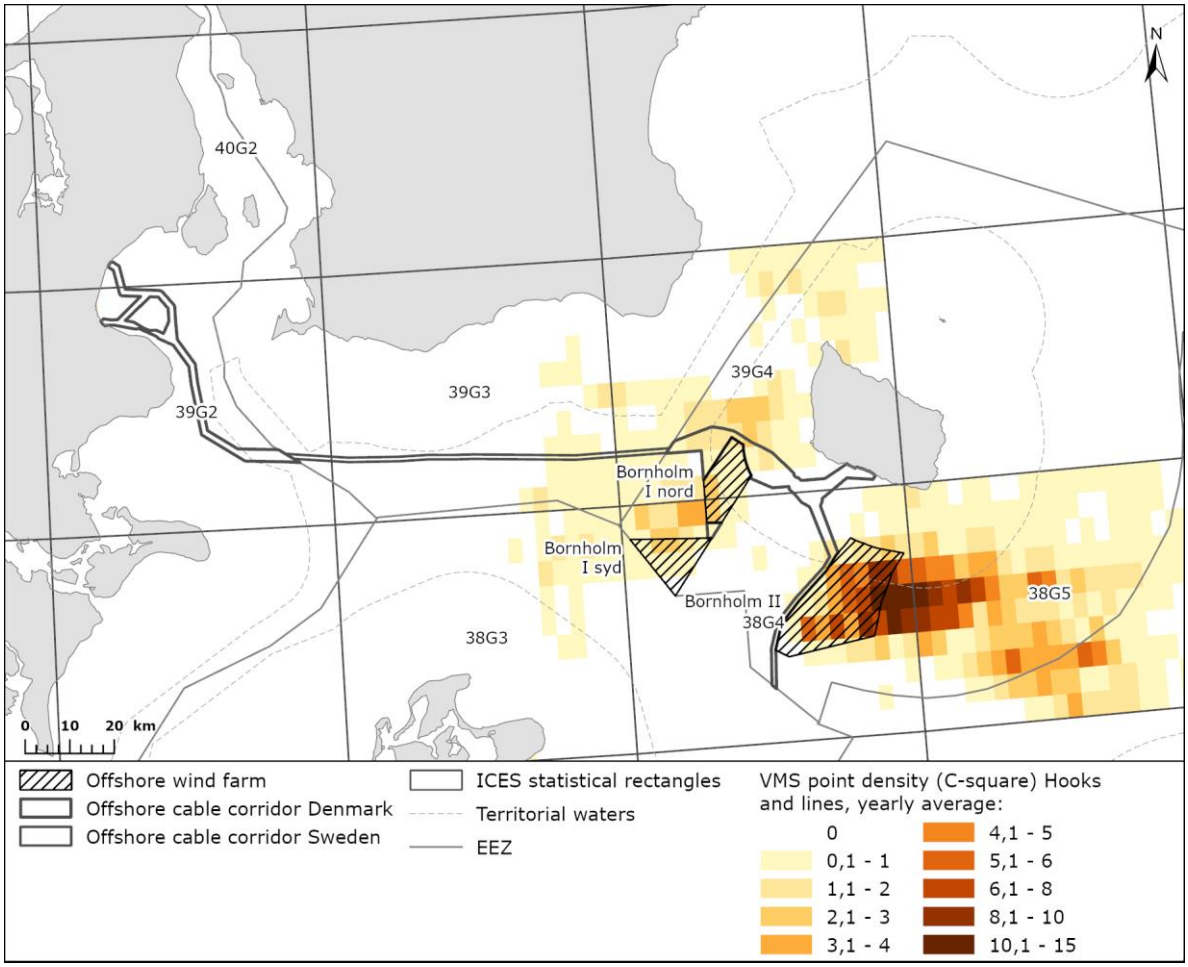

Figure 4-8 The distribution of hooks and lines by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The gears presented in Table 3-1, that are considered as hooks and lines, include long lines and drifting long lines. Much like gillnets and entangling nets, the fishing activity primarily originates from smaller vessels (< 12 meters of Length). As this is the case, the activity from fishery with hooks and lines presented in Figure 4-8 and Appendix 1 are underrepresented and should be concluded upon with some caution.

4.2.6 Seine nets

Seine nets are not a widely used type of fishery in the Baltic Proper. Seine nets were primarily used outside the pre-investigation area. As can be seen on Figure 4-9, there were little activity within both the offshore cable corridor and the OWFs during the investigated period. Relative to the other types of fisheries, this gear is used infrequently.

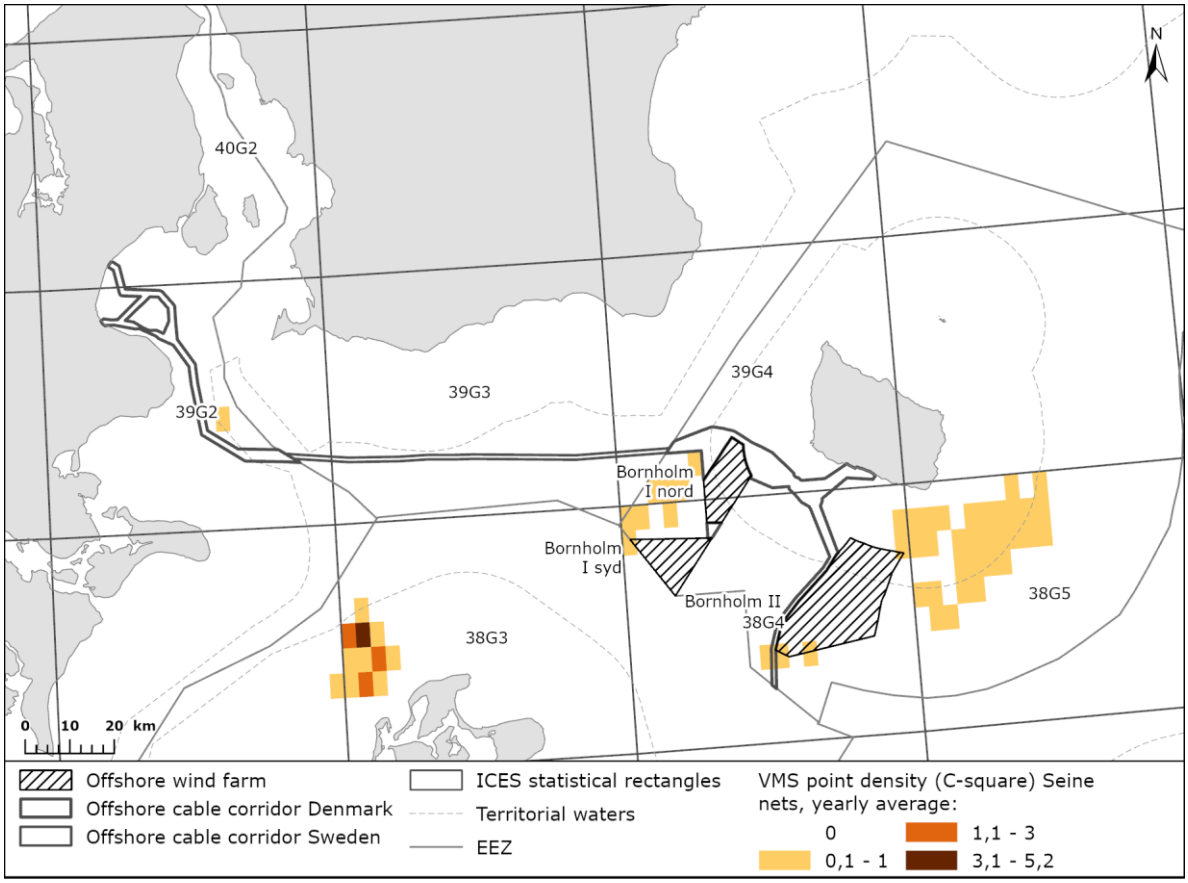

Figure 4-9 The distribution of seine fisheries by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The gears presented in Table 3-1, that are considered as seine nets, include Danish seines and Scottish seines. The distribution of the beforementioned seine nets can be found in Appendix 1. Seine fisheries are mainly undertaken by vessels ≥ 12 m with a VMS installed.

4.2.7 Traps

During the last decade traps have been used within 38G4, where some of the observed usage was within Bornholm II, Figure 4-10. Traps were not observed within the offshore cable corridor. Much like seine nets, traps were used infrequently relative to other types of fisheries in the Baltic Proper. Traps have mainly been used in 40G2.

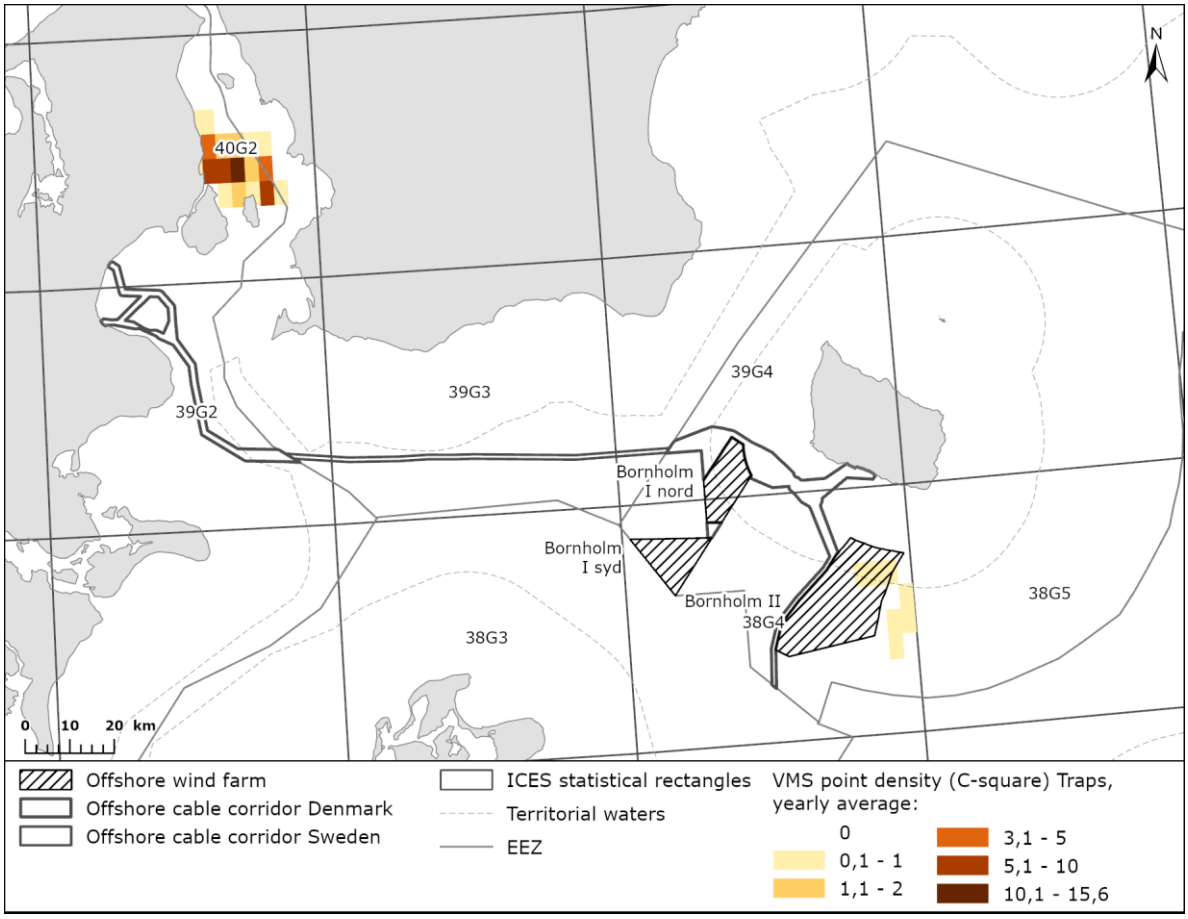

Figure 4-10 The distribution of fisheries with traps by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The term trap covers all types of traps (not specified) presented in Table 3-1.

4.3 Analysis of ICES-rectangles

In this section the individual ICES rectangles are described i.e., 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The descriptions are based on catches within the individual rectangles divided in weight/value by species and vessel size. VMS is not mandatory on vessels < 12 meters of length; therefore, the catches from this fleet has been separated from larger vessels (≥ 12 meters of length) equipped with VMS as there is a better spatial understanding of their activity.

4.3.1 Larger vessels (≥ 12 meters of length) – Landings

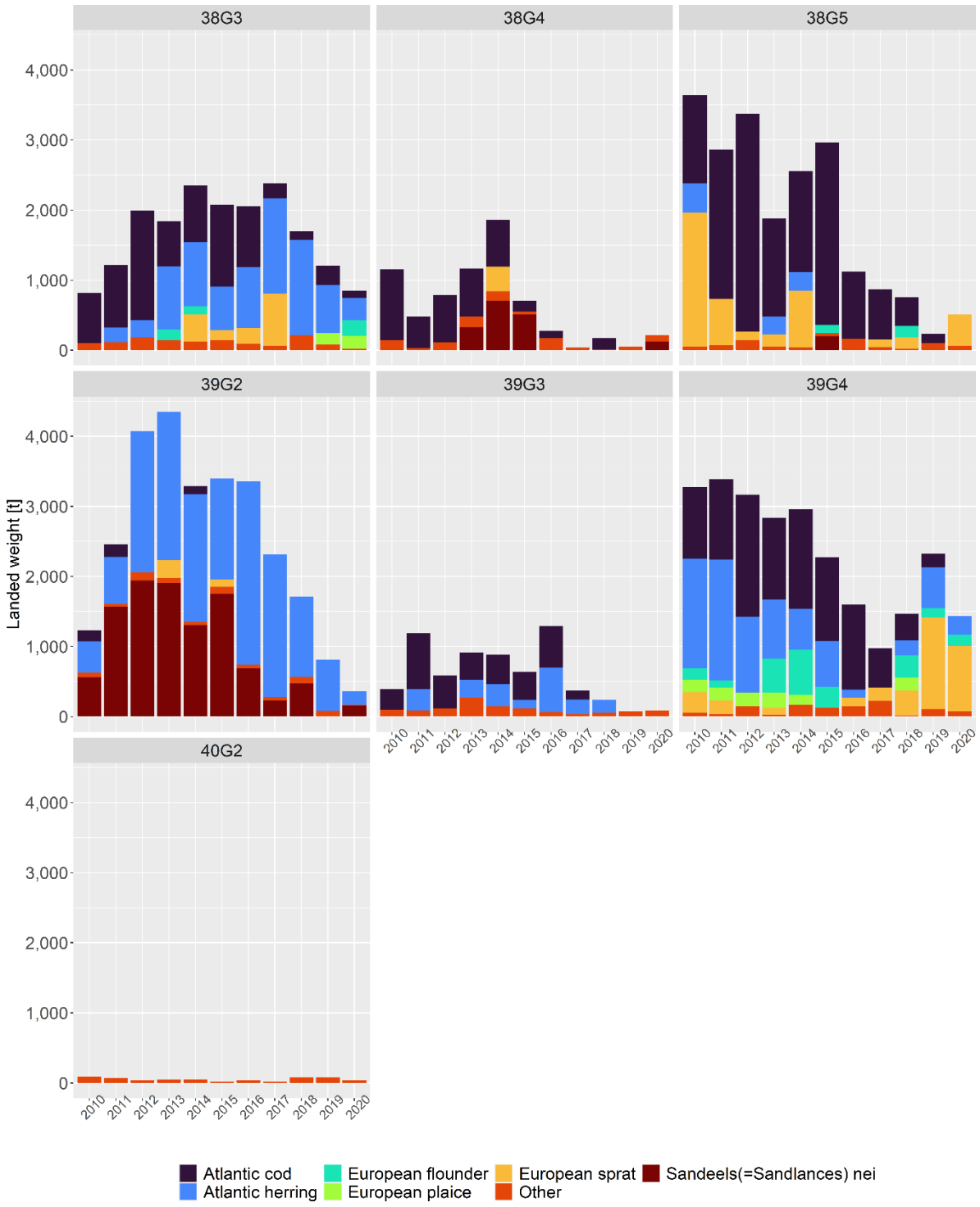

Figure 4-11 Landed weight [t] by larger vessels (≥ 12 m) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landings for species where the catch constituted less than 10 [t] the respective year.

38G3

The majority of 38G3 is located within the German EEZ. None of the OWFs and the cable corridor is placed within this rectangle. In the start of the investigated period the landings were cod, until 2013, when the fisheries started to target pelagic species like Atlantic herring and European sprat

more often due to the changes in the quota seen in Table 2-1. From 2017 to now, the fisheries have gradually started to land more flatfish and less pelagic species, Figure 4-11. A total of 20 different species were landed in the period by larger vessels. The yearly average landed weight was 1,679 tonnes. Landings within 38G3, have yearly been declining since 2017.

38G4

Bornholm I nord is partly located within ICES rectangle 38G4, whereas the entirety of Bornholm I syd and Bornholm II is found here. A combination of landings of cod and sandeel has dominated the landings in the investigated period. The fisheries are primarily conducted by bottom trawlers, but with some contribution from both hooks and lines, and midwater trawls. As with the rest of the Baltic Sea, the decreasing quota and total allowable catch on cod has influenced the composition of the landed catch, Figure 4-11. The fisheries by larger vessels in the area has neared a collapse in 2017 and 2019. Less than 250 tonnes were landed yearly by larger vessels from 2017 to 2020. In some years, the industrial species sandeel was heavily fished in comparison to the combined landings. A total of 18 different species were landed in the period by larger vessels, Appendix 2. The yearly average landed weight was 626.6 tonnes. Other species of high importance to the fisheries here were Atlantic herring, salmon (*Salmo salar*), European flounder, European plaice, European sprat and whiting (*Merlangius merlangus*). The low growth, poor condition and high natural mortality of cod are not expected to change the coming years, see section 2.2 for pressures.

38G5

The ICES rectangle 38G5 is located southeast of Bornholm. None of the OWFs and the cable corridor is placed within 38G5. The landed weight by the larger vessels consisted especially of Atlantic cod and European sprat. In total, 18 different species were landed in the period. The yearly average landed weight was 1,887 tonnes. There has been a decline in the landed weight within 38G5 in the investigated period, which is mainly driven by the lower quota for cod. The fisheries are primarily conducted by bottom trawls, but with some contribution from both hooks and lines, and midwater trawls. Less than 1,000 tonnes were landed yearly by larger vessels from 2017 to 2020.

39G2

The ICES rectangle includes Faxe Bay and the areas around the fisheries harbor of Rødvig. The fishery by larger vessels has in the period primarily targeted species like Atlantic herring, European sprat and sandeels, Appendix 2. Sandeels and European sprat are caught for industrial purposes i.e., fish meal and oil production. There is currently no scientific advice requested by the EU for the unrestricted sandeel fisheries in the area. The stock size of Atlantic herring i.e., the western Baltic herring stock remains below safe biological limits and there is scientific advice to stop the fisheries. There has gradually been a decrease in the total allowable catch for the Atlantic cod i.e., the western Baltic herring stock, which can be seen in Figure 4-11. In the investigated period, 23 different species were landed by the larger vessels Appendix 2. The yearly average landed weight was 2,486 tonnes, but since 2018 the landed weight within 39G2 has been below average.

39G3

The main part of 39G3 is located within the Swedish EEZ with harbours like Trelleborg and Ystad. The larger vessels have targeted cod and herring here. The intensity of Danish fisheries within the 39G3 is low and it has been decreasing since 2016, Figure 4-11. The fisheries are mainly conducted by bottom trawlers. Low quotas and total allowable catch on the Atlantic herring stock i.e., the western Baltic herring stock, and Atlantic cod is the limiting factor for years like 2019 and 2020 where the landings are low. As both stocks are in poor condition, the fisheries have recently

switched target to different types of flatfish. 18 different species were landed in the period by larger vessels, Appendix 2. The yearly average landed weight was 607 tonnes. The last two years less than 100 tonnes have been landed.

39G4

Bornholm I nord is partly located within ICES rectangle 39G4. 39G4 includes important fisheries harbours like Rønne og Tejn. This is an area with intense bottom and pelagic trawling. Here, landings of Atlantic herring and Atlantic cod has dominated the landings from 2010 to 2017. As with the rest of the Baltic Sea, the decreasing quota and total allowable catch on Atlantic herring and Atlantic cod has influenced the composition of the landed catch remarkably, Figure 4-11. Landings of Euopean sprat is increasingly important for the pelagic fisheries as the quota for the western Baltic herring is limited. Most of the landings in the area has since 2019, been for pelagic species, Appendix 2. In some years, the industrial used species sandeel was fished for, and for consumption purposes different types of flatfish and whiting. In total, 24 different species were landed in the period by larger vessels. The yearly average landed weight was 2,337 tonnes.

40G2

The ICES rectangle 40G2 is primarily located in the Sound. Larger vessels have little activity here, which is partly due to the intense shipping traffic and that there is a historic ban on bottom trawling. Annually, less than 90 tonnes of fish and invertebrates are caught here by larger vessels with an average of 52 tonnes. In the analysed period, the landings in terms of weight consisted primarily of Atlantic cod, European eel (*Anguilla anguilla*), European flounder, and European plaice. 25 different species were landed in the period, with the primary target species being Atlantic cod, Appendix 2. From 2018 and onwards, European plaice have become more frequent in the landings. There was a downward going trend in the landings from 2010 to 2017. The fleet has since landed different flatfish species more frequently and there has been an increase of total landed weight in recent years.

4.3.2 Larger vessels (≥ 12 meters of length) – Value

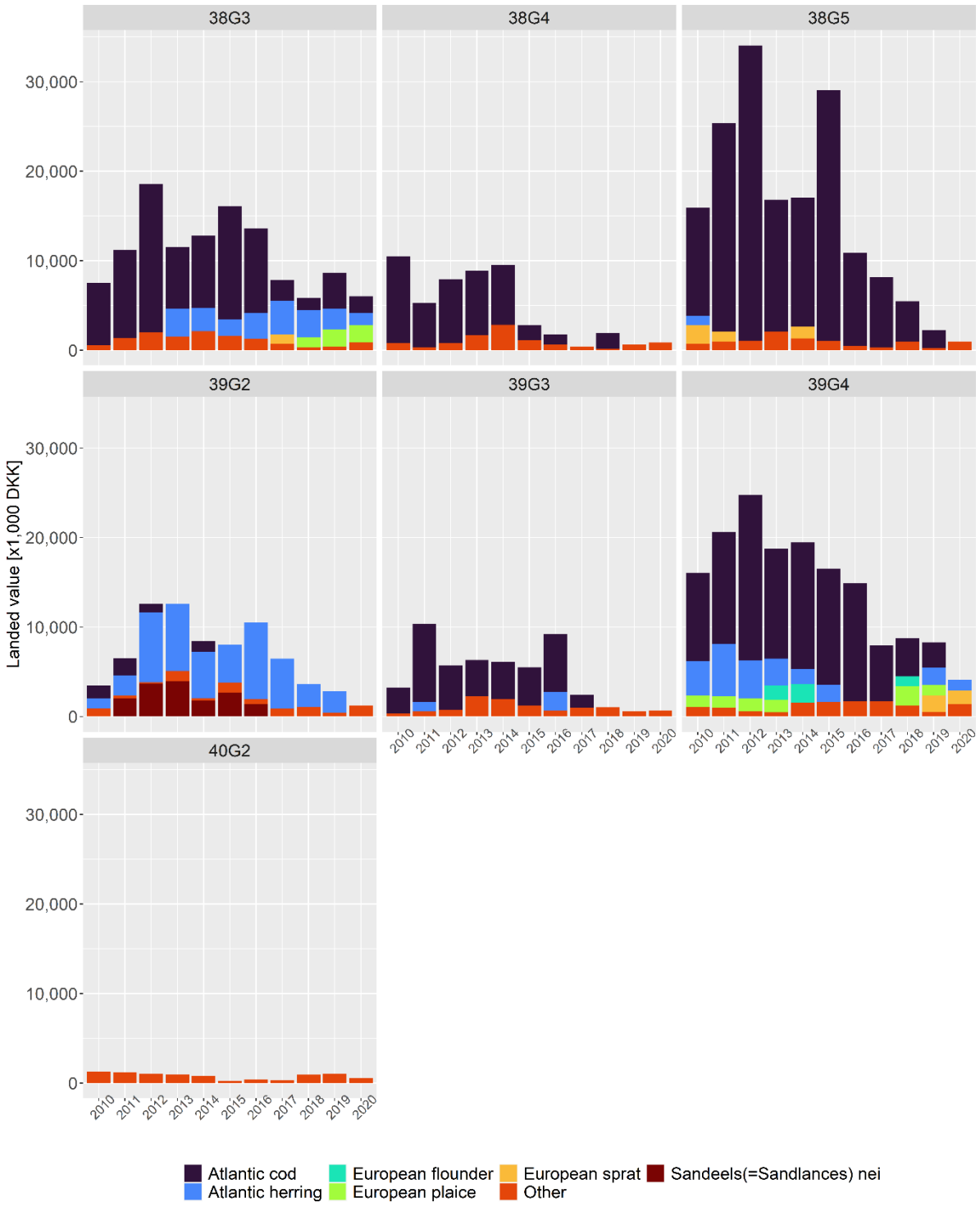

Figure 4-12 Landed value [x1,000 DKK] by larger vessels (≥ 12 m) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landed value for species where the catch constituted less than 100 [x1,000 DKK] the respective year.

38G3

The landed value within 38G3 has declined with the reductions of the quota for Atlantic cod, Figure 4-12. The kilo price for pelagic species like Atlantic herring and European sprat is relatively small in comparison to cod. Despite the increased landings in 2017 from the previous years, it is

not reflected in the accumulated landed value, Appendix 2. The yearly landed value within 38G3 from larger vessels was on average 10,879 [x1,000 DKK], but from 2017 and onwards the landed value has declined to 6,038 [x1,000 DKK] in 2020.

38G4
The landed value within 38G4 has declined with the reductions of the quota for Atlantic cod, Figure 4-12 and see 2.3 for changes in quota. The kilo price for species like sandeels, European sprat and Atlantic herring is relatively small in comparison to that of Atlantic cod. The yearly landed value within 38G4 from larger vessels was on average 4,589 [x1,000 DKK]. From 2015 to 2020 the average landed value has declined to 1,398 [x1,000 DKK], see Appendix 2.

38G5
The landed value within 38G5 has declined with the reductions of the quota for Atlantic cod, Figure 4-12. The kilo price for pelagic species like European sprat and Atlantic herring are relatively small in comparison to that of Atlantic cod. The yearly landed value within 38G5 from larger vessels was on average 15,088 [x1,000 DKK], but from 2015 and onwards the landed value has declined to 985 [x1,000 DKK] in 2020, see Appendix 2 for detailed estimates.

39G2
The accumulated landed value is highly influenced by the reduction in catches for western Baltic herring, and the landed value has declined steadily since 2016. Other than Atlantic herring, sandeels, European sprat and Atlantic cod has had years with some contributions to the landed value within 39G2. The landed value within 39G2 from larger vessels was on average 6,945 [x1,000 DKK]. The landings and the revenue from 39G2 were primarily made from midwater trawls, which is also reflected in the species composition. A more detailed estimate on landed value can be found in Appendix 2.

39G3
The accumulated landed value is highly influenced by the reduction in catches for Atlantic cod and the Atlantic herring i.e., the western Baltic herring stock, and the landed value has declined since 2016, Figure 4-12. Other than Atlatic cod and Atlantic herring, species like European flounder, European plaice, Euroepan sprat, saithe (*Pollachius virens*) and whiting have had years with some contributions to the landed value within 39G3. The landed value within 39G3 from larger vessels was on yearly average 4,652 [x1,000 DKK]. The landings and the revenue from 39G3 were primarily made from bottom trawls, which is also reflected in the species composition, Appendix 2.

39G4
The landed value within 39G4 has declined with the reductions of the quota for Atlantic cod, Figure 4-12. Despite the increased landings in 2019 and 2020 from the previous years, it is not reflected in the accumulated landed value. The yearly landed value within 39G4 from larger vessels were on average 14,565 [x1,000 DKK], but from 2017 and onwards the landed value has declined to 4,128 [x1,000 DKK] in 2020. A more detailed estimate on landed value can be found in Appendix 2.

40G2
The landed value was in the beginning of the investigated period mainly from contributions from European eel and Atlantic cod. Landings of European eel and the quota thereof have changed dramatically over time, and as a result there has been landed less than a tonne since 2015 which has influenced the landed value in the area greatly, Figure 4-12. The landed value within 40G2 had a short period of increased revenue in 2018 and 2019. The yearly average landed value

within 40G2 from larger vessels was 781 [x1,000 DKK]. A more detailed estimate on landed value can be found in Appendix 2.

4.3.3 Smaller vessels (< 12 meters of length) – Landings

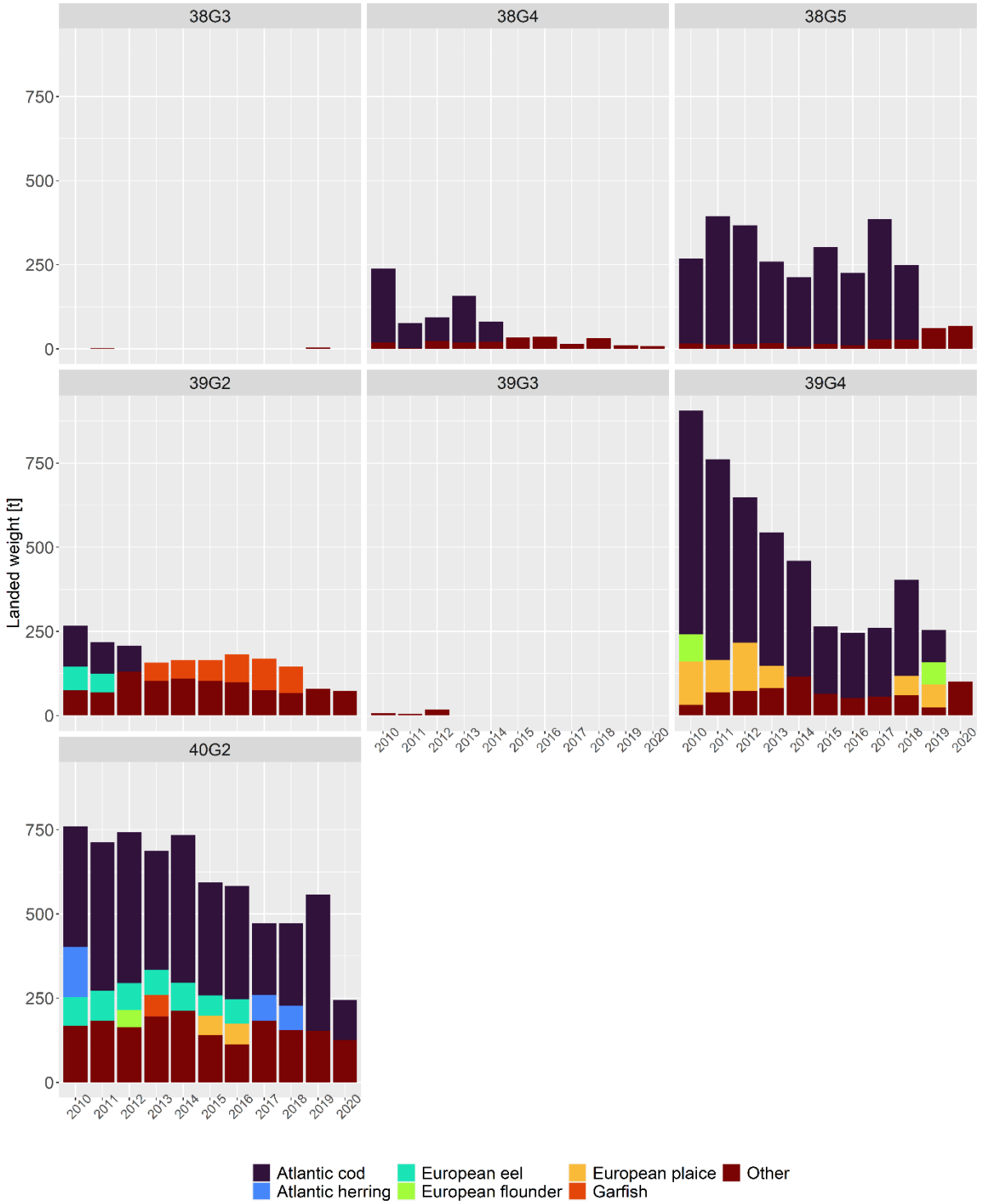

Figure 4-13 Landed weight [t] by smaller vessels (< 12 meters of length) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landings for species where the catch constituted less than 10 [t] the respective year.

38G3
There is very little activity from smaller vessels within 38G3. The ICES rectangle is far from the nearshore areas where smaller vessels from Denmark usually operate due to limited engine power. In 2013, 2014 and 2018, no landings were made, Figure 4-13. In total, 10 different species were landed in the area over the investigated period, Appendix 3. The yearly landed weight within 38G3 from smaller vessels was on average 0.8 tonnes.

38G4
The smaller vessels in 38G4 have targeted cod and salmon. The landings have been decreasing from approximately 240 tonnes in 2010 to 10 tonnes a decade later, Figure 4-13. This is especially seen in the missing catches of Atlantic cod and Atlantic salmon. The landings mainly originate from gillnets and entangling nets, and hooks and lines. Hooks and lines are especially used to land salmon. A total of 16 different species were landed by the smaller vessels, Appendix 3.

38G5
The smaller vessels in 38G5 have targeted cod, but some years included some landings of Atlantic salmon, European flounder and European sprat. The landings have been decreasing from approximately 269 tonnes in 2010 to 68 tonnes a decade later, Figure 4-13. This is especially seen in the missing catches of Atlantic cod. The landings are mainly landed by bottom trawls, and gillnets and entangling nets. 16 different species were landed by the smaller vessels, see Appendix 3 for more details. On average 254 tonnes were landed in the period.

39G2
Smaller vessel within 39G2 contribute less to the total landed weight within the area. Fisheries from smaller vessels have over the investigated period targeted Atlantic cod, Atlantic herring, European eel, European flounder, and garfish (*Belone belone*). In the analyzed period, 36 different species were landed by smaller vessels, Appendix 3. Both Atlantic cod and European eel were a primary target from 2010 to 2014, Figure 4-13. Catches of garfish has over time become an important species for the fisheries operating in 39G2. Less fish is landed in 39G2 from smaller vessels in comparison to 40G2. The yearly average landed weight was 166 tonnes.

39G3
There is very little activity from smaller vessels within 39G3, Figure 4-13. This is because the ICES rectangle is far from the nearshore areas where smaller vessels from Denmark usually operate due to limited engine power. In 2013 and 2018 there were made no landings. During the investigated period, a total of 14 different species were landed in the area, Appendix 3. The yearly landed weight within 39G3 from smaller vessels was on average 3 tonnes.

39G4
The smaller vessels in 39G4 have targeted Atlantic cod, Atlantic salmon, European flounder and European plaice. The landings decreased from approximately 900 tonnes in 2010 to 100 tonnes a decade later, Figure 4-13. This was especially seen in the missing catches of Atlantic cod and Atlantic salmon, whereas landings of flatfish like European plaice and European flounder have been fluctuating. The landings were mainly landed by gillnets and entangling nets, and hooks and lines. Hooks and lines are especially used to land Atlantic salmon. In total, 28 different species were landed by the smaller vessels, Appendix 3.

40G2
In 40G2, landings in terms of weight from smaller vessels are more common. The fisheries from smaller vessels have targeted a more diverse composition of species, Appendix 3. 50 different

species were landed by the smaller vessels. The landings have more than halved from 2010 to 2020, Figure 4-13. There has been a substantial reduction in the landings of Atlantic cod which has had the largest impact on the overall decrease in landings within the area. The average landed weight was 596 tonnes, but since 2015 the landed weight within 40G2 has been below this. Landings of European eel were stable from 2010 to 2014 with an yearly average landed weight of 82 tonnes, but less than 30 tonnes have been landed yearly since 2018.

4.3.4 Smaller vessels (< 12 meters of length) – Value

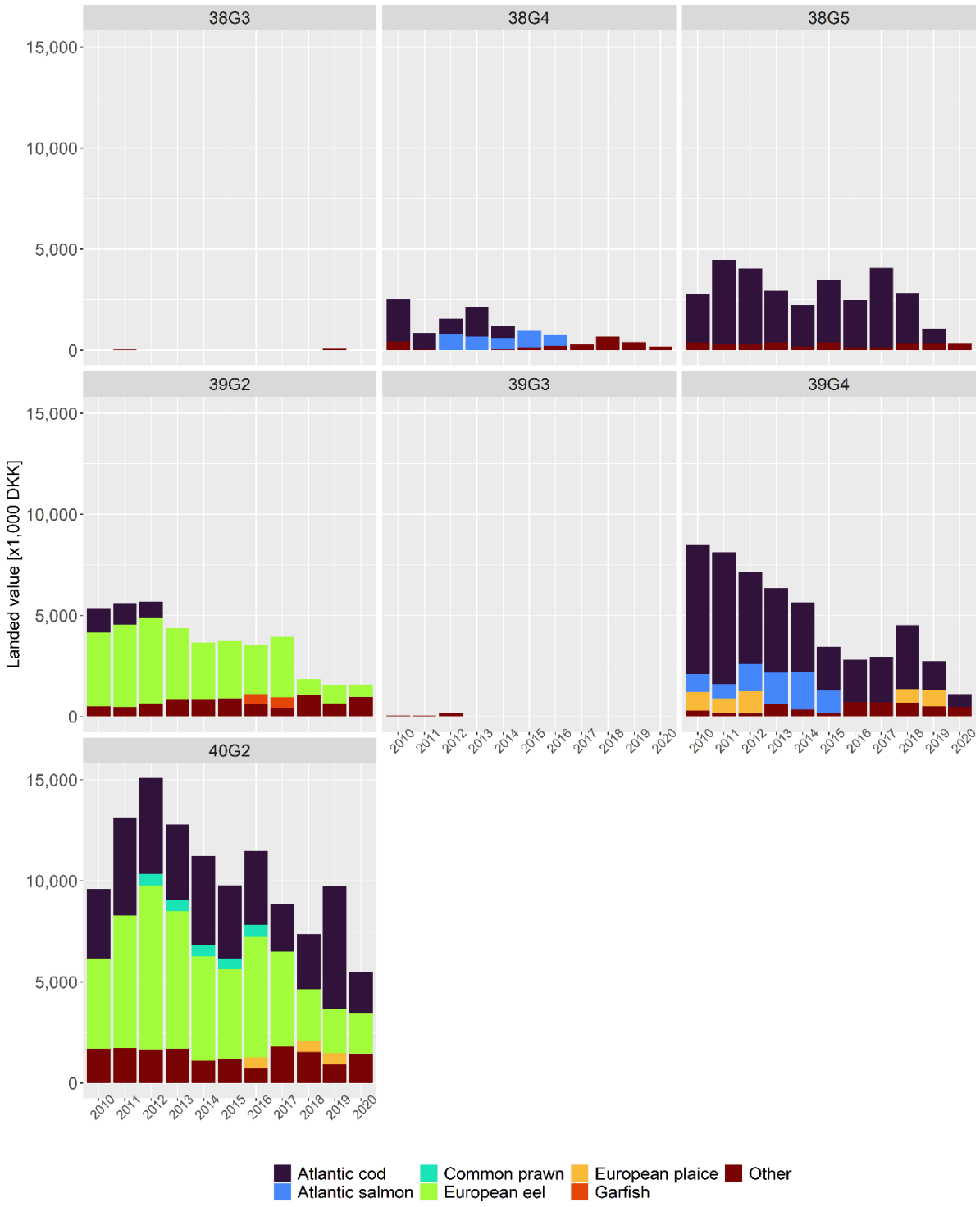

Figure 4-14 Landed value [x1,000 DKK] by smaller vessels (< 12 meters of length) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landed value for species where the catch constituted less than 100 [x1,000 DKK] the respective year.

38G3

The landed value by smaller vessels in 38G3 was on average 11.5 [1,000 DKK]. A more detailed estimate on landed value can be found in Appendix 3.

38G4
The landed value in 38G4 shares a pattern like the landings by the smaller vessels, Figure 4-14. Atlantic cod and Atlantic salmon has presented the biggest accumulated value within the investigated period. The yearly average landed value by smaller vessels was 1,051 [x1,000 DKK], but the landed value has yearly been less than 1,000 [x1.000 DKK] since 2015. In the start of the period, Atlantic cod dominated the landed value, but gradually Atlantic salmon has become more important to the smaller vessels operating in 38G4. In recent years the decline in the accumulated landings has influenced the landed value greatly. A more detailed estimate on landed value can be found in Appendix 3.

38G5
The landed value in 38G5 shares a pattern like the landings by the smaller vessels. Cod and salmon have presented the biggest accumulated value within the investigated period, Figure 4-14. The yearly average landed value by smaller vessels was 2,795 [x1,000 DKK], but with a large reduction from 2018 to 2020, Appendix 3.

39G2
The landed value in 39G2 was on average 3,718 [1,000 DKK]. As fewer tonnes of cod and eel were landed, the landed value started to decline towards 2020. European eel is especially important for the smaller vessels operating in 39G2, as the species by far contributes most to the accumulated landed value, Appendix 3. Despite the increased landings of garfish, the kilo price for the species is modest, hence, the contribution of the accumulated landed value from garfish is limited, Figure 4-14.

39G3
The landed value in 39G3 was on average 39 [x1,000 DKK]. There are no expectations for this to change in the coming years. A more detailed estimate on landed value can be found in Appendix 3.

39G4
The landed value in 39G4 shared a pattern like the landings by the smaller vessels. Atlantic cod and Atlantic salmon presented the biggest accumulated value within the investigated period, Figure 4-14. In recent years the landed value decreased to 1,100 [x1,000 DKK] in 2020. The yearly average landed value by smaller vessels was 4,853 [x1,000 DKK]. A more detailed estimate on landed value can be found in Appendix 3.

40G2
The kilo price for European eel and Atlantic cod is high compared to other landed species in 40G2. The accumulated landed value is highly influenced by the reduction in catches of the two beforementioned species, and the landed value has declined steadily since 2012, Figure 4-14. The landed value within 40G2 from smaller vessels was on an yearly average 10,409 [x1,000 DKK]. Revenue from smaller vessels within 40G2 was much greater than what was gained from larger vessels, Appendix 3. The landings and the revenue from 40G2 were primarily made from gillnets and entangling nets.

4.4 Detailed mapping of sandeel fishing grounds
A detailed mapping of sandeel fishing grounds was done as sandeels are considered an important commercial species, and the fact that the fishing grounds tend to be highly localized due to the habitat preferences and behaviour of sandeels. Sandeels are largely sedentary after settlement [6]. The fishery is seasonal and mainly takes place in-between spring and summer [6]. This is due

to the behaviour of sandeels and that the geographical distribution varies both seasonally and annually, see Appendix 4. Adult sandeels are closely related to well-oxygenated bottom substrates that consist of gravel or coarse sand, and usually water depths between 20 and 100 meters [7]. Sandeels hibernate between September and March, where they remain buried in the sand. During their larval stage the sandeel is found mostly in the water column. After the planktonic larval stage, they reach metamorphosis and settle into the sandy seadbed, where older individuals are aggregated [8]. It is common that the individuals that eventually settle show high site fidelity. This site fidelity and burrowing habit is not only an anti-predator behaviour, but also an energy conservation strategy. It is very energy costly for sandeels to remain in open water when they are not feeding, as they lack both a swim bladder and fins for compensatory movement [7], [8]. The distribution of post settled sandeels is very patchy and the post settled sandeels are rarely found >15 kilometres from known habitat. This patchiness and limited migration between suitable habitat mean that local aggregations may be vulnerable to depletion by the sandeel fishery. The landings of sandeel by Danish vessels in the Baltic Sea is mainly taken with pair midwater and pair bottom trawlers, Appendix 4.

The fishing for sandeel in the Baltic Sea has been declining in the investigated ICES rectangles. This decline is despite that there still is no scientific advice for the stock and that there is an unrestricted sandeel fisheries, Figure 4-15. The fishing is mainly taking place in 39G2 (83 %), but approximately 14 % of the landings were made in 38G4. The last 2 % of the landings were made within 38G5, 39G3 and 39G4, Appendix 4.

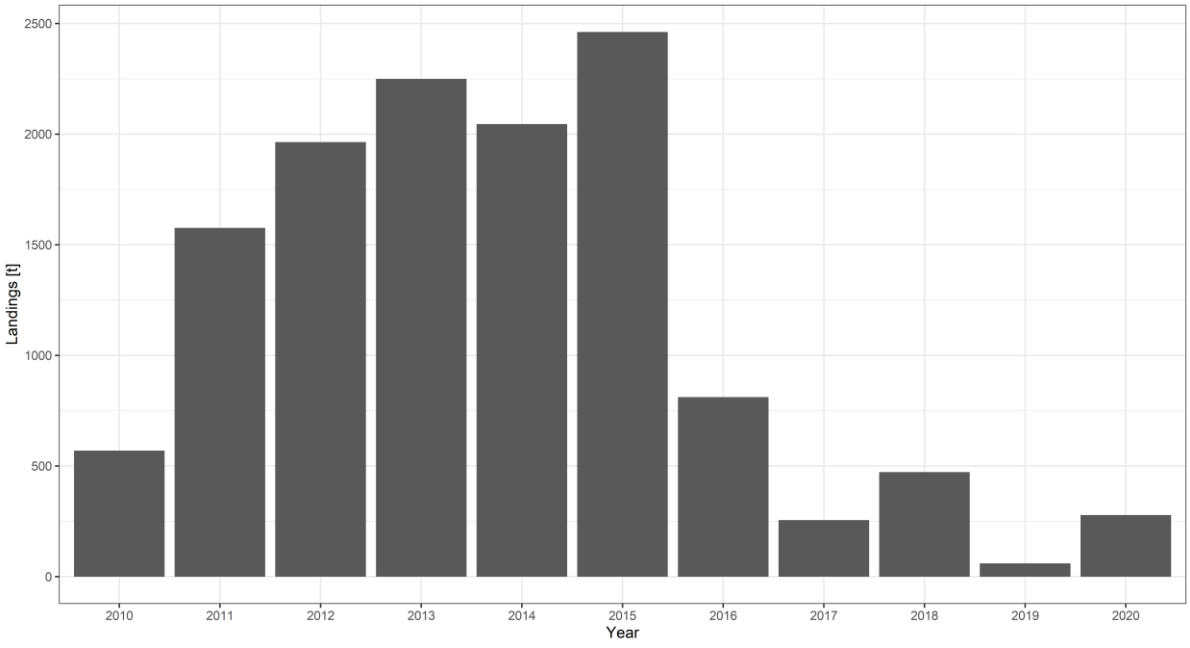

Figure 4-15 Landings [t] of sandeel (*Ammodytes spp.*) from 2010 to 2020 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The distribution of the sandeel fisheries confirm that there is high site-fidelity among sandeel. This is especially seen in Faxe Bay and in an area between Falsterbo and Stege in 39G2. There is also a fishery for sandeel northwest of Bornholm II OWF in 38G4, Figure 4-16. Some of the fishing activity for sandeel is found within Bornholm II OWF, but generally, the activity is located outside the OWFs. The activity from the fisheries shows an annual change in where the fisheries are conducted e.g., some years the fisheries are almost exclusively conducted in 39G2, whereas the fisheries expand into 38G4 in other years. An analysis created to understand the activity of the

sandeel fisheries in the investigated ICES rectangles showed that there were changes in the distribution of the fisheries, Appendix 4.

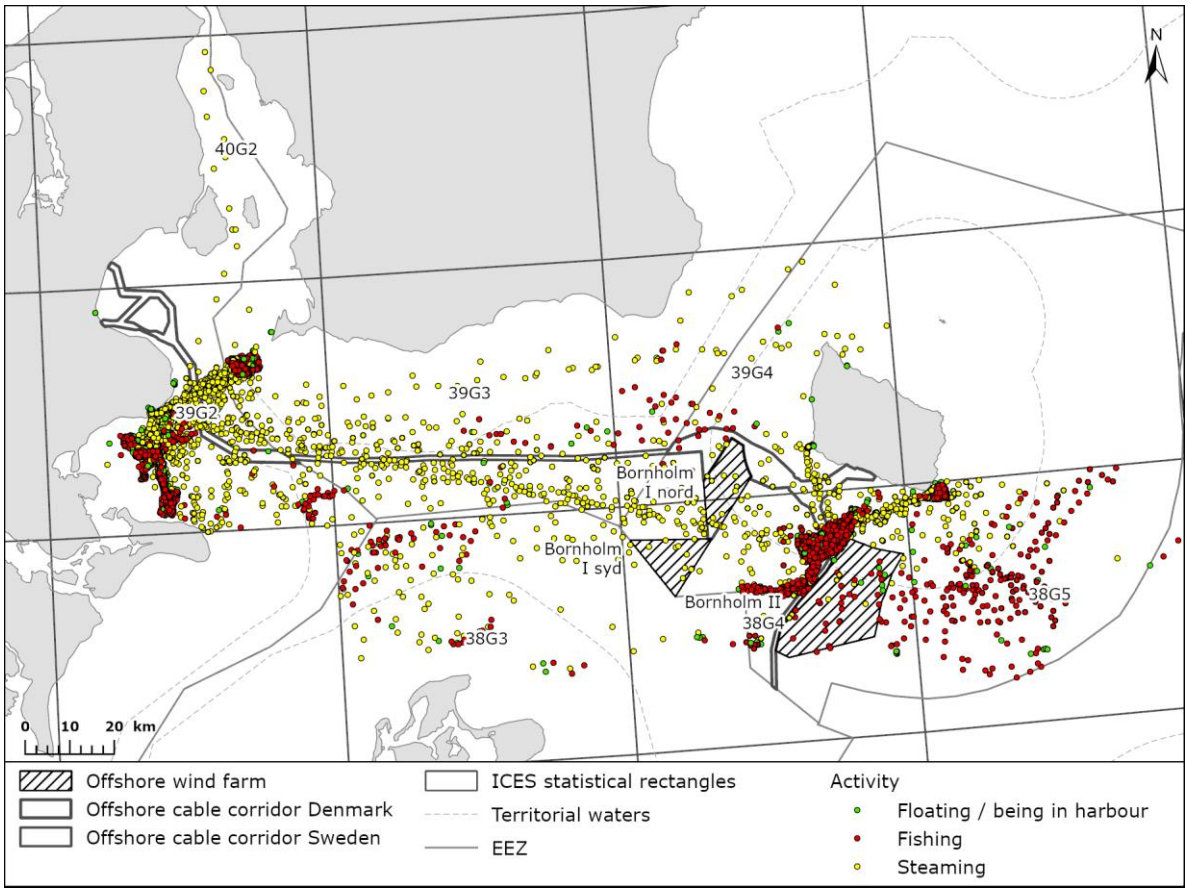

Figure 4-16 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 meters of length) from 2010 to 2020 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented regression on the speed profile, with automatic detection of fishing versus no-fishing or by fixed speed rules from literature.

5. BASELINE – SWEDEN

This section describes the baseline for Swedish fisheries in the southern Baltic Sea.

5.1 VMS data for relevant ICES rectangles divided into type of fishery and gear

5.1.1 Fishery types

The distribution of the fishing activity is presented here by type of fishery (e.g., bottom trawl, pelagic trawl, and gillnets). A similar analysis has been conducted for the individual type of fisheries, and the figures of distribution patterns can be found in Appendix 5. VMS pings considered as active fishing is presented by ICES rectangle and fisheries type for the period 2010 to 2020 in Figure 5-1. As seen in Figure 5-1, the highest activity was registered in 39G3 and 39G4. Most pings come from bottom trawlers. Some ICES rectangles are more frequently fished with gillnets and entangling nets, and midwater trawls. The OWFs are located in 39G4 and 38G4, with the highest areal uptake in 38G4. The ICES rectangle 39G4 was fished heavily in the investigated period, mostly by bottom trawlers, but fisheries with midwater trawlers; and hooks and lines are also widely used in both rectangles. The offshore cable corridor is planned through 38G4, 39G4, 39G3, 39G2 and 40G2. Fisheries with hooks and lines are also used in the ICES rectangles, mainly in 39G4.

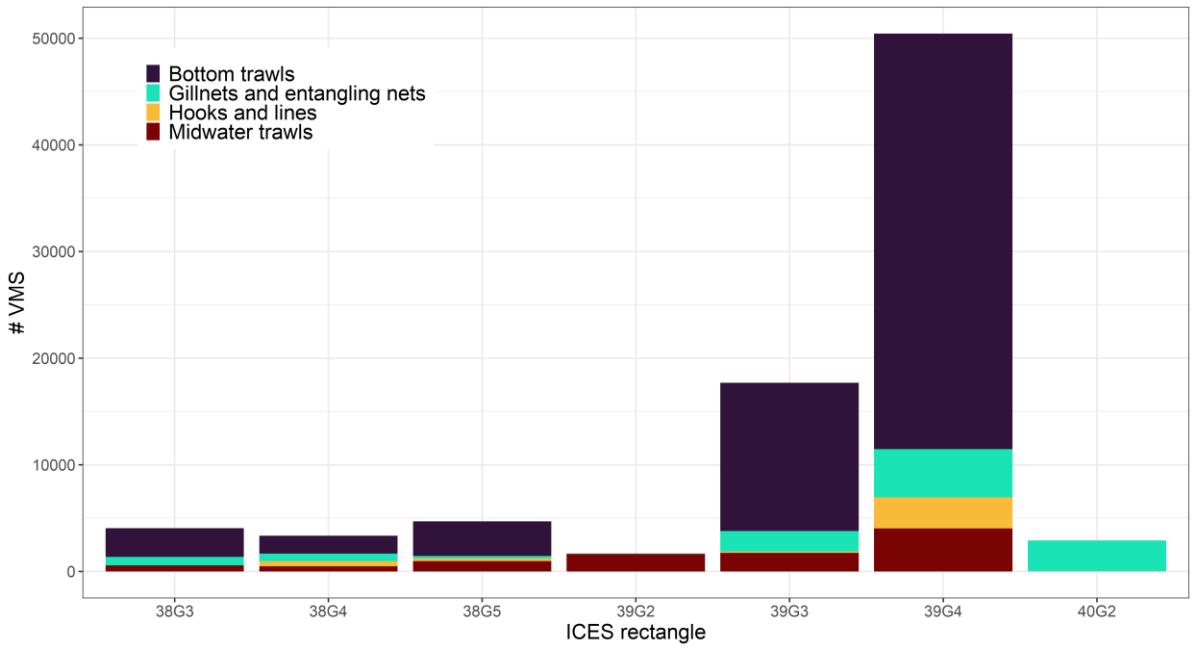

Figure 5-1 VMS pings from 2010 to 2020 by fishery types (i.e., bottom trawls (dark blue); gillnets and entangling nets (teal); hooks and lines (orange) and midwater trawls (brown)) and ICES rectangle. Only pings that are considered as active fishing has been included in the analysis.

To increase the knowledge of the impacted fleet, an analysis was done to understand which types of fisheries were operating within and outside the proposed OWFs in the period 2010 to 2020, Figure 5-2.

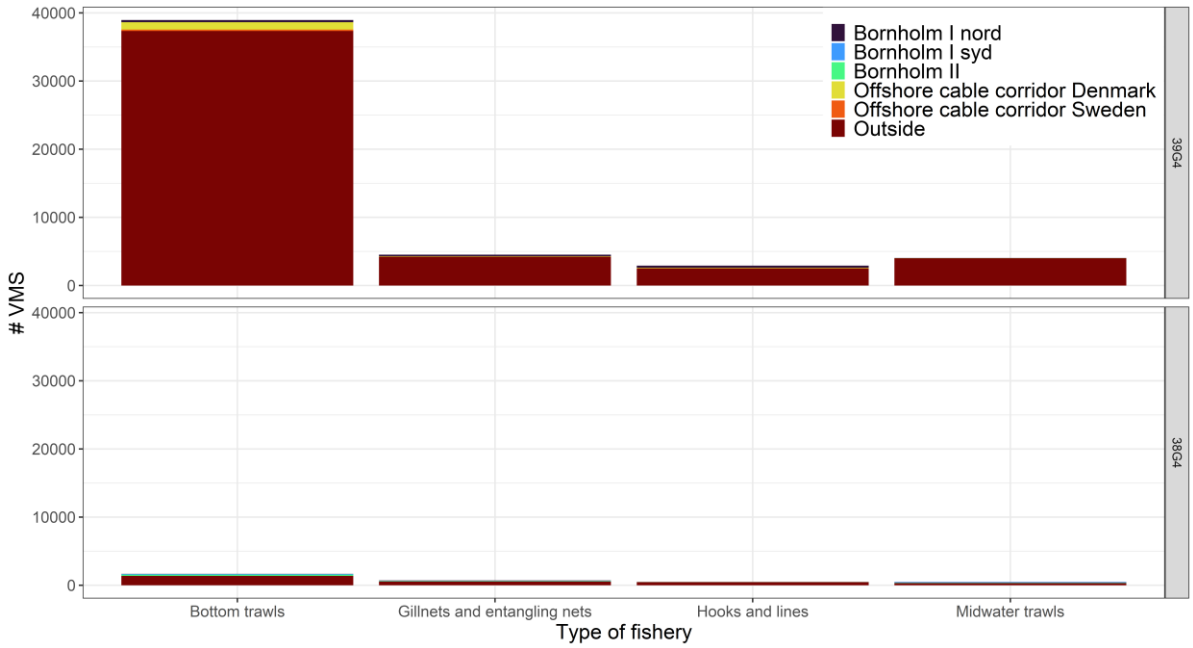

Figure 5-2 VMS pings from 2010 to 2020 by fishery types (i.e., bottom trawl, gillnets and entangling nets, hooks and lines and midwater trawls) and ICES rectangle 39G4 or 38G4. Only pings that are considered as active fishing has been included in the analysis. Bornholm I OWF North (dark blue), Bornholm I OWF South (light blue), Bornholm II OWF (teal) are VMS pings set within the individual offshore wind farm (OWF) area. Offshore cable corridor Denmark (yellow) and offshore cable corridor Sweden (orange) are VMS pings set within the two cable corridors. Outside (brown) are VMS pings outside the OWF area.

In 39G4 it is primarily bottom trawling that takes place, but the pings are rarely set within the OWFs, Figure 5-2. Hooks and lines, gillnets and entangling nets and midwater trawls were also used in 39G4, but these fisheries were mostly ongoing outside the OWFs. ICES rectangle 38G4 had less activity than what was observed in 39G4, and the activity was primarily ongoing outside the OWF. Bottom trawls were also the main type of fisheries used in 38G4 with little activity from both hooks and lines, gillnets and entangling nets, and midwater trawls. In 39G4, the VMS pings varied between 543 and 8,638, Figure 5-3. The intensity from the Swedish fleet has steadily decreased since 2014 and VMS pings set within Bornholm I nord, Bornholm I syd and Bornholm II has also decreased in proportion over time. In 38G4, the VMS pings varied between 7 and 987, and the amount of VMS pings has been decreasing over time, Figure 5-3.

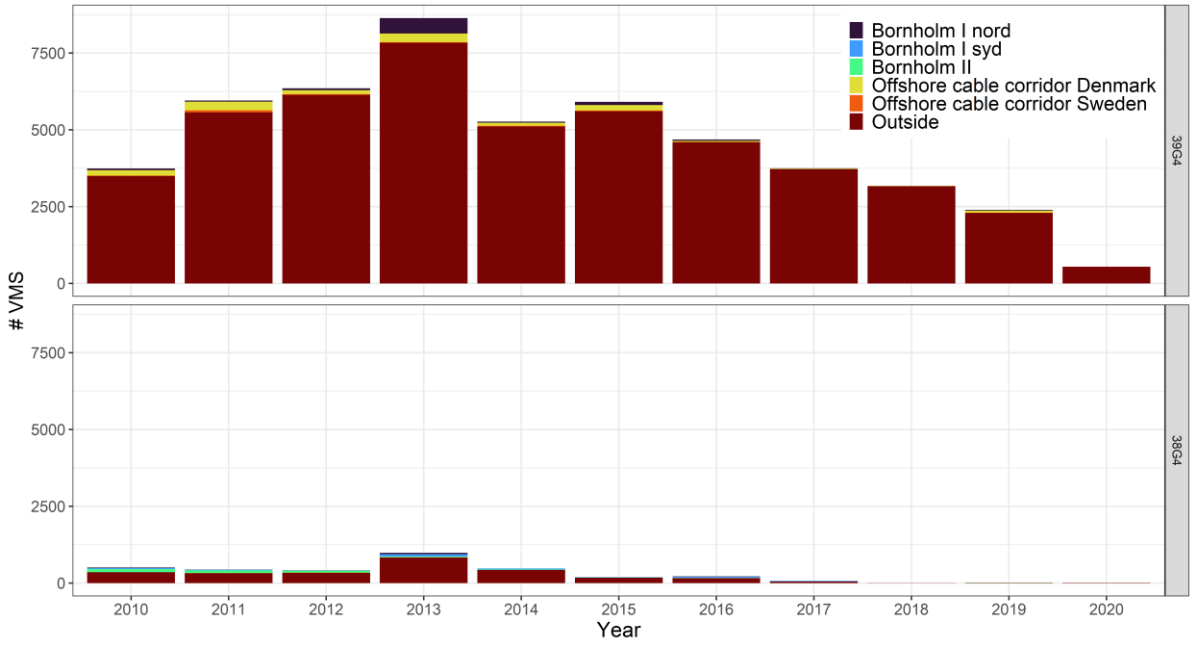

Figure 5-3 VMS pings by ICES rectangle, 39G4 or 38G4, and year. Only pings that are considered as active fishing has been included in the analysis. Bornholm I OWF North (dark blue), Bornholm I OWF South (light blue), Bornholm II OWF (teal) are VMS pings set within the individual offshore wind farm (OWF) area. Offshore cable corridor Denmark (yellow) and offshore cable corridor Sweden (orange) are VMS pings set within the two cable corridors. Outside (brown) are VMS pings outside the OWF area.

5.1.2 Bottom trawl

The intensity of the Swedish fishery was largest in 39G4 and 39G3, when compared to the distribution of the other investigated ICES rectangles, Figure 5-4. The intensity in Bornholm I nord, Bornholm I syd and Bornholm II, has been limited. The intensity of bottom trawling has particularly been large just north of Bornholm I nord to avoid areas with hard bottom habitats and reef formations that are found within the proposed area of the OWFs. The offshore cable corridor is located in areas with large intensity of bottom trawling, especially north and west of Bornholm I nord. The intensity of bottom trawling is decreasing along the western part of the offshore cable corridor towards the landfall at Zealand with no activity in both 40G2 and 39G2. Parts of the OWF and offshore cable area had no activity from bottom trawlers.

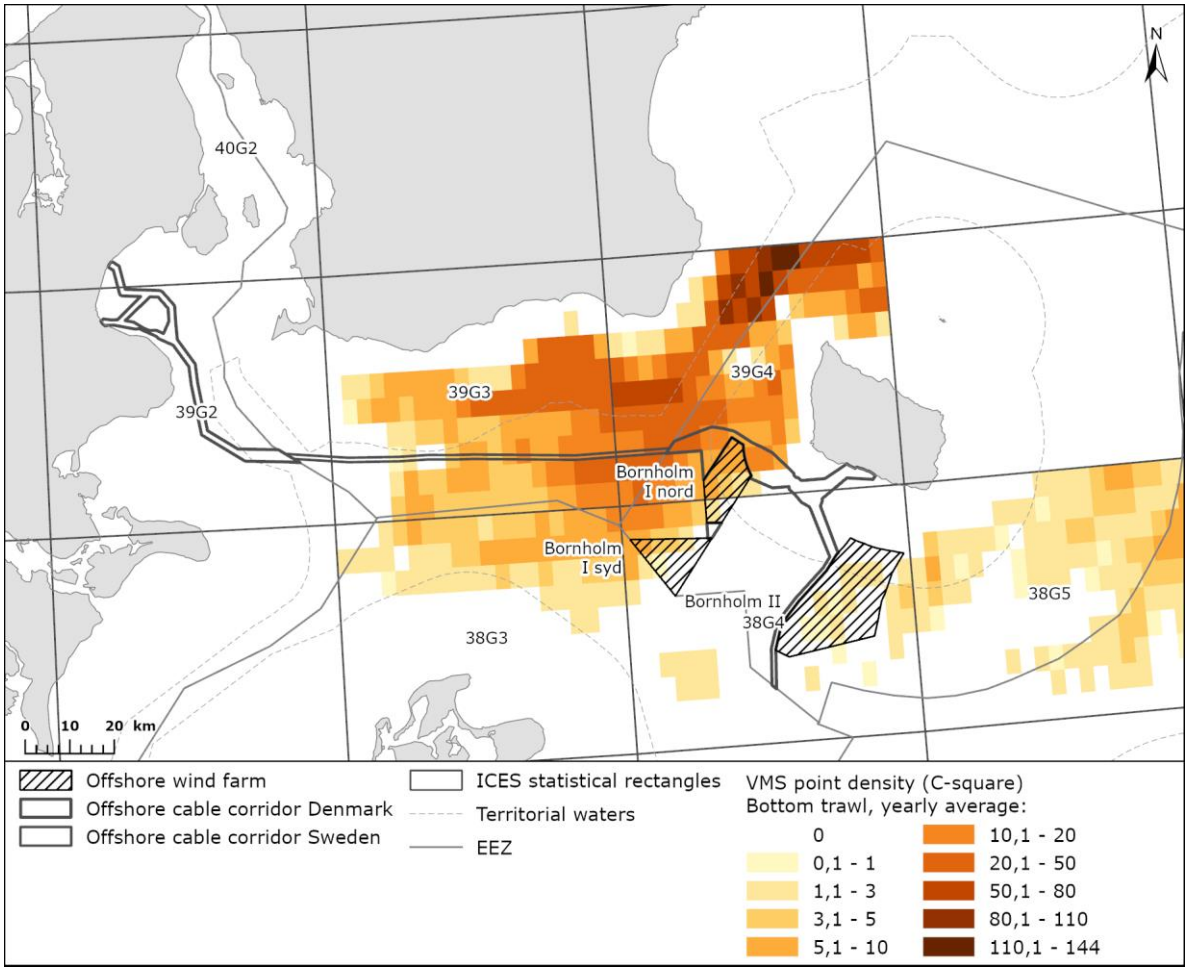

Figure 5-4 The distribution of bottom trawling by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The gears presented in Table 3-4, that are considered as bottom trawls, include otter bottom trawls, pair bottom trawls and otter twin trawls. The distribution of the beforementioned bottom trawls can be found in Appendix 5. Otter bottom trawls as a gear, contributes far most to the VMS point density of the bottom trawls. In general, the otter bottom trawls have been the most frequently used gear type in the Baltic Proper by Swedish fisheries with VMS. The bottom trawl is designed to catch species that live near the bottom e.g., cod, plaice, flounder, and sandeel.

5.1.3 Midwater trawl

Fishing with midwater trawls has been scattered over the last decade in the Southern Baltic Proper, Figure 5-5. There was little activity within the OWFs over the investigated period. There is high intensity of pelagic trawling within the western part of the cable corridor in the Danish EEZ.

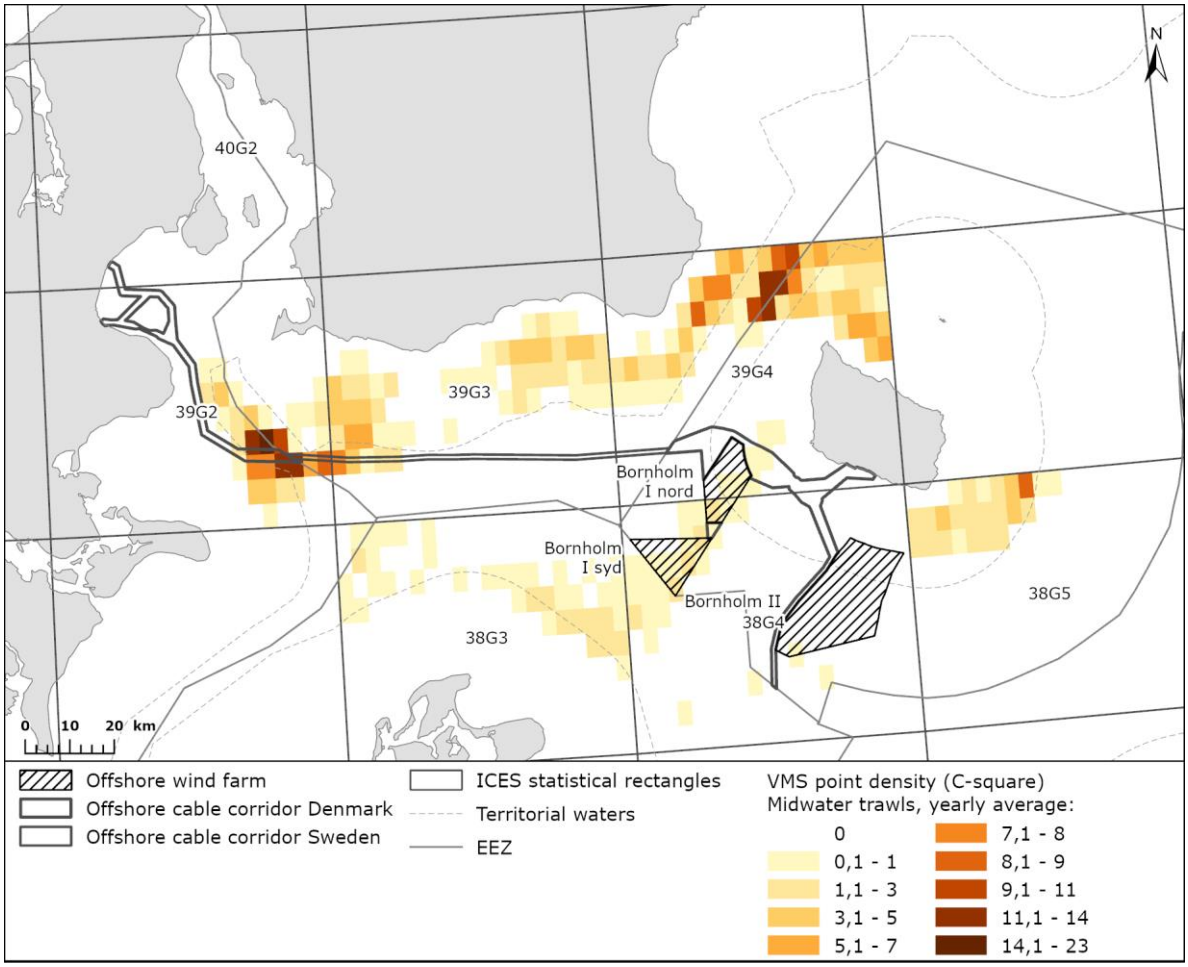

Figure 5-5 The distribution of midwater trawl by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The gears presented in Table 3-1, that are considered as midwater trawls, include otter midwater trawls and pair midwater trawls. The distribution of the beforementioned midwater trawls can be found in Appendix 5. Pair midwater trawls were more frequently used over otter midwater trawls. The midwater trawl is designed to catch species that live in the water column e.g., Atlantic herring, European sprat, and garfish.

5.1.4 Gillnets and entangling nets

The usage of gillnets and entangling nets was used sporadic in the Baltic Proper. Gillnets and entangling nets are a static type of fishery. There has been some activity from gillnets and entangling nets within the OWFs and in the planned offshore cable corridor. Gillnets and entangling nets were especially used in ICES rectangle 39G4 and 40G2.

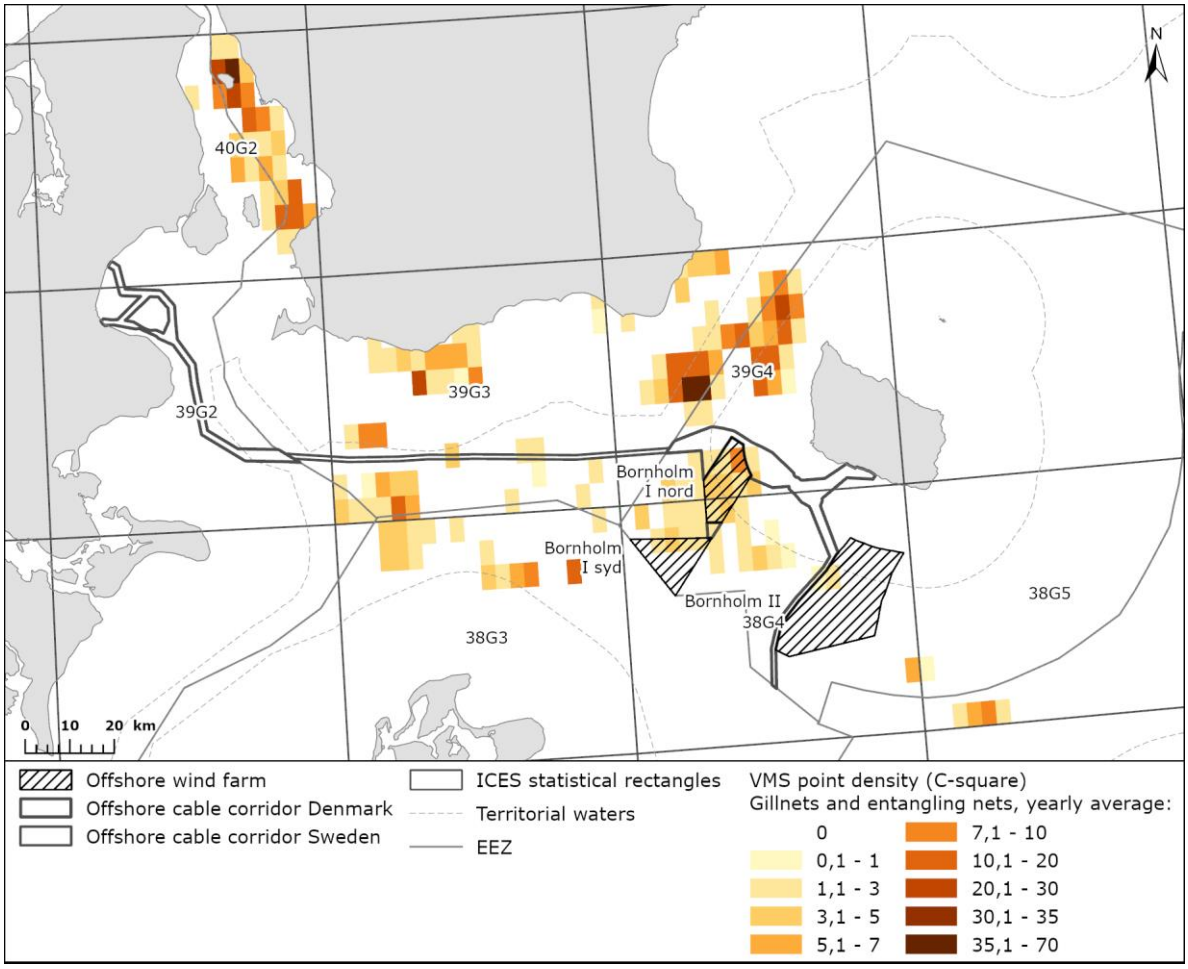

Figure 5-6 The distribution of gillnets and entangling nets by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The gears presented in Table 3-4, that are considered as gillnets and entangling nets, include gillnets (standing) and trammel nets. The distribution of the beforementioned gillnets and entangling nets can be found in Appendix 5. Unlike both bottom and midwater trawls, gillnets and entangling nets are usually operated by smaller vessels (< 12 meters of length), that are not obliged to have a VMS installed. Therefore, the distribution pattern of gillnets and entangling nets from Appendix 5 and Figure 5-6, should be concluded upon with some caution. Gillnets and entangling nets are highly selective and can catch both bottom and midwater species dependent on the selected type of gear.

5.1.5 Hooks and lines

In the investigated period hooks and lines was used, especially in the eastern part of the Baltic Proper within ICES rectangle 39G4 and 38G4, Figure 5-7. There has been some fishing activity inside the planned OWFs, especially in the northeastern part of Bornholm I nord. The offshore cable corridor is also located in areas where fishery with hooks and lines take place, but mainly within 38G4, 39G4 and 39G3.

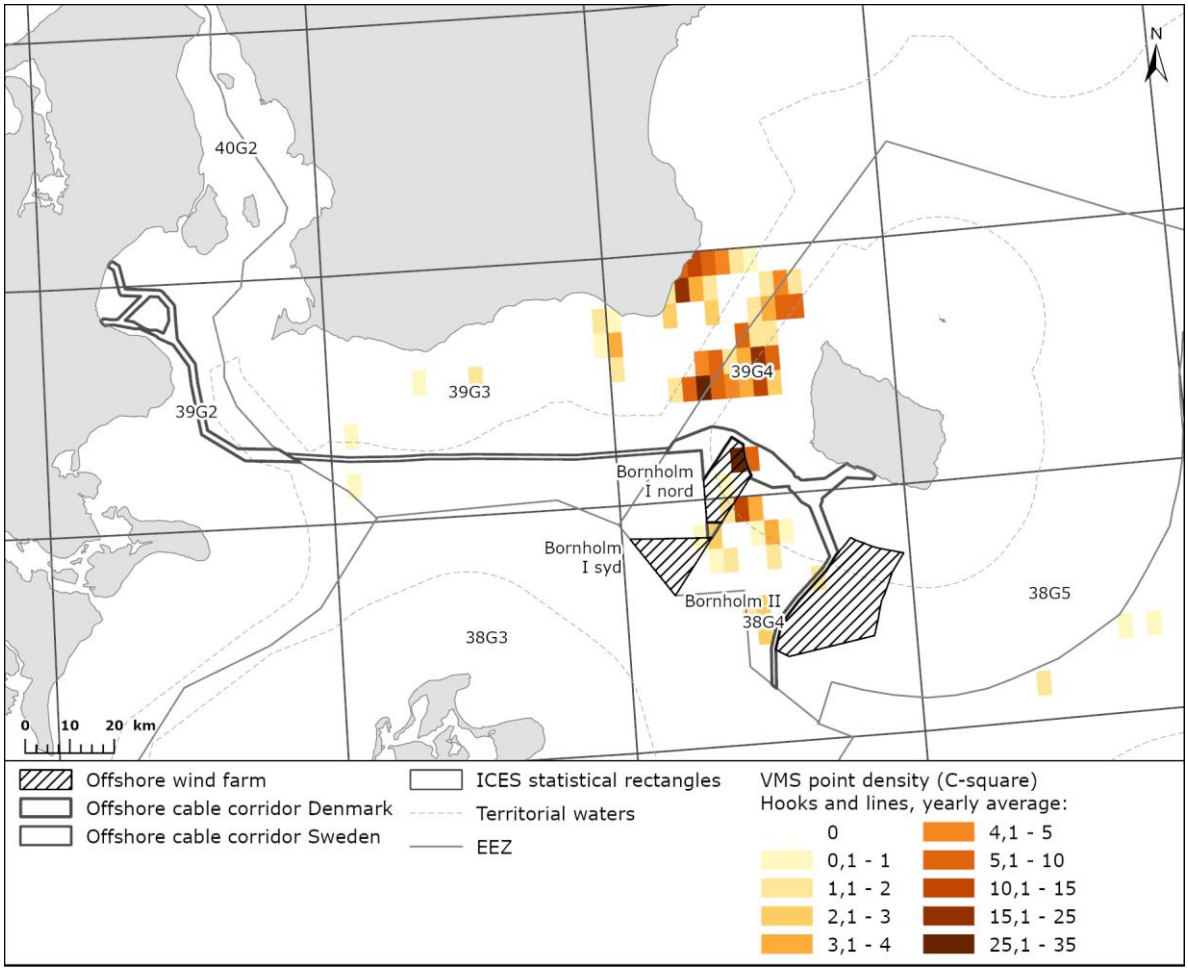

Figure 5-7 The distribution of hooks and lines by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

The gears presented in Table 3-4, that are considered as hooks and lines, include set longlines and drifting longlines. Much like gillnets and entangling nets, the activity is primarily by smaller vessels (< 12 meters of length). As this is the case, the activity from hooks and lines presented in Figure 5-7 and Appendix 5 are underrepresented and should be concluded upon with some caution. Hooks and lines can be used to target both midwater and demersal fish dependent of the rigging for species like salmon, cod, trout, and flounder.

5.2 Analysis of ICES-rectangles

In this section the individual ICES rectangle is described i.e., 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The description is based on catches within the individual rectangle divided in weight/value by gear type and vessel size. Smaller vessels (< 12 meters of length) are not obliged to hand in VMS data; therefore, the catches from this fleet have been separated from larger vessels (≥ 12 meters of length) equipped with VMS as there is a better spatial understanding of their activity.

5.2.1 Larger vessels (≥ 12 meters of length) – Landings

Figure 5-8 Landed weight [t] by larger vessels (≥ 12 meters of length) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landings from gear types where the catch constituted less than 10 [t] the respective year.

38G3

38G3 is mainly an ICES rectangle within the German EEZ. None of the OWFs and the cable corridor are placed within this rectangle. The fisheries have primarily been conducted with pair midwater trawls, and to a lesser degree different bottom trawls and gillnets. No landings were

made in 2020 within 38G3, Figure 5-8. The average landed weight was 435.4 tonnes. Landings within 38G3, have yearly been declining since 2016. There were no landings by pair midwater trawls in 2019 and 2020, see Appendix 6.

38G4
Bornholm I nord is partly located within ICES rectangle 38G4, whereas the entirety of Bornholm I syd and Bornholm II is found here. The fisheries are primarily with midwater trawls, but there is some contribution from both bottom trawls and hooks and lines. As with the rest of the Baltic Sea, the decreasing quota and total allowable catch on Atlantic cod and Atlantic herring has influenced the landed catch. The fisheries by larger vessels in the area has neared a collapse in 2019, and nothing was landed in 2018, see Figure 5-8. Less than 250 tonnes were landed yearly by larger vessels from 2017 to 2020. 6 different fishing gears were used in the period by larger vessels, see Appendix 6. The average landed weight was 299.5 tonnes.

38G5
38G5 is located southeast of Bornholm. None of the OWFs and the cable corridor are placed within 38G5. The landed weight by the larger vessels came from 7 different fishing techniques. The average landed weight was 454 tonnes, Appendix 6. The fisheries are primarily conducted by midwater trawls, but with some contribution from bottom trawls, Figure 5-8. Less than 1,000 tonnes were landed yearly by larger vessels apart from 2017 in the period between 2010 to 2020.

39G2
39G2 is highly influenced by the shipping traffic, and the fishable areas are mainly within Danish EEZ. Larger vessels from Sweden, have sporadically made landings with midwater trawlers in the period, most likely for species like Atlantic herring and Eruropean sprat. There has gradually been a decrease in the total allowable catch for Atlantic herring i.e., the western Baltic herring stock. No landings were made from larger vessels in 2014, 2018 and 2019. The average landed weight was 667 tonnes, Figure 5-8. The group Other, constitutes of few tonnes landed by gillnets (standing) and otter bottom trawlers, Appendix 6.

39G3
39G3 is mainly an ICES rectangle within the Swedish EEZ with harbours like Trelleborg and Ystad. The intensity of Swedish fisheries within the rectangle has been decreasing since 2017, nearing 0 tonnes in 2020, Figure 5-8. The fisheries are mainly conducted by midwater trawls i.e., pair midwater trawls and otter midwater trawls. Low quotas and total allowable catch on Atlantic herring i.e., the western Baltic herring stock, and Atlantic cod is the limiting factor for years like 2019 and 2020 where the landings are low. The average landed weight was 1,000 tonnes.

39G4
Bornholm I nord is partly located within ICES rectangle 39G4. This is an area with intense bottom and pelagic trawling. 69 % of all landings in the period, by larger vessels, were made with midwater trawlers. In comparison 29 % of the landings were made with bottom trawlers. The average landed weight was 2,664 tonnes, Figure 5-8. The landed weight by Swedish fisheries in 39G4 is relatively high when compared to the other investigated ICES rectangles. Most of the landings are made outside the proposed OWF i.e., the northern part of 39G4. In 2020, the landings were mainly made with pair midwater trawls, whereas it was more diverse in previous years, see Appendix 6.

40G2
ICES rectangle 40G2 is mainly located in the Sound. In 40G2 there is a historic ban on bottom trawling, and it is an area with intense shipping traffic. Swedish fisheries from larger vessels have

little activity in 40G2, Figure 5-8. On average 47 tonnes were landed here, mainly by gillnets (standing) and trammel nets, see Appendix 6. There was a downward going trend in the landings from 2013 to 2020 from larger vessels.

5.2.2 Larger vessels (≥ 12 meters of length) – Value

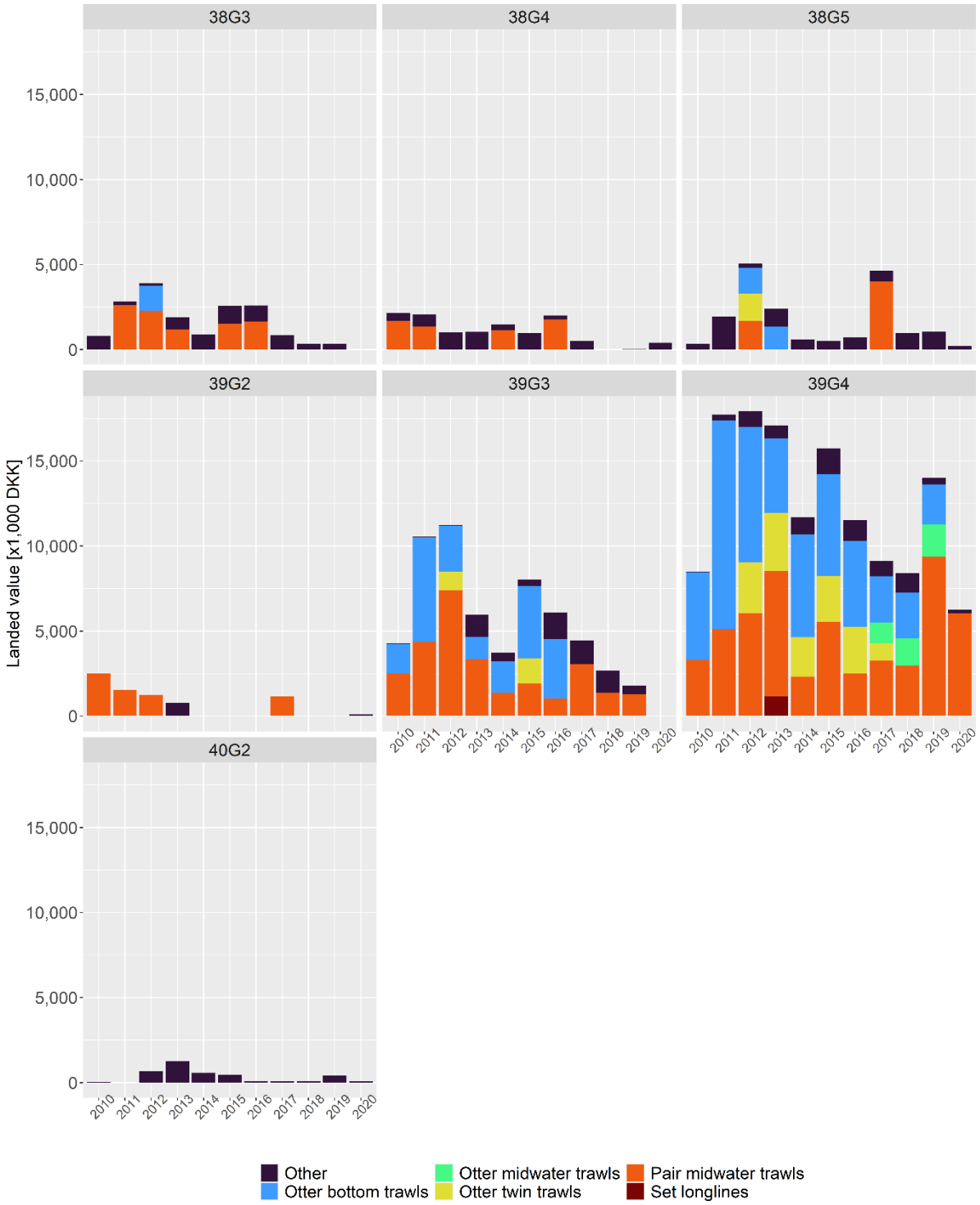

Figure 5-9 Landed value [x1,000 DKK] by larger vessels (≥ 12 meters of length) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landed value from gear types where the catch constituted less than 100 [x1,000 DKK] the respective year.

38G3
The landed value within 38G3 from larger vessels was on average 1,700.4 [x1,000 DKK]. Approximately 68 % of the landed value was made with pair midwater trawls. 38G3 is an ICES area known for its fisheries possibilities for both Atlantic herring and European sprat. The reduction in the quota for herring in 2019 and 2020 is affecting the landed value within 38G3.

38G4
The landed value within 38G4 has declined with the reductions of the quota for Atlantic cod and Atlantic herring. The landed value within 38G4 from larger vessels was on average 1,057 [x1,000 DKK]. From 2017 to 2020 the average landed value has declined to 231 [x1,000 DKK].

38G5
The landed value within 38G5 from larger vessels were on average 1,674 [x1,000 DKK]. The proportion of landed value from midwater trawlers has increased in the period 2017 to 2020, when compared to 2010 to 2016, Figure 5-9.

39G2
The landed value within 39G2 has in general been decreasing from 2010 to 2020, Figure 5-9. With no landings in 2014, 2018 and 2019, no revenue was made from larger vessels. The landed value within 39G2 from larger vessels was on average 667 [x1,000 DKK]. The landings and the revenue from 39G2 were primarily made from midwater trawls, Appendix 6.

39G3
The accumulated landed value is highly influenced by the reduction in catches for Atlantic cod and Atlantic herring, and the landed value has declined since 2015, Figure 5-9. The landed value within 39G3 from larger vessels was on average 5,345 [x1,000 DKK]. The landings and the revenue from 39G3 were mainly from midwater (48.6 %) and bottom trawls (47.5%), Appendix 6.

39G4
The landed value within 39G4 has gradually declined since 2012, Figure 5-9. The landed value where higher in the early part of the investigated period. This tendency is linked to fisheries from bottom trawlers and their catches of high valued species like Atlantic cod. Despite the increased landings in 2019 from the previous years, it is not reflected in the accumulated landed value, see Appendix 6 for further details. The landed value within 39G4 from larger vessels was on average 12,545 [x1,000 DKK].

40G2
The landed value was in the start of the investigated period mainly from contributions from gillnets (standing) and trammel nets, Figure 5-9. The landed value within the area had a short period of increased revenue from 2012 to 2013 and has since declined except for 2019, Appendix 6. The landed value within 40G2 from larger vessels was on average 376 [x1,000 DKK].

5.2.3 Smaller vessels (< 12 meters of length) – Landings

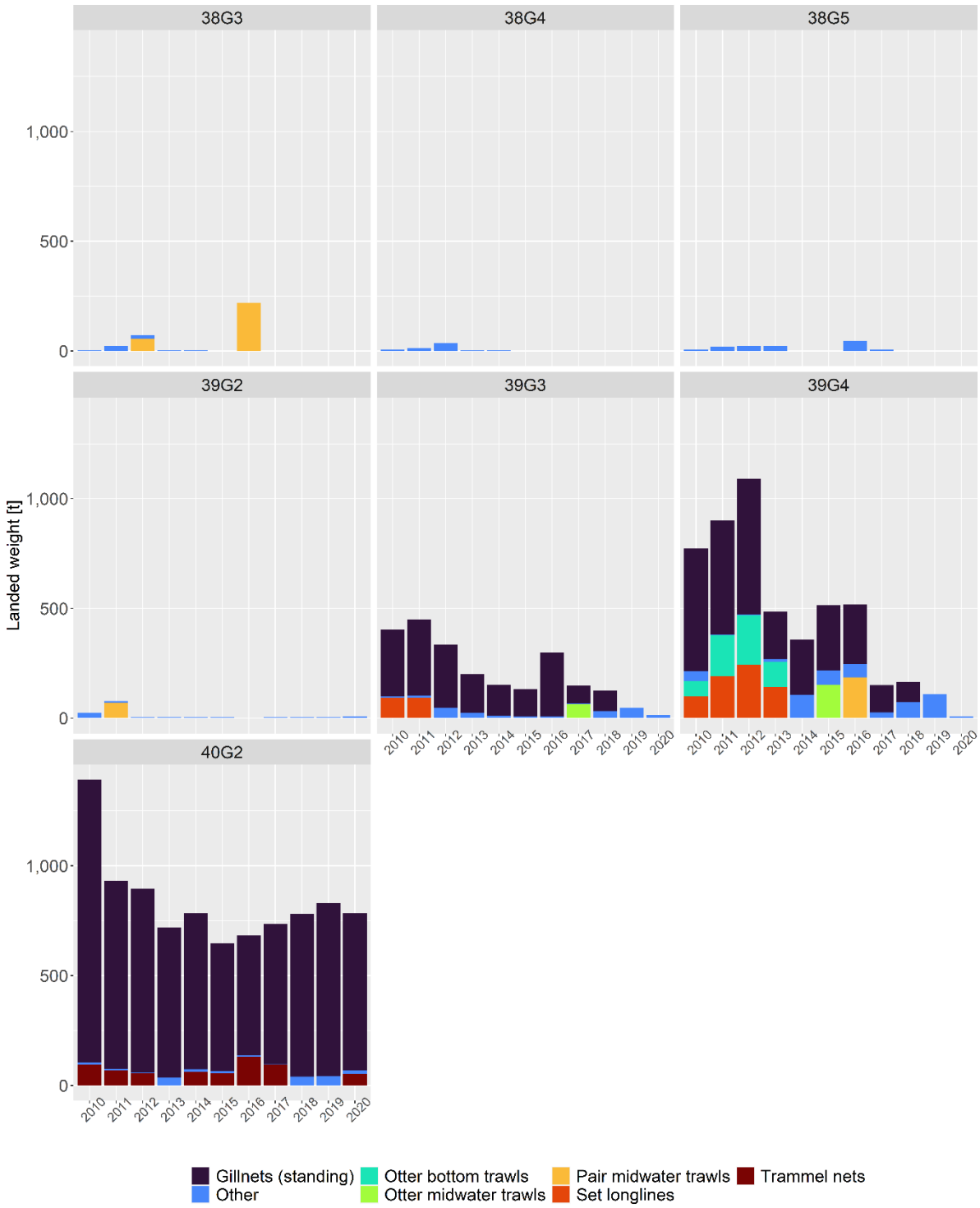

Figure 5-10 Landed weight [t] by larger vessels (≥ 12 meters of length) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landings from gear types where the catch constituted less than 10 [t] the respective year.

38G3

There is very little activity from smaller vessels within 38G3, Figure 5-10. The ICES rectangle is relatively far from nearshore areas of Sweden. In 2015 and 2020, no landings were made, see Appendix 7. 3 different gear types were used in 38G3 over the investigated period i.e., gillnets

(standing), otter bottom trawls and pair midwater trawls. The landed weight within 38G3 from smaller vessels was on average 30 tonnes. Since 2017 less than 2 tonnes has been landed within the area on a yearly basis.

38G4
There is very little activity from smaller vessels in 38G4. The landings have been decreasing over the investigated period, Figure 5-10. Less than a ton has been landed since 2015 within 38G4. The landings are mainly landed by hooks and lines and midwater trawls. Hooks and lines are especially used to land Atlantic salmon. 4 different fishing techniques were used by the smaller vessels, Appendix 7.

38G5
Landings from smaller vessels in 38G5 have been limited. There were no landings in 2015 and in the period 2018 to 2020, Figure 5-10. The landings are mainly landed by midwater trawls, bottom trawls, and hooks and lines. Overall, 6 different gear types were used in 38G5, see Appendix 7. A yearly average of 11 tonnes was landed in the period.

39G2
Smaller vessel within 39G2 contribute less to the total landed weight within the area. 8 different types of gears was used in 39G2, but landings from gillnets (standing) and pair midwater trawls were used most frequently, Appendix 7. Catches in 39G2 from smaller vessels is less than what was observed in 40G2. The average landed weight was 13 tonnes, but less than 10 tonnes were landed yearly since 2012, Figure 5-10.

39G3
This is an ICES rectangle close to nearshore areas where smaller vessels from Sweden usually operate. The landings from have gradually declined from 2010 to 2020, Figure 5-10. The yearly landed weight within 39G3 from smaller vessels was on average 209 tonnes. The landings were mainly collected with gillnets (standing), see Appendix 7 for further details.

39G4
The landings have been decreasing from approximately 800 tonnes in 2010 to 7 tonnes a decade later, Figure 5-10. The landings are mainly landed by gillnets and entangling nets, and hooks and lines. Hooks and lines are especially used to land salmon. 10 different fishing techniques were used by the smaller vessels in 39G4, see Appendix 7.

40G2
In 40G2, landings from smaller vessels are more common, which is observed in the differences in the landed weight, Figure 5-10. The fisheries from smaller vessels are mainly with passive techniques like gillnets (standing) and trammel nets. The average landed weight was 835 tonnes. The landings have been quite stable throughout the period, see Appendix 7.

5.2.4 Smaller vessels (< 12 meters of length) – Value

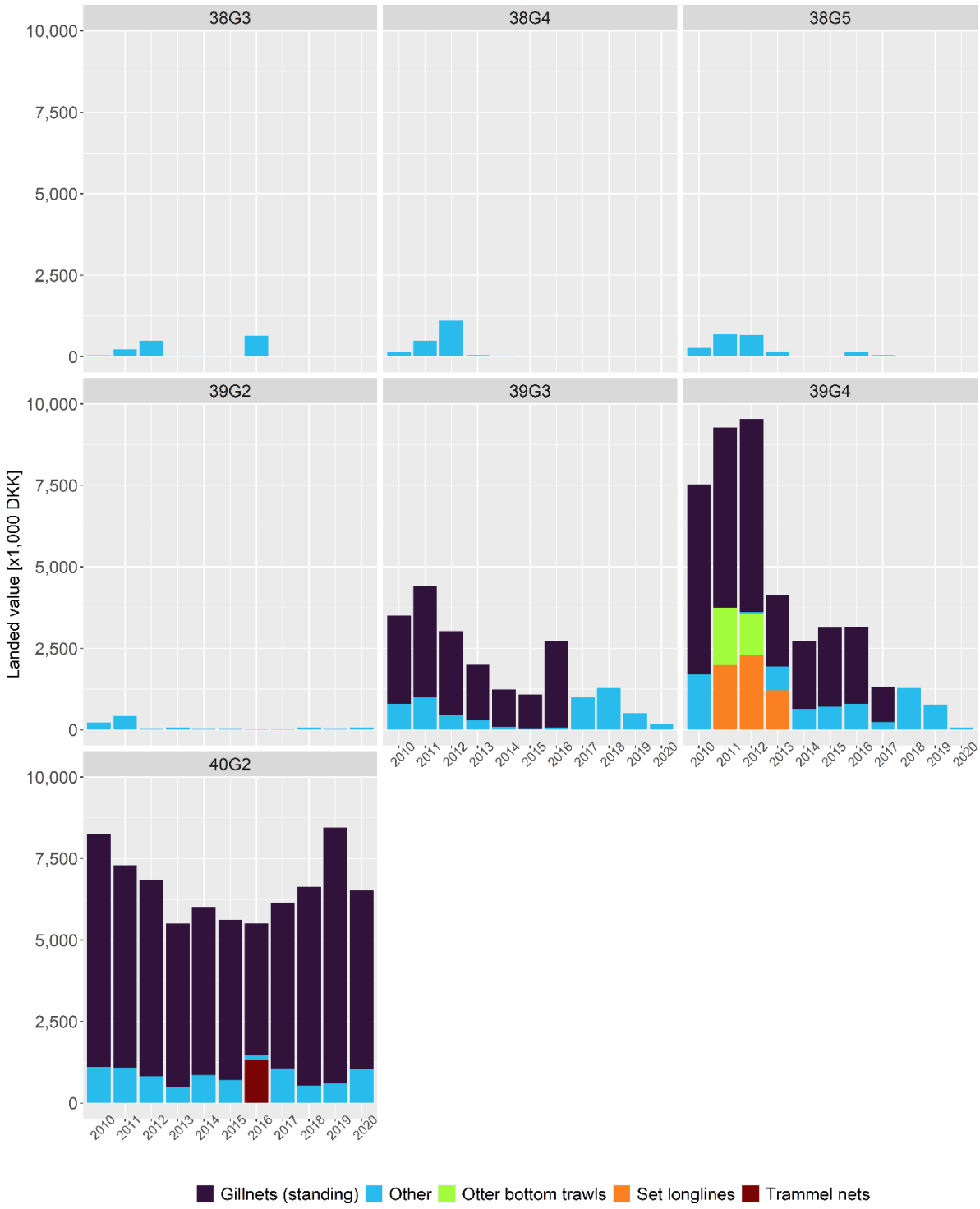

Figure 5-11 Landed value [x1,000 DKK] by larger vessels (≥ 12 meters of length) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landed value from gear types where the catch constituted less than 100 [x1,000 DKK] the respective year.

38G3

The landed value by smaller vessels in 38G3 was on average 135 [1,000 DKK], highly influenced by the landings in 2012 and 2016, Figure 5-11. The landed value within 38G3 has been less than 10 [1,000 DKK] since 2017.

38G4
The average landed value by smaller vessels was 165 [x1,000 DKK]. The accumulated landed value has been less than 10 [x1,000 DKK] since 2015, Figure 5-11.

38G5
The average landed value by smaller vessels was 179 [x1.000 DKK]. The landed value from smaller vessels within 38G5 has been decreasing in the investigated period, see Figure 5-11. There has been no activity from smaller vessels within 38G5 since 2018.

39G2
The landed value in 39G2 was on average 99 [1,000 DKK]. The landed value has declined since 2011, and the revenue has been quite stable from 2012 to 2020, Figure 5-11. The landed value was primarily from gillnets (standing), pair midwater trawls and trammel nets, Appendix 7.

39G3
The landed value in 39G3 was on average 1,903 [1,000 DKK]. The landed value was primarily made with gillnets (standing) and set longlines, Figure 5-11. The decline in landed value is most likely duo to a lower quota for species like Atlantic cod and Atlantic herring, see Appendix 7 for further details on landed value.

39G4
The landings have been decreasing from approximately 800 tonnes in 2010 to 7 tonnes a decade later, Figure 5-11. The landings are mainly landed by gillnets and entangling nets, and hooks and lines. Hooks and lines are especially used to land Atlantic salmon. 10 different fishing techniques were used by the smaller vessels in 39G4, see Appendix 7.

40G2
The kilo price for eel and cod is high compared to other landed species in 40G2. Gears like pots and traps, and fyke nets are quite selective and can catch high value species like European eel. The landed value within 40G2 from smaller vessels were on average 6,614 [x1,000 DKK]. Revenue from smaller vessels within 40G2 was much greater than what was gained from larger vessels, Figure 5-11. The landings and the revenue from 40G2 were primarily made from gillnets and entangling nets, Appendix 7.

6. BASELINE – POLAND

This section describes the baseline for Polish fisheries in the southern Baltic Sea.

6.1 VMS data for relevant ICES rectangles

The distribution of the fishing activity is presented here. The Polish VMS data stores no information concerning gear and type of fishery. Therefore, the distribution of the Polish fisheries from larger vessels have been pooled.

VMS pings considered as active fishing is presented as a total by ICES rectangle for the period 2010 to 2020 in Figure 6-1. As seen in Figure 6-1, the highest activity was registered in 38G5 and 38G4. The OWFs are located in 39G4 and 38G4, with the highest areal uptake in 38G4. The offshore cable corridor is planned through 38G4, 39G4, 39G3, 39G2 and 40G2. 39G4 is in comparison to the other investigated ICES rectangles fished relatively little by the Polish fisheries. The activity from the Polish fisheries in 39G4 is primarily in the southwestern part of the rectangle, with approximately 3 % of the VMS points set within Bornholm I nord. In 38G4, approximately 20 % of the activity from the Polish fleet is within Bornholm I nord, Bornholm I syd and Bornholm II. Of the investigated ICES rectangles, 38G4 is the area with the second highest recorded activity for the Polish commercial fishery.

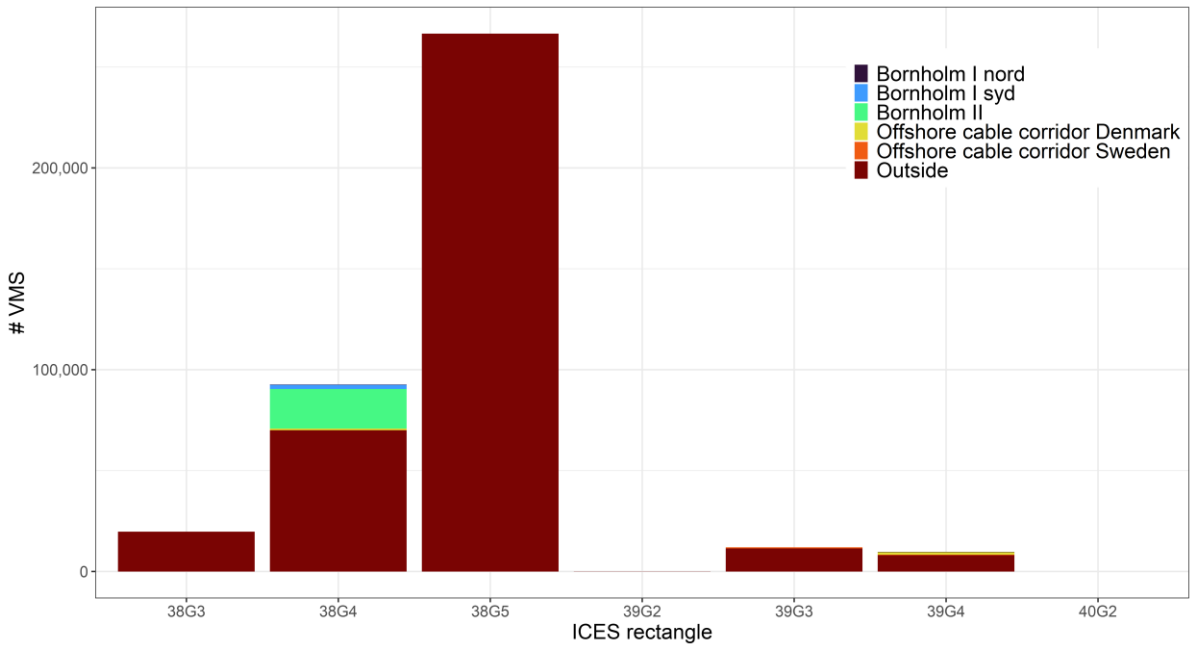

Figure 6-1 Polish VMS pings from 2010 to 2020 by ICES rectangle. Only pings that are considered as active fishing has been included in the analysis. Bornholm I nord (dark blue), Bornholm I syd (light blue), Bornholm II (teal) are VMS pings set within the individual offshore wind farm (OWF) area. Offshore cable corridor Denmark (yellow) and offshore cable corridor Sweden (orange) are VMS pings set within the two cable corridors. Outside (brown) are VMS pings outside the OWF area.

In 39G4, the VMS pings varied between 41 and 1,893, Figure 6-2. The intensity from the Polish fleet was the highest in the period 2016 to 2019. In 38G4 the VMS pings varied between 2,320 and 12,155, Figure 6-2. On average, 8,427 pings were set in 38G4 by year, making it the second most intensely fished ICES rectangle.

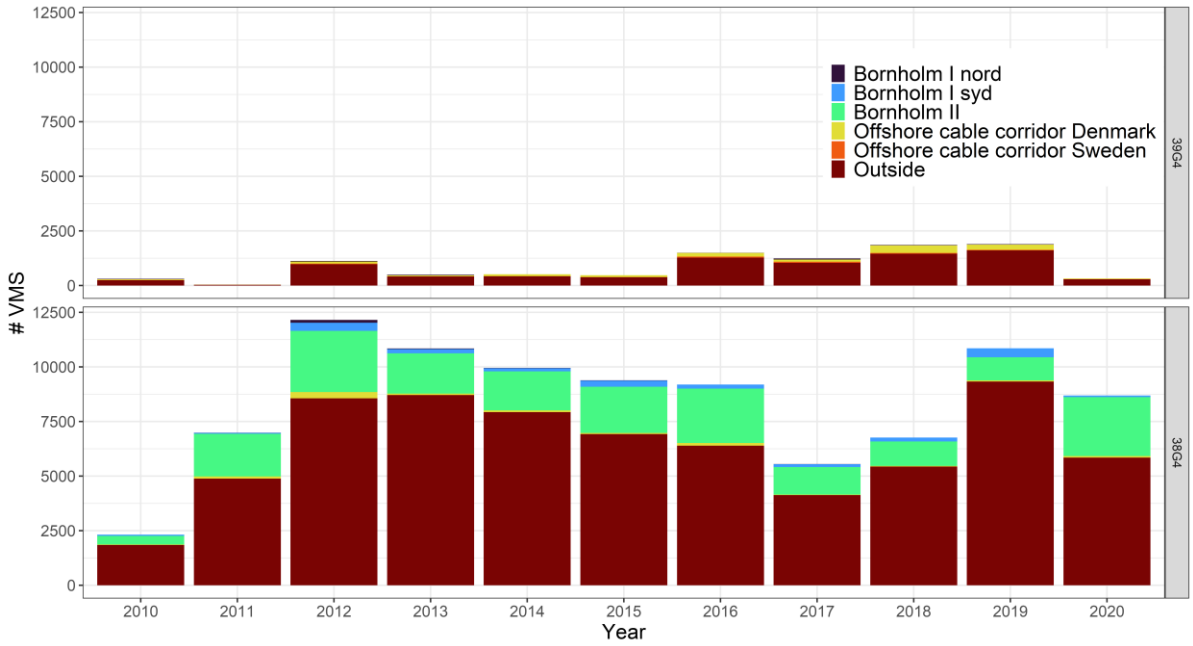

Figure 6-2 Polish VMS pings from 2010 to 2020 in ICES rectangle 39G4 or 38G4. Only pings that are considered as active fishing has been included in the analysis. Bornholm I nord (dark blue), Bornholm I syd (light blue), Bornholm II (teal) are VMS pings set within the individual offshore wind farm (OWF) area. Offshore cable corridor Denmark (yellow) and offshore cable corridor Sweden (orange) are VMS pings set within the two cable corridors. Outside (brown) are VMS pings outside the OWF area.

Fishing by the Polish fleet mainly occurred in the investigated ICES rectangles closest to Poland i.e., 38G5 and 38G4, see Figure 6-3. Areas like 39G4, 39G3, 39G2 and 40G2 were less frequently fished, Figure 6-3. There has been some fishing intensity within the areas designated for OWFs, mainly within Bornholm II. The Polish fleet is mainly targeting pelagic species, using midwater trawls. The intensity of the Polish fleet is decreasing along the western part of the offshore cable corridor towards the landfall at Zealand. The Polish fleet has been active in the majority of the areas designated for OWFs, but not for the offshore cable area.

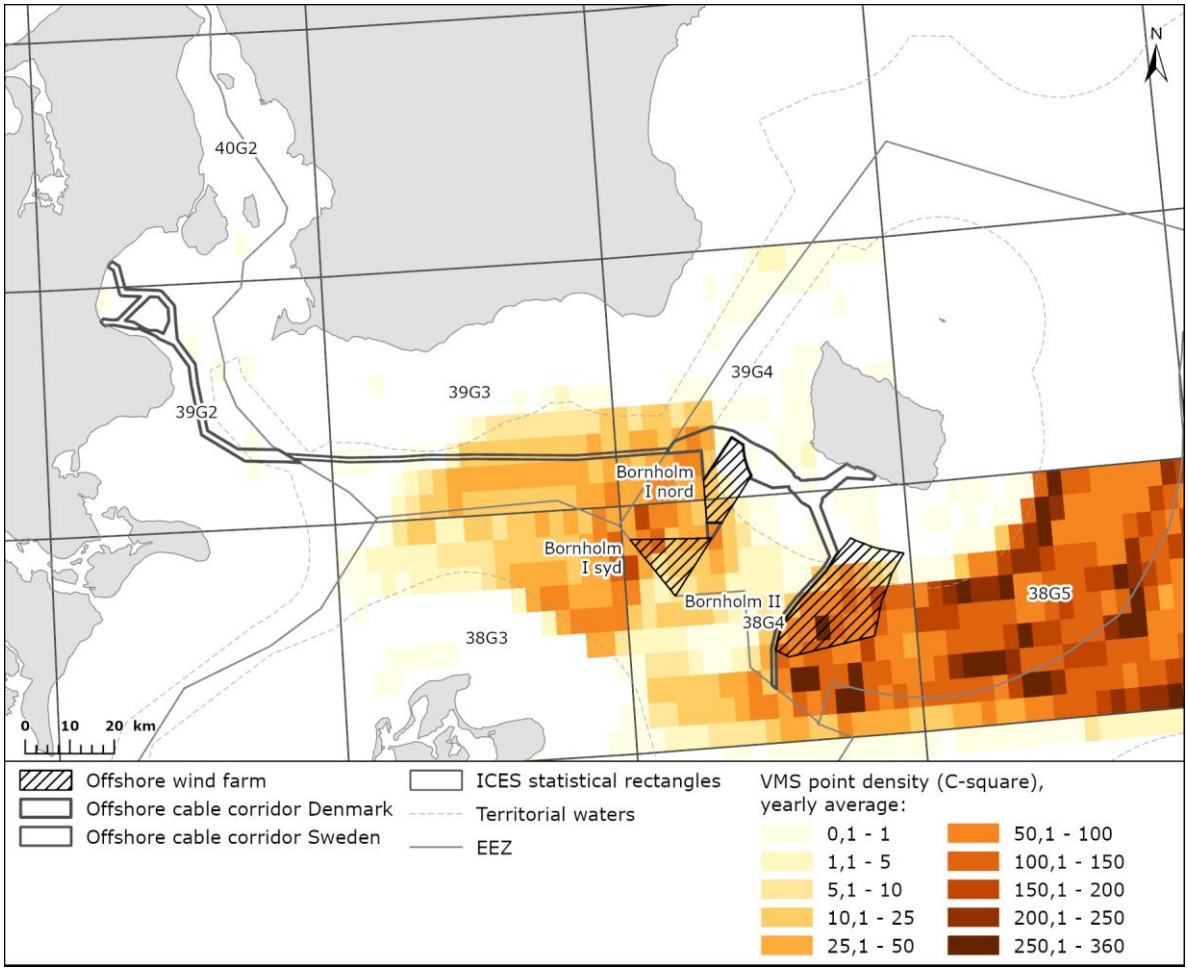

Figure 6-3 The distribution of Polish fisheries by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

6.2 VMS data for relevant ICES rectangles by gear

In this section the individual ICES rectangle is described i.e., 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. There were no landings in 39G2 and 40G2, therefore the areas are excluded from the following sections. The description is based on catches within the individual rectangle divided in weight by gear type.

6.2.1 Landed weight

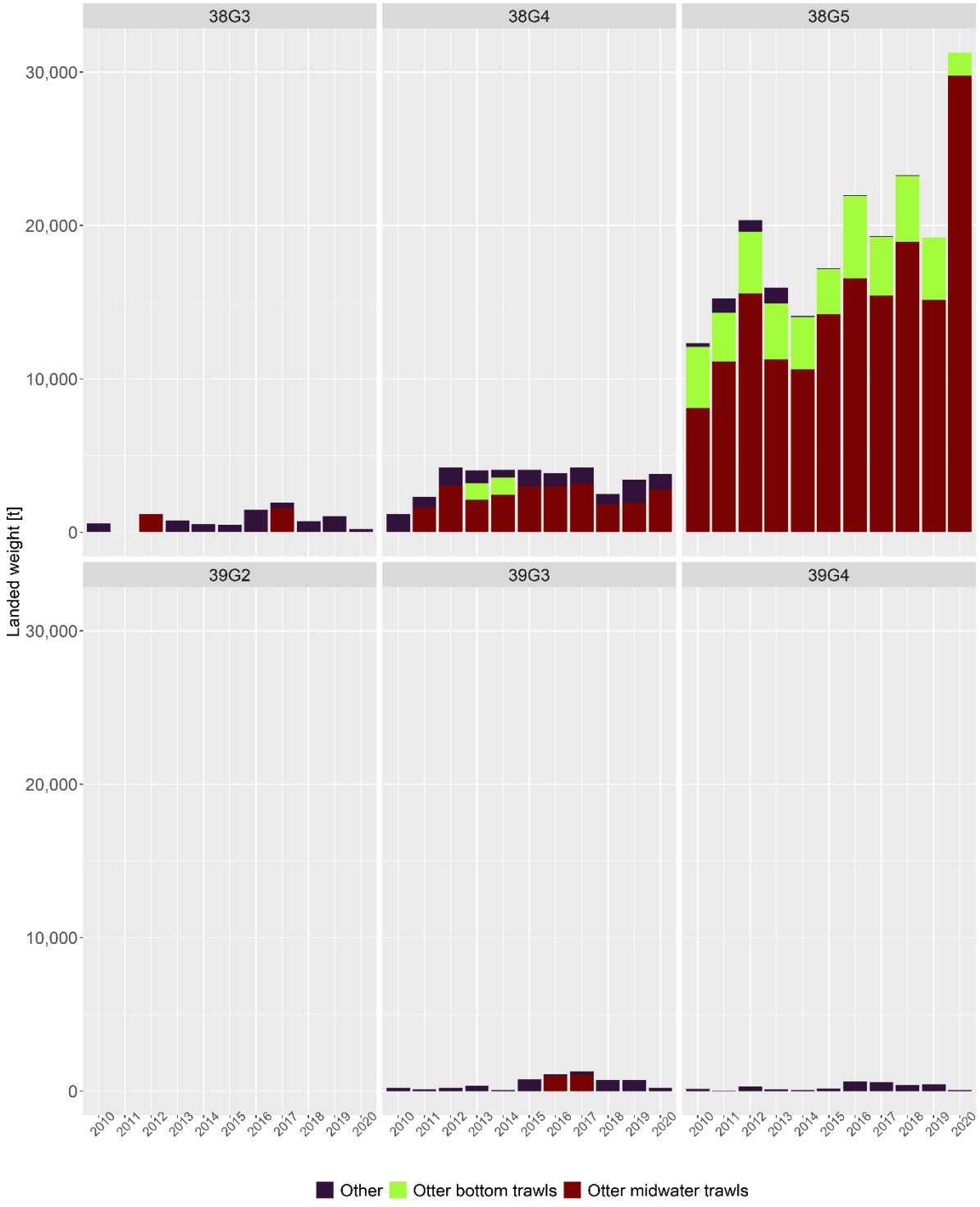

Figure 6-4 Landed weight [t] in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landings from gear types where the catch constituted less than 10 [t] the respective year.

38G3
The majority of ICES rectangle 38G3 is located within the German EEZ. None of the areas designated for OWFs and the cable corridor is placed within this rectangle. The fisheries have primarily been conducted with otter midwater trawl (69 %), and to a lesser degree otter bottom trawl (29.2 %). The yearly average landed weight was 819.3 tonnes. Landings within 38G3, have been declining since 2018, Figure 6-4. A more detailed estimate of the landings can be found in Appendix 8.

38G4
Bornholm I nord is partly located within ICES rectangle 38G4, whereas the entirety of Bornholm I syd and Bornholm II is found here. The fisheries are primarily with otter midwater trawls (68.1 %), but there is some contribution from both otter bottom trawls (19.7 %) and gillnets (10.5 %). Overall, eight different fishing gears were used by the Polish fisheries within 38G4, see Appendix 8. The average landed weight was 3,430 tonnes. The landed weight in this area suggests that this is an important area for the Polish pelagic fisheries when compared to the other investigated ICES rectangles, Figure 6-4.

38G5
The ICES rectangle 38G5 is located southeast of Bornholm. The OWFs and the cable corridor is not placed within 38G5. Of the investigated ICES rectangles, this is the most fished area of the Polish fleet in terms of landings, see Appendix 8. The average landed weight was in the period 19,105 [t]. There has been an increase in the landed weight within 38G5 in the investigated period mainly driven by pelagic fisheries, Figure 6-4. The fisheries are primarily conducted by otter midwater trawls (79.3 %), but with some contribution from otter bottom trawls (19.1 %).

39G3
39G3 is mainly an ICES rectangle within the Swedish EEZ with harbours like Trelleborg and Ystad. The Polish fisheries intensified their activities within 39G3 in the period 2015 to 2017, Figure 6-4. The fisheries are mainly conducted by otter midwater trawls (88.3 %), but with some contribution from otter bottom trawls (11.6 %). Overall, 6 different fishing techniques were used by the Polish fisheries in 39G3, see Appendix 8. The yearly average landed weight was 523 tonnes.

39G4
Bornholm I nord is partly located within ICES rectangle 39G4. This is an area with little activity from the Polish fisheries, see Appendix 8. A total of 63.6 % of all landings in the period originated from otter midwater trawls. In comparison, 35 % of the landings originated from otter bottom trawls. The average landed weight was 265 tonnes, Figure 6-4. Most of the landings are made outside the proposed OWF.

7. BASELINE – GERMANY

This section describes the baseline for German fisheries in the southern Baltic Sea.

7.1 VMS data for relevant ICES rectangles

The distribution of the fishing activity is presented here. The German VMS data stores no information concerning gear and type of fishery. Therefore, the distribution of the German fisheries from larger vessels have been pooled.

VMS pings considered as active fishing is presented as a total by ICES rectangle for the period 2010 to 2020 in Figure 7-1. As seen in Figure 7-1, the highest activity was registered in 38G3 and 38G5. The OWFs are located in 39G4 and 38G4, with the highest areal uptake in 38G4. The offshore cable corridor is planned through 38G4, 39G4, 39G3, 39G2 and 40G2. The activity from the German fisheries in 39G4 is primarily in the southwestern part of the rectangle. Approximately 3 % of the VMS points within 39G4 have been set within Bornholm I nord. In 38G4 approximately 12 % of the VMS pings from the German fleet is within Bornholm I nord, Bornholm I syd and Bornholm II.

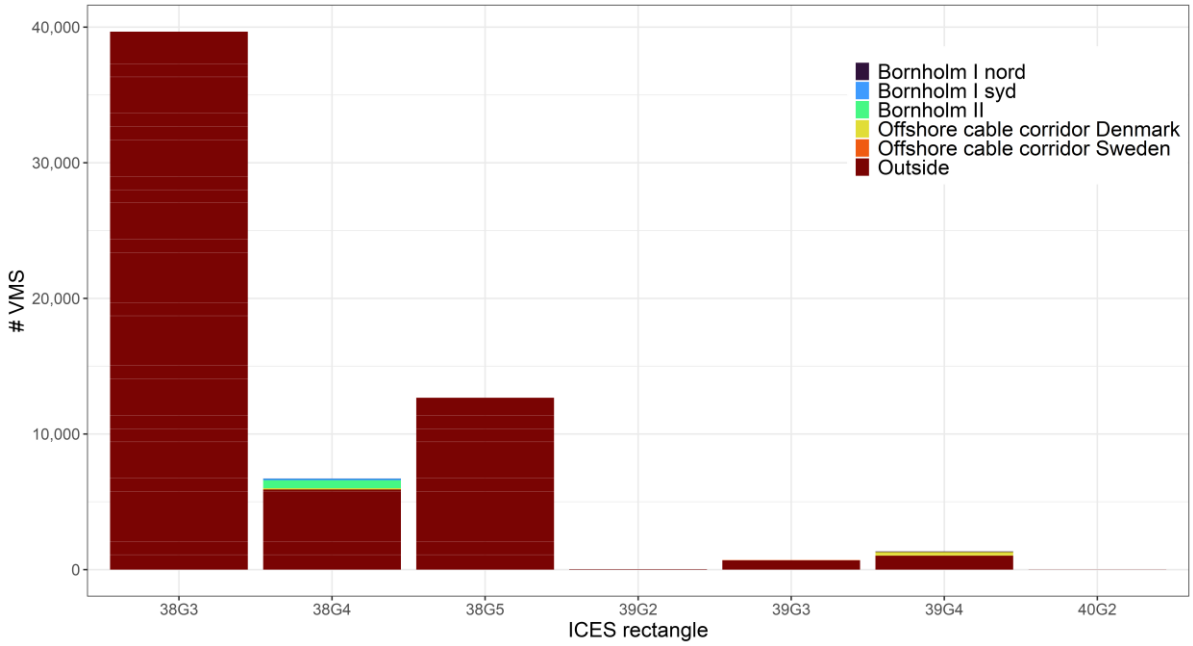

Figure 7-1 VMS pings from 2010 to 2020 by ICES rectangle. Only pings that are considered as active fishing has been included in the analysis. Bornholm I nord (dark blue), Bornholm I syd (light blue), Bornholm II (teal) are VMS pings set within the individual offshore wind farm (OWF) area. Offshore cable corridor Denmark (yellow) and offshore cable corridor Sweden (orange) are VMS pings set within the two cable corridors. Outside (brown) are VMS pings outside the OWF area.

The German fishing intensity is very low within 39G4 with the number of VMS pings varying between three and 212 over the analysed period, Figure 7-2. In 38G4 the VMS pings varied between 58 and 1,235, Figure 7-2.

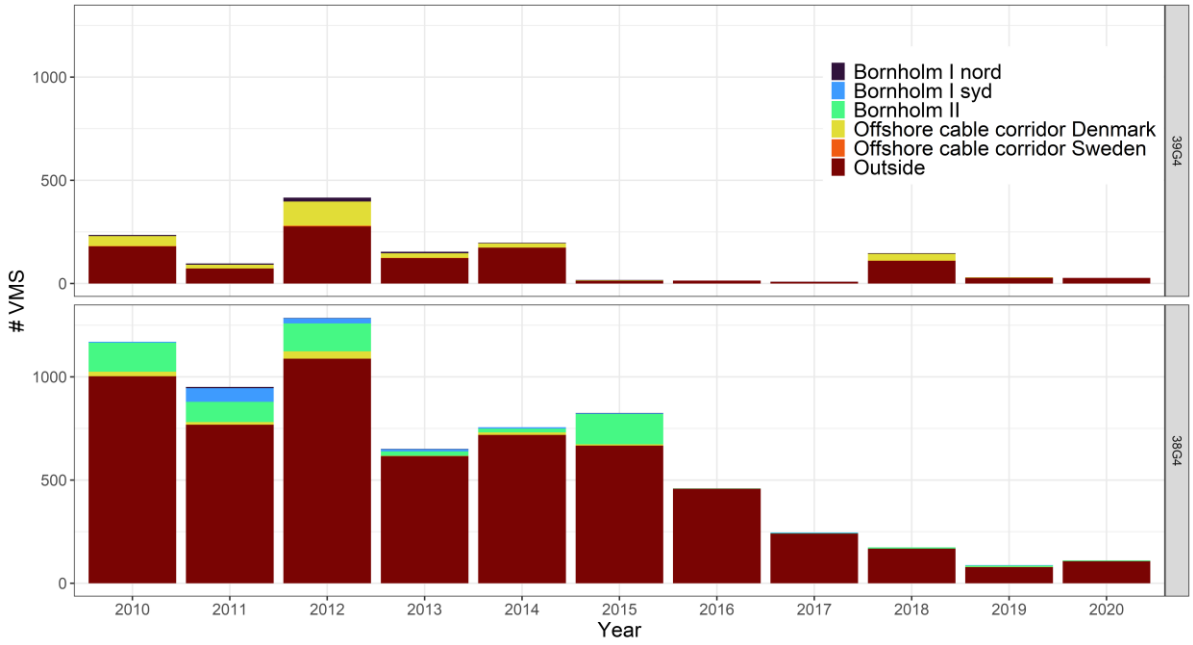

Figure 7-2 VMS pings from 2010 to 2020 by ICES rectangle 39G4 or 38G4. Only pings that are considered as active fishing has been included in the analysis. Bornholm I nord (dark blue), Bornholm I syd (light blue), Bornholm II (teal) are VMS pings set within the individual offshore wind farm (OWF) area. Offshore cable corridor Denmark (yellow) and offshore cable corridor Sweden (orange) are VMS pings set within the two cable corridors. Outside (brown) are VMS pings outside the OWF area.

The main fishing activity performed by the German fleet occurred in the investigated ICES rectangles 38G3 and 38G5, see Figure 7-3. Areas like 39G4, 39G3, 39G2 and 40G2 were less frequently fished. In ICES rectangle 38G4, where Bornholm I syd, Bornholm II and a part of Bornholm I nord is located, there is some activity from the German fisheries fleet, but the analysis indicated that the majority of the VMS pings were set closer to the German shore, Figure 7-3. The fishing intensity from the German fleet is decreasing along the western part of the offshore cable corridor towards the landfall at Zealand. The German fleet has been active in the majority of the areas designated for OWFs, but with very limited intensity.

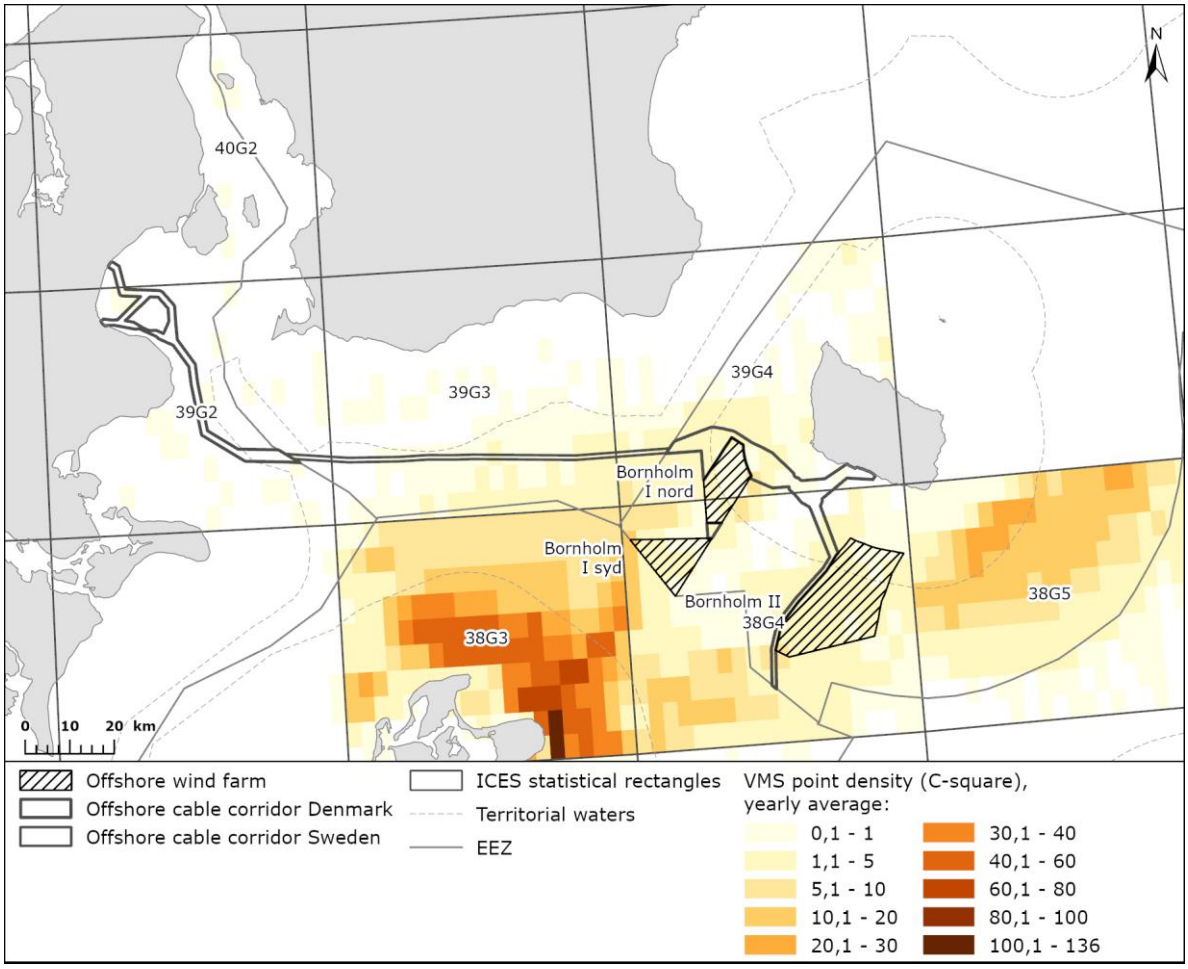

Figure 7-3 The distribution of German fisheries by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

7.2 VMS data for relevant ICES rectangles by gear

In this section the individual ICES rectangle is described i.e., 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. There were no landings in 39G2 and 40G2, therefore the areas are excluded from the following sections. The description is based on catches within the individual rectangle divided in weight and value by species.

7.2.1 Landed weight

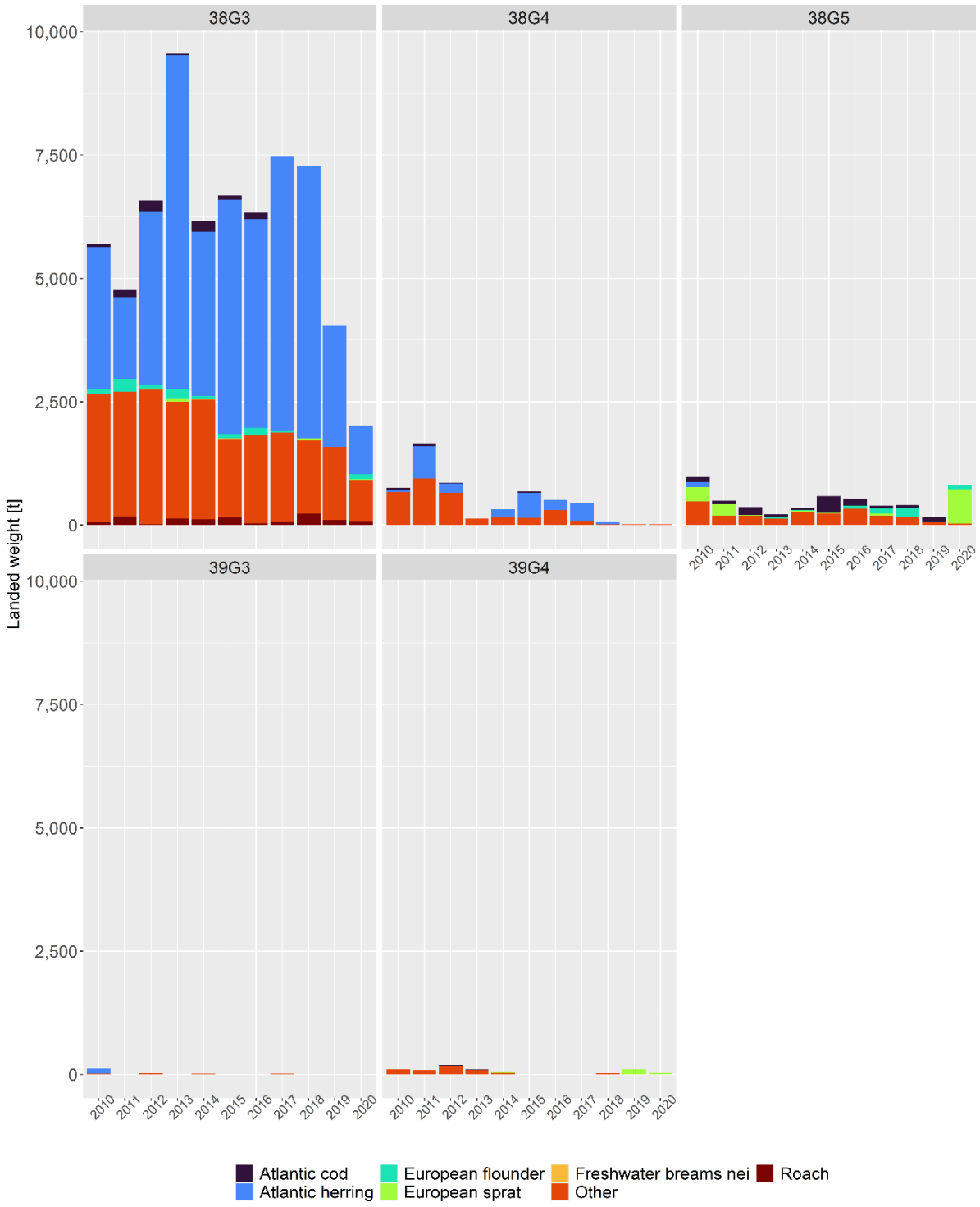

Figure 7-4 Landed weight [t] by larger vessels (≥ 12 meter of length) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landings from gear types where the catch constituted less than 10 [t] the respective year.

38G3

The main part of 38G3 is located within the German EEZ. None of the OWFs and the cable corridor is placed within this rectangle. Here, the German fleet has mainly targeted Atlantic herring, Atlantic cod and European flounder. The fishing ground is important to the German fleet, when

compared to the other investigated ICES rectangles and national fisheries in terms of landed weight. The landings are characterized by being diverse i.e. there is a combined commercial fisheries for both freshwater and saltwater species. The catch composition consisted of 42 species, Appendix 9. The average landed weight was 6053 tonnes. The lowered quota for Atlantic cod and Atlantic herring can be observed in the declining landed weight in 38G3 which was approximately 2000 tonnes in 2020, Figure 7-4.

38G4
Bornholm I nord is partly located within ICES rectangle 38G4, whereas the entirety of Bornholm I syd and Bornholm II is found here. The German EEZ borders up to Bornholm I syd. Like 38G3, the targeted fish are primarily Atlantic herring, Atltanic cod and European flounder. The catch composition consisted of 27 freshwater and saltwater species, Appendix 9. The average landed weight was 498 tonnes, but since 2018 less than 100 tonnes have been caught by the German fleet in 38G4.

38G5
38G5 is located southeast of Bornholm. None of the OWFs and the cable corridor is placed within 38G5. The catch composition were exclusively of saltwater species, mainly Atlantic cod, European sprat and European flounder. In 2020 the landings were almost solely of European sprat. The average landed weight was 482 tonnes in the investigated period, Appendix 9.

39G3
39G2 is mainly an ICES rectangle within the Swedish EEZ with harbours like Trelleborg and Ystad. The German fleet does seldom fish here, and every year less than 30 tonnes were landed here since 2011. The catches has mostly consisted of Atlantic cod, European sprat and European flounder.

39G4
Bornholm I nord is partly located within ICES rectangle 39G4. On average the German fleet landed 68 tonnes. It was previously an area where cod were the main targeted species, but since 2019 the landings has solely been cosisting of European sprat. The intensity map of the German fleet suggest, that the activity from the fleet mainly occurs in the southern part of 39G4.

7.2.2 Landed value

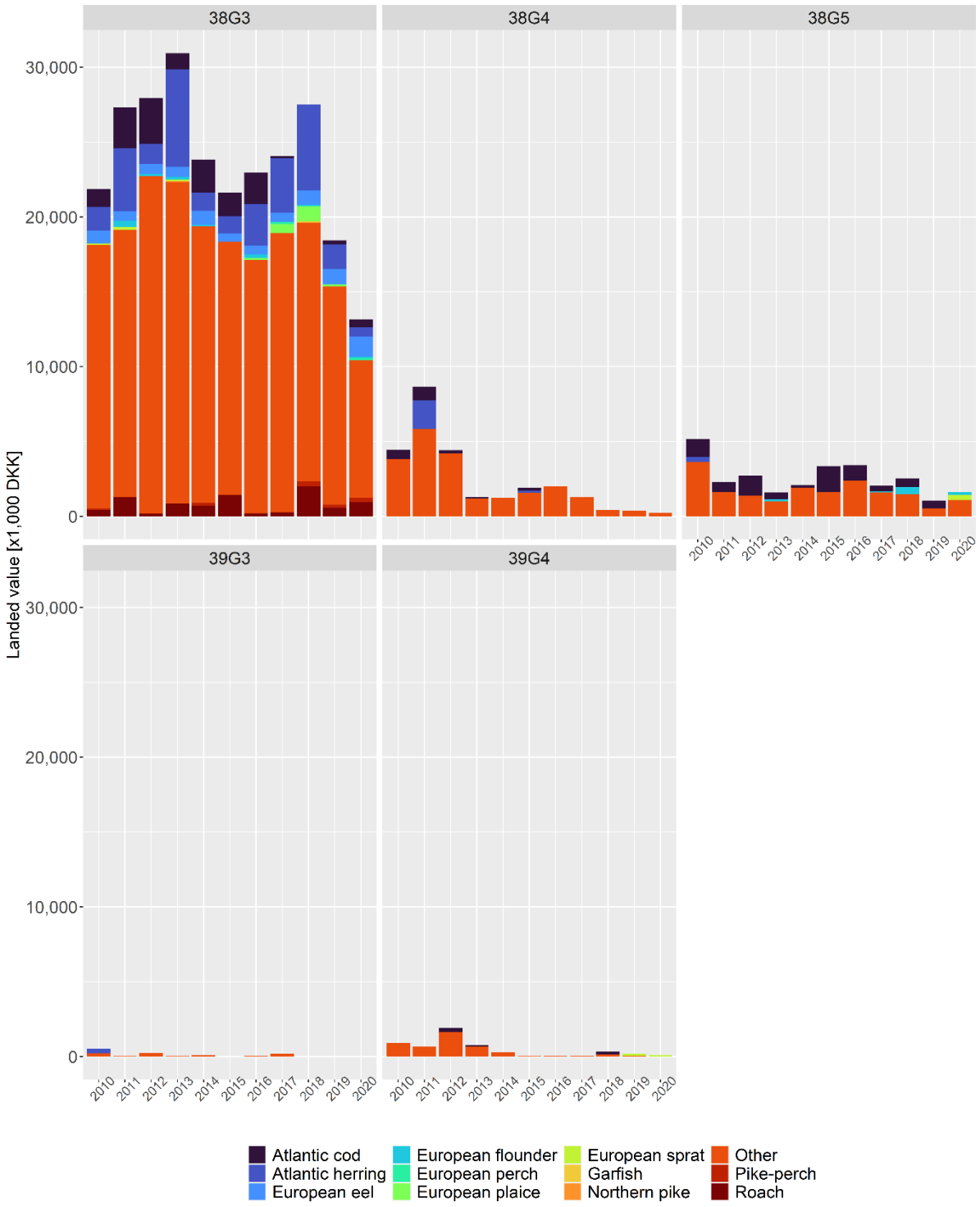

Figure 7-5 Landed value [x1,000 DKK] by larger vessels (≥ 12 meters of lenth) in the period 2010 to 2020 by ICES rectangle. The group *Other* is a grouped category. *Other* contains landed value from gear types where the catch constituted less than 100 [x1,000 DKK] the respective year.

38G3

The landed value within 38G3 were on average 23,602.5 [x1,000 DKK]. The German fleet had the highest landed value within 38G3, when compared to Poland, Denmark and Sweden. The most

important species in terms of value is Atlantic herring, Atlantic cod and European flounder in 38G3.

Approximately 68% of the landed value was made with pair midwater trawls. 38G3 is an ICES area known for its fisheries possibilities for both herring and sprat. The reduction in the quota for herring in 2019 and 2020 is affecting the landed value within 38G3.

38G4
Bornholm I nord is partly located within ICES rectangle 38G4, whereas the entirety of Bornholm I syd and Bornholm II is found here. Atlantic cod, Atltantic herring and European flounder were the most important species in terms of landed value. The average landed value was 2,383 [x1,000 DKK]. There has been a decline in the landed value over the investigated period, Figure 7-5.

38G5
The average landed value were 2,530 [x1.000 DKK]. The landed value within 38G5 has been decreasing in the investigated period, see Figure 7-5. Here Atlantic cod, European flounder and European sprat contributed most to the landed value in 38G5.

39G3
The landed value in 39G3 was on average 132.4 [1,000 DKK]. The landed value was primarily made with Atlantic cod and Atlantic herring, Figure 7-5. The German fleet does seldom fish here.

39G4
The landed value in 39G4 was on average 477.1 [1,000 DKK]. The landed value was primarily made with Atlantic cod, Figure 7-5. Since 2019 the landings have almost exclusively been of European sprat. The German fleet does seldom fish here.

8. MAPPING OF HARBOURS

A mapping of home harbours has been made based on the Danish logbook data for the Danish commercial fisheries. This was done to get an understanding of where impacted vessels stem from. The datasets from Sweden, Germany and Poland did not have home harbour included as a parameter. During the investigated period, vessels from 91 different home harbours fished in the ICES rectangles. The difference in landed weight and value by ICES rectangle and home harbour can be seen in Figure 8-1. In 38G4, where Bornholm II, Bornholm I syd and a part of Bornholm I nord is located, the vessels mainly had home harbour in Nexø and Rødvig in terms of landings and value. There was more variation in the reported home harbour of the vessels operating in 39G4, where Bornholm I nord is placed, in comparison to 38G4, Figure 8-1.

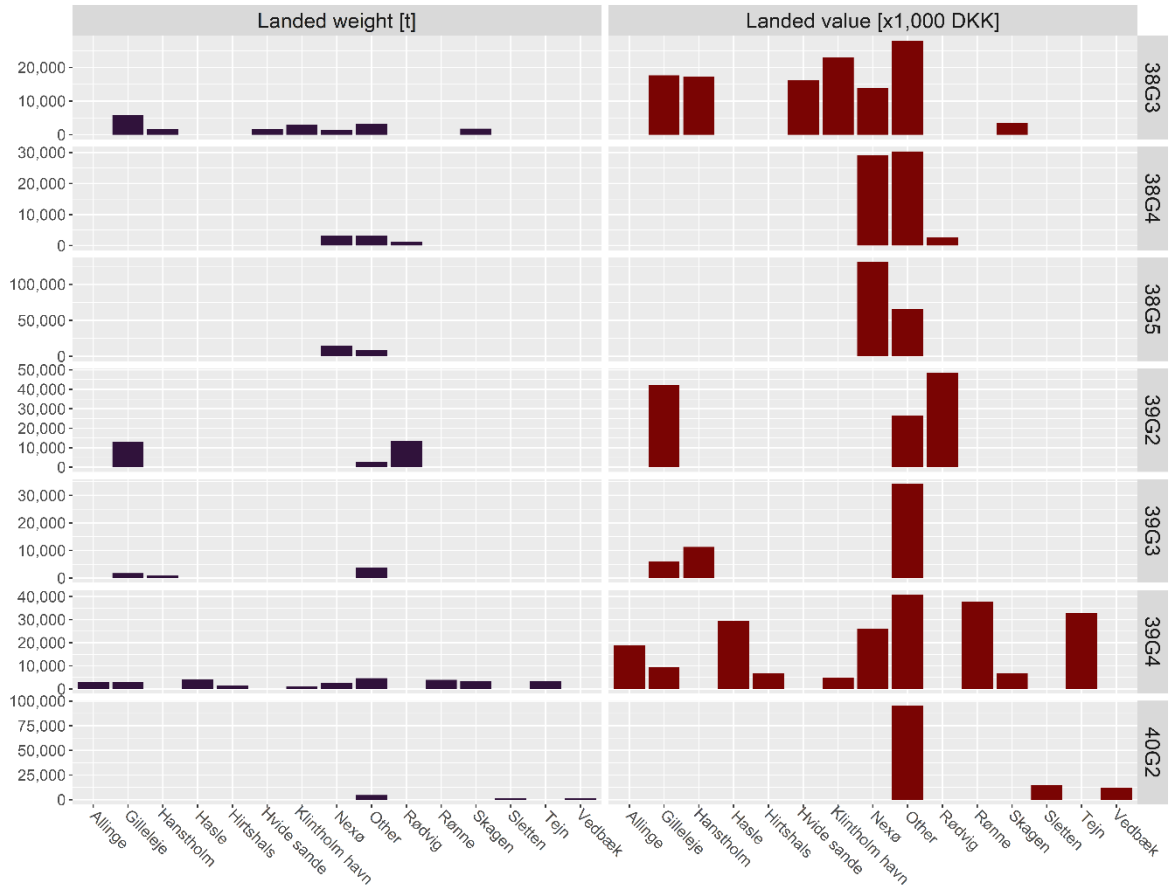

Figure 8-1 Accumulated landed weight [t] and value [x1,000 DKK] by Danish fisheries from 2010 to 2020 within ICES rectangle 38G3, 38G4, 38G5, 39G2, 39G3, 39G4 and 40G2. The weight and value have been divided by home harbour. The group *Other* constitutes of harbours where the accumulated weight was less than a 1,000 [t].

Similar to the mapping of home harbour, an analysis was conducted to understand which harbours were used for the landing of the catches, Figure 8-2. Here several harbours in Sweden and Poland were used e.g., Darkowo, Simrishamn, Swinousjcie and Ystad. Despite that the national data from Sweden, Poland and Germany had no harbour parameter, it is assessed that the beforementioned harbours are important to the commercial fisheries taking place near and in the pre-investigation area of Bornholm OWF. The Danish vessels that operated in 38G4 mainly used Nexø and Rønne as landing harbour. In 39G4 different harbours of Bornholm like Rønne,

Hasle, Nexø and Tejn were preferred, Figure 8-2. Alternatively, the commercial fisheries operating in 39G4 used ports like Simrishamn and Swinoujscie.

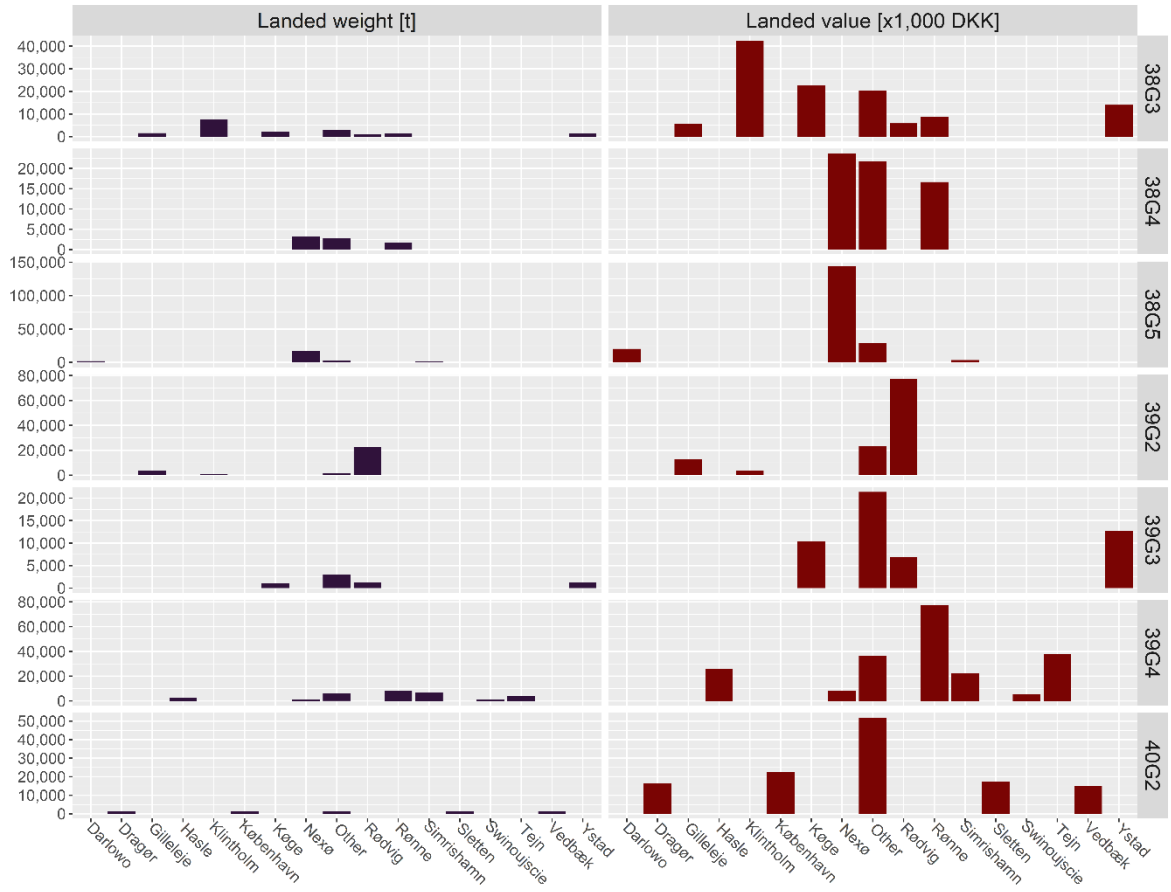

Figure 8-2 Accumulated landed weight [t] and value [x1,000 DKK] by Danish fisheries from 2010 to 2020 within ICES rectangle 38G3, 38G4, 38G5, 39G2, 39G3, 39G4 and 40G2. The weight and value have been divided by landing harbour. The group *Other* constitutes of harbours where the accumulated weight was less than a 1,000 [t].

Important species and fishing methods within 38G4 and 39G4 has previously been described in detail for commercial fisheries in Denmark in 4.2 and 4.3 without a relation to home and preferred landing harbour. In 39G4, European sprat is increasingly important for the pelagic fisheries in terms of the composition of the landings. The landed catches and value are primarily for pelagic species in the last years of the investigated period. Demersal species like European plaice and European flounder are also important catches in 39G4. A combination of landings of cod and sandeels has dominated the landings in 38G4. The fisheries in 38G4 are primarily conducted by bottom trawlers, but with some contribution from both hooks and lines, and midwater trawls. Since 2020 the landings in 38G4 and 39G4 has most likely decreased even further. As with the rest of the Baltic Sea, the decreasing quota and total allowable catch ofn herring and cod has influenced the composition of the landed catch remarkably. It was also confirmed in an interview with the DFPO that under current circumstances a lot of the effort from the commercial fisheries of Bornholm has moved to Kattegat and Skagerrak because of the dwindling quota, see 4.1.

9. POTENTIAL IMPACTS

Energy Island Bornholm can potentially interfere with the commercial fisheries both during the construction and operational phase. See Table 9-1 for the potential impacts on commercial fisheries.

Table 9-1 Potential impact on commercial fisheries.

Potential impact	Construction	Operation
Safety zones	X	X

The potential impacts are described at an overall level, as the impacts are dependent of the planned construction work that will be determined in a subsequent design phase e.g., offshore wind turbine types, size, number, and positioning patterns.

9.1.1 Construction phase

Safety zones: Cable corridor
A safety zone will be established around the cable corridor. A safety zone should be agreed upon with the national maritime authorities, after which the fisheries should be informed to avoid the safety zone during the construction period. As there is presently no decision about the safety zone around the cable in the construction phase, the gross area of the cable corridor in both Denmark and Sweden has been used to describe the impact. The safety zone could either be for the entire construction area or, alternatively, a "rolling" safety zone, only related to the specific vessels involved. There is some variation among the used fisheries gear within the cable corridor. The variation also differs between the investigated nations.

Denmark
Denmark has mainly been bottom trawling in eastern part of the cable corridor, with a shift towards pelagic trawlers closer to Zealand. The usage of passive techniques like gillnets and entangling nets is the preferred type of fishery conducted within Køge Bay. Gillnets (standing) could be impacted in a larger degree than active types of fishing due to the immobility of the gear in nearshore areas. The different fishery types used by Denmark can be found in section 4.2.

Sweden
Section 5.1 suggests that there is little activity within the cable corridor from the Swedish fisheries, with the exceptions of bottom trawlers operating in 39G3 and 39G4 and the midwater trawlers fishing in the western part of the Danish EEZ. There has been a drastic decrease in the activity of larger vessels (≥ 12 meters of length) operating in 39G3 since 2019.

Poland
The Polish fisheries have mainly fished outside the cable corridor. Within 39G3 there has been some activity from the fleet, especially, in the eastern part of the ICES rectangle, see section 6.1. The cable corridor found within 38G4 and 39G4 has also been fished by the Polish fisheries. The activity has mainly been outside Danish territorial waters by midwater trawls.

Germany
The distribution of the German fishing fleet is analysed in section 7.1. The analysis indicated that most of the activity is set closer to the German shore, outside the cable corridor. The fishing intensity from the German fleet decreases along the western part of the offshore cable corridor towards the landfall at Zealand.

Possible effects
No fishing is allowed within the safety zone of the cable corridor in the construction phase. The safety zone will impact the commercial fisheries negative as it limits the fishable area, increases travel expenses, and alter the fisheries pattern in the area.

Safety zones: Site and turbines
A safety zone will be established around the main OWF sites to protect the project, personnel, and the safety of third parties during the construction phase of the wind farm. The safety zone could either be for the entire construction area or, alternatively, a rolling safety zone. A safety zone should be agreed upon with the Danish Maritime Authority.

It is intended that third parties will be excluded from any safety zone during the construction period, and that the zone will be marked in accordance with the requirements from the Danish Maritime Authority. The safety zones are de facto closed for commercial fisheries, and this can potentially have a negative impact on the fisheries operating within the area. The safety zones are yet to be decided so the impact is currently being considered in the pre-investigation area of Bornholm I nord, Bornholm I syd and Bornholm II.

Denmark
Danish bottom trawlers have had little fishing activity within the gross area of OWFs in comparison to the fishing grounds just north of Bornholm I nord and east of Bornholm II, which could be explained by the presence of hard bottom habitats and reef formations. The intensity from bottom trawlers within the area designated for OWFs have been largest in the northern part of Bornholm I nord and the south-eastern part of Bornholm II. The intensity of midwater trawlers within Bornholm I nord, Bornholm I syd, and Bornholm II has been limited in the investigated period, with the highest intensity in the northern part of Bornholm II. Some of the highest intensity from hooks and lines were within the wind farm area of Bornholm II, and this type of gear is frequently for salmon fishing.

Sweden
Like the Danish fisheries, the main activities of the Swedish fisheries have occurred outside the gross area of the project, especially north of Bornholm I nord, see section 5.1 for further details. There has been some bottom trawling within the northern and western area designated for Bornholm I nord, but their main operations were just north of Bornholm I nord. Activity from bottom trawlers in Bornholm I syd and Bornholm II has been limited. The intensity of midwater trawlers within Bornholm I nord, Bornholm I syd, and Bornholm II has been limited in the investigated period. Both gillnets and entangling nets, and hooks and lines have been used to some extent within Bornholm I nord.

Poland
The Polish fisheries are by far the most active in terms of landings in 38G4, see section 6.1. Bornholm I nord is partly located within ICES rectangle 38G4, whereas the entirety of Bornholm I syd and Bornholm II is found here. Approximately 2 0% of the VMS points were set within the area designated for OWFs, predominately the south-eastern section of Bornholm II. The activity within the gross area has mainly been outside Danish territorial waters by midwater trawlers targeting pelagic species like sprat and herring.

Germany
The distribution of the German fisheries fleet was analysed in section 7.1. Most of the recorded activity were closer to the German shore, outside the gross area of the project. In 38G4

approximately 12 % of the VMS pings from the German fleet is within Bornholm I nord, Bornholm I syd and Bornholm II.

Possible effects
There will be an impact to the fisheries due to the safety zone of the site and turbines in the construction phase. The negative impact of the safety zone to the commercial fisheries is limitation to the fishable area, increased travel time and expenses, and alterations of the fisheries pattern in the area. Therefore, the fisheries that are impacted can become less profitable than they are today. According to the Fisheries Act (*fiskeriloven*) § 78, all fishermen who normally fish in the affected area must be compensated for the loss of income. The Developer has to negotiate compensation with every affected fisherman, and the licence to produce electricity from the OWF can be granted to the Developer only if an agreement has been made with all affected fishermen.

It is assessed that the main impact of the safety zones are limitations of current operations from midwater trawlers, bottom trawlers and fisheries with hooks and lines in the south-eastern part of Bornholm II based on the national VMS investigations in section 4.2, 5.1, 6.1 and 7.1. The safety zones will also pose a conflict to activities from bottom trawlers, gillnets and entangling nets, and hooks and lines in the northern part of Bornholm I nord.

Vessels that are restricted in their manoeuvrability e.g., bottom and midwater trawlers that haul for several kilometres, are potentially forced to move to areas with less catch per unit effort (CPUE) because of the established safety zone.

9.1.2 Operational phase

Safety zones: Cables
The project needs to comply with Regulation no. 939 of 27/11/1992 on protection of sea cables and submarine pipes. Under the Administrative Order on protection of submarine cables and submarine pipelines, cable fields are given a 200 meter wide safety zone along and on each side of the cable. Ships may not, without urgent necessity, anchor in the cable fields established for such infrastructure, which cover the associated safety zones. In the safety zones, suction dredging, fishing for stones as well as any use of tools or other gear that is dragged on the seabed is prohibited. The fisheries should be informed to avoid the safety zone during the operational period. Cable owners may grant a waiver to allow all types of trawling across the permanent safety zone once the cable is installed. If dispensation is granted to allow trawling within all or parts of the safety zone of the cable during the operation phase, then impacts on the commercial fisheries would be reduced during the operation phase. Dispensation cannot be provided until after installation. There is some variation among the used fishing gears within the safety zone. The variation also differs between the investigated nations.

Denmark
Denmark has mainly been bottom trawling in eastern part of the cable corridor. The different fishery types used by Denmark can be found in section 4.2.

Sweden
Section 5.1 suggests that there is little activity within the cable corridor from the Swedish bottom trawlers, except for operations in 39G3 and 39G4. There has been a drastic decrease in the activity of larger vessels (≥ 12 meter of length) operating in 39G3 since 2019.

Poland
The Polish fisheries have mainly fished outside the cable corridor. Within 39G3 there has been some activity from the fleet, especially, in the eastern part of the ICES rectangle, see 6.1. The cable corridor found within 38G4 and 39G4 has also been fished by the Polish fisheries. The activity has mainly been outside Danish territorial waters by midwater trawls.

Germany
The distribution of the German fisheries fleet was analysed in section 7.1. The analysis indicated that most of the VMS pings were set closer to the German shore, outside the cable corridor. The fishing intensity from the German fleet is decreasing along the western part of the cable corridor towards the landfall at Zealand.

Possible effects
No fishing is allowed within the safety zone of the cable in the operational phase by gears that are dragged on the seabed. The safety zone will impact the bottom trawlers negative as it limits the fishable area, increases travel time to fishing grounds and expenses, and alter the fisheries pattern in the area. Therefore, bottom trawling that is impacted can become less profitable than they are today. Mitigating the impact to the bottom trawlers is a financial compensation. According to the Fisheries Act (*fiskeriloven*) § 78, all fishermen who normally fish in the affected area must be compensated for the loss of income. The Developer has to negotiate compensation with every affected fisherman, and the licence to produce electricity from the OWF can be granted to the Developer only if an agreement has been made with all affected fishermen. Another mitigation measure could be a dispensation to the safety zone of the cable. Confirmation of dispensation to regulation no. 939 of 27/11/1992 on protection of sea cables and submarine pipes cannot be provided until after installation.

Safety zones: Site and turbines
A permanent safety zone is expected to be established around the main OWF sites during the operational phase of the wind farm. A safety zone should be agreed upon with the Danish Maritime Authority.

It is intended that third parties will be excluded from any safety zone during the operational phase, and that the zones will be marked in accordance with the requirements from the Danish Maritime Authority. The safety zones are de facto closed for commercial fisheries, with the exception of those that are exempt, and this can potentially have a negative impact to the fisheries operating within the area. The safety zones are yet to be decided, so the impact is assessed based on the area designated for Bornholm I nord, Bornholm I syd and Bornholm II.

Denmark
Danish bottom trawlers have had little fishing activity within the gross area of Bornholm I nord, Bornholm I syd and Bornholm II in comparison to the fishing grounds just north of Bornholm I nord and east of Bornholm II, which could be explained by the presence of hard bottom habitats and reef formations. The intensity from bottom trawlers within the gross area have been largest in the northern part of Bornholm I nord and the south-eastern part of Bornholm II. The intensity of midwater trawlers within Bornholm I nord, Bornholm I syd, and Bornholm II has been limited in the investigated period, with the highest intensity in the northern part of Bornholm II. Some of the highest intensity from hooks and lines were within the wind farm area of Bornholm II.

Sweden
Like the Danish fisheries, the main activities of the Swedish fisheries have occurred outside the gross area of the project especially north of Bornholm I nord, see section 5.1 for further details.

There has been some bottom trawling within the northern and western gross area of Bornholm I nord, but their main operations were just north of Bornholm I nord. Activity from bottom trawlers in Bornholm I syd and Bornholm II has been limited. The intensity of midwater trawlers within Bornholm I nord, Bornholm I syd, and Bornholm II has been limited in the investigated period. Both gillnets and entangling nets, and hooks and lines have been used to some extent within Bornholm I nord.

Poland
The Polish fisheries are by far the most active in terms of landings in 38G4, see section 6.1. Approximately 20% of the VMS points were set within the gross area of Energy Island Bornholm, predominately the south-eastern section of Bornholm II. The activity within the gross area has mainly been outside Danish territorial waters by midwater trawlers targeting pelagic species like sprat and herring.

Germany
The distribution of the German fisheries fleet was analysed in section 7.1. Most of the recorded activity were closer to the German shore, outside the gross area of the project. In 38G4 approximately 12 % of the fishing activity of the German fleet is within Bornholm I nord, Bornholm I syd and Bornholm II.

Possible effects
There will be an impact to the fisheries, with the exception of those that are exempt, due to the permanent safety zone of the site and turbines in the operational phase. The negative impact of the safety zone on the commercial fisheries is a limitation to the fishable area, increased travel time and expenses, and alterations of the fisheries pattern in the area. Therefore, the fisheries that are impacted can become less profitable than they are today.

It is assessed that the main impact of the safety zones are limitations of current operations from midwater trawlers and bottom trawlers in the south-eastern part of Bornholm II based on the national VMS investigations in section 4.2, 5.1, 6.1 and 7.1. The safety zones will also pose a conflict to activities from bottom trawlers in the northern part of Bornholm I nord. Similar projects have allowed fisheries with passive gears to continue their activities inside the safety zones, making it possible to fish between and around the turbines in the operational phase.

Vessels that are restricted in their manoeuvrability e.g., bottom and midwater trawlers that haul for several kilometres, are potentially forced to move to areas with less CPUE because of the established safety zone. The active fisheries will simply avoid the safety zones during the operational phase and seek alternative fishing grounds. The safety zones are permanently closing the fishing opportunities in the designated area for the OWFs and the cable corridor for fisheries that are not exempt.

10. ASSESSMENT OF ICES RECTANGLES

In this chapter the different analyses and data have been summarized. This is based on activity from the fisheries within and around Energy Island Bornholm and the cable corridors within the ICES rectangles i.e., 39G3, 39G4, 38G3, 38G4, 38G5, 39G2 and 40G2.

The assessment is mainly based on data from Denmark and Sweden. Datasets from Germany and Poland lacked parameters to couple the VMS and logbook data, and it is therefore described at an overall level. The Polish datasets also lacked a value and species parameter. It was assumed that the landed weight and value was spread equally among the VMS pings made by the commercial fisheries of Poland and Germany. It is not likely that the landed weight and value is spread evenly among the pings, but in order to get an idea of the magnitude this approach was chosen for the assessment. An overview of the accumulated landings and value thereof is presented in Figure 10-1 and Figure 10-2, respectively.

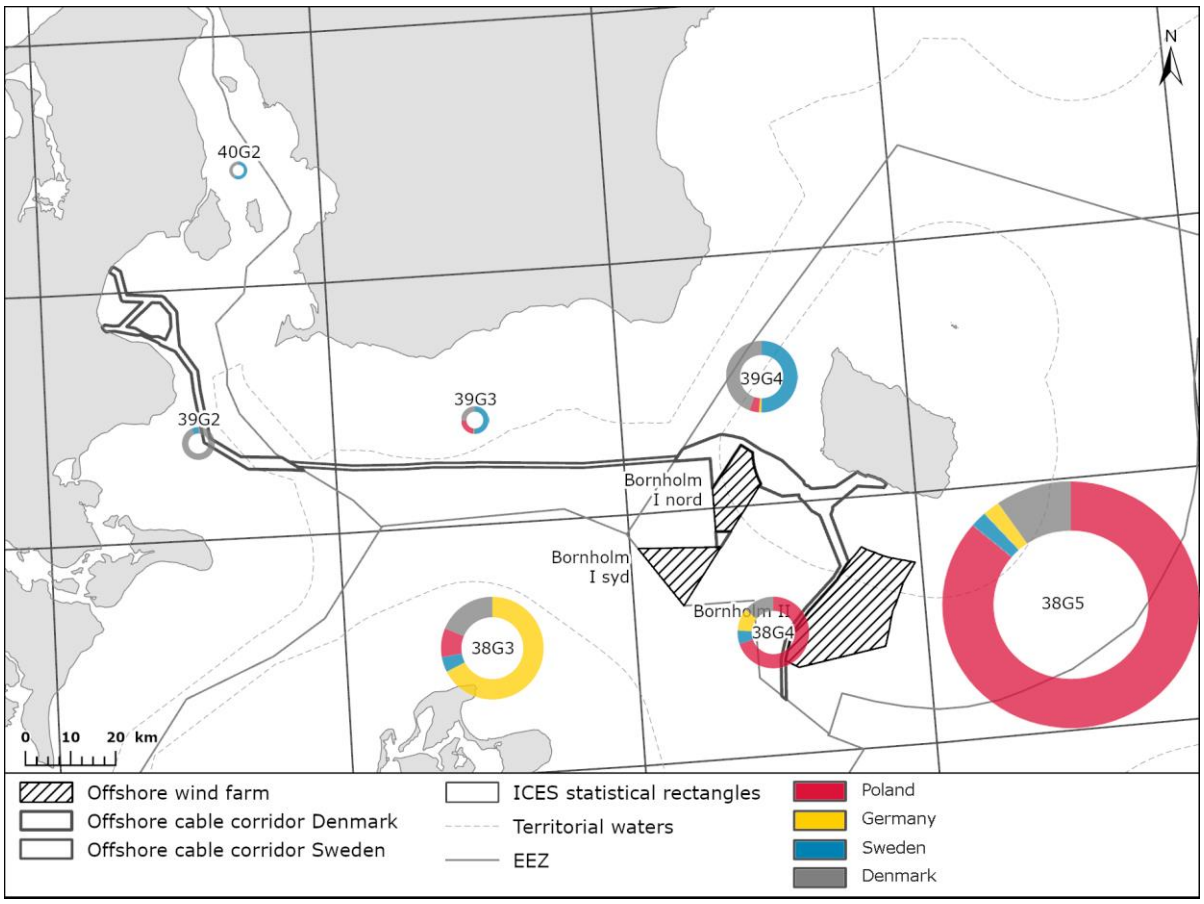

Figure 10-1 Donut chart scaled by accumulated landings from 2010 to 2020, by country (Poland, Germany, Sweden and Denmark) and ICES rectangle.

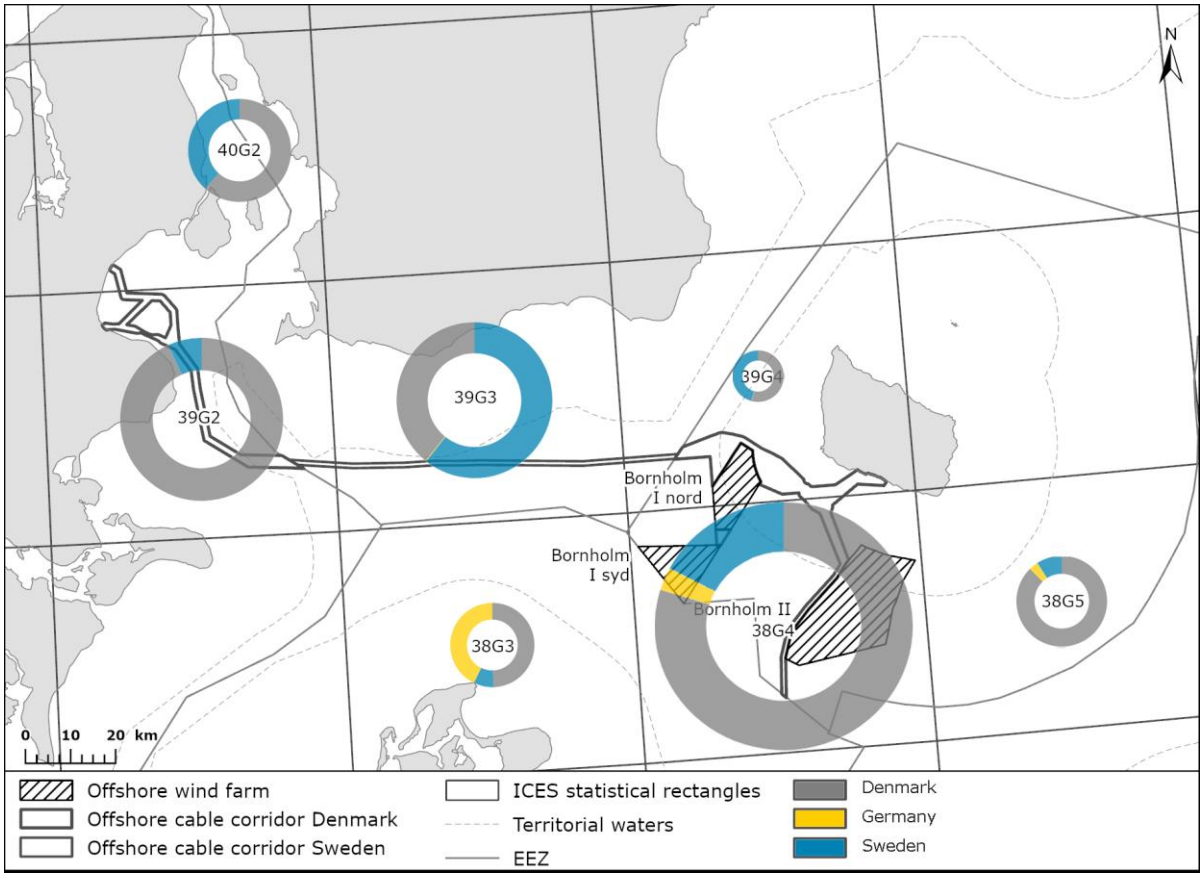

Figure 10-2 Donut chart scaled by accumulated landed value from 2010 to 2020, by country (Denmark, Germany and Sweden) and ICES rectangle.

As the Energy Island is located within ICES rectangle 39G4 and 38G4, emphasis in the summary has been put here.

10.1.1 ICES rectangle 39G4

An average of 6,238 tonnes were yearly landed in 39G4 by Denmark, Germany, Poland, and Sweden. Sweden landed approximately 50 % of the landings in 39G4, whereas 45 %, 4 % and 1 % were by Denmark, Poland, and Germany, respectively. In 39G4 approximately 3 % of the recorded VMS activity, from both the Polish and German fleet, were within Bornholm I nord. This is equivalent to an estimated landed weight of 88 and 23 tonnes caught within Bornholm I nord by Poland and Germany in the period 2010 to 2020, respectively.

Table 10-1 Landed weight [t] by country and year in 39G4.

Nation	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
DK	4183	4146	3816	3378	3418	2540	1844	1241	1874	2576	1541
DE	109	92	195	100	62	3	5	3	36	101	47
PL	136	12	306	129	57	173	615	589	396	428	84
SE	2702	3572	3799	3741	2209	3718	2972	2589	2634	4555	1895
Total	7130	7822	8116	7348	5746	6434	5436	4422	4940	7660	3567

The coupled data for Danish commercial fisheries, for VMS enabled vessels, was used to estimate landings made within Bornholm I nord, the cable corridor in both Sweden and Denmark, and outside the project area, Table 10-2. As seen from the table, the landings made within Bornholm I

nord and the cable corridors are relatively small in comparison to outside the OWF, Table 10-2. The decreasing landed weight also relates well to the information achieved from the interviews with DFPO in section 4.1. The landings originate mostly from just north of Bornholm I nord. It is estimated that a total of 1,855 tonnes were landed within the OWFs and the cable corridor by commercial fisheries of Denmark from 2010 to 2020 in 39G4.

Table 10-2 Estimated landed weight [t] by VMS enabled vessels from Denmark in 39G4 within Bornholm I nord (BH I nord), offshore cable corridor Denmark (OCC DK), offshore cable corridor Sweden (OCC SE) and outside the OWFs.

Project part	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BH I nord	0	0	127	113	30	45	16	10	15	0	0
OCC DK	98	0	380	340	207	114	80	59	118	0	72
OCC SE	0	0	32	0	0	0	0	0	0	0	0
Outside	3146	3386	2661	2381	2692	2115	1502	902	1338	2322	1354
Total	3244	3386	3200	2835	2929	2274	1598	970	1471	2322	1426

The VMS enabled vessels of Sweden was used to estimate landings made within Bornholm I nord, the cable corridor of Denmark and Sweden and outside the project area, Table 10-3. Approximately 98 % of the landings are made outside the OWFs, 1 % within Bornholm I nord, 1 % the offshore cable corridor. It is estimated that a total of 659 tonnes were landed within the OWFs and the cable corridor by commercial fisheries of Sweden from 2010 to 2020 in 39G4.

Table 10-3 Estimated landed weight [t] by VMS enabled vessels from Sweden in 39G4 within Bornholm I nord (BH I nord), offshore cable corridor Denmark (OCC DK), offshore cable corridor Sweden (OCC SE) and outside the OWFs.

Project part	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BH I nord	26	88	20	33	7	24	14	23	1	5	0
OCC DK	85	91	26	33	18	60	10	41	2	12	0
OCC SE	2	9	5	3	6	8	3	0	0	1	0
Outside	1588	2291	2797	2941	2044	3522	2627	2543	2460	4077	1705
Total	1702	2479	2848	3010	2075	3615	2654	2607	2463	4096	1705

An average of 35,926 [x1,000 DKK] were yearly caught for in 39G4 by Denmark, Sweden, and Germany, Table 10-4. Danish vessels received 54 % of the landed value, whereas 46 % and >1 % were by Sweden and Germany, respectively. Approximately 3 % of the German landings were made within the OWFs, which is estimated to a value of 157 [x1,000 DKK] in the period. Note that the landed value has decreased greatly over the investigated period, Table 10-4. This is partly a result of the changed species composition to pelagic species. The Polish datasets lacked a value and species parameter and was therefore not included in Table 10-4. With reference to the landings made by the commercial fisheries of Poland, it is likely that the landed value would have constituted a minor proportion in 39G4.

Table 10-4 Landed value [x1,000 DKK] by country and year in 39G4.

Nation	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
DK	24554	28782	31929	25102	25088	19954	17716	10908	13275	11075	5229
DE	907	690	1905	771	281	24	33	34	326	198	80
SE	16030	27013	27472	21204	14399	18881	14692	10434	9676	14809	6326
Total	41491	56485	61306	47077	39768	38859	32441	21376	23277	26082	11634

The VMS enabled vessels of Denmark was used to estimate landed value made within Bornholm I nord, the cable corridors and outside the project area, Table 10-5. The estimated landed value has decreased from 2010 to 2020, and 92 % of the landed value was made outside the OWF and cable corridors. It is estimated that a total of 12,844 [x1,000 DKK] were landed for within the OWF and the cable corridors by commercial fisheries of Denmark from 2010 to 2020 in 39G4. There has been little activity within Bornholm I nord since 2017.

Table 10-5 Estimated landed value [x1,000 DKK] by VMS enabled vessels from Denmark in 39G4 within Bornholm I nord (BH I nord), offshore cable corridor Denmark (OCC DK), offshore cable corridor Sweden (OCC SE) and outside the OWFs.

Project part	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BH I nord	0	0	990	749	195	330	149	80	87	0	0
OCC DK	482	0	2971	2248	1362	825	744	478	700	0	206
OCC SE	0	0	248	0	0	0	0	0	0	0	0
Outside	15436	20649	20800	15735	17702	15343	13995	7323	7958	8322	3881
Total	15918	20649	25010	18732	19259	16498	14889	7881	8746	8322	4087

The VMS enabled vessels of Sweden was included in the analysis to estimate landed value made within Bornholm I nord, the cable corridors and outside the project area, Table 10-6. 97 % of the landed value was made outside the OWF and cable corridor. It is estimated that a total of 4,072 [x1,000 DKK] were landed for within the OWF and the cable corridor by commercial fisheries of Sweden from 2010 to 2020 in 39G4. Since 2016, the fishing intensity has been low.

Table 10-6 Estimated landed value [x1,000 DKK] by VMS enabled vessels from Sweden in 39G4 within Bornholm I nord (BH I nord), offshore cable corridor Denmark (OCC DK), offshore cable corridor Sweden (OCC SE) and outside the OWFs.

Project part	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BH I nord	89	275	174	301	75	237	84	71	9	42	0
OCC DK	327	635	225	278	152	448	62	139	23	110	0
OCC SE	18	86	48	25	43	52	28	2	0	11	1
Outside	7380	16094	18019	15649	11405	16506	11620	9478	8444	12634	5670
Total	7815	17090	18466	16253	11674	17243	11795	9690	8476	12798	5671

10.1.2 ICES rectangle 38G4

An average of 4,963 tonnes were yearly landed in 38G4 by Denmark, Germany, Poland, and Sweden, Table 10-7 . Poland landed approximately 70 % of the landings in 38G4, whereas 14 %, 6 % and 10 % were by Denmark, Sweden, and Germany, respectively. In 38G4 approximately 20 % of the activity from the Polish fleet were within Bornholm I nord, Bornholm I syd and Bornholm II. It is estimated that 7629 tonnes were caught within the OWFs by the Polish fleet from 2010 to 2020. Approximately 12 % of the German landings were made within the OWFs, which is estimated to 650 tonnes in the period.

Table 10-7 Landed weight [t] by country and year in 38G4.

Nation	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
DK	1392	555	881	1321	1940	741	317	52	203	59	219
DE	760	1651	854	137	324	682	449	449	75	20	12
PL	1188	2324	4238	4044	4063	4060	3868	4222	2919	3432	3789

Nation	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
SE	910	650	177	170	371	197	629	153	0	3	102
Total	4250	5180	6150	5672	6698	5680	5263	4876	3197	3514	4122

The coupled data for Danish commercial fisheries, for VMS enabled vessels, was used to estimate landings made within Bornholm I nord and syd, Bornholm II, the cable corridor and outside the project area, Table 10-8. As seen from the table, there has been a development which corresponds good with what was reported by the DFPO in section 4.1. Less tonnes are landed over time and the activity from the vessels are primarily outside the OWFs. The landings are mostly done in the south-eastern part of Bornholm II. It is estimated that a total of 1,678 tonnes were landed within the OWFs and the cable corridor by commercial fisheries of Denmark from 2010 to 2020 in 38G4.

Table 10-8 Estimated landed weight [t] by VMS enabled vessels from Denmark in 38G4 within Bornholm I nord (BH I nord), Bornholm I syd (BH I syd), Bornholm II (BH II), offshore cable corridor Denmark (OCC DK) and outside the OWFs.

Project part	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BH I nord	0	0	16	12	19	21	0	0	0	0	0
BH I syd	0	0	24	12	0	28	3	0	0	0	2
BH II	288	0	86	233	483	113	48	9	17	0	23
OCC DK	23	0	24	47	93	28	6	0	9	0	13
Outside	842	478	637	861	1245	523	221	27	145	48	173
Total	1153	478	786	1164	1840	714	278	37	170	48	211

The VMS enabled vessels of Sweden was similarly to Denmark used to estimate landings made within Bornholm I nord and syd, Bornholm II, the cable corridor and outside the project area, Table 10-9. Approximately 65 % of the landings are made outside the OWFs, 19 % within Bornholm II, 7 % within both Bornholm I syd and the offshore cable corridor. The commercial fisheries of Sweden are more present in Bornholm I nord and syd than the Danish vessels in terms of landed weight. Less tonnes are landed over time by the commercial fisheries of Sweden in 38G4 over the investigated period, Table 10-8. It is estimated that a total of 1,271 tonnes were landed within the OWFs and the cable corridor by commercial fisheries of Sweden from 2010 to 2020 in 38G4.

Table 10-9 Estimated landed weight [t] by VMS enabled vessels from Sweden in 38G4 within Bornholm I nord (BH I nord), Bornholm I syd (BH I syd), Bornholm II (BH II), offshore cable corridor Denmark (OCC DK) and outside the OWFs.

Project part	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BH I nord	82	73	5	3	0	1	67	7	0	0	0
BH I syd	30	156	17	19	120	40	241	64	0	0	0
BH II	63	109	12	26	31	0	0	0	0	0	24
OCC DK	7	47	0	1	4	0	19	0	0	0	0
Outside	610	378	158	151	223	144	396	214	1	1	70
Total	793	763	192	199	378	186	724	285	1	2	95

An average of 9,251 [x1,000 DKK] were yearly caught for in 38G4 by Denmark, Germany, and Sweden, Table 10-10. Danish vessels received 61% of the landed value, whereas 13 % and 26 % were by Sweden and Germany, respectively. Approximately 12% of the German landings were

made within the OWFs, which is estimated to a value of 3,146 [x1,000 DKK] in the period. Note that the landed value has decreased drastically over the investigated period. This is partly a result of the changed species composition to pelagic species, and the fewer landings by Denmark, Sweden, and Germany. The Polish datasets lacked a value and species parameter and was therefore not included in Table 10-10. With reference to the landings made by the commercial fisheries of Poland, it is likely that the landed value would have constituted the largest proportion in 38G4.

Table 10-10 Landed value [x1,000 DKK] by country and year in 38G4.

Nation	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
DK	13033	6145	9521	11001	10703	3802	2522	701	2584	1045	1033
DE	4445	8647	4419	1267	1245	1910	2009	1275	437	356	208
SE	2293	2564	2121	1084	1492	962	2008	501	0	24	401
Total	19771	17356	16061	13352	13440	6674	6539	2477	3021	1425	1642

The coupled data for Danish commercial fisheries, for VMS enabled vessels, was used to estimate landed value made within Bornholm I nord and syd, Bornholm II, the cable corridor and outside the project area, Table 10-11. The estimated landed value has decreased from 2010 to 2020, and 77 % of the landed value was made outside the OWFs and cable corridor. It is estimated that a total of 11,353 [x1,000 DKK] were landed for within the OWFs and the cable corridor by commercial fisheries of Denmark from 2010 to 2020 in 38G4. There has been little activity within Bornholm I nord and syd since 2016 in 38G4.

Table 10-11 Estimated landed value [x1,000 DKK] by VMS enabled vessels from Denmark in 38G4 within Bornholm I nord (BH I nord), Bornholm I syd (BH I syd), Bornholm II (BH II), offshore cable corridor Denmark (OCC DK) and outside the OWFs.

Project part	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BH I nord	0	0	158	89	95	85	0	0	0	0	0
BH I syd	0	0	238	89	0	113	17	4	0	0	9
BH II	2628	0	872	1775	2471	453	296	102	190	0	94
OCC DK	210	0	238	355	475	113	35	4	95	0	51
Outside	7673	5284	6418	6567	6367	2095	1375	314	1615	640	699
Total	10511	5284	7924	8874	9408	2859	1724	425	1900	640	853

The VMS enabled vessels of Sweden was similarly to Denmark used to estimate landed value made within Bornholm I nord and syd, Bornholm II, the cable corridor and outside the project area, Table 10-12. The landed value has decreased from 2010 to 2020, and 69 % of the landed value was made outside the OWFs and cable corridor. It is estimated that a total of 3,954 [x1,000 DKK] were landed for within the OWFs and the cable corridor by commercial fisheries of Sweden from 2010 to 2020 in 38G4. There has been little activity within the OWFs and the cable corridor since 2018.

Table 10-12 Estimated landed value [x1,000 DKK] by VMS enabled vessels from Sweden in 38G4 within Bornholm I nord (BH I nord), Bornholm I syd (BH I syd), Bornholm II (BH II), offshore cable corridor Denmark (OCC DK) and outside the OWFs.

Project part	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BH I nord	220	145	27	27	2	6	215	25	0	0	0
BH I syd	119	377	98	104	353	153	687	196	0	0	0

Project part	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BH II	225	342	94	97	127	4	0	0	1	2	94
OCC DK	26	88	5	7	18	1	72	0	0	0	0
Outside	1533	1318	1026	947	967	747	1372	638	8	13	281
Total	2123	2270	1250	1181	1466	911	2345	859	9	15	375

11. CONCLUSION

Based on the conducted analysis in section 9 and 10 a conclusion and summarization were divided into short- and long-term losses for the commercial fisheries.

11.1.1 Short-term losses

Short-term losses can derive from limited access to fishing grounds and changes in fish distribution. The potential impacts were described at an overall level, as the impacts are dependent of the planned construction work that will be determined in a subsequent design phase e.g., offshore wind turbine types, size, number, and positioning patterns. During the construction phase several impacts were identified including safety zones around cables, the site, and turbines. The safety zone will impact the commercial fisheries negative as it limits the fishable area, increases travel expenses, and alter the fisheries pattern in the area. Therefore, the fisheries that are impacted can become less profitable than they are today. According to the Fisheries Act (*fiskeriloven*) § 78, all fishermen who normally fish in the affected area must be compensated for the loss of income. The Developer has to negotiate compensation with every affected fisherman, and the licence to produce electricity from the OWF can be granted to the Developer only if an agreement has been made with all affected fishermen. Passive techniques like the Danish gillnet (standing) fisheries in Køge Bay are vulnerable in the nearshore area due to the static nature of the gear to a safety zone around the cables. It was assessed that the main impact of the safety zones around the site and turbines were limitations of current operations from midwater trawlers, and bottom trawlers in the south-eastern part of Bornholm II. The safety zones around the site and turbines will also pose a conflict to activities from bottom trawlers in the northern part of Bornholm I nord. The active fisheries will simply avoid the safety zones and other construction activities during the construction phase and seek alternative fishing grounds.

Commercial fisheries of Poland and Germany have had close to no activity within ICES rectangle 39G4 both in terms of landings, but also in terms of fishing intensity within Bornholm I nord and the offshore cable corridor, see section 10.1.1. Denmark and Sweden were in contrast active in 39G4, but it was estimated that 8 % and 3 % of the landed value was made inside the OWF and cable corridor, respectively. This finding suggests that the location is of relatively little importance to the commercial fisheries.

In ICES rectangle 38G4 approximately 70 % of the landings were made by commercial fisheries of Poland. It was estimated that 20 % of the Polish landings were made within Bornholm I nord, Bornholm I syd and Bornholm II in 38G4, which would be equivalent to 7,629 tonnes from 2010 to 2020. The Polish fishing intensity was predominately in the south-eastern section of Bornholm II, by midwater trawlers. In contrast, it was estimated that the commercial fisheries of Germany landed 650 tonnes in the same period within the areas designated for OWFs. It was estimated that a total of 11,353 [x1,000 DKK] were landed for within the areas designated for OWFs and the cable corridor by commercial fisheries of Denmark from 2010 to 2020 in 38G4. The activity of the commercial fisheries of Denmark was decreasing in the investigated period and it was mainly outside the areas designated for OWFs and the cable corridor, 10.1.2. It was estimated that a total of 3,954 [x1,000 DKK] were landed for within the areas designated for OWFs and the cable corridor by commercial fisheries of Sweden from 2010 to 2020 in 38G4, see 10.1.2.

The proportion of landed value within the areas designated for OWFs and the cable corridors were in general limited over the investigated period from Denmark and Sweden, Figure 11-1. When consulting the DFPO they told that under current circumstances, the commercial fishermen of Bornholm are moving their efforts to Kattegat and Skagerrak, as they are hindered from fishing in the Baltic Sea as a result of the reduced quotas in subdivision 24 for e.g., Atltantic cod and

Atlantic herring. This can also be seen from Figure 11-1, and a similar pattern is found for the Swedish commercial fisheries.

To summarize, the commercial fisheries is prone to short-term losses in the south-eastern part of Bornholm II and in the northern part of Bornholm I nord based on fishing intensity. However, it is assessed that the activity from commercial fisheries within the areas designated for OWFs and the cable corridor is limited and decreasing, and it will most likely remain so because of the poor fish stock conditions.

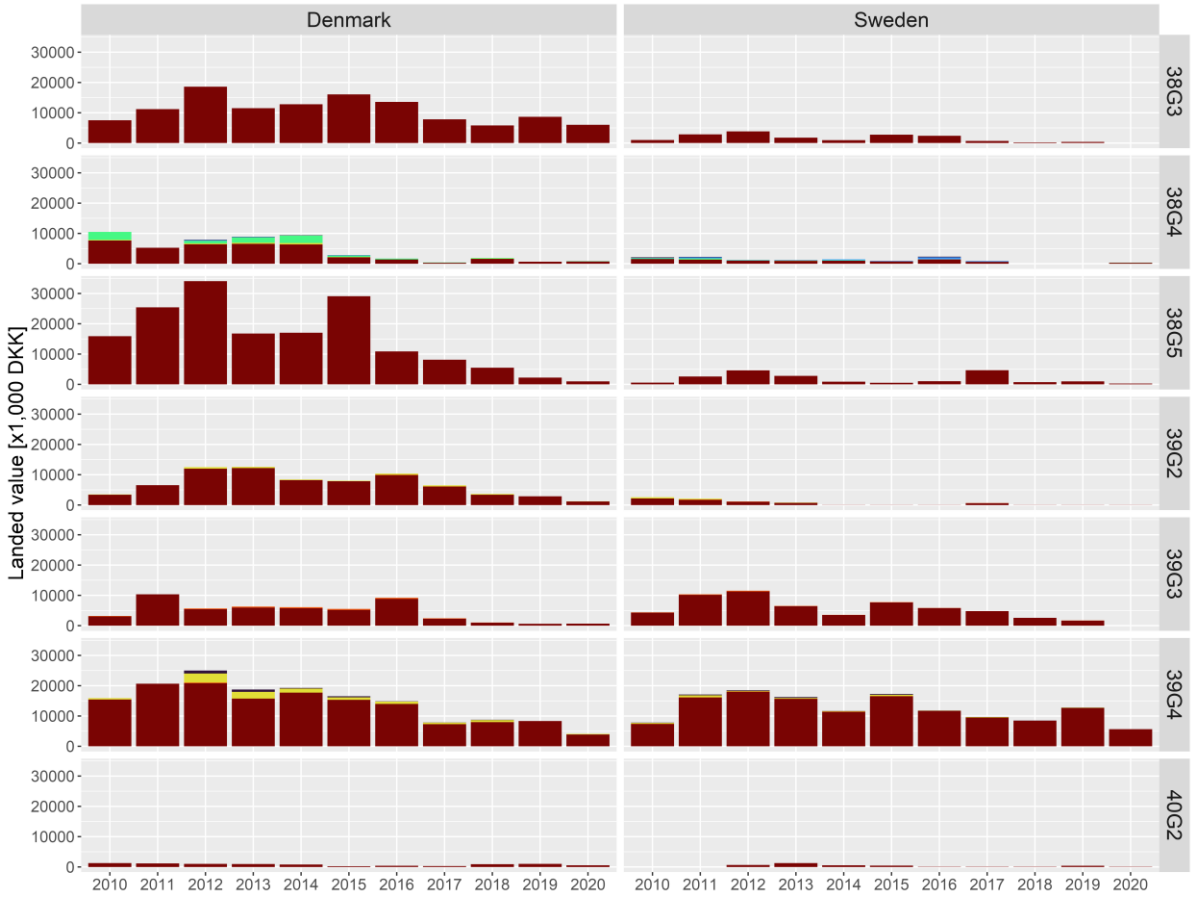

Figure 11-1 Landed value [x1,000 DKK] by Danish and Swedish VMS enabled vessels from 2010 to 2020 by ICES rectangle 38G3, 38G4, 38G5, 39G2, 39G3, 39G4 and 40G2. Bornholm I nord (dark blue), Bornholm I syd (light blue), Bornholm II (teal) are VMS pings set within the individual offshore wind farm (OWF) area. Offshore cable corridor Denmark (yellow) and offshore cable corridor Sweden (orange) are VMS pings set within the two cable corridors. Outside (brown) are VMS pings outside the OWF area.

11.1.2 Long-term losses

Long-term losses are expected because of restricted access to fishing grounds. Long-term losses are like short-term losses dependent on the design phase. During the operational phase several impacts were identified including safety zones around cables, the site, and turbines. No fishing is allowed within the safety zone of the cable in the operational phase by gears that are dragged on the seabed. The safety zone will impact the bottom trawlers negative as it limits the fishable area, increases travel expenses, and alter the fisheries pattern in the area. Cable owners may grant a waiver to allow all types of trawling across the permanent safety zone once the cable is installed. If dispensation is granted to allow trawling within all or part of the safety zone of the cable during the operation phase, then impacts on the commercial fisheries would be reduced during the

operation phase. Mitigating the impact to the bottom trawlers could also be a financial compensation. According to the Fisheries Act (*fiskeriloven*) § 78, all fishermen who normally fish in the affected area must be compensated for the loss of income. The Developer has to negotiate compensation with every affected fisherman, and the licence to produce electricity from the OWF can be granted to the Developer only if an agreement has been made with all affected fishermen. The permanent safety zones of the site and turbines have a similar impact on the fisheries as the safety zone around the cable. Therefore, the fisheries that are impacted can become less profitable than they are today. It is assessed that the main impact of the safety zones around the site and turbines were limitations of current operations from midwater trawlers and bottom trawlers in the south-eastern part of Bornholm II. The safety zones around the site and turbines will also pose a conflict to activities from bottom trawlers in the northern part of Bornholm I nord. Similar projects have as a mitigation measure allowed fisheries with passive gears to continue their activities inside the safety zone at a defined distance from the turbines, making it possible to fish between and around the turbines in the operational phase. Vessels that are restricted in their manoeuvrability e.g., bottom and midwater trawlers that haul for several kilometres, are potentially forced to move to areas with less CPUE because of the established safety zone. The active fisheries there might avoid the safety zones during the operational phase and seek alternative fishing grounds. The safety zones represent a "de facto" closure of the fisheries in the area designated for OWFs for fisheries that are not exempt.

For Poland and Germany, the longterm losses are expected to be none or minor for the commercial fisheries in 39G4, as they both have had very little activity within ICES rectangle 39G4, see section 10.1.1. Denmark and Sweden were in contrast active in 39G4, but it was estimated that 8 % and 3% of the landed value was made inside the OWF and cable corridor, respectively, and that there is a stagnating trend in the landings inside the pre-investigation area of Bornholm OWF and the cable corridor.

In ICES rectangle 38G4 approximately 70 % of the landings were made by commercial fisheries of Poland. It was estimated that 20 % of the Polish landings were made within Bornholm I nord, Bornholm I syd and Bornholm II in 38G4. The Polish fishing intensity was predominately in the south-eastern section of Bornholm II, by midwater trawlers. Long-term losses caused by limitations of fishing grounds could potentially decrease the yearly average landed weight, which was 3,430 [t] in 38G4. The catches that usually are landed within the area designated for the OWFs and the cable corridor would have to be caught outside the safety zone.

No long-term losses are expected for the German fisheries, as their presence in the OWF and safety zones are limited in the entire period, and it is not expected to change in the future.

The activity of the commercial fisheries of Denmark and Sweden decreased in the investigated period mainly outside the OWFs and the cable corridor, see 10.1.2 and Figure 11-1. DFPO informs that under current circumstances, the commercial fishermen of Bornholm are moving their efforts to Kattegat and Skagerrak, as they are hindered from fishing in the Baltic Sea as a result of the reduced quotas in subdivision 24 for e.g., Atlantic cod and Atlantic herring. This can also be seen from Figure 11-1, and a similar pattern is found for the Swedish commercial fisheries.

To summarize, the commercial fisheries is prone to long-term losses in the south-eastern part of Bornholm II and in the northern part of Bornholm I nord based on fishing intensity. Long-term losses are therefore expected. However, the activity from commercial fisheries within the OWFs and the cable corridor is limited and decreasing, and it will most likely remain so because of the poor fish stock conditions. Since 2020, there has been huge cuts in the quota for multiple stocks, see 2.3 [9]. In addition, recovery management measures have been agreed upon. This includes

limiting fishing to unavoidable by-catches for main basin Atlantic salmon and Atlantic herring, i.e. the western Baltic herring stock, as well as extended spawning closures and regulations on recreational fisheries for Atlantic cod, i.e., the western Baltic cod stock. Baltic member states have also been recommended to use more selective fishing gear for flatfish fishing, to get less bycatch of Atlantic cod. The effort of the commercial fisheries will be concentrated to areas outside the safety zones, which may influence their CPUE. The ecological effect of the project is a loss of soft-bottom habitat and an introduction of hard substrata. Other effects include increased abundance and biodiversity of hard-bottom species due to reef-effects and the impact of the safety zones, which potentially can have a spill-over effect to neighbouring areas. There has long been a discussion whether the increase in abundance is because of attraction or production, but there are increasingly indications that new production is associated with OWFs [10]. Modifying the design of scour protection and the structural complexity of the OWF can potentially increase the abundance of target species and possibly influence the fisheries positively by contributions from spill-over effects.

12. REFERENCES

[1] ICES, "Baltic Sea Ecoregion - Ecosystem overview," *ICES Ecosyst. Overviews*, no. 2, p. 25, 2020, [Online]. Available: https://doi.org/10.17895/ices.pub.4665.

[2] ICES, "Baltic fisheries assessment working group," no. September, p. 543, 2021, [Online]. Available: https://www.ices.dk/sites/pub/Publication Reports/Expert Group Report/Fisheries Resources Steering Group/2021/WGBFAS 2021_Full report.pdf.

[3] Miljø- og Fødevareministeriet, "Danmarks Havstrategi II, første del. God miljøtilstand, basisanalyse og miljømål," 2019. Accessed: Mar. 26, 2023. [Online]. Available: https://prodstoragehoeringspo.blob.core.windows.net/5ecfd397-7cd3-432a-a8f5-5590674cb003/Udkast til Danmarks Havstrategi II.pdf.

[4] O. R. Eigaard *et al.*, "Estimating seabed pressure from demersal trawls, seines, and dredges based on gear design and dimensions," vol. 73, 2016.

[5] ICES, "Working Group on Spatial Fisheries Data (WGSFD). ICES Scientific Reports.," vol. 1, no. 52, p. 144, 2019, [Online]. Available: http://doi.org/10.17895/ices.pub.5648.

[6] M. Van Deur, R. Van Hal, M. T. Tomczak, and S. H. Jónasdóttir, "Recruitment of lesser sandeel Ammodytes marinus in relation to density dependence and zooplankton composition," *Mar. Ecol. Prog. Ser.*, vol. 381, no. Reay 1970, pp. 249–258, 2009, doi: 10.3354/meps07960.

[7] L. A. Worsøe, M. Horsten, and E. Hoffmann, "Gyde- Og Opvækstpladser for Kommercielle Fiskearter i Nordsøen, Skagerrak Og Kattegat," no. 118, 2002.

[8] ICES, "ECOREGION North Sea STOCK Sandeel in Division IIIa and Subarea IV," no. February, pp. 1–33, 2014.

[9] European commission, "Fishing opportunities in the Baltic Sea for 2021 : improving long-term sustainability of stocks," no. August 2020, pp. 28–30, 2020, [Online]. Available: https://ec.europa.eu/commission/presscorner/detail/en/IP_20_1522.

[10] M. Glarou, M. Zrust, and J. C. Svendsen, "Marine Science and Engineering Using Artificial-Reef Knowledge to Enhance the Ecological Function of Offshore Wind Turbine Foundations: Implications for Fish Abundance and Diversity," *mdpi.com*, doi: 10.3390/jmse8050332.

APPENDIX 1
DANISH VMS DATA FOR RELEVANT ICES RECTANGLES DIVDED BY GEAR

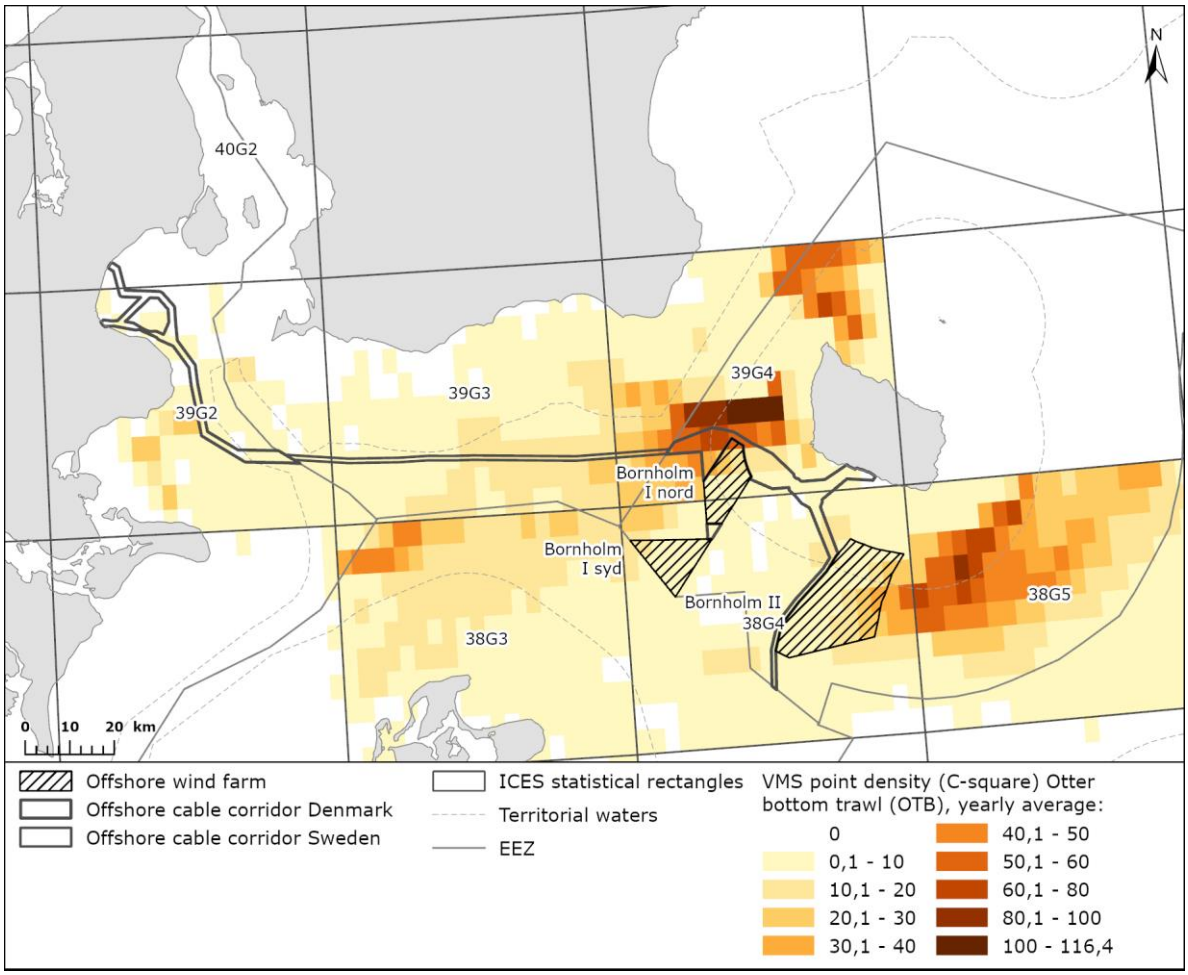

Figure 12-1 The distribution of otter bottom trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

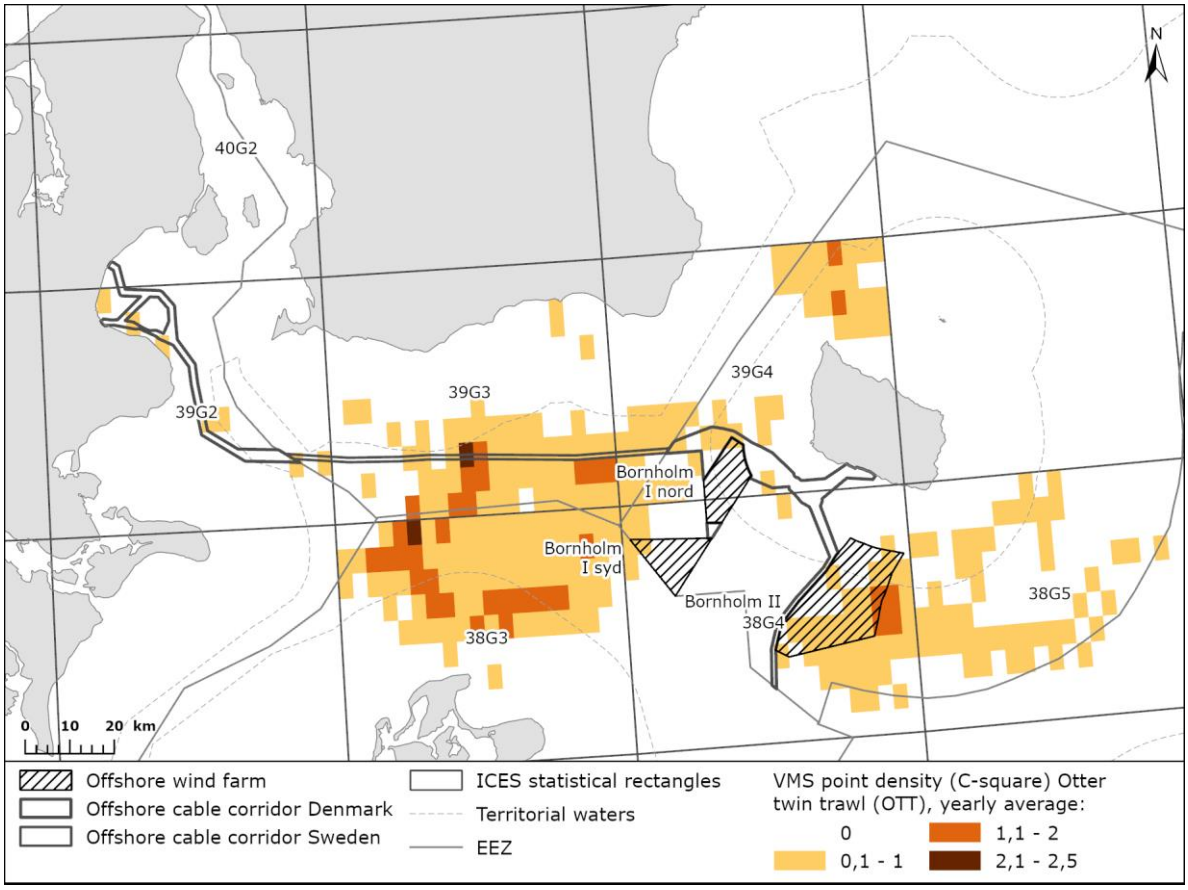

Figure 12-2 The distribution of otter twin trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

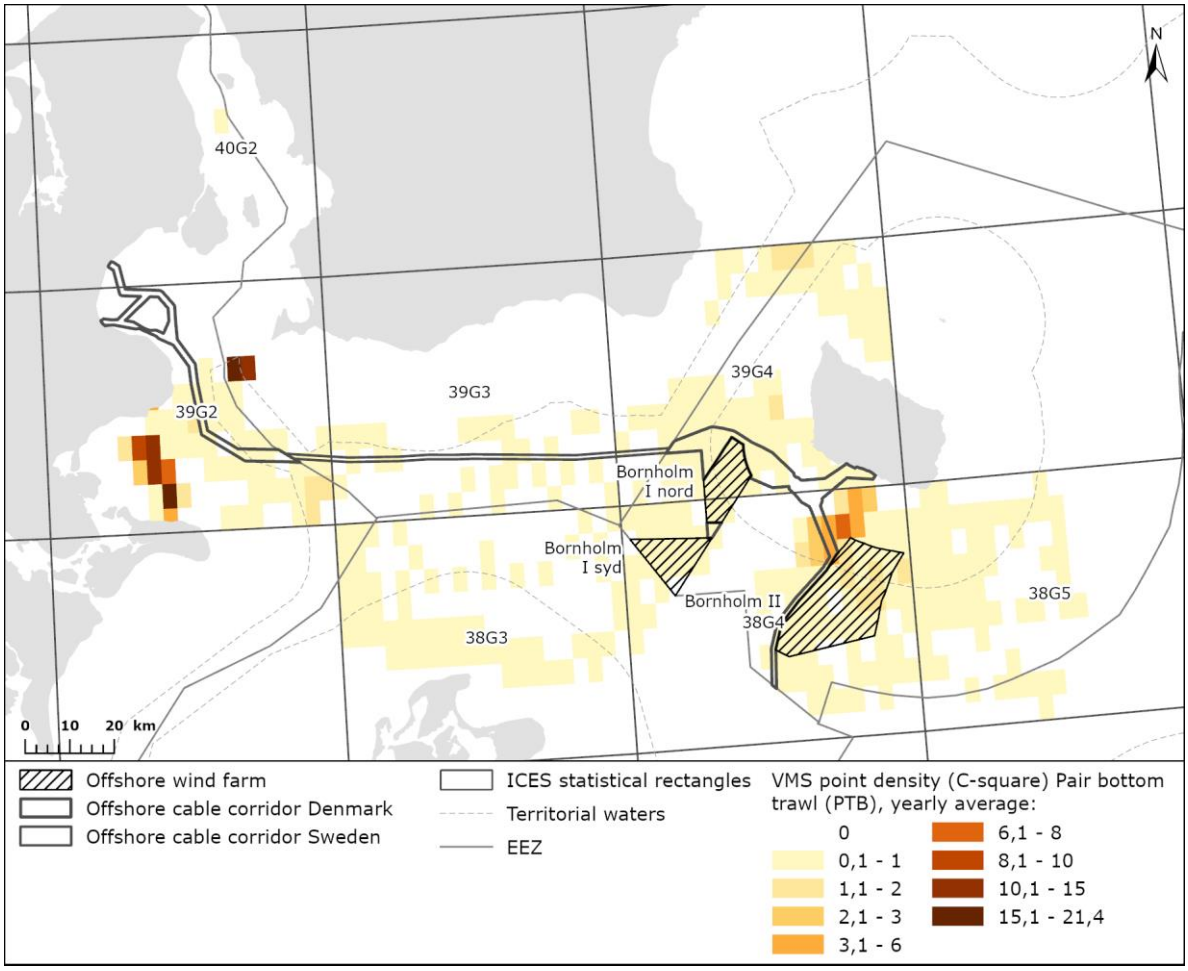

Figure 12-3 The distribution of pair bottom trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

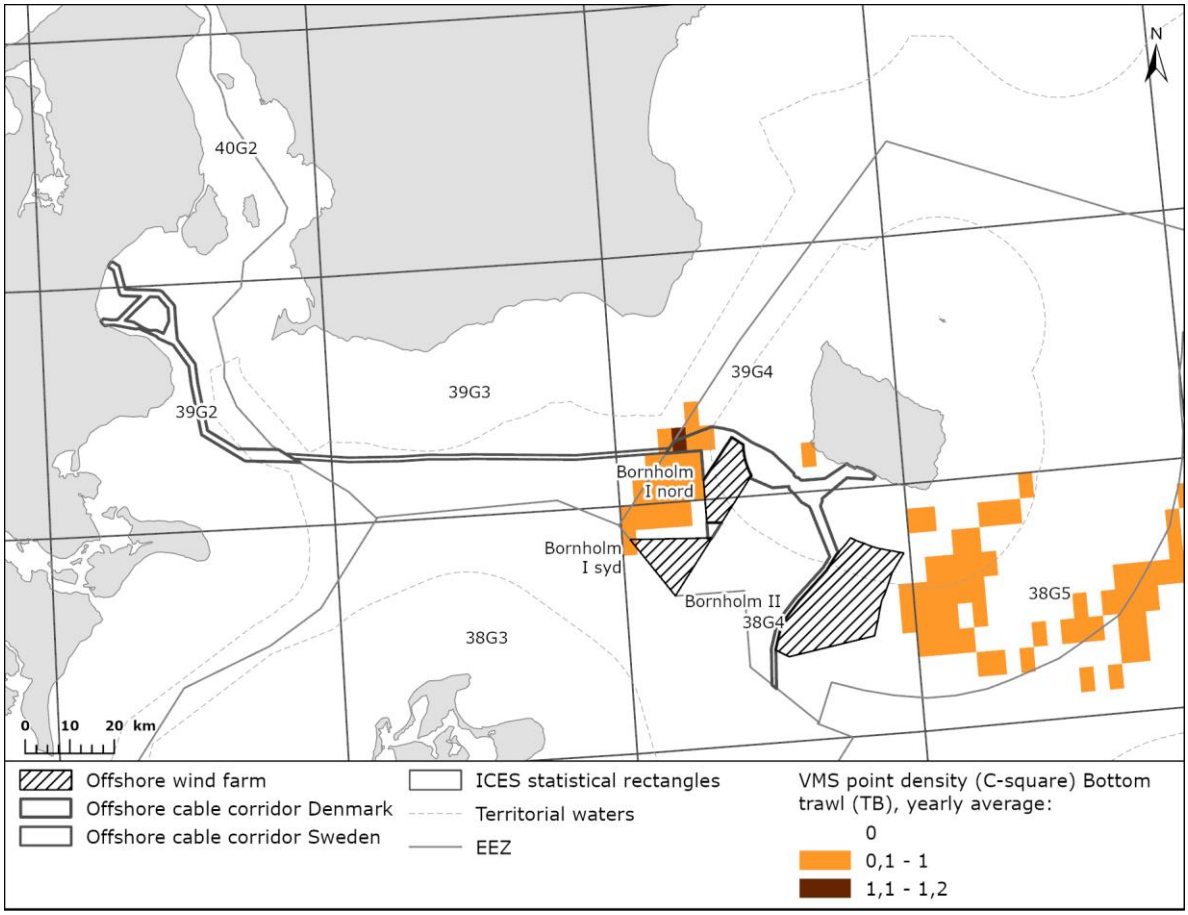

Figure 12-4 The distribution of bottom trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

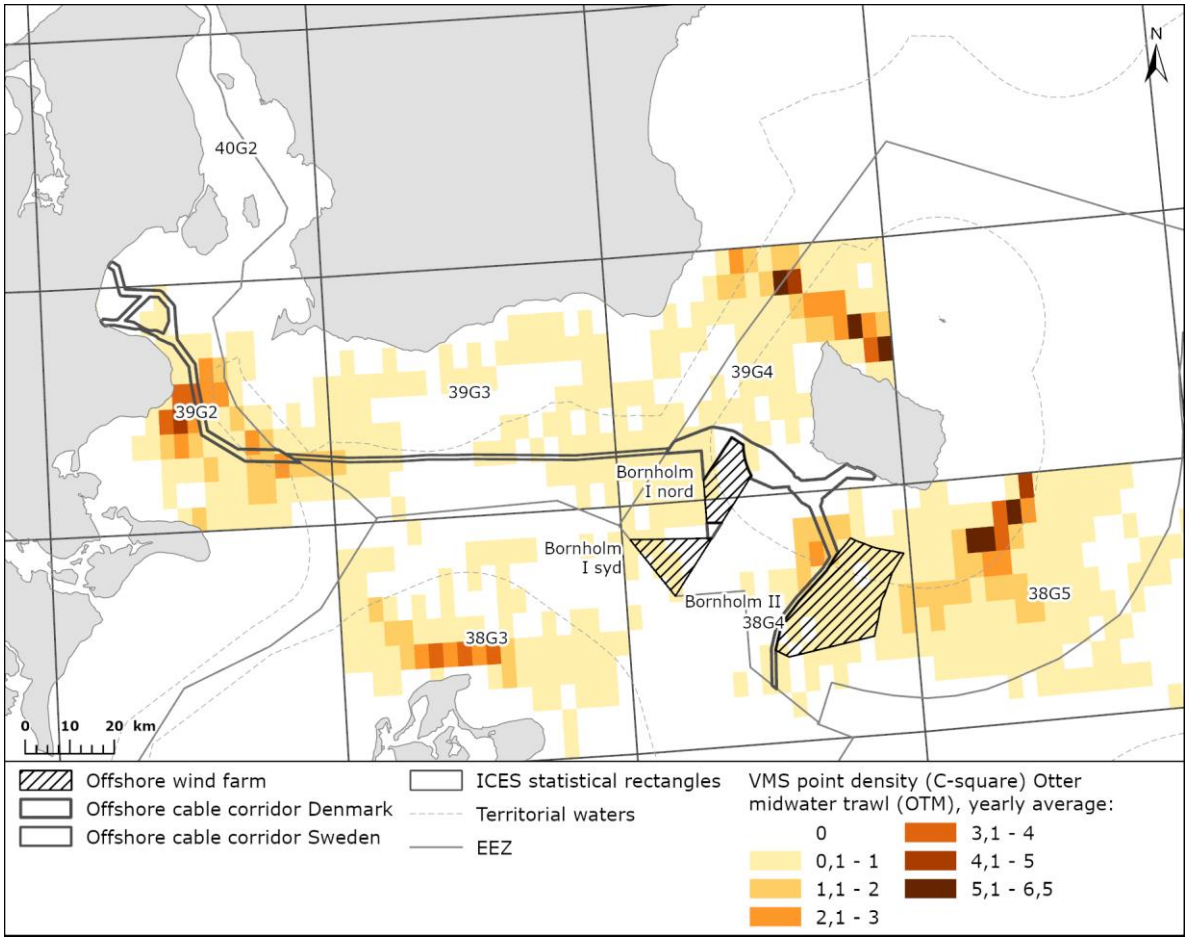

Figure 12-5 The distribution of otter midwater trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

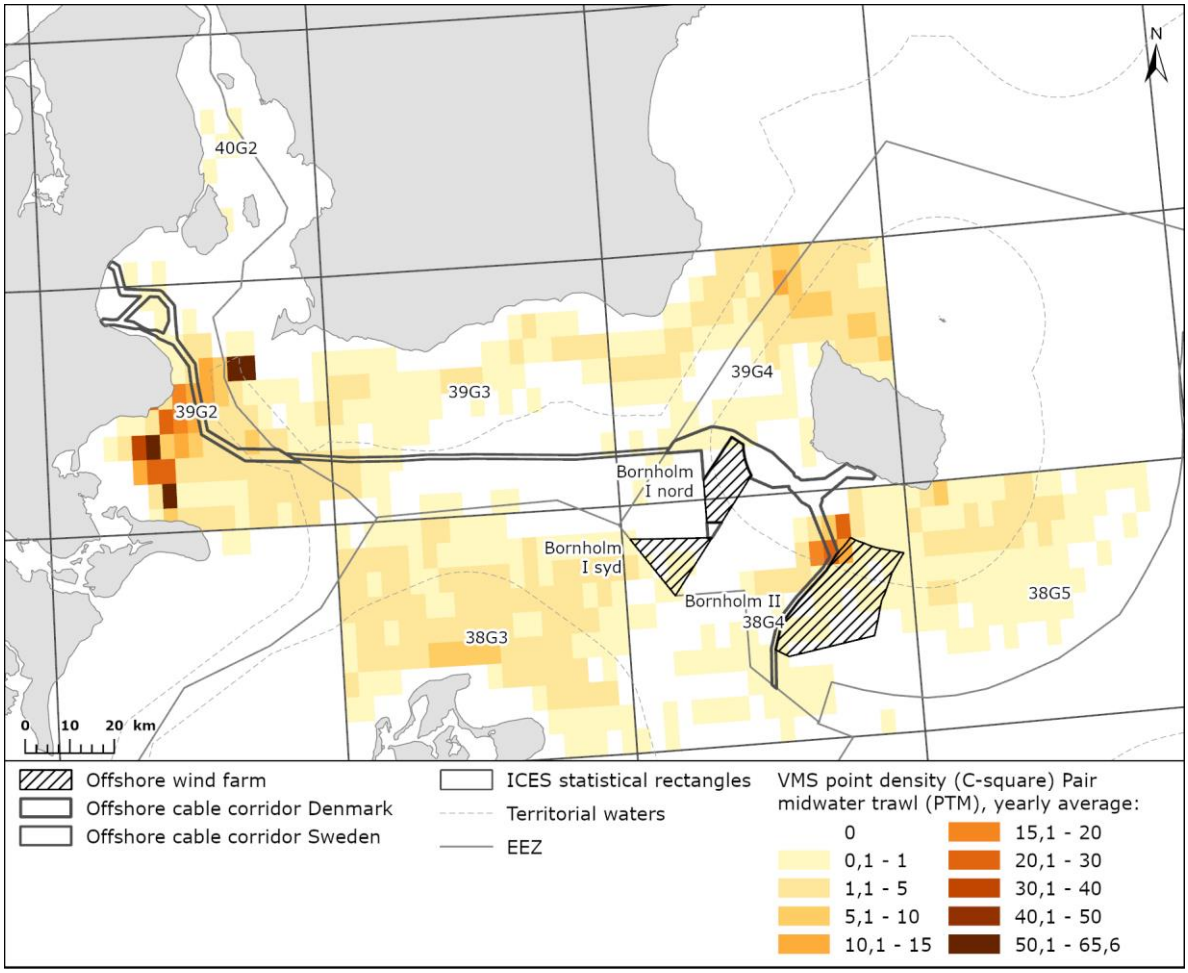

Figure 12-6 The distribution of pair midwater trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

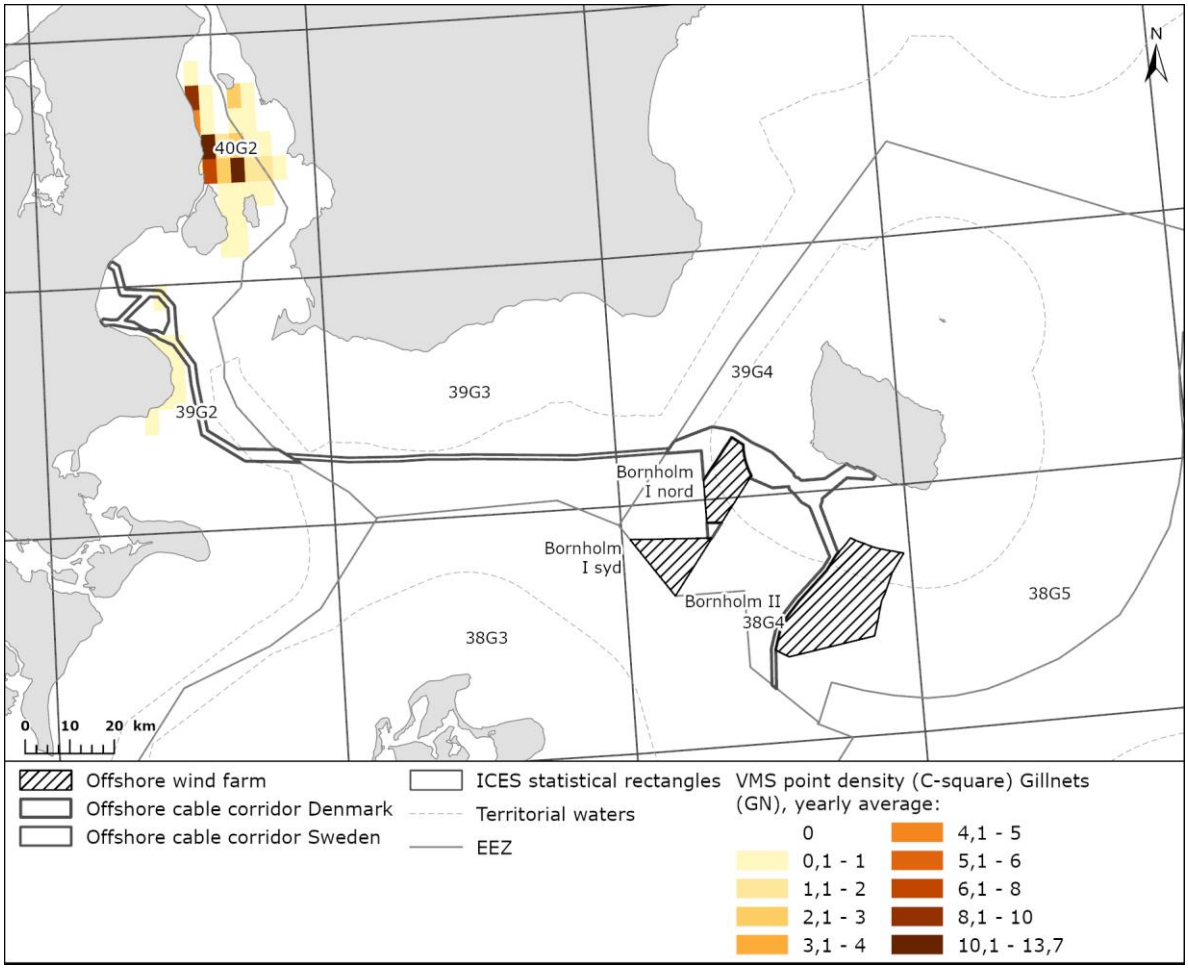

Figure 12-7 The distribution of gillnets by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

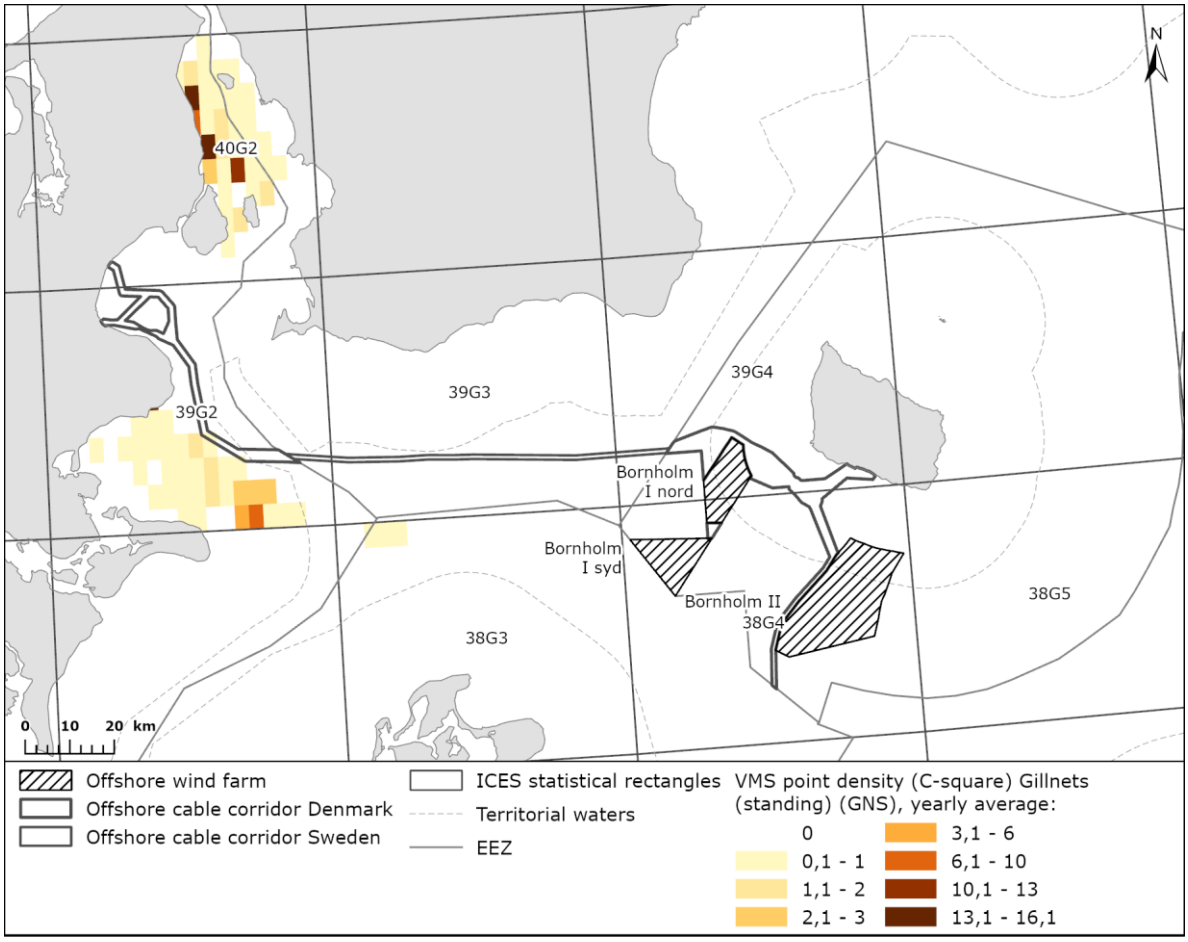

Figure 12-8 The distribution of standing gillnets by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

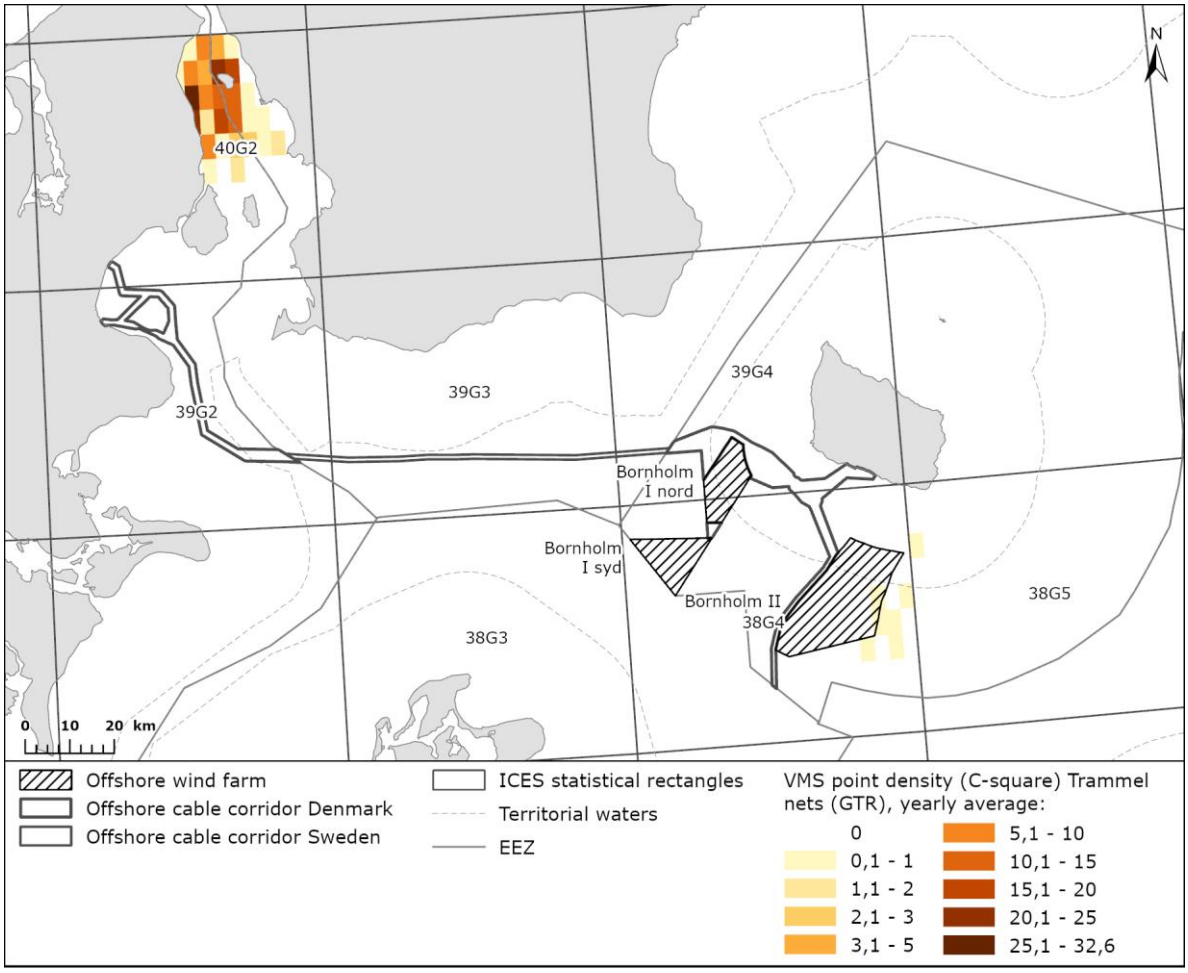

Figure 12-9 The distribution of trammel nets by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

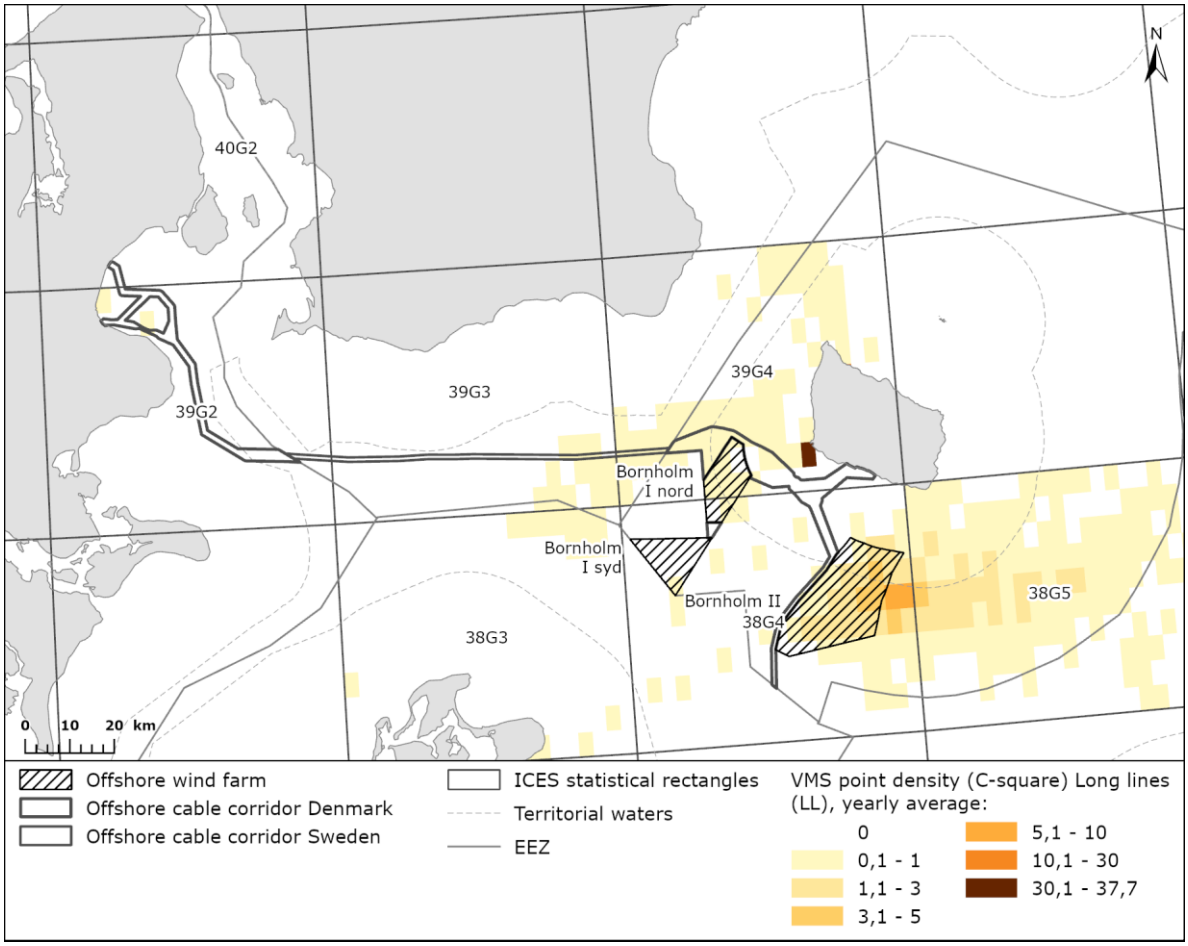

Figure 12-10 The distribution of long lines by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

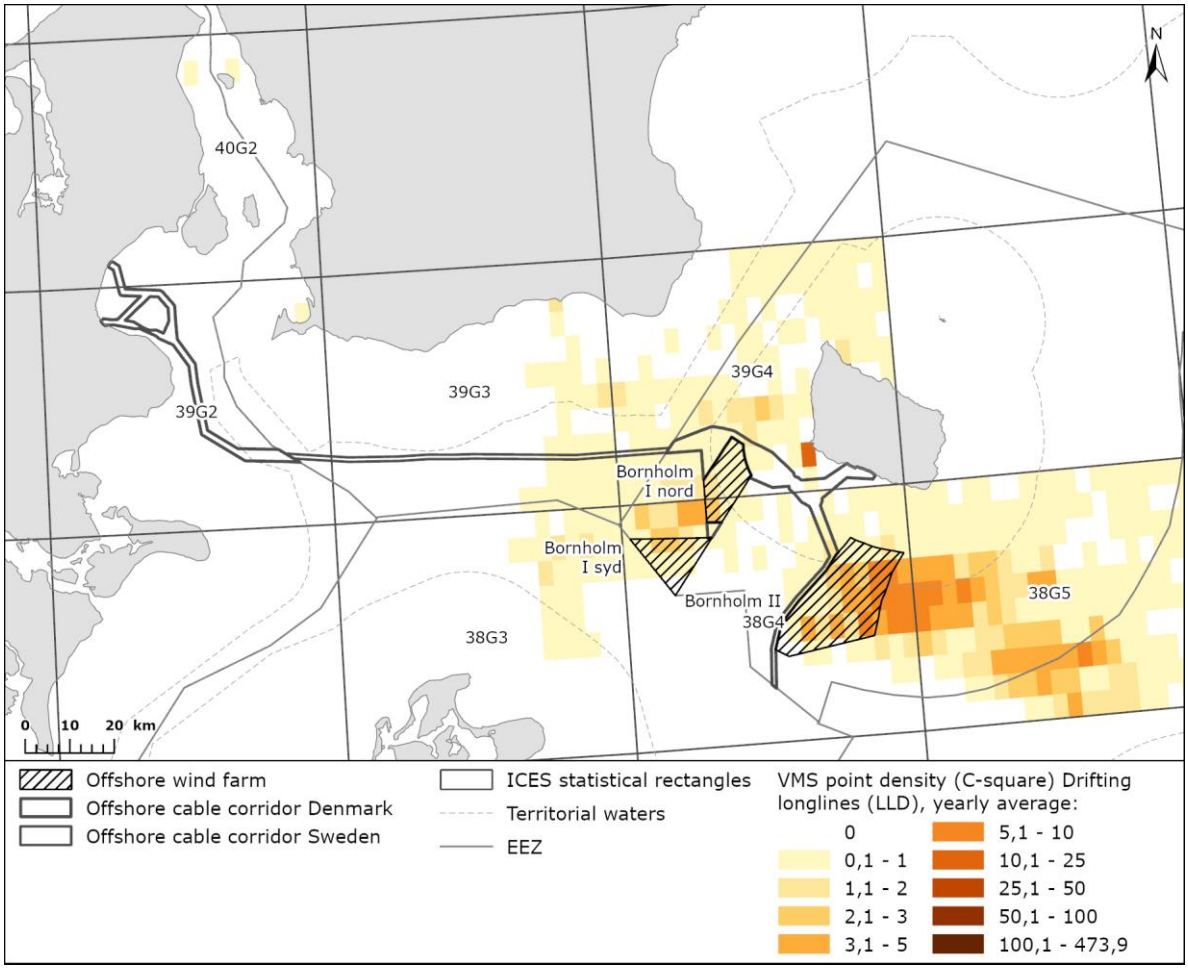

Figure 12-11 The distribution of drifting longlines by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

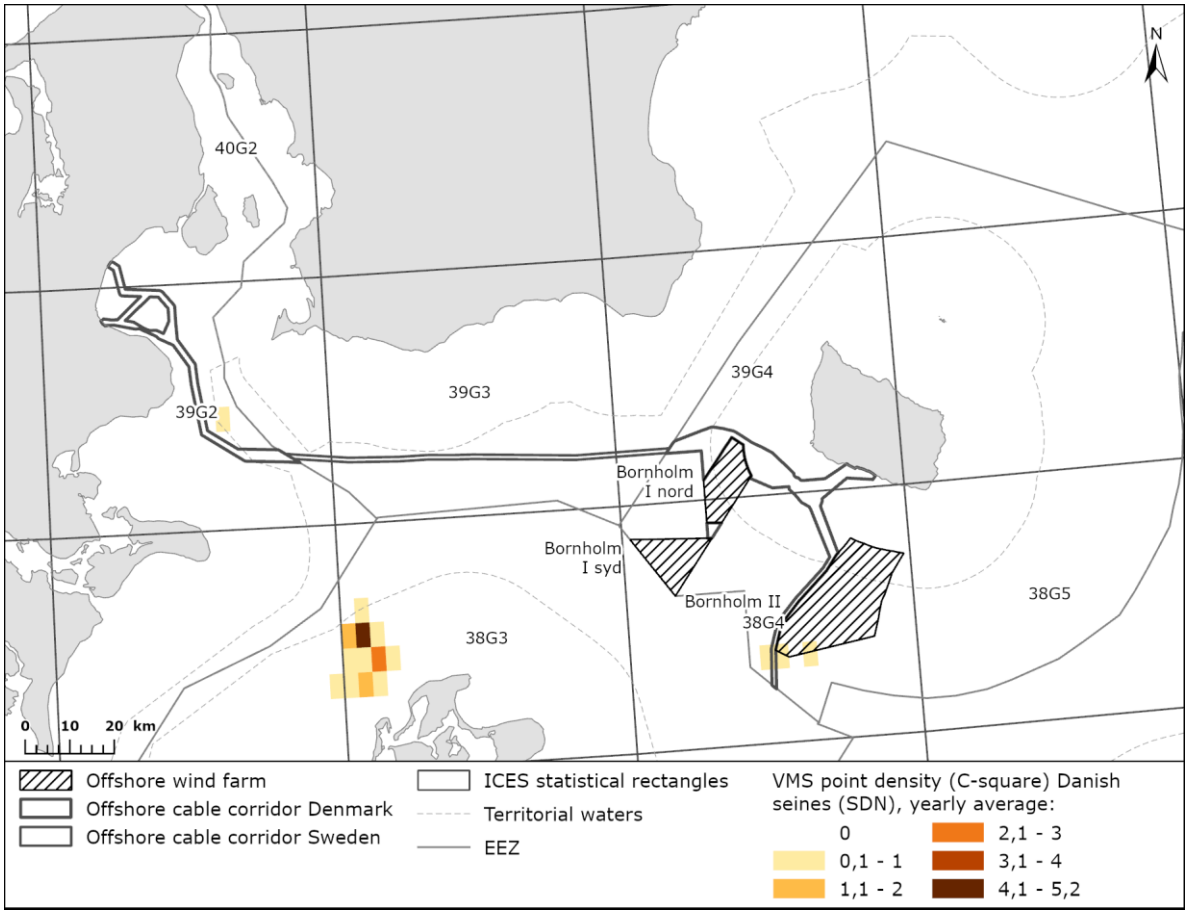

Figure 12-12 The distribution of Danish seines by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

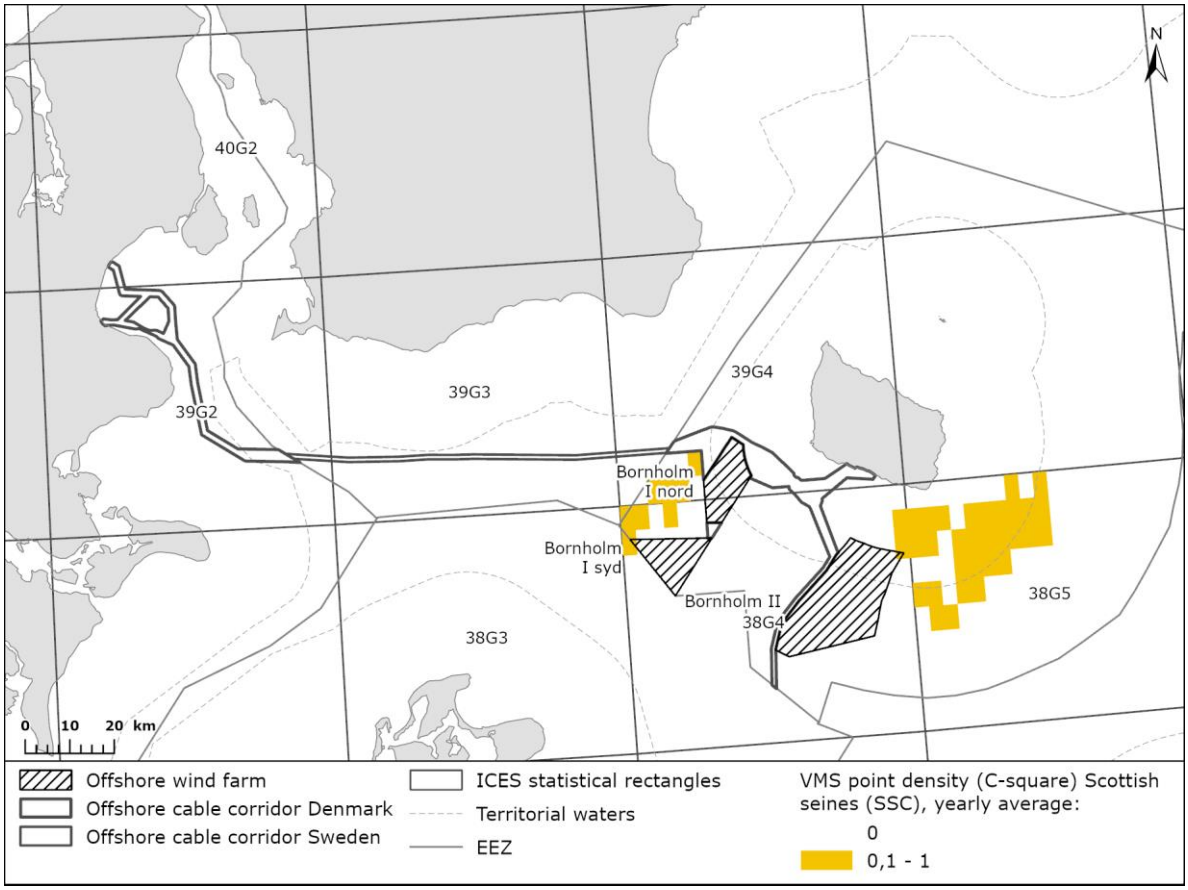

Figure 12-13 The distribution of Scottish seines by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

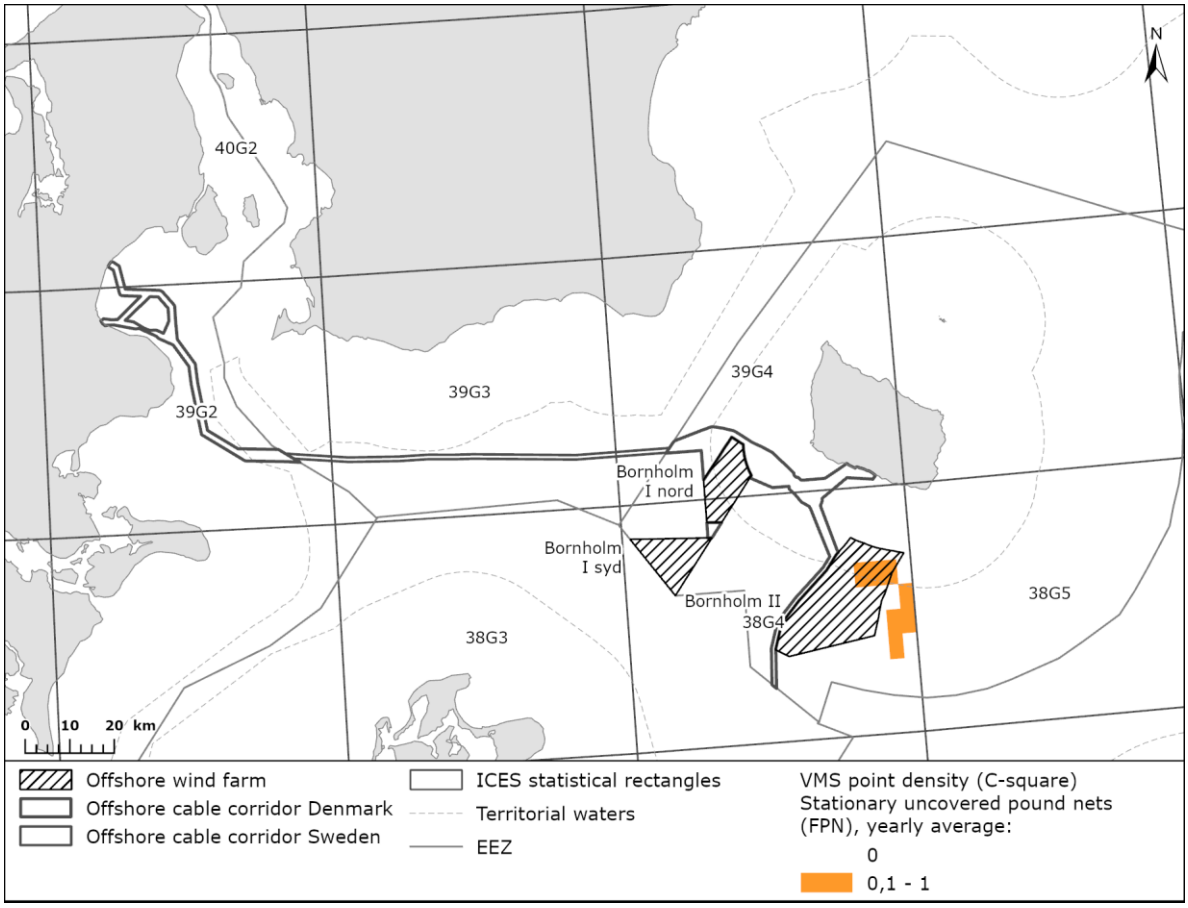

Figure 12-14 The distribution of stationary uncovered pound nets by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

APPENDIX 2
ANALYSIS OF ICES RECTANGLES – (≥ 12 M)

Table 12-1 Landings [t] within ICES rectangle 40G2 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	70.1	57.5	28.2	31.7	39.8	14.8	35.3	17.0	35.2	43.1	14.7
Atlantic herring	0.1	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.5	0.1	0.7
Common dab	0.3	0.4	0.3	0.0	0.0	0.3	0.0	0.3	1.0	1.2	1.4
Common sole	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.3	0.1
Eelpouts nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	10.9	6.2	6.5	6.1	6.1	0.8	0.0	0.0	0.0	0.0	0.0
European flounder	0.3	1.2	1.4	3.5	2.6	1.6	1.5	1.5	10.1	6.1	3.7
European perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	0.1	0.1	0.6	1.5	0.3	1.1	0.9	1.0	29.5	26.6	21.0
Haddock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lemon sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lumpfish(=Lumpsucker)	4.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Marine crabs nei	0.8	1.0	2.0	1.6	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	0.4	1.1	0.3	1.0	0.6	0.4	0.3	0.2	1.5	1.5	1.7
Norway lobster	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Picked dogfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whelk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
Whiting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-2 Landed value [x1,000 DKK] within ICES rectangle 40G2 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	672.5	629.5	298.8	335.2	396.8	159.6	384.6	186.9	391.0	647.1	255.9
Atlantic herring	0.3	0.1	0.1	0.1	0.0	8.9	0.0	0.0	0.0	0.0	0.0
Atlantic mackerel	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.2	54.5	3.9	17.8
Common dab	1.8	2.1	2.4	0.2	0.0	1.5	0.0	1.6	7.2	7.9	8.6
Common sole	11.2	21.3	0.1	0.6	0.0	1.4	1.5	1.5	51.8	16.0	6.0
Eelpouts nei	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	566.5	456.4	667.3	554.4	380.7	59.4	0.0	0.0	0.0	0.0	0.0
European flounder	0.9	3.9	4.8	11.5	8.4	3.9	3.9	5.5	34.8	17.1	10.7

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European perch	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	0.9	0.9	4.2	10.0	1.5	7.3	7.5	10.8	351.2	312.2	219.9
Haddock	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lemon sole	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.0
Ling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.1
Lumpfish(=Lumpsucker)	14.6	1.2	1.3	0.1	0.0	0.0	0.0	0.0	0.3	0.5	0.0
Marine crabs nei	9.3	7.3	14.3	23.1	14.1	0.3	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	5.5	26.6	5.5	8.3	4.2	1.7	1.8	9.4	16.3	4.8	17.8
Norway lobster	0.0	7.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Picked dogfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Rainbow trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Sea trout	1.0	1.0	0.0	0.0	0.0	0.0	1.6	1.1	0.0	0.7	0.0
Turbot	0.9	3.4	0.2	0.0	0.0	0.0	0.0	0.3	1.7	0.0	0.5
Whelk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	76.5	0.0	0.0	0.0
Whiting	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-3 Landings [t] within ICES rectangle 39G2 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	156.3	176.8	95.5	37.3	118.0	73.3	37.6	33.1	15.4	16.7	0.4
Atlantic herring	444.5	667.0	2011.5	2117.2	1815.0	1444.7	2611.1	2036.8	1144.5	728.4	195.5
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	1.3	2.2	1.6	0.4	1.2	0.7	1.0	1.3	0.2	0.4	0.3
Common sole	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	17.4	23.6	16.3	27.1	24.2	15.3	11.2	4.2	6.9	2.6	3.7
European lobster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
European perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
European plaice	4.6	7.3	5.2	1.8	5.0	2.3	2.0	0.5	4.4	1.0	0.5
European sprat	40.0	0.0	0.0	254.0	14.5	103.3	4.2	3.2	68.0	0.0	0.9
Garfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Haddock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lemon sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Lumpfish(=Lumpsucker)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	1.0	1.2	0.5	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Norway lobster	0.1	4.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Pouting(=Bib)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.2	1.3	0.0	0.0	0.0	0.0	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sandeels(=Sandlances) nei	562.5	1571.5	1940.9	1902.9	1307.0	1753.9	687.0	230.8	472.9	60.1	159.4
Sticklebacks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Turbot	1.3	0.5	0.7	0.3	1.5	1.2	1.5	1.4	1.0	0.4	1.3
Whiting	0.8	1.3	1.9	8.4	3.8	1.9	0.8	4.1	0.1	0.2	0.0

Table 12-4 Landed value [x1,000 DKK] within ICES rectangle 39G2 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	1500.7	1935.8	1012.7	394.2	1176.4	790.7	409.1	364.2	170.8	251.1	6.1
Atlantic herring	1100.4	2253.7	7779.7	7468.8	5189.9	4262.4	8542.8	5594.5	2549.6	2446.9	866.1
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Brill	0.4	0.0	0.3	1.0	2.4	1.1	0.1	0.0	0.2	0.0	0.1
Common dab	7.0	12.0	11.6	2.4	6.9	3.5	5.9	8.1	1.7	2.3	1.8
Common sole	5.9	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2
European flounder	44.7	73.1	55.7	90.3	78.1	38.3	28.4	15.3	23.9	7.4	10.8
European lobster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0
European perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
European plaice	32.8	53.6	38.8	11.9	26.7	15.0	17.5	5.8	52.7	11.3	5.1
European sprat	43.0	0.0	0.0	612.0	23.6	186.1	8.1	4.7	103.1	0.1	1.5
Garfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0
Haddock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lemon sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0
Lumpfish(=Lumpsucker)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	15.3	27.4	7.8	0.1	0.0	0.9	0.2	0.0	0.3	0.0	0.0
Norway lobster	2.0	99.4	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
Pouting(=Bib)	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	1.0	17.0	0.0	0.0	0.1	0.0	0.0
Sandeels(=Sandlances) nei	709.0	2048.6	3683.9	3927.7	1833.5	2643.8	1420.5	374.5	692.4	97.5	260.2
Sticklebacks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.7
Turbot	48.7	20.5	23.5	10.6	54.3	44.9	54.0	56.2	40.7	17.3	41.6
Whiting	3.7	8.4	15.4	68.4	41.4	17.6	9.1	52.2	1.0	2.0	0.2

Table 12-5 Landings [t] within ICES rectangle 39G3 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	296.6	797.6	467.6	386.2	416.9	399.4	594.6	131.5	25.6	22.2	7.6
Atlantic herring	60.0	302.0	53.0	259.0	323.0	119.0	633.0	210.0	185.0	38.0	0.0
Atlantic salmon	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	1.3	1.4	1.3	0.3	0.3	0.0	0.1	0.0	0.1	0.1	0.8
Common sole	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	12.9	8.1	10.0	86.4	52.7	12.4	7.9	2.3	3.2	1.5	39.5
European plaice	19.2	19.8	34.5	53.0	26.3	16.1	12.8	6.2	24.0	9.3	40.3
European sprat	0.0	4.0	0.0	49.0	0.0	23.0	0.0	0.0	0.9	0.0	0.0
Haddock	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	0.7	1.6	2.4	0.7	0.3	0.2	0.5	0.0	0.1	0.0	0.0
Norway lobster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	5.8	15.2	0.0	0.0	0.0	0.0	0.0
Sandeels(=Sandlances) nei	0.0	0.0	0.0	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.1	0.5	1.6	0.4	0.6	0.5	1.4	0.1	0.2	0.1	0.2
Whiting	5.8	55.9	16.1	63.5	58.7	49.3	41.9	26.6	3.4	3.1	0.6
Witch flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-6 Landed value [x1,000 DKK] within ICES rectangle 39G3 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	2847.5	8731.9	4959.6	4077.8	4156.9	4307.2	6471.2	1448.2	283.7	332.3	131.9
Atlantic herring	148.5	1020.4	205.0	913.7	923.6	351.1	2071.0	576.8	412.1	127.6	0.0
Atlantic salmon	0.0	0.0	0.0	4.7	0.5	12.5	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Common dab	7.3	8.0	9.2	2.0	1.8	0.2	0.6	0.1	0.7	0.3	4.6
Common sole	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	33.1	25.1	34.0	287.8	170.1	30.8	19.9	8.2	11.0	4.2	114.0
European plaice	138.7	145.5	260.2	350.7	139.4	103.1	109.9	68.2	285.9	108.8	421.7
European sprat	0.0	6.7	0.0	118.1	0.0	41.4	0.0	0.0	1.4	0.0	0.0
Haddock	1.5	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	10.3	38.7	40.4	5.9	2.6	0.8	2.7	1.5	0.5	0.0	0.0
Norway lobster	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	34.6	196.8	0.3	0.3	0.0	0.0	0.0
Sandeels(=Sandlances) nei	0.0	0.0	0.0	29.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	0.0	0.0	0.0	0.1	3.2	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	3.9	20.1	52.0	13.5	20.6	18.2	50.6	3.8	8.5	2.4	7.8
Whiting	28.2	356.9	132.2	517.5	634.1	453.8	481.4	339.4	32.2	26.6	5.1

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Witch flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0

Table 12-7 Landings [t] within ICES rectangle 39G4 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	1026.6	1146.6	1746.1	1160.6	1420.3	1198.8	1211.2	565.2	383.6	187.8	25.2
Atlantic halibut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic herring	1561.0	1726.0	1084.1	847.0	583.9	655.0	112.8	99.1	216.4	589.9	273.2
Atlantic mackerel	0.0	0.0	0.0	0.0	0.3	0.1	0.9	0.0	0.2	0.1	0.1
Atlantic pomfret	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Atlantic salmon	1.3	0.1	0.0	0.1	1.0	0.3	0.0	0.0	0.0	0.0	0.0
Common dab	0.1	0.2	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	1.4
Common shrimp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Common sole	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	164.0	103.7	99.0	488.1	647.6	288.9	46.1	39.4	312.5	132.3	161.0
European hake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	178.0	177.9	193.9	209.2	137.8	60.1	72.1	55.6	184.5	96.8	41.9
European sprat	294.0	194.7	24.5	102.5	74.6	23.9	125.5	190.0	359.8	1301.1	934.7
Greater weever	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haddock	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	2.6	0.8	2.4	0.7	0.0	0.1	0.3	0.6	4.8	0.4	0.2
Norway lobster	0.6	0.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.0
Saithe(=Pollock)	0.1	0.0	0.0	0.0	7.1	2.7	0.0	0.0	0.0	0.0	0.0
Sandeels(=Sandlances) nei	0.0	0.0	0.0	0.0	37.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Turbot	0.5	0.7	0.6	0.4	0.6	1.1	0.7	0.3	0.9	0.3	1.2
Whiting	47.6	33.9	16.6	26.0	47.7	43.2	28.4	29.5	7.3	12.3	1.4
Witch flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0

Table 12-8 Landed value [x1,000 DKK] within ICES rectangle 39G4 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	9855.0	12552.7	18519.2	12254.6	14162.8	12928.4	13182.8	6224.3	4256.8	2817.4	439.9
Atlantic halibut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic herring	3864.3	5831.8	4192.7	2988.0	1669.7	1932.3	369.1	272.2	482.1	1981.5	1210.1
Atlantic mackerel	0.0	0.3	0.0	0.0	5.4	0.9	7.7	0.2	1.9	1.7	0.9

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic pomfret	0.0	0.0	0.0	0.0	0.0	1.3	0.2	0.0	0.0	0.0	0.0
Atlantic salmon	39.6	4.7	0.6	1.8	40.2	11.7	0.0	0.0	0.0	0.0	0.0
Common dab	0.5	1.0	7.3	0.4	0.8	0.0	0.1	0.4	0.8	0.4	8.6
Common shrimp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0
Common sole	0.0	24.1	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.1	0.2
European flounder	422.0	321.4	338.5	1625.1	2090.2	721.0	116.5	142.4	1080.6	372.1	464.1
European hake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
European plaice	1283.0	1303.9	1462.1	1383.1	730.0	385.8	618.1	606.4	2194.3	1135.5	438.8
European sprat	316.1	326.5	42.9	247.0	121.5	43.0	241.8	276.2	546.1	1891.4	1514.3
Greater weever	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Haddock	0.6	0.2	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Ling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	39.2	19.4	41.4	5.5	0.2	0.3	1.6	28.5	50.3	1.3	1.7
Norway lobster	8.9	19.6	0.0	0.0	0.0	0.0	0.0	9.2	0.0	1.7	0.0
Saithe(=Pollock)	0.3	0.0	0.0	0.0	42.3	35.3	0.1	0.0	0.0	0.0	0.1
Sandeels(=Sandlances) nei	0.0	0.0	0.0	0.0	51.9	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.6	0.0	0.0
Turbot	17.7	26.8	21.3	14.4	22.5	40.8	24.0	14.2	35.5	14.5	37.0
Whiting	232.0	216.6	136.4	212.3	515.4	397.0	326.1	376.0	69.2	103.9	12.9
Witch flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0

Table 12-9 Landings [t] within ICES rectangle 38G3 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	721.8	898.2	1561.9	648.7	808.6	1169.7	869.2	214.2	119.1	266.7	105.4
Atlantic herring	0.0	204.5	241.0	895.0	911.1	621.0	870.1	1358.0	1358.7	686.2	317.0
Atlantic salmon	0.0	0.0	0.1	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4
Cephalopods nei	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Common dab	4.5	3.4	2.7	5.1	1.5	0.4	1.0	0.3	1.2	10.8	12.2
Common sole	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
European flounder	33.2	49.5	38.5	154.3	114.3	15.0	11.5	7.9	16.9	52.2	222.5
European plaice	42.6	31.2	44.0	62.3	31.4	16.9	33.0	17.6	95.8	165.0	180.9
European sprat	0.0	0.0	52.0	21.8	395.9	140.0	226.7	747.0	92.7	7.3	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Haddock	0.2	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Lumpfish(=Lumpsucker)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	1.4	1.4	5.7	0.8	0.3	0.5	0.3	0.2	0.0	0.0	0.0
Norway lobster	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	1.5	6.9	38.7	0.1	0.0	0.0	0.0	0.0
Sea trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.8	1.2	2.0	1.9	1.6	1.0	1.3	0.4	1.0	1.8	3.7
Whiting	16.5	30.9	43.0	51.2	75.5	71.0	41.5	34.3	8.4	12.4	6.2
Witch flounder	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-10 Landed value [x1,000 DKK] within ICES rectangle 38G3 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	6928.8	9833.7	16565.8	6849.8	8062.6	12613.7	9460.7	2358.8	1321.4	4000.0	1840.1
Atlantic herring	0.0	691.0	932.1	3157.3	2605.3	1832.1	2846.8	3729.9	3026.7	2305.1	1404.2
Atlantic salmon	0.0	0.0	1.9	1.7	0.3	30.6	0.0	0.0	0.0	0.0	0.0
Brill	0.0	1.4	0.0	0.0	0.0	0.2	0.0	0.2	0.8	3.6	10.0
Cephalopods nei	0.0	0.0	0.0	0.0	0.3	0.0	0.4	0.0	0.0	0.0	0.0
Common dab	24.9	19.1	19.3	34.1	8.7	2.0	6.2	1.9	9.2	69.2	73.7
Common sole	47.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2
European flounder	85.5	153.6	131.5	513.8	368.8	37.3	29.1	28.4	58.4	146.7	641.3
European plaice	307.3	228.6	331.4	412.2	166.1	108.7	282.8	191.8	1139.9	1936.0	1892.9
European sprat	0.0	0.0	91.0	52.5	645.0	252.3	436.8	1085.9	140.7	10.5	0.0
Haddock	1.1	0.0	0.0	0.0	4.2	0.4	0.0	0.0	0.0	0.0	0.0
Lumpfish(=Lumpsucker)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	20.2	32.8	97.1	6.5	2.5	2.4	1.8	9.2	0.0	0.0	0.0
Norway lobster	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	14.5	40.7	501.8	0.7	0.0	0.0	0.0	0.0
Sea trout	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	30.4	47.7	64.9	61.9	59.5	35.6	46.7	15.5	38.9	83.2	116.6
Whiting	80.4	197.5	352.3	417.0	816.6	653.1	476.8	436.8	79.0	105.2	55.6
Witch flounder	0.0	0.0	0.0	0.0	7.9	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-11 Landings [t] within ICES rectangle 38G4 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	1013.9	450.5	671.4	679.0	667.8	156.5	102.9	32.1	158.7	30.8	19.2
Atlantic herring	0.0	0.0	39.5	59.7	55.1	15.5	85.0	0.0	0.0	0.0	0.2
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic salmon	12.4	6.1	8.5	10.4	16.3	6.4	2.9	0.3	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.1
European flounder	21.7	6.1	16.9	45.1	24.3	11.0	0.7	0.5	0.9	2.7	61.6
European plaice	20.6	6.4	22.5	30.4	15.5	3.2	2.3	1.4	9.6	10.1	8.9
European sprat	60.0	0.0	0.0	1.0	348.3	5.5	0.0	0.0	0.0	0.0	0.0
Haddock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	0.9	1.6	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway lobster	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0
Sandeels(=Sandlances) nei	7.0	5.0	23.5	332.3	701.4	507.1	84.1	0.0	0.0	0.0	119.0
Sea trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.9	0.7	0.9	1.1	0.7	0.3	0.6	0.3	0.4	0.5	1.3
Whiting	15.6	1.7	1.4	4.5	28.6	1.8	1.8	1.7	0.6	3.5	0.9

Table 12-12 Landed value [x1,000 DKK] within ICES rectangle 38G4 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	9732.4	4932.3	7121.2	7169.1	6659.0	1687.8	1120.1	353.3	1761.6	461.4	334.8
Atlantic herring	0.0	0.0	152.8	210.6	157.5	45.7	278.1	0.0	0.0	0.0	1.1
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Atlantic salmon	376.3	205.7	313.9	379.7	636.6	246.8	104.5	15.5	1.2	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.7	0.0	0.8	0.1	0.2	0.1	0.0	4.2	0.0	0.0	0.8
European flounder	55.7	18.9	57.8	150.0	78.5	27.5	1.9	1.6	3.0	7.7	177.5
European plaice	148.6	46.8	169.8	201.1	82.0	20.5	20.1	14.9	113.6	118.0	93.6
European sprat	64.5	0.0	0.0	2.4	567.5	9.9	0.0	0.0	0.0	0.0	0.0
Haddock	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	13.6	37.5	20.1	1.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Norway lobster	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Saithe(=Pollock)	0.1	0.0	0.0	0.0	3.5	1.2	0.0	0.0	0.0	0.0	0.0
Sandeels(=Sandlances) nei	8.8	6.5	44.6	685.9	984.0	764.4	173.9	0.0	0.0	0.0	194.4
Sea trout	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Turbot	33.1	26.0	31.4	37.0	25.6	9.7	22.4	13.8	14.8	22.4	42.6
Whiting	76.2	10.7	11.1	36.6	308.8	17.0	20.2	21.3	5.7	30.0	7.7

Table 12-13 Landings [t] within ICES rectangle 38G5 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	1255.4	2133.4	3109.6	1393.3	1445.9	2600.7	954.4	714.6	405.1	133.0	1.3
Atlantic halibut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic herring	418.0	23.1	98.3	254.0	265.5	34.5	53.6	15.2	11.5	2.1	31.2
Atlantic salmon	18.5	20.9	6.9	16.1	11.8	8.1	1.6	0.0	0.0	0.1	0.2
Common dab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cuckoo ray	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	4.9	10.0	21.9	28.9	25.1	114.6	3.4	2.6	169.1	51.2	23.4
European plaice	23.5	12.1	12.6	5.8	2.7	3.0	2.5	3.1	11.6	0.2	2.1
European sprat	1916.5	663.7	118.0	177.2	806.8	1.9	65.0	108.6	158.6	44.9	449.8
Lemon sole	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	0.2	1.1	2.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Norway lobster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pouting(=Bib)	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sandeels(=Sandlances) nei	0.0	0.0	0.0	0.0	0.0	200.5	40.3	25.0	0.0	0.0	0.0
Sea trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whiting	0.1	0.7	1.3	0.9	0.0	0.4	0.1	0.1	0.4	0.0	0.0

Table 12-14 Landed value [x1,000 DKK] within ICES rectangle 38G5 by the Danish fleet (≥ 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	12050.7	23355.4	32981.6	14712.3	14417.6	28046.4	10387.7	7869.6	4495.7	1995.0	22.9
Atlantic halibut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Atlantic herring	1034.8	78.1	380.2	896.0	759.2	101.8	175.2	41.7	25.5	7.1	138.2
Atlantic salmon	564.4	700.9	256.9	591.7	461.9	314.6	56.0	0.0	0.0	2.6	6.4
Common dab	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cuckoo ray	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
European flounder	12.6	30.9	74.9	96.1	81.0	285.8	8.6	9.3	584.6	144.0	67.5
European plaice	169.3	89.0	94.9	38.1	14.2	19.3	21.6	34.3	138.0	2.8	21.9
European sprat	2060.4	1112.9	206.6	427.0	1314.4	3.4	125.2	157.9	240.7	65.3	728.7
Lemon sole	0.0	0.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	2.6	25.2	40.4	2.8	0.6	0.1	0.0	0.0	0.0	0.0	0.0
Norway lobster	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pouting(=Bib)	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Sandeels(=Sandlances) nei	0.0	0.0	0.0	0.0	0.0	302.2	83.3	40.6	0.0	0.0	0.0
Sea trout	0.0	0.0	0.6	0.0	1.0	0.8	0.0	0.0	0.0	0.0	0.0
Turbot	1.8	8.5	2.5	2.4	0.3	1.7	0.8	1.3	1.8	0.0	0.0
Whiting	0.6	4.2	11.0	7.5	0.0	3.9	1.4	0.7	4.1	0.0	0.0

APPENDIX 3
ANALYSIS OF ICES RECTANGLES – (< 12 M)

Table 12-15 Landings [t] within ICES rectangle 40G2 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angler(=Monk)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic cod	358.6	442.0	447.9	352.8	438.8	335.3	336.1	214.5	245.7	404.5	117.9
Atlantic herring	148.3	29.3	37.5	44.6	47.8	29.6	28.9	76.2	71.5	7.9	1.3
Atlantic mackerel	2.9	3.5	10.3	5.5	2.0	2.9	4.0	3.7	5.7	6.8	12.0
Atlantic pomfret	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic salmon	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.4	0.3	0.6	1.6	2.3	2.5	3.2	3.9	4.7	3.7	7.0
Common dab	9.0	8.3	7.9	9.9	6.1	4.3	9.1	6.7	12.1	9.3	8.3
Common prawn	5.9	8.4	10.6	10.4	11.2	10.3	10.1	4.8	5.1	2.8	0.8
Common shrimp	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common sole	1.2	2.8	2.0	2.2	1.9	1.5	1.9	3.0	4.1	4.1	4.8
Edible crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Eelpout	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Eelpouts nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	85.6	88.5	78.9	74.5	83.0	60.3	72.0	47.8	27.0	23.7	24.0
European flounder	46.1	42.7	52.8	46.0	37.1	35.7	33.1	33.1	26.3	35.6	18.5
European hake	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European lobster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European perch	0.0	0.7	1.1	1.1	0.2	0.1	0.1	0.0	0.1	0.0	0.1
European plaice	36.9	22.4	31.1	49.4	32.7	57.8	61.9	43.2	47.6	46.8	39.0
European sprat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Freshwater bream	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Garfish	32.9	43.1	36.8	64.2	34.3	22.2	6.0	7.8	4.4	0.1	2.0
Greater weever	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Grey gurnard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haddock	0.0	0.0	0.8	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0
Lemon sole	0.3	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Ling	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Lumpfish(=Lumpsucker)	18.5	4.7	1.7	5.5	27.1	21.4	10.9	3.4	7.4	6.0	3.7
Marine crabs nei	0.0	0.2	0.0	0.0	0.0	0.0	0.7	20.6	1.3	2.0	0.6
Marine fishes nei	9.3	12.9	19.7	11.9	5.3	4.3	0.9	0.8	1.0	0.9	0.3
Mullets nei	0.0	0.1	0.1	0.3	0.1	0.6	0.0	0.0	0.0	0.0	0.0
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway lobster	0.1	0.2	0.1	0.4	0.9	0.1	0.0	0.3	0.7	0.8	0.5
Picked dogfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike-perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Polar cod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Raja rays nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red starfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Roach	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.5	0.9	0.7	0.1	0.1	0.1	0.0
Sea trout	1.0	0.8	0.9	2.1	1.1	1.0	0.6	0.6	0.3	0.4	0.4
Turbot	3.4	2.3	1.7	3.8	2.1	2.3	1.9	2.1	7.2	1.5	2.7
Twaite shad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whelk	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.6	0.0	0.0	0.0
Whiting	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Witch flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wolffishes(=Catfishes) nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-16 Landed value [x1,000 DKK] within ICES rectangle 40G2 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angler(=Monk)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic cod	3442.3	4838.4	4750.4	3725.5	4375.2	3616.0	3657.9	2362.0	2726.2	6068.1	2057.9
Atlantic herring	367.2	98.9	145.1	157.2	136.8	87.4	94.5	209.4	159.3	26.5	5.7
Atlantic mackerel	28.8	22.0	166.5	53.8	40.6	23.3	35.7	62.6	53.6	80.2	127.7
Atlantic pomfret	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Atlantic salmon	0.0	0.2	0.7	2.9	0.1	0.4	0.1	0.2	0.4	0.0	0.4
Brill	13.7	10.8	19.3	53.1	72.3	59.7	101.7	127.6	165.8	104.8	165.6
Common dab	49.4	46.3	56.3	66.4	36.1	21.2	54.6	42.5	90.5	59.2	50.4
Common prawn	252.8	394.7	542.7	544.4	585.7	545.4	576.5	297.6	334.4	193.4	49.7
Common shrimp	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common sole	101.5	228.2	132.2	178.9	98.4	126.7	119.4	146.7	243.8	221.4	391.7
Edible crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.6	0.0	0.1
Eelpout	0.0	0.0	0.5	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Eelpouts nei	0.0	0.0	0.3	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
European eel	4466.7	6538.0	8127.9	6814.4	5149.3	4434.1	5980.9	4688.5	2550.3	2182.9	2005.2
European flounder	118.6	132.4	180.5	153.2	119.7	89.2	83.8	119.7	90.8	100.2	53.4
European hake	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European lobster	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.3	0.0	0.0	4.6
European perch	0.7	10.9	18.6	12.2	2.5	1.5	0.9	0.2	0.7	0.1	0.6
European plaice	265.5	164.0	234.2	326.3	173.2	370.9	531.1	471.3	565.7	549.5	408.2
European sprat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Freshwater bream	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Garfish	114.7	182.9	262.9	345.1	167.6	129.8	36.1	42.8	24.4	0.9	17.7
Greater weever	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.5	0.0	0.0
Grey gurnard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haddock	0.1	0.3	5.7	0.9	2.5	0.6	0.0	0.0	0.5	0.0	0.0
Lemon sole	7.5	0.0	0.1	2.5	3.4	4.6	3.8	1.3	3.8	2.3	2.7

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Ling	0.0	0.0	0.0	0.4	1.3	1.2	0.7	0.0	0.0	0.0	0.6
Lumpfish(=Lumpsucker)	67.4	21.4	15.8	33.3	94.8	100.0	75.9	31.0	50.9	36.2	37.7
Marine crabs nei	0.0	1.3	0.3	0.0	0.0	0.0	6.7	51.6	2.7	4.5	1.6
Marine fishes nei	138.5	307.2	336.1	94.5	40.0	19.9	4.8	38.5	10.7	2.9	3.0
Mullets nei	1.1	5.2	3.5	9.6	5.0	26.1	1.2	0.0	0.0	0.0	0.0
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway lobster	1.7	3.8	1.2	2.8	6.8	0.5	0.3	22.4	7.2	2.5	5.5
Picked dogfish	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike-perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Polar cod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow trout	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Raja rays nei	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red starfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Roach	0.0	0.1	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.2	0.0	0.1	3.0	11.8	9.0	0.6	0.5	0.6	0.4
Sea trout	25.0	21.3	19.3	73.4	23.0	35.6	20.9	23.5	13.3	19.4	17.9
Turbot	127.8	91.3	56.1	125.0	79.1	83.9	68.7	87.0	278.8	72.2	85.3
Twaite shad	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whelk	0.0	0.0	0.0	0.0	0.0	0.0	5.2	30.0	0.0	0.0	0.0
Whiting	0.9	0.0	0.1	1.5	0.3	0.2	0.0	0.0	0.1	0.1	0.0
Witch flounder	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0
Wolffishes(=Catfishes) nei	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-17 Landings [t] within ICES rectangle 39G2 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	121.3	93.6	77.2	36.6	34.1	25.0	29.3	18.2	36.6	11.8	3.9
Atlantic herring	1.0	3.1	6.4	8.6	3.4	13.5	19.7	8.6	8.6	9.9	8.9
Atlantic horse mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic mackerel	0.0	0.4	0.2	0.1	0.0	0.2	0.0	0.1	0.1	0.0	0.2
Atlantic salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.0
Brill	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Common dab	0.9	1.3	1.7	0.4	0.2	0.6	0.8	0.4	0.1	0.4	0.4
Common prawn	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common sole	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.1	6.0
Eelpouts nei	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	70.3	55.2	41.0	38.8	45.6	38.3	29.1	30.6	8.3	10.0	7.5
European flounder	35.1	40.8	28.4	14.0	14.1	14.9	10.2	8.4	6.4	10.4	16.1
European hake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European perch	0.2	0.3	0.4	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.1
European plaice	1.3	2.6	2.6	1.1	0.5	0.6	0.6	0.3	1.1	0.5	3.7
Garfish	21.7	10.2	40.0	54.7	54.4	62.5	83.2	93.9	79.2	33.3	19.9

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gobies nei	0.0	0.0	0.0	0.0	0.0	1.5	3.3	3.4	0.1	0.7	0.3
Grey gurnard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haddock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lemon sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lumpfish(=Lumpsucker)	1.0	0.6	0.2	0.1	7.5	3.3	0.3	0.7	0.5	0.1	0.3
Marine crabs nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.5	2.1
Marine fishes nei	6.2	7.0	5.6	0.6	0.1	0.1	0.3	0.0	0.1	0.0	0.0
Mullets nei	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway lobster	2.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike-perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raja rays nei	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Roach	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	1.1	0.4	1.7	0.4	0.6	0.9	0.1	0.2	0.2	0.0	0.0
Sturgeon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	4.1	1.9	1.9	0.9	2.8	3.3	4.8	2.9	4.0	1.8	2.9
Whiting	0.1	0.0	0.3	0.2	0.6	0.4	0.0	0.0	0.0	0.0	0.1
Witch flounder	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-18 Landed value [x1,000 DKK] within ICES rectangle 39G2 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	1164.2	1024.6	818.7	386.9	339.8	269.4	318.4	200.5	405.9	177.2	68.7
Atlantic herring	2.4	10.6	24.7	30.4	9.6	39.9	64.6	23.5	19.2	33.1	39.3
Atlantic horse mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic mackerel	0.0	2.7	2.6	1.4	0.2	1.3	0.3	2.1	0.8	0.4	2.5
Atlantic salmon	0.0	0.0	0.0	0.0	0.0	0.8	1.9	27.6	0.0	2.3	0.4
Brill	0.4	5.6	0.6	1.4	0.6	0.6	1.0	1.3	1.3	1.4	1.8
Common dab	4.8	7.1	12.3	2.8	1.4	3.1	4.5	2.5	0.5	2.8	2.7
Common prawn	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Common sole	10.1	0.0	0.0	0.1	15.6	1.8	0.4	6.4	1.6	4.8	492.3
Eelpouts nei	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	3667.8	4079.9	4224.9	3544.8	2828.1	2817.9	2416.3	2998.5	787.4	918.5	621.9
European flounder	90.3	126.4	97.1	46.6	45.5	37.2	25.9	30.3	22.2	29.3	46.3
European hake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European perch	3.0	5.8	6.2	8.2	4.3	2.6	2.1	0.7	0.4	0.5	0.7

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European plaice	9.2	19.1	19.9	7.2	2.7	4.1	4.9	3.7	13.5	6.3	38.7
Garfish	75.6	43.4	285.3	294.0	265.6	365.2	501.3	518.6	440.0	308.0	174.2
Gobies nei	0.0	0.0	0.0	0.0	0.0	7.0	3.4	4.0	1.1	2.3	0.2
Grey gurnard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Haddock	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Lemon sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Lumpfish(=Lumpsucker)	3.6	2.5	1.9	0.5	26.3	15.3	2.0	6.8	3.6	0.6	3.2
Marine crabs nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	1.1	6.1
Marine fishes nei	92.0	166.1	95.3	4.9	1.0	0.5	1.9	0.6	1.0	0.0	0.0
Mullets nei	2.3	0.0	2.3	0.6	2.0	1.7	0.4	0.2	0.1	0.0	0.0
Northern pike	0.2	0.1	0.0	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0
Norway lobster	29.4	2.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike-perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow trout	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Raja rays nei	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Roach	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.9	0.0	0.0	0.1
Saithe(=Pollock)	0.0	0.0	0.0	0.3	0.0	0.1	0.1	0.0	0.0	0.1	0.1
Sea trout	28.2	11.6	38.6	14.6	13.4	31.7	5.3	6.3	6.5	0.6	1.3
Sturgeon	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	153.2	73.6	61.5	29.7	103.4	122.1	176.9	117.5	155.9	85.6	91.3
Whiting	0.4	0.2	2.5	1.5	6.6	3.3	0.1	0.3	0.0	0.1	0.8
Witch flounder	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-19 Landings [t] within ICES rectangle 39G3 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2014	2015	2016	2017	2019	2020
Atlantic cod	6.2	4.3	16.7	0.0	0.1	0.0	0.0	0.0	0.0
Atlantic herring	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic salmon	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	0.7	0.2	0.4	0.0	0.1	0.0	0.0	0.7	0.6
European perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	0.2	0.3	0.9	0.0	0.0	0.0	0.0	0.1	0.1
Garfish	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Lumpfish(=Lumpsucker)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0

Table 12-20 Landed value [x1,000 DKK] within ICES rectangle 39G3 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	59.9	47.3	177.4	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.3
Atlantic herring	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0
Atlantic mackerel	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic salmon	0.0	0.0	0.0	0.0	0.0	0.0	9.4	15.4	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Common dab	0.6	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
European eel	0.0	0.0	3.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
European flounder	1.9	0.5	1.2	0.0	0.0	0.1	0.0	0.0	0.0	2.0	1.7
European perch	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	1.6	2.1	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.4
Garfish	0.3	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0
Lumpfish(=Lumpsucker)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	4.4	0.4	0.0	0.0	0.0	0.2	0.0	0.0	0.0	5.4	1.6

Table 12-21 Landings [t] within ICES rectangle 39G4 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	665.1	594.5	430.6	396.4	343.5	200.7	192.6	203.6	284.8	95.7	35.4
Atlantic herring	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	6.0	0.5
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.0	0.3	0.9
Atlantic salmon	28.4	21.3	36.2	42.9	47.5	28.3	11.3	4.2	5.2	3.9	1.8
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	1.1	0.3
Common prawn	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.3
European flounder	79.5	44.4	33.8	35.1	31.8	18.3	23.0	22.0	45.0	65.4	39.7
European hake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European perch	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	129.7	97.2	144.2	65.8	32.7	16.0	11.8	22.3	58.1	68.7	17.3
European sprat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	1.6
Garfish	0.0	0.0	0.0	0.7	0.0	0.4	0.7	0.0	0.1	0.0	0.0
Haddock	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lumpfish(=Lumpsucker)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	0.9	1.3	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Norway lobster	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.0	0.0
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.2	0.0
Sea trout	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1
Shorthorn sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Swordfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	1.7	0.5	0.6	1.1	1.4	1.0	3.6	1.6	3.2	0.8	1.9
Twaite shad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whiting	0.3	1.0	0.9	0.7	1.1	0.2	2.5	6.4	4.8	5.8	1.3
Witch flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-22 Landings [t] within ICES rectangle 38G3 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	0.0	2.5	0.4	0	0	0.2	0.2	0.1	0	3.5	0.0
Atlantic mackerel	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0.0	0.0
Atlantic salmon	0.0	0.0	0.0	0	0	0.4	0.0	0.0	0	0.0	0.0
Common dab	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0.0	0.0
European eel	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0.0	0.0
European flounder	0.1	0.0	0.2	0	0	0.0	0.1	0.0	0	0.0	0.0
European plaice	0.0	0.0	0.1	0	0	0.0	0.0	0.0	0	0.5	0.0
Marine fishes nei	0.0	0.1	0.0	0	0	0.0	0.0	0.0	0	0.0	0.0
Turbot	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0.1	0.0
Whiting	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0.0	0.0

Table 12-23 Landed value [x1,000 DKK] within ICES rectangle 38G3 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	0.4	27.4	4.7	0.0	0.0	2.4	2.1	1.2	0.0	52.7	0.0
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic salmon	0.0	0.0	0.0	0.0	0.0	13.5	1.3	0.0	0.0	0.0	0.0
Common dab	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0
European eel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3
European flounder	0.2	0.0	0.5	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0
European plaice	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.0
Marine fishes nei	0.2	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.6	0.0	4.6	0.0
Whiting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0

Table 12-24 Landings [t] within ICES rectangle 38G4 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	219.7	74.6	70.7	138.3	59.9	10.4	19.8	10.6	22.3	1.4	1.5
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic salmon	12.1	1.0	21.6	18.0	14.6	21.8	15.5	2.7	6.0	7.1	2.9
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Common sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

European flounder	3.5	0.6	0.8	0.3	2.7	0.7	1.2	1.1	2.1	1.1	1.9
European perch	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	1.9	0.5	0.6	0.1	4.2	0.3	0.3	0.4	2.1	1.2	0.5
Marine fishes nei	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Sandeels(=Sandlances) nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Sea trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.2	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.6	0.0	0.8
Whiting	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0

Table 12-25 Landed value [x1,000 DKK] within ICES rectangle 38G4 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	2109.2	816.9	749.9	1460.1	597.7	112.5	216.0	117.2	247.5	21.3	26.5
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1
Atlantic salmon	368.3	34.2	801.2	661.2	569.7	842.4	556.6	148.8	381.5	364.7	117.2
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Common dab	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.0
Common sole	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
European eel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
European flounder	9.0	1.9	2.7	1.1	8.7	1.8	3.0	4.0	7.4	3.0	5.4
European perch	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	13.4	3.7	4.9	1.0	22.5	2.0	2.9	3.9	24.4	14.0	5.4
Marine fishes nei	9.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Sandeels(=Sandlances) nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Sea trout	0.8	0.0	0.8	0.2	0.3	0.0	0.0	0.0	0.9	0.6	0.4
Turbot	6.4	1.3	0.2	0.7	0.3	12.7	2.2	0.1	21.7	1.0	24.8
Whiting	5.5	0.0	0.0	0.0	0.1	0.0	0.1	2.5	0.0	0.3	0.1

Table 12-26 Landings [t] within ICES rectangle 38G5 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	253.2	380.4	353.1	240.9	206.8	287.7	213.7	357.3	221.7	47.8	0.9
Atlantic herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Atlantic salmon	11.0	7.7	6.7	9.8	3.9	9.5	2.7	0.2	3.6	6.4	3.7
Common dab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
European flounder	2.1	2.6	3.5	6.9	2.1	3.6	4.8	26.7	19.2	6.7	16.3

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European plaice	1.7	2.5	3.7	1.0	0.4	0.8	3.6	1.2	3.8	0.4	3.1
European sprat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.3
Lumpfish(=Lumpsucker)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway lobster	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Turbot	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.6	0.1	0.1
Whiting	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.2	0.1	0.6

Table 12-27 Landed value [x1,000 DKK] within ICES rectangle 38G5 by the Danish fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	2430.7	4164.6	3745.3	2543.9	2062.1	3102.7	2326.2	3934.9	2460.7	717.2	16.4
Atlantic herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.7
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Atlantic salmon	333.7	258.0	248.5	359.4	154.4	367.8	95.9	10.7	230.5	325.5	149.5
Common dab	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
European eel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0
European flounder	5.3	7.9	12.1	23.1	6.9	8.9	12.1	96.5	66.4	18.8	46.9
European plaice	12.3	18.6	27.9	6.8	2.2	5.2	31.3	12.9	44.8	5.2	32.5
European sprat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.0
Lumpfish(=Lumpsucker)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes nei	16.9	2.7	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Norway lobster	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.2	0.0
Sea trout	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	1.4	2.5	0.4
Turbot	7.2	5.5	6.5	3.7	3.3	3.1	4.6	1.8	23.8	4.3	2.0
Whiting	0.1	0.0	0.0	0.0	0.3	0.2	3.9	5.2	1.8	0.6	5.7

APPENDIX 4
DETAILED MAPPING OF SANDEEL FISHING GROUNDS

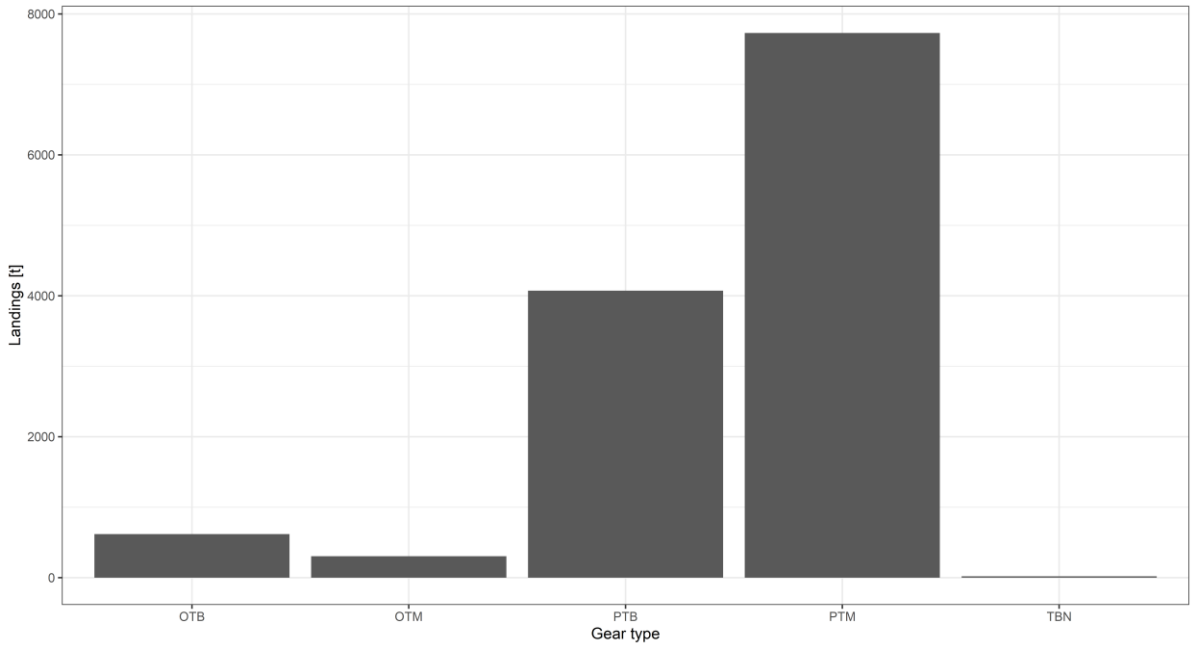

Figure 12-15 Landings [t] by Danish vessels of sandeel (*Ammodytes spp.*) from 2010 to 2020 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The landings are shown by used gear type.

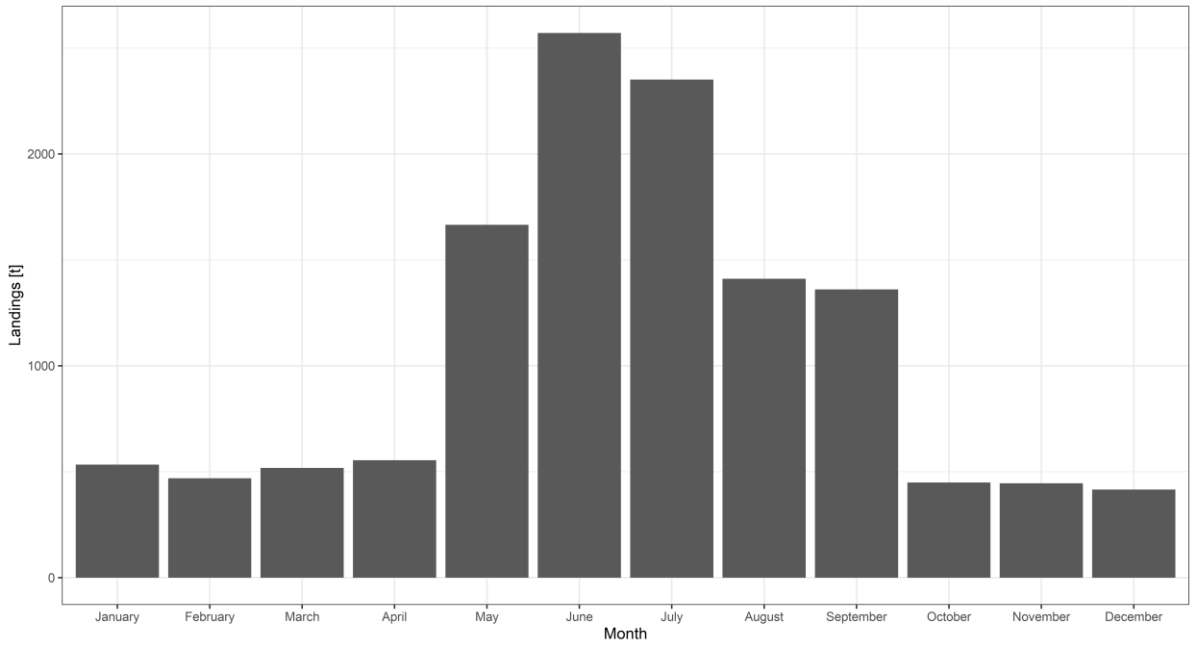

Figure 12-16 Landings [t] by Danish vessels of sandeel (*Ammodytes spp.*) from 2010 to 2020 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The landings are shown by month.

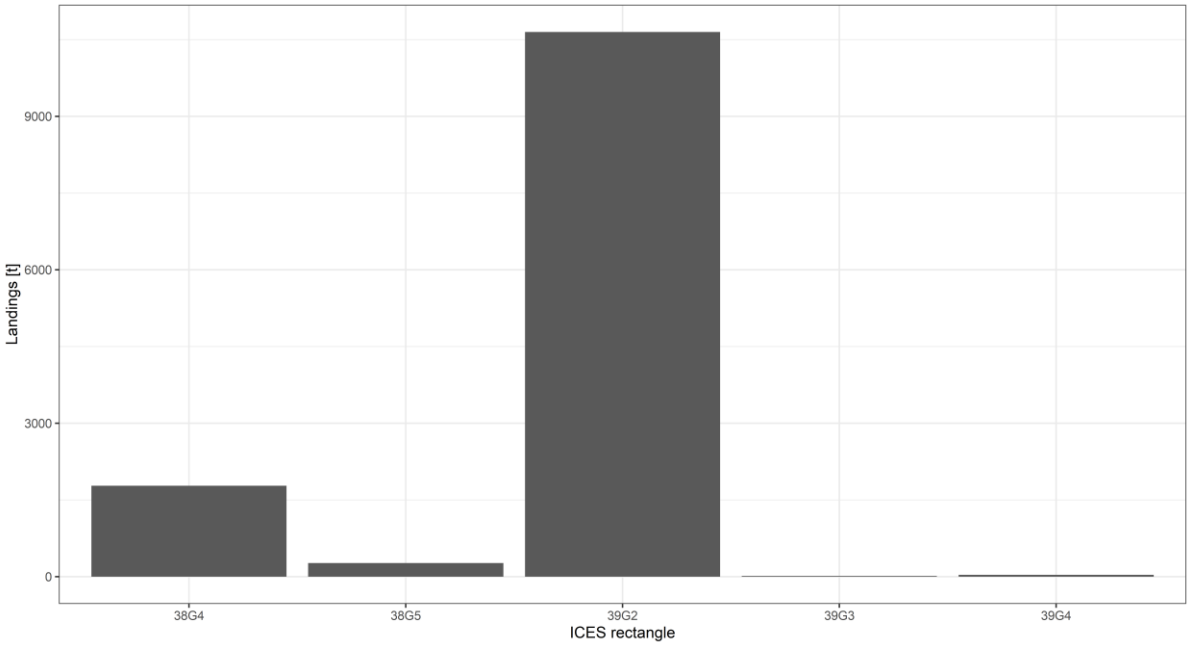

Figure 12-17 Landings [t] by Danish vessels of sandeel (*Ammodytes spp.*) from 2010 to 2020 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The landings are shown by ICES rectangle. No landings were made in 40G2 and 38G3.

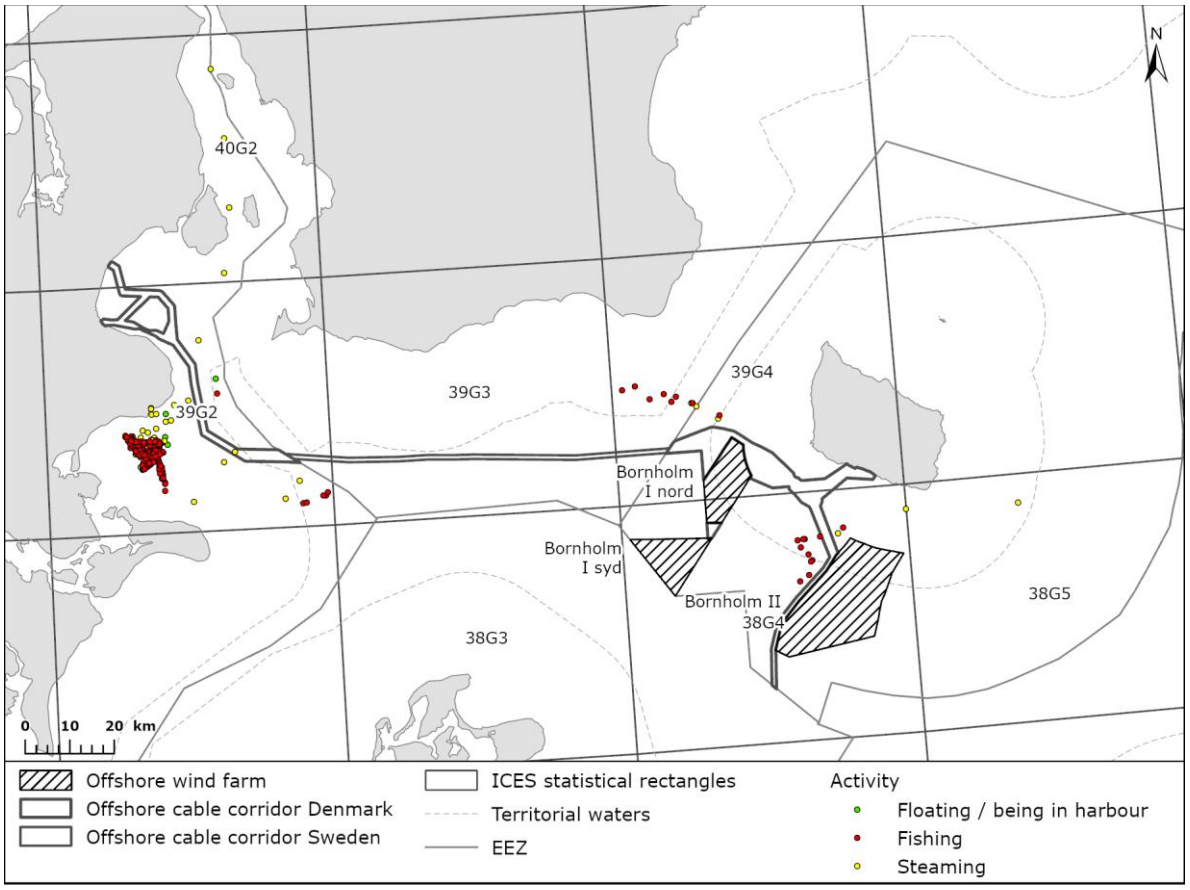

Figure 12-18 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2010 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

regression on the speed profile, with automatic detection of fishing versus no-fishing or by fixed speed rules from literature.

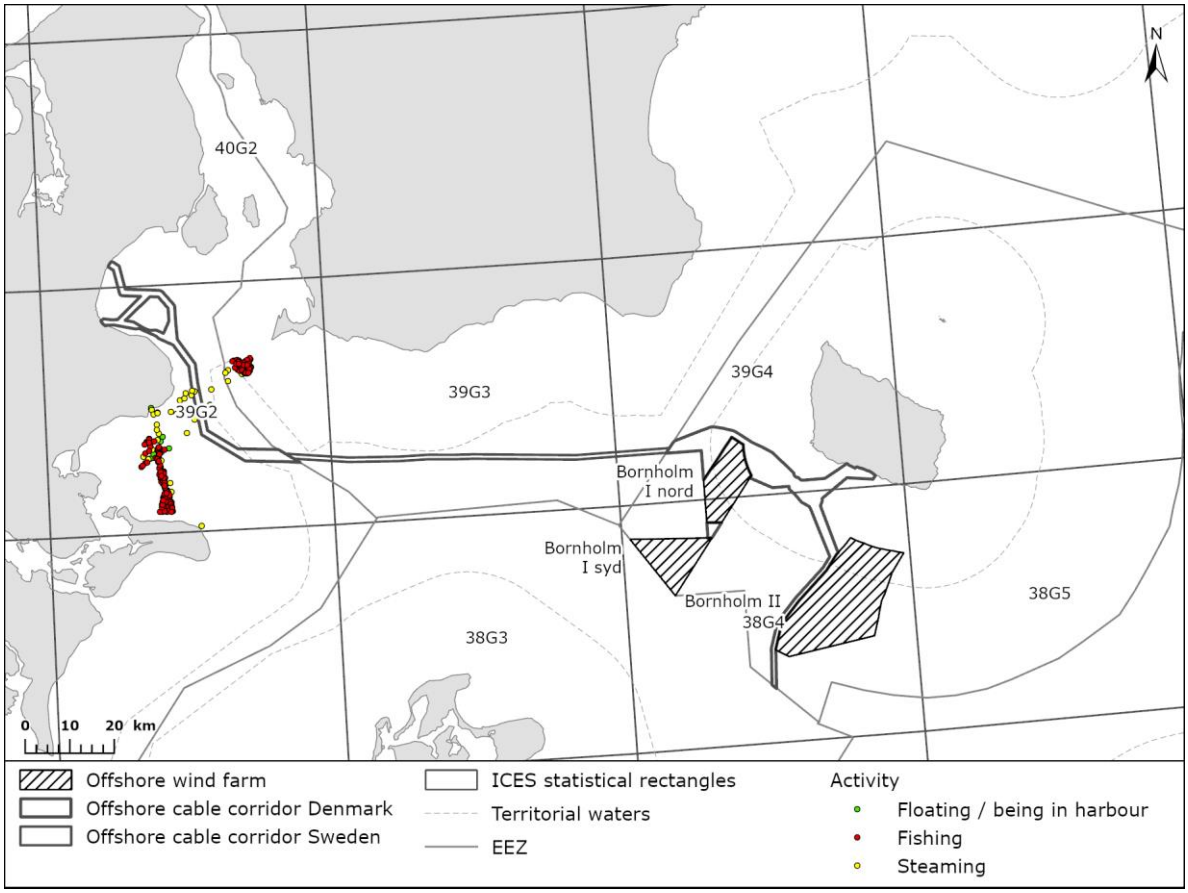

Figure 12-19 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2011 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

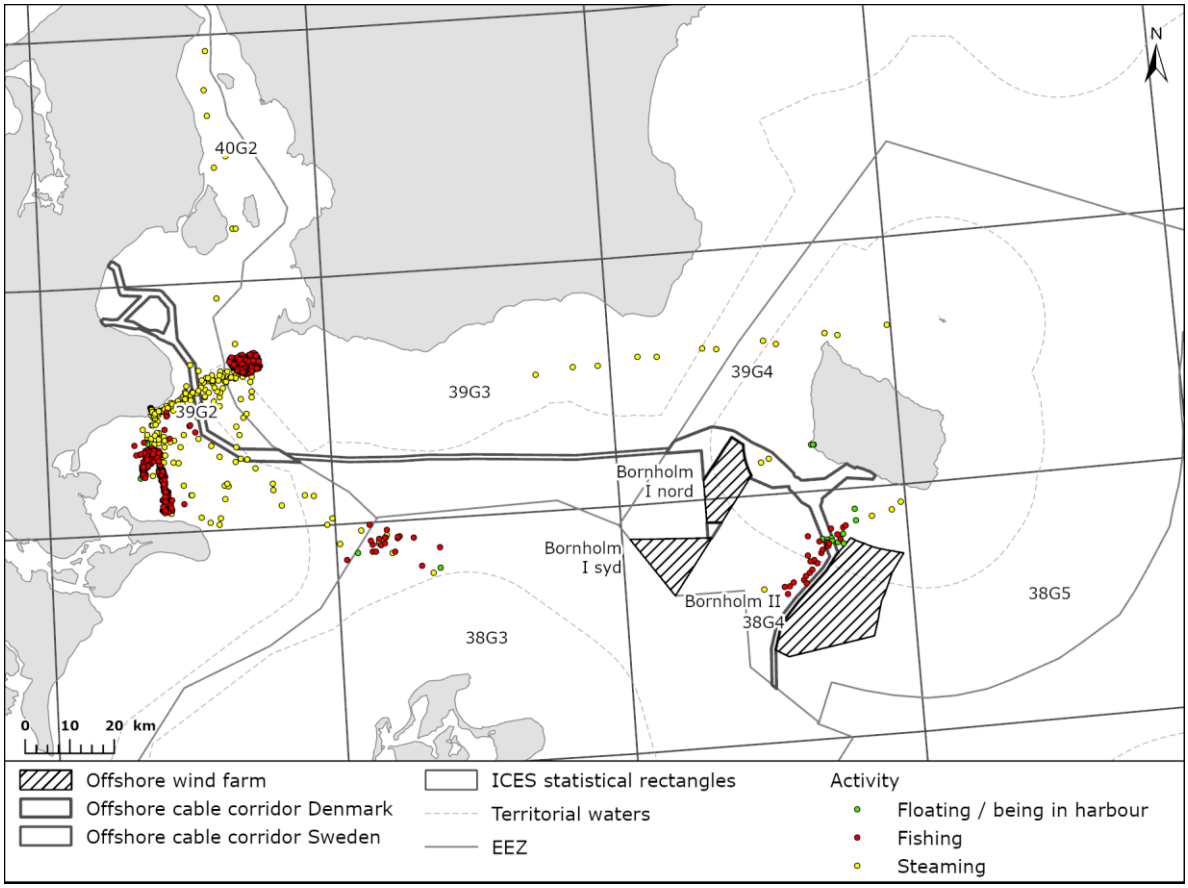

Figure 12-20 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2012 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

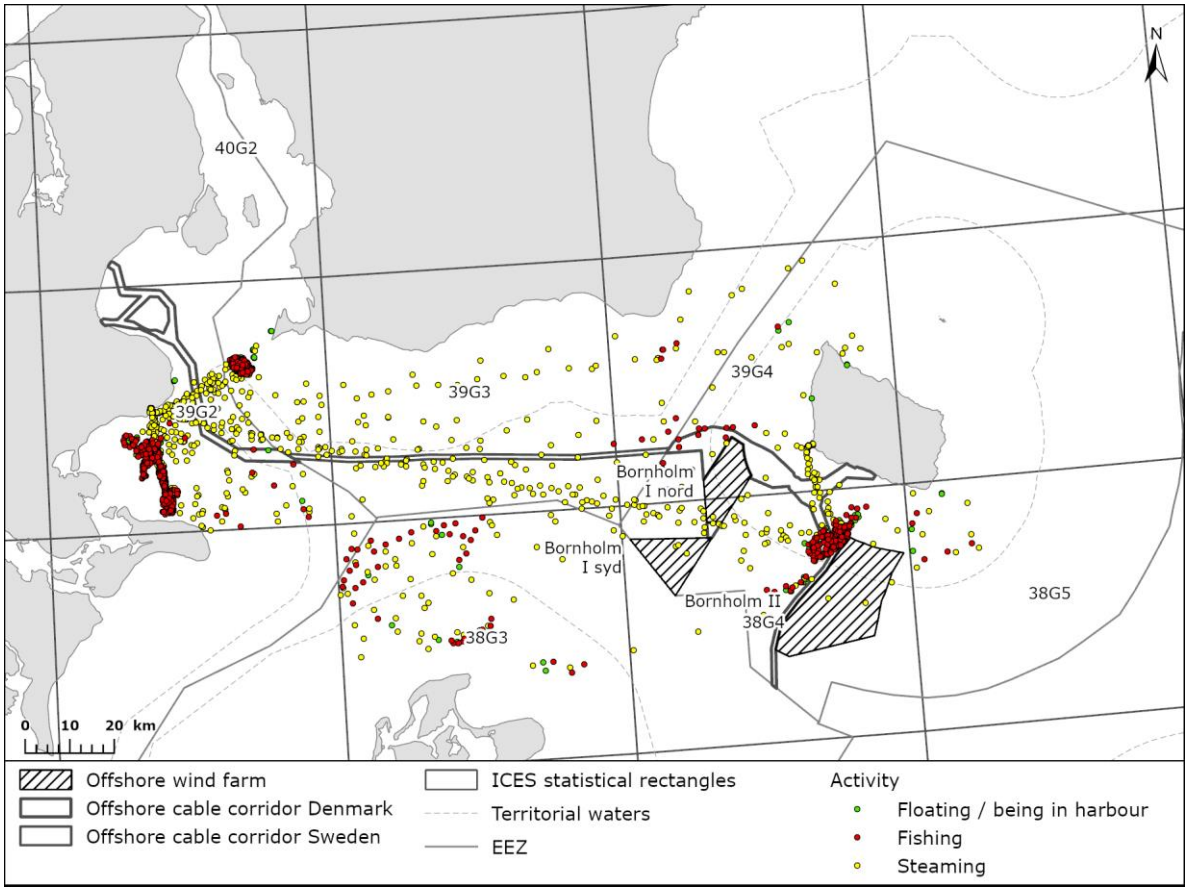

Figure 12-21 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2013 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

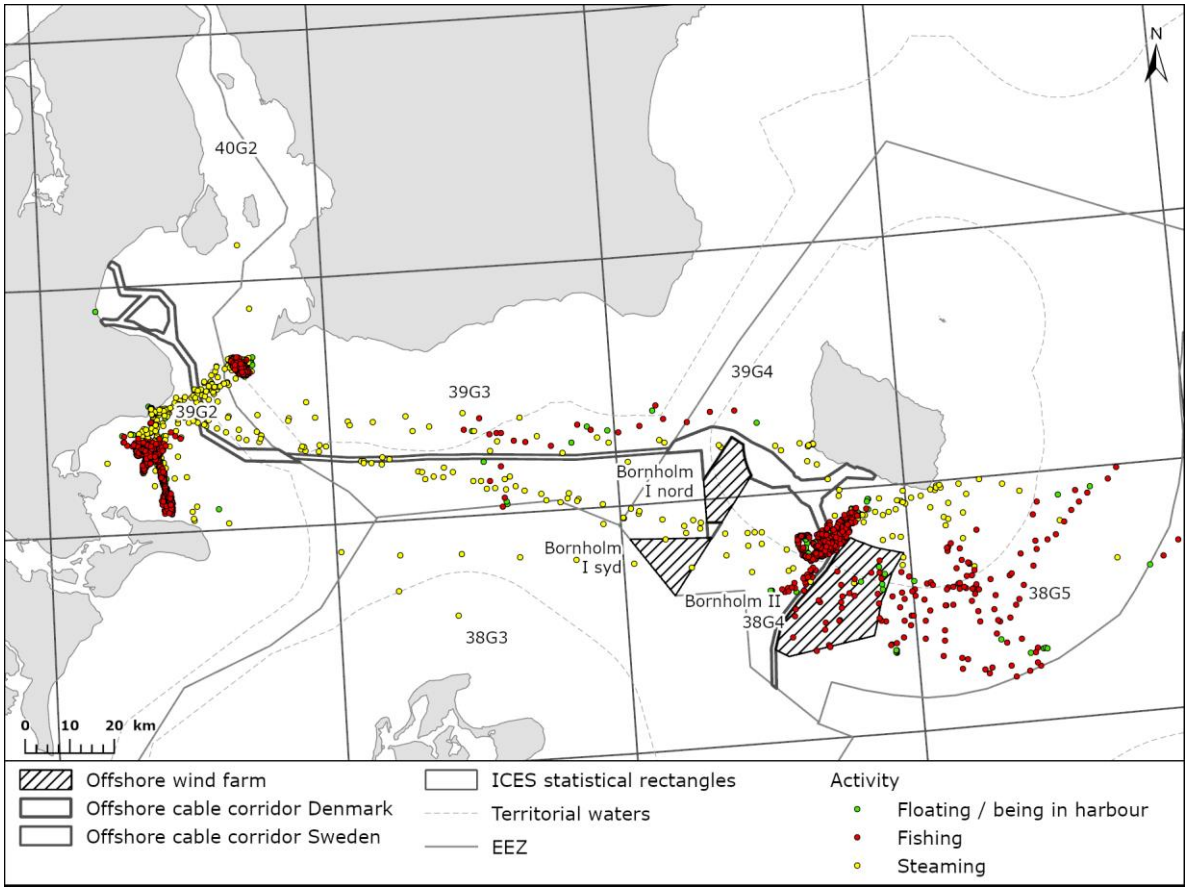

Figure 12-22 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2014 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

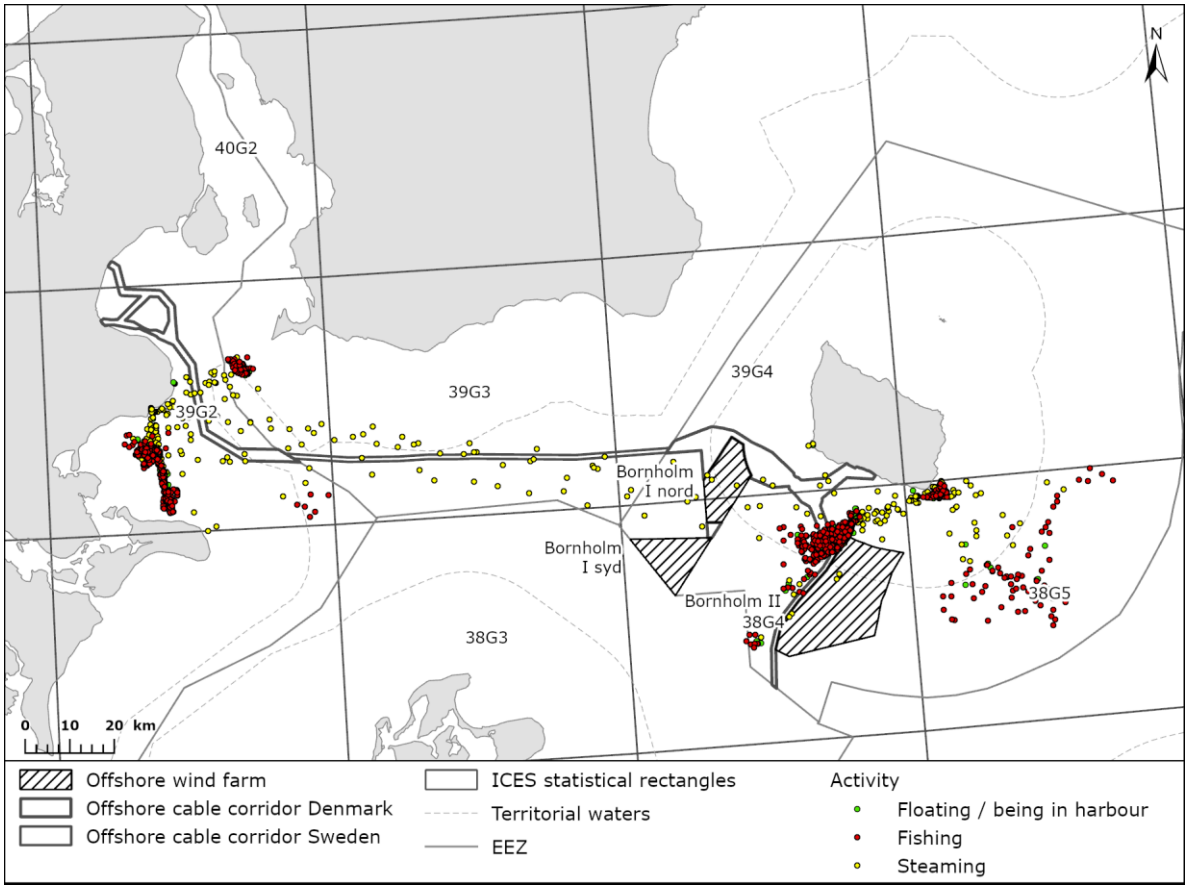

Figure 12-23 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2015 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

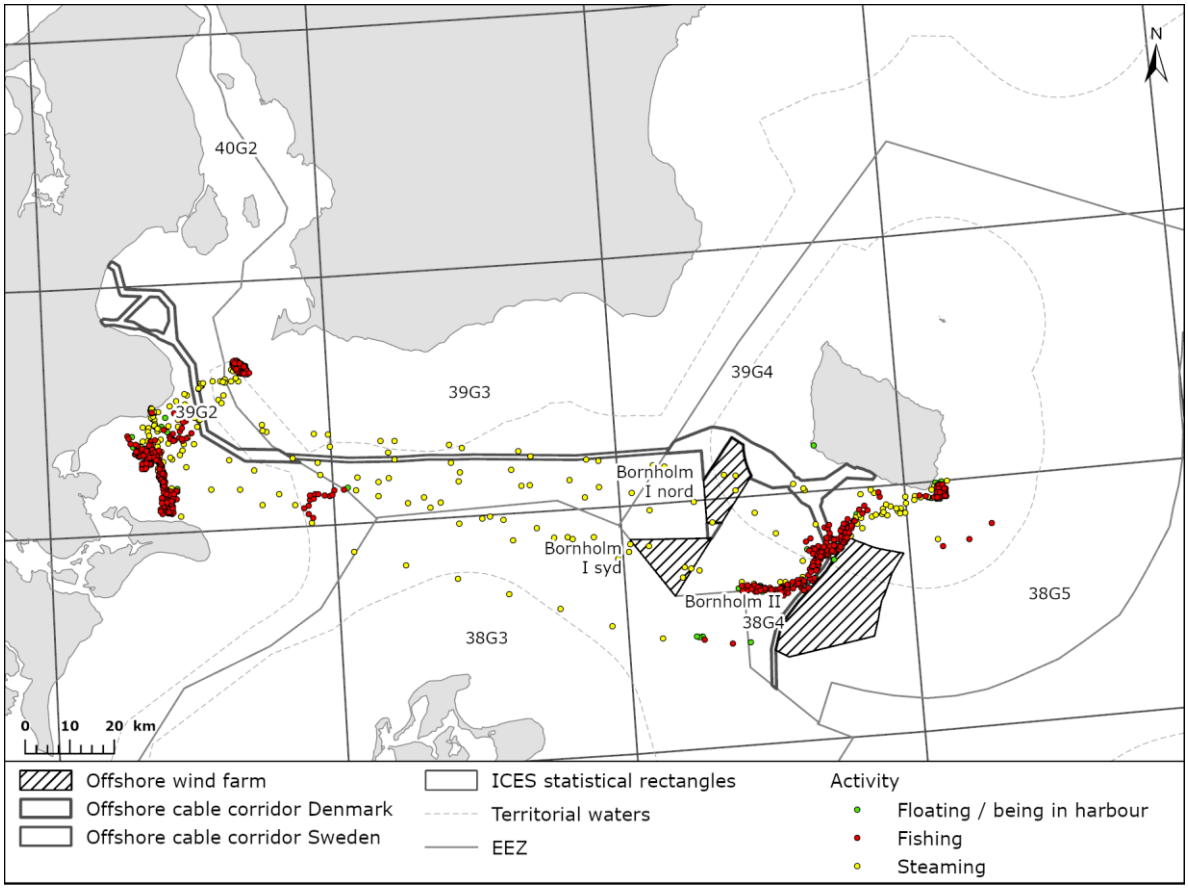

Figure 12-24 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2016 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

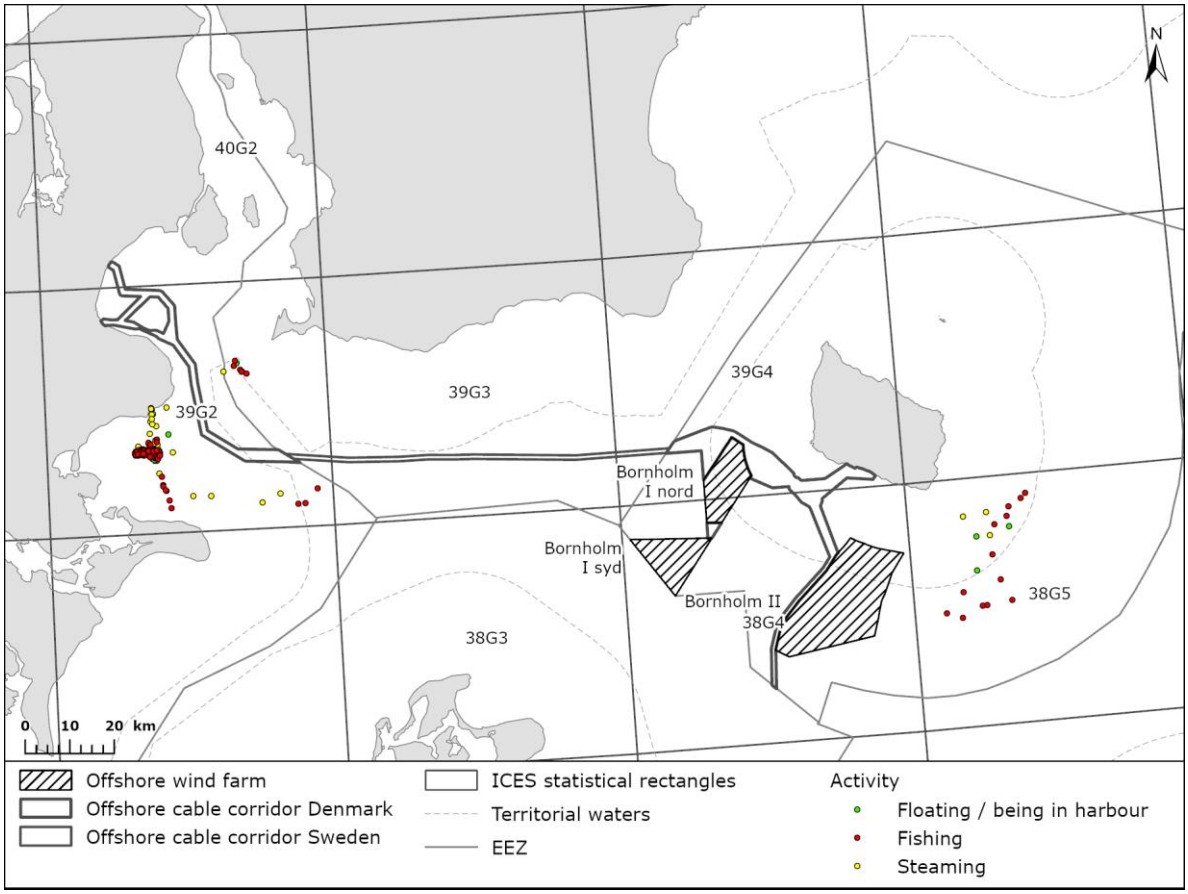

Figure 12-25 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2017 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

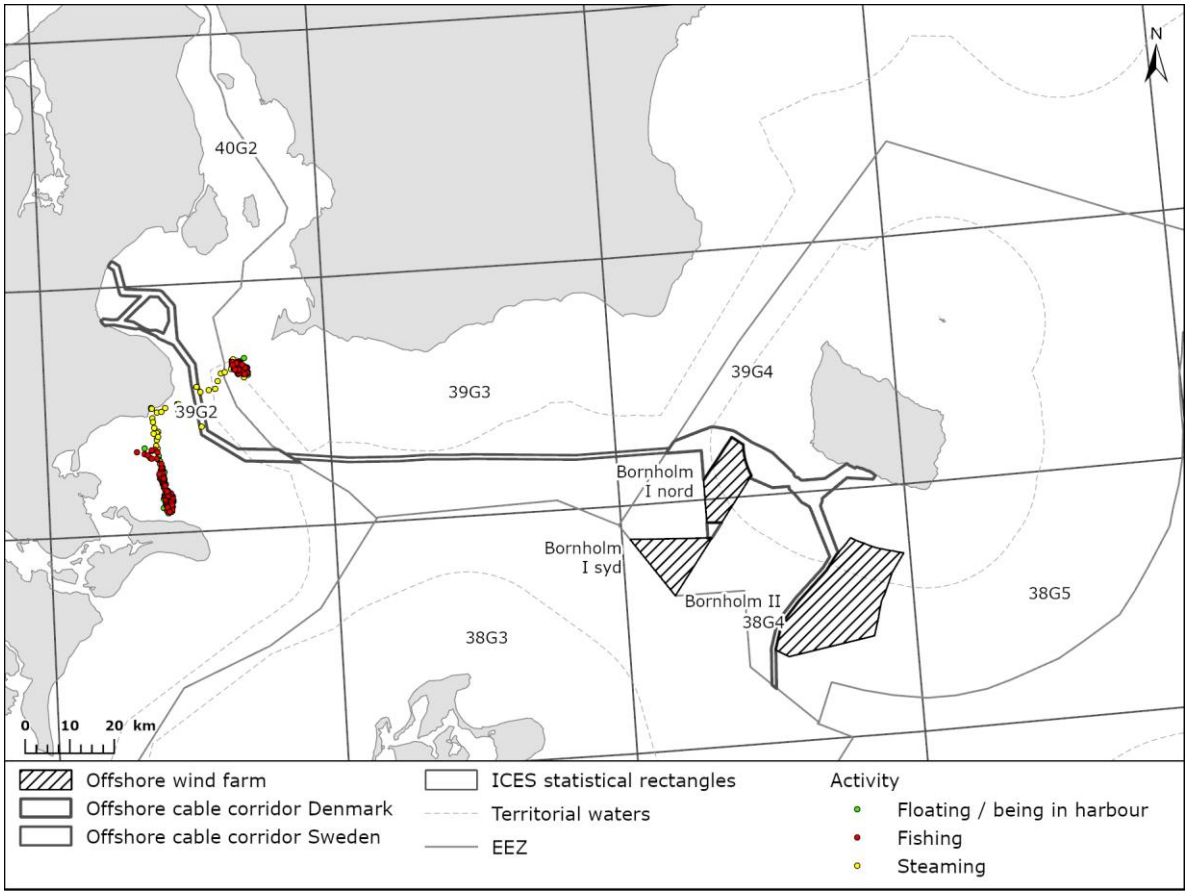

Figure 12-26 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2018 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

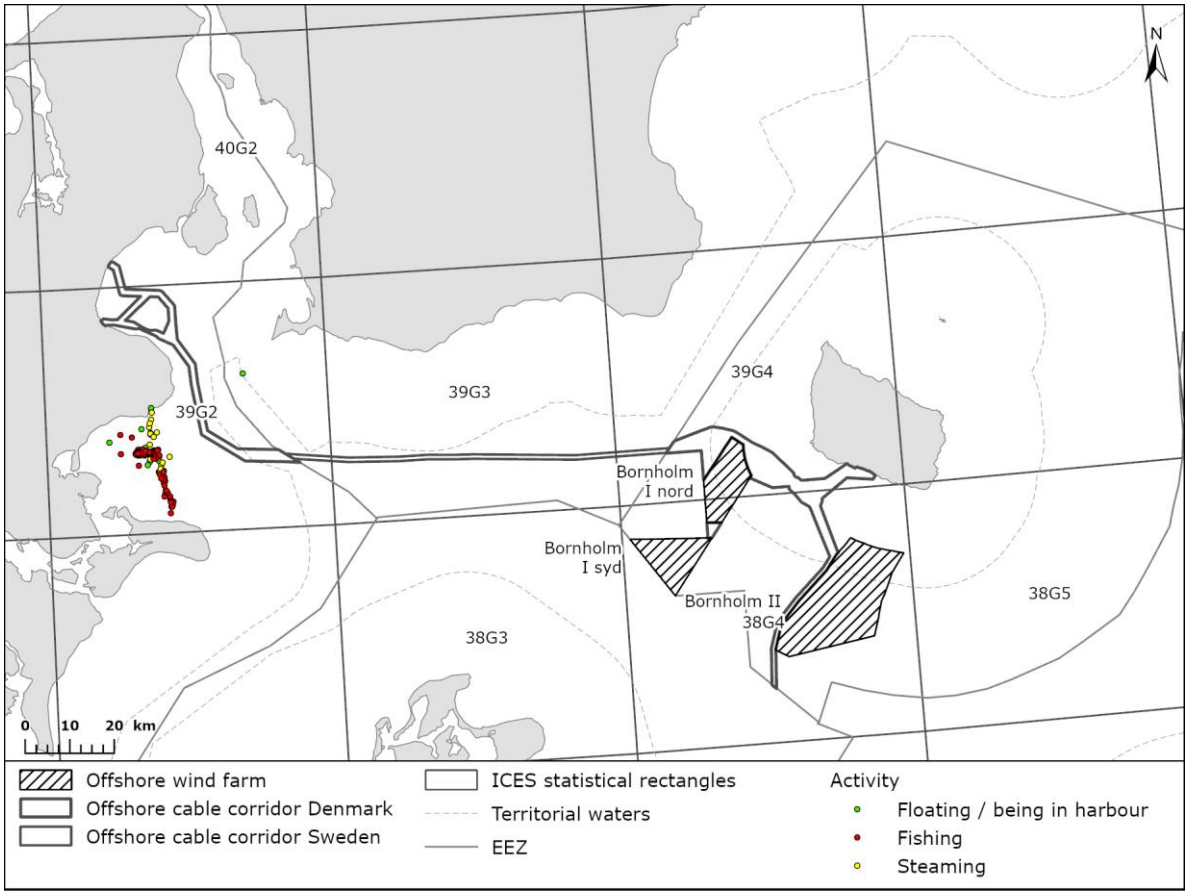

Figure 12-27 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2019 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

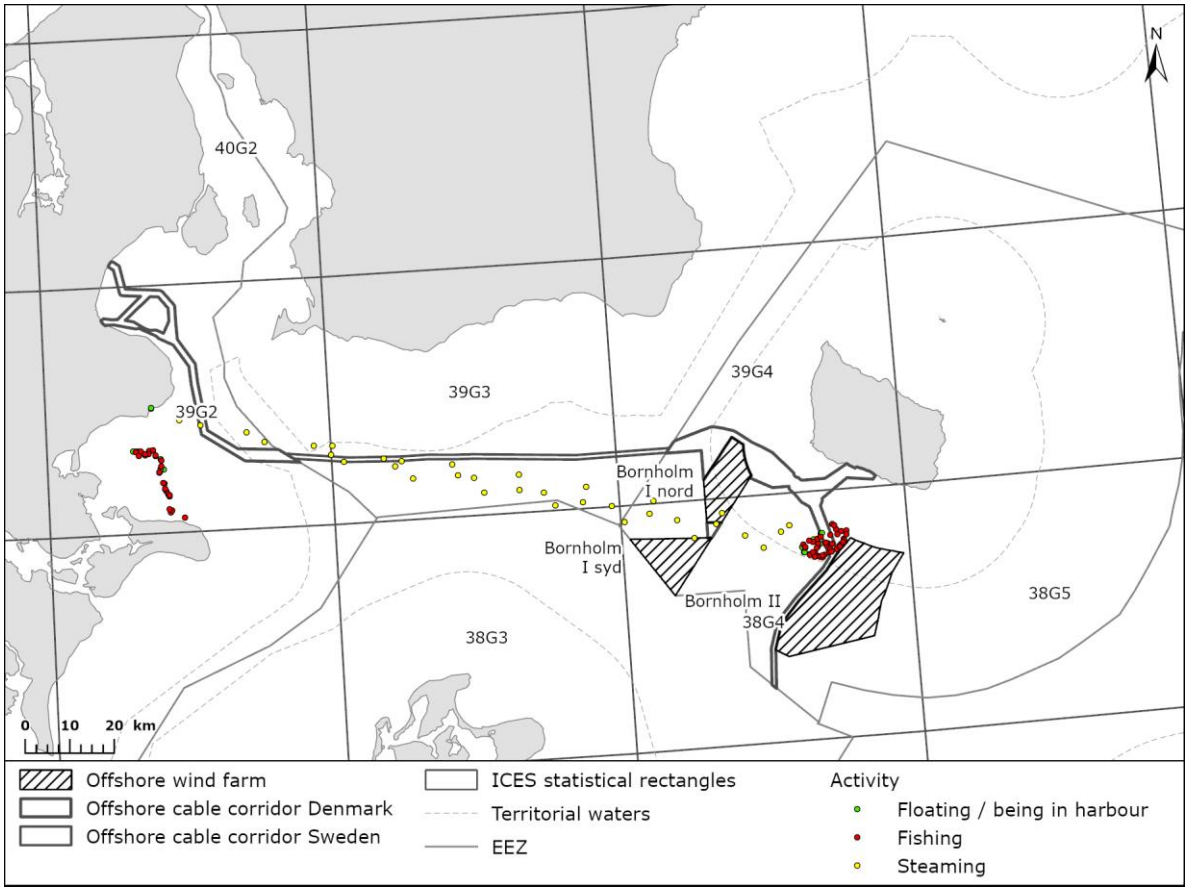

Figure 12-28 Detailed mapping of sandeel fishing grounds by Danish vessels (≥ 12 m) in 2020 in the ICES rectangles: 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5. The activity of the vessel is either considered as floating / being in harbour (green), fishing (red) or steaming (yellow) based on SI_SP. SI_SP is the instant speed of the vessel. The activity i.e., floating, fishing and steaming was either determined by segmented

APPENDIX 5
SWEDISH VMS DATA FOR RELEVANT ICES RECTANGLE DIVDED BY GEAR

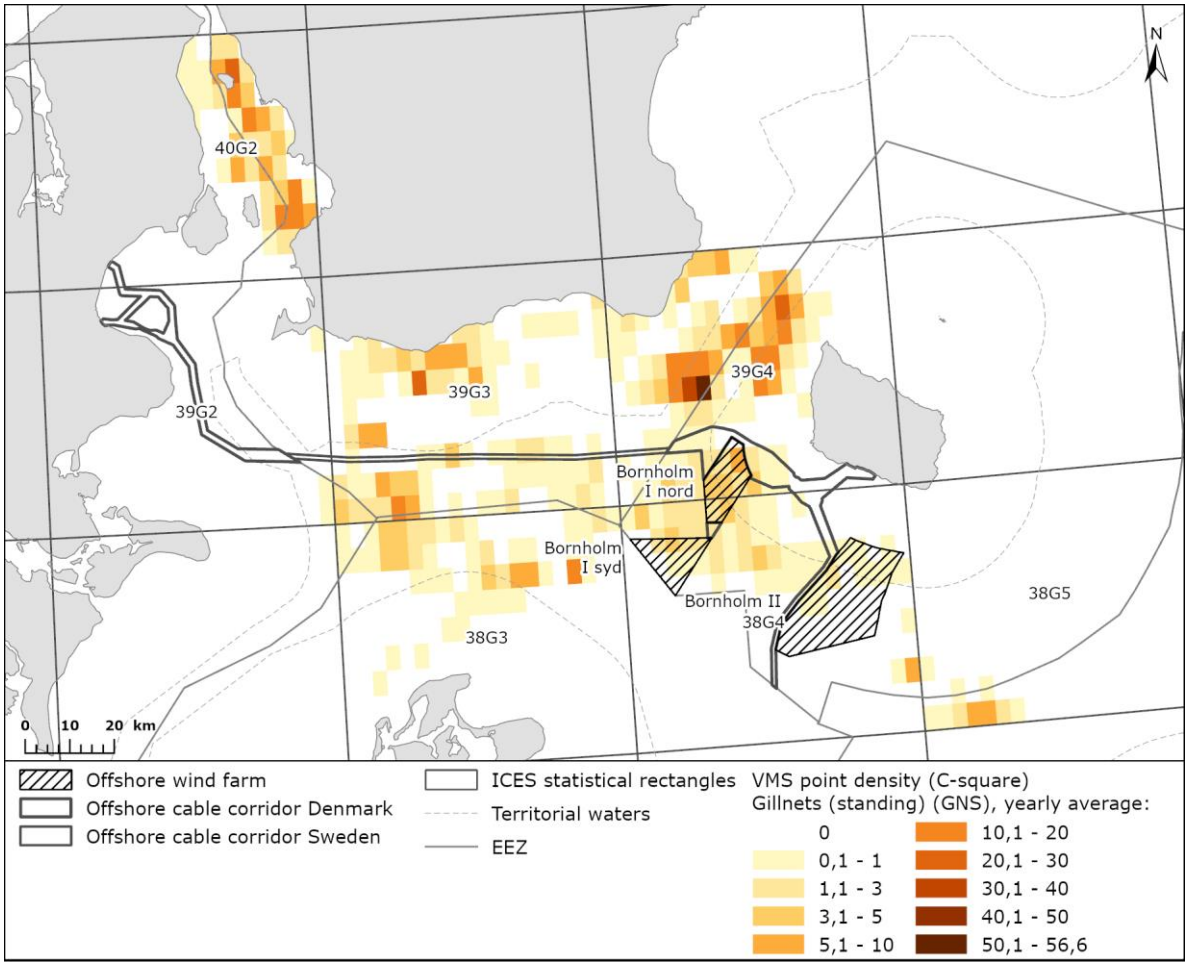

Figure 12-29 The distribution of gillnets (standing) by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

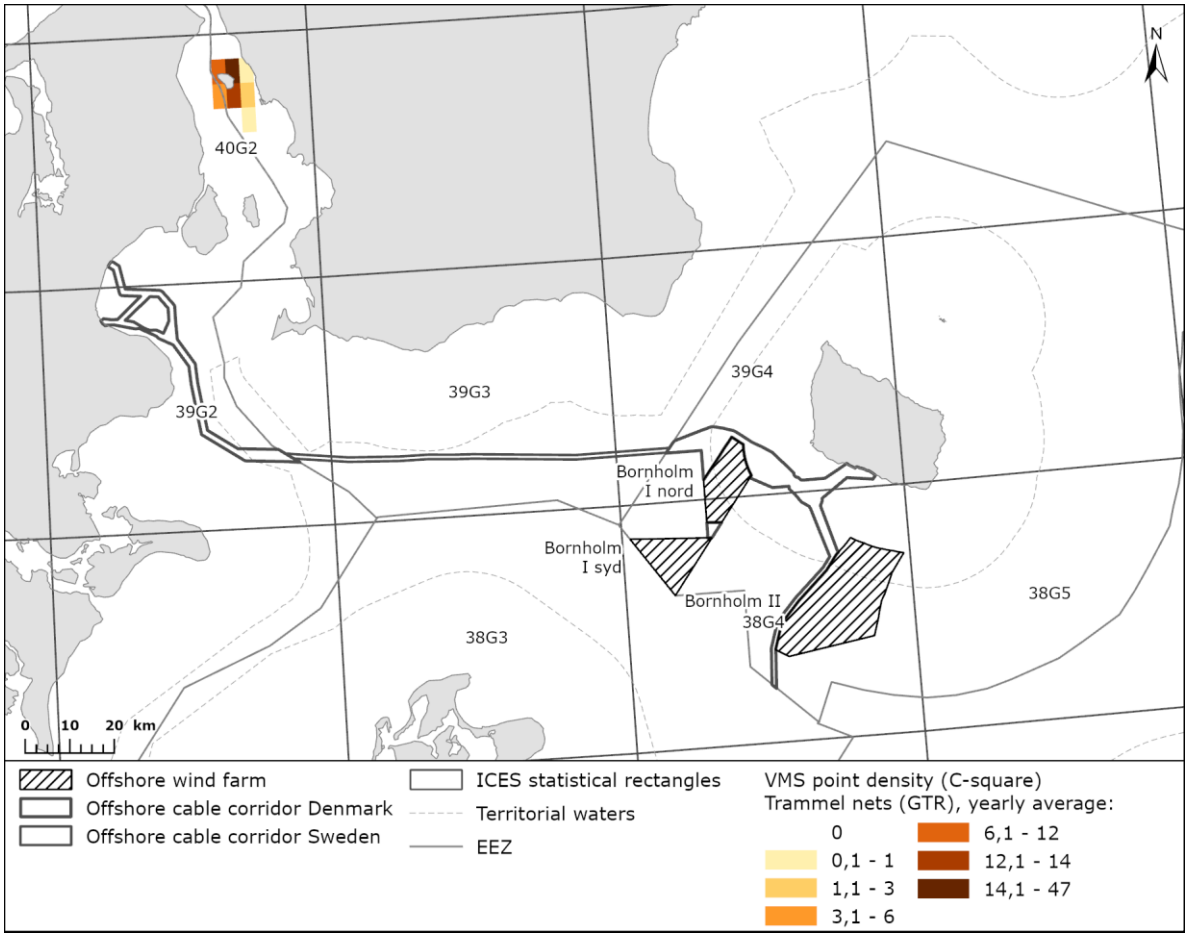

Figure 12-30 The distribution of trammel nets by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

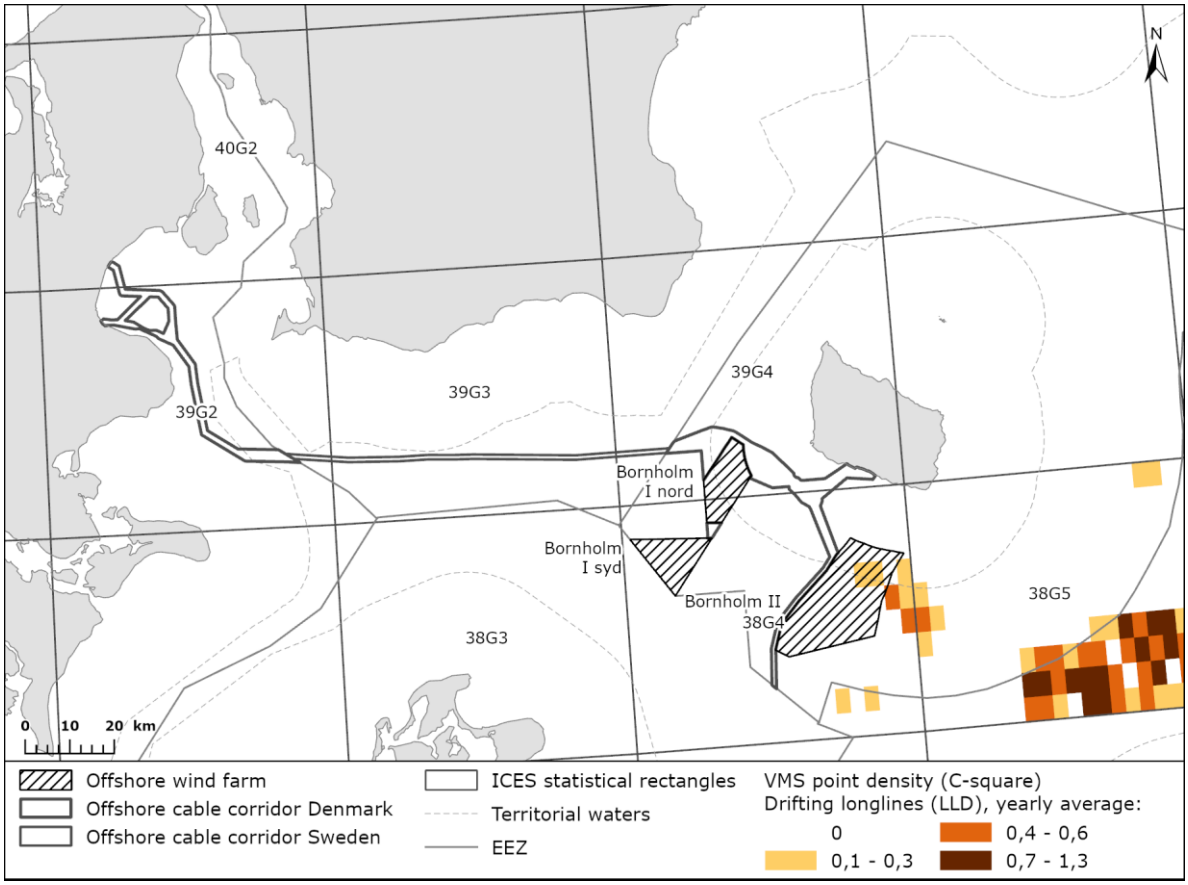

Figure 12-31 The distribution of drifting longlines by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

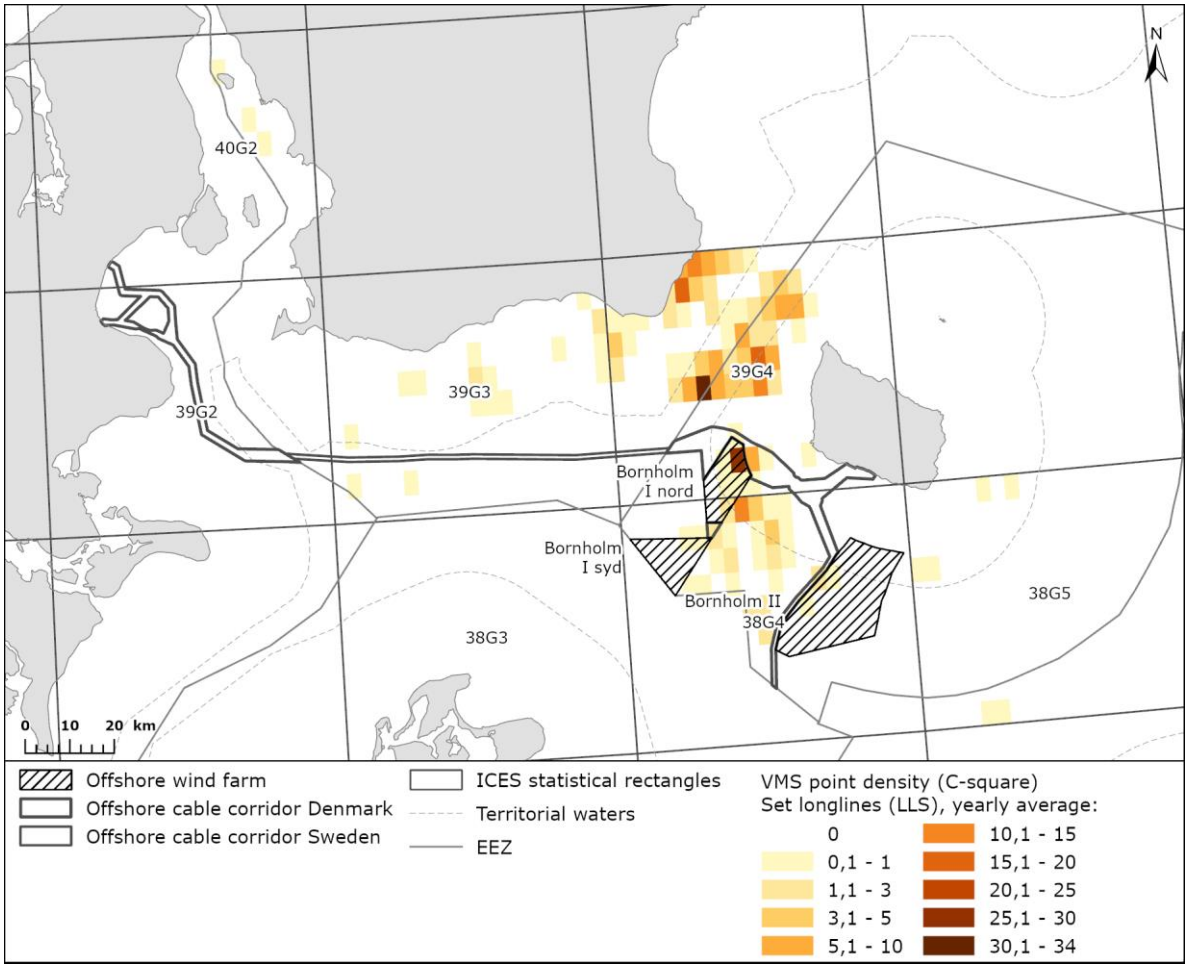

Figure 12-32 The distribution of set longlines by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

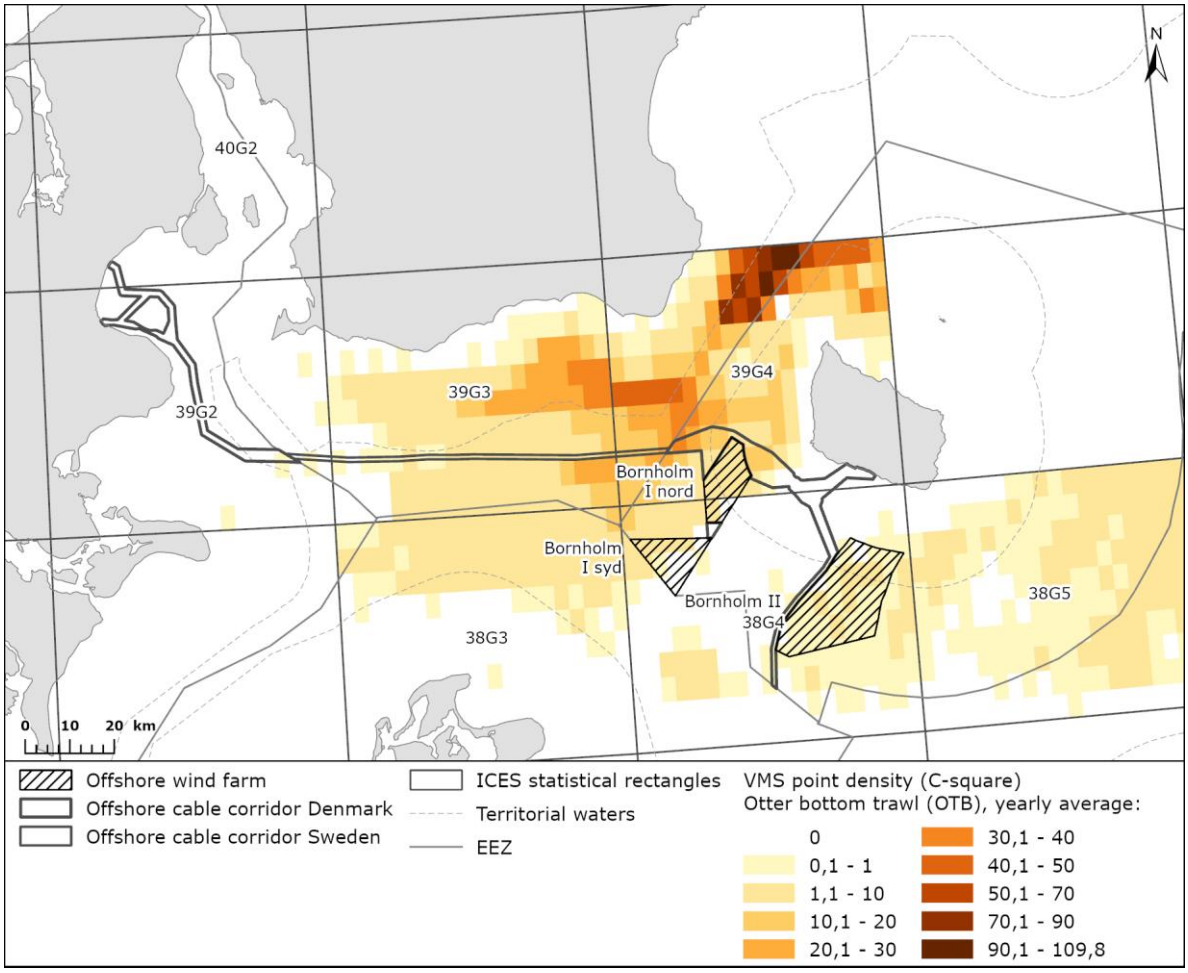

Figure 12-33 The distribution of otter bottom trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

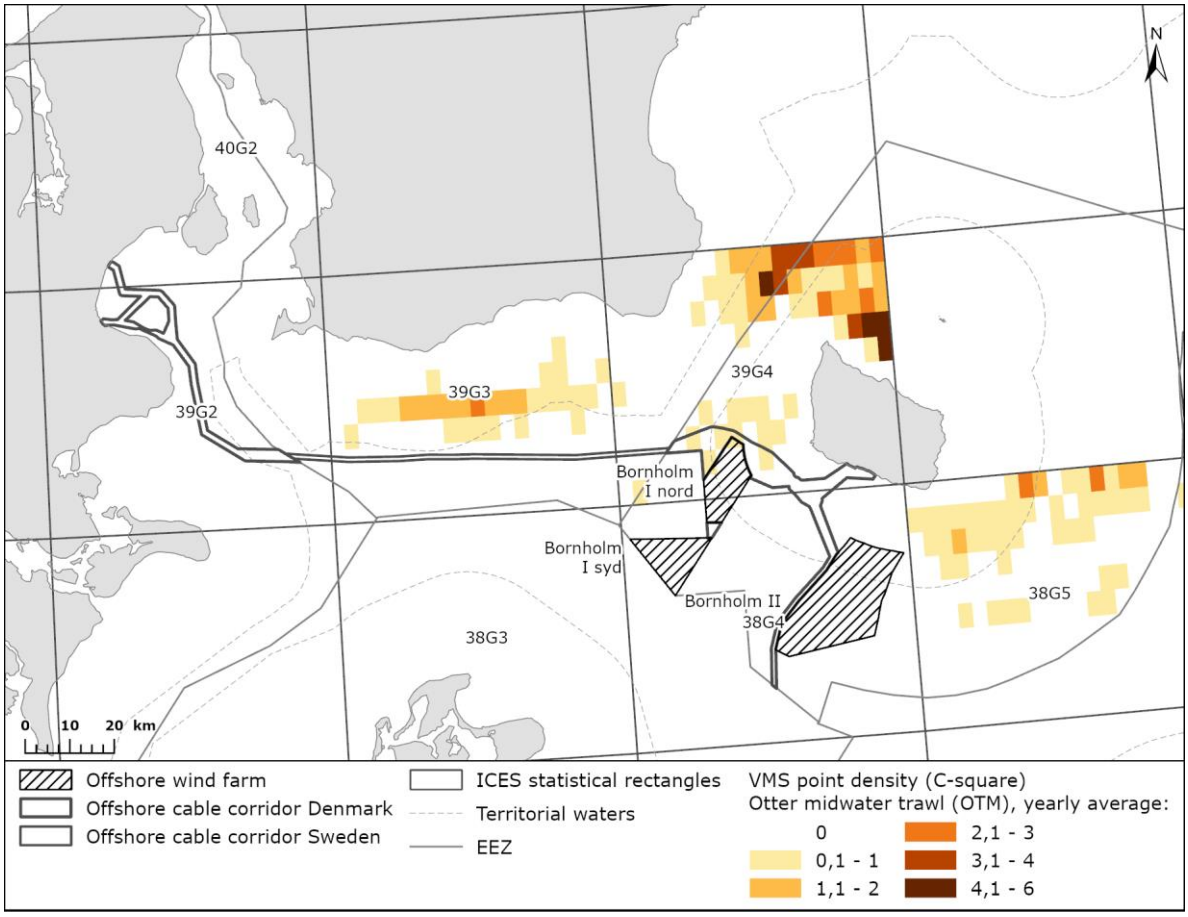

Figure 12-34 The distribution of otter midwater trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

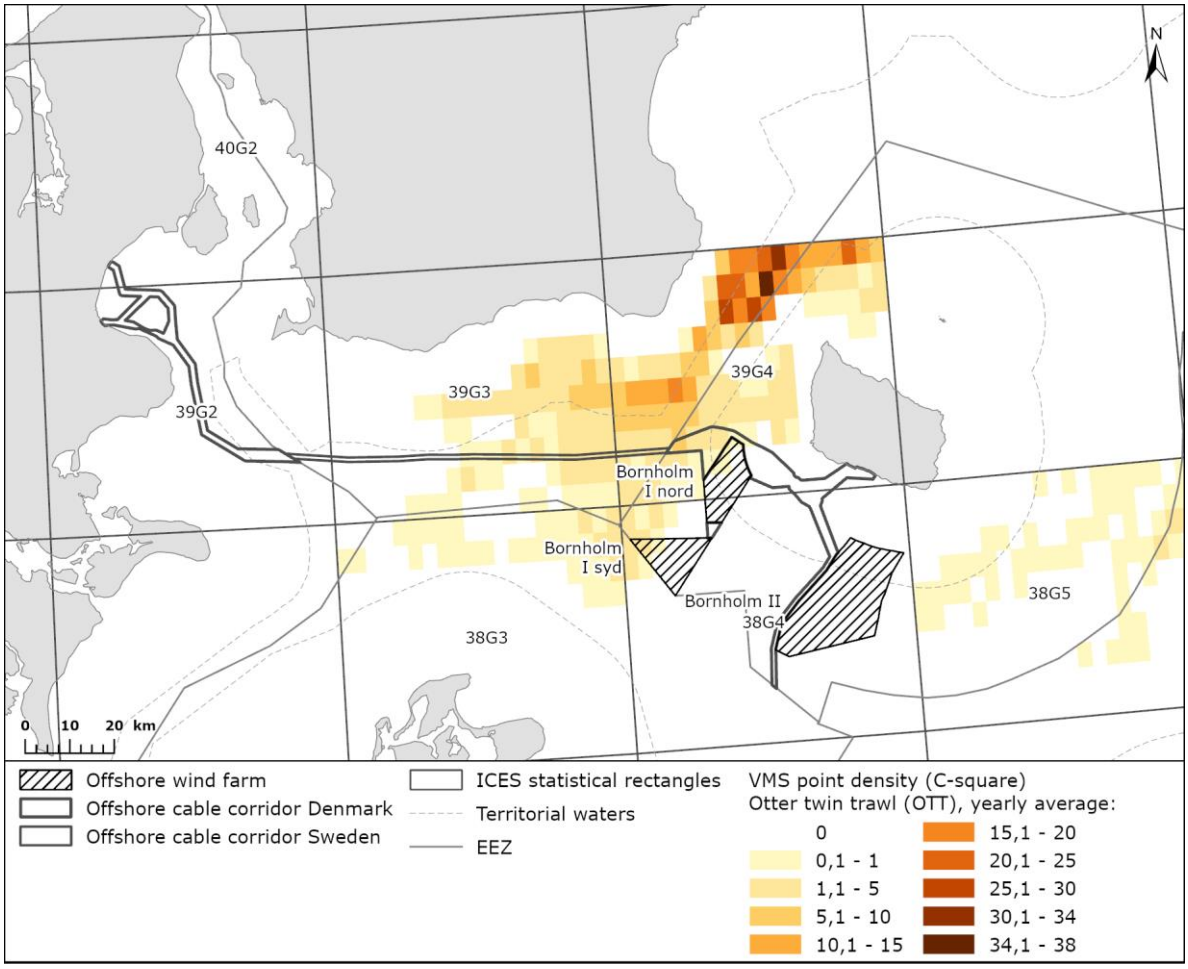

Figure 12-35 The distribution of otter twin trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

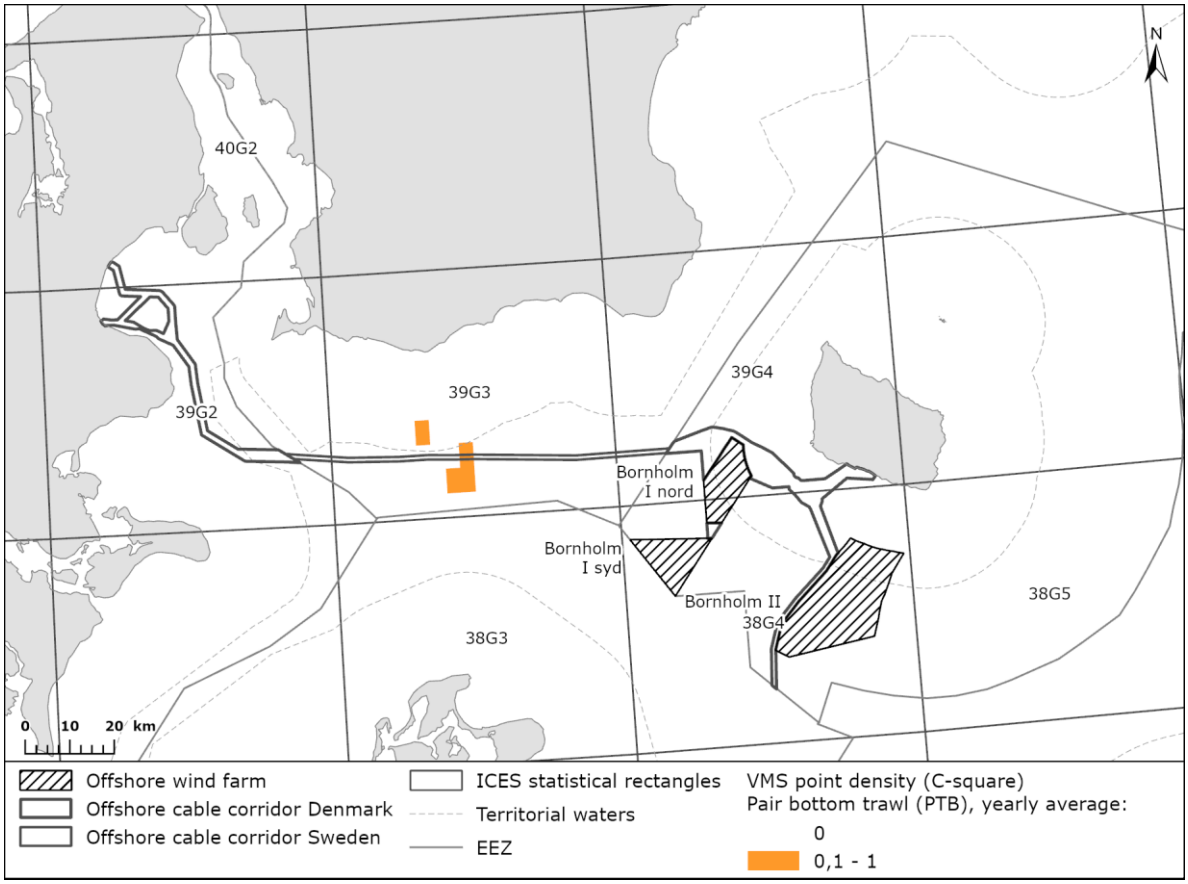

Figure 12-36 The distribution of pair bottom trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

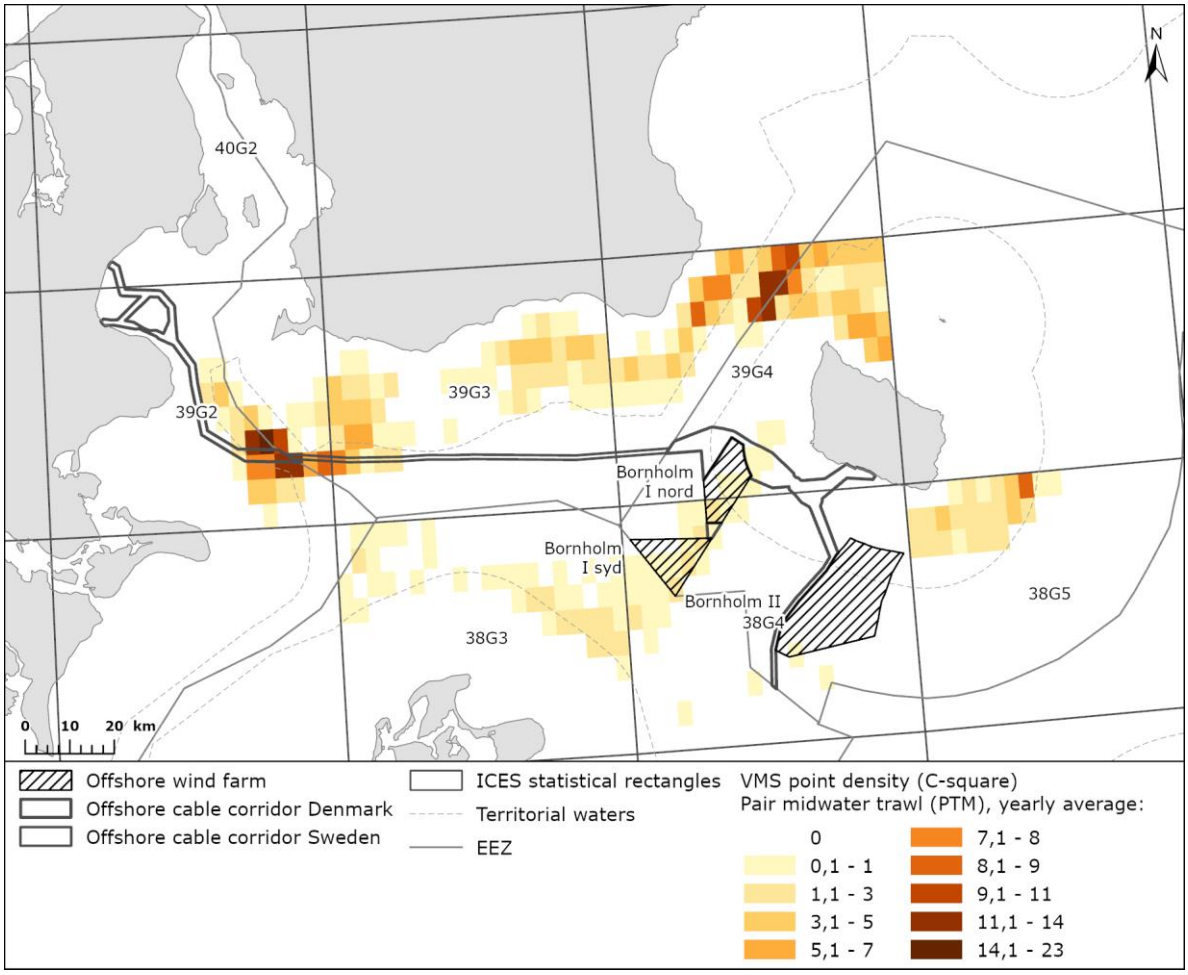

Figure 12-37 The distribution of pair midwater trawlers by averaged VMS point density in a C-square grid from the period 2010 to 2020 in the investigated ICES rectangles 40G2, 39G2, 39G3, 39G4, 38G3, 38G4 and 38G5.

APPENDIX 6
ANALYSIS OF SWEDISH FISHERY IN ICES RECTANGLES – (≥ 12 M)

Table 12-28 Landings [t] within ICES rectangle 40G2 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	112.6	174.0	28.5	11.5	8.2	7.7	8.0	30.3	6.5
Otter bottom trawls	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Otter twin trawls	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pots and traps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Set longlines	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trammel nets	0.0	0.0	0.0	34.8	20.5	26.1	0.2	0.0	0.0	0.0	0.0

Table 12-29 Landed value [x1,000 DKK] within ICES rectangle 40G2 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	668.2	927.3	304.2	129.1	95.6	91.4	99.8	402.5	82.7
Otter bottom trawls	17.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Otter twin trawls	18.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pots and traps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Set longlines	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trammel nets	0.0	0.0	0.0	337.9	262.3	326.1	2.9	0.0	0.0	0.0	0.0

Table 12-30 Landings [t] within ICES rectangle 39G2 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	0.0	0.6	0.0	1.7	0.0	0.0	0.0	0.0	0.0
Otter bottom trawls	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Pair midwater trawls	702.4	354.0	252.0	188.1	0.0	0.0	0.0	394.0	0.0	0.0	22.5

Table 12-31 Landed value [x1,000 DKK] within ICES rectangle 39G2 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	0.0	5.0	0.0	13.7	0.0	0.0	0.0	0.0	0.0
Otter bottom trawls	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	0.0
Pair midwater trawls	2499.7	1539.2	1248.5	758.9	0.0	0.0	0.0	1176.7	0.0	0.0	93.9

Table 12-32 Landings [t] within ICES rectangle 39G3 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	2.5	27.9	17.0	41.0	79.1	27.2	28.2	4.2	0.0
Hand and pole lines	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Otter bottom trawls	173.1	567.8	306.4	127.7	232.4	511.8	442.0	25.4	80.3	39.8	1.4
Otter midwater trawls	0.0	0.0	0.0	0.0	0.0	0.0	0.0	324.2	0.0	0.0	0.0
Otter twin trawls	0.0	4.7	109.8	93.1	43.5	185.1	101.7	3.6	11.1	11.0	0.0
Pair bottom trawls	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pair midwater trawls	893.7	957.6	1522.5	854.3	412.4	675.3	266.4	944.5	501.8	346.3	0.0
Set longlines	0.0	0.0	1.9	4.4	1.2	0.6	0.0	0.0	0.0	0.0	0.0

Table 12-33 Landed value [x1,000 DKK] within ICES rectangle 39G3 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	15.6	300.9	149.2	374.8	734.2	242.8	318.5	44.6	0.0
Hand and pole lines	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Otter bottom trawls	1734.7	6172.1	2684.5	1314.4	1848.2	4261.1	3518.6	208.8	845.9	372.3	5.2
Otter midwater trawls	0.0	0.0	0.0	0.0	0.0	0.0	0.0	923.5	0.0	0.0	0.0
Otter twin trawls	0.0	43.9	1094.9	955.7	364.4	1463.8	812.2	36.3	111.9	91.2	0.0
Pair bottom trawls	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pair midwater trawls	2517.0	4354.7	7402.5	3344.1	1365.4	1913.2	1023.3	3053.3	1386.3	1295.4	0.0
Set longlines	0.0	0.0	19.1	34.2	9.6	2.7	0.0	0.0	0.0	0.0	0.0

Table 12-34 Landings [t] within ICES rectangle 39G4 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	49.6	82.4	54.3	83.6	60.9	116.0	35.3	18.0	0.0
Otter bottom trawls	536.2	1239.7	981.4	525.6	681.8	825.6	710.1	344.8	305.1	300.2	30.9
Otter midwater trawls	6.7	5.8	40.7	0.0	82.1	199.6	422.3	525.0	894.7	1129.2	51.7
Otter twin trawls	0.0	30.7	335.4	371.3	278.6	355.9	350.7	127.5	99.2	32.7	0.0
Pair bottom trawls	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pair midwater trawls	1382.7	1394.5	1272.2	2153.5	710.7	1719.4	910.6	1325.6	1134.5	2967.4	1804.7
Set longlines	0.0	0.0	29.4	123.0	42.8	18.0	0.0	0.0	0.0	0.0	0.0

Table 12-35 Landed value [x1,000 DKK] within ICES rectangle 39G4 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	516.0	762.7	460.1	648.3	456.5	892.7	299.0	164.2	0.0
Otter bottom trawls	5162.1	12287.9	7944.3	4358.8	6056.3	5996.0	5068.1	2704.1	2686.2	2352.6	98.4
Otter midwater trawls	12.9	48.1	129.2	0.0	208.6	728.0	778.5	1234.6	1578.0	1888.0	110.5
Otter twin trawls	0.0	290.6	2994.5	3436.6	2316.0	2700.2	2737.4	1023.2	841.9	251.0	0.0
Pair bottom trawls	27.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pair midwater trawls	3304.8	5112.3	6058.5	7364.6	2316.9	5544.6	2493.3	3256.2	2983.5	9372.8	6042.7
Set longlines	0.0	0.0	291.0	1158.6	327.8	120.2	0.0	0.0	0.0	0.0	0.0

Table 12-36 Landings [t] within ICES rectangle 38G3 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	0.0	18.9	30.2	17.7	27.0	5.6	0.0	0.0	0.0
Otter bottom trawls	2.9	22.3	154.9	38.5	26.8	94.0	80.4	0.5	0.2	30.6	0.0
Otter twin trawls	0.0	0.0	16.3	25.5	9.5	30.5	6.7	0.0	0.0	2.3	0.0
Pair midwater trawls	490.5	884.4	487.6	239.0	131.6	510.9	554.7	271.9	142.1	0.0	0.0

Table 12-37 Landed value [x1,000 DKK] within ICES rectangle 38G3 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	0.0	0.0	0.0	186.0	224.0	140.3	248.5	43.6	0.0	0.0	0.0
Otter bottom trawls	25.5	211.7	1482.0	332.3	195.0	689.8	633.1	2.6	1.4	308.7	0.0
Otter twin trawls	0.0	0.0	134.2	187.7	56.4	228.0	49.1	0.0	0.0	18.4	0.0
Pair midwater trawls	786.6	2631.7	2283.1	1179.1	409.4	1505.0	1664.6	819.5	330.2	0.0	0.0

Table 12-38 Landings [t] within ICES rectangle 38G4 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gillnets (standing)	0.0	0.0	10.0	14.0	3.3	0.0	0.0	0.1	0.0	0.0	0.0
Otter bottom trawls	32.3	70.3	48.5	41.6	30.0	63.1	31.2	0.0	0.0	2.8	0.0
Otter twin trawls	0.0	0.0	11.9	23.5	11.6	0.6	0.0	0.0	0.0	0.0	0.0
Pair midwater trawls	865.3	565.5	70.0	70.3	322.6	133.4	597.2	153.4	0.0	0.0	102.1
Set longlines	0.0	0.0	0.0	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-39 Landed value [x1,000 DKK] within ICES rectangle 38G4 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	140.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gillnets (standing)	0.0	0.0	107.1	115.7	31.0	0.0	0.0	1.1	0.0	0.0	0.0
Otter bottom trawls	326.6	706.8	429.0	343.4	242.3	481.4	227.8	0.0	0.0	24.1	0.0

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Otter twin trawls	0.0	0.0	101.7	181.4	68.1	3.9	0.0	0.0	0.0	0.0	0.0
Pair midwater trawls	1685.9	1365.3	379.3	250.6	1125.6	477.1	1772.2	500.4	0.0	0.0	401.2
Set longlines	0.0	0.0	0.0	143.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-40 Landings [t] within ICES rectangle 38G5 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	2.1	3.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gillnets (standing)	0.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0
Otter bottom trawls	12.1	91.4	186.2	201.1	15.5	66.6	43.6	52.0	6.7	1.2	0.0
Otter midwater trawls	0.0	21.5	0.0	50.3	30.0	0.0	103.2	91.0	67.7	52.0	0.0
Otter twin trawls	0.0	1.1	198.1	116.6	7.6	14.1	0.0	0.0	0.0	0.0	0.0
Pair midwater trawls	114.6	328.5	508.0	30.0	108.4	14.6	142.9	1705.4	265.6	273.2	54.8
Set longlines	0.0	0.0	0.0	0.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0

Table 12-41 Landed value [x1,000 DKK] within ICES rectangle 38G5 by the Swedish fleet (≥ 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	82.7	99.0	262.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gillnets (standing)	0.0	0.0	0.0	0.0	48.6	0.0	0.0	0.0	0.0	0.0	0.0
Otter bottom trawls	102.1	744.0	1512.1	1338.3	121.5	383.8	242.9	385.6	65.6	7.5	0.0
Otter midwater trawls	0.0	166.1	0.0	107.8	68.6	0.0	159.2	240.0	165.2	202.1	0.0
Otter twin trawls	0.0	8.3	1582.1	841.3	50.1	86.9	0.0	0.0	0.0	0.0	0.0
Pair midwater trawls	161.3	934.8	1701.7	97.2	286.0	47.2	313.4	4012.9	728.1	854.5	194.3
Set longlines	0.0	0.0	0.0	5.1	12.1	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 7
ANALYSIS OF SWEDISH FISHERY IN ICES RECTANGLES – (< 12 M)

Tabel 12-1 Landings [t] within ICES rectangle 40G2 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fyke nets	4,3	7,4	4,7	5,1	5,5	4,8	6,7	2,7	3,2	1,5	1,4
Gillnets (standing)	1288,5	857,1	836,3	685,4	712,3	583,1	544,0	640,0	741,2	788,5	715,9
Hand and pole lines	3,2	0,3	0,0	0,0	6,4	3,1	0,9	0,0	0,3	0,4	0,0
Otter midwater trawls	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	4,5
Pots and traps	0,0	0,0	0,0	0,3	0,0	0,3	0,5	0,0	0,1	2,1	8,5
Set longlines	0,0	0,0	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Trammel nets	95,6	68,1	54,2	28,9	61,0	56,1	129,5	93,3	36,8	37,7	53,1

Tabel 12-2 Landed value [x1,000 DKK] within ICES rectangle 40G2 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fyke nets	133,0	220,8	171,7	217,7	195,8	124,5	131,3	74,8	155,2	75,7	74,7
Gillnets (standing)	7130	6209	6031	4997	5154	4926	4044	5080	6096	7846	5474
Hand and pole lines	30,0	3,4	0,0	0,0	58,7	37,9	10,8	0,0	3,2	3,7	0,1
Otter midwater trawls	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	7,0
Pots and traps	0,0	0,0	0,0	3,9	0,2	2,3	0,5	0,0	1,1	28,4	160,8
Set longlines	0,0	0,0	0,7	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Trammel nets	949,2	849,6	646,2	278,6	598,7	534,8	1323,8	986,7	377,0	492,5	798,3

Tabel 12-3 Landings [t] within ICES rectangle 39G2 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fyke nets	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Gillnets (standing)	23,8	5,7	5,3	6,0	3,7	4,0	1,7	2,0	4,5	2,7	5,5
Hand and pole lines	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0
Otter bottom trawls	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,4	0,0	0,0
Pair midwater trawls	0,0	70,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Pots and traps	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Set longlines	0,8	1,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Trammel nets	0,4	1,3	0,3	0,0	0,1	0,1	0,5	1,7	0,0	1,8	1,2

Tabel 12-4 Landed value [x1,000 DKK] within ICES rectangle 39G2 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fyke nets	0,9	0,0	0,0	0,0	0,0	0,0	0,9	0,0	0,0	0,0	0,0
Gillnets (standing)	203,0	74,5	45,5	77,8	41,2	47,6	18,8	22,4	62,6	31,9	63,2
Hand and pole lines	0,0	0,0	0,0	0,0	1,1	0,0	0,0	0,0	0,0	0,0	0,0
Otter bottom trawls	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	3,6	0,0	0,0

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Pair midwater trawls	0,0	319,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Pots and traps	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0
Set longlines	6,0	11,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Trammel nets	6,5	12,8	2,8	0,0	1,1	0,9	3,7	15,3	0,0	11,0	7,9

Tabel 12-5 Landings [t] within ICES rectangle 39G3 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	0,0	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Fyke nets	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,4
Gillnets (standing)	303,6	346,3	286,0	175,0	138,8	125,1	289,2	78,9	94,2	23,0	11,9
Hand and pole lines	0,3	1,5	1,8	1,3	0,0	0,0	0,1	0,1	0,4	0,3	0,5
Otter bottom trawls	1,8	9,1	12,0	5,0	2,4	0,7	4,7	0,0	7,8	14,5	0,0
Otter midwater trawls	0,0	0,0	0,0	0,0	0,0	0,0	0,0	63,3	0,0	0,0	0,0
Otter twin trawls	0,0	0,0	0,0	11,0	2,7	0,0	0,7	0,0	0,0	0,0	0,0
Pair midwater trawls	0,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Pots and traps	0,0	0,0	1,7	0,0	0,0	1,2	0,5	1,0	3,2	3,7	0,0
Set longlines	92,9	92,4	30,0	6,7	7,0	4,8	0,5	3,7	18,3	3,9	0,7
Stationary uncovered pound nets	0,0	0,0	0,0	0,0	0,0	0,0	0,8	0,2	0,2	0,0	0,2
Trammel nets	3,3	0,1	2,1	1,6	0,3	0,6	1,5	0,0	2,8	0,9	0,1

Tabel 12-6 Landed value [x1,000 DKK] within ICES rectangle 39G3 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	0	8	1	0	0	0	0	0	0	0	0
Fyke nets	0	0	0	0	0	0	0	0	0	2	4
Gillnets (standing)	2693	3419	2578	1707	1163	1035	2631	757	975	292	160
Hand and pole lines	3	15	15	13	0	0	1	1	4	3	6
Otter bottom trawls	19	108	136	55	18	7	41	0	74	127	0
Otter midwater trawls	0	0	0	0	0	0	0	187	0	0	0
Otter twin trawls	0	0	0	131	12	0	7	0	0	0	0
Pair midwater trawls	2	0	0	0	0	0	0	0	0	0	0
Pots and traps	0	0	14	0	0	6	5	9	29	35	0
Set longlines	754	856	261	65	52	38	4	38	165	42	4

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Stationary uncovered pound nets	0	0	0	0	0	0	6	2	1	0	2
Trammel nets	26	1	28	26	4	5	11	1	26	10	1

Tabel 12-7 Landings [t] within ICES rectangle 39G4 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	558,5	520,6	618,1	217,2	251,4	299,1	269,2	124,4	91,5	46,2	5,8
Hand and pole lines	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0
Otter bottom trawls	69,4	187,5	223,8	113,6	19,7	8,6	9,6	1,5	9,3	12,0	0,8
Otter midwater trawls	0,0	0,0	0,0	0,0	0,0	152,2	30,0	0,0	0,0	0,0	0,0
Otter twin trawls	0,0	0,0	0,3	9,1	17,5	26,7	3,1	10,2	1,6	0,0	0,0
Pair bottom trawls	0,0	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Pair midwater trawls	45,2	0,0	0,0	0,0	30,3	0,0	186,0	0,0	39,1	38,2	0,0
Pots and traps	0,0	0,0	0,1	1,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Set longlines	100,5	191,3	244,9	142,8	39,2	26,7	18,9	14,3	23,7	11,4	1,3
Trammel nets	0,0	0,5	2,8	1,6	0,3	2,3	0,3	0,0	0,0	0,1	0,0

Tabel 12-8 Landed value [x1,000 DKK] within ICES rectangle 39G4 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	5823	5519	5932	2178	2076	2439	2357	1086	860	466	61
Hand and pole lines	0	1	0	0	0	0	0	0	0	0	0
Otter bottom trawls	622	1759	1280	595	152	88	70	9	64	85	2
Otter midwater trawls	0	0	0	0	0	269	50	0	0	0	0
Otter twin trawls	0	0	2	106	90	166	26	79	14	0	0
Pair bottom trawls	0	8	0	0	0	0	0	0	0	0	0
Pair midwater trawls	130	0	0	0	82	0	527	0	117	123	0
Pots and traps	0	0	1	12	0	0	0	0	0	0	0
Set longlines	947	1984	2297	1222	312	165	126	149	232	105	11
Trammel nets	0	4	28	10	2	16	2	0	0	1	0

Tabel 12-9 Landings [t] within ICES rectangle 38G3 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	4,5	23,2	8,4	3,2	0,0	0,0	0,5	1,0	0,4	0,2	0,0
Otter bottom trawls	0,1	0,0	7,9	0,9	4,7	0,0	0,0	0,0	0,0	0,0	0,0
Pair midwater trawls	0,0	0,0	56,1	0,0	0,0	0,0	220,3	0,0	0,0	0,0	0,0

Tabel 12-10 Landed value [x1,000 DKK] within ICES rectangle 38G3 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnets (standing)	39,0	231,1	73,6	28,7	0,0	0,0	5,6	9,8	2,9	2,2	0,0
Otter bottom trawls	1,1	0,0	83,2	6,6	29,8	0,0	0,0	0,0	0,0	0,0	0,0
Pair midwater trawls	0,0	0,0	333,6	0,0	0,0	0,0	637,6	0,0	0,0	0,0	0,0

Tabel 12-11 Landings [t] within ICES rectangle 38G4 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	2,8	11,1	21,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Gillnets (standing)	4,4	2,8	0,6	1,2	0,0	0,0	0,8	0,0	0,0	0,0	0,0
Otter bottom trawls	0,7	0,3	1,9	3,2	3,4	0,0	0,0	0,0	0,0	0,0	0,0
Otter twin trawls	0,0	0,0	12,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Tabel 12-12 Landed value [x1,000 DKK] within ICES rectangle 38G4 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	99,4	461,3	994,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Gillnets (standing)	36,0	28,4	5,7	10,9	0,0	0,0	8,0	0,0	0,0	0,0	0,0
Otter bottom trawls	5,0	2,5	19,1	38,8	24,6	0,0	0,0	0,0	0,0	0,0	0,0
Otter twin trawls	0,0	0,0	84,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Tabel 12-13 Landings [t] within ICES rectangle 38G5 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	7,6	17,5	13,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Gillnets (standing)	0,1	0,0	0,0	0,0	0,9	0,0	0,0	0,0	0,0	0,0	0,0
Otter bottom trawls	0,0	3,1	1,9	6,0	0,1	0,0	0,0	6,4	0,0	0,0	0,0
Otter twin trawls	0,0	0,0	7,1	16,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Pair midwater trawls	0,0	0,0	0,0	0,0	0,0	0,0	46,0	0,0	0,0	0,0	0,0
Set longlines	0,0	0,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Tabel 12-14 Landed value [x1,000 DKK] within ICES rectangle 38G5 by the Swedish fleet (< 12 m) from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Drifting longlines	272,6	640,3	598,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Gillnets (standing)	0,5	0,0	0,0	0,0	6,1	0,0	0,0	0,0	0,0	0,0	0,0
Otter bottom trawls	0,0	26,2	19,3	12,4	1,2	0,0	0,0	49,9	0,0	0,0	0,0
Otter twin trawls	0,0	0,0	49,0	151,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Pair midwater trawls	0,0	0,0	0,0	0,0	0,0	0,0	132,8	0,0	0,0	0,0	0,0
Set longlines	0,0	10,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

APPENDIX 8
ANALYSIS OF POLISH FISHERIES IN ICES RECTANGLES

Tabel 12-15 Landings [t] within ICES rectangle 39G3 by the Polish fleet from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bottom trawl (not specified)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,6	0,0	0,0
Drifting longlines	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Gillnets (standing)	0,0	0,8	2,6	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Otter bottom trawls	0,0	7,3	5,1	2,4	3,6	2,0	83,0	229,7	85,8	237,3	9,5
Otter midwater trawls	222,7	92,3	198,8	343,9	51,8	780,6	1014,8	1038,5	649,5	497,6	197,6
Pots and traps	0,0	0,0	0,0	2,6	0,0	0,0	0,0	0,0	1,7	0,0	0,0

Tabel 12-16 Landings [t] within ICES rectangle 39G4 by the Polish fleet from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bottom trawl (not specified)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1,1	0,0	0,0
Gillnets (standing)	0,0	0,0	1,0	3,3	5,9	1,2	0,3	0,0	3,3	0,4	0,0
Otter bottom trawls	0,3	1,3	65,2	16,9	34,3	21,9	183,7	260,6	194,3	243,2	25,1
Otter midwater trawls	135,8	10,6	238,6	108,6	16,5	150,0	431,0	328,6	197,3	184,2	59,2
Set longlines	0,0	0,0	1,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Tabel 12-17 Landings [t] within ICES rectangle 38G3 by the Polish fleet from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bottom trawl (not specified)	0,0	0,0	0,0	140,1	0,0	0,0	1,9	0,0	1,7	0,0	0,0
Gillnets (standing)	0,0	1,0	0,5	0,0	0,0	0,0	0,0	0,0	2,7	0,3	0,0
Otter bottom trawls	1,0	0,0	18,4	215,8	111,0	297,3	496,3	409,4	416,2	624,9	48,5
Otter midwater trawls	568,3	35,5	1164,1	409,6	426,1	187,8	968,8	1541,4	313,3	427,5	183,0
Set longlines	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,6	0,0	0,0

Tabel 12-18 Landings [t] within ICES rectangle 38G4 by the Polish fleet from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bottom trawl (not specified)	0	0	0	326	1	0	3	0	7	0	0
Drifting longlines	0	0	0	0	0	0	0	0	0	0	0
Gillnets (standing)	180	296	436	513	456	309	264	369	0	703	448

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Hooks and lines	0	0	0	0	0	0	0	0	0	0	0
Otter bottom trawls	221	355	687	1062	1147	742	586	672	622	771	575
Otter midwater trawls	777	1629	3047	2118	2427	3001	3009	3129	1854	1947	2766
Pair midwater trawls	0	24	40	11	0	0	0	0	0	0	0
Set longlines	10	20	29	15	32	8	5	51	20	10	0

Tabel 12-19 Landings [t] within ICES rectangle 38G5 by the Polish fleet from 2010 to 2020.

Gear type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bottom trawl (not specified)	0	0	0	496	11	0	27	38	0	0	0
Drifting longlines	0	0	0	0	0	0	0	0	0	0	0
Gillnets (standing)	189	301	377	300	0	0	0	0	0	0	3
Miscellaneous gear	0	66	0	0	0	0	0	0	0	0	0
Otter bottom trawls	3986	3145	4027	3648	3416	2917	5370	3859	4294	4067	1488
Otter midwater trawls	8105	11153	15552	11255	10618	14225	16559	15411	18939	15135	29774
Pair bottom trawl	0	0	0	26	14	12	0	0	0	0	0
Pair midwater trawls	44	571	335	135	0	8	0	0	0	0	5
Purse seine	0	0	0	0	0	0	1	0	0	0	0
Set longlines	0	0	58	65	37	44	14	12	21	3	0

APPENDIX 9
ANALYSIS OF GERMAN FISHERIES IN ICES RECTANGLES

Tabel 12-20 Landings [t] within ICES rectangle 39G3 by the German fleet from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2020
Atlantic cod	22.3	2.3	24.0	1.9	9.2	0.0	3.9	4.2	0.3
Atlantic herring	93.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
European eel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	1.4	0.5	3.9	0.8	4.3	0.0	0.2	11.1	2.4
European perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
European plaice	0.7	0.0	0.6	0.2	1.1	0.0	0.1	5.0	0.7
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Turbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whiting	0.0	0.0	0.9	0.2	1.2	0.0	0.0	0.4	0.0

Tabel 12-21 Landed value [x1,000 DKK] within ICES rectangle 39G3 by the German fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2020
Atlantic cod	204.8	24.5	233.2	18.7	68.1	0.1	35.7	78.5	5.4
Atlantic herring	327.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Common dab	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3
European eel	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
European flounder	5.8	1.0	15.0	1.9	10.9	0.1	0.5	60.5	9.1
European perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0
European plaice	3.0	0.0	2.8	0.5	4.4	0.0	0.3	46.7	5.6
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
Turbot	0.0	1.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Whiting	0.1	0.3	8.6	2.2	7.7	0.0	0.1	3.2	0.0

Tabel 12-22 Landings [t] within ICES rectangle 39G4 by the German fleet from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	97.0	72.9	185.6	93.1	31.3	3.2	4.6	1.6	34.4	5.6	0.0
Atlantic herring	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic mackerel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	7.4	2.5	6.4	4.7	8.4	0.1	0.3	1.1	0.7	0.0	0.0
European plaice	3.5	1.5	2.0	0.8	0.8	0.0	0.1	0.3	0.9	0.0	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European sprat	0.0	9.8	0.0	0.0	21.2	0.0	0.0	0.0	0.0	95.2	47.2
Haddock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whiting	0.8	0.6	0.9	1.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0

Tabel 12-23 Landed value [x1,000 DKK] within ICES rectangle 39G4 by the German fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	853.4	642.0	1865.3	748.2	216.7	23.4	31.9	24.5	320.9	31.0	0.0
Atlantic herring	0.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic mackerel	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	23.7	6.1	22.5	11.0	21.8	0.2	0.6	5.8	1.9	0.0	0.0
European plaice	21.8	9.3	12.0	3.6	2.9	0.0	0.3	2.6	3.1	0.0	0.0
European sprat	0.0	14.7	0.0	0.0	37.0	0.0	0.0	0.0	0.0	166.8	80.1
Haddock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	3.5	1.5	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whiting	4.1	2.4	5.0	7.9	1.5	0.0	0.4	0.8	0.0	0.0	0.0

Tabel 12-24 Landings [t] within ICES rectangle 38G3 by the German fleet from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	767.0	876.4	1059.7	480.2	810.8	399.1	476.6	110.8	155.1	175.2	151.0
Atlantic herring	4209.5	2378.4	4629.7	8022.6	4323.3	5522.8	5170.1	6678.6	6021.3	2911.9	1051.0
Atlantic mackerel	0.3	0.4	0.2	0.2	0.0	0.3	0.1	0.6	0.3	0.1	0.2
Atlantic salmon	0.4	0.3	0.3	0.1	0.1	0.3	0.1	0.0	0.1	0.1	0.0
Atlantic searobins	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common carp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	3.4	1.2	2.3	3.1	2.6	4.0	10.0	20.8	18.3	17.5	11.5
Common shrimp	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crangon shrimps	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Crucian carp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Eelpout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	21.7	14.4	13.1	13.4	16.3	12.3	10.0	9.1	13.2	11.8	16.1
European flounder	462.2	1078.0	560.7	503.5	536.3	329.9	393.0	253.6	318.9	391.6	436.6
European hake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European perch	12.5	17.6	20.8	33.5	22.8	13.3	24.9	31.6	30.7	6.2	10.2

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European plaice	35.5	67.8	49.3	23.9	44.7	34.7	63.8	103.9	241.3	260.0	152.3
European sprat	26.9	28.8	58.0	167.4	25.9	23.7	48.4	91.8	100.4	70.5	16.3
European whitefish	0.0	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Freshwater breams	11.4	14.4	5.7	13.4	44.7	42.3	8.1	9.9	13.4	4.6	2.3
Freshwater fishes	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Garfish	7.2	5.9	7.2	9.3	41.9	48.7	11.1	9.1	33.5	20.1	31.8
Haddock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lemon sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lumpfish	0.0	0.0	0.2	0.1	0.8	0.2	0.3	0.6	0.3	0.2	0.0
Marine fishes nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mullets nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northern pike	18.8	32.7	35.3	56.2	44.4	27.7	35.9	30.7	35.4	23.7	11.9
Northern prawn	0.0	0.1	0.3	0.6	0.2	0.6	0.3	0.0	0.0	0.0	0.0
Pike-perch	14.5	13.9	16.4	20.6	29.2	19.7	11.4	17.2	32.1	18.0	14.3
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Roach	84.1	192.1	64.6	147.3	145.7	185.3	48.7	95.9	240.1	119.6	90.5
Saithe(=Pollock)	0.0	0.0	0.0	0.3	5.6	0.0	0.0	0.0	0.0	0.3	0.0
Sculpins	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	2.0	3.9	2.0	1.4	2.0	1.5	2.1	0.6	1.0	0.8	0.8
Tench	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Trouts nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Turbot	5.2	8.3	6.4	6.5	4.9	3.0	4.9	4.0	11.7	5.4	6.6
Tusk(=Cusk)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whiting	11.5	28.6	46.4	51.0	57.4	11.7	18.8	12.8	7.4	11.8	9.4

Tabel 12-25 Landed value [x1,000 DKK] within ICES rectangle 38G3 by the German fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	7223.4	9649.0	10488.6	5251.8	7505.4	4575.5	5202.7	1369.4	1995.2	2748.5	2685.6
Atlantic herring	9630.3	8832.2	11016.2	18932.2	9052.5	11227.4	12608.8	17092.8	14770.6	7281.2	3061.5
Atlantic mackerel	7.6	6.6	2.2	2.3	0.1	4.4	2.1	10.0	6.1	1.9	2.2
Atlantic salmon	37.7	26.3	31.0	10.0	10.2	33.6	8.9	0.9	23.3	3.9	1.1
Atlantic searobins	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	1.7	2.5	0.3	0.6	1.2	0.4	0.4	0.0	0.2	1.6	2.4
Burbot	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common carp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Common dab	13.8	8.6	16.2	17.8	18.3	33.6	61.9	183.9	117.9	74.6	61.8
Common shrimp	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common sole	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.1	0.5	2.2
Crangon shrimps	0.0	0.0	0.0	0.0	8.1	0.0	0.0	0.0	0.0	0.0	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Crucian carp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Eelpout	0.2	0.1	2.4	0.1	0.0	0.0	0.1	0.4	0.0	0.0	0.0
European eel	1057.6	848.3	863.6	845.6	1181.8	807.5	813.1	731.0	1084.5	1036.8	1348.6
European flounder	1602.0	4262.9	2615.5	2087.0	2053.3	1269.1	1840.5	1368.4	1453.0	1571.3	1499.2
European hake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European perch	159.8	199.7	254.6	400.6	268.8	161.6	331.3	524.3	323.6	80.7	229.3
European plaice	193.1	354.4	322.8	164.7	350.7	284.2	543.6	1160.9	3785.9	3593.7	1933.2
European sprat	191.4	219.9	51.0	281.4	21.0	19.2	81.6	74.2	95.0	55.8	21.6
European whitefish	0.5	1.0	3.7	1.1	0.4	0.6	1.5	1.3	0.6	0.2	0.0
Freshwater breams	32.6	38.0	21.7	33.1	135.5	123.4	34.6	13.6	49.3	14.1	5.3
Freshwater fishes	0.4	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Garfish	72.6	46.4	81.1	143.6	229.4	304.5	93.7	43.1	148.2	145.2	235.0
Haddock	0.1	0.1	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Lemon sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lumpfish	0.1	0.2	1.8	0.4	13.0	1.7	4.9	0.0	0.0	0.0	0.0
Marine fishes nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mullets nei	0.2	0.0	0.3	1.0	0.1	0.0	0.2	0.3	0.0	0.0	0.0
Northern pike	340.6	405.3	471.0	635.8	497.3	349.2	404.2	316.5	360.5	314.8	191.0
Northern prawn	0.0	0.4	1.5	6.6	0.2	1.7	8.9	0.0	0.0	0.0	0.0
Pike-perch	436.3	463.2	533.6	627.2	916.2	695.7	348.6	567.5	781.2	645.7	572.9
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Roach	554.9	1399.4	468.8	902.7	868.8	1467.7	241.5	366.1	2031.7	578.6	1009.9
Saithe(=Pollock)	0.0	0.0	0.0	4.0	34.7	0.3	0.0	0.0	0.1	2.0	0.0
Sculpins	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	48.3	84.0	66.6	46.1	65.3	56.5	70.6	20.4	51.6	33.2	34.9
Tench	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.5	1.0
Trouts nei	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Turbot	153.1	254.5	180.0	204.3	160.9	74.9	121.1	161.5	375.1	203.5	208.9
Tusk(=Cusk)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whiting	85.1	228.0	444.5	321.9	415.2	111.8	147.0	69.1	32.4	46.9	57.7

Tabel 12-26 Landings [t] within ICES rectangle 38G4 by the German fleet from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	328.8	337.3	292.5	99.1	53.6	62.9	30.8	4.9	6.5	3.3	2.7
Atlantic herring	179.7	1058.3	431.8	0.0	258.7	603.1	469.4	433.1	60.0	0.0	0.0
Atlantic mackerel	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic redfishes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic searobins	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Burbot	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Eelpout	0.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European eel	3.7	1.5	1.6	2.7	1.7	0.0	2.5	0.5	1.7	2.1	2.1
European flounder	221.2	203.5	100.6	24.8	5.0	3.7	4.5	4.3	1.1	5.2	5.2
European perch	0.1	3.2	1.8	0.0	0.0	4.1	0.0	0.2	0.0	0.0	0.0
European plaice	13.7	28.8	18.2	4.5	0.7	1.5	0.4	0.3	0.6	2.0	1.4
European sprat	8.0	8.5	0.7	0.0	0.1	4.1	0.8	0.0	0.0	0.0	0.0
European whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Freshwater breams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Garfish	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Lumpfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine fishes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike-perch	0.2	0.0	0.4	0.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Roach	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Turbot	4.1	3.3	2.6	4.1	3.0	2.7	5.3	5.1	4.6	7.3	0.6
Whiting	0.6	5.9	3.3	0.7	0.4	0.1	0.7	0.0	0.0	0.0	0.0

Tabel 12-27 Landed value [x1,000 DKK] within ICES rectangle 38G4 by the German fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	2977.3	3372.1	2773.0	908.0	494.0	544.9	532.3	69.9	64.4	38.3	47.8
Atlantic herring	374.5	4201.5	1006.9	0.0	515.4	1226.1	1113.8	1039.0	145.7	0.0	0.0
Atlantic mackerel	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic redfishes	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic salmon	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Atlantic searobins	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Burbot	0.4	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Eelpout	0.1	4.6	1.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0
European eel	173.8	42.5	71.1	102.3	135.5	0.0	203.3	40.6	138.0	139.6	98.9
European flounder	720.6	698.8	367.2	96.7	22.0	18.3	35.1	18.5	2.6	16.3	21.0
European perch	0.9	43.7	19.9	0.4	0.0	37.0	0.5	2.4	0.0	0.0	0.0
European plaice	64.1	135.5	78.5	11.9	2.4	6.3	7.1	1.2	2.6	18.4	17.4
European sprat	8.0	12.7	1.0	0.0	0.4	3.3	0.8	0.0	0.0	0.0	0.0
European whitefish	0.1	0.5	0.1	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Freshwater breams	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Garfish	0.0	0.5	0.1	4.0	0.2	0.0	0.6	0.2	0.1	0.0	0.2
Lumpfish	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Marine fishes nei	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northern pike	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike-perch	9.7	0.0	11.4	20.1	0.0	4.5	0.1	0.0	0.0	0.0	0.0
Roach	0.0	0.8	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
Sea trout	3.5	1.2	2.3	0.0	0.1	3.0	0.1	3.5	0.0	0.0	0.0
Turbot	108.4	91.8	63.0	118.4	69.7	65.7	113.0	98.5	83.4	142.4	23.0
Whiting	3.6	38.4	22.0	5.2	2.0	0.8	2.7	0.0	0.0	0.1	0.0

Tabel 12-28 Landings [t] within ICES rectangle 38G5 by the German fleet from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	513.7	204.2	333.1	186.7	273.1	562.8	423.3	170.3	155.8	125.5	8.8
Atlantic herring	99.4	0.0	5.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	4.3
Atlantic salmon	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	15.3	34.7	14.1	33.7	37.5	12.1	113.5	187.6	244.1	31.3	90.2
European hake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	6.8	2.1	2.1	0.3	0.1	0.5	0.9	0.8	3.0	0.9	1.3
European sprat	343.2	254.8	10.2	0.0	35.1	14.7	0.0	39.1	0.0	0.0	703.9
Ling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike-perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbot	0.3	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0
Whiting	0.3	0.4	0.1	0.0	0.0	0.3	0.3	0.0	0.3	0.0	0.0

Tabel 12-29 Landed value [x1,000 DKK] within ICES rectangle 38G5 by the German fleet (< 12 m) from 2010 to 2020.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic cod	4357.7	1780.4	2638.9	1416.9	1926.1	3305.8	3056.3	128	147	950	144.6
Atlantic herring	344.5	0.0	9.3	0.0	0.0	0.0	0.0	1.0	0.0	0.0	6.1
Atlantic salmon	0.0	0.9	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brill	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common dab	3.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common sole	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European flounder	48.1	109.9	49.9	170.4	91.2	28.6	332.2	698	1035	94.7	331.6
European hake	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European plaice	35.9	11.4	10.1	2.0	0.2	2.1	4.3	4.3	22.8	9.6	8.7
European sprat	338.8	377.6	18.9	0.0	57.9	23.8	0.0	44.8	0.0	0.0	112
Ling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike-perch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Pollack	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saithe(=Pollock)	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Turbot	12.4	0.7	0.5	0.3	0.2	0.0	21.1	0.0	0.5	0.1	2.2
Whiting	1.4	2.4	0.5	0.1	0.2	1.8	2.3	0.1	2.0	0.0	0.1