FISKERIDIREKTORATET
The Norwegian Directorate of Fisheries

KYSTVERKET
The Norwegian Coastal Administration

GUIDANCE AND SUMMARY

REPORTS CONCERNING

VESSELS BELONGING TO THE LATVIAN COMPANY SIA NORTH STAR

by

THE SECTION OF ANALYSIS IN VARDØ

This report has been prepared by the Section of Analysis in Vardø[1].
Further publication and use of this report is decided by the recipient.

Our reference: 2020 06 06 – **Method, sources, terms and abbreviations**

Date of issue: ~~November 13~~8th ~~2020~~[this will need to be updated]

Recipient:
This report was requested by the Ministry of Foreign Affairs, the Section for Section for Treaty Law, Environmental Law and Law of the Sea

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[1] The Section of Analysis in Vardø is a joint unit of The Norwegian Directorate of Fisheries and the Norwegian Coastal Administration aimed at analyzing available information on movement and activities of vessels and at revealing illegal fisheries and transport of goods.

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1. Introduction

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At the request of the Norwegian Ministry of Foreign Affairs, the Section of Analysis, a joint unit of the Norwegian Directorate of Fisheries and the Norwegian Coastal Administration, has analysed movements and activities of SIA North Star's vessels Saldus, Solveiga, Solvita and Senator (the "**Vessels**") related to snow crab ~~catching~~ harvesting activities in the Barents Sea. The results of the analyses are presented in separate reports on each of the four vessels (the "**Vessel Reports**").

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This Summary Report serves as a summary of the Vessel Reports, and explains the common methodology, abbreviations within the Vessel Reports.

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2. Summary of findings regarding the vessels

The table below presents a summary ~~of findings of the Vessel Reports~~of key information relating to each of the Vessels, presented in more detail in each of the Vessel Reports.

	Saldus	Solveiga	Solvita	Senator	Totals
Date Arrived in Norway	March 27th 2015	March 20th 2015	January 17th 2014	May 19th 2015	N/A
Dates Operational	April 8th 2015 until September 4th 2016	March 31st 2015 until September 5th 2016	July 26th 2014 until September 9th 2016	May 20th 2015 until September 8th 2016	N/A
Number of Inspections (Norwegian)	4	0	0	5	N/A
~~**Number of Inspections (Russian – if known)**~~	~~Unknown~~	~~Unknown~~	~~Unknown~~	~~Unknown~~	~~N/A~~
Total ~~Catch~~ Harvest of Snow Crab	653 897	1 388 075	1 357 796	1 956 214	5 355 982
Percentage of Snow Crab Caught on Russian CS (Loop Hole)	99, 76	100	99, 73	99, 87	99, 85 (average)[2]
Percentage of Snow Crab Caught on Norwegian CS (Loop Hole)	0, 24	0	0, 27	0, 13	0, 15 (average)[3]
Percentage of Snow Crab Caught in Svalbard FPS	0	0	0	0	0
Percentage of Snow Crab caught in other Norwegian waters	0	0	0	0	0

2. Abbreviations, terms and sources of information in the Vessel Reports~~, sources and methodology~~

~~This report clarifies the terms and abbreviations used in the reports concerning snow crab activities of SIA North Star's vessels "Saldus" YL2888, "Solveiga" YL2982, "Solvita" YL2843 and "Senator" YLAC.~~

2.1 Abbreviations

[2] Correct to two decimal places.
[3] Correct to two decimal places.

- **AIS** – *Automatic Identification System* – anti-collision system within shipping. Vessels equipped with AIS send out and exchange information about their identity, position, speed and course through radio signals. This information is received by land based stations and satellites. [Where is this received – unless explained below?]
- **CS** – *Call Sign* – number identifying the sender of a radio message.
- **EEZ** – *Exclusive Economic Zone*
- **IMO** - *International Maritime Organization*
- **IMO NUMBER** – *International Maritime Organization number* - this number is a part of the International Maritime Organization's identification system for vessels and it consists of seven numbers unique for the vessel.
- **KNOTS** - 1 knot is 1.852 kilometers (or 1 NM) per hour.
- **MMSI** – *Maritime Mobility Service Identity* – Code of nine numbers identifying the vessel whereas the first three numbers indicates which country the vessel is registered.
- **NEAFC** – *North East Atlantic Fisheries Commission* - the Regional Fisheries Management Organisation (RFMO) for the North East Atlantic.
- **NM** – *Nautical Mile* – Maritime measuring for distance. One nautical mile equals to 1852 meters.
- **UTC** – *Coordinated Universal time* - Specification of time zone. One hour before Norwegian time during winter and two hours before Norwegian time during summer.
- **Vessels** – "Saldus" YL2888, "Solveiga" YL2982, "Solvita" YL2843 and "Senator" YLAC, the four vessels under analysis in these reports.

2.2 ~~Terms and technical information on data used~~Technical terms used in the Vessel Reports

- **Geometry** – defined geographical area either officially recognized or created by us especially for the ~~case~~purposes of analysis in the Vessel Reports.
- **Conversion factor** – international standards require that official fisheries statistics are given in live weight. The conversion factor in this case reflects the relationship between the live weight of the crab and the weight of the end product, in this case crab clusters~~. (C~~(crab legs without crab body). The crab clusters have a conversion factor ranging ~~for~~ from 1.61 to 1.66, i.e. the live crab weighs 1.61 to 1.66 times as much as the crab clusters.
- **Landing_notes** (In Norwegian: *Landings- og sluttseddel*) – landing_notes are issued by the Norwegian Fishermen's Sales Organization. The landing_note gives information about the ~~catch~~harvest:~~,~~ the amount, size and gender of the ~~catch~~harvest. It also gives information about the vessel that has ~~caught the catch~~harvested the crab and the ~~receiver~~ recipient of the ~~catch~~harvested crab. In the ~~report~~ Vessel Reports, we have not distinguished between when the crab is sold upon landing and ~~in cases when the~~ crab which is landed and not sold.
- **Polar Map** – in ~~these reports~~the Vessel Reports polar maps are used. The polar map projection is an azimuthal projection drawn to show Arctic and Antarctic areas. It is based on a plane perpendicular to the earth's axis in contact with the North or South Pole.

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Commented [JEW5R4]: Conversion factor is used in vessel report for "Senator". This vessel delivered only frozen crab legs and therefore conversion factor is needed.

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- **Reefer** – refrigerated cargo ship used for transport of frozen products.
- **Time** – all AIS trackings are done in Central European time (Norwegian local time).
- **Transshipment** – when cargo (crab in this case) is moved from one vessel to another whilst afloat before transit to its final destination.
- **Voyage** – in the Vessel Reports, a voyage starts when the vessel leaves port. The voyage ends when the vessels returns to port.

2.3 Sources of data and information in the Vessel Reports

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The following sources of data and information have been used to compile the Vessel Reports.

2.3.1 AIS data (position of the Vessels)

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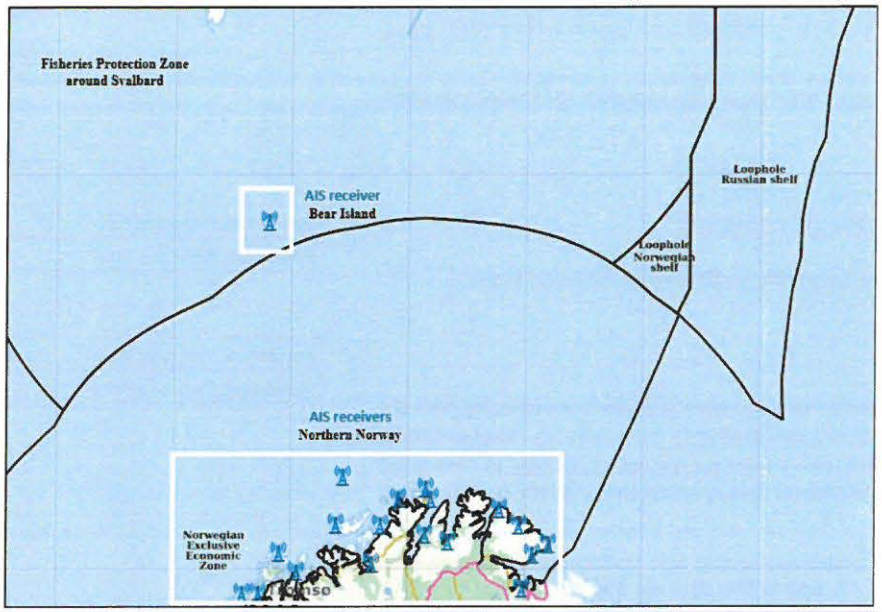
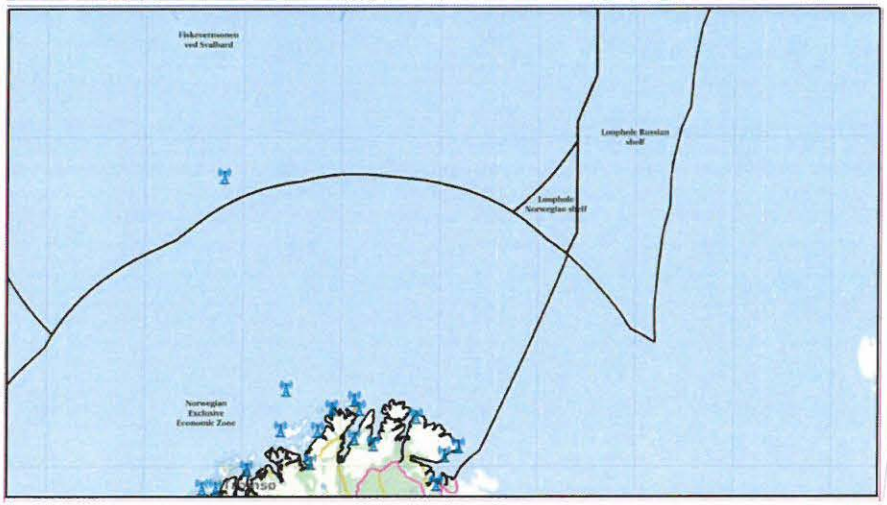
Automatic Identification System (AIS) data for the ~~four vessels~~Vessels have been collected from the Norwegian Coastal Administration in order to track ~~the vessels~~their movements. ~~As "Saldus" YL2888, "Solveiga" YL2982, "Solvita" YL2843 and "Senator" YLAC~~As the Vessels in question all have gross tonnages over 300, they are required under IMO rules to have an AIS antenna installed, and AIS- turned on at all times.

The Norwegian Coastal Administration has established several base stations along the Norwegian coastline which receive and can download AIS signals. The coverage area for the land based AIS receivers are limited to reach 40 to 50 nautical miles off the coastline.

Figure 1 Base stations for receiving AIS signals in Northern Norway and ~~the~~ Bear Island





The screen shot in the map above shows the land-based AIS- receivers in Northern Norway and on ~~the~~ Bear Island. The land-based base stations do not have long enough reach to collect AIS signals from the Loop Hole.

Since 2010, the Norwegian Coastal Administration had access to AIS signals received by satellites, so that AIS signals beyond 40 to 50 ~~nautical miles~~NM off the coast are picked up by AIS satellites. This means that all AIS positions for the Vessels ~~the vessels "Saldus" YL2888, "Solveiga" YL2982, "Solvita" YL2843 and "Senator" YLAC have~~ in the Loop Hole or in the Fisheries Protection Zone around Svalbard have been downloaded from AIS satellites. The AIS positions is received from the ~~vessels~~ Vessels' own GPS receiver. The accuracy of AIS positions ~~are~~ is normally between 0 to 30 meters.

2.3.2 Landing notes (for the quantity of snow crab harvested)

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Landing notes from all V~~v~~essels' landings and landings after transshipments have been received from the Norwegian Fishermen's Sales Organization. The Norwegian Fishermen's Sales Organization (Norges Råfisklag) was established in 1938 and aims through organized turnover to secure the fishermen's income and contribute to a sustainable and profitable value in the Norwegian industry.

The organization's activity is regulated by Norwegian law. (Act on First-Hand Sale of Wild Marine Resources)[4] and, in particular, the Organisation's responsibility for the production and accuracy of landing notes is regulated by law.[5]

[redacted]

Commented [JEW8R7]: Yes this is correct, but the text written by us (Section of Analyses) is more accurate.

We have received all landing notes related to the ~~vessels Saldus" YL2888, "Solveiga" YL2982, "Solvita" YL2843 and "Senator" YLAC in excel format~~Vessels in excel format.

[redacted]

~~The Norwegian Fishermen's Sales Organization (Norges Råfisklag) was established in 1938 and aims through organized turnover to secure the fishermen's income and contribute to a sustainable and profitable value in the Norwegian industry.~~

~~The organization's activity is regulated by Norwegian law. (Act on first hand sale of wild marine resource).[6]~~

~~In the Vessel Reports we refer to landingnotes received from The Norwegian Fishermen's Sales Organization. The Sales Organization's responsibility regarding landingnotes are regulated in "Regulations on landing and endnotes".[7]~~

2.3.3 Inspection reports and databases

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Each of the Vessel Reports includes information about inspections conducted by the Norwegian Coast Guard. Inspection reports and results of inspections done by the Norwegian Coast Guard ~~are~~ have been received from the Norwegian Coast Guard and from databases of the Norwegian Directorate of Fisheries.

~~2.3.4 Databases~~

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[4] *https://lovdata.no/dokument/NL/lov/2013-06-21-75*

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[5] "Regulations on landing and endnotes" *https://lovdata.no/dokument/SF/forskrift/2014-05-06-607*

[6] ~~*https://lovdata.no/dokument/NL/lov/2013-06-21-75*~~

[7] ~~*https://lovdata.no/dokument/SF/forskrift/2014-05-06-607*~~

~~We have also used the databases from the Norwegian Directorate of Fisheries for inspection reports from the Directorate's Inspectors.~~

2.3.5 Lloyd's List intelligence

Ownership and other vessel information has been obtained from Lloyd's List Intelligence ~~are used for vessel information and ownership of the vessels.~~.

2.3.6 Marine Traffic

Photographs of the Vessels have been obtained from the Marine Traffic ~~are used for photo of the vessels~~website.

2.3.7 NEAFC Port State Control Scheme

North-East Atlantic Fisheries Commission (NEAFC). NEAFC Port State Control procedures apply to the use of ports of NEAFC Contracting Parties by foreign fishing vessels (including fish processing vessels and vessels engaged in transhipment), with catch on board of fisheries resources that have been ~~caught~~ harvested in the NEAFC Convention Area by foreign fishing vessels and that have not been previously landed or transhipped at a port. PSC procedures apply to both fresh, frozen resources and other resources.

Also with reference to "Regulations on foreigners fishing and catch e.t.c in Norway's economic zone and landings or other use of Norwegian ports".[8]

From NEAFC we have obtained information about landings and transshipments made by the vessels covered by these reports.

[redacted]

~~2.3.8 Norwegian Fishermen's Sales Organization~~

~~The Norwegian Fishermen's Sales Organization (Norges Råfisklag) was established in 1938 and aims through organized turnover to secure the fishermen's income and contribute to a sustainable and profitable value in the Norwegian industry.~~

~~The organization's activity is regulated by Norwegian law. (Act on first-hand sale of wild marine resources).[9]~~

~~In the Vessel Reports we refer to landingnotes received from The Norwegian Fishermen's Sales Organization. The Sales Organization's responsibility regarding landingnotes are regulated in "Regulations on landing and endnotes".[10]~~

[8] https://www.fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger/JJ-15-2021

[9] ~~https://lovdata.no/dokument/NL/lov/2013-06-21-75~~

[10] ~~https://lovdata.no/dokument/SF/forskrift/2014-05-06-607~~

~~2020 06 06. Ministry of Foreign Affairs. SIA North Star. Snow crab. Continental shelf, Loop Hole. Method. Summary.~~

3. Method used in the reports

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The Section of Analysis has produced one report for each of the ~~four vessels listed above~~Vessels. Three of the executive officers at the Section of Analysis have been writing the reports regarding the vessels.

3.1 The vessels

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Each of the Vessel Reports discusses ~~The vessels~~ the activities on one Vessel. They are:

- "Saldus", IMO 8423155, MMSI 275460000 and call sign YL2888;
- "Solveiga", IMO 8520173, MMSI 273377520 and call sign YL2982;
- "Solvita", IMO 8721765, MMSI 275444000 and call sign YL2843; and
- "Senator", IMO 6812986, MMSI 275171000 and call sign YLAC. ~~are the objects of the reports.~~

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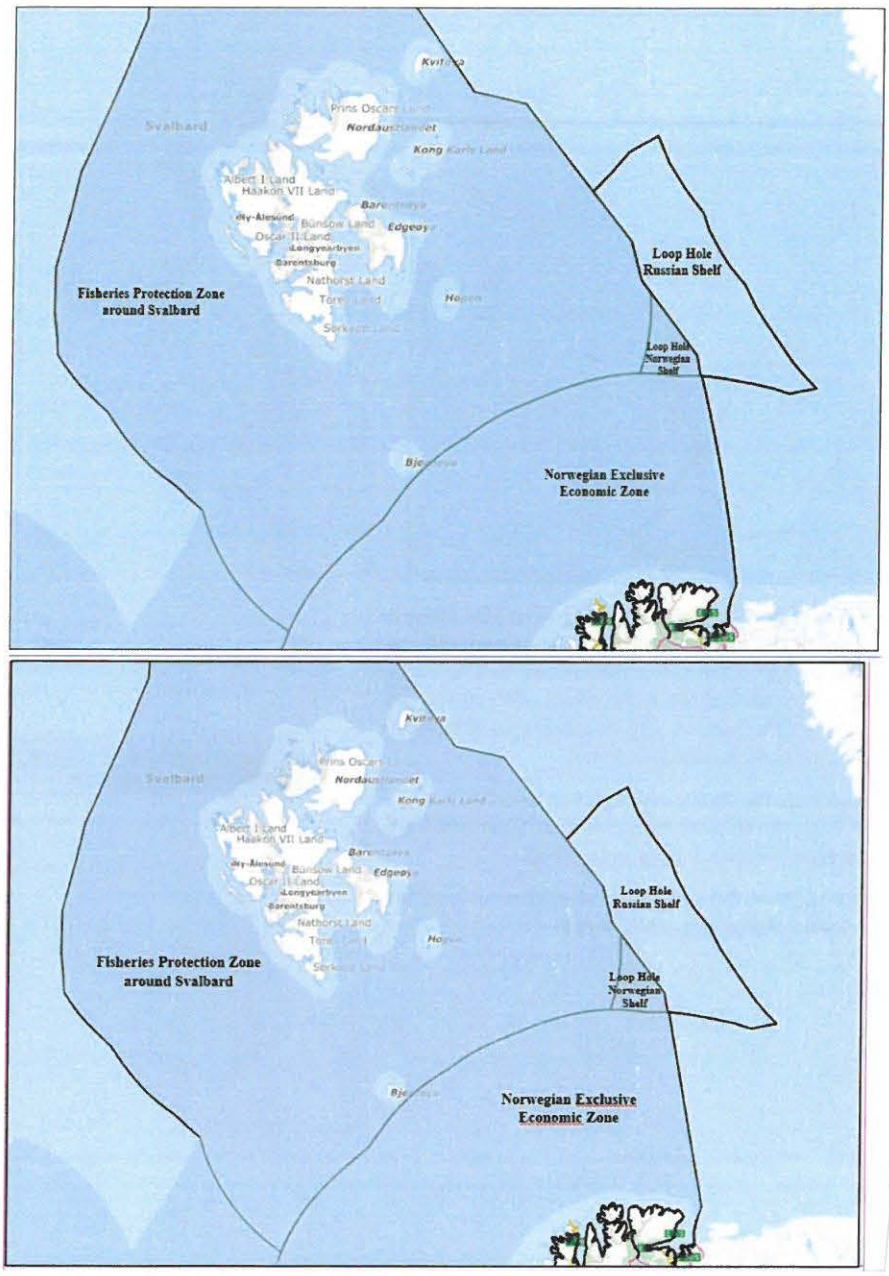
3.2 Geographical areas for the reports

Figure 2 The geographical areas for the reports



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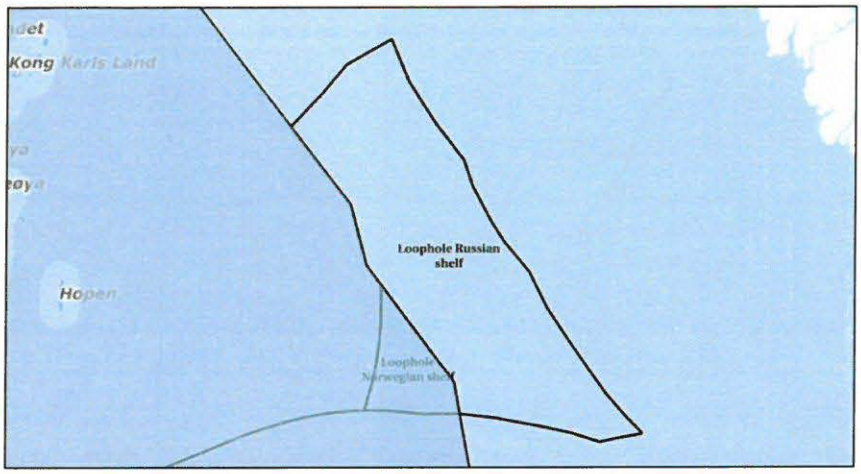
[redacted]

The areas covered in the reports are: the Norwegian Exclusive Economic Zone, the Fisheries Protection Zone around Svalbard, the Loop Hole ~~on Norwegian and Russian Shelf~~ in the Barents Sea.

Figure 3 The Loop Hole



The Loop Hole is the area of the Barents Sea that lies beyond 200 nautical miles from the baselines of Norway and the Russian Federation respectively. The water column is thus beyond national jurisdiction. The seabed ~~floor~~, however, is ~~C~~continental ~~S~~shelf under the national jurisdiction of Norway and the Russian Federation respectively. Norway and the Russian Federation agreed the delimitation of the ~~Continental~~ continental ~~Shelf~~ shelf in a treaty of 2010. Approximately 90 % of the ~~Continental~~ continental ~~Shelf~~ shelf in the Loop Hole is under Russian jurisdiction.

There are two different shades of blue in the polar map. The slightly darker blue on the left side of the map covers the Norwegian Exclusive Economic Zone, the Fisheries Protection Zone around Svalbard and the part of the Loop Hole consisting of Norwegian ~~Continental~~ continental ~~S~~shelf.

The slightly lighter blue on the right side of the map covers the Russian Exclusive Economic Zone and the part of the Loop Hole consisting of Russian ~~Continental~~ continental ~~Shelf~~shelf.

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3.3 Voyages and how to view voyage data in the Vessel Reports

The bulk of each of the Vessel Reports are analyses of the voyages of each of the Vessels. The start and end point of each voyage was determined by reference to the landing notes, which set out (1) when and from which port each voyage began; and (2) in which port the voyage ended.

~~The vessel's landing notes received from the Norwegian Fishermen's Sales Organization were used as starting points in order to establish when and from which port the voyages started as well as when and in which port the voyages ended.~~

All of the voyages, with the exception of one, went to the Loop Hole in the Barents Sea. The one voyage that did not go to the Loop Hole was the ~~"Senator's"~~ voyage of the "Senator" to the Fisheries Protection Zone around Svalbard in January 2017.

[redacted]

Commented [JEW15R14]: This is incorrect. The landing notes from the vessels only contain landing date and location of said landing. To determine the vessels voyage we use vessel tracking to determine start point and the landing note determines the end point of said voyage.

[redacted]

Figure 4 Example of a voyage to the Loop Hole

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The screen shot in the map above gives an example of one of the voyages to the Loop Hole. On this voyage "Senator" left Båtsfjord port on 9 February 2016 for the Loop Hole and returned to Båtsfjord Port on 3 March 2016. This is also an example of a voyage starting and ending in the same port.

[redacted]

Commented [JEW18R17]: No, the placement of the boxes is random. The boxes display the timestamp of the voyage.

3.4 ~~Color~~Colour coding of the tracks

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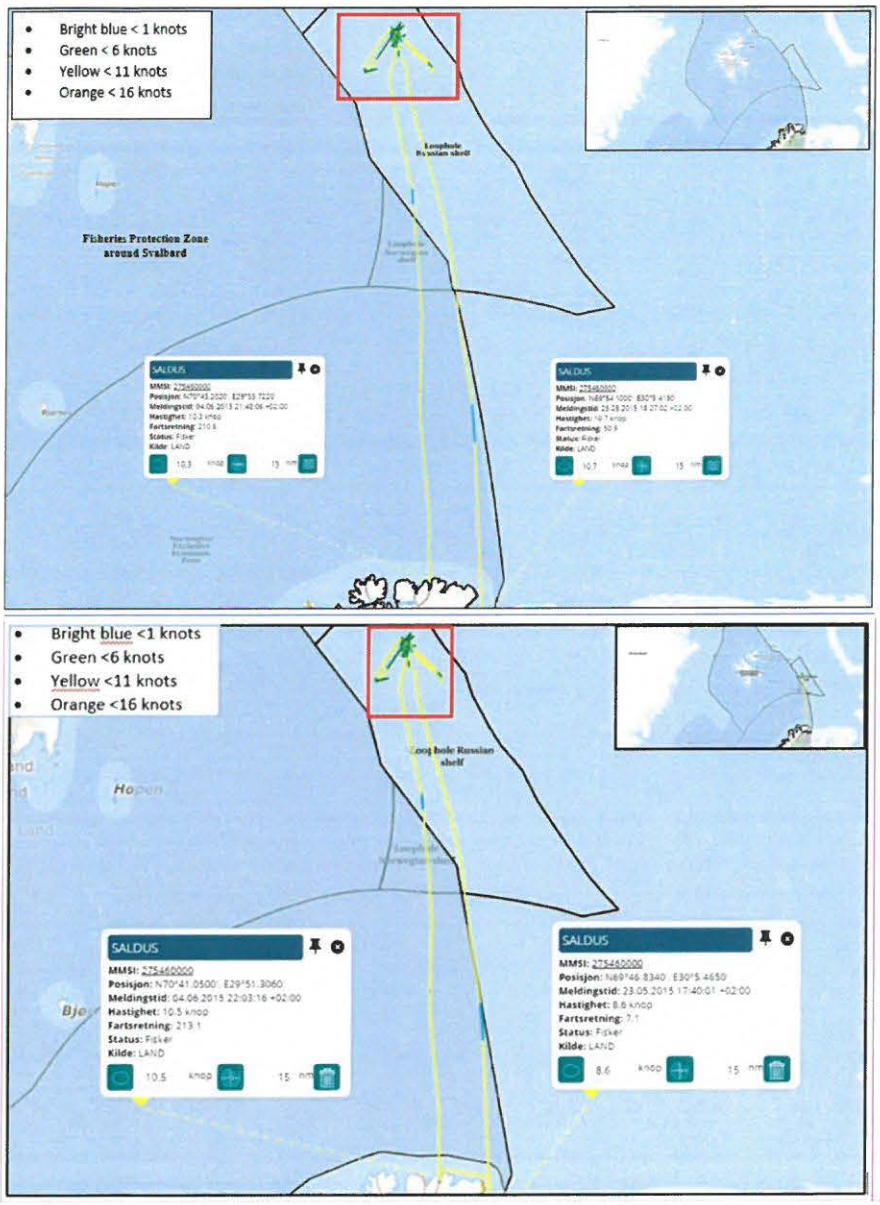
Figure 5 ~~Overviewing screen shot as shown in the reports with color coding~~screenshot of a voyage with colour-coded tracks



The screen shot above is an example of a typical ~~voyage~~ screenshot included in the Vessel Reports which sets out the "tracks" or pathway of a single voyage. In this screenshot ~~we have included~~there is

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a small map of the reference area in the box in the upper right corner. The reference area stretches from Greenland to the Kara Sea.

The box included in the upper left corner gives the color coding of the AIS tracking. These colors indicate the speed the vessel at various points during its voyage. Blue color indicates speed less than 1 knot, green color indicates speed less than 6 knots, yellow color indicates speed less than 11 knots and orange color indicates speed less than 16 knots. As mentioned below, speeds of below 6 knots suggest that there has been snow crab harvesting activity.

The red square in the upper middle gives the reference area for the next screen shot included in the report. This red square focuses on the ~~catching~~ harvesting activity the vessel has had, or the possible ~~catching~~ harvesting activity the vessel might have had in the area marked.

3.5 Tracking of the voyages

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Each voyage the Vvessels ~~have had~~ undertook is ~~are~~ documented by screen shots in the reports. Each voyage is normally shown in two screen shots. The first screen shot is an overviewing shot of the entire voyage, from the vessel left port to the vessel was back in port (see figure 5, above). The next screen shot shows the ~~catching~~ harvesting activity. If the vessel's track indicates ~~catching~~ harvesting activity on the Norwegian continental shelf, this is also included in a seperate screen s~~h~~ot. The screen-shots are all shown in a polar map.

~~*Figure 6 Example of an overviewing screen shot for one of the voyages, the entire voyage, shown in a polar map.*~~

The screen shot ~~in the map~~Figure 5 above is an example of an overview~~ing~~ screenshot ~~for~~ of one of the voyages. The example shows "Saldus~~"'s"~~" voyage leaving Kirkenes port May 23rd 2015 and returning to Båtsfjord port June 4th 2015. The departure and arrival information is given in the pop ups included. The information provided in those pop ups is discussed further below.

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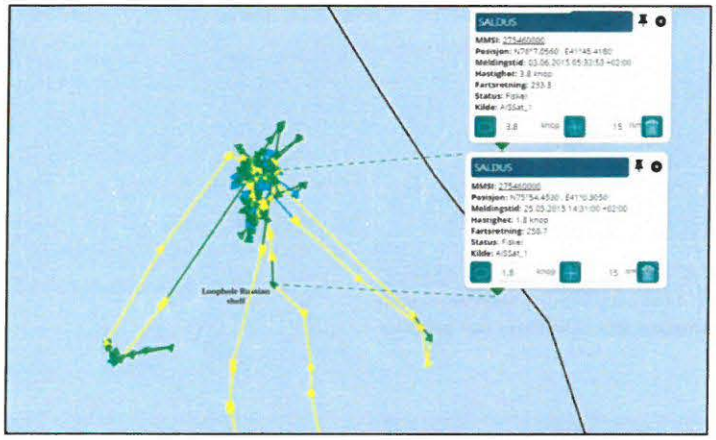
[redacted]

Commented [JEW21R20]: Ok.

The second screen shot for the voyage shows the ~~vessel~~vessel's movements in the ~~catching~~ harvesting operation, or the possible ~~catching~~ harvesting operation the vessel has had based on the vessel's movements. This screenshot will focus on that particular part of the overall voyage which indicates snow crab harvesting activity. ~~-~~This screen shot is also shown in a polar map.

Figure 6 Example of vessel movements in the Russian shelf of the Loop Hole



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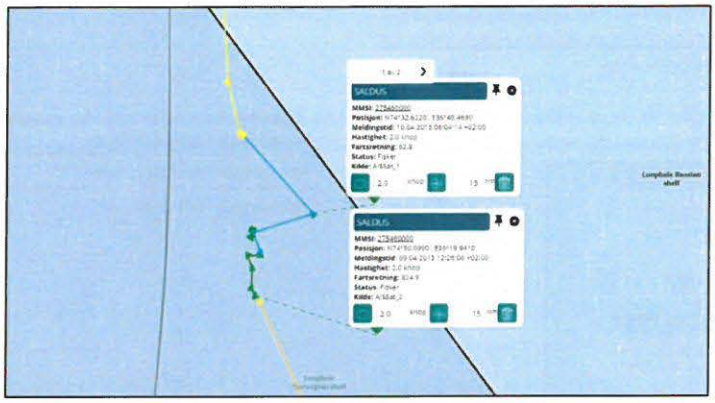
The screen shot in the map above is an example of one of "Saldus"'s ~~catching~~ harvesting operations on the Russian continental shelf in the Loop Hole. Information about the times and dates for when the vessel was speeding 6 knots and less in the area is given in the pop ups (see below for the relevance of the speed of 6 knots). Since most of the ~~catching~~ harvesting activity for the V~~v~~essels took place on the Russian shelf of the Loop Hole, ~~it was considered sufficient to show the voyage in two screen shots for most of the voyages~~most voyages are shown in two screenshots: (1) the overall voyage; and (2) the harvesting activity on the Russian continental shelf.

On some voyages the speed and ~~maneuvers~~manoeuvres of the vessel could indicate ~~catching~~ harvesting operations, or possible ~~catching~~ harvesting operations, on the Norwegian continental shelf of the Loop Hole. For these voyages the reports also include a screen-shot of the vessel's movements over the Norwegian continental shelf in the Loop Hole. On voyages where the vessel had fishing operations, or possible fishing operations on both the Russian Shelf and the Norwegian Shelf of the Loop Hole, the report will contain three screen shots of the voyage, the first two indicated above and (3) the possible harvesting activity on the Norwegian continental shelf.~~.~~

Figure 7 Example of vessel movements in the Norwegian shelf of the Loop Hole



The screen'-shot in the map above is an example of one of "Saldus" ~~catching~~ harvesting operations, or possible ~~catching~~ harvesting operations on the Norwegian shelf in the Loop Hole. ~~Also in this screen shot, p~~Pop-ups are also included in this screenshot to give information about the times and dates ~~for~~ when the vessel was speeding 6 knots ~~and~~ or less in the area.

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3.6 ~~Pop up in the screen shots~~Information contained in each of the pop-ups

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~~There is~~When an AIS position for each of the Vessels is registered, it records certain information ~~about~~ the Vessel's movements. ~~available for each AIS position registered for the vessel.~~ For the purposes of the analysis in the Vessel Reports, ~~C~~certain AIS-positions are singled out and information on speed etc is given in the pop-up.

A pop-up with information for one of "Solveiga~~"'s"~~ AIS positions is included in the tracking image below. This AIS position is registered over the Russian Shelf in the Loop Hole.

Figure 8 Example of a pop up

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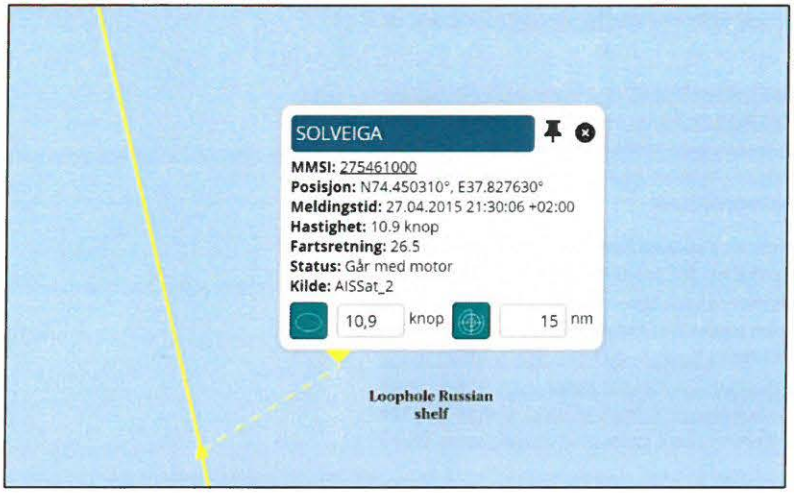

The information in this pop tells us that this AIS position belongs to the vessel "**Solveiga**". "Solveiga" has **MMSI** number 275461000. The name and MMSI number identify the vessel.

The next information in the pop up establishes the **posisjon** (position) of the vessel at the time of the registration. In this case, the position is given in decimal degrees.

"Meldingstid", the time for the registration of the AIS position, establishes when the AIS position was registered, the date and time. In this specific case, the AIS position was registered 27 April 2015 at 21:30:06 +02:00. The "+02:00" indicates that the time is given in Central European time (Norwegian time), 2 hours before UTC time.

"Hastighet", the speed "Solveiga" ~~had~~was travelling at the time of the registration of the AIS-position was 10,9 knots (or knop, in Norwegian).

"Fartsretning", the direction of speed, provides the direction of the vessel at the time when the AIS position was registered given in compass coordinates. In this case, "Solveiga" sailed 26.5 degrees northeast. The reason that the line does not appear to be going to the top-right, but the top-left, is because of the use of the polar map projection.

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[redacted]

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"Status" as described above shows that "Solveiga" was underway using engine at the time of the registration of the AIS-position.

"Kilde", source, shows which AIS satellite (AISSat_2) received the information.

3.7 Speed less than 6 knots and length of "harvesting operations"

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The reason that the Vessel Reports focus on the Vessels' movements at under 6 knots is because ~~As the~~ the ~~catching~~ harvesting method for snow crabs involves setting out and collecting pots from the seafloor, and thus vessels cannot conduct snow crab ~~catching~~ harvesting activities at speeds higher than 6 knots. Based on the time the vessels have had speed of 6 knots and less in the Loop Hole, we have estimated the time that the vessels have been engaged in ~~catching~~ harvesting operations, or possible ~~catching~~ harvesting operations in the area.

~~The vessel can~~Where the vessel has (in the same voyage) had periods of time above both the Russian and Norwegian continental shelves at under 6 knots, both time estimates are given separately. ~~on the same voyage have been over both the Norwegian and Russian shelf in the Loop Hole, as well as over the Russian and the Norwegian Shelf outside the Loop Hole. In those cases the times the vessel has had over each shelf with speed 6 knots and less have been calculated.~~

The times the vessels have had a speed of 6 knots and less is calculated from the first AIS position the vessel has had in the area with speed 6 knots and less to the last AIS position the vessel has had in the same area with speed 6 knots and less. If the vessel has moved with speed higher than 6 knots in the area in between sessions of ~~catching~~ harvesting operation (speed less than 6 knots) the entire period is calculated as the total time of ~~catching~~ harvesting operations because in these cases a speed ~~Speed > 6 knots~~ of over 6 knots is likely to be transit between locations where the pots are set or will be set and is therefore still counted as time that the vessel was engaged in "harvesting operations". ~~.~~ The total time of ~~catching~~ harvesting operations will therefore in some cases also include some speed higher than 6 knots.

Figure 9 ~~Catching~~ Harvesting operation speed <6 knots and > 6 knots.

The screen-shot above shows "Saldus" ~~catching~~ harvesting operation on the Russian Shelf in the Loop Hole in the period from May 10th 2015 time 09:22 until May 20th 2015 time 09:22. The pop ups include information about the first AIS position "Saldus" had in the area with speed 6 knots and less and information about the last AIS position "Saldus" had in the same area with speed 6 knots and less.

The color of the track indicates that "Saldus" also has had speed higher than 6 knots during this ~~catching~~ harvesting operation. During the ~~catching~~ harvesting operation "Saldus" had movements with speed both <6 knots and > 6 knots. ~~Speed > 6 knots is likely to be transit between locations where the pots are set or will be set.~~

3.7.1 Speed less than 6 knots during transit

On some voyages the tracking of the vessel shows that the vessel has moved with speed < 6 knots during transit to or from ~~catching~~ harvesting areas (but not otherwise during a "harvesting operation"). This may be due to weather conditions, technical conditions or other conditions on board the vessel.

In cases where the vessel's tracking shows speed < 6 knots over the Norwegian c~~C~~ontinental s~~S~~helf in the Loop Hole, these positions will be shown in separate screen shots in the report. In the cases where the vessel has been moving at low speed in the Norwegian EEZ (i.e. not above the Loop Hole), this will not be shown in the reports as no ~~catching~~ harvesting of snow crab in this zone has been reported.

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Figure 10 Transit speed< 6 knots

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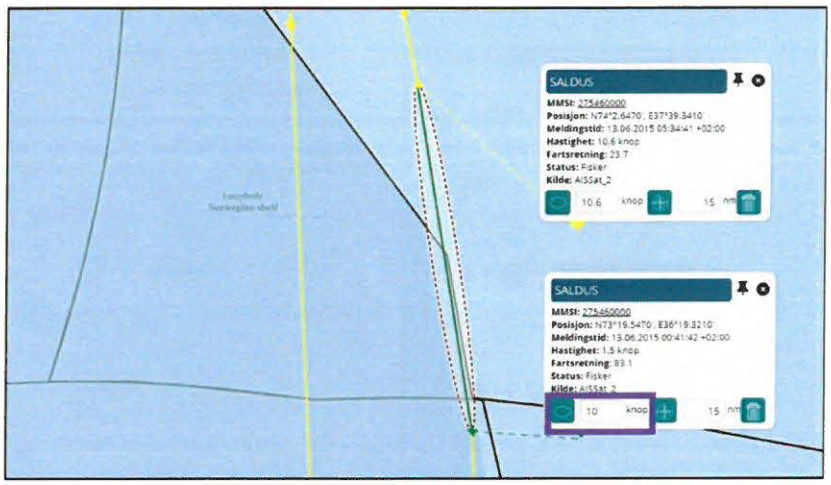


The example in the screen shot in the map above shows that "Saldus" had one AIS position <6 knots in the Norwegian EEZ (in the bottom-middle of the screenshot). "Saldus" next AIS position was registered on the Russian Continental Shelf in the Loop Hole (in the top-middle of the screenshot). "Saldus" had no AIS positions on the Norwegian Continental Shelf in the Loop Hole. The green color of the tracking may seem to indicate that "Saldus" was having a transit through the Norwegian shelf of the Loop Hole with speed less than 6 knots, but the reason for this is that it is the speed at the registration time which decides the color of the line (here green) until the next- AIS registration. It therefore cannot be discerned as a matter of certainty that the "Saldus" was travelling below 6 knots for the entirety of the length of the green line.

[redacted]

Commented [JEW25R24]: Correct.

In fact, ~~T~~the time and distance between the two AIS registrations in the Norwegian EEZ and over the Russian Continental Shelf shown above indicates that "Saldus" had an average speed of 10 knots between those points. The speed of 10 knots is shown in the purple rectangle in the lowermost pop-up. ~~and t~~The red dotted circle round the green tracking shows the theoretical area "Saldus" may have moved in during this period.

3.8 Enter and leave area

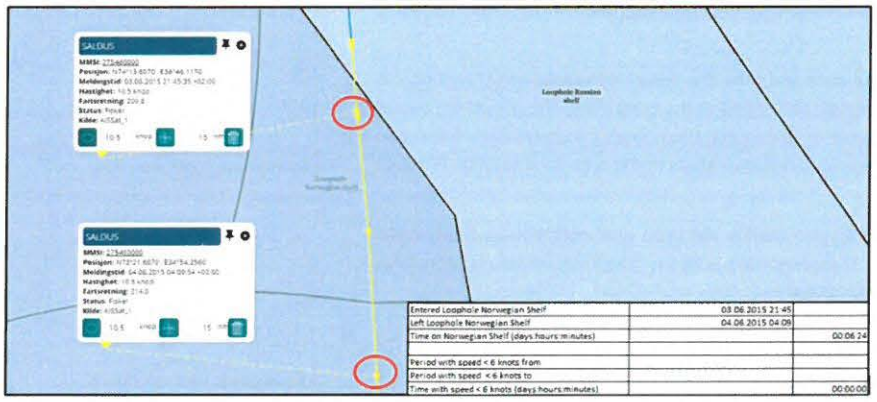
~~In the Vessel Reports we use the terms~~The Vessel Reports use the terms "enter" and "leave" ~~the area for vessels going in or out of the given area.~~ to describe when a vessel has come into or gone out of a certain area.

The time for the vessel's entrance in the area is based on the first registered AIS position for the vessel in the specific area. The time for the vessel's exit of the area is based on the first registered AIS position the vessel has outside of the specific area. ~~The~~ Thus, the positions are correct, ~~but in some cases the satellites do not register the exact time when the vessel enter or leave the position for the zone~~but the satellites are not able to register the exact time that the vessel entered or left the relevant zone (given that the AIS satellites only record data at a specific point in time when the position is registered).

On some voyages, there can be some time in between the registered AIS positions for the vessel. The result of that can be that the first AIS position the vessel has in the specific area might be registered ~~while~~ when the vessel is quite far into the area. The first AIS position for the vessel after its departure from the area might also not be registered until quite long after the vessel has left the area. The registration of the vessels AIS positions can therefore cause the time the vessel has had in the area to be calculated ~~not so correctly as preferred~~with a degree of inaccuracy.

The issue with AIS positions registered far apart in time is especially visible for voyages where the vessel has had a rapid transit through ~~the~~ an area, as shown in the example below:

Figure 11 Enter and exit area



The screen shot in the map above shows the first AIS- position for "Saldus" on June 3rd 2015 time 21:45 over the Norwegian Continental Shelf in the Loop Hole, southbound. This AIS position is registered some time after "Saldus" entered the area. The first AIS position for "Saldus" after the vessel left the waters above the Norwegian continental shelf of the Loop Hole is registered on June 4th 2015 time 04:09 in the Norwegian EEZ. This AIS position is registered some time after the vessel left the area. For this voyage, the time "Saldus" has been over the Norwegian Continental Shelf in the Loop Hole will not be entirely ~~correct~~ accurate due to the registration apart in time for the AIS positions.

4. Explaining the tables used in the Vessel Reports

In the Vessel Rreports ~~we have used table~~ tables are used~~s~~ to sum up the voyage information at the end of each voyage. There is one table for each of the ~~vessel's voyages~~Vessels' voyages. The structure of the tables used are all the same, ~~the sections of the vessel's presence in the Loop Hole will however vary as the vessels have had different numbers of entrances and exits to the shelves in the Russian and Norwegian part of the Loop Hole.~~but the data naturally varies.

4.1 Information about the Norwegian shelf, northbound

Figure 12 Norwegian Continental Shelf, northbound

Entered Loophole Norwegian Shelf	09.04.2015 07:38	
Left Loophole Norwegian Shelf	10.04.2015 11:08	
Time on Norwegian Shelf (days:hours:minutes)		01:03:30
Period with speed < 6 knots from	09.04.2015 12:26	
Period with speed <6 knots to	10.04.2015 06:05	
Time with speed < 6 knots (days:hours:minutes)		00:17:38

The table gives information about the date and time for when the vessel entered the waters above the Norwegian continental shelf in the Loop Hole, northbound. It also gives information about the date and time for the vessel's exit. Then, the time ~~given in days, hours and minutes~~ the vessel has had over the Norwegian c~~C~~ontinental s~~S~~helf in the Loop Hole is shown in the format days:hours:minutes. On this voyage the vessel has been over the ~~Russian~~ Norwegian continental shelf in the Loop Hole for 1 day, 3 hours and 30 minutes.

This section also gives information about the date and time the vessel ~~had speed~~was travelling < 6 knots over the Norwegian ~~Continental~~ continental ~~Shelf~~ shelf in the Loop Hole. The period the vessel has had with speed less than 6 knots also appears in the format days:hours:minutes~~in days, hours and minutes~~. On this voyage the vessel has had speed less than 6 knots in the area for a total of 17 hours and 38 minutes.

If the vessel has no AIS tracking over the Norwegian shelf in the Loop Hole northbound, the text NO TRACKS IN ZONE will appear in this section. If the vessel has tracks over the area, but no registered AIS positions here, the text NO AIS POSITIONS will appear.

4.2 Information about the Russian shelf, northbound

Figure 13 Russian Continental Shelf, northbound

Entered Loophole Russian Shelf	10.04.2015 11:08	
Left Loophole Russian Shelf	12.04.2015 09:48	
Time on Russian Shelf (days:hours:minutes)		01:22:40
Period with speed < 6 knots from	10.04.2015 19:04	
Period with speed < 6 knots to	11.04.2015 22:31	
Time with speed < 6 knots (days:hours:minutes)		01:03:27

The same information is also given in respect of the Russian continental shelf.

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4.3 Information about the Norwegian shelf, southbound

Figure 14 Norwegian Continental Shelf, southbound

Entered Loophole Norwegian Shelf	12.04.2015 09:48	
Left Loophole Norwegian Shelf	12.04.2015 18:19	
Time on Norwegian Shelf (days:hours:minutes)		00:08:31
Period with speed < 6 knots from		
Period with speed < 6 knots to		
Time with speed < 6 knots (days:hours:minutes)		00:00:00

The table above gives information about the date and time for when the vessel entered the Norwegian continental shelf in the Loop Hole, southbound. This is normally when the vessel returns from ~~catching~~ harvesting operations on the Russian continental shelf in the Loop Hole, going back to port. Otherwise, this section has the same information as set out above.

~~This section has the same kind of information as section 2 and section 3. See these sections for further information and explanation.~~

4.4 Periods <6 knots in the areas

Figure 15 Periods <6 knots in the areas

Hours on Norwegian Shelf < 6 knots	**17,38**
Hours on Russian Shelf < 6 knots	**27,27**
Total hours < 6 knots	**44,65**
Percent time on Russian Shelf < 6 knots	**61,08 %**
Percent time on Norwegian Shelf < 6 knots	**38,92 %**

The next table ~~above~~ gives information about the number of hours the vessel has ~~had speed~~been travelling < 6 knots over the Norwegian c~~C~~ontinental ~~S~~shelf in the Loop Hole and over the Russian c~~C~~ontinental ~~S~~shelf in the Loop Hole. ~~The periods of speed < 6 knots~~As stated above, the speed of < 6 knots is consistent with ~~are also compatible with catching~~ harvesting operations the vessel has had, or possible ~~catching~~ harvesting operations the vessel has had in the area.

The last two rows give information about the percentage of the total time the vessel has had over the Russian Continental Shelf in the Loop Hole and over the Norwegian Continental Shelf in the Loop Hole.

4.5 Landing information

The owner or user of a harvesting or transport vessel and ~~the one that receives the catch~~the receipt of a catch are both required to complete ~~shall complete~~ a landing note ~~(landings- eller sluttseddel)~~ with information about the catch. This applies regardless of whether the catch is transferred to a land-based facility or to another vessel.

Figure 16 Landing information

Snow crab landed live in kg	**50 000**	
Factory (crab receiver)	**Seagourmet Norway AS, Båtsfjord**	
Landingnote number and date	**10428779**	**11.06.2015**

The table above gives information about how many kilos of snow crab in live weight the vessel landed on this voyage according to those landing notes. It also gives information about the receiver of the crab. The landingnote ~~(landings- eller sluttseddel)~~ is identified with a unique number and the date is given for when the landingnote from the Norwegian Fishermen's Sales Organization was issued. The date given on the landing note is the date for the ending of the landing of the catch. The landing note ~~(landings- eller sluttseddel)~~ is issued by the Norwegian receiver of the catch, either the buyer of the catch or the cold storage in port.

Attachments

- NEAFC port state control forms (PSC 1 and PSC 2)

~~2020 06 06. Ministry of Foreign Affairs. SIA North Star. Snow crab. Continental shelf, Loop Hole. Method. Summary.~~

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- All AIS-positions for the vessels "Saldus", "Solveiga", "Solvita" and "Senator"