

SOCIO-ECONOMIC ENVIRONMENT

MILITARY AREAS

INFRASTRUCTURE

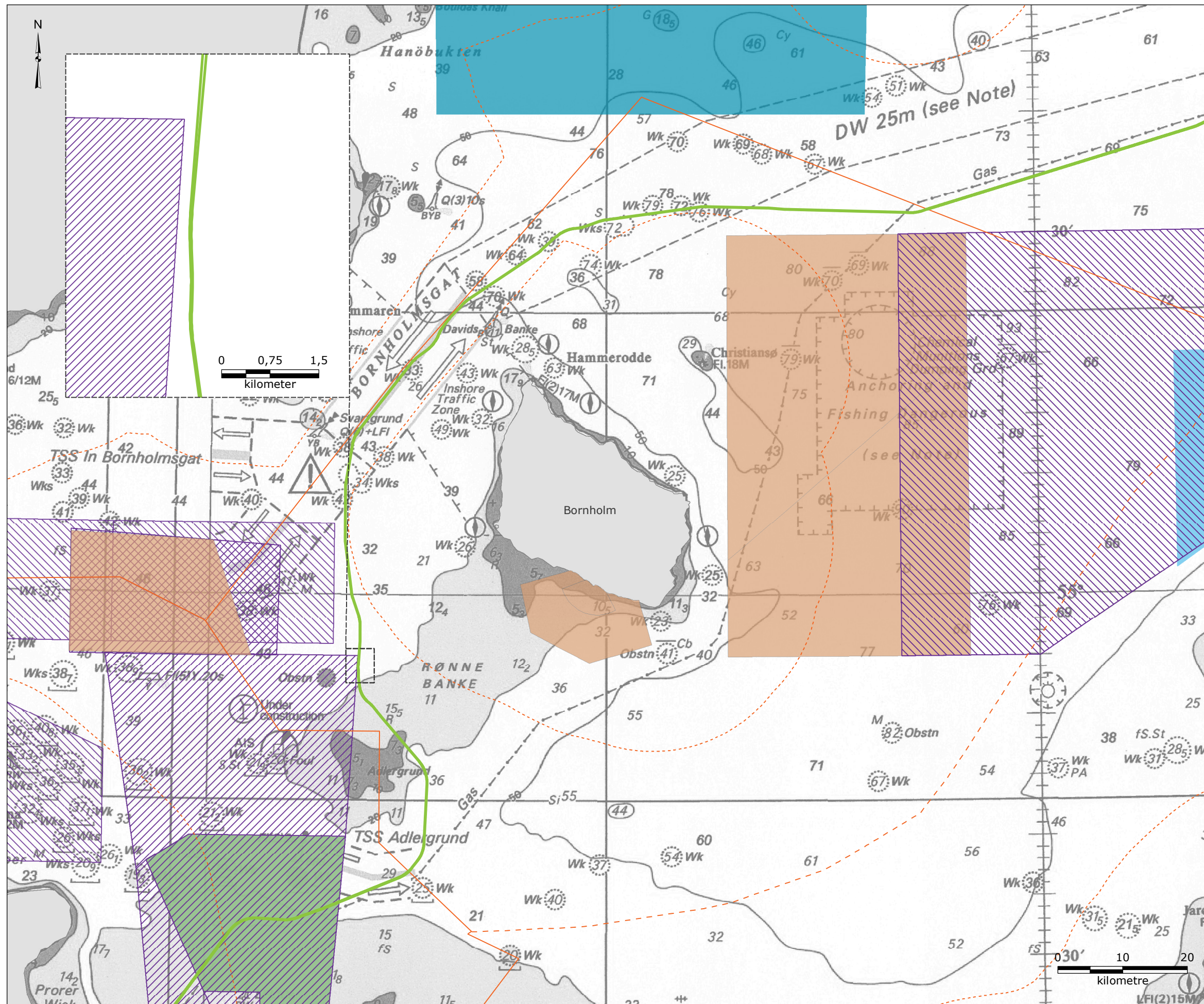
MUNITIONS, CONVENTIONAL/CHEMICAL

FISHERY

SHIP TRAFFIC

TOURISM

CULTURAL HERITAGE



- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - Firing danger area
 - Other military exercise area
 - Submarine exercise area
 - Safe Bottoming Areas
 - Other live firing exercise area
 - Artillery firing exercise area

References:

- Försvarmakten, 2015, "Redovisning av riksinteressen och områden av betydelse för totalförsvarets militära del enligt 3 kap §9 Miljöbalken i Kalmar Län", Sweden
- Letter from Federal Office for Infrastructure, Environmental Protection and Services of The German Armed Forces, 23 March 2016
- Ramboll, 2013, "E-mail from Forsvarets Bygnings- & Etablisementstjeneste, Denmark", Received: 2013-06-27
- Ramboll, 2017, "E-mail from IfAO GmbH, Germany", Received: 2017-03-01
- UKHO, 2007, "British Admiralty Nautical Chart 2816: Baltic Sea, Southern Sheet", United Kingdom Hydrographic Office

Version: 02
 Date: 2018-07-23
 Prepared: MRIH
 Controlled: CASO

MI-01-D

Military practice areas





Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- Midline between Denmark and Poland

- Pipelines:
- Nord Stream Route
- Planned Baltic Pipe route

- Cables:
- Power - active
- Power - planned
- Telecom - active
- Telecom - inactive
- Unknown

- Wind farms:
- Planned
- Under Construction
- Fully Commissioned

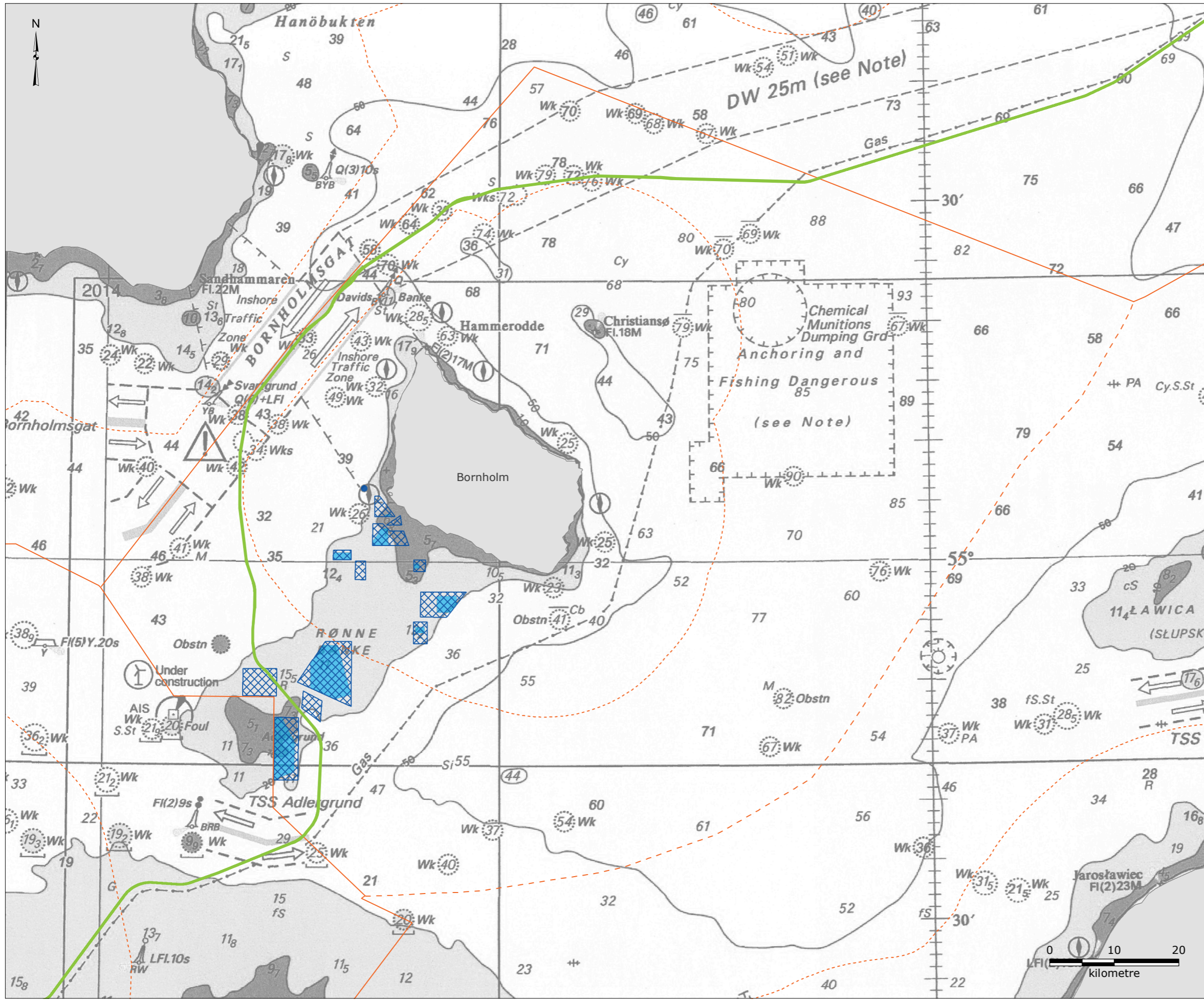
References:
 - 4C Offshore, <http://www.4coffshore.com/offshorewind/>,
 Date accessed: 2018-02-22
 - Cable data received from Nord Stream 2 AG 20 January 2017

Version: 03
 Date: 2018-08-01
 Prepared: MRIH/ MALM
 Controlled: ANL/ CASO

IN-01-D

**Infrastructure,
existing and planned**





- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - Sediment dumping site
 - Area reserved for extraction of raw materials
 - Potential area reserved for extraction of raw materials

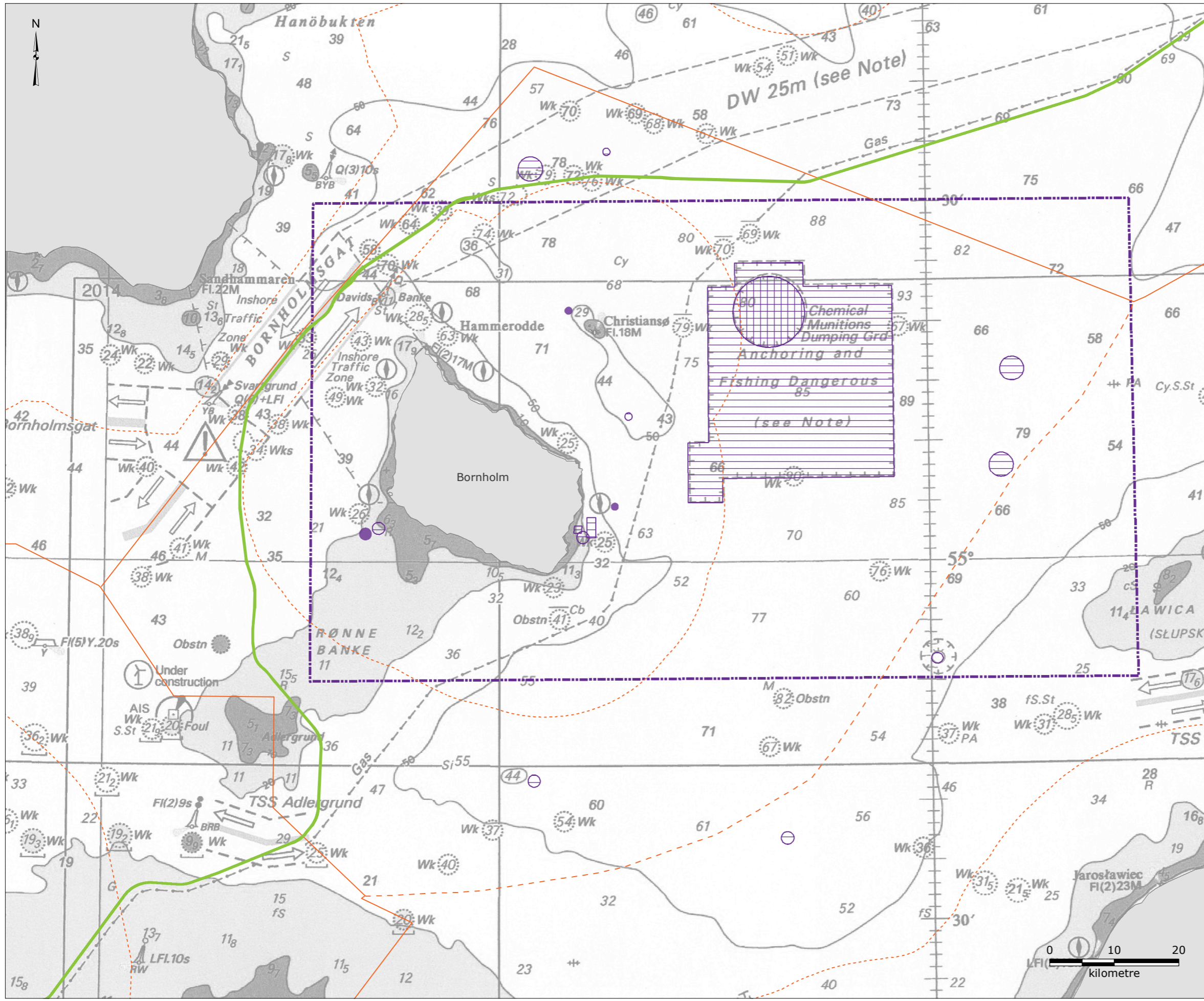
References:
 - Naturstyrelsen, 2018, "Restriktive områder-Klappladser", <http://miljoegis.mim.dk/cbkort?profile=miljoegis-raastofferhavet>, Miljøministeriet, Date accessed: 2018-04-10
 - Naturstyrelsen, 2018, "Råstofindvinding på havet-Fællesområder", <http://miljoegis.mim.dk/cbkort?profile=miljoegis-raastofferhavet>, Miljøministeriet, Date accessed: 2018-04-10
 - Naturstyrelsen, 2018, "Råstofindvinding på havet - Potentielle Fællesområder", <http://miljoegis.mim.dk/cbkort?profile=miljoegis-raastofferhavet>, Miljøministeriet, Date accessed: 2018-04-10

Version: 01
 Date: 2018-05-16
 Prepared: MSTB/ MRIH
 Controlled: ANL/ CASO

IN-02-D

Resource extraction areas





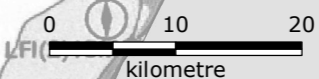
- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - Emergency dumping area
 - Chemical munitions dumping site
 - Bottom trawling, anchoring and seabed intervention works discouraged
 - Risk area in which fishing vessels are required to have first aid gas equipment on board

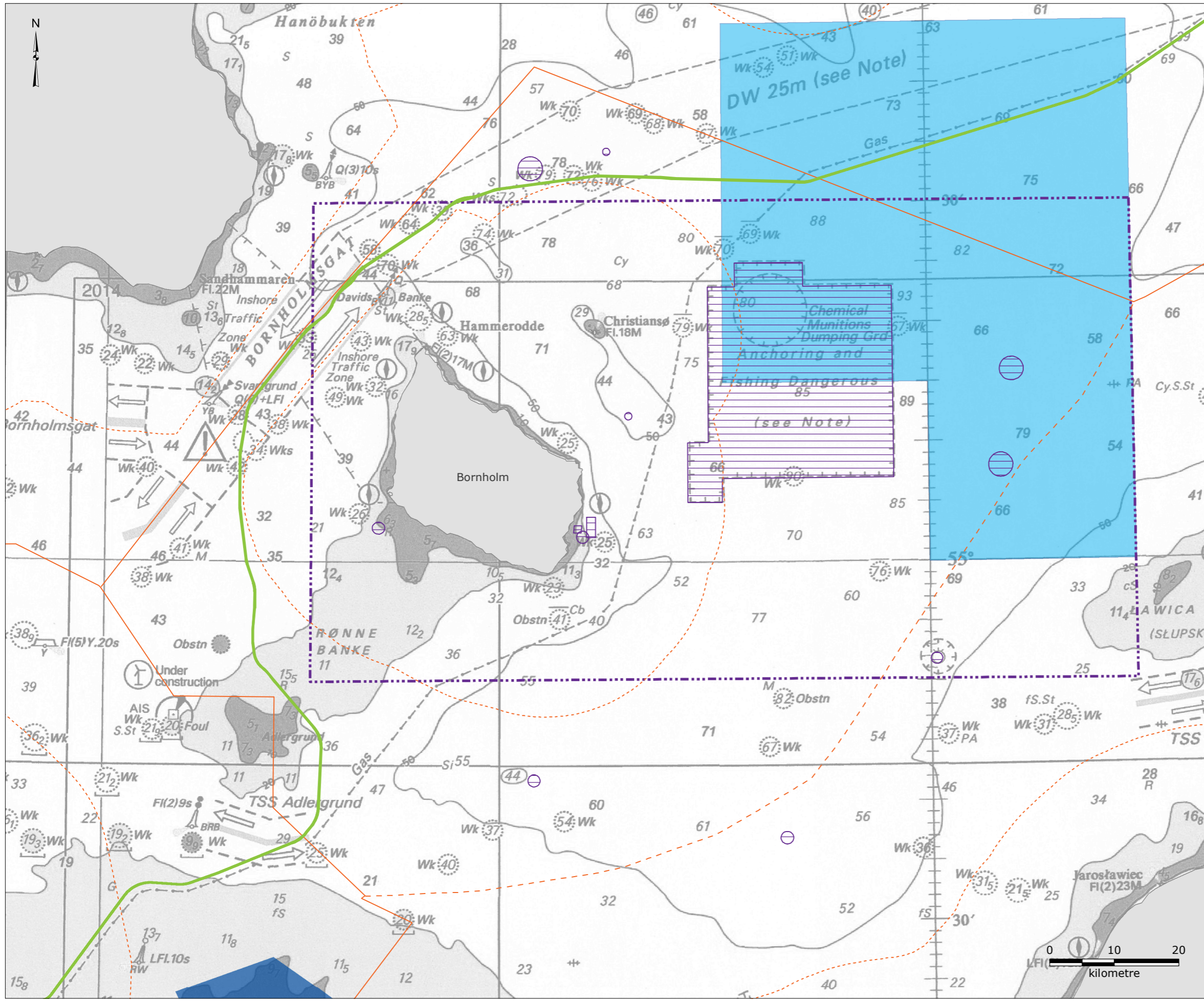
References:
 - Fiskeriministeriet, 2012, "Fiskeriårbogen 2012 (årgang 119)", Iver C. Weibach & co.
 - Kort og Matrikelstyrelsen, 2010, "Ny udgave af kort 188 - Østersøen omkring Bornholm, 5th edition
 - Ministry of Business and Growth, 2005, "Bekendtgørelse om forbud mod sejlads, ankring og fiskeri mv. i visse områder i danske farvande", BEK nr. 135 af 04/03/2005

Version: 02
 Date: 2018-07-05
 Prepared: MSTB/ MRIH
 Controlled: JCXS

MU-01-D

Areas with chemical munitions





- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - Area closed to cod (*Gadus morhua*) fishery from May 1 to October 31
 - Area permanently closed to fisheries with active gear year around
 - Bottom trawling, anchoring and seabed intervention works discouraged
 - Risk area in which fishing vessels are required to have first aid gas equipment on board

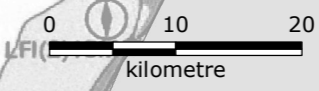
Note:
 - Closed for fishery in order to enable undisturbed spawning conditions for the eastern cod population /ICES 2014/

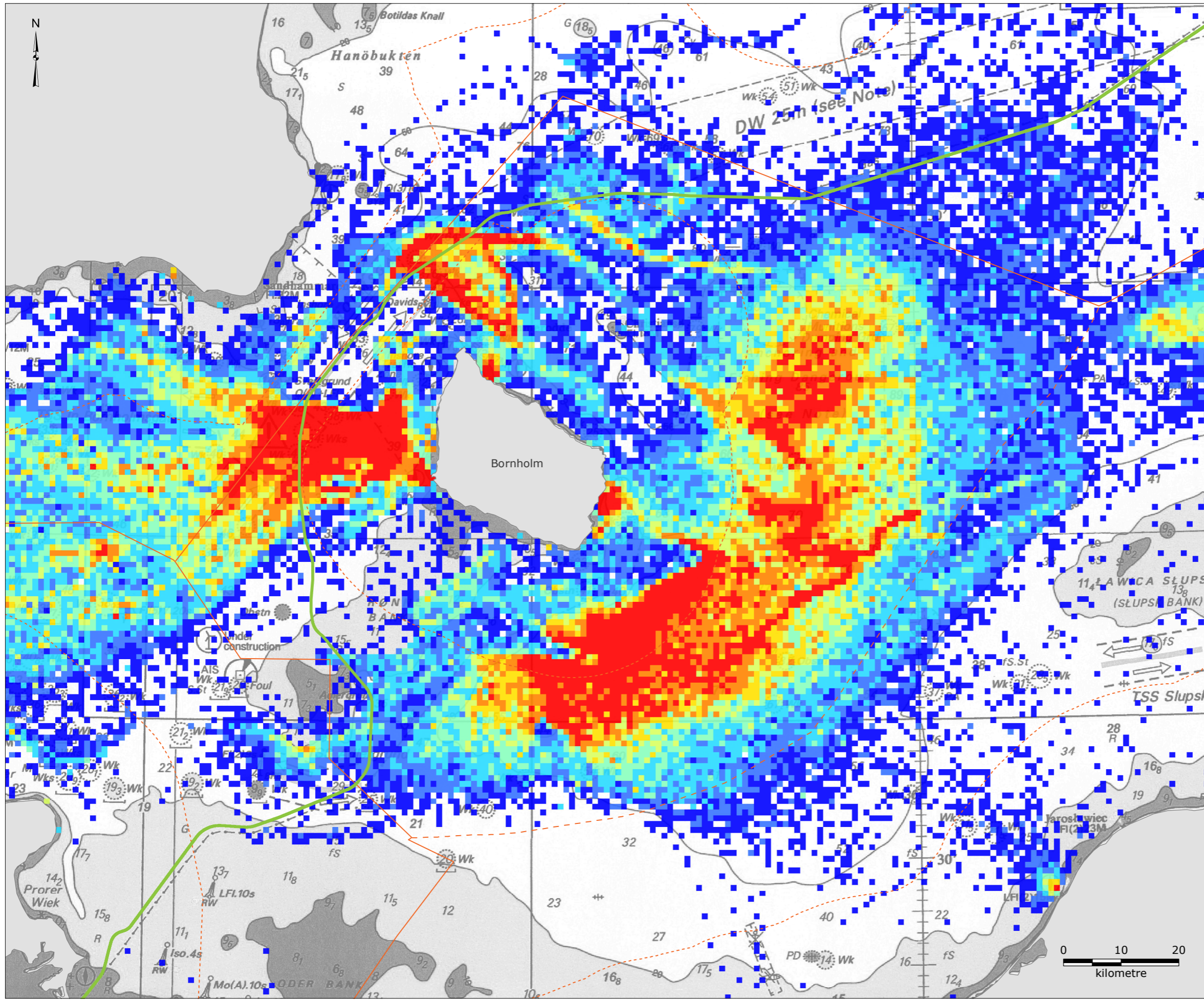
References:
 - Council Regulation (EC) No 1098/2007 of 18 September 2007 establishing a multiannual plan for the cod stocks in the Baltic Sea and the fisheries exploiting those stocks, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 779/97
 - Council Regulation (EC) No 2187/2005 of 21 December 2005 for the conservation of fishery resources through technical measures in the Baltic Sea, the Belts and the Sound, amending Regulation (EC) No 1434/98 and repealing Regulation (EC) No 88/98
 - Fiskeriministeriet, 2007, "Fiskeriårbogen 2007 (årgang 114)", Iver C. Weibach & co., pp. 944
 - HELCOM, 2013, "Baltic Sea fisheries closure" <http://maps.helcom.fi/website/mapservice/index.html>, Data accessed: 2018-07-06
 - HELCOM, 2013, "Cod fisheries closures" <http://maps.helcom.fi/website/mapservice/index.html>, Data accessed: 2018-07-06
 - ICES, 2014, "Report of the Baltic Fishery Assessment Working Group (WGBFAS)", April 2014, ICES HQ, Copenhagen, Denmark. ICES CM 2014/ACOM:10
 - Kort og Matrikelstyrelsen, 2010, "Ny udgave af kort 188 - Østersøen omkring Bornholm, 5th edition
 - Ministry of Business and Growth, 2005, "Bekendtgørelse om forbud mod sejlad, ankring og fiskeri mv. i visse områder i danske farvande", BEK nr. 135 af 04/03/2005
 - UKHO, 2007, "British Admiralty Nautical Chart 2816: Baltic Sea, Southern Sheet", United Kingdom Hydrographic Office

Version: 02
 Date: 2018-07-06
 Prepared: MSTB/ MRIH
 Controlled: MIBR

FC-01-D

Areas where commercial fishery is prohibited





Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- Midline between Denmark and Poland

Calculated bottom trawling density
(Danish fishing vessels):
(Total number of trawl tracks from 2010-2016
based on VMS data)

- 1 - 2
- > 2 - 5
- > 5 - 10
- > 10 - 15
- > 15 - 20
- > 20 - 25
- > 25 - 35
- > 35

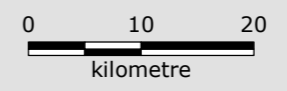
Note:
- Density data were derived from VMS data points of Danish fishing vessels fishing in the Baltic in 2010-2016. Only vessels with speed between 0-5 knots are shown, as it is estimated that bottom trawling is undertaken at this speed interval. Background data obtained from The Danish Agrifish Agency

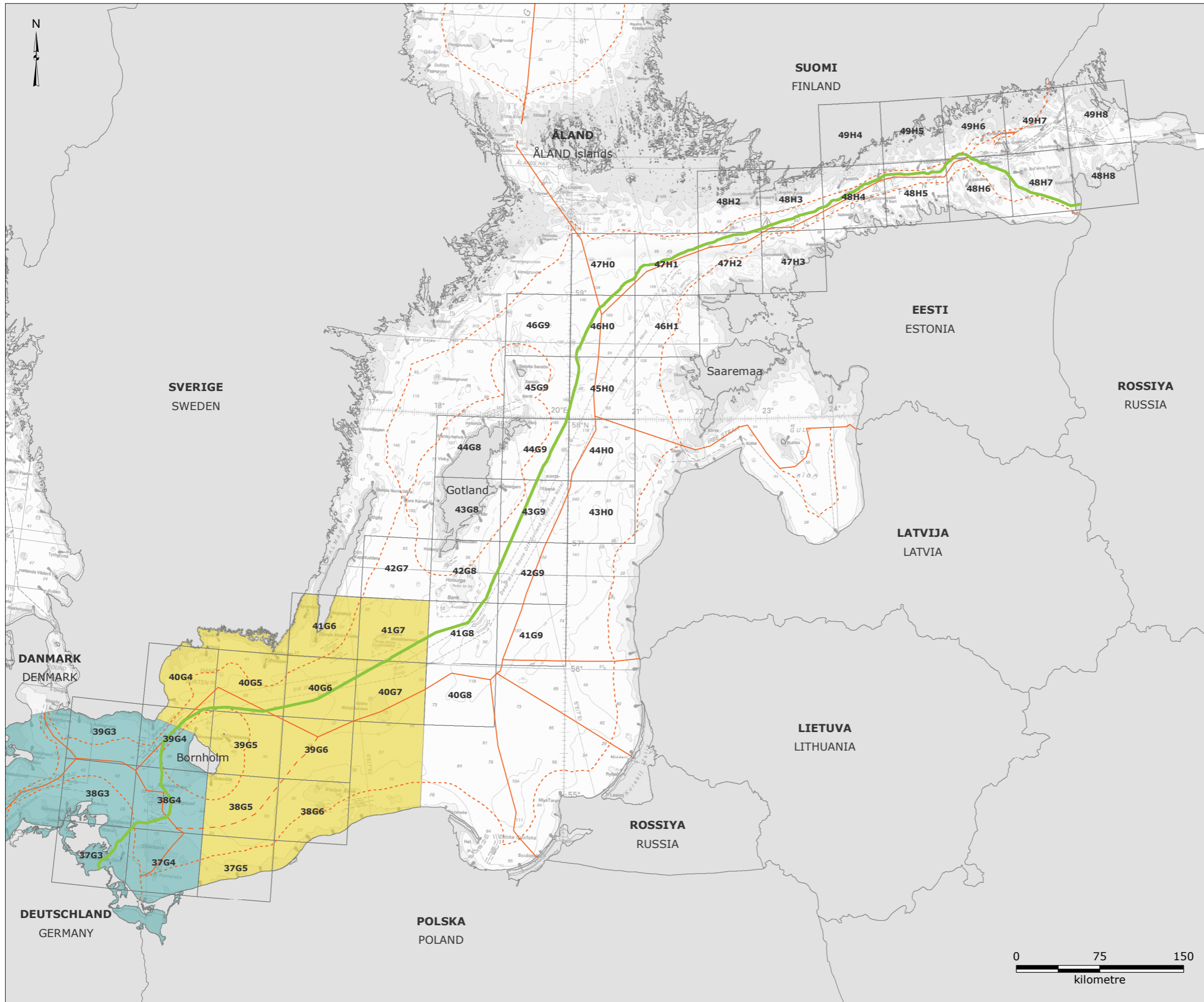
Reference:
- Orbicon, 2018, "Nord Stream 2 - Baltic fisheries along the pipeline transect", Note, 2018-03-05

Version: 03
Date: 2018-08-01
Prepared: MIRS/ MRIH
Controlled: MIBR

FC-02-D

Bottom trawling density





- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - ICES statistical rectangles

- ICES subdivisions:
- 24
 - 25

Note:
 - ICES subdivisions are only shown for Denmark

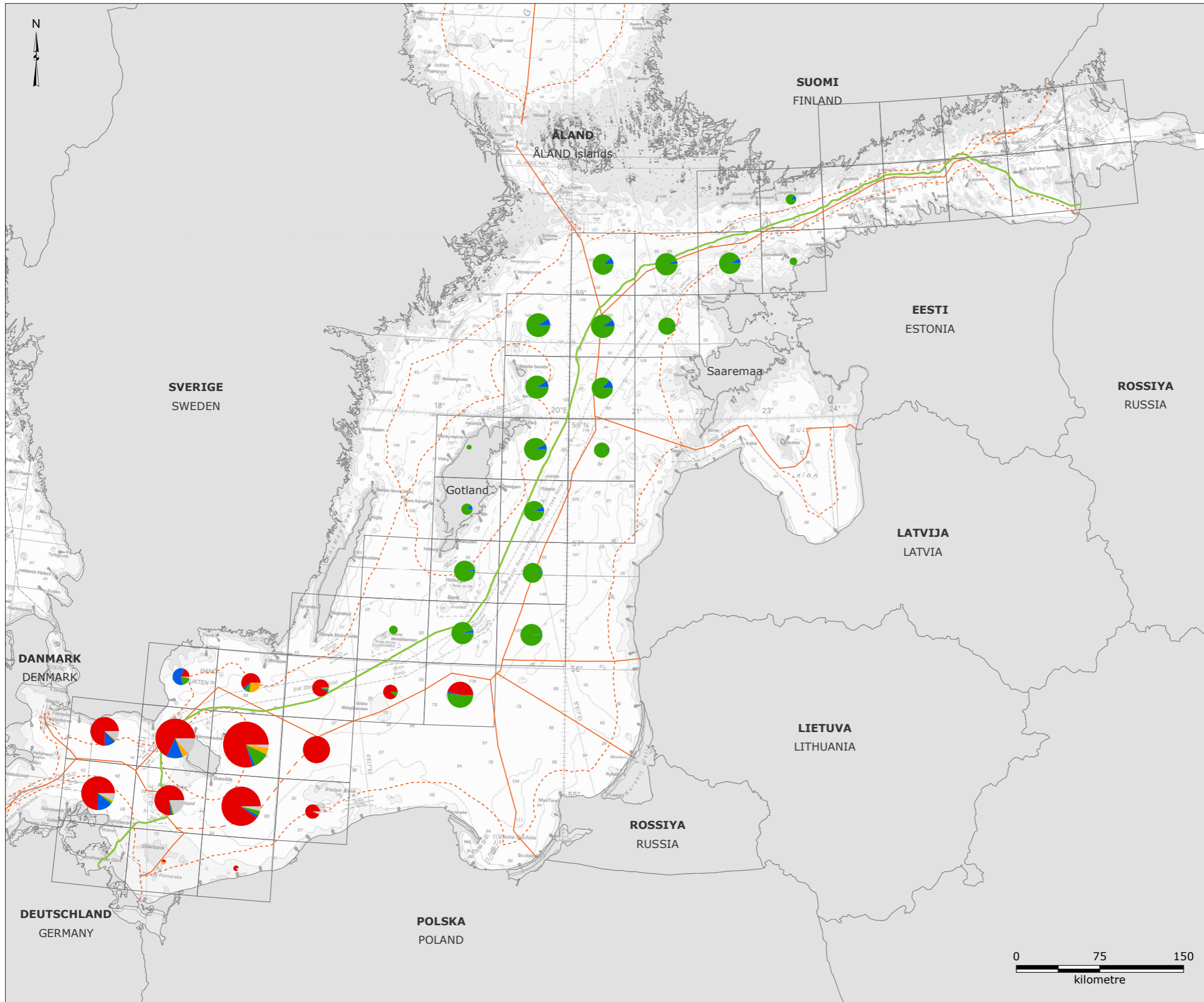
References:
 - ICES, 2017, <http://gis.ices.dk/sf/index.html>, Date accessed: 2018-05-30
 - Orbicon, 2016, "Nord Stream 2 – Baltic fisheries along the pipeline transect", Note, 2016-06-09

Version: 01
 Date: 2018-05-30
 Prepared: MSTB/ MRIH
 Controlled: MIBR

FC-03

ICES statistical rectangles and subdivisions





Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- Midline between Denmark and Poland

Fishery mean value (euros):



- Cod
- Herring
- Sprat
- Flounder
- Other

Pie areas scaled according to square root of values:

- 5,000,000 euro
- 1,000,000 euro
- 250,000 euro

Note:
- Based on data for 2010-2016

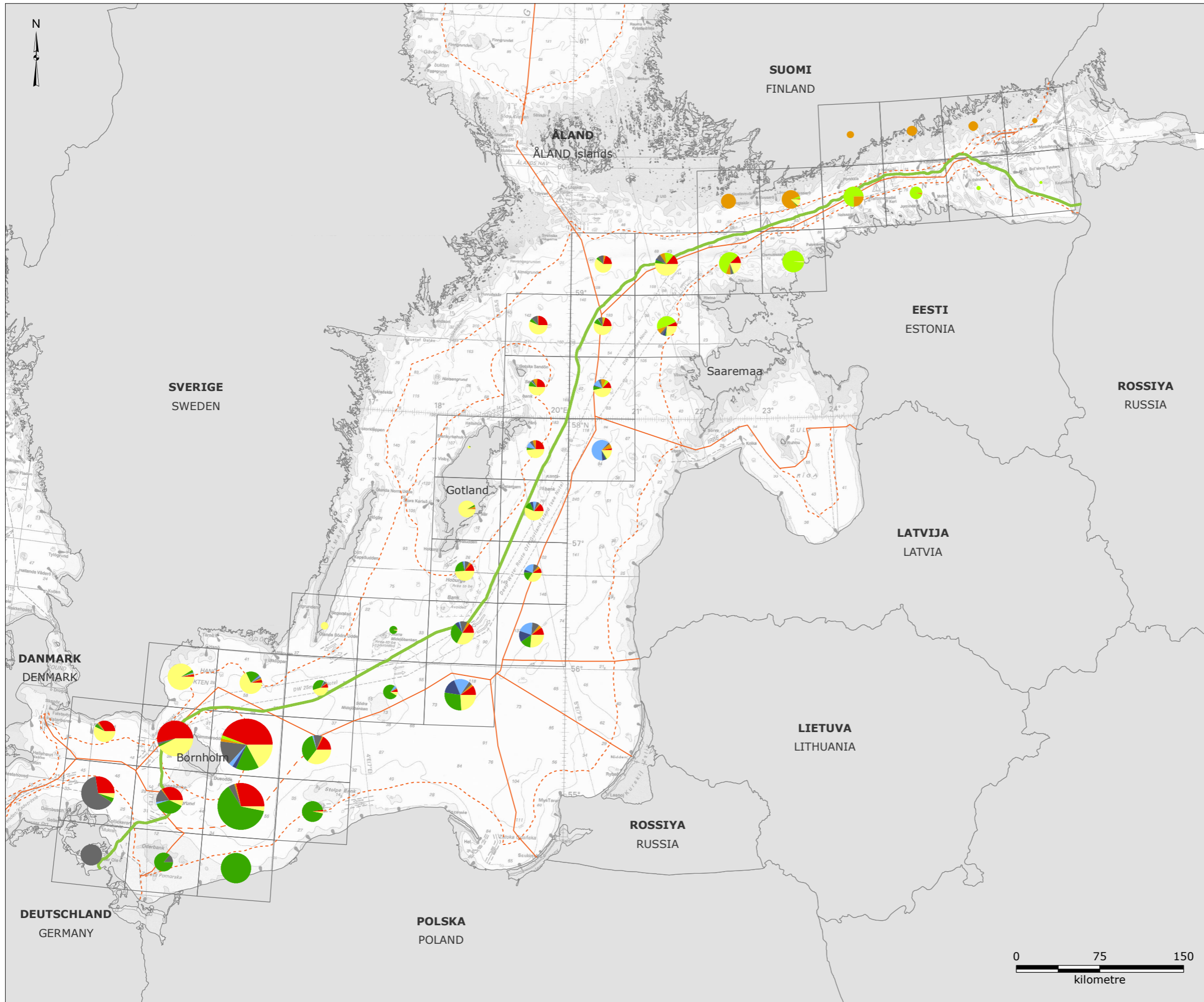
Reference:
- Orbicon, 2018, "Nord Stream 2 - Baltic fisheries along the pipeline transect", Note, 2018-03-05

Version: 01
Date: 2018-05-16
Prepared: MIRS/ MRIH
Controlled: MIBR

FC-04

Mean value of catches according to species by Danish fishery





Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- Midline between Denmark and Poland

Fishery mean value (euro):



- Denmark
- Estonia
- Finland
- Germany
- Latvia
- Lithuania
- Poland
- Sweden

Pie areas scaled according to real values:

- 10,000,000 euro
- 5,000,000 euro
- 2,000,000 euro

Note:
 - Based on data for 2010-2014.
 - Data provided from Poland for 2009-2013
 - Russia is not included (no data available)

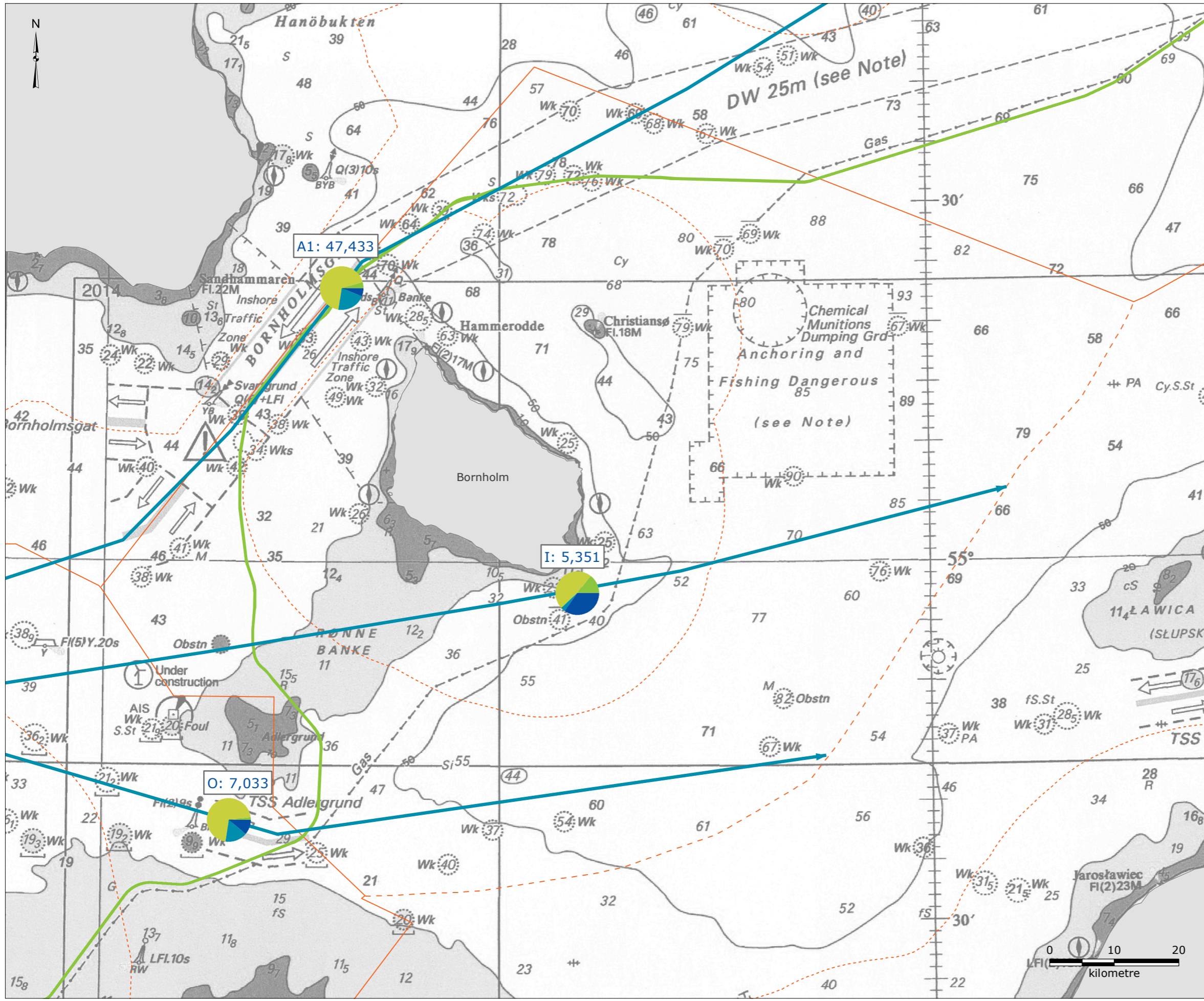
Reference:
 - Orbicon, 2016, "Nord Stream 2 - Baltic fisheries along the pipeline transect", Note, 2016-06-09

Version: 01
 Date: 2018-05-16
 Prepared: MIRS/ MRIH
 Controlled: MIBR

FC-05

Mean value of catches by country





- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - Primary ship traffic routes

- Ship types:**
- Passenger
 - Cargo
 - Tanker
 - Other

Note:

- The labels show number of ship movements on primary ship traffic routes in 2014
- Letters represent the name of the location where data was measured
- Ship statistics at certain points of interest are based on data concerning ships that cross a defined line on a shipping route. The lines are drawn approximately perpendicularly to the shipping route direction.
- The relevant major/minor ship traffic routes have been selected from the Baltic area in connection to the two Nordstream pipelines.

Reference:

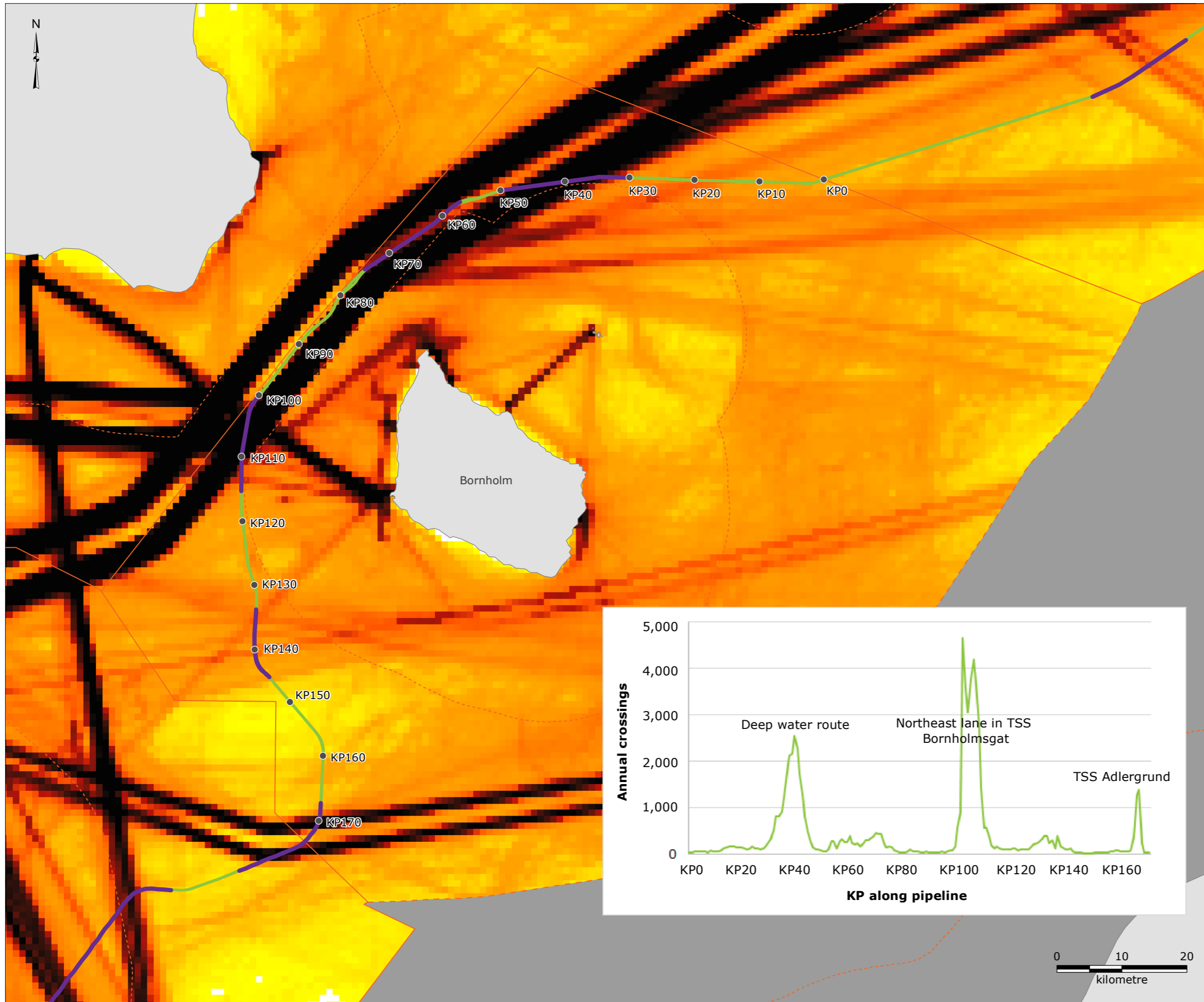
- The Danish Maritime Authority (DMA), 2014, Automatic Identification System (AIS) data 2014

Version: 02
 Date: 2018-05-16
 Prepared: MIRS/ MRIH
 Controlled: FMR

SH-01-D

Primary ship traffic routes





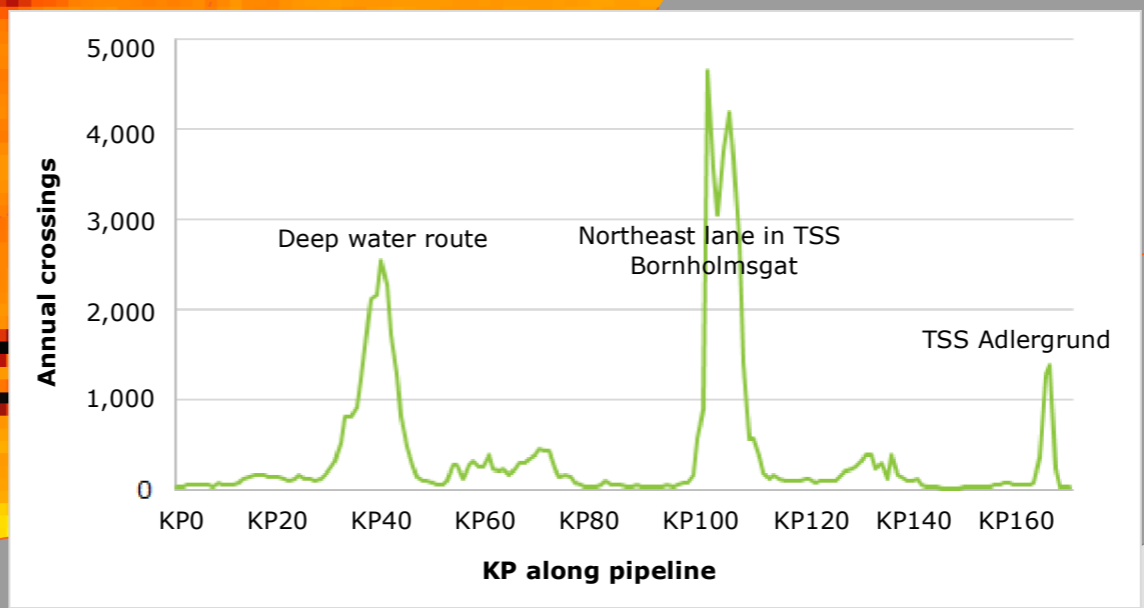
Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- Midline between Denmark and Poland
- Locations where primary ship traffic routes cross NSP2 pipelines

Ship density (2014)

	0 - 1
	1 - 100
	100 - 500
	500 - 600
	600 - 1,000
	1,000 - 1,500
	> 1,500
	No data available (Poland)

● KP (kilometre point)



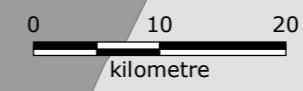
Note:
 - There is no permission from Poland to show AIS data

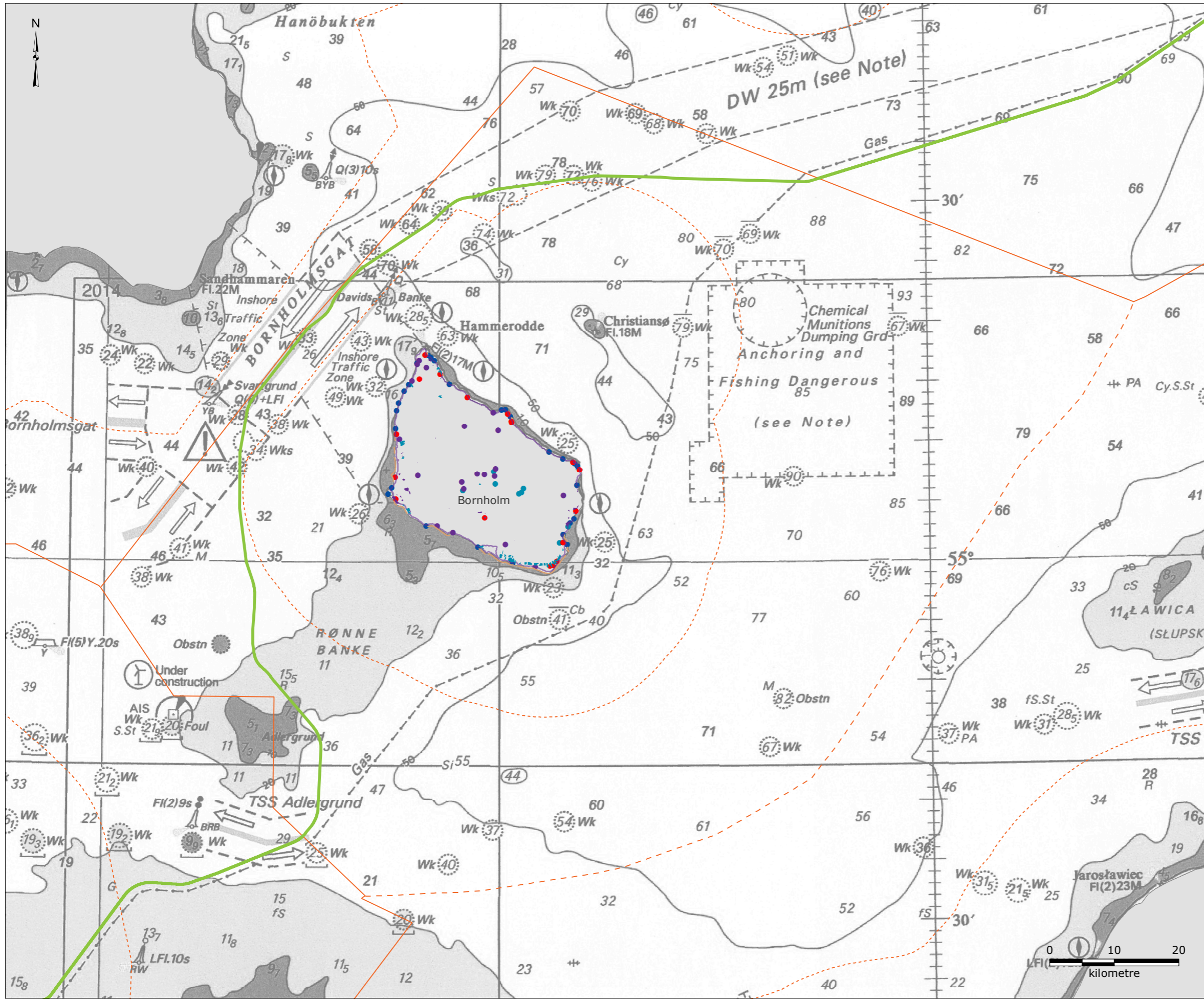
References:
 - The Danish Maritime Authority (DMA), 2014, Automatic Identification System (AIS) data 2014.
 - Ramboll, 2016, "Ship traffic background report", W-PE-EIA-POF-REP-805-060100EN, Ramboll, Denmark

Version: 02
 Date: 2018-07-11
 Prepared: MIRS/ MRIH
 Controlled: FMR

SH-02-D

NSP2 crossings of primary ship traffic routes





- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - Coastal trails
 - Particularly good beaches
 - Recreation areas
 - Summer cottage areas
 - Primitive campsites and shelters
 - Campsites
 - Birdwatching towers
 - Harbours

Note:
Tourist facilities are only shown for Bornholm

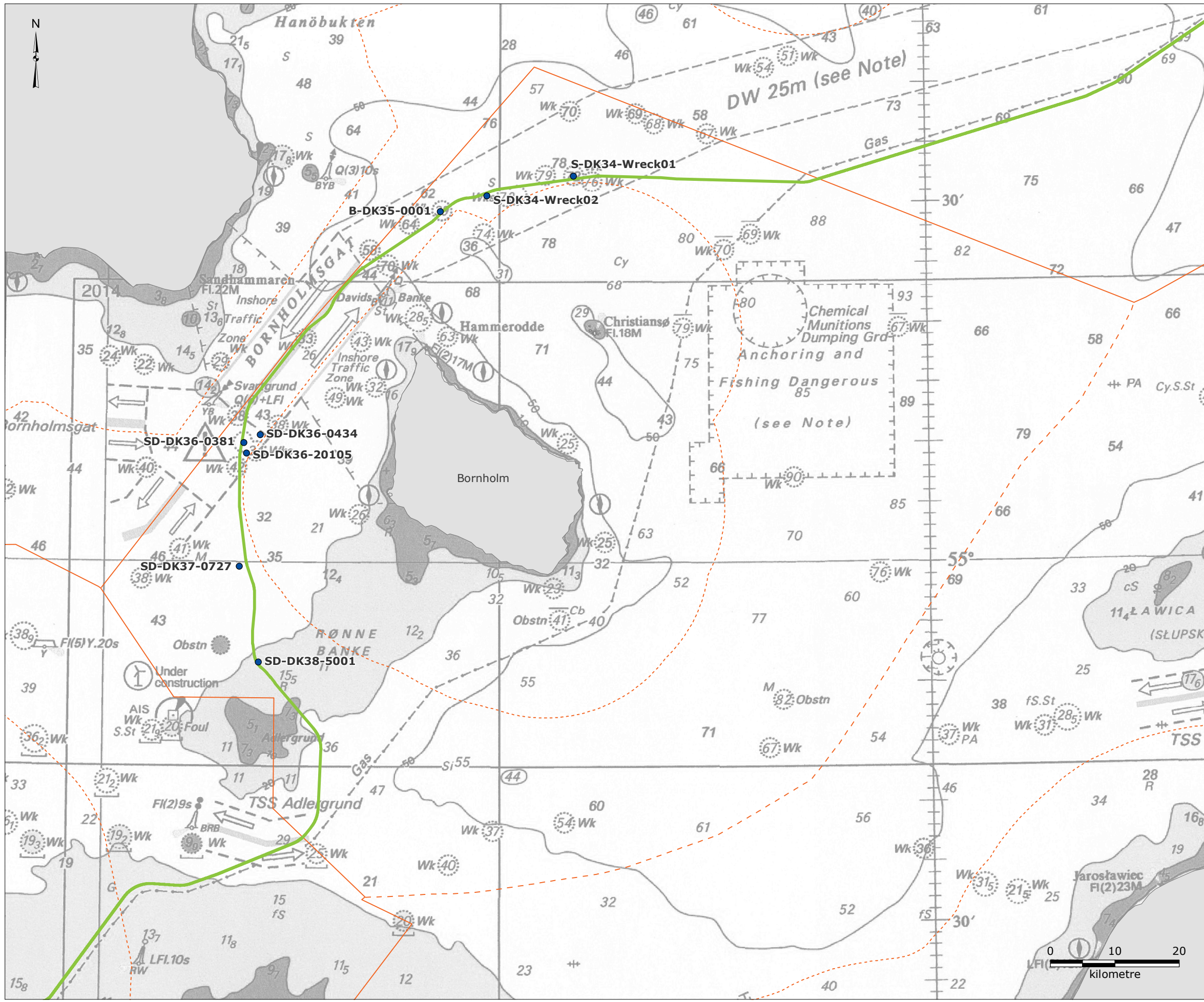
Reference:
- Ramboll, 2016, "E-mail from Bornholms Kommune, Denmark",
Received: 2016-04-20

Version: 02
Date: 2018-07-04
Prepared: MSTB/ MRIH
Controlled: STHA/ CASO

TO-01-D

Tourist facilities





Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- EEZ
- Territorial
- Midline between Denmark and Poland
- Identified shipwrecks from NSP2 investigations

Note:
 - Potential ship wreck findings are from NSP2 investigations. Findings are to be verified further by the Viking Ship Museum and The Heritage Agency of Denmark.

References:
 - MMT Sweden AB, 2017, "Cultural heritage target inspection. Nord Stream 2 Project. Route development, geophysical survey - cultural heritage inspection. Denmark Block 34", November. Doc. No. W-SU-DET-PDK-REP-808-RDCH01EN. Rev. 01.
 - MMT Sweden AB, 2017, "Cultural heritage target inspection. Nord Stream 2 Project. Route development, geophysical survey - cultural heritage inspection. Denmark Block 34", November. Doc. No. W-SU-DET-PDK-REP-808-RDCH02EN. Rev. 01.
 - MMT Sweden AB, 2017, "Cultural heritage survey SD-DK38-5001, Nord Stream 2 Project. Route development, geophysical survey - cultural heritage survey. Denmark Block DK-38", November. Doc. No. W-SU-DET-PDK-REP-808-RDCH03EN. Rev. 01.
 - MMT Sweden AB, 2017, "Cultural heritage survey SD-DK36-0434, Nord Stream 2 Project. Route development, geophysical survey - cultural heritage survey. Denmark Block DK-36", November. Doc. No. W-SU-DET-PDK-REP-808-RDCH05EN. Rev. A.
 - MMT Sweden AB, 2017, "Cultural heritage survey SD-DK36-0381, Nord Stream 2 Project. Route development, geophysical survey - cultural heritage survey. Denmark Block DK-36", November. Doc. No. W-SU-DET-PDK-REP-808-RDCH06EN. Rev. A.
 - MMT Sweden AB, 2017, "Cultural heritage survey B-DK35-0001, Nord Stream 2 Project. Route development, geophysical survey - cultural heritage survey. Denmark Block DK-35", November. Doc. No. W-SU-DET-PDK-REP-808-RDCH07EN. Rev. 01.
 - MMT Sweden AB, 2017, "Cultural heritage survey SD-DK37-0727, Nord Stream 2 Project. Route development, geophysical survey - cultural heritage survey. Denmark Block DK-37", December. Doc. No. W-SU-DET-PDK-REP-808-RDCH08EN. Rev. 01.
 - MMT Sweden AB, 2017, "Cultural heritage survey SD-DK38-20105, Nord Stream 2 Project. Route development, geophysical survey - cultural heritage survey. Denmark Block DK-36", December. Doc. No. W-SU-DET-PDK-REP-808-RDCH09EN. Rev. 01.

Version: 01
 Date: 2018-07-10
 Prepared: MRIH
 Controlled: CASO

CU-01-D

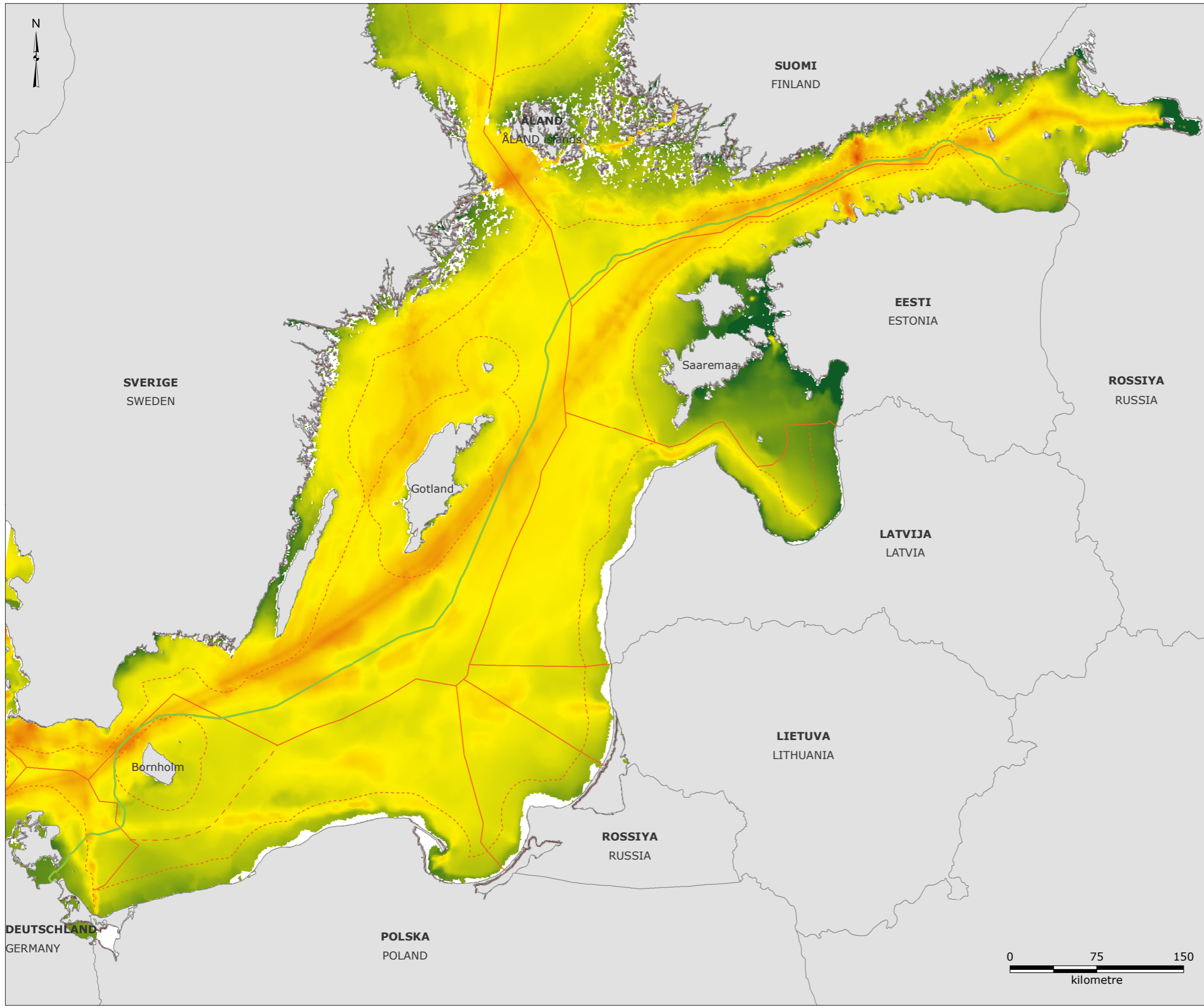
Potential ship wrecks along the NSP2 route



MATHEMATICAL MODELLING

NOISE MODELLING

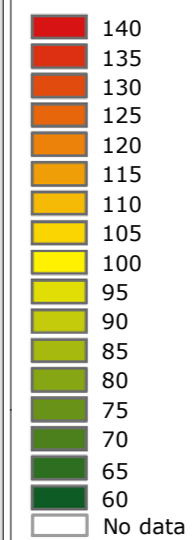
SEDIMENT MODELLING



Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- Midline between Denmark and Poland

SPL (dB re 1µPa):



Note:

- Time period: 2014 March
- Centre Frequency: 125 Hz third octave band
- Depth interval: 0 - 15 m
- Exceeded Sound level: L10 (10% of time)
- SPL: Sound Pressure Level

- White portions along the coast are probably missing data and therefore should be treated as such.

Reference:

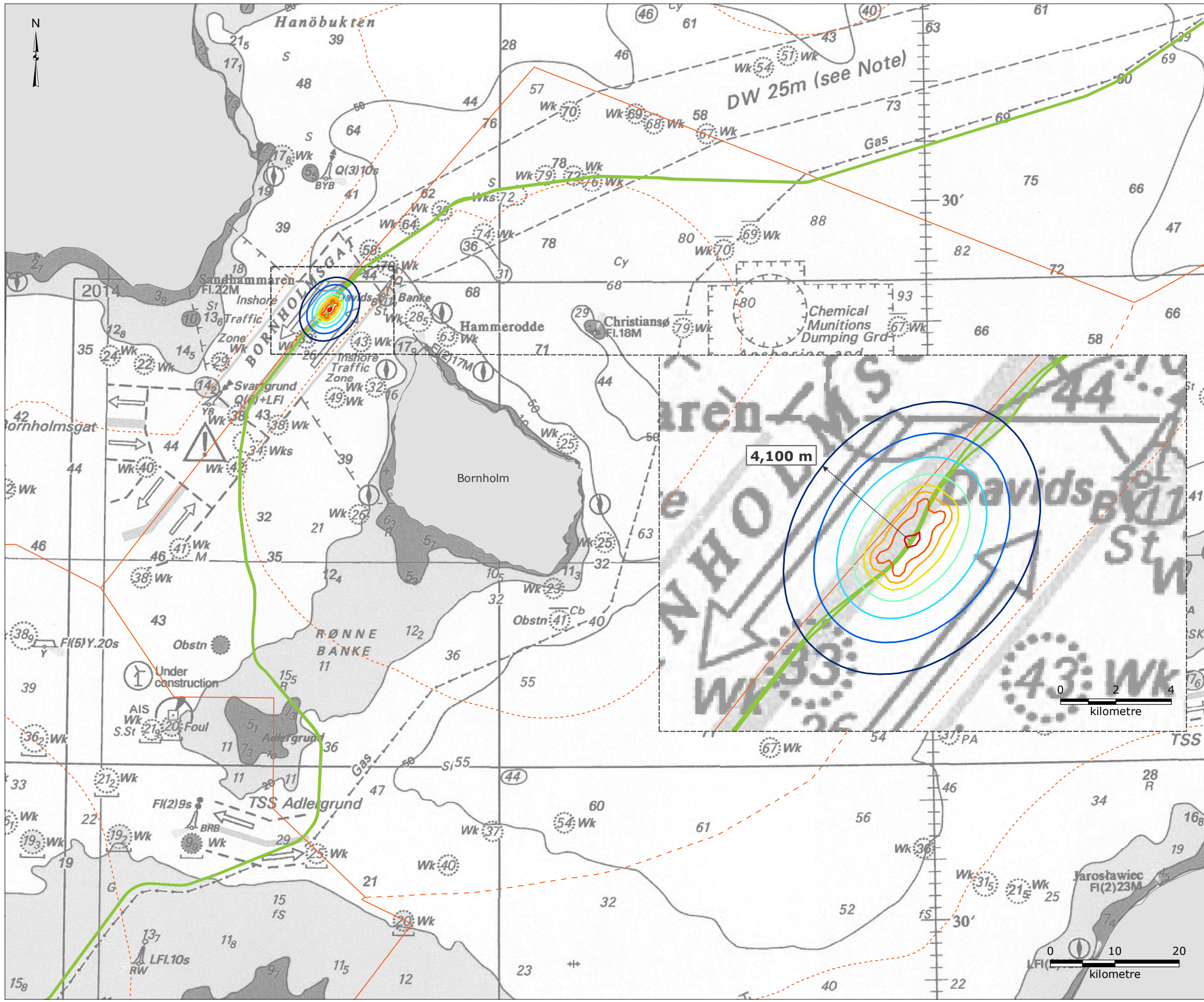
- These results have been extracted with help of the BIAS soundscape planning tool, which was prepared within the EU LIFE project Baltic Sea Information on the Acoustic Soundscape (BIAS LIFE11 ENV/SE 841); www.bias-project.eu.

Version: 02
 Date: 2018-07-04
 Prepared: FLAV/ MRIH
 Controlled: DMM

NM-01

Baltic Sea underwater soundscape





Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- Midline between Denmark and Poland

Noise distribution (db):

- 33
- 36
- 39
- 42
- 45
- 48
- 51
- 57

Note:
 - Atmospheric noise modelling assuming one anchored pipe-laying vessel, one supply vessel, and four tug vessels

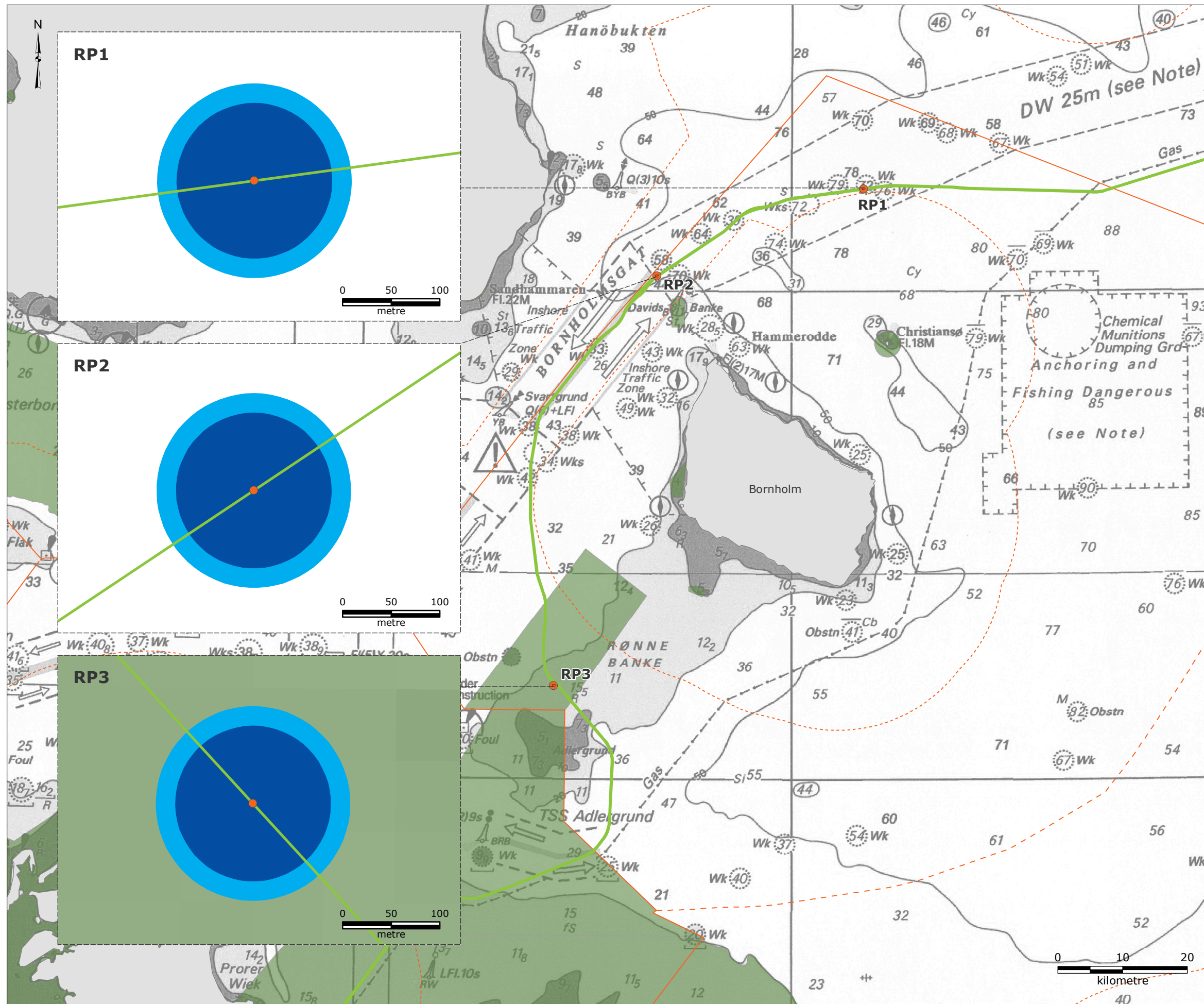
References:
 - Calculations according to Miljøstyrelsen, 1993, "Beregning af støj fra virksomheder. Fælles nordisk beregningsmetode", in Vejledning fra Miljøstyrelsen Nr. 5/1993
 - Nord Stream AG, 2008, Offshore pipeline through the Baltic Sea, Memo no. 4.3Q, Noise, June 2008.
 Doc. No. G-PE-PER-EIA-100-43Q00000-A

Version: 01
 Date: 2018-05-16
 Prepared: MSTB/ MRIH
 Controlled: JCXS

NM-02-D

Airborne noise propagation modelling results





Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- Midline between Denmark and Poland
- Natura 2000 site
- Noise modelling location

Rock placement, winter

- Cumulative SEL (two-hour):
- Marine mammals (188 dB - TTS)
 - Fish (186 dB - TTS)

Note:

- The cumulative SEL levels are related to threshold levels used in the assessment to evaluate impact on biological environment
- Underwater noise propagation from rock placement is shown for the winter conditions as the worst case scenario
- Exposure to sound may result in permanent hearing impairments (permanent threshold shift, PTS) or temporary hearing impairments (temporary threshold shift, TTS). The modelling results show that exceedance of TTS occurs only in the vicinity of the pipeline (less than 90 m). Underwater noise from rock placement does not exceed threshold levels causing PTS.

References:

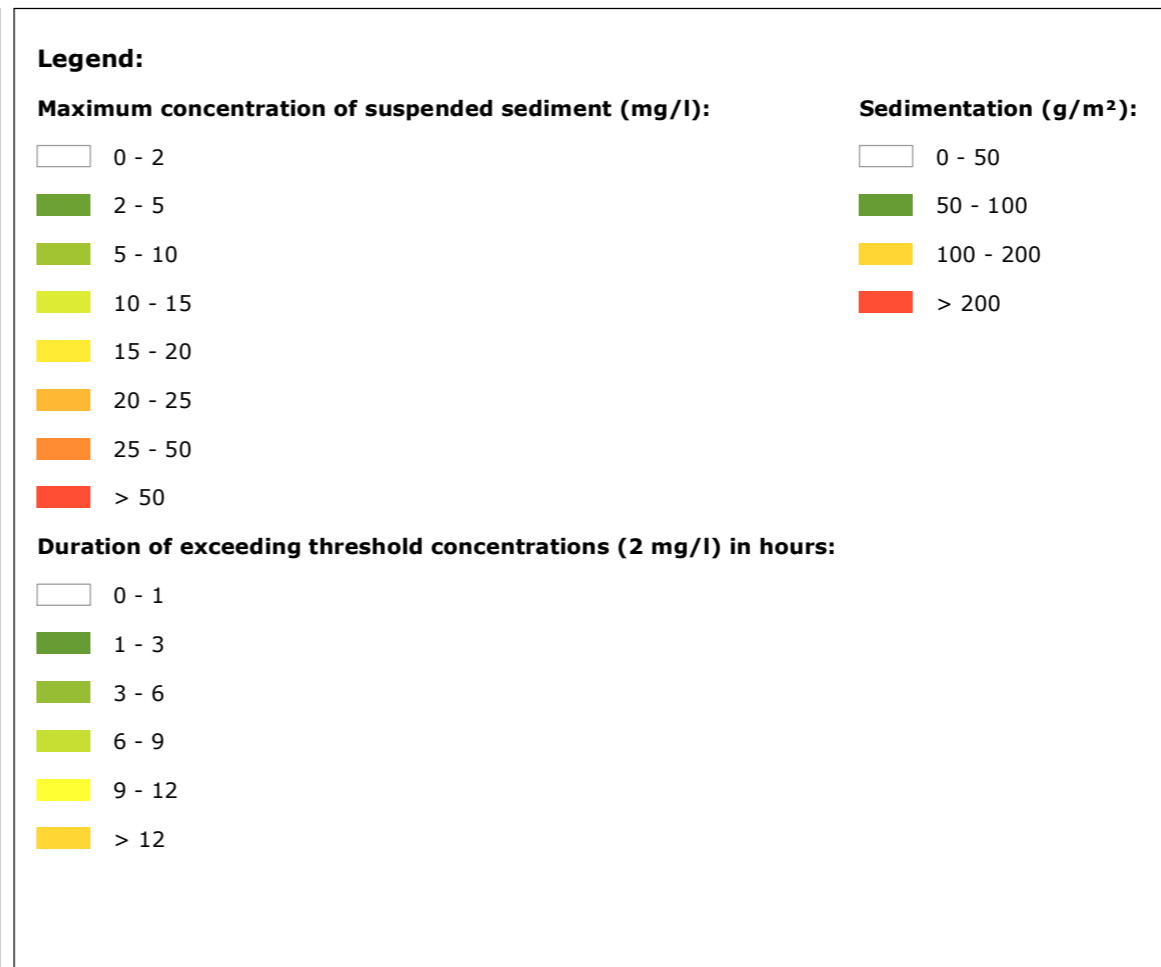
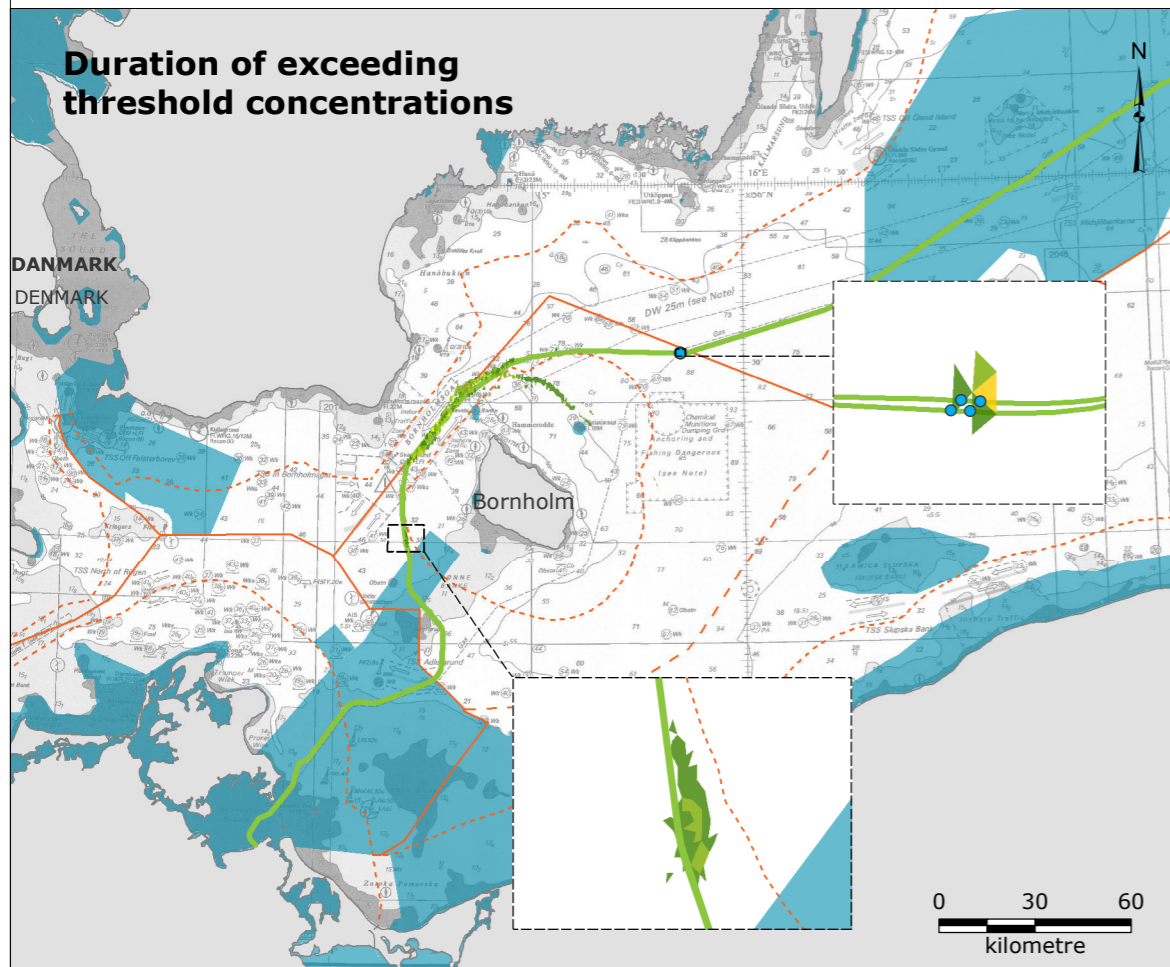
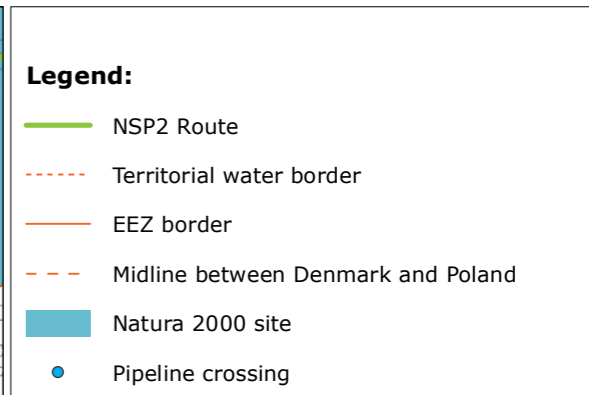
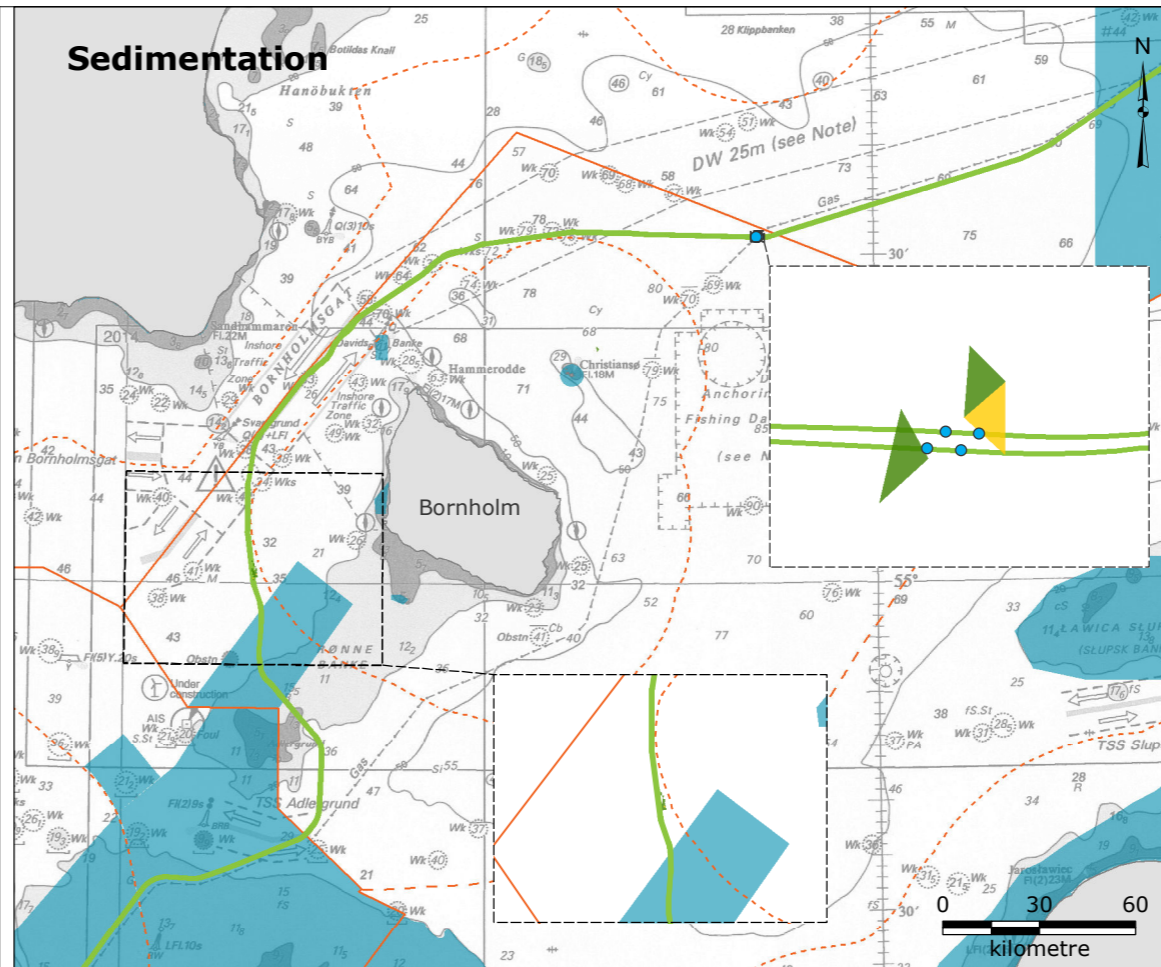
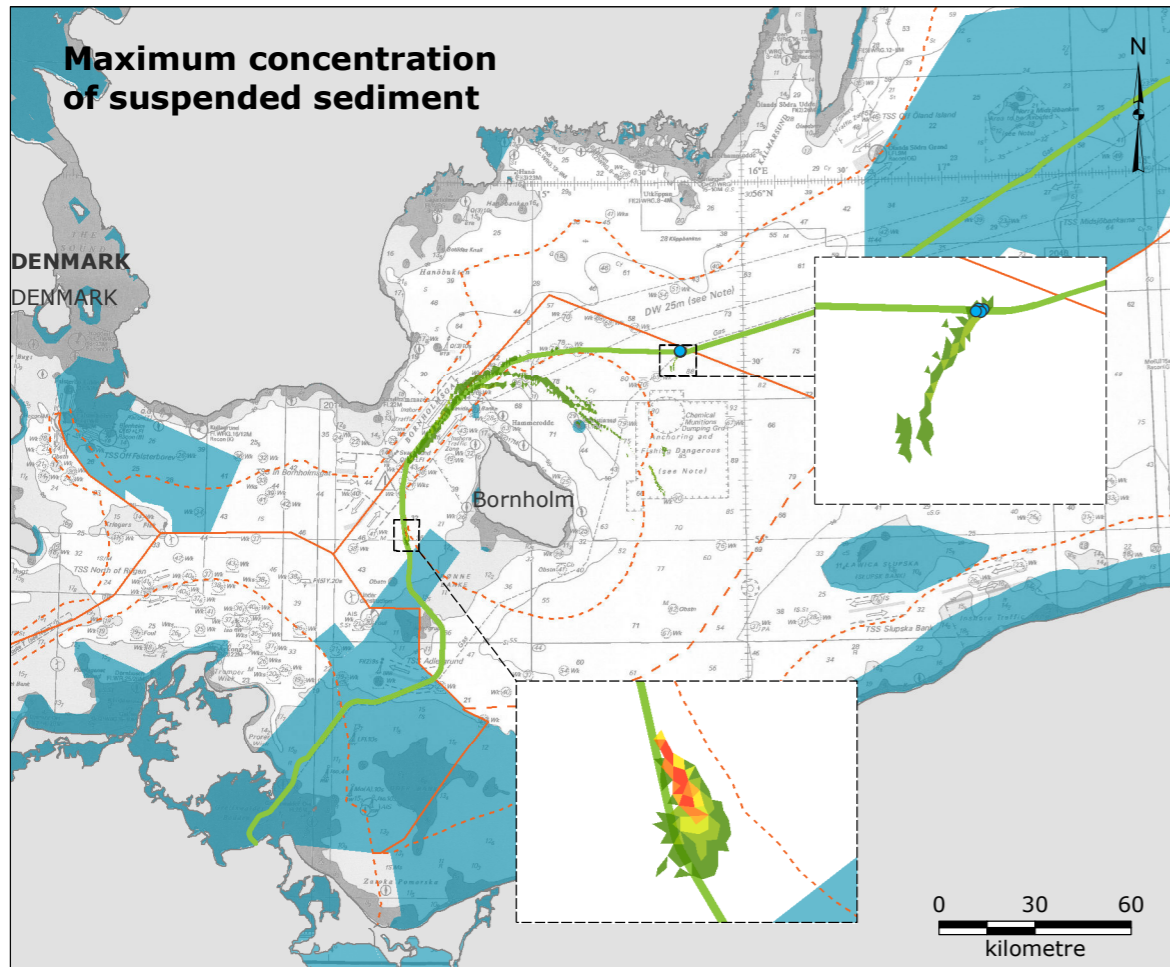
- European Environment Agency, 2017, "Natura 2000 data - the European network of protected sites", <http://www.eea.europa.eu/data-and-maps/data/natura-8>, Date accessed: 2017-09-08
- Ramboll, 2018, "Nord Stream 2. Underwater noise modelling" Doc. No. W-PE-EIA-PDK-REP-805-RN1600EN-01

Version: 02
 Date: 2018-07-11
 Prepared: MIRS/ MRIH
 Controlled: DMM

NM-03-D

Sound exposure levels





Note:
 - Duration of exceeding threshold concentration is shown for 2 mg/l since concentration of 10mg/l (avoidance reactions in fish) for rock placement would not be visible on the map
 - Winter scenario refers to a period with winter hydrographic conditions with respect to flow velocities and stratification
 - Redistribution of sediments for winter scenario is shown

Reference:
 - Nord Stream 2 AG and Ramboll, 2018, "Modelling of sediment spill in Denmark - northern route", Doc. No. W-PE-EIA-PDK-REP-805-012600EN-00.00

Version: 02
 Date: 2018-07-04
 Prepared: MALM
 Controlled: JCXS

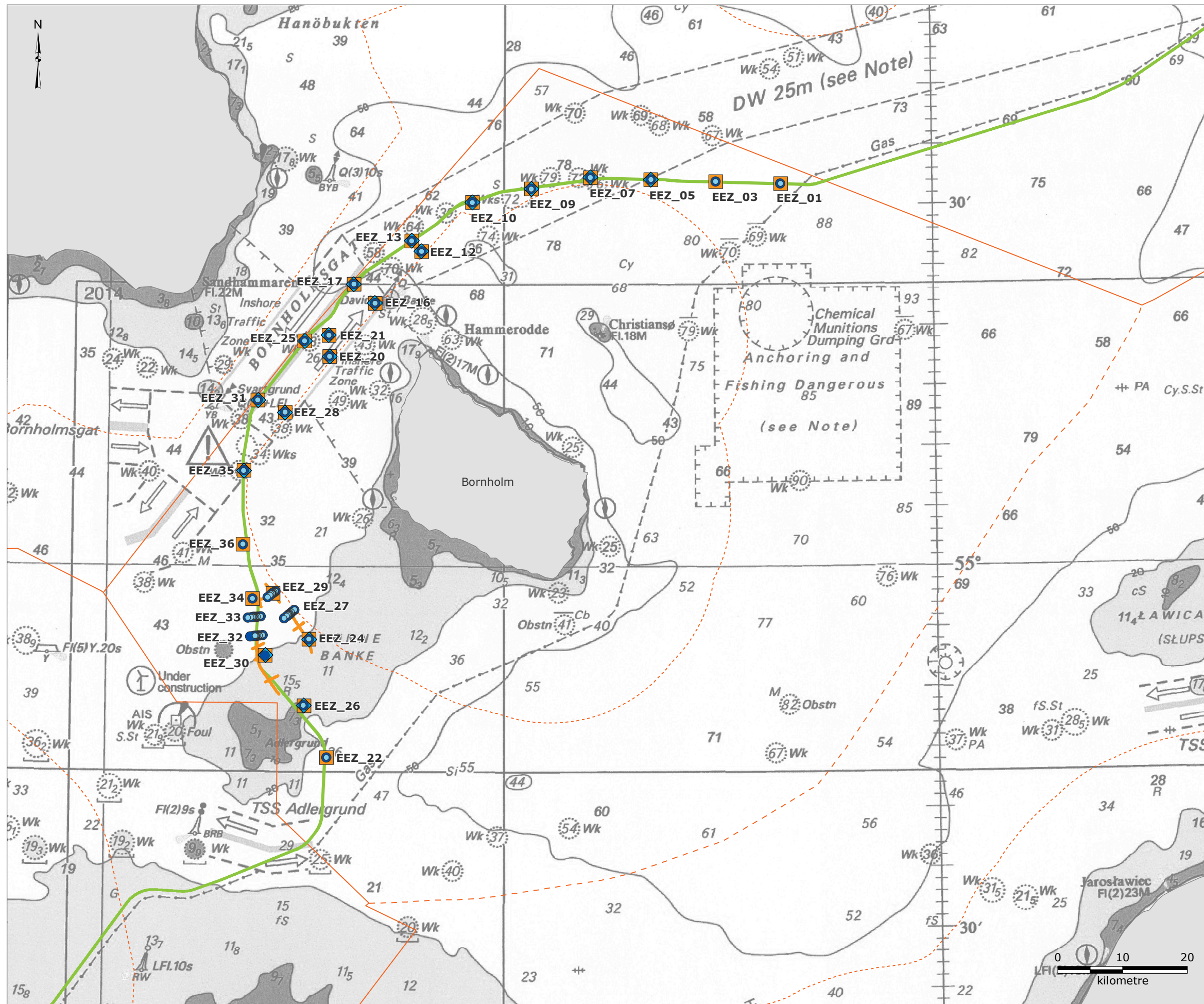
SM-01-D

Suspended sediments – shipping lane, Nord Stream crossing and Rønne Bank area



ENVIRONMENTAL SURVEY STATIONS

ENVIRONMENTAL SURVEY STATIONS



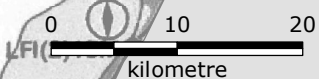
- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - Biotope survey transect
 - Infauna station
 - Water column survey station
 - Vibro core station
 - Surface sediment station

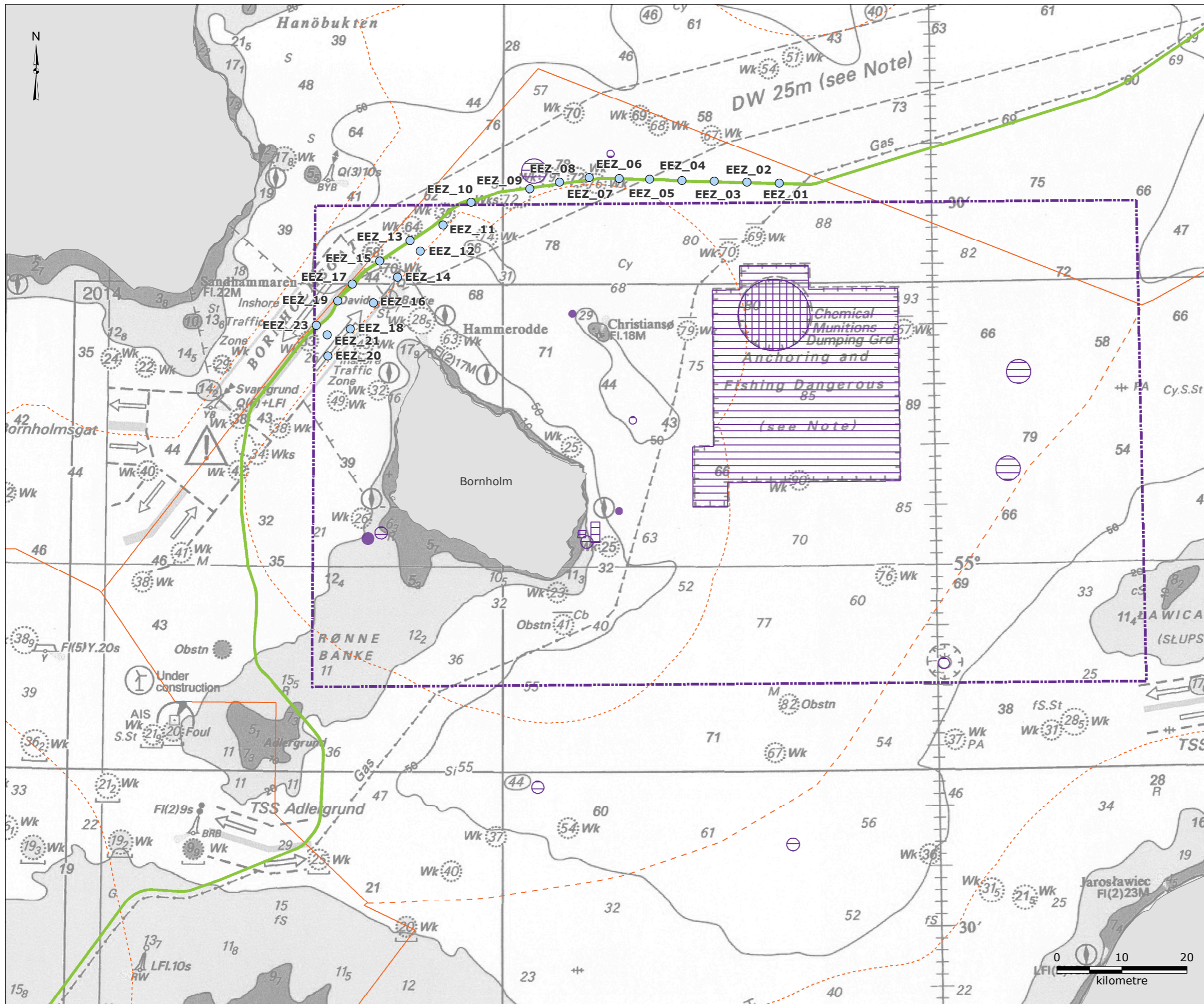
References:
 - Orbicon, 2018, "Seabed sediments report for the Danish EEZ in 2017", Doc. No. W-PE-EIA-PDK-REP-805-RNORB4EN-03
 - Orbicon, 2018, "Infauna report for Danish EEZ in 2017", Doc. No. W-PE-EIA-PDK-REP-805-RNORB6EN-02
 - Orbicon, 2018, "Report for the Biotope survey in Natura 2000 site "Adler Grund og Rønne Banke"", Doc. No. W-PE-EIA-PDK-REP-805-RNORB2EN-03

Version: 01
 Date: 2018-05-16
 Prepared: MSTB/ MRIH
 Controlled: JCXS

SS-01-D

Survey stations for water column and seabed conditions





Legend:

- NSP2 Route
- Territorial water border
- EEZ border
- Midline between Denmark and Poland
- Emergency dumping area
- Chemical munitions dumping site
- Bottom trawling, anchoring and seabed intervention works discouraged
- Risk area in which fishing vessels are required to have first aid gas equipment on board
- CWA station

References:
 - Orbicon, 2018, "Chemical warfare Agents Report for Danish EEZ in 2017", Doc. No. W-PE-EIA-PDK-REP-805-RNORBSEN-03
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Survey stations for chemical warfare agents

