

BIOLOGICAL ENVIRONMENT

PELAGIC ENVIRONMENT

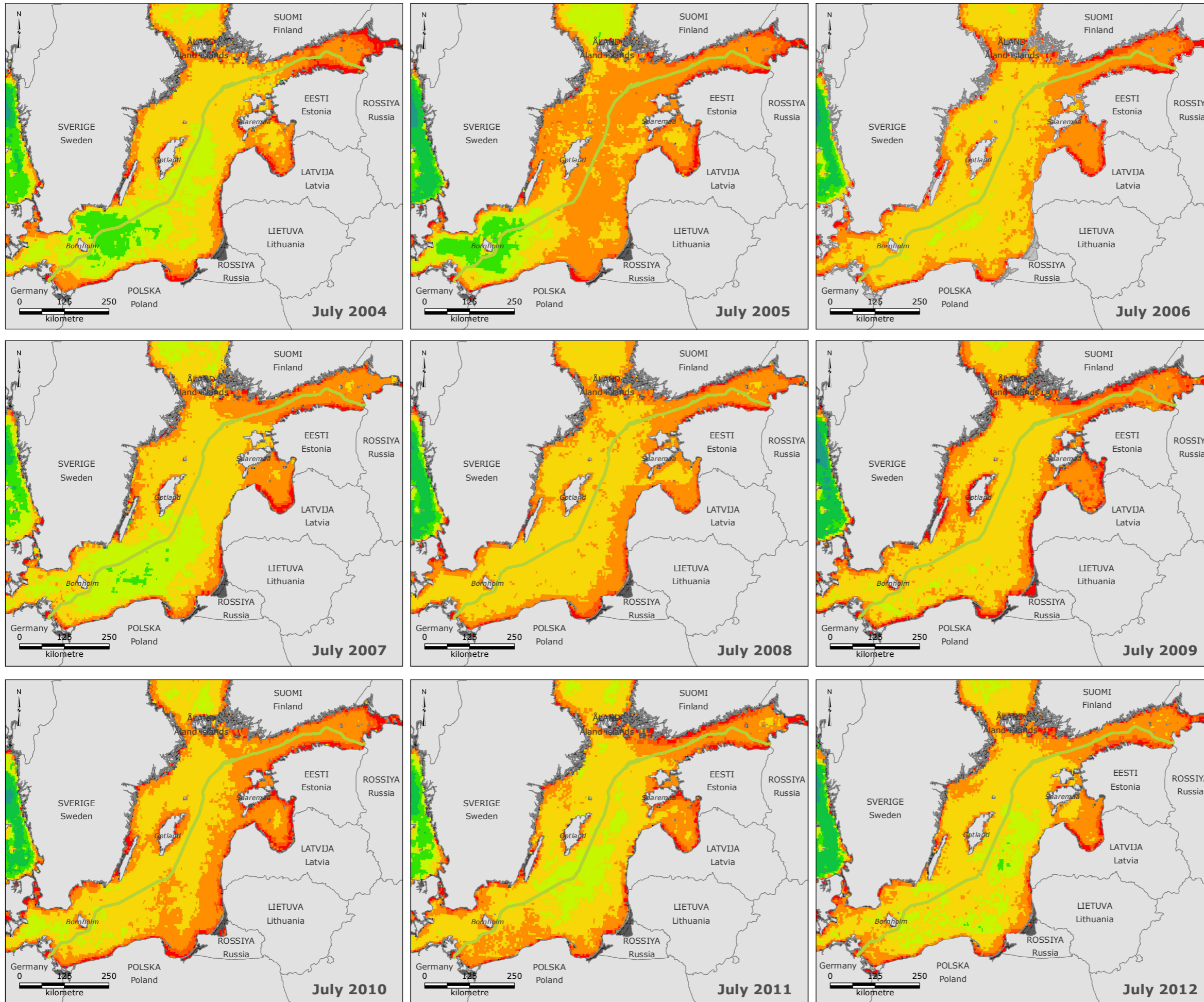
BENTHIC ENVIRONMENT

FISH

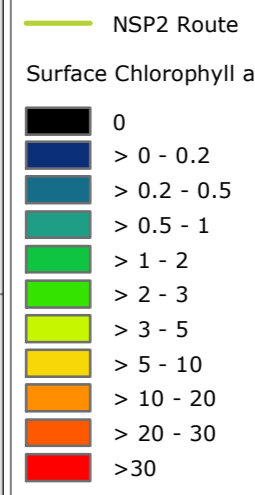
MARINE MAMMALS

BIRDS

PROTECTED AREAS



Legend:



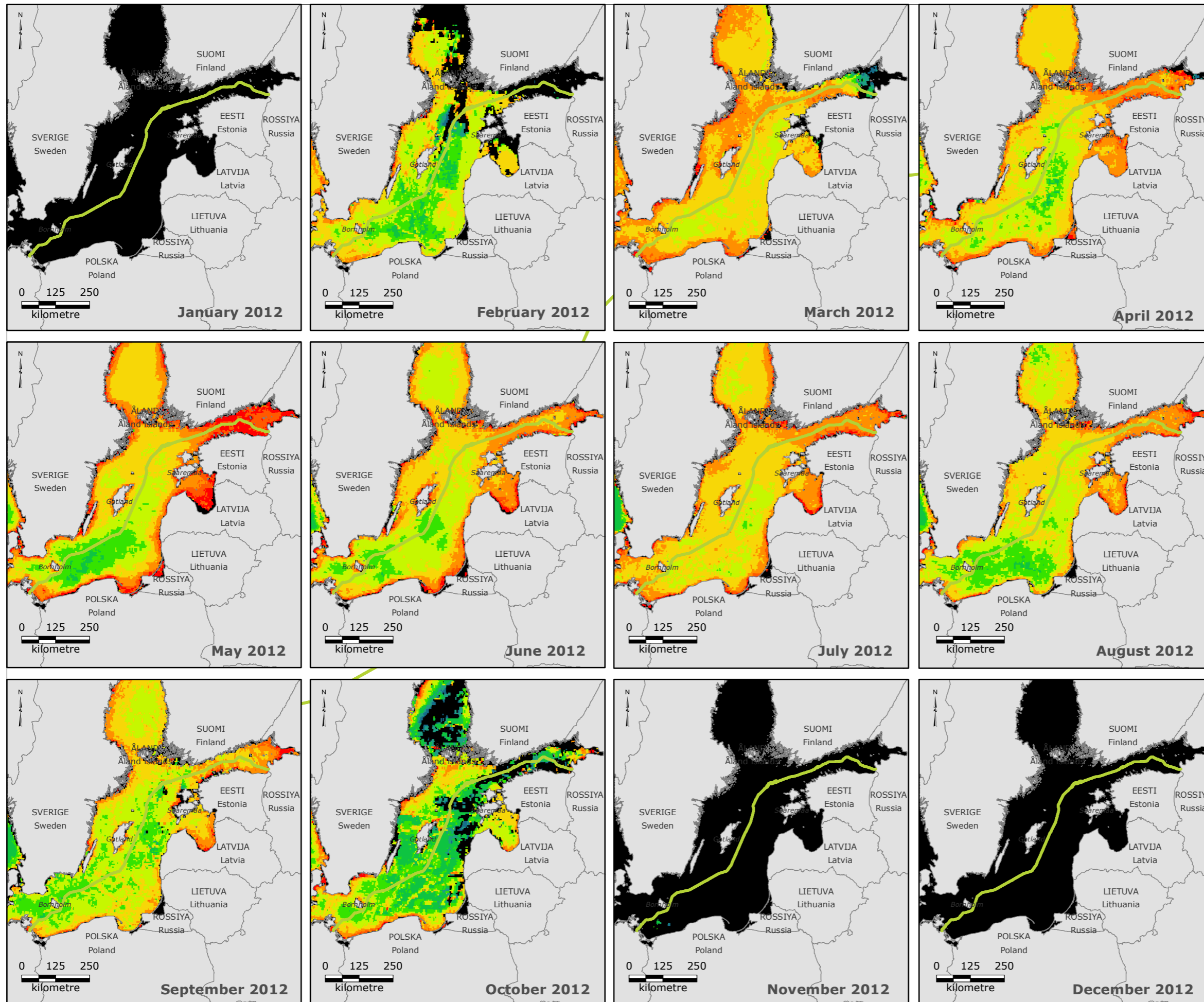
Note:
 - The value 0 in a cell represents areas where the satellite could not collect data due to absence of Chlorophyll a, sea ice, extensive cloud cover etc.
 - Data for July has been chosen to be shown due to the high chlorophyll a content compared to other months of the year.
 Reference:
 - European Commission, "Chlorophyll Concentration (MODIS A)", http://mcc.jrc.ec.europa.eu/emis/dev.py?N=50&O=306&titre_chap=Data%20discovery&titre_page=4km%20Marine%20Data, Date accessed: 2015-11-20.

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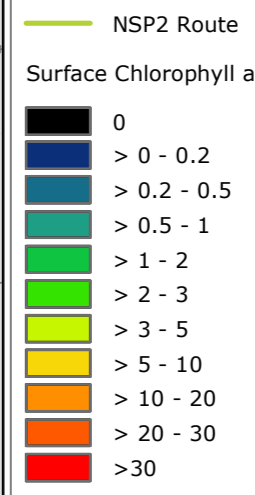
PE-01-Espoo

**Surface Chlorophyll a
 - July 2004-2012**





Legend:



Note:
 - The value 0 in a cell represents areas where the satellite could not collect data due to absence of Chlorophyll a, sea ice, extensive cloud cover etc.
 - January, November, and December are most affected by the lack of sunlight and spread of ice cover and therefore show large areas without Chlorophyll a content.

Reference:
 - European Commission, "Chlorophyll Concentration MODIS A)", http://mcc.jrc.ec.europa.eu/emis/dev.py?N=50&O=306&titre_chap=Data%20discovery&titre_page=4km%20Marine%20Data, Date accessed: 2015-11-20.

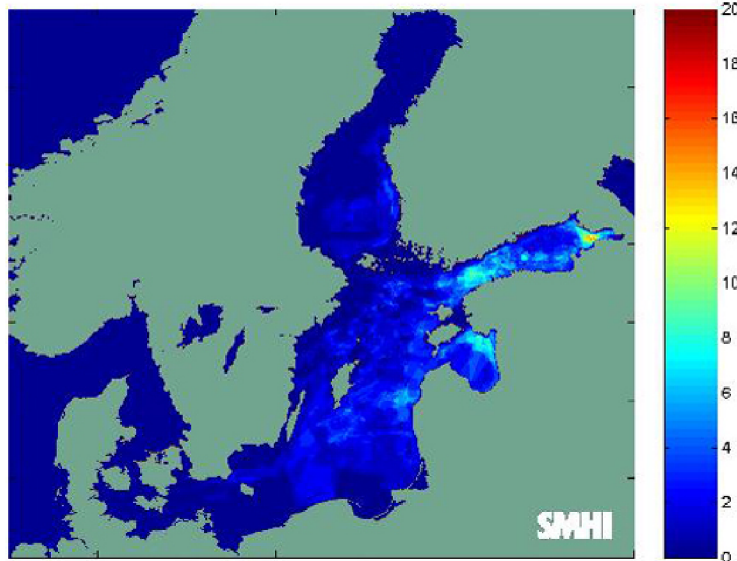
Version: 08
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PE-02-Espoo

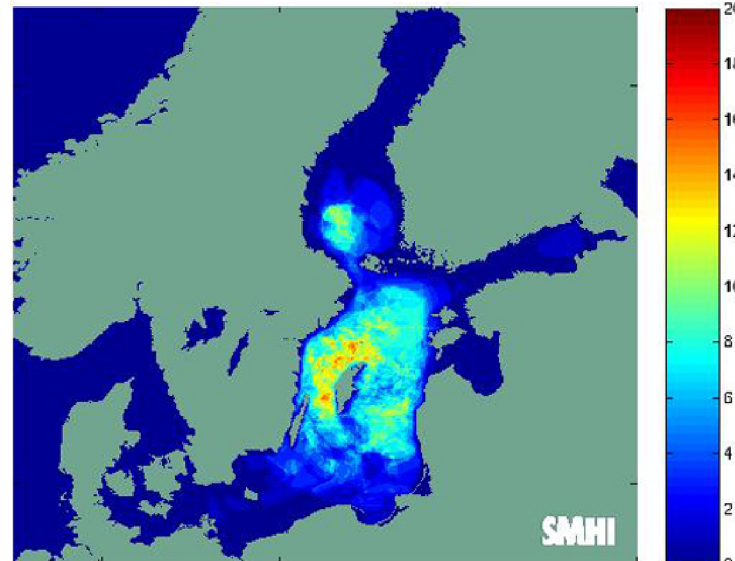
Surface Chlorophyll a - 2012



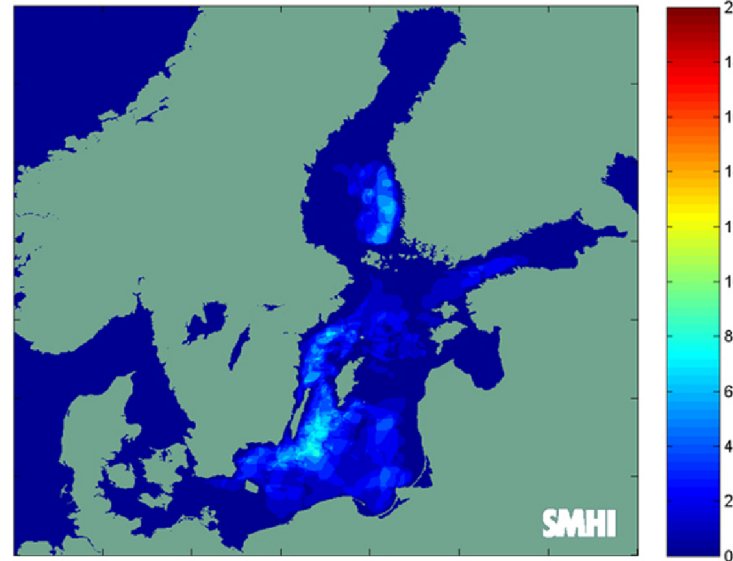
Number of days with cyanobacteria observations during 2007



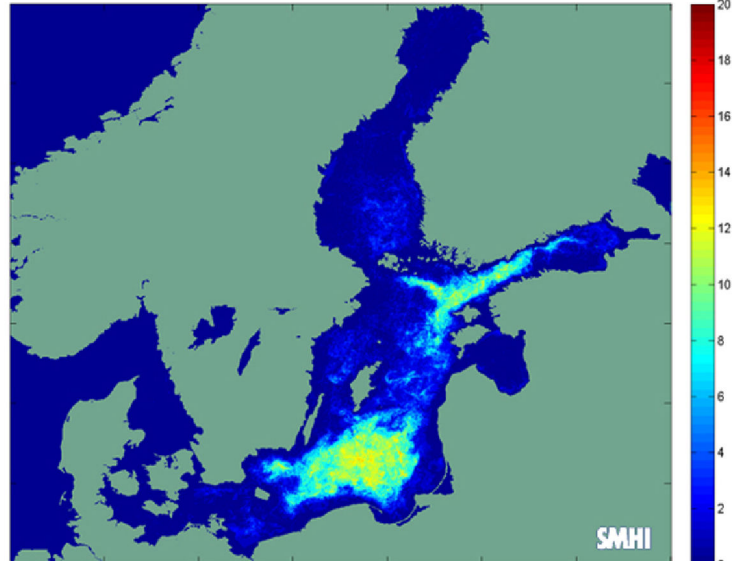
Number of days with cyanobacteria observations during 2008



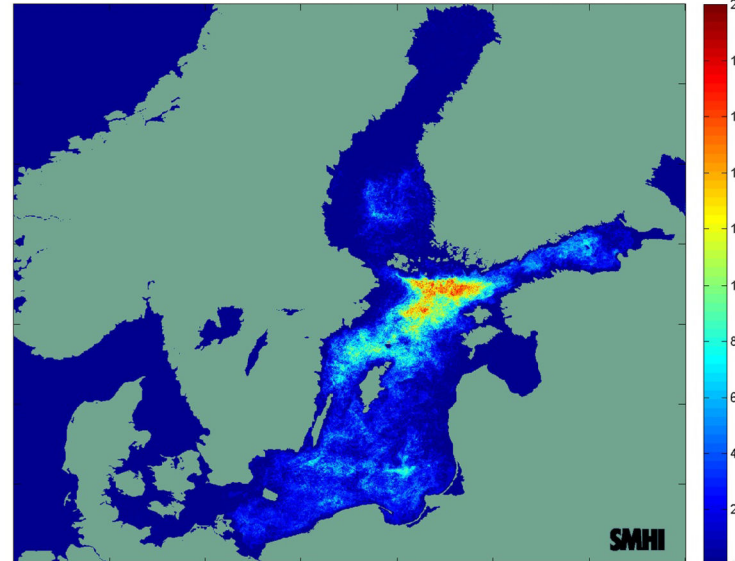
Number of days with cyanobacteria observations during 2009



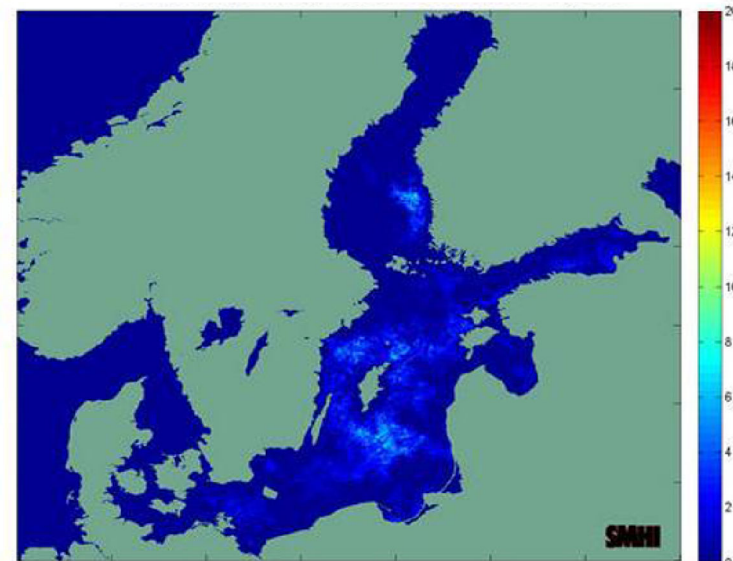
Number of days with cyanobacteria observations during 2010



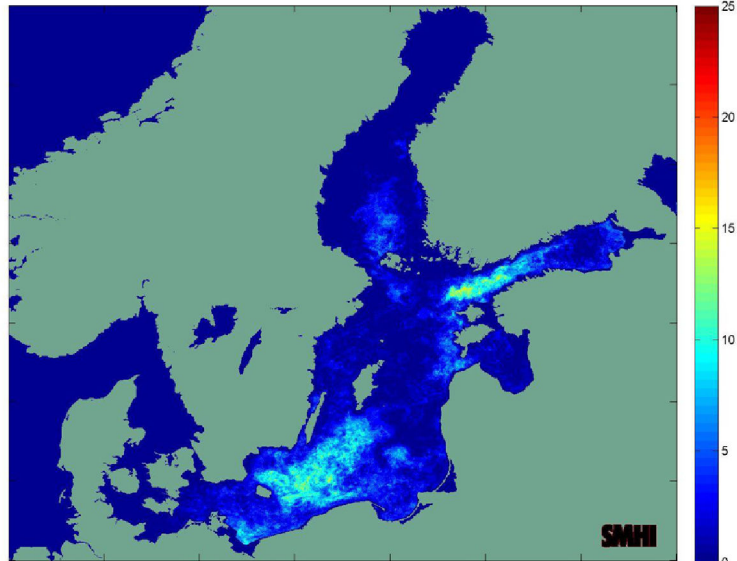
Number of days with cyanobacteria observations during 2011



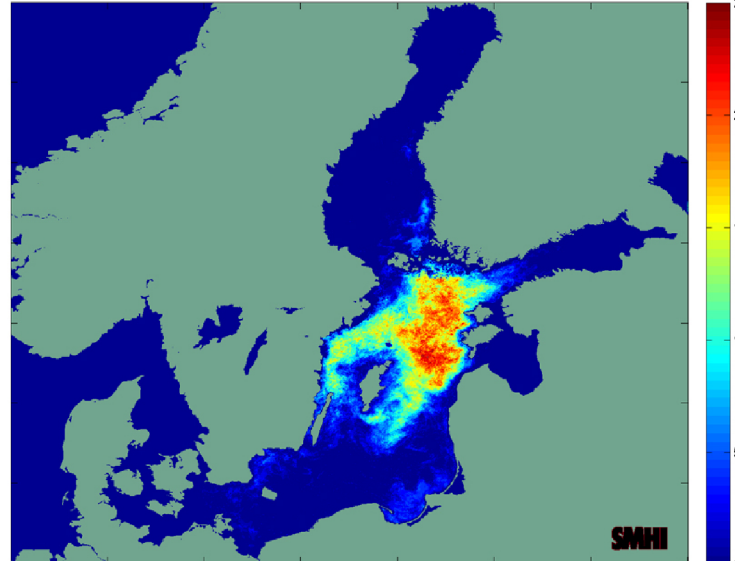
Number of days with cyanobacteria observations during 2012



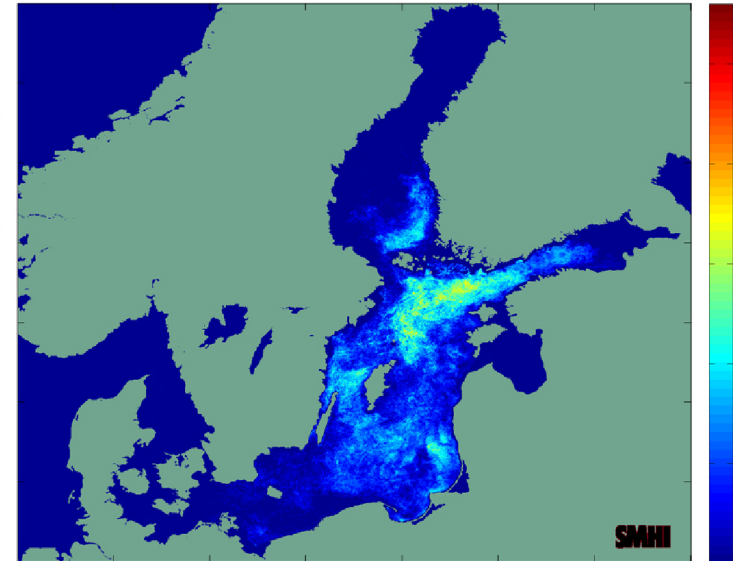
Number of days with cyanobacteria observations during 2013



Number of days with cyanobacteria observations during 2014



Number of days with cyanobacteria observations during 2015



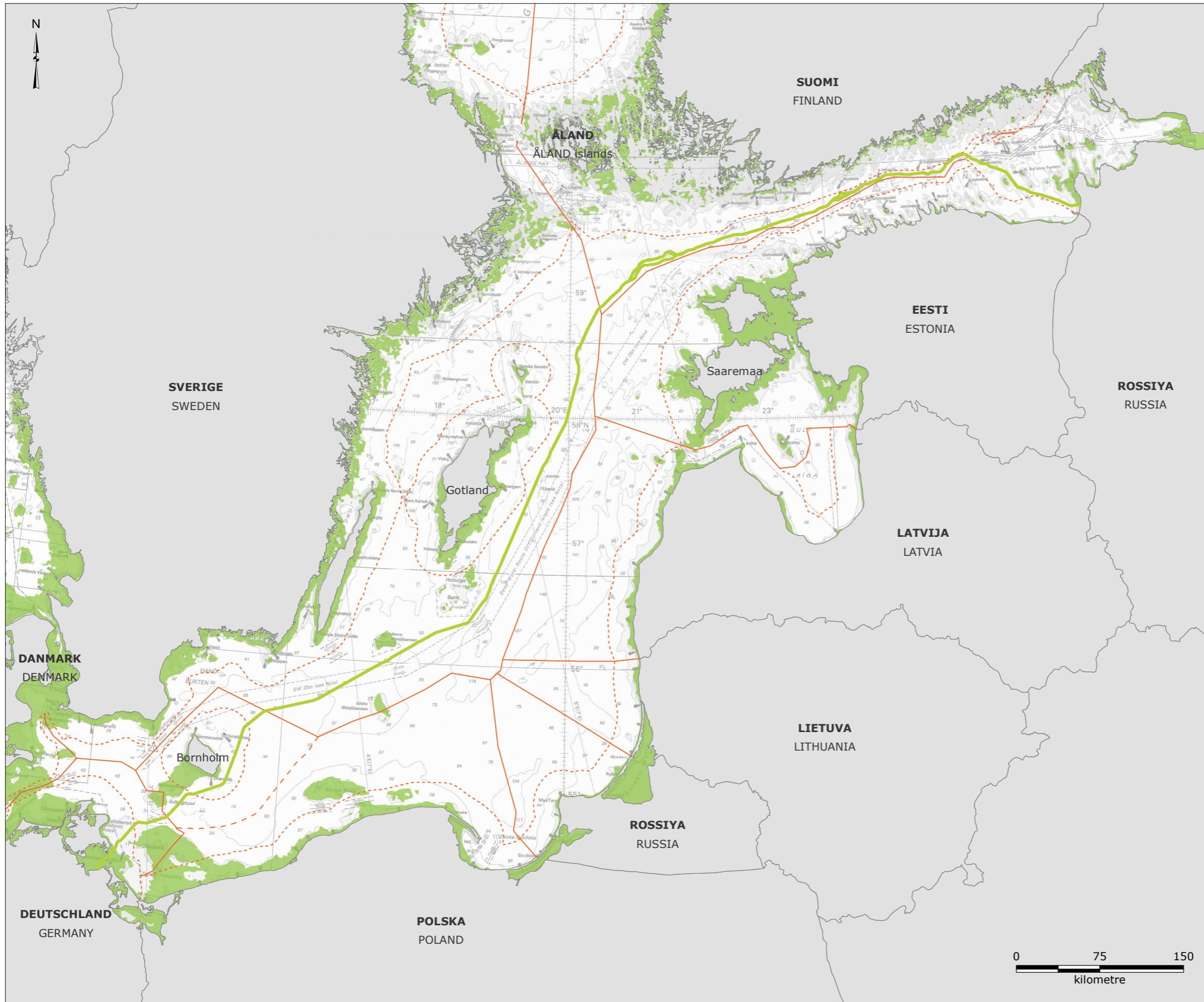
References:
 - Öberg, J., 2016, "Cyanobacterial blooms in the Baltic Sea in 2016", HELCOM Baltic Sea Environment Fact Sheet 2016

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PE-03-Espoo

Cyanobacteria





- Legend:**
- NSP2 Route
 - - - Territorial water border
 - EEZ border
 - - - Midline between Denmark and Poland
 - DHI-model for euphotic zone

Note:
 - *Benthic flora - modelling results of areas with possible benthic flora occurrences (comprising the areas where the euphotic zone reaches seabed)

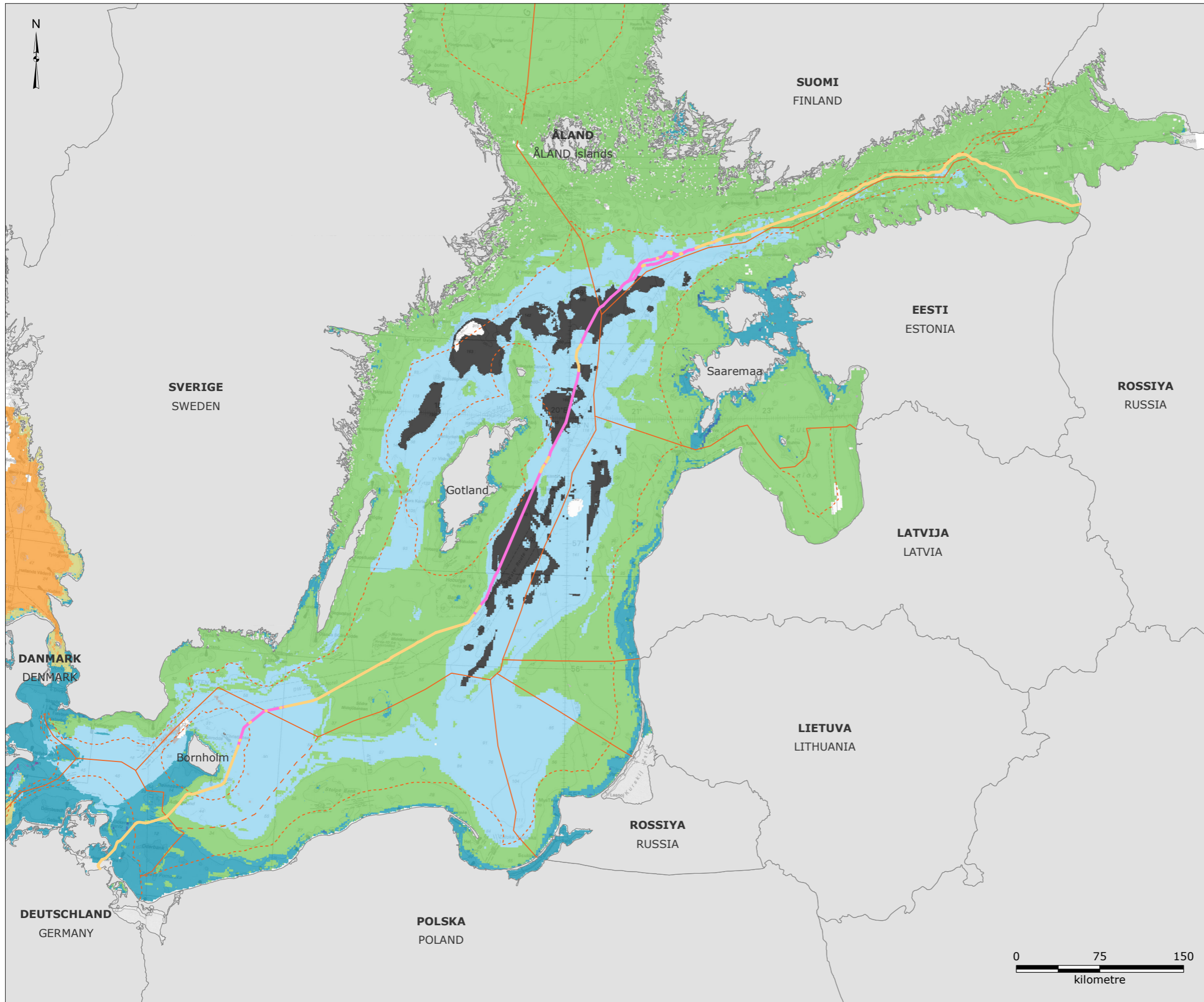
Reference:
 - DHI and HELCOM, 2013, "Modelled photic zone polygon (EUSeaMap)", <http://maps.helcom.fi/website/mapservice/index.html>, Date accessed: 2016-06-08

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BE-01-Espoo

DHI-model of potential benthic flora distribution*





Legend:

NSP2 Route (depth in meters):

- < 80
- > 80

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

Benthic Fauna:

- Monoporeia affinis, Marenzelleria, Macoma balthica*
- Hydrobiidae, *Pygospio elegans, Cerastoderma glaucum*
- Diastylis, Corbula gibba, Dipolydora quadrilobata, Arctica islandica, Aricidea suecica, Abra alba*
- Bylgides sarsi, Pontoporeia femorata*
- Amphiura sp., Abra nitida, Galathowenia oculata, Ennucula tenuis, Thyasira flexuosa, Nucula nitidosa, Diplocirrus glaucus*
- Mytilus edulis, Amphibalanus improvisus*
- Phoronis sp., Tellina fabula, Thracia phaseolina, Ophelia borealis, Spiophanes bombyx, Branchiostoma lanceolatum, Spio arndti*
- Tellina tenuis, Ensis directus, Haustorius arenarius, Lamprops fasciatus*
- Lagis koreni, Cerastoderma edule, Polydora sp., Halicyrtus spinulosus*
- Echinocyamus pusillus, Harmothoe sp., Bittium reticulatum, Oligochaeta, Alitta virens, Turritella communis, Asterias rubens*
- Other
- No benthic fauna

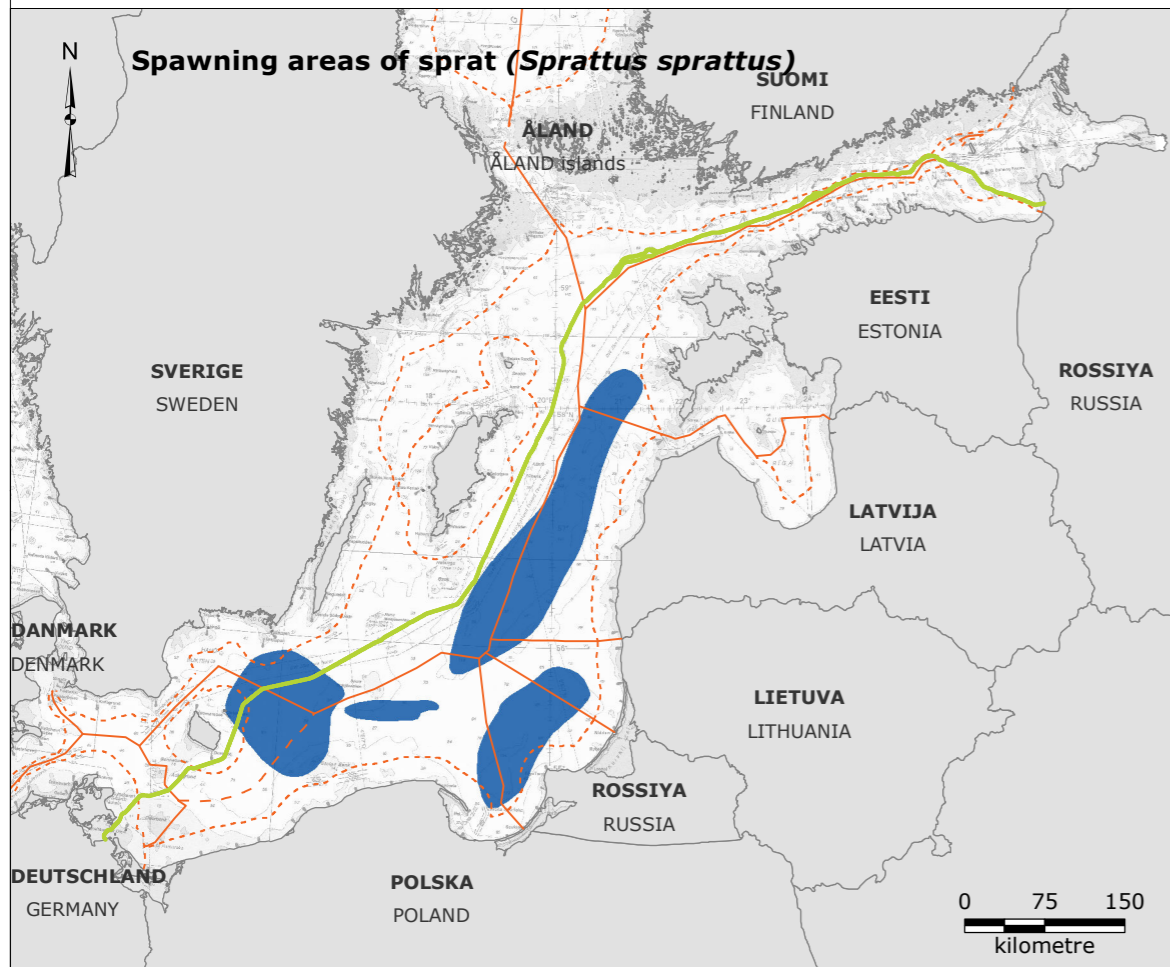
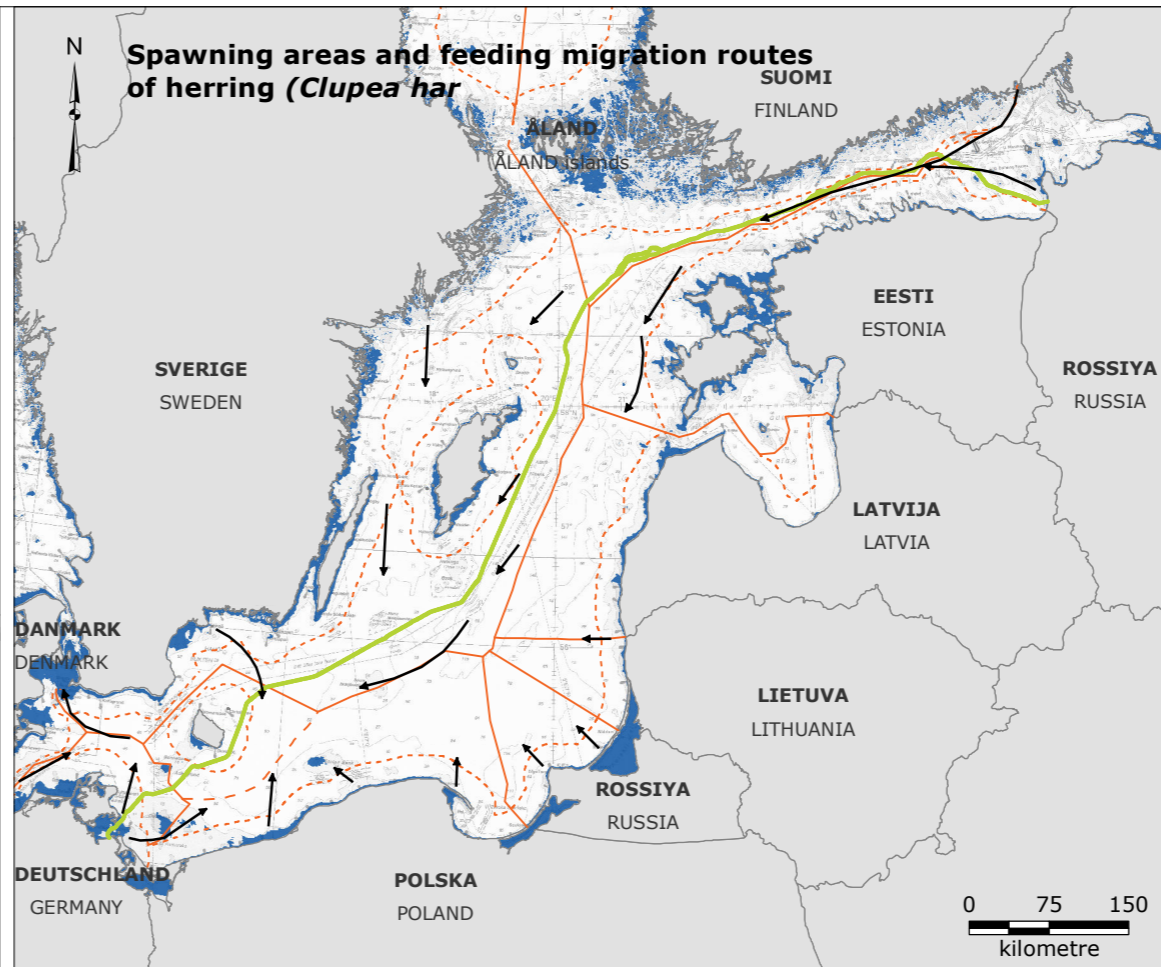
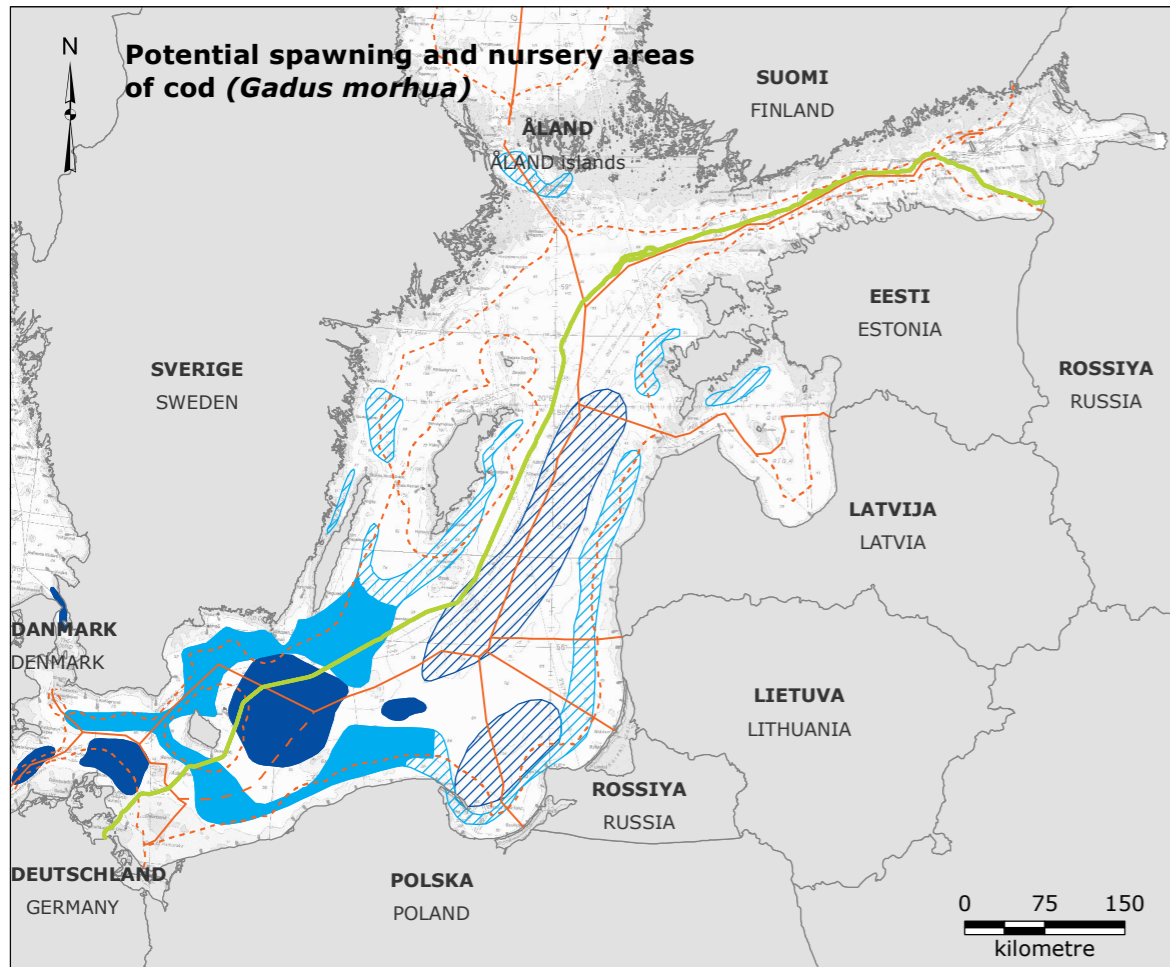
Reference:
 - Gogina, M., Nygård, H., Blomqvist, M., Daunys, D., Josefson, A.B., Kotta, J., Maximov, A., Warzocha, J., Yermakov, V., Gräwe, U. and Zettler, M.L. The Baltic Sea scale inventory of benthic faunal communities. ICES J. Mar. Sci. first published online January 26, 2016. doi:10.1093/icesjms/fsv265. 18 pages.

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BE-02-Espoo

Benthic fauna communities based on abundance





- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - Nursery area
 - Spawning area
 - Previous nursery area
 - Previous spawning area
 - Migration routes to feeding areas

Note:
 - Areas referred to as 'previous', represent data prior to the year 2000 /ICES 2012/

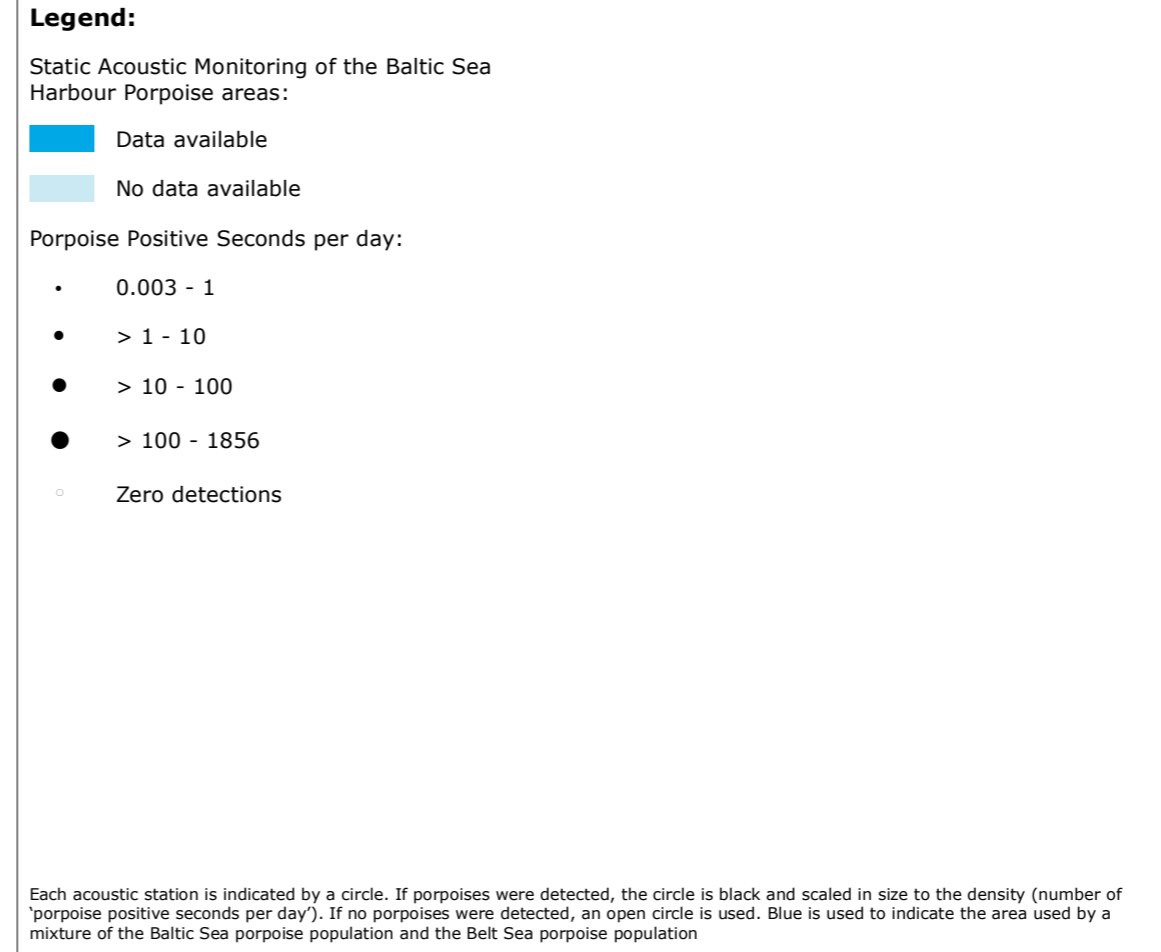
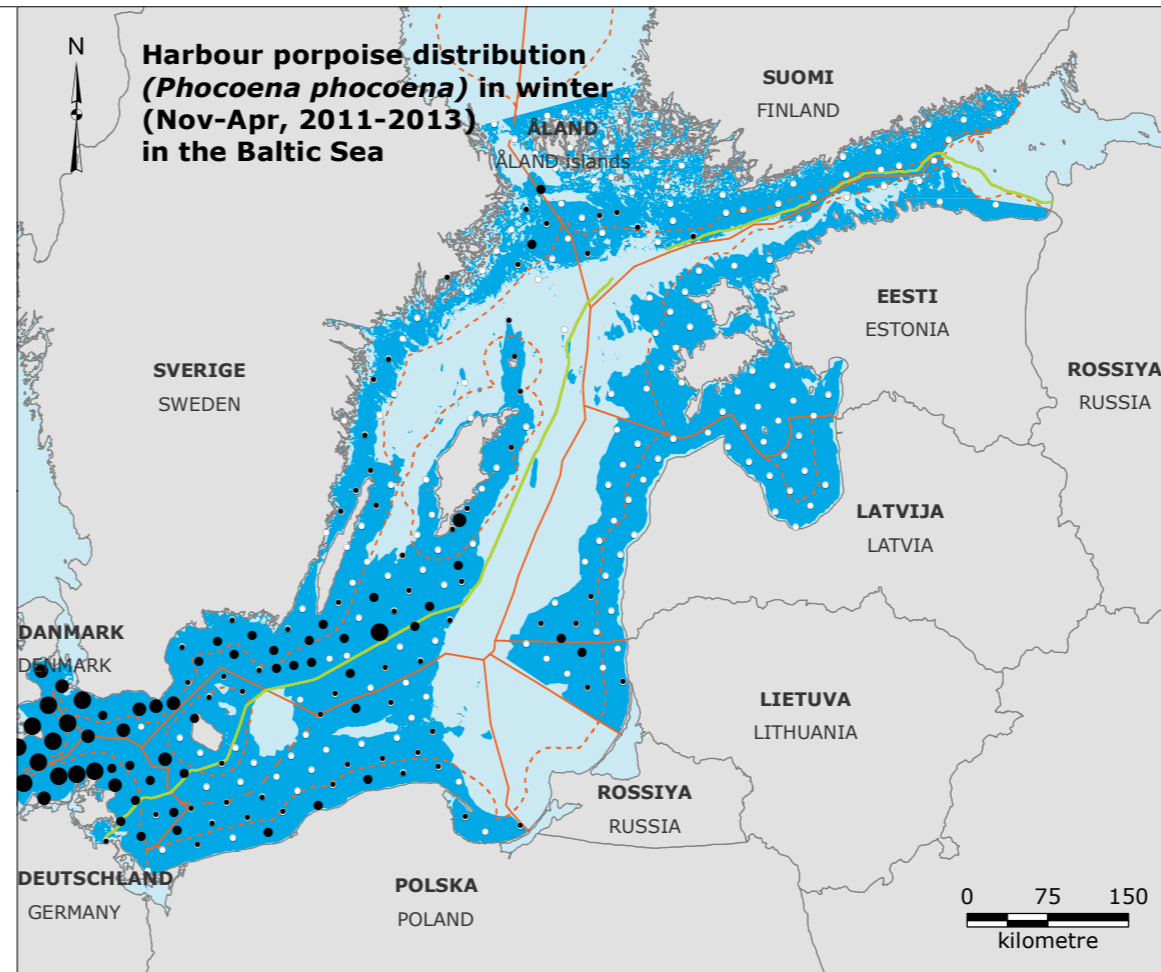
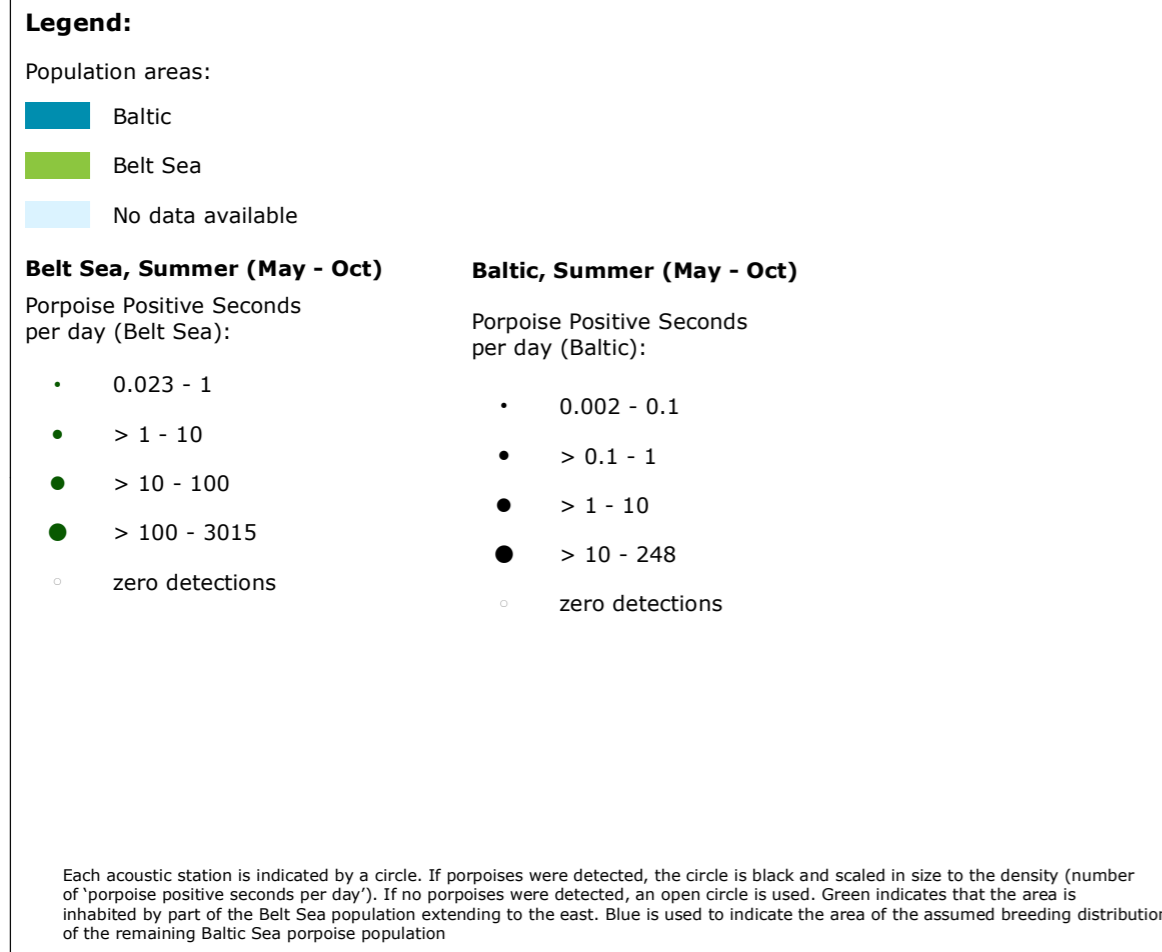
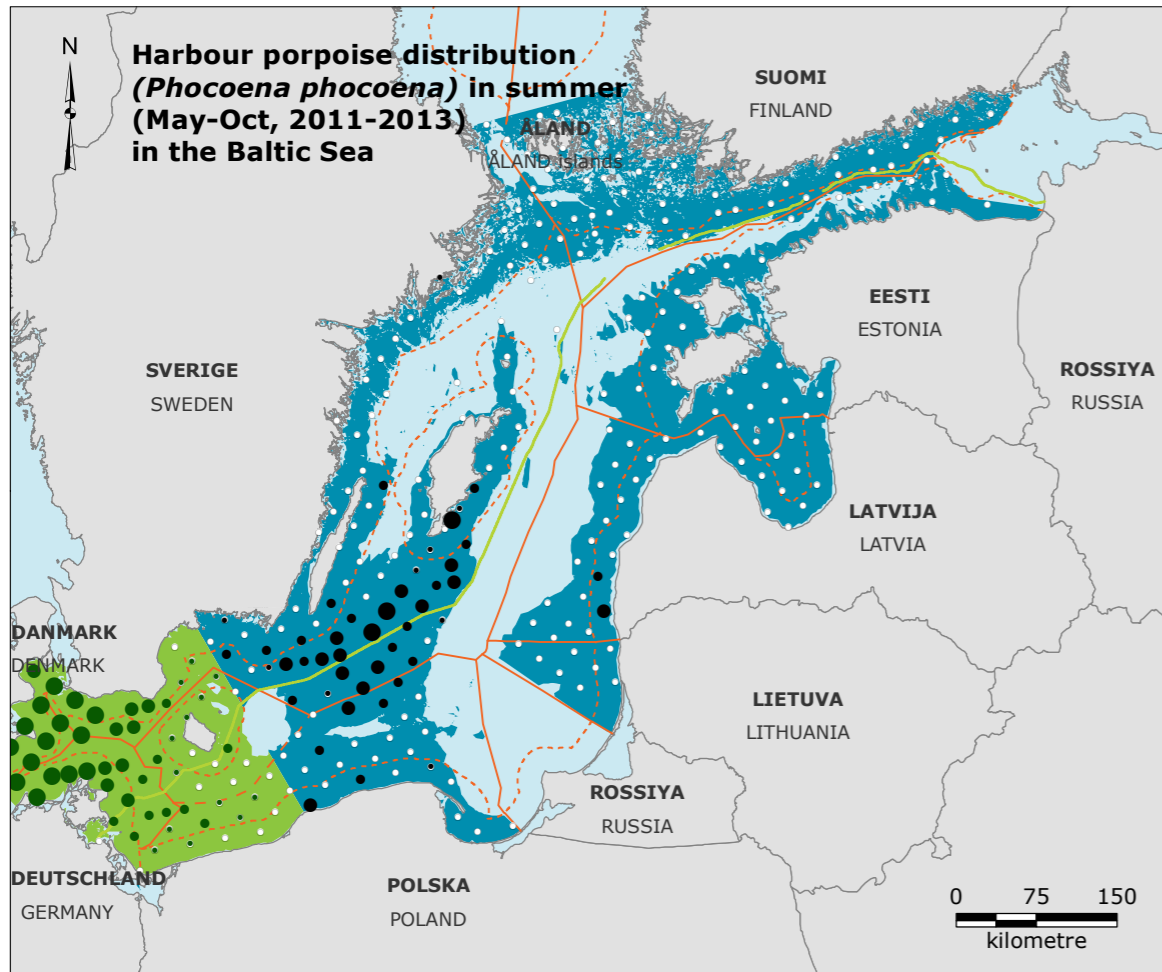
References:
 - Bagge, O., Thurow, F., Steffensen, E., Bay, J. 1994. "The Baltic Cod". Dana, 10, pp. 1-28
 - Cardinale, M., Svedäng, H., 2011. "The beauty of simplicity in science: Baltic cod stock improves rapidly in "cod hostile" ecosystem state". Marine Ecology Progress Series, 425, pp. 297-301
 - ICES, 2012, "Report of the ICES Advisory Committee". ICES advice 2012, Book 8. ICES, Copenhagen.
 - ICES, 2006. "ICES advice. Book 9. Widely distributed and Migratory stocks".
 - Pliiks and Aleksjevs, 1998. "Latvijas baba". Riga

Version: 04
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 Controlled: MCO

FI-01-Espoo

Spawning areas of cod, herring and sprat





Legend:

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

Notes:

- It is only possible to separate the Baltic Sea and Belt Sea harbour porpoise populations in summer
- Porpoise Positive Seconds is the encounter rate, measured as proportion of click positive seconds per second
- Data collected by CPODs under the Static Acoustic Monitoring of the Baltic Sea Harbour Porpoise project

References:

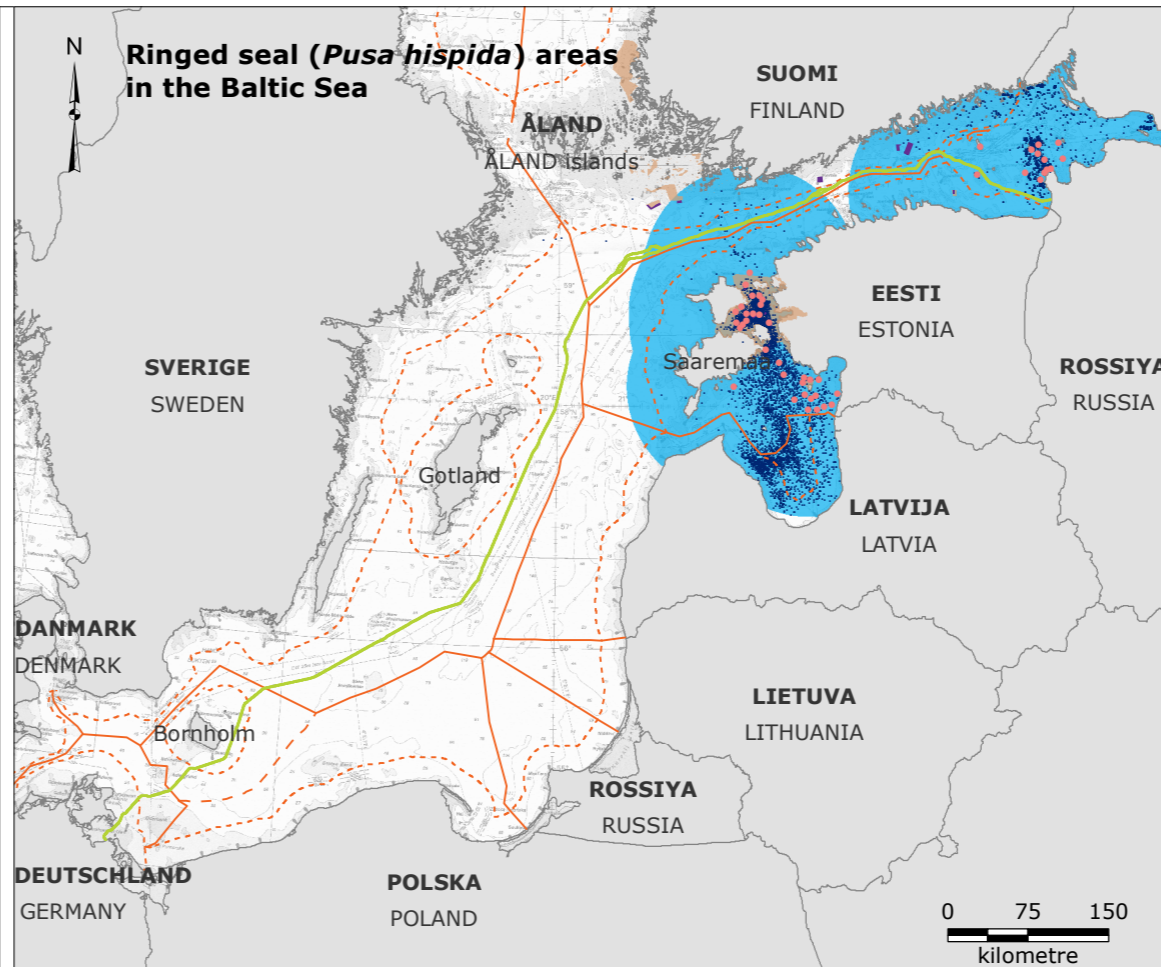
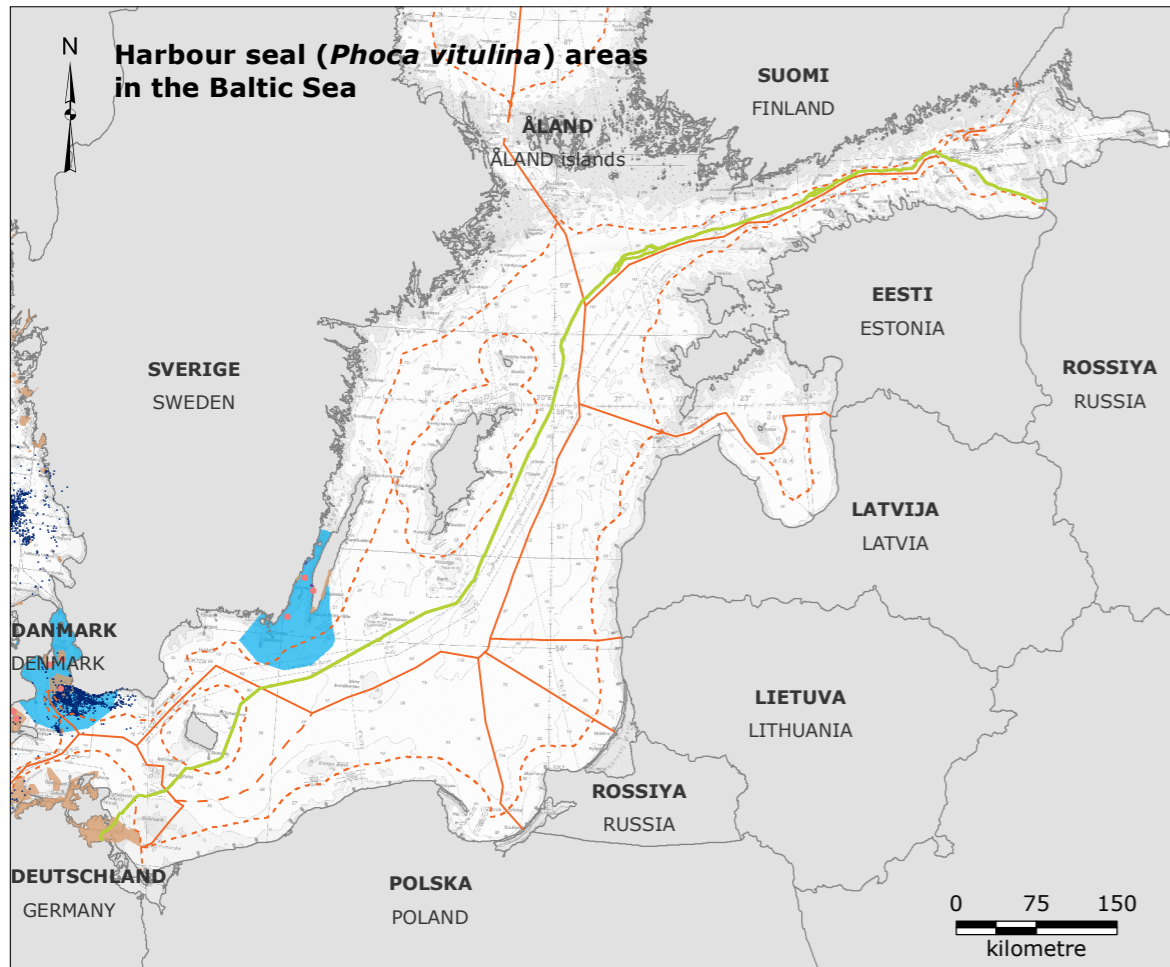
- SAMBAH, 2016, "Static Acoustic Monitoring of the Baltic Sea Harbour Porpoise (SAMBAH). Final report under the LIFE+ project LIFE08 NAT/S/000261", Kolmårdens Djurpark AB, SE-618 92 Kolmården, Sweden. 81pp.
- Teilmann, J., Sveegaard, S., 2016. "Marine mammals in the Baltic Sea in relation to the Nord Stream 2 project - Baseline report", DCE/Institute for Bioscience, Aarhus University

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Prepared: MSTB
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MA-01-Espoo

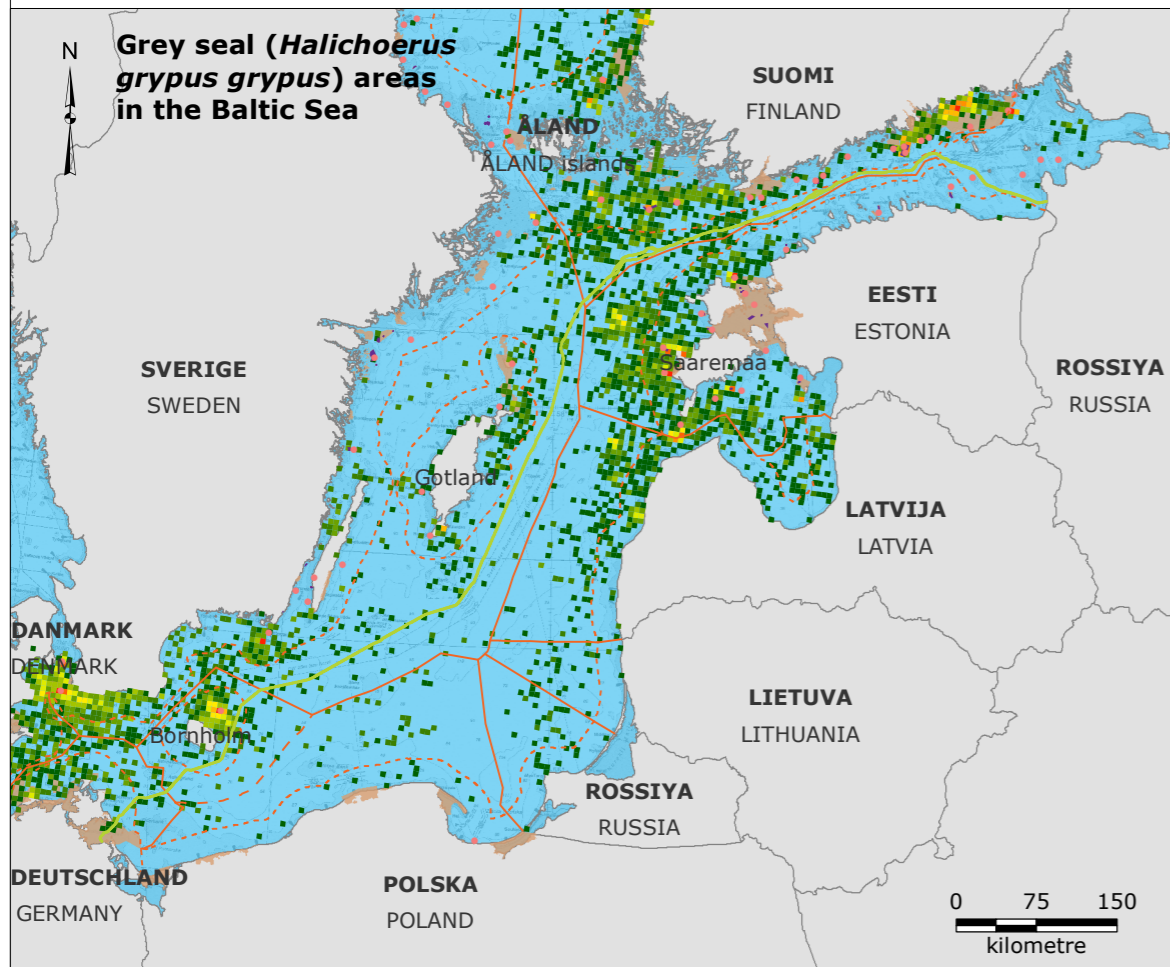
Harbour porpoise distribution in the Baltic Sea

RAMBOLL



Legend:

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



Legend:

Harbour seals:

- Colony
- Sanctuary
- Natura 2000 site designated for harbour seal
- Regular occurrence (27 km zone)

Ringed seals:

- Colony
- Sanctuary
- Natura 2000 site designated for ringed seal
- Regular occurrence (100 km zone)

Grey seals:

- Colony
- Sanctuary
- Natura 2000 site designated for grey seal
- Regular occurrence (380 km zone)

Grey seal distribution in 2015:

■ 12 - 17	■ 26 - 45
■ 18 - 25	■ 46 - 77
■ 1	■ 78 - 113
■ 2	■ 114 - 432
■ 3 - 6	
■ 7 - 11	

Note:

- Satellite tracking based on number of tagged seals
- Regular occurrence represents maximum tagging distance from colony

Reference:

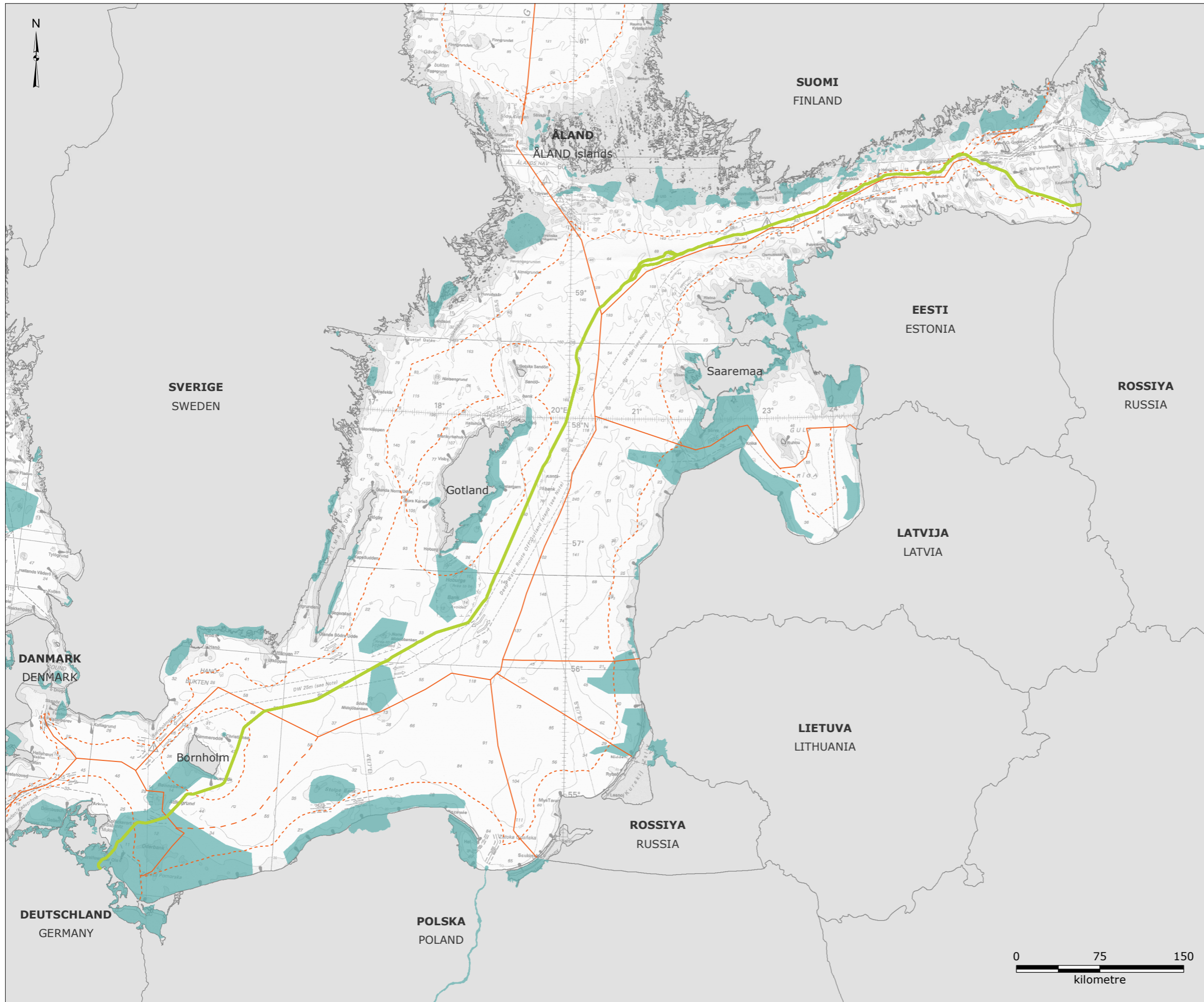
- Estonian Fund for Nature, ringed seal satellite tracking location - Estonian Nature Information System (EELIS), Date accessed: 2016-04-04
- Eco Express, 2016, "Baseline - Book 4"
- HELCOM, 2015, "BALSAM - Grey seals", <http://maps.helcom.fi/website/mapservice/index.html>, Date accessed: 2016-01-25
- Teilmann, J., Sveegaard, S., 2016. "Marine mammals in the Baltic Sea in relation to the Nord Stream 2 project - Baseline report", DCE/Institute for Bioscience, Aarhus University

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MA-02-Espoo

Harbour, ringed and grey seal areas

RAMBOLL



- Legend:**
- NSP2 Route
 - - - Territorial water border
 - EEZ border
 - - - Midline between Denmark and Poland
 - Important Bird and Biodiversity Areas (IBA)

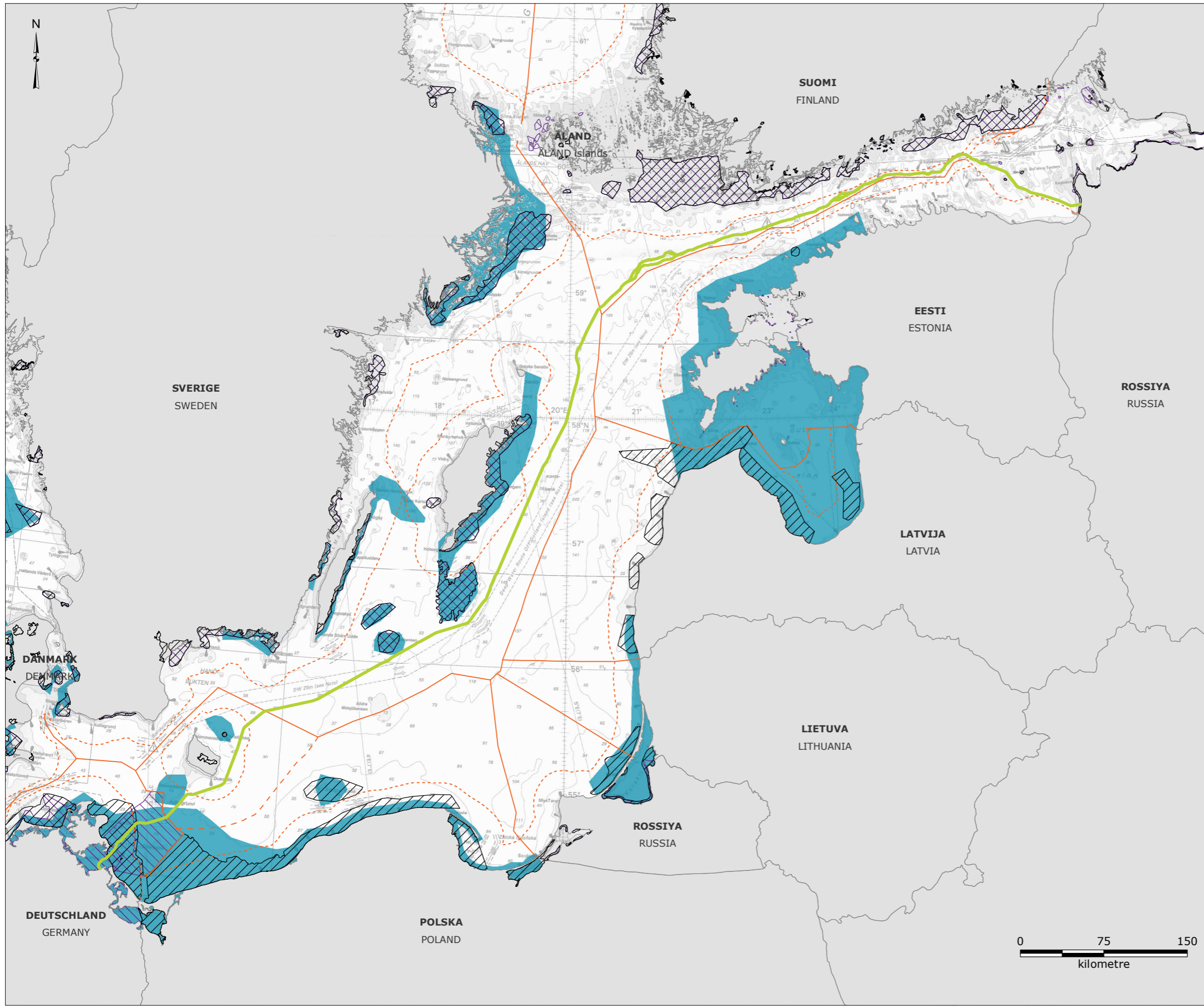
References:
 - BirdLife, 2016, "Marine IBA e-atlas", <http://maps.birdlife.org/marineIBAs/default.html>, Date accessed: 2016-3-1
 - BirdLife Finland, 2016, <http://www.birdlife.fi/suojelu/paikat/iba/iba-suomen-tarkeat-lintualueet.shtml>, Date accessed: 2016-09-15
 - HELCOM, 2003, "Important Bird Areas - digital map", <http://maps.helcom.fi/website/Biodiversity/index.html>, Date accessed: 2015-6-11

Version: 07
 Date: 2017-01-24
 Prepared: MIRS
 Controlled: MAJH

BI-01-Espoo

Important Bird and Biodiversity Areas (IBA's)





- Legend:**
- NSP2 Route
 - - - Territorial water border
 - EEZ border
 - - - Midline between Denmark and Poland
 - / / / / / Waterbirds during migration (spring and autumn)
 - / / / / / Waterbirds during breeding season (spring and summer)
 - Waterbirds during winter

References:

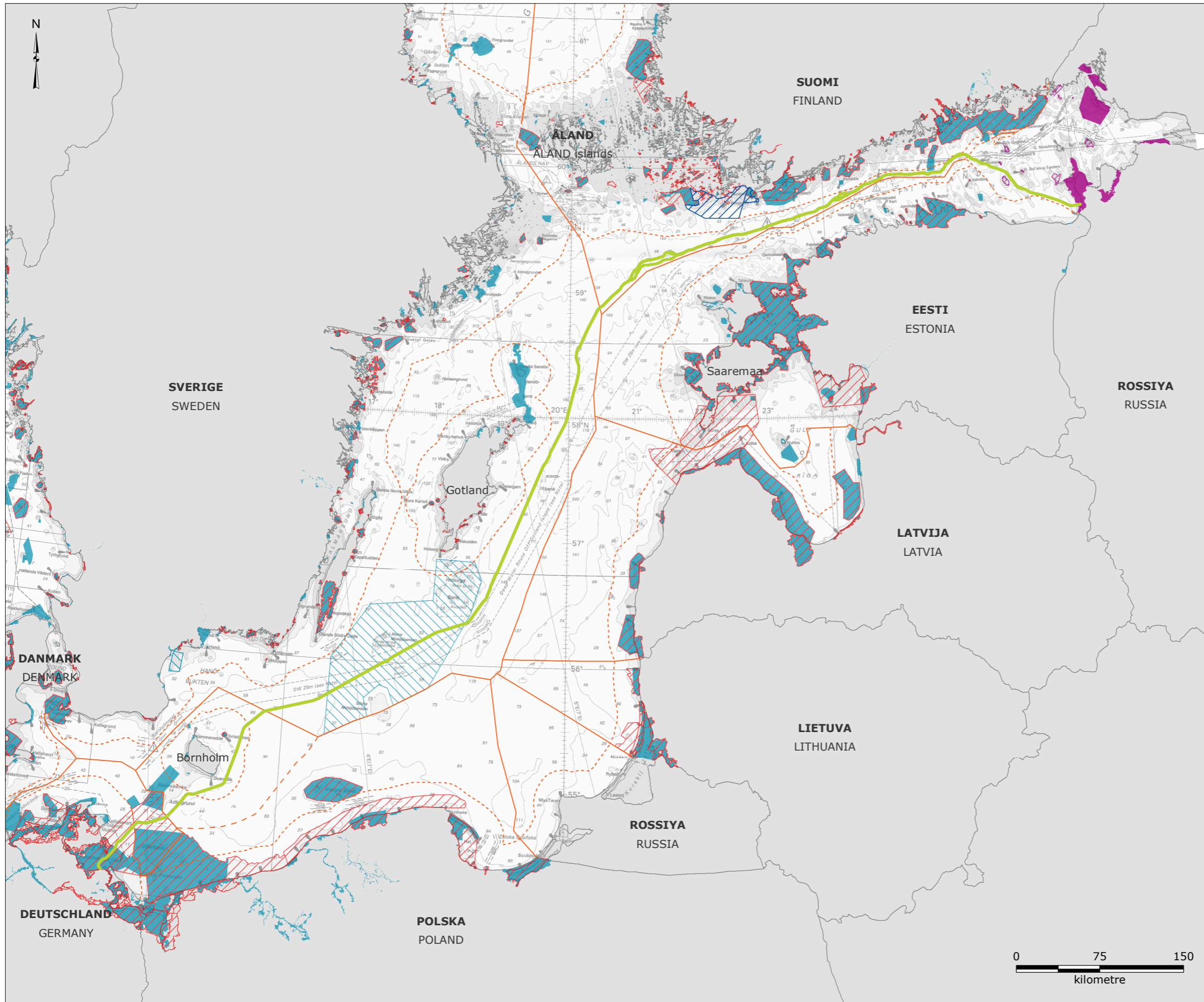
- COWI, 2010, "Sub-Regional risk of spill of oil and hazardous substances in the Baltic Sea (BRISK)", Data Collection Report, Denmark.
- Sonntag, N., Mendel, B., Garthe, S., 2006, "Distribution of seabirds and waterbirds in the German Baltic Sea throughout the year". Vogelwarte 44, pp. 81-112
- Skov, H., Vaitkus, G., Flensted, K.N., Grishanov, G., Kalamees, A., Kondratyev, A., Leivo, M., Luigujõe, L., Mayr, C., Rasmussen, J.F., Raudonikis, L., Scheller, W., Sidlo, P.O., Stipniece, A., Struwe-Juhl, B., Welander, B., 2000, "Inventory of Coastal and marine Important Bird Areas in the Baltic Sea". BirdLife International, Cambridge, 287 pp.
- Heath, M.F., Evans, M.I. (eds.), 2000, "Important Bird Areas in Europe: priority sites for conservation". Vol. 1: Northern Europe. BirdLife Conservation Series No. 9, BirdLife International
- Skov, H., Durinck, J., Leopold, M.F., Tasker, M.L., 2007. "A quantitative method for evaluating the importance of marine areas for conservation of birds". Biological Conservation, 136, pp. 362-371", <http://maps.helcom.fi/website/Biodiversity/index.html>, Date accessed: 2015-06-11

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BI-02-Espoo

Bird wintering and staging areas during migration





- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
- Natura 2000 sites:
- Special Protection Area (SPA)
 - Special Area of Conservation/ Special Conservation Interests (SAC/SCI)
 - Proposed new and extended Natura 2000 site in Sweden
 - Proposed extended Natura 2000 site in Finland: Special Protection Areas (SPA) and Special Area of Conservation/ Special Conservation Interests (SAC/SCI)
- Protected areas in the Russian part of the Baltic Region:
- Protected site in Russia
 - Proposed protected site in Russia

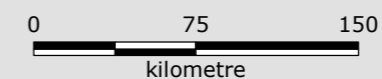
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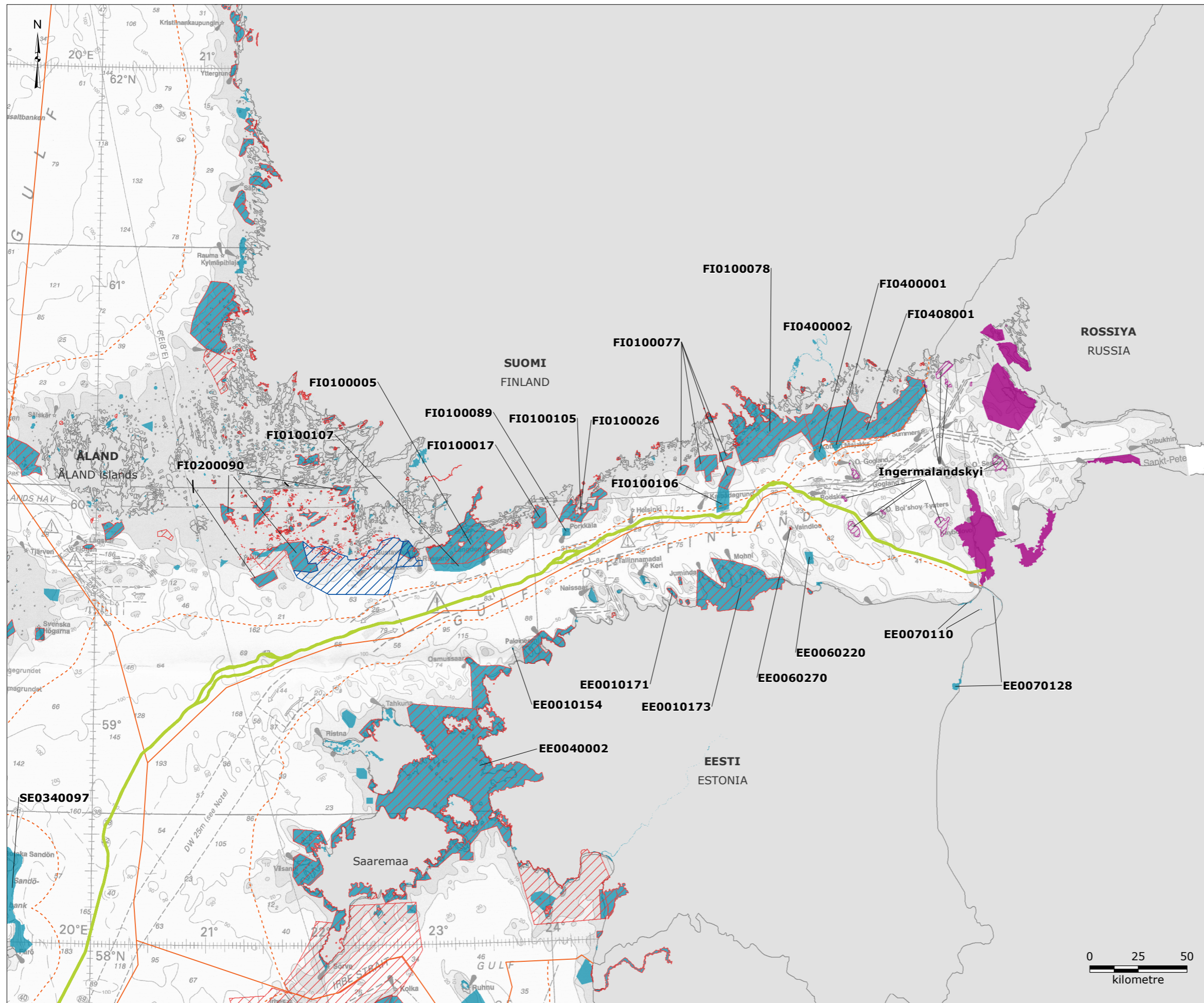
- European Environment Agency, 2014, "Natura 2000 data - the European network of protected sites", <http://www.eea.europa.eu/data-and-maps/data/natura-6>, Date accessed: 2016-01-19
- Länsstyrelsen Skåne, 2015, "Utpekande av nya Natura 2000-områden i Skåne 2015, dnr 511-11380-14, 2015-05-05"
- Länsstyrelsen Gotlands Län and Kalmar Län, 2016, "M2015/02273/N m (delvis) - Förslag till nya områden för bevarande av livsmiljöer samt vilda djur och växter - SE0330308 Hoburgs bank och Midsjöbankarna", Miljö- och Energidepartementet, Regeringen
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- SYKE, Finnish Environmental Institute, Date accessed: 2016-09-14

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 Controlled: MAJH

PA-01-Espoo

Natura 2000 sites and Russian protected areas in the Baltic region





- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
- Natura 2000 sites:
- Special Protection Area (SPA)
 - Special Area of Conservation/ Special Conservation Interests (SAC/SCI)
- Proposed extended Natura 2000 site in Finland:
- Special Protection Areas (SPA) and Special Area of Conservation/ Special Conservation Interests (SAC/SCI)
- Protected areas in the Russian part of the Baltic Region:
- Protected site in Russia
 - Proposed protected site in Russia

Note:
- Only sites assessed in the Espoo report are labelled

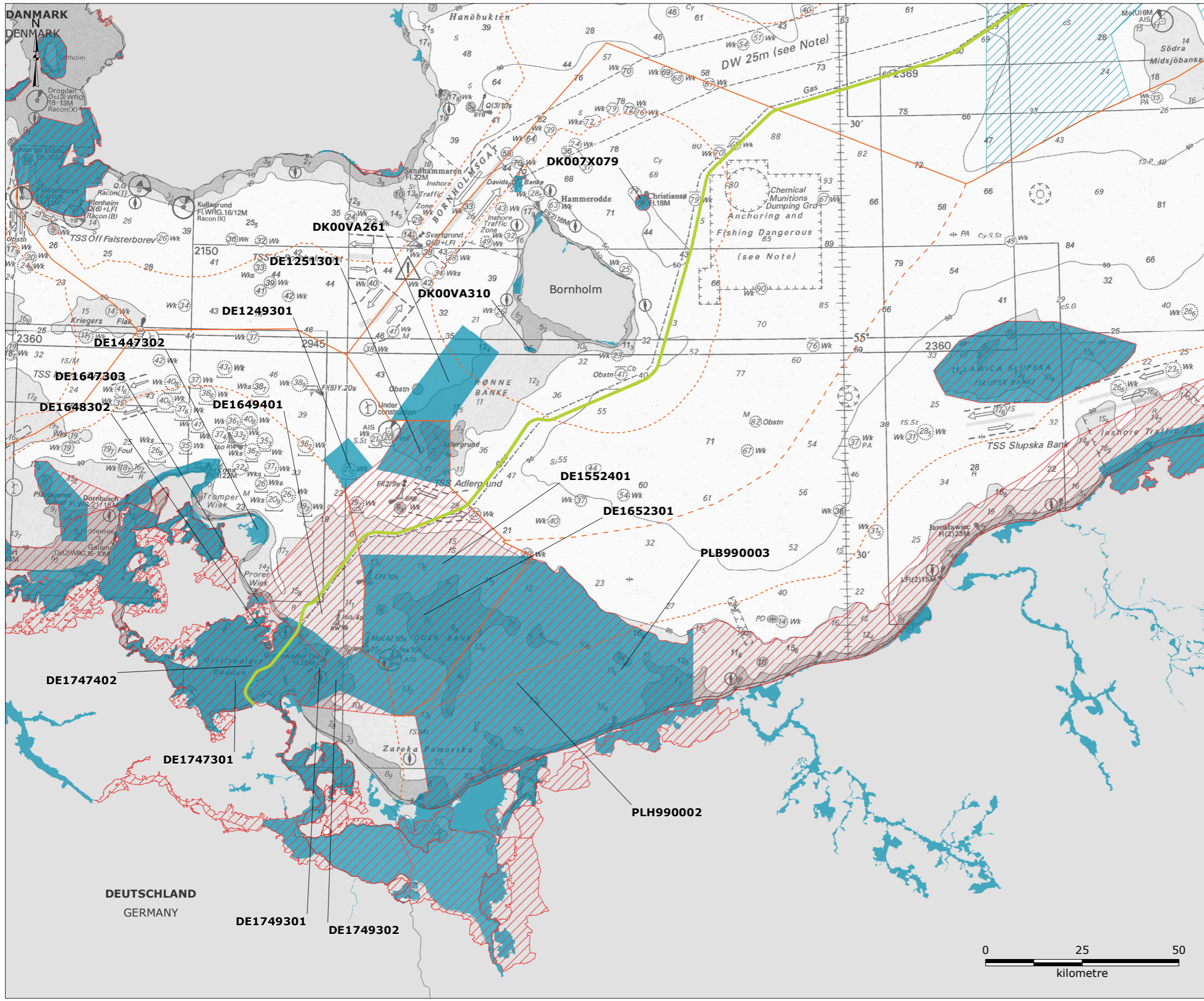
References:
- European Environment Agency, 2014, "Natura 2000 data - the European network of protected sites", <http://www.eea.europa.eu/data-and-maps/data/natura-6>, Date accessed: 2016-1-19
- Pogrebov, V., Sagitov, R., 2006, "Nature conservation atlas of the Russian part of the Gulf of Finland", Tuscarora, Russia, 60 pp.
- SYKE, Finnish Environmental Institute, Date accessed: 2016-09-14

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Controlled: MAJH








PA-02-Espoo

Natura 2000 sites and Russian protected areas in the Gulf of Finland





Legend:

-  NSP2 Route
 -  Territorial water border
 -  EEZ border
 -  Midline between Denmark and Poland
- Natura 2000 sites:
-  Special Protection Area (SPA)
 -  Special Area of Conservation/ Special Conservation Interests (SAC/SCI)
 -  Proposed extended Natura 2000 site in Sweden

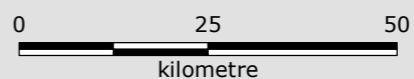
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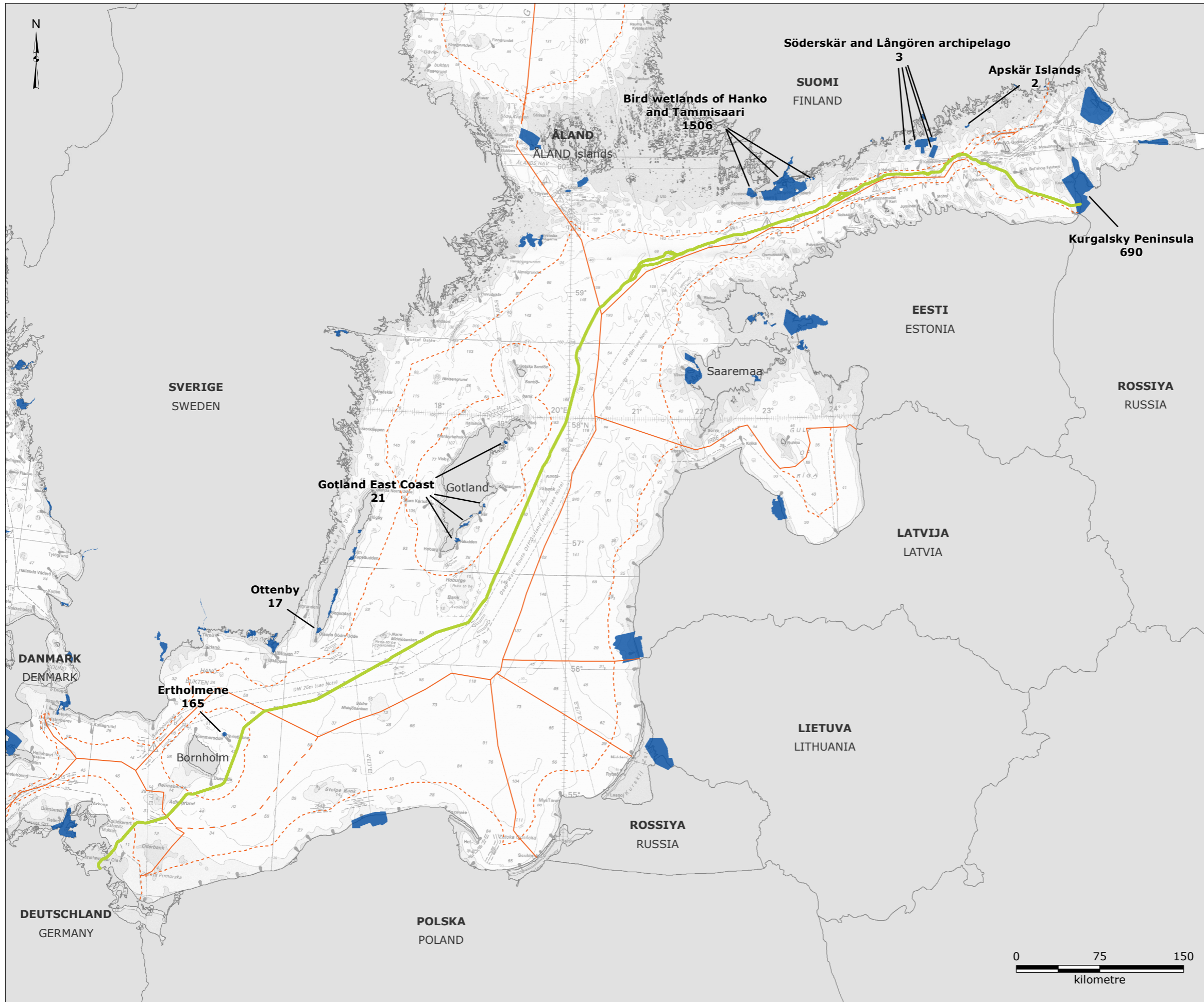
Reference:
- European Environment Agency, 2014, "Natura 2000 data - the European network of protected sites", <http://www.eea.europa.eu/data-and-maps/data/natura-6>, Date accessed: 2016-1-19
- Länsstyrelsen Gotlands Län and Kalmar Län, 2016, "M2015/02273/N m (delvis) - Förslag till nya områden för bevarande av livsmiljöer samt vilda djur och växter - SE0330308 Hoburgs bank och Midsjöbankarna", Miljö- och Energidepartementet, Regeringen

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PA-03-Espoo

Natura 2000 sites in Germany and Denmark





- Legend:**
- NSP2 Route
 - Territorial water border
 - EEZ border
 - Midline between Denmark and Poland
 - Ramsar site

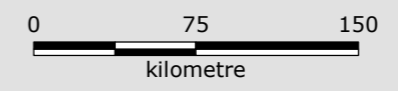
Note:
 - Only sites assessed in the Espoo report are labelled

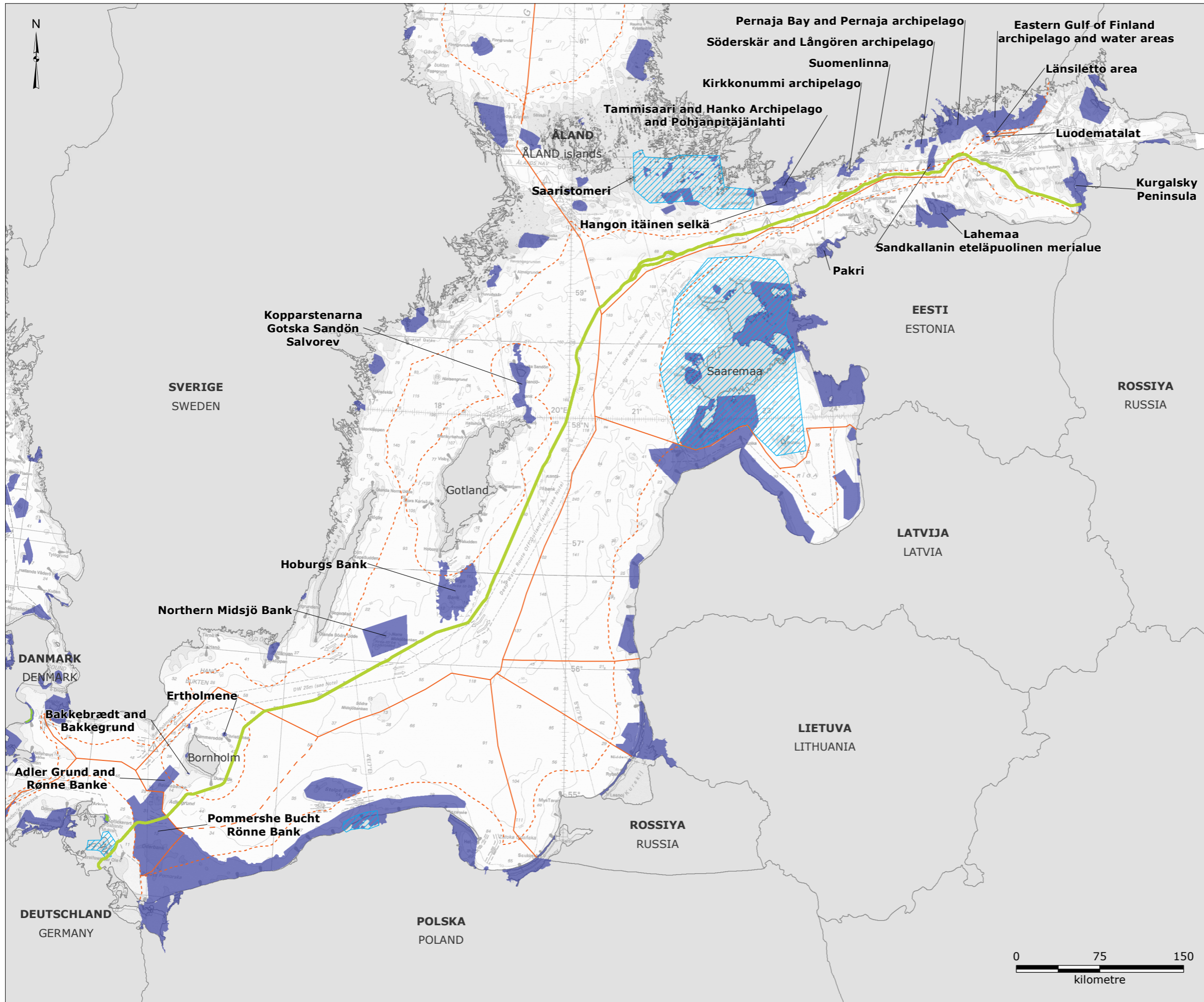
Reference:
 - European Environment Agency and HELCOM, 2012, "Ramsar sites", <http://maps.helcom.fi/website/mapservice/index.html>, Data accessed: 2016-1-21

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PA-04-Espoo

Ramsar sites in the Baltic region





- Legend:**
- NSP2 Route
 - - - Territorial water border
 - EEZ border
 - - - Midline between Denmark and Poland
 - UNESCO - Biosphere Reserves
 - UNESCO - World Heritage Site (natural)
 - HELCOM MPA

Note:
- Only sites assessed in the Espoo report are labelled

References:
- HELCOM, European Commission and UNESCO, 1998, "UNESCO sites", <http://maps.helcom.fi/website/mapservice/index.html>, Date accessed: 2015-11-12
- HELCOM, 2015, "HELCOM MPAs", <http://maps.helcom.fi/website/mapservice/index.html>, Date accessed: 2016-01-11

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PA-05-Espoo

Marine Protected Areas (MPA's) and UNESCO Biosphere Reserves in the Baltic region

