



The risks and harm that oil causes to wildlife

Vanessa Ryan, WWF Finland

POPCORN webinar: Oil spills and wildlife protection
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In this presentation




- The risk of oil spills
- Effects of oil on wildlife
- Potential impacts on species
- Environmental sensitivity
- Vulnerable species
- Data needs
- How can you prepare?
- Importance of planning and international cooperation

The risk of an oil spill...



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'Port of Rotterdam was not well prepared for oil spill Bow Jubail'

Published on 13-03-2020 at 11:28

The port of Rotterdam was insufficiently prepared for a calamity, as happened almost two years ago with the Bow Jubail. More than two hundred tonnes of fuel oil ended up in the water.

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The Dutch Safety Board states this in its report on the oil spill in the port on Thursday 23 June 2018. On that day, the chemical tanker from Odjell collided with a jetty in the Botiek. A fuel tank, which was in the double hull of the ship, was pierced. The outflow of the fuel oil proved unstoppable until the liquid level in the tank had dropped to the bottom of the hole in the hull.

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Rotterdam oil spill: Hundreds of birds hit after Dutch leak

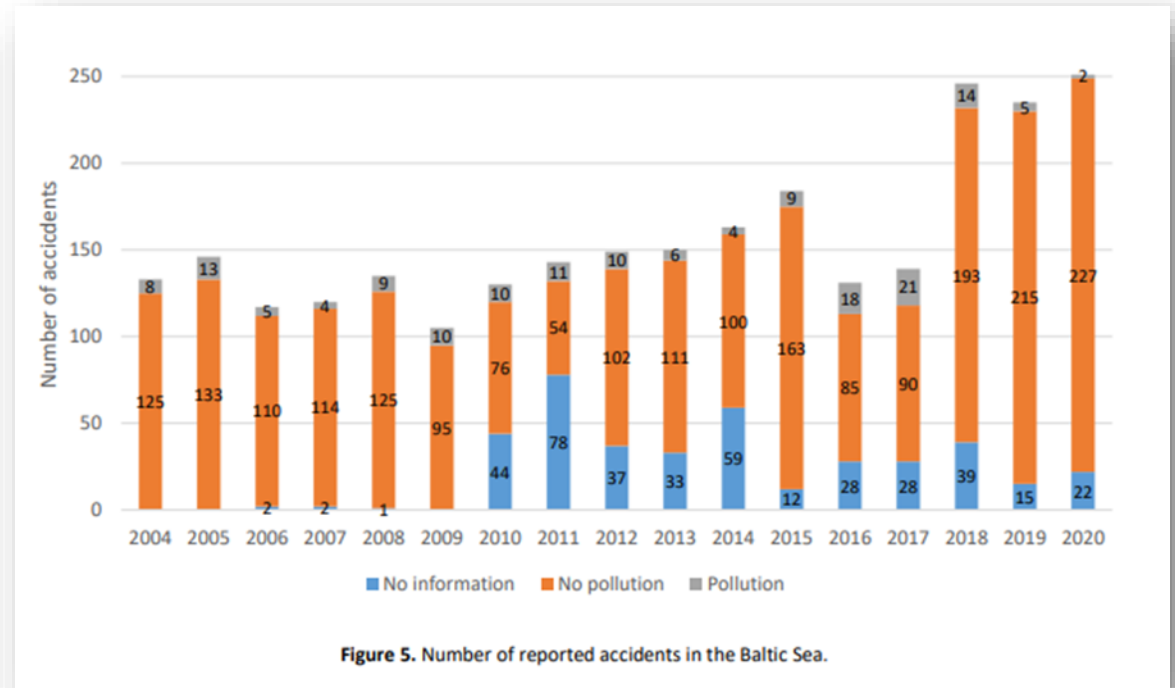
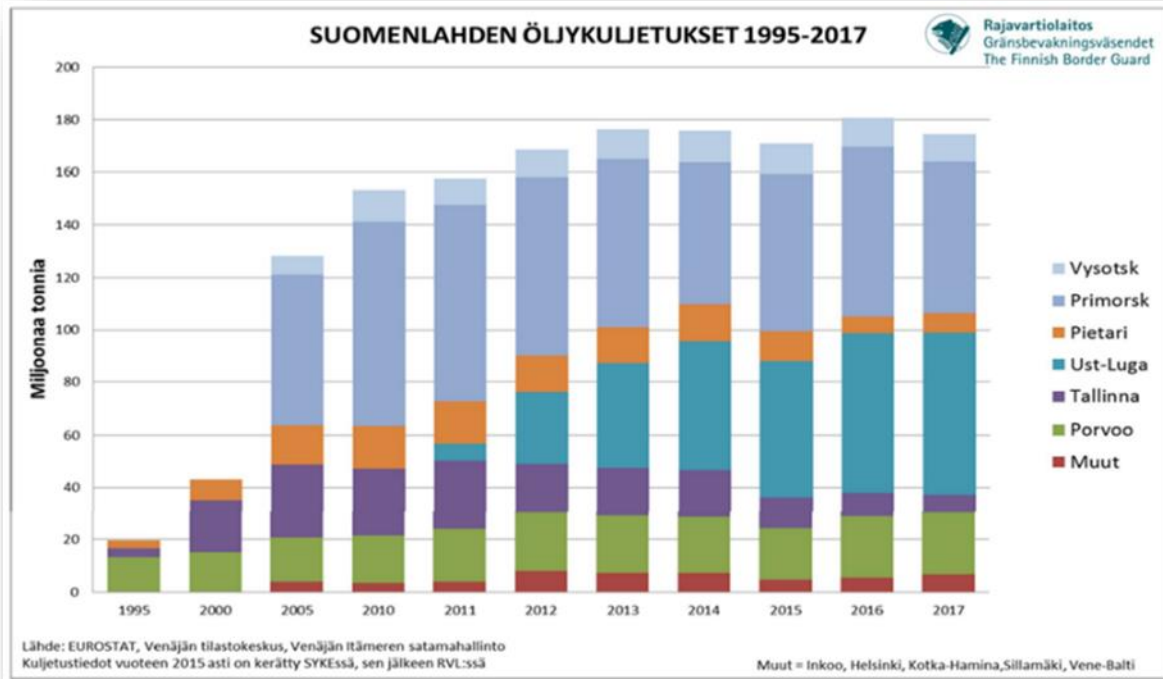
25 June 2018



Rescue workers have been overwhelmed by the number of contaminated birds

- Maritime safety has improved, but accidents have not been completely eliminated
- Countries have little experience of managing large-scale incidents
- Big differences in preparedness, capacity to respond and resources available

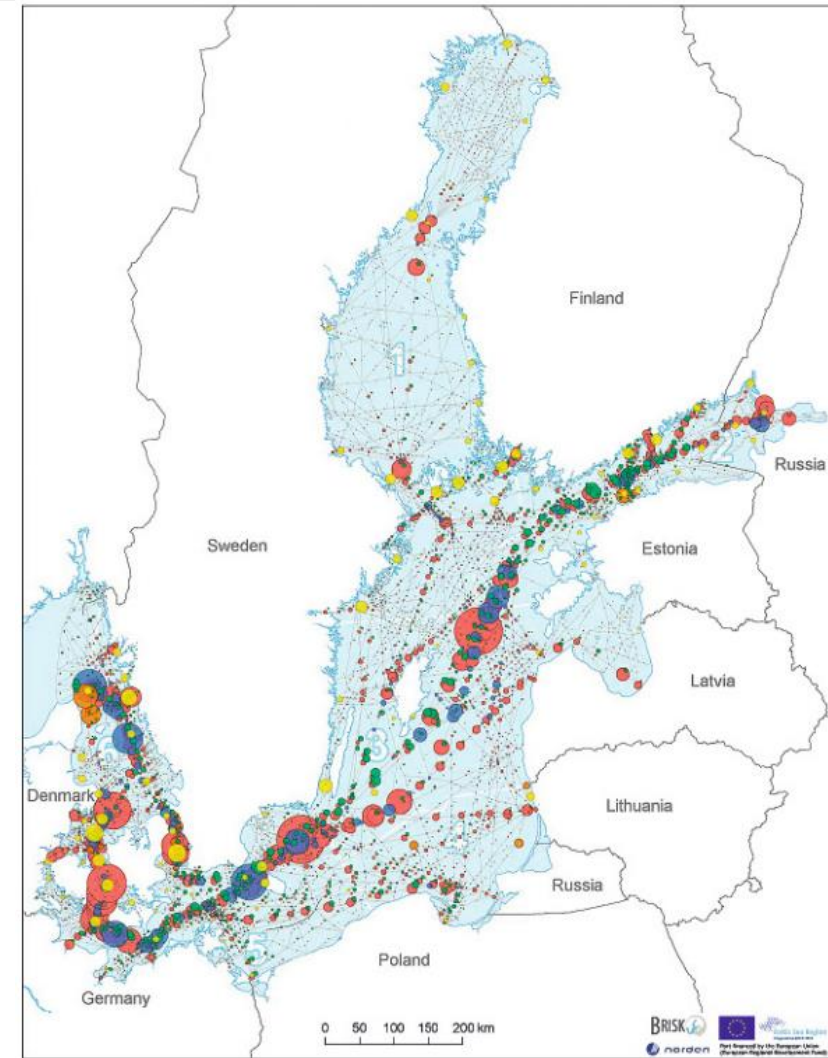
...is ever present



Source: HELCOM: Shipping accidents in the Baltic Sea 2020

What are the risks of a spill?

- Shipping (volume, routes etc.)
 - Biggest risk
 - Has been analyzed on Baltic scale (BRISK)
 - Not very detailed, out of date
 - Unlikely incidents can happen in unlikely places
- GoF worst case scenario 30 000 tonnes - 400 km?
- Other sources (land-based, wrecks)
- Risk assessments have also been made for Arctic waters

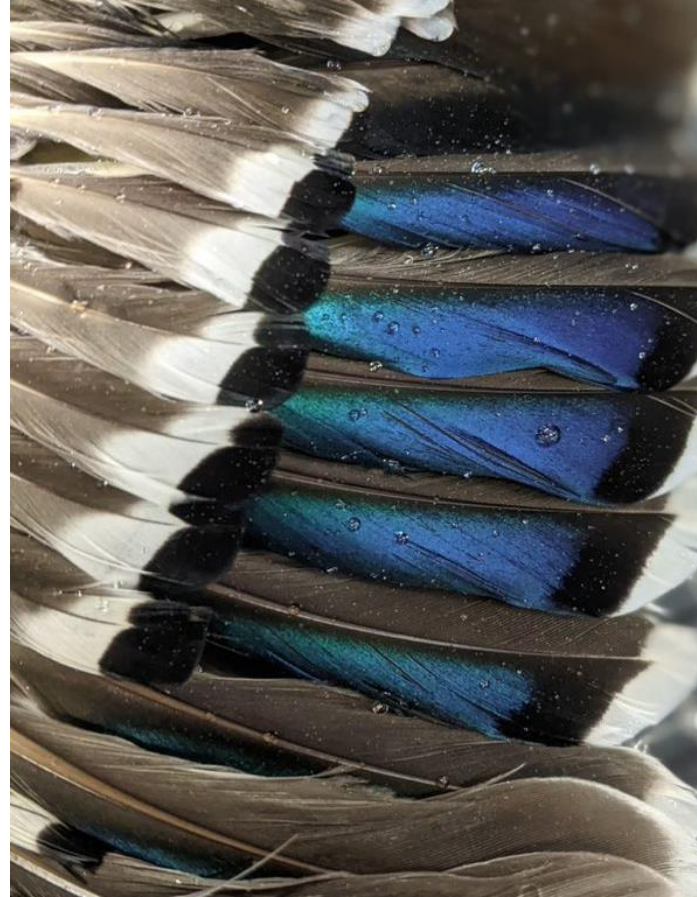
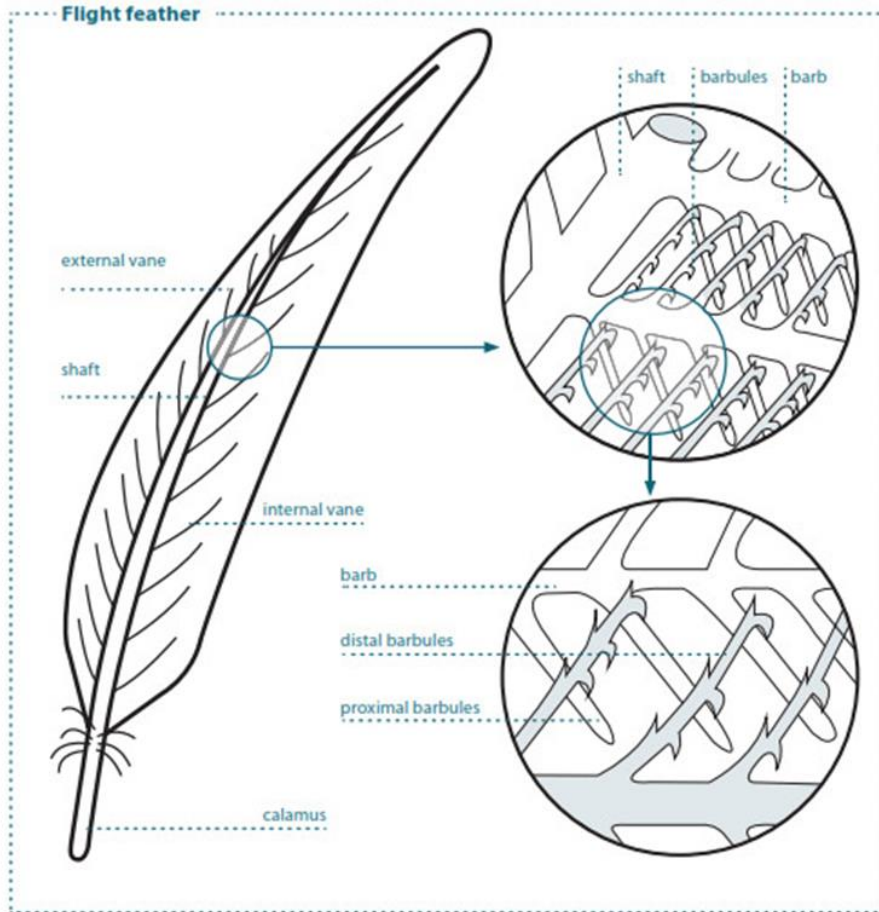


The risk of oil spills.
(tonnes/year)



- Groundings
- Collisions at intersections
- Overtaking and head-on collisions
- Collisions with fixed objects and spills from offshore platforms, terminals, bunkering and STS operations
- Illegal spills

Effects of oil on wildlife



- Seabirds usually the most visible sign of fauna being affected
 - External effects: destruction of water-proofness and feathers, skin burns
 - Hypothermia
 - Loss of mobility
- Internal effects:
 - Preening bird ingest oil
 - Damage to intestine → dehydration
 - Effects on specific organs (liver, lungs, kidneys, reproductive organs)

Potential impacts

OIL SPILL	AMOUNT OF OIL (Tonnes)	ESTIMATED AMOUNT SEABIRDS
Exxon Valdez (1989)	37,000	350,000
Braer (1993)	85,000	6,500
Sea Empress (1996)	23,000	32,000
Erika (1999)	20,000	120,000
Prestige (2002)	63,000	250,000
Tricolor (2003)	170	40,000



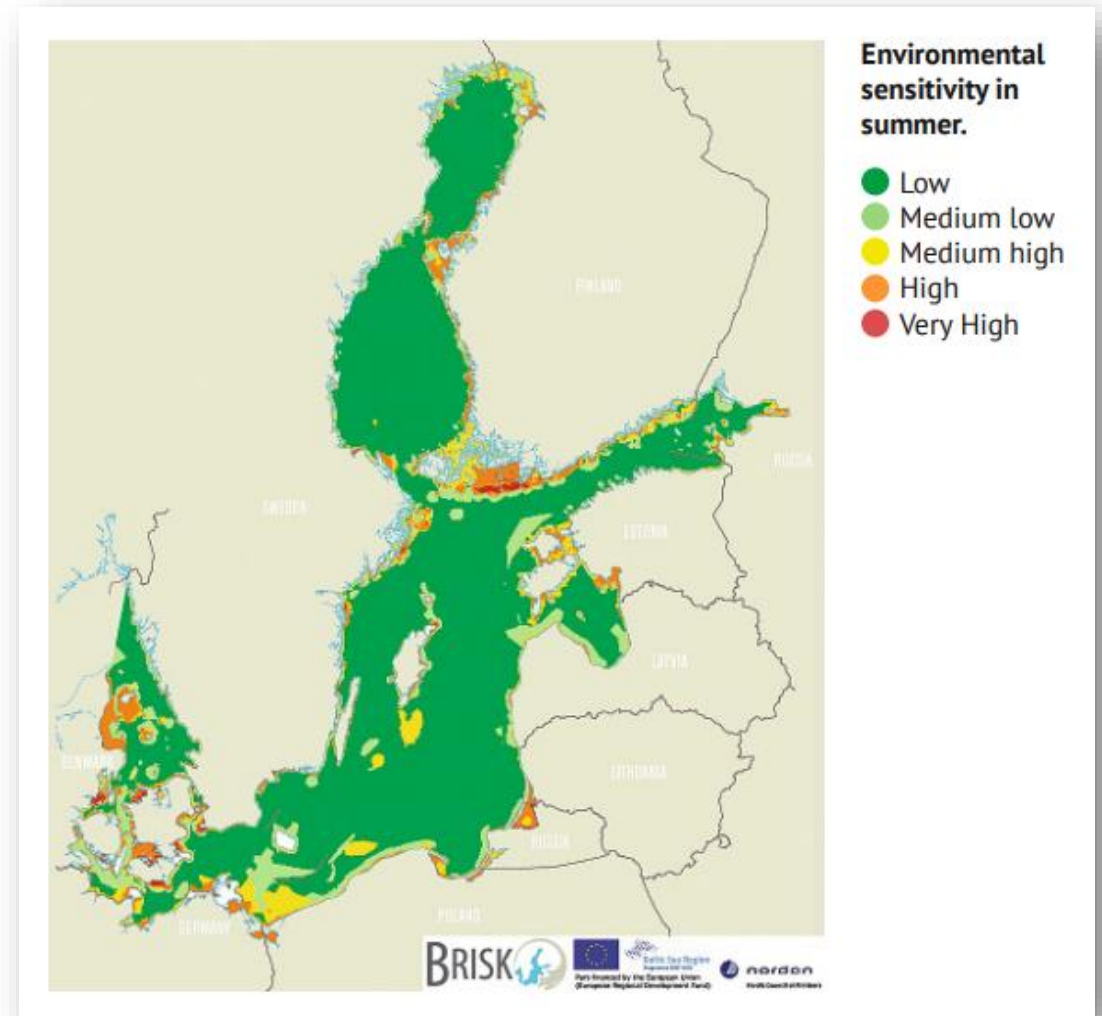
© Martin Harvey / WWF

- The amount of seabirds affected does not correlate with amount of oil spilled
 - Time of the year
 - Location
 - Species involved and their behaviour
- Not only seabirds
 - Mammals (seals, whales, otters, beavers)
 - Turtles
 - Fish (spawning areas)

Environmental sensitivity



- Beach structure and quality
 - Sensitive species
- Underwater environmental values?
 - Reefs and sandbanks, seagrass meadows, estuaries
- Fish spawning areas
- Marine mammals
- BIRDS



Vulnerable species



- Especially endangered species that aggregate in certain areas at certain times of the year

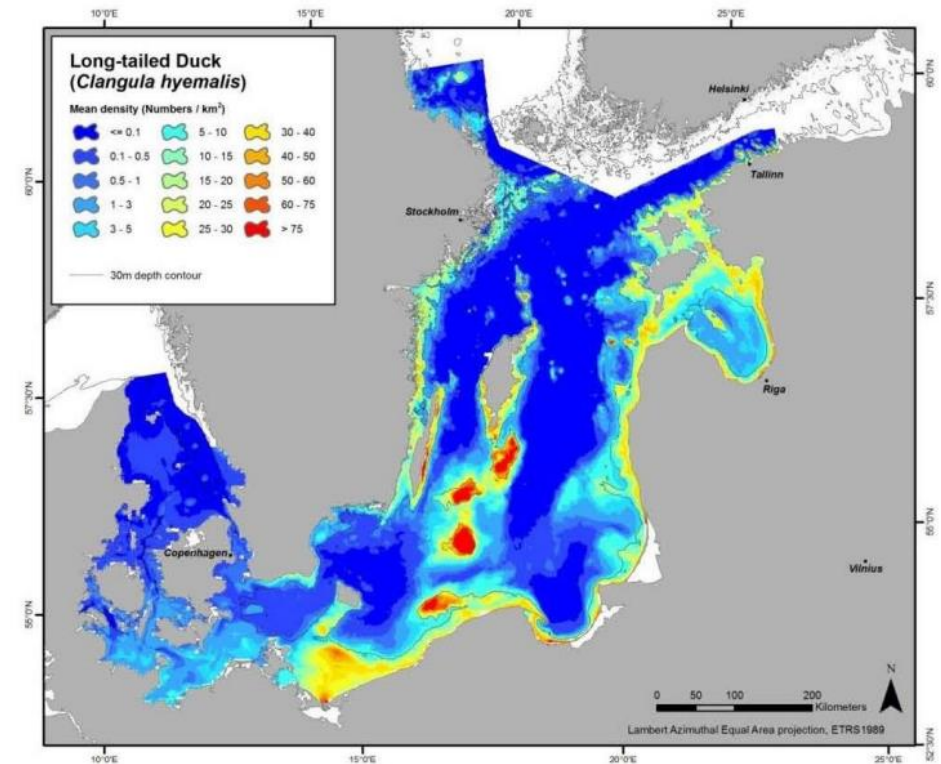


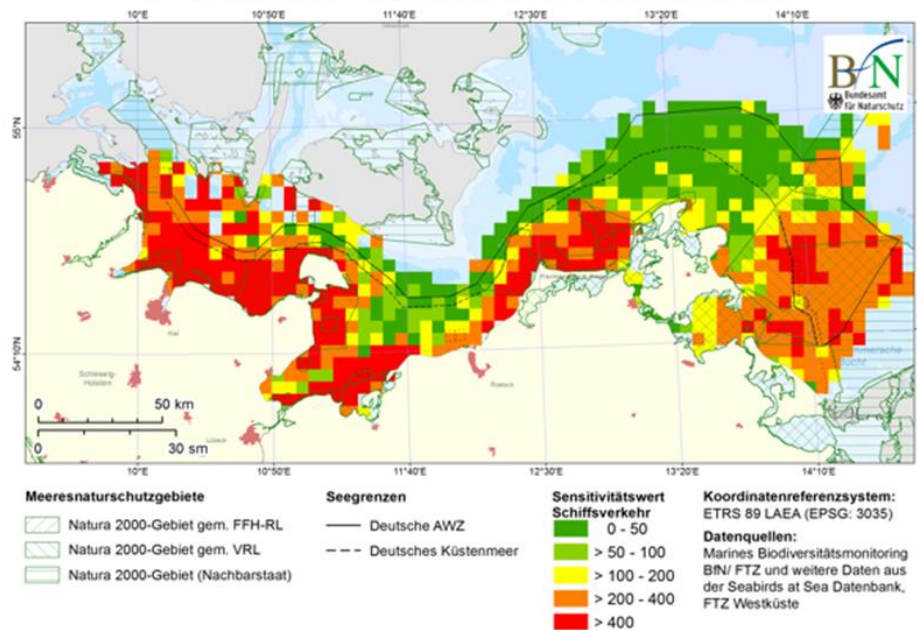
Fig. 1. Distribution and density of wintering long-tailed duck *Clangula hyemalis* in the Baltic Sea, 2007 – 2009. From Skov et al. (2011).

Data for informed decision-making

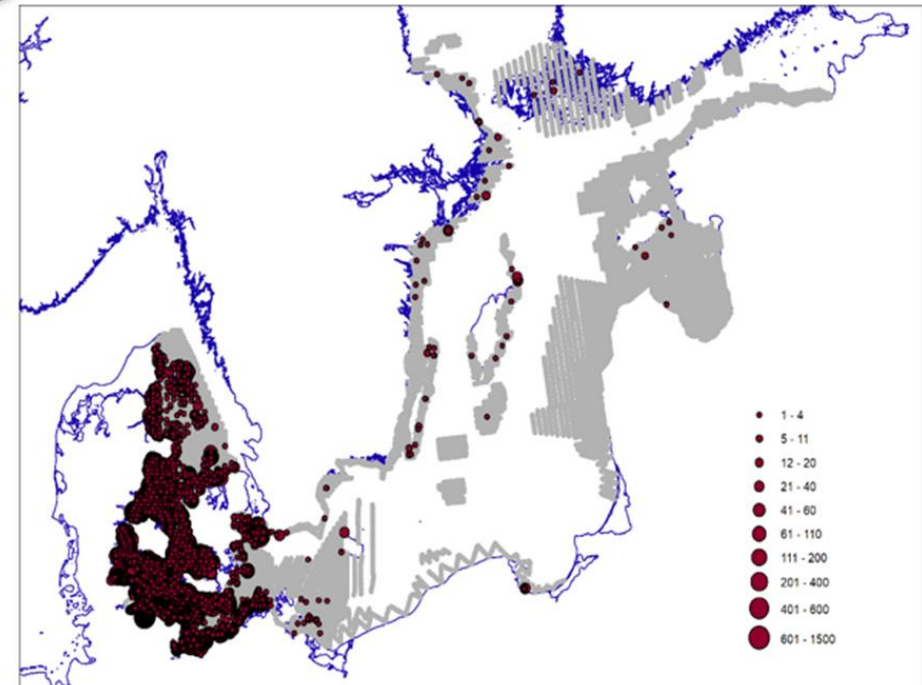


Sensitivity maps

Example: Sensitivity of seabirds to ship traffic in the German Baltic Sea
in winter (all key species aggregated)



Preliminary maps: Common Eider



Evaluation & visualisation: Katharina Fließbach, FTZ, Kiel University, Germany

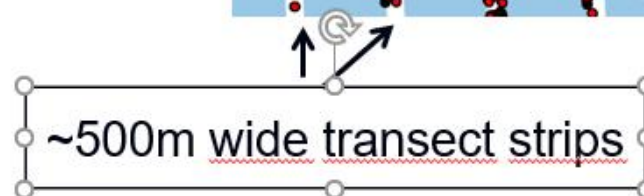
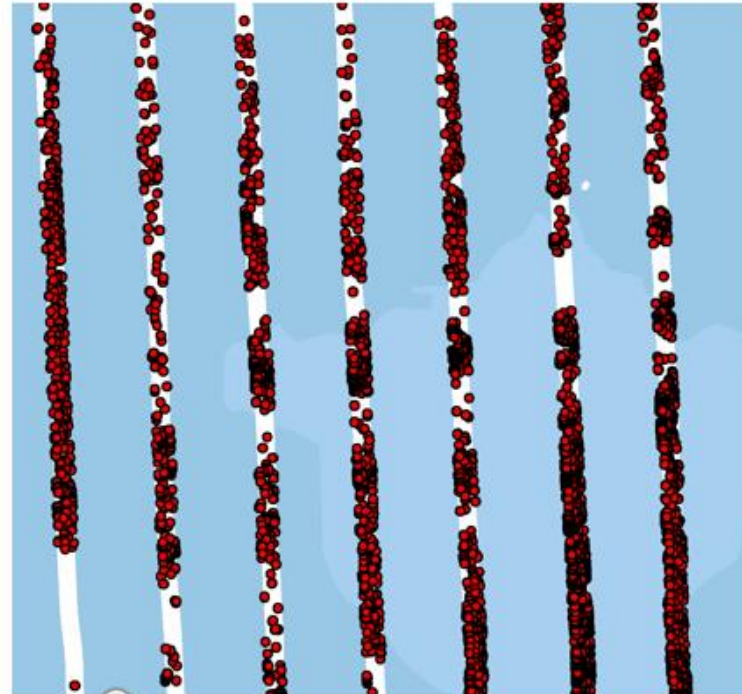
Maps by: Dr. Ainārs Aunins, University of Latvia, Riga, ainars.aunins@lu.lv

Data for informed decision-making



Dense aggregations

Long-tailed Ducks – Odrabank, DE – March 2017



How can you prepare?



- Know the sources (shipping, harbours, industry)
 - Locating and quantifying the risks these sources pose
- Know where your sensitive areas lie
 - length of shoreline, habitats, accessibility
- Know your bird populations
 - Species distribution
 - Expected numbers in different seasons



How can you prepare?



- Develop a multi-annual preparedness framework
 - Develop an oiled wildlife response plan
 - Build relationships/networks
 - Authorities
 - Experts (vets, ornithologists)
 - Develop a training and exercise program
 - Keep an up-to-date stock of emergency equipment, know where to get more
 - Ensure funding for OWR development work



Importance of oiled wildlife response planning



- National wildlife response plans, taking into account
 - Possible scenarios
 - Response concepts and strategies
 - Rehab? Euthanasia? Guidelines? Protocols?
 - Organisational setup:
 - Responsible authorities and their relationships
 - Stakeholders involved (rehab centres, NGOs, volunteers) and their roles
 - Mobilisation and decision-making
 - Key positions in a response and who will fill them
 - Facilities, logistics, equipment
 - Financial aspects



Importance of international cooperation



- Very few countries have the resources to deal with a large-scale spill on their own
- Important to train local responders to be able to start the response, and deal with smaller spills
- Important to facilitate cross-border cooperation to ensure adequate resources in large-scale spills





**Thank you for your
attention!**

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ratkaisemme ympäristöongelmia
– luonnon ja ihmisten hyväksi**

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