Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas

ASCOBANS

The Conservation Plan for the Harbour Porpoise in the North Sea

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LIST OF ACTIONS

1. **Implementation of the Conservation Plan: Co-ordinator and Steering Committee – HIGH (ongoing)**
2. **Implementation of existing regulations on bycatch of cetaceans – HIGH (Tech. Reg.)**
3. **Establishment of Bycatch Observation Programmes on small vessel (<15m) and recreational fisheries – HIGH (some progress through iVMS)**
4. **Regular evaluation of all relevant fisheries with respect to extent of porpoise bycatch – HIGH (ICES WGBYC)**
5. **Review of current pingers, development of alternative pingers and pinger modifications – HIGH (UK, DE, DK)**
6. **Finalise a management procedure approach for determining maximum allowable anthropogenic removals in the region – HIGH (JBWG, OSPAR)**

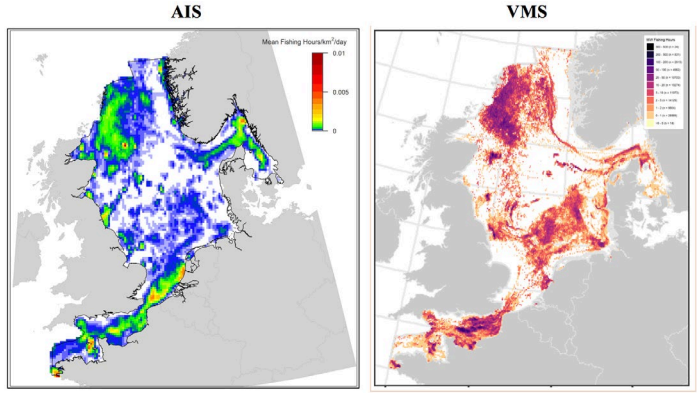
LIST OF ACTIONS

7. Monitoring trends in distribution and abundance of harbour porpoises in the region – HIGH (FR, BE, NL*, DE, DK) - *every 3 years
8. Review of the stock structure of harbour porpoises in the region – HIGH (no progress)
9. Collection of incidental catch data through stranding networks in the region – MEDIUM (FR, BE, NL, DE, UK)
10. Investigation of the health, nutritional status and diet of harbour porpoises in the region – MEDIUM (see NSG Progress Report 2020; also IJsseldyk, 2021; Lambert 2021)
11. Investigation of the effects of anthropogenic sounds on harbour porpoises – MEDIUM (ICES, BE, NL, DE, DK, UK)
12. Collection and archiving of data on anthropogenic activities and development of a North Sea-wide GIS based database – MEDIUM (ongoing)

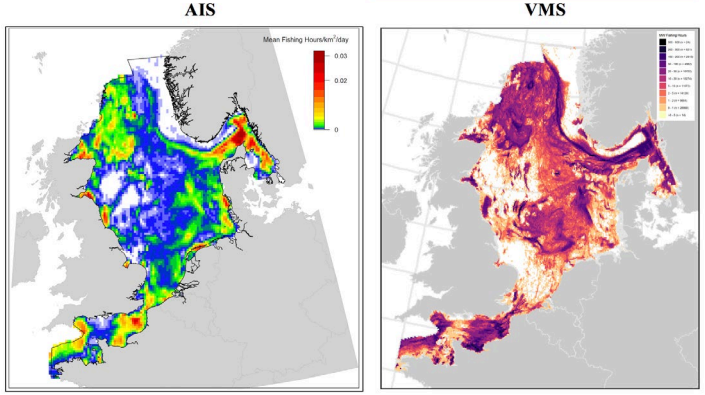
Comparison of Fishing Effort determined by AIS vs VMS

(mean fishing hours, 2015-18)

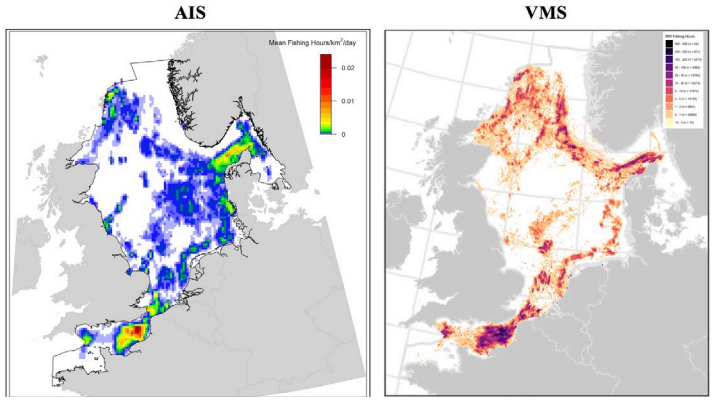
a) Pelagic Trawls & Seines



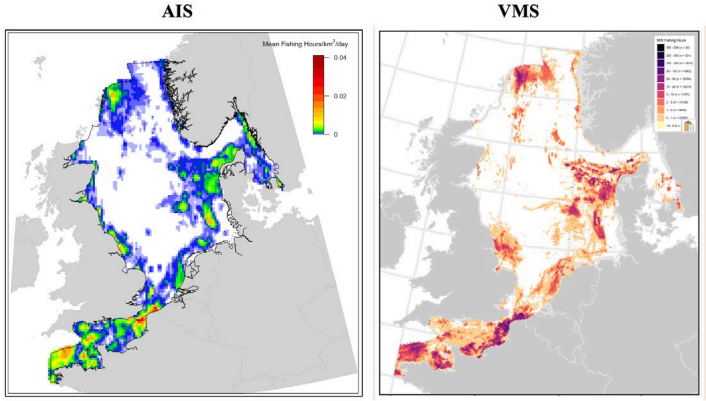
b) Bottom Otter Trawls



c) Demersal Seines



d) Static Gear

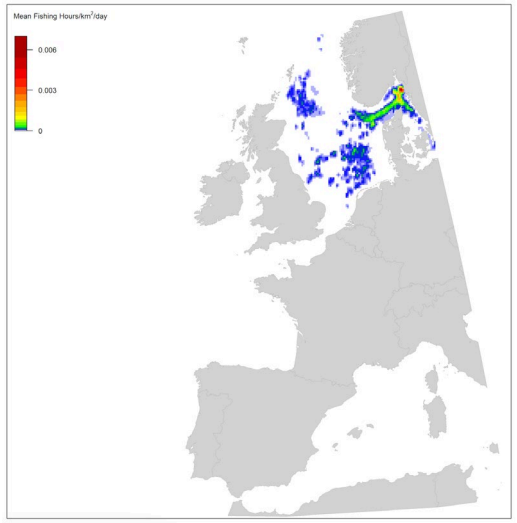


Source: Evans et al. (2021)

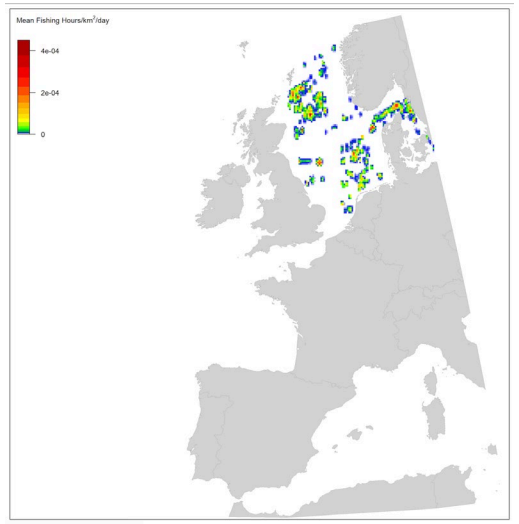
Fishing Effort by country & gear type in the North Sea - Sweden

(mean fishing hours/km^2/day, 2015-18)

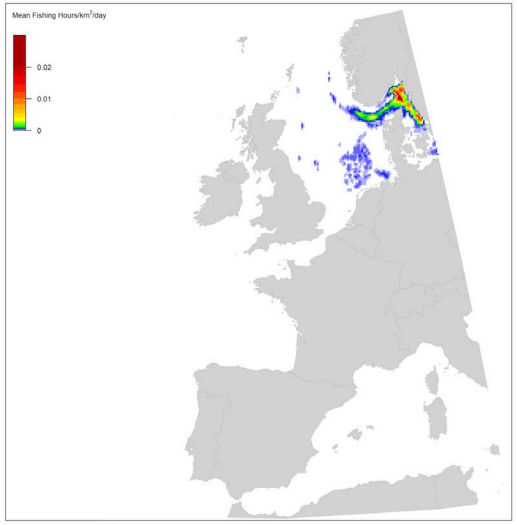
Pelagic Trawl



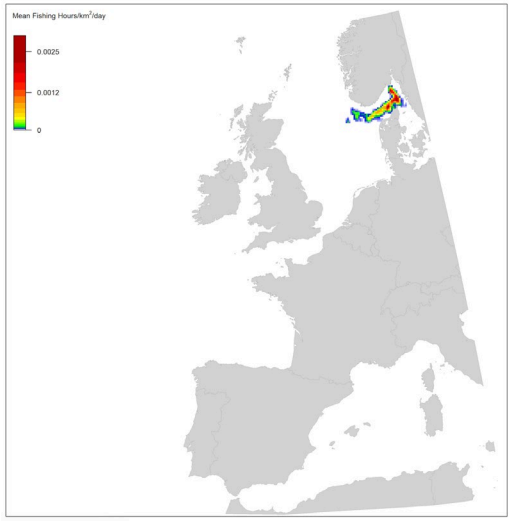
Pelagic Seine



Demersal Trawl



Demersal Seine

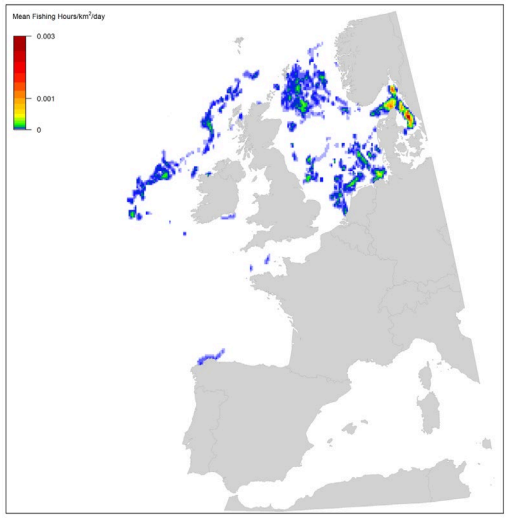


Source: Evans et al. (2021)

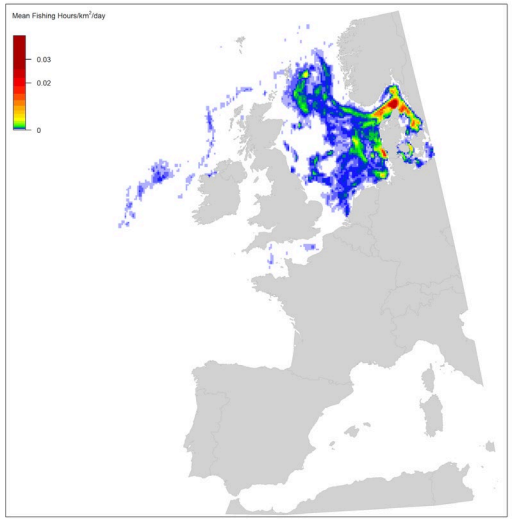
Fishing Effort by country & gear type in the North Sea - Denmark

(mean fishing hours/km^2/day, 2015-18)

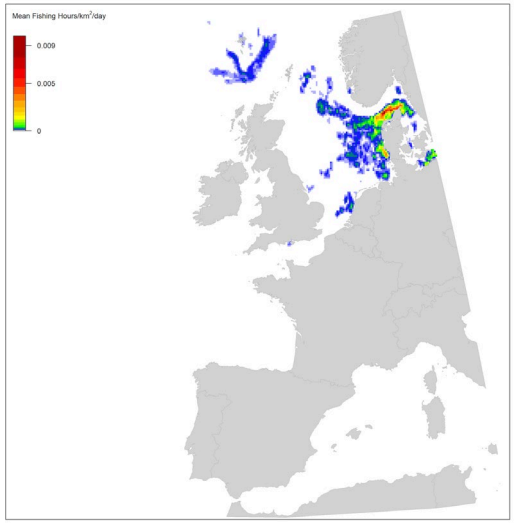
Pelagic Trawls



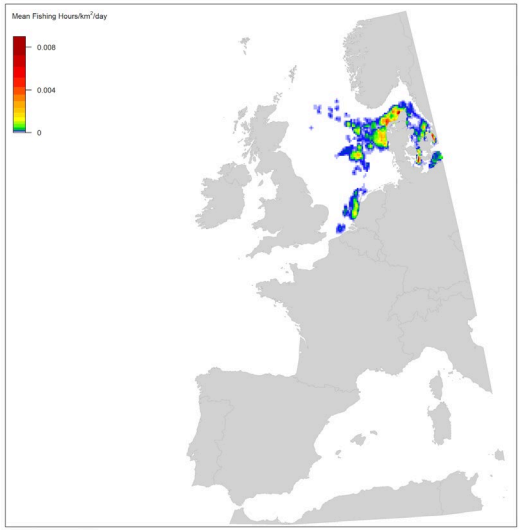
Demersal Trawls



Demersal Seines



Set Gillnets

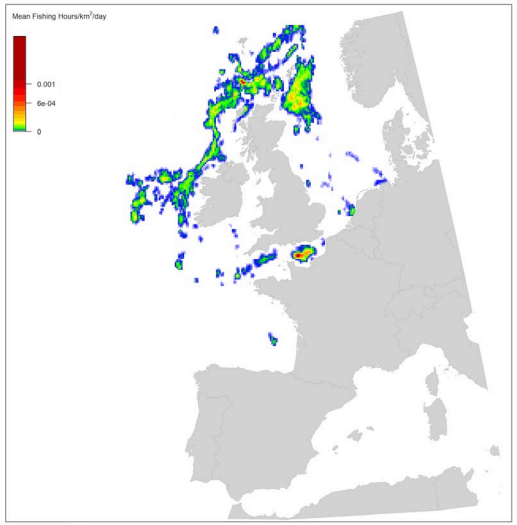


Source: Evans et al. (2021)

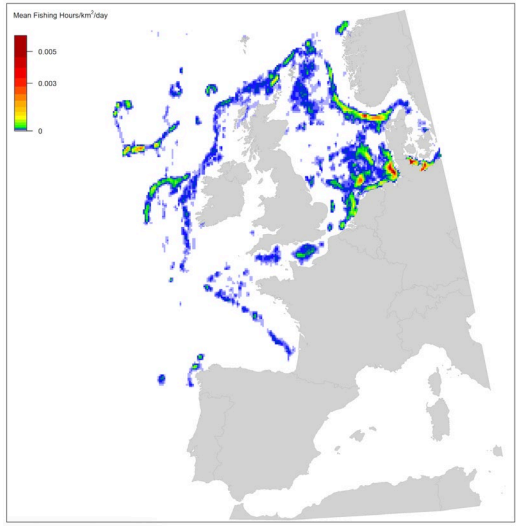
Fishing Effort by country & gear type in the North Sea - Germany

(mean fishing hours/km^2/day, 2015-18)

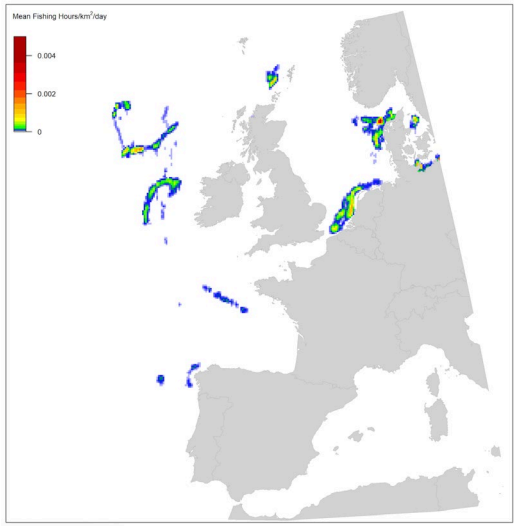
Pelagic Trawls



Demersal Trawls



Set Gillnets

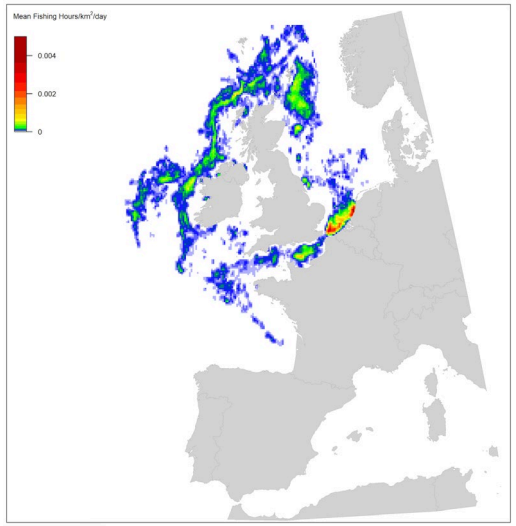


Source: Evans et al. (2021)

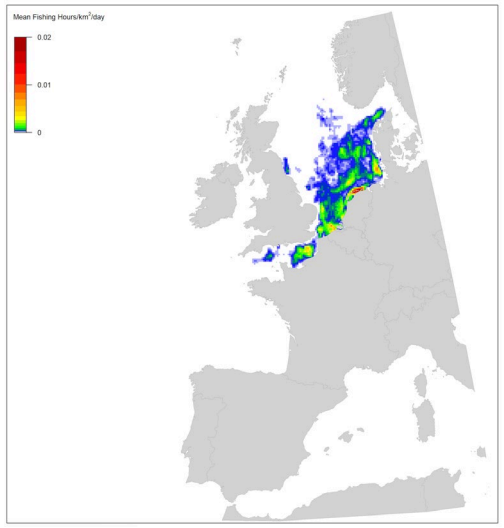
Fishing Effort by country & gear type in the North Sea - Netherlands

(mean fishing hours/km^2/day, 2015-18)

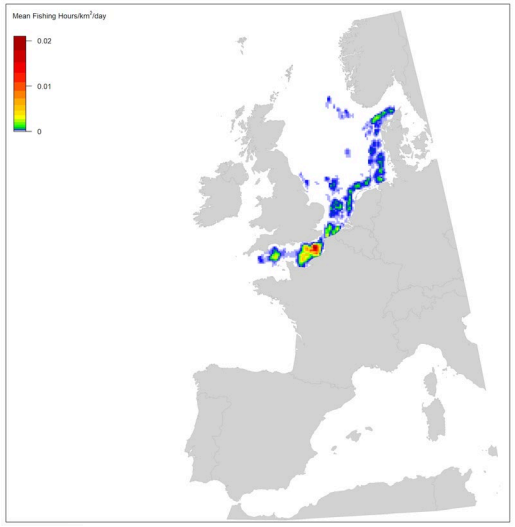
Pelagic Trawls



Demersal Trawls



Demersal Seines

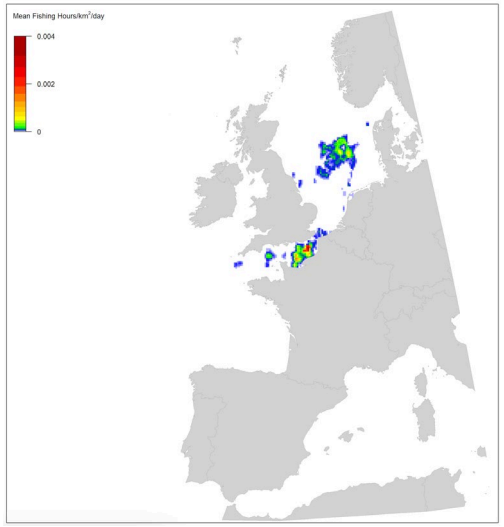


Source: Evans et al. (2021)

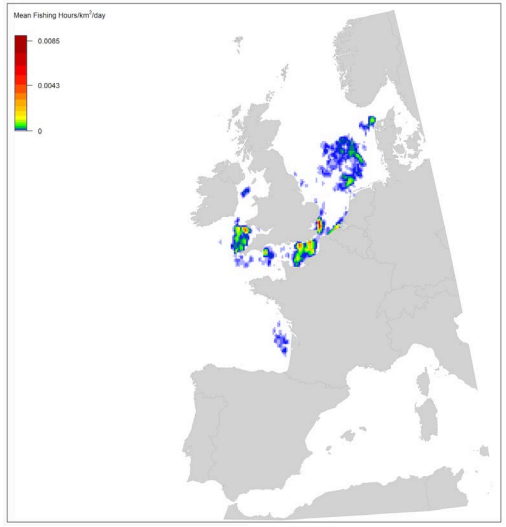
Fishing Effort by country & gear type in the North Sea - Belgium

(mean fishing hours/km^2/day, 2015-18)

Pelagic Seines



Demersal Trawls



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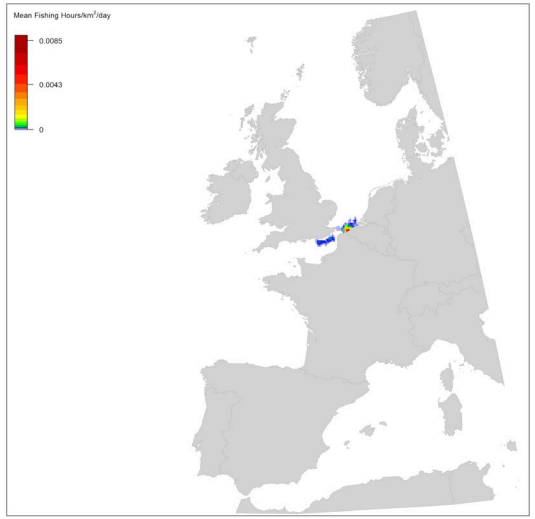
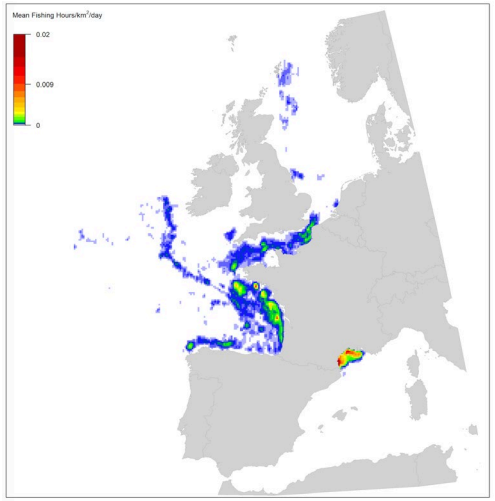


Source: Evans et al. (2021)

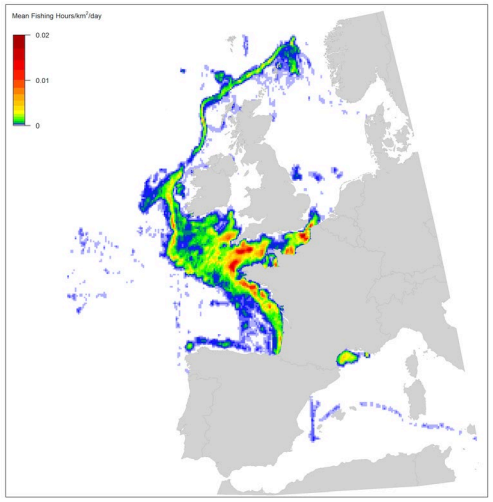
Fishing Effort by country & gear type in the North Sea - France

(mean fishing hours/km^2/day, 2015-18)

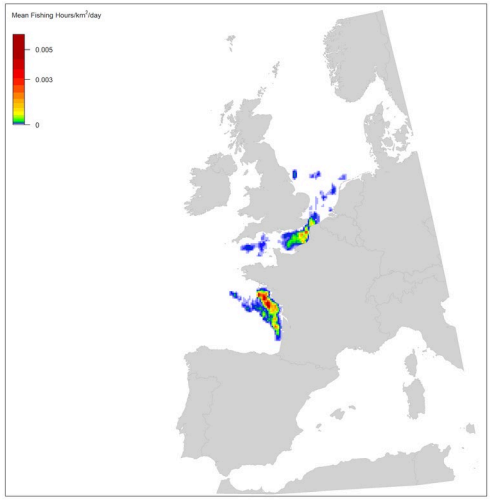
Pelagic Trawls



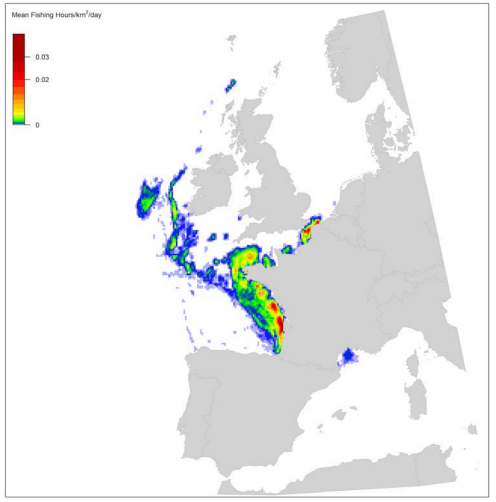
Demersal Trawls



Demersal Seines



Set Gillnets

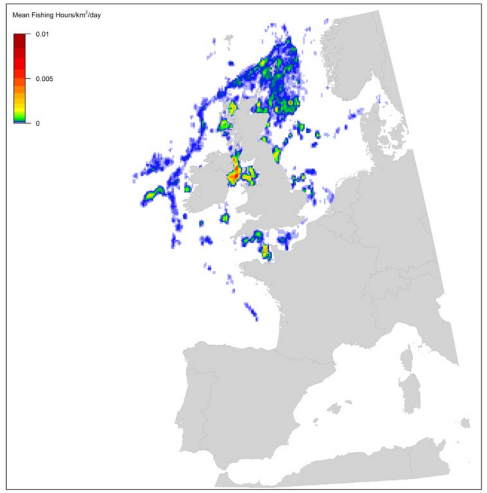


Source: Evans et al. (2021)

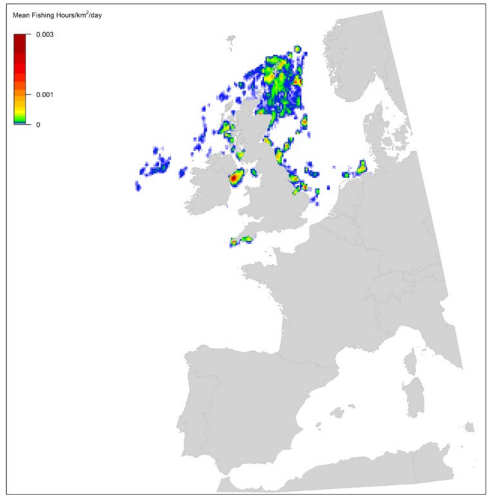
Fishing Effort by country & gear type in the North Sea - UK

(mean fishing hours/km^2/day, 2015-18)

Pelagic Trawls



Pelagic Seines



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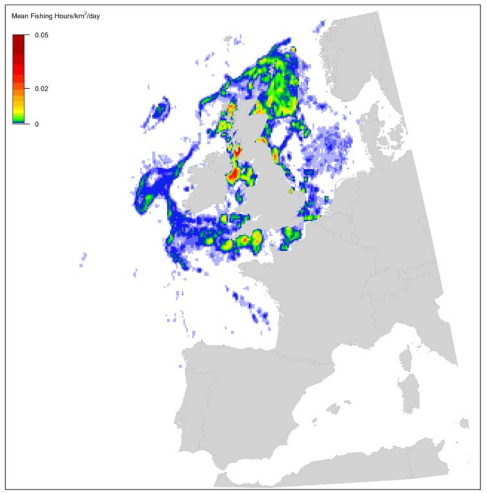
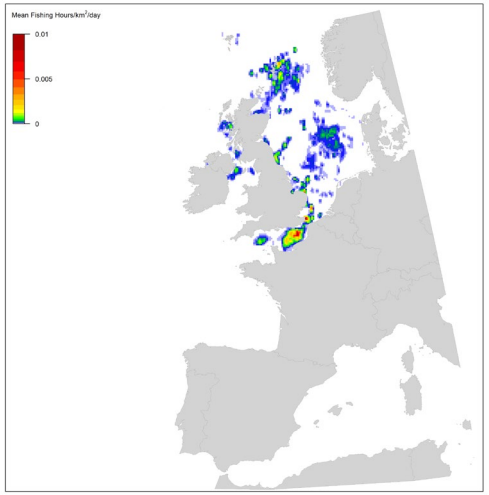


Demersal Seines



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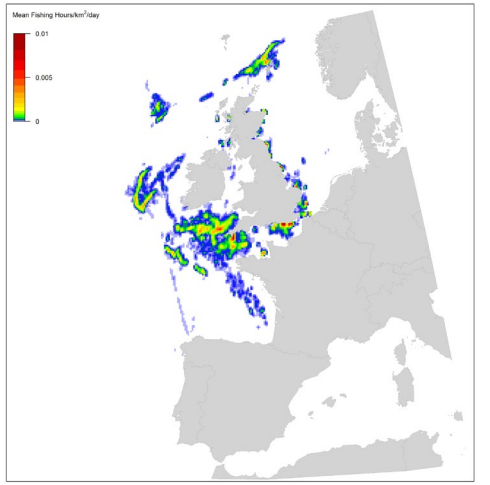
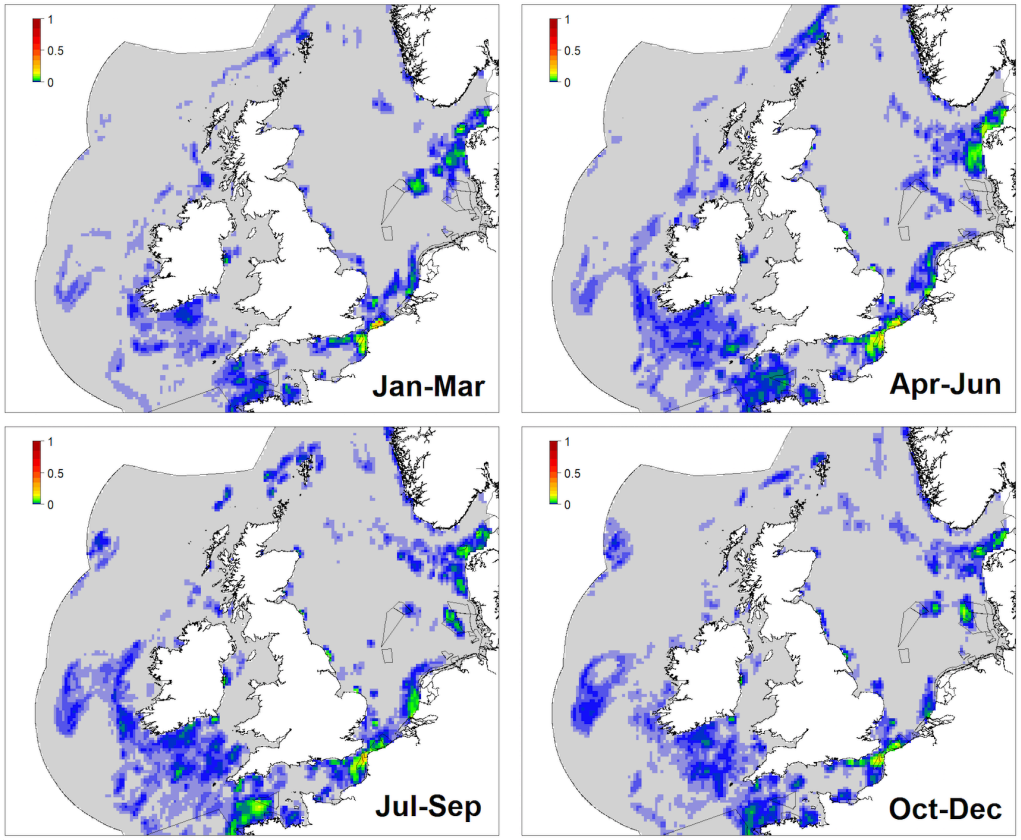


Source: Evans et al. (2021)

Harbour Porpoise Seasonal Bycatch Risk Maps

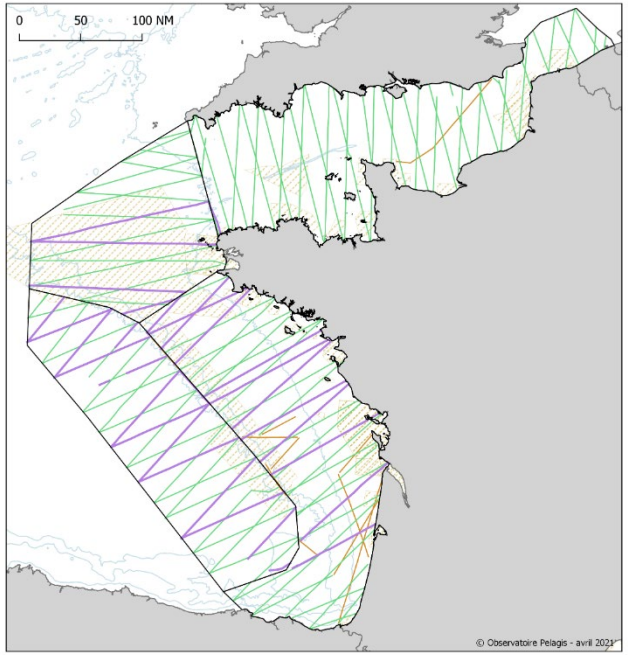


- Overlap between Set Gillnetting activity (2015-18) and Porpoise densities (2005-20)
- Potential Hotspots of Bycatch Risk: SW Skagerrak, just W of Sylt Outer Reef (German Bight), Dutch & Belgian waters including the Dover Strait
- Bycatch Risk highest Apr-Sep but with some geographic variability

Source: Evans et al. (2021)

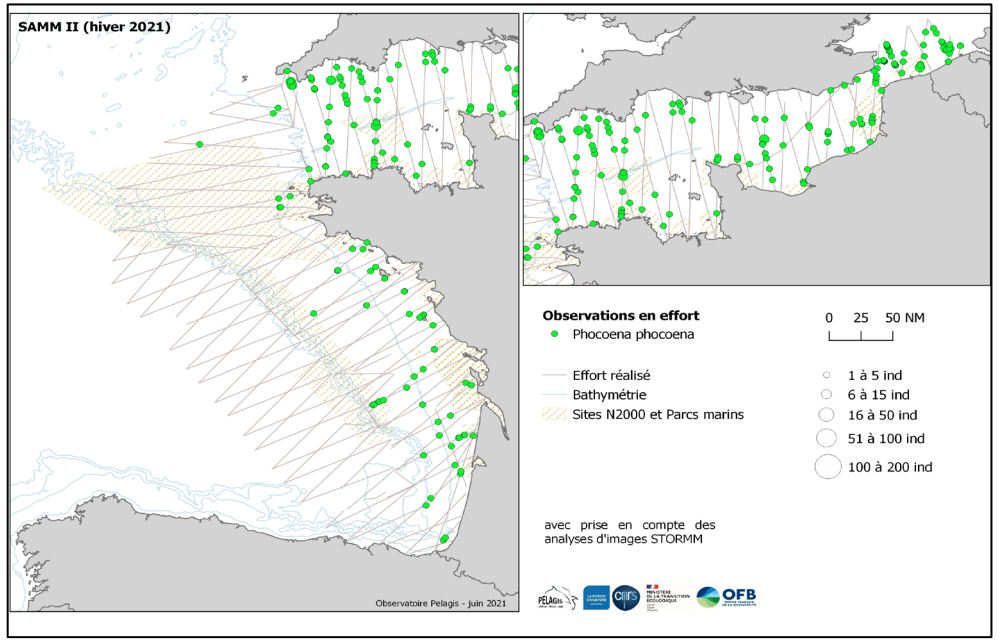
Recent Abundance Surveys in French Waters (and beyond!)

Transect Lines



- Purple lines show camera coverage

Spring 2021

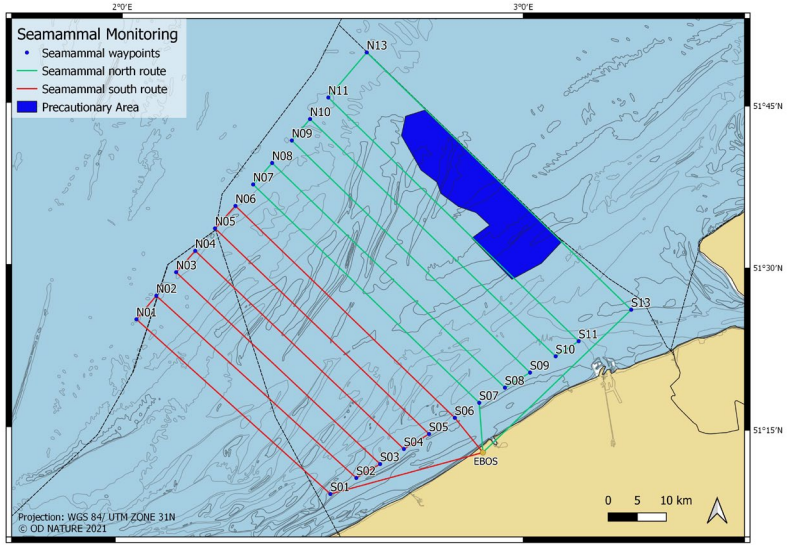


Source: Courtesy of Vincent Ridoux

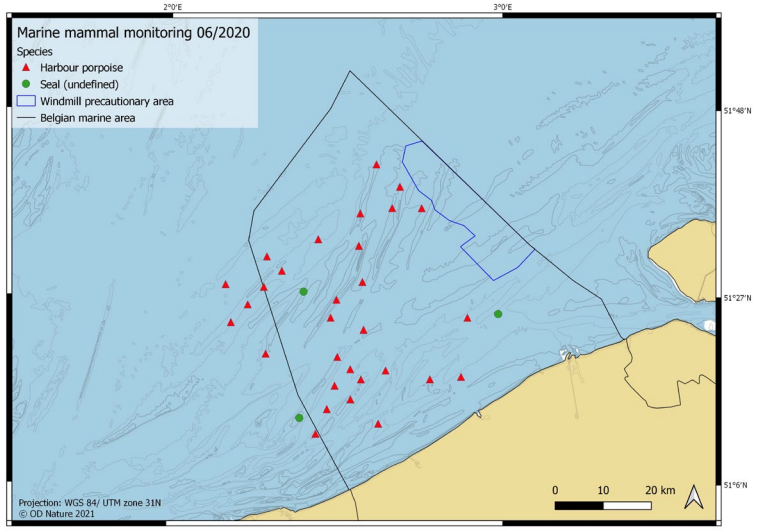
- Aerial visual & digital surveys (SAMM-II) from January to March 2021
- 20,000 km of effort of which 30% had HIGH DEF camera coverage to confirm species ID and group size estimates
- Report expected late 2021

Recent Abundance Surveys in Belgian Waters

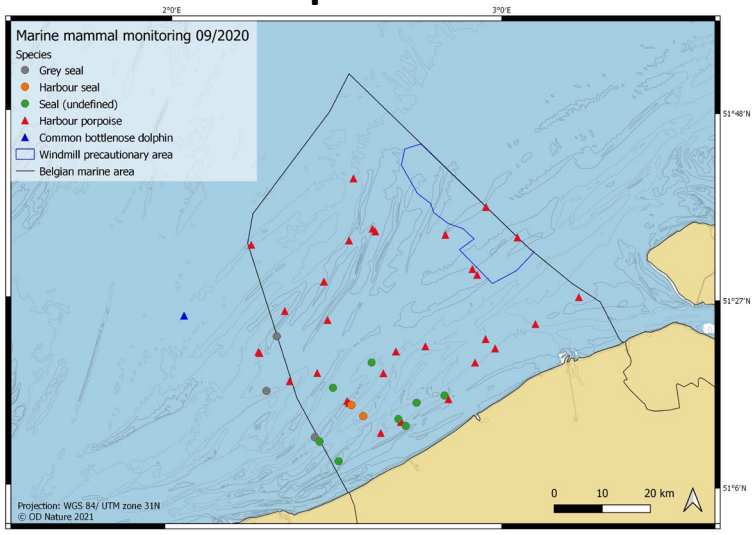
Transect Lines



June 2020



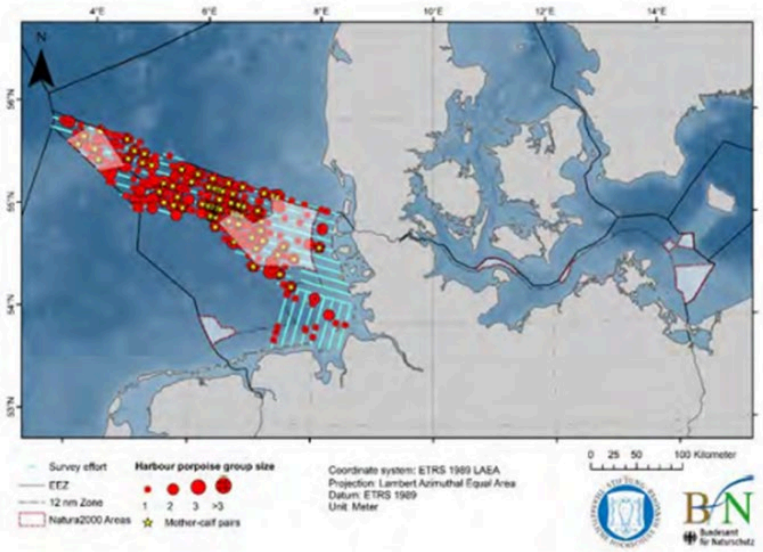
Sept 2020



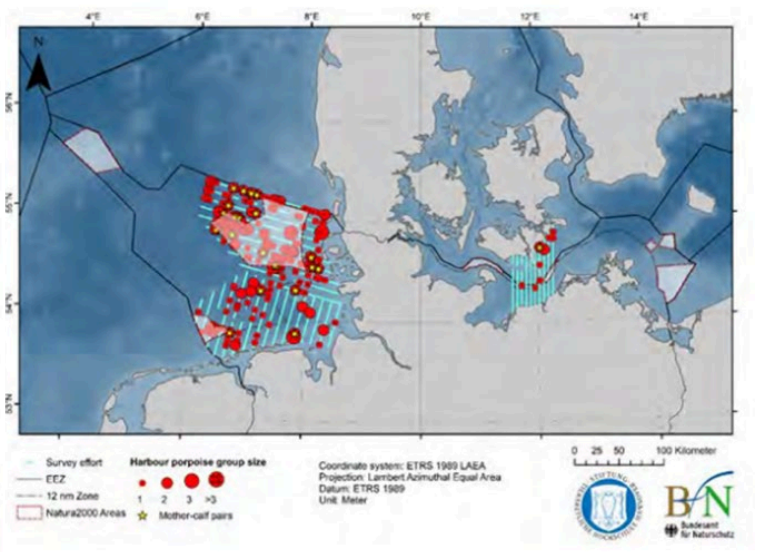
Source: Courtesy of Jan Haelters

Recent Abundance Surveys in German Waters

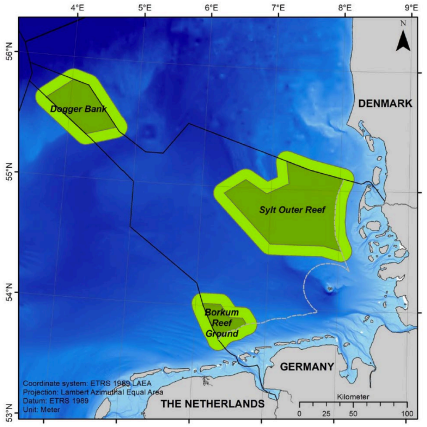
Spring 2020



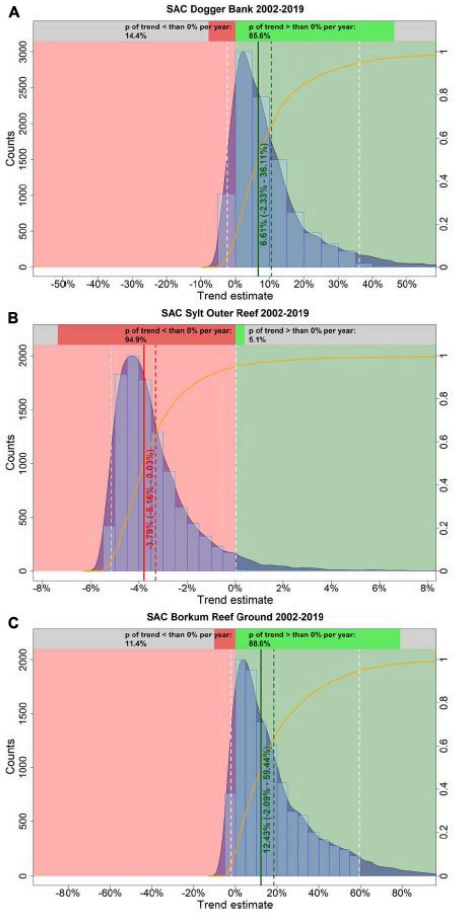
Summer 2020



Three SACs



Trends: 2002-19

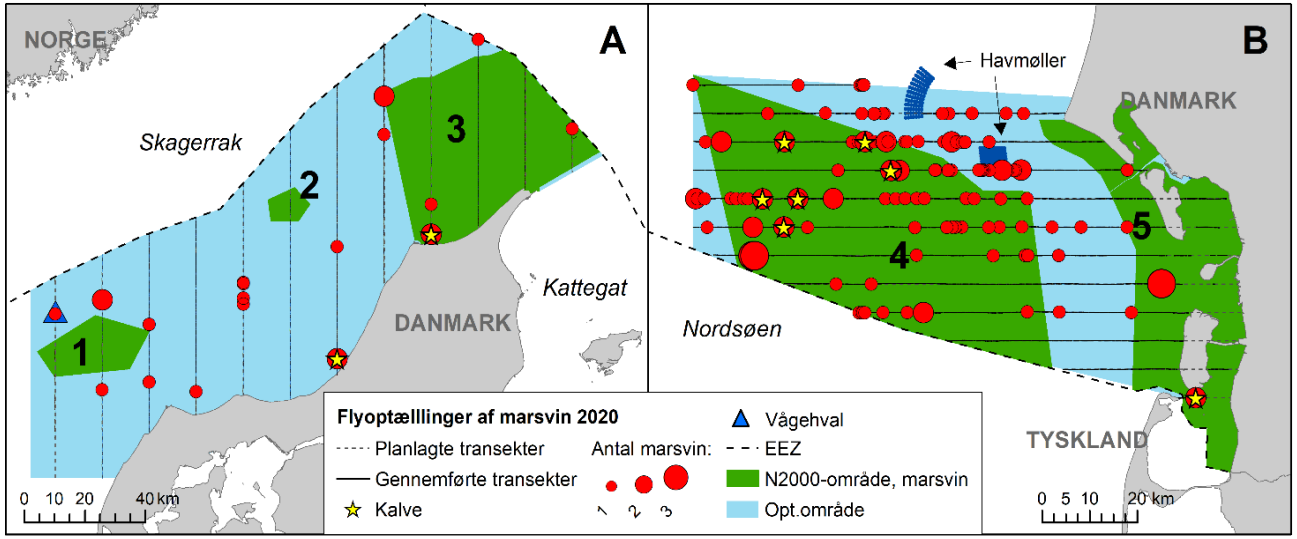


Source: Courtesy of Anita Gilles; see also Nachtsheim et al. (2020)

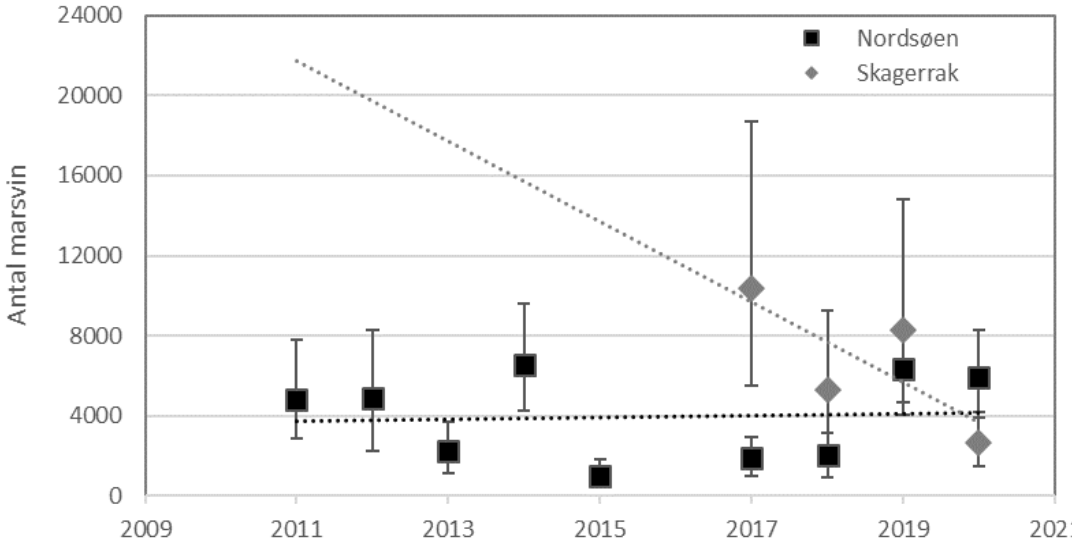
Recent Abundance Surveys in Danish Waters

July 2020

Aug 2020

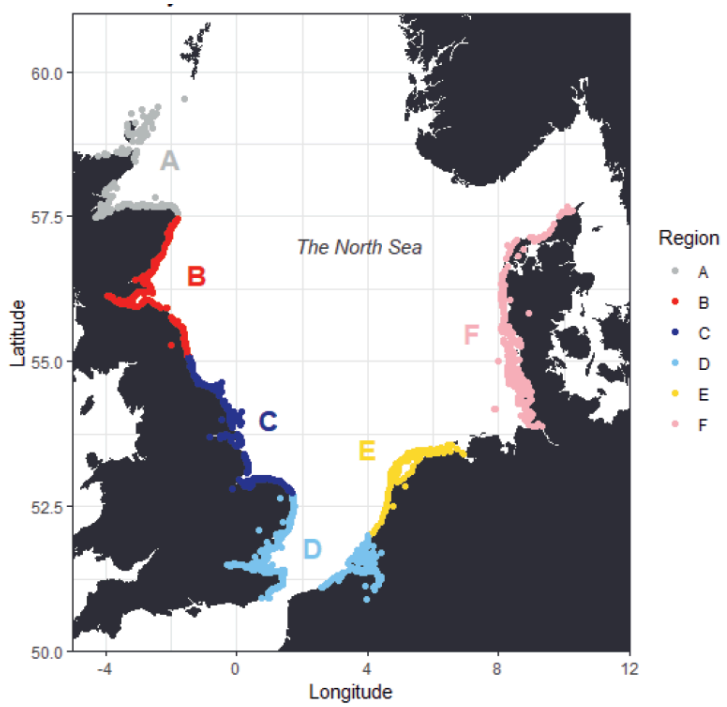


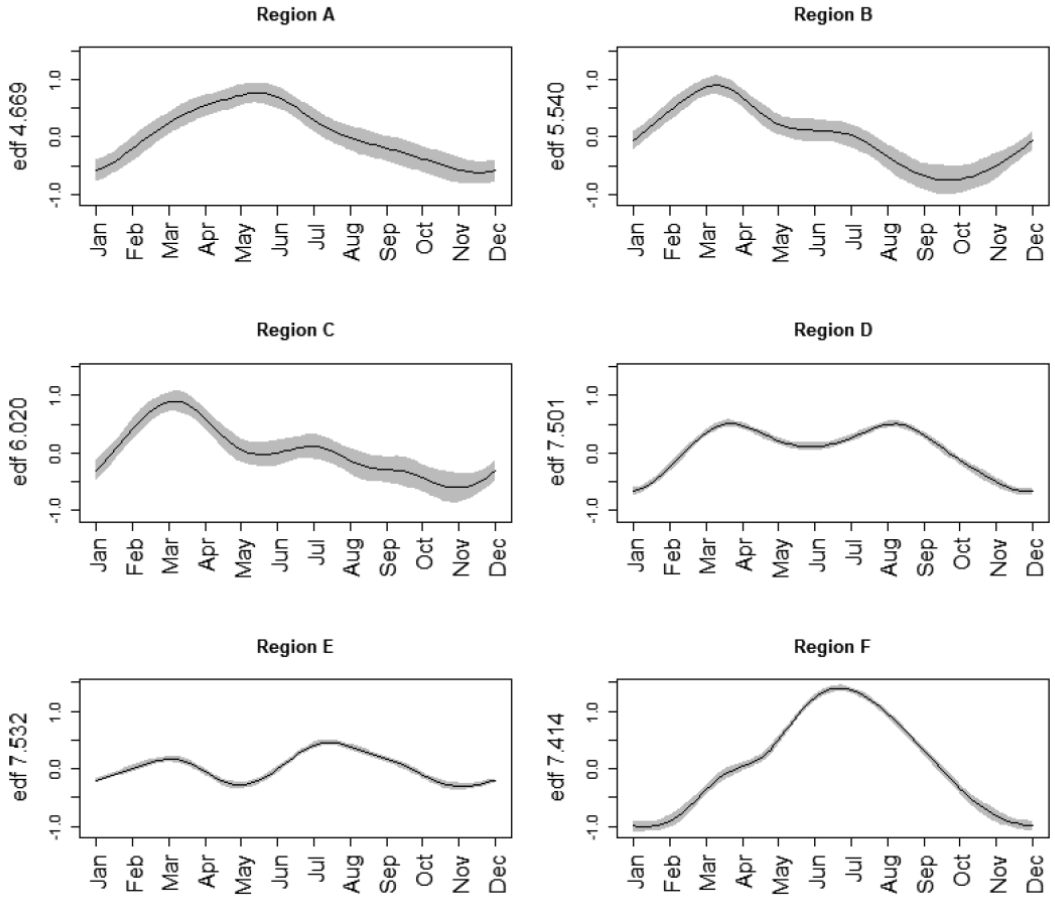
Estimated Abundance Trends



Source: Courtesy of Signe Sveegaard; see also Hansen & Høgslund, 2021)

Monthly Variation in Strandings in the North Sea: 1990-2017

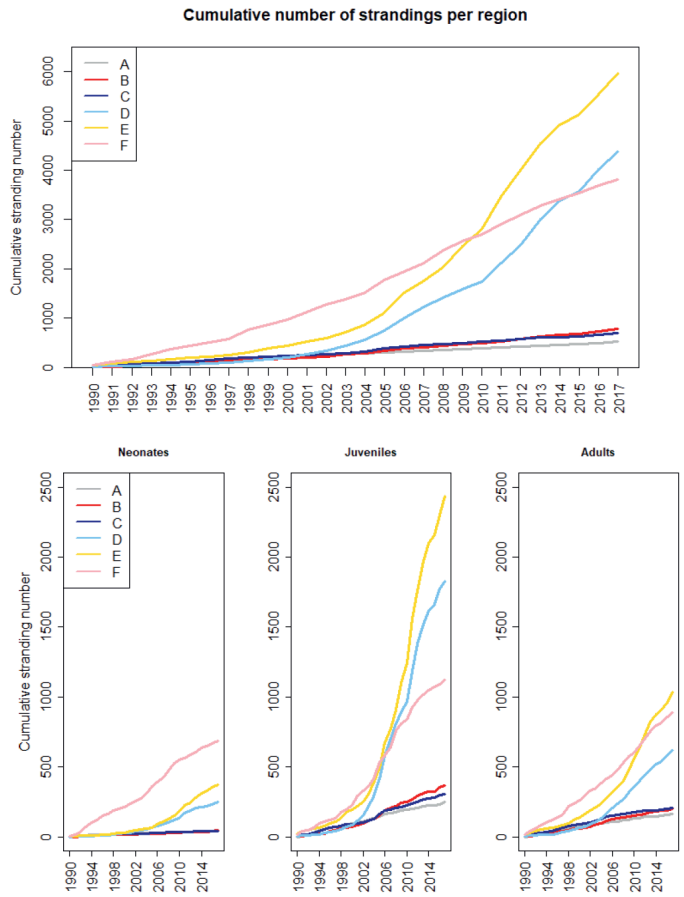


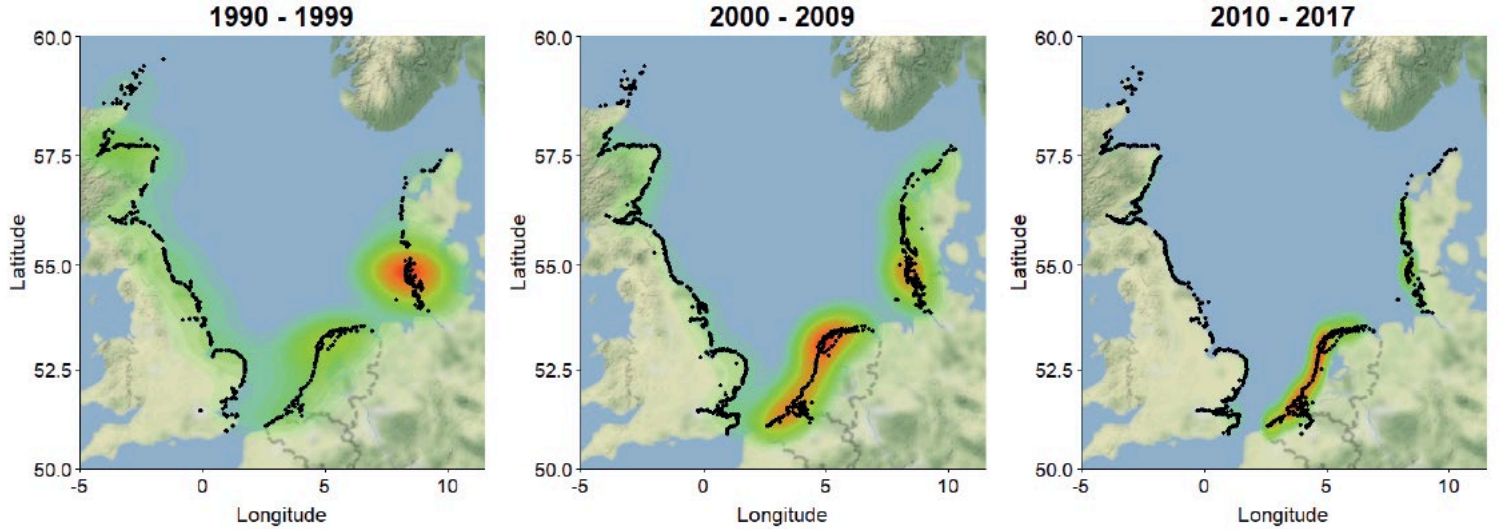


- Analysis divided by region using data from stranding schemes in the UK, BE, NL, DE, and DK
- Seasonal peaks vary between regions, earliest in the west, latest in the south and east

Source:
IJsseldyk et al. (2020a), IJsseldyk @2021)

Trends in Strandings in the North Sea, 1990-2017

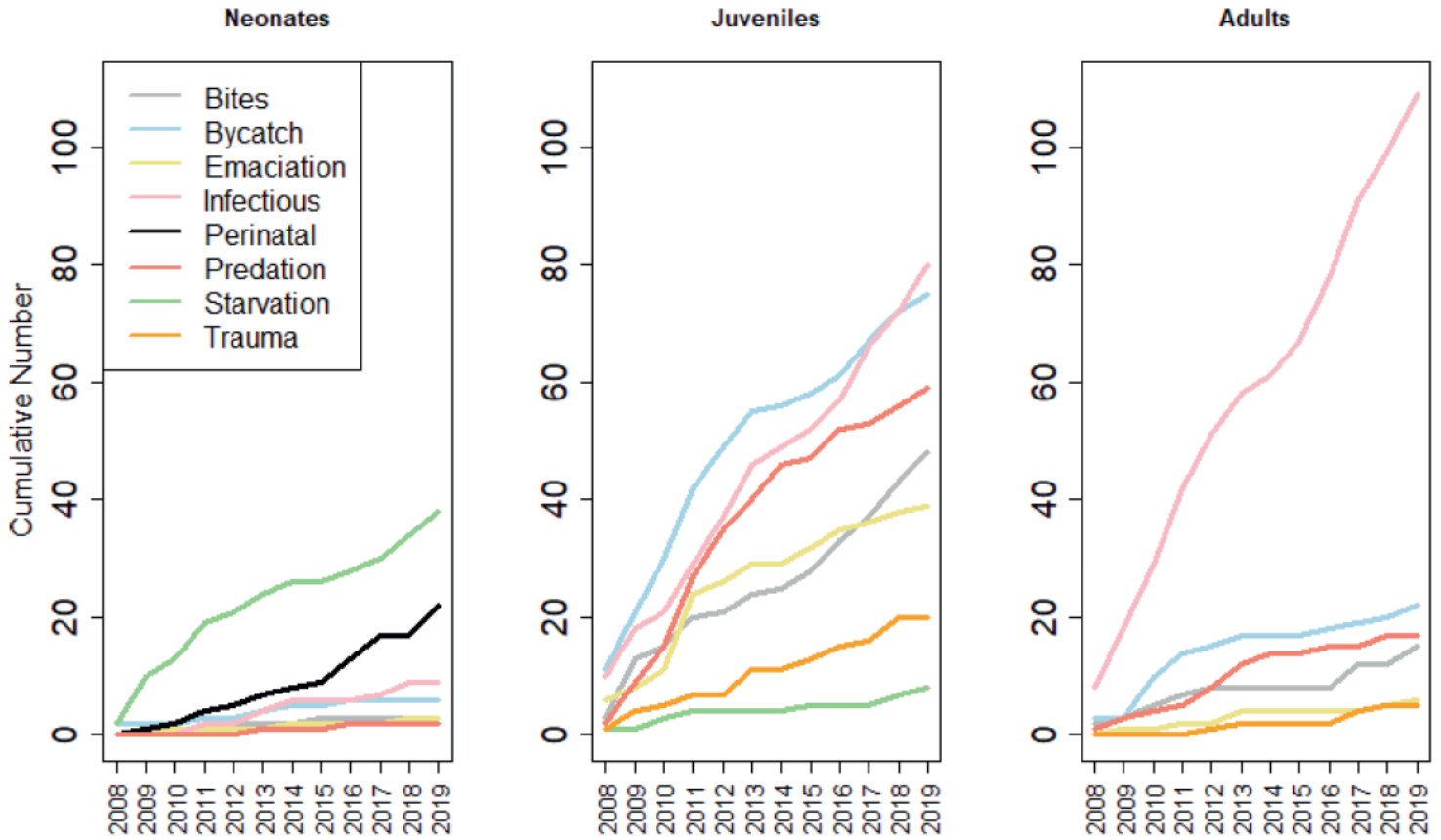




- Major increase in stranding numbers in southern North Sea
- Increases in southern North Sea greatest in juveniles
- General shift in strandings away from the eastern sector

Source: IJsseldyk et al. (2020a), IJsseldyk (2021)

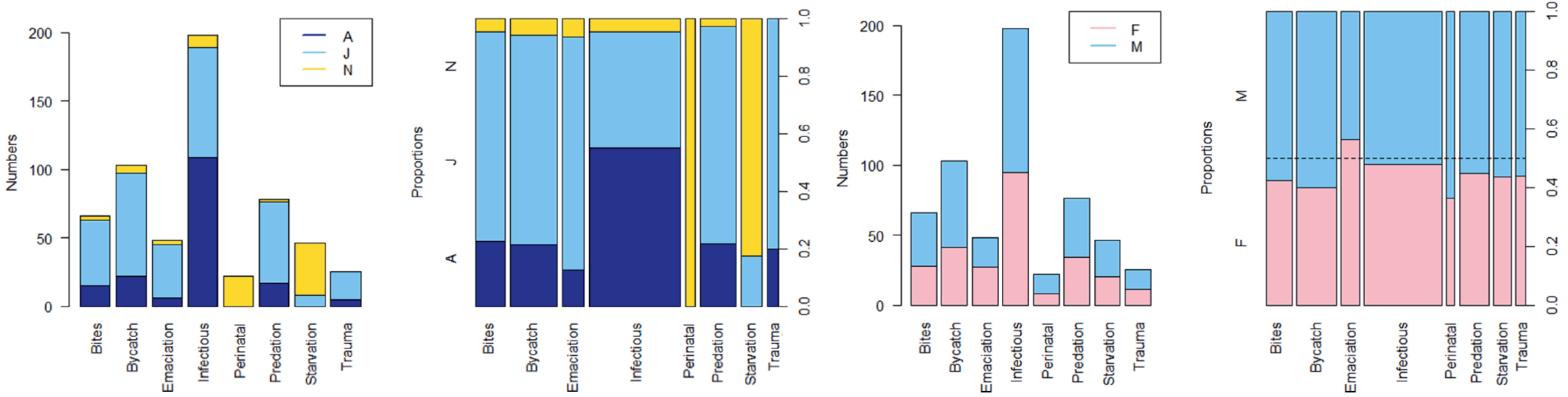
Trends in Causes of Death of Stranded Porpoises in the Southern North Sea, 2008-2019



- Starvation mainly in Neonates
- Emaciation mainly in Juveniles
- Bycatch & Predation mainly in Juveniles
- Infectious disease in both Adults and Juveniles

Source:
IJsseldyk et al. (2020b),
IJsseldyk (2021)

Causes of Death of Stranded Porpoises by Age & Gender in the Southern North Sea, 2008-2019

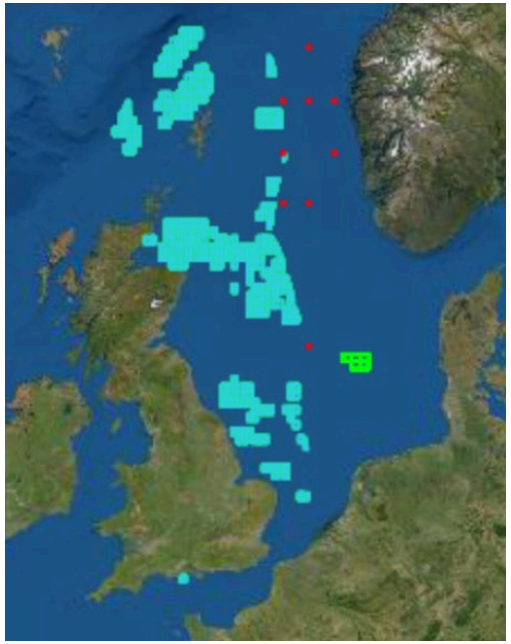


- Neonates: perinatal & starvation; Juveniles: emaciation, bycatch & predation; Adults: mainly infectious disease
- No obvious gender differences

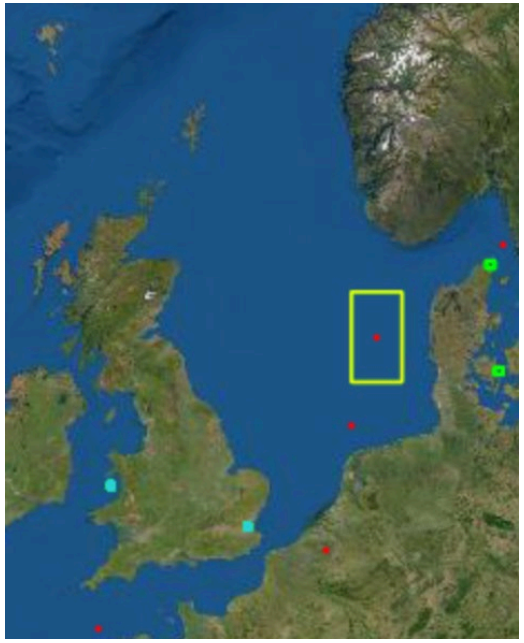
Source: IJsseldyk et al. (2020b), IJsseldyk (2021)

IMPULSIVE NOISE IN THE NORTH SEA: 2018-20

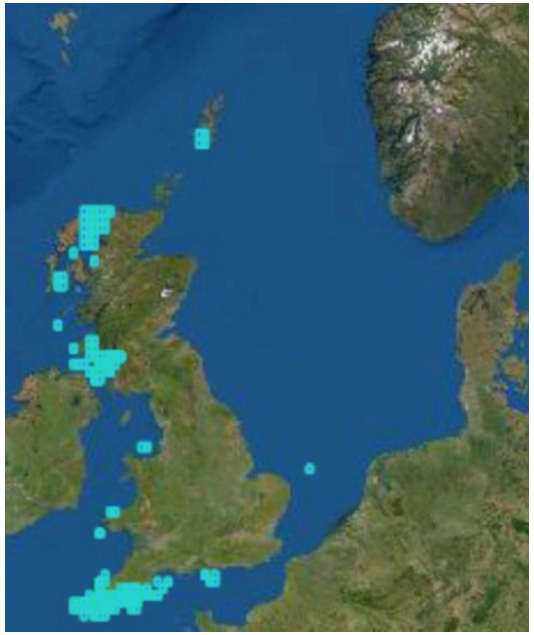
Airguns



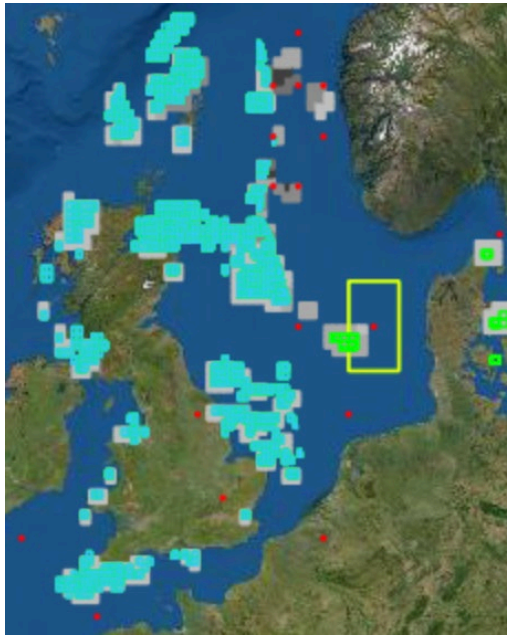
Explosions



Sonar



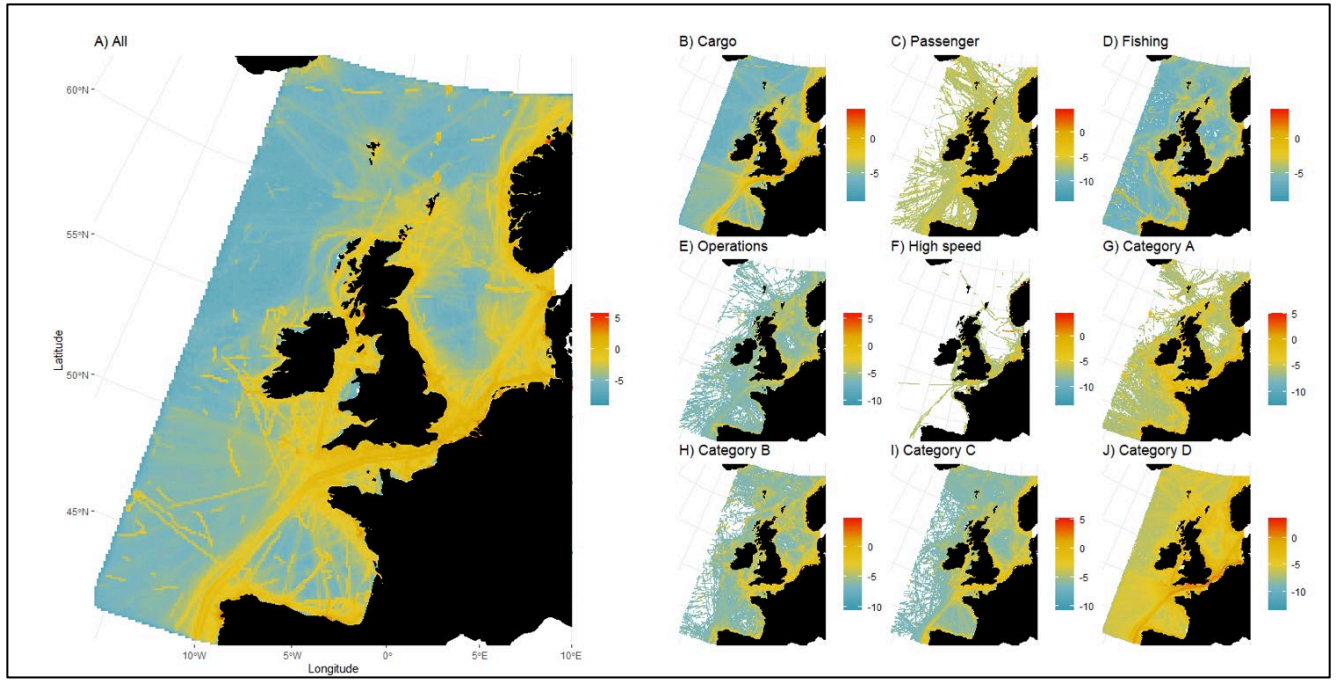
Pulse Block Days



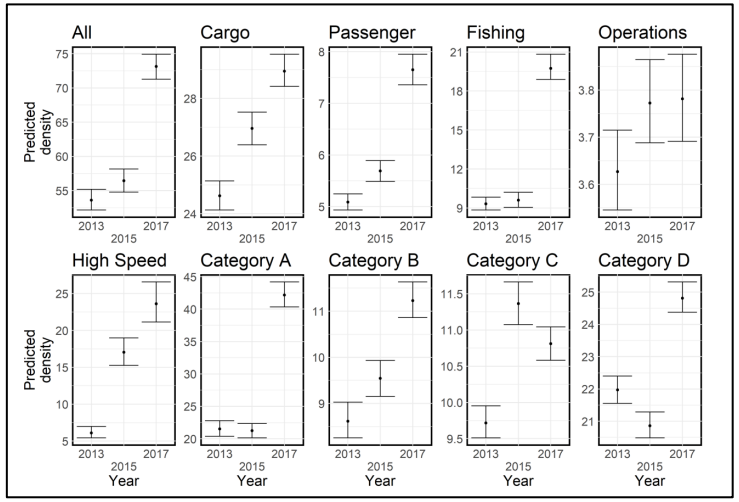
Source: ICES Impulsive Noise Register (2021)

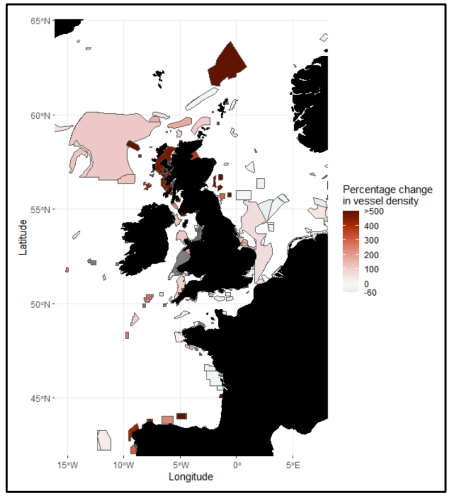
SPATIAL & TEMPORAL TRENDS IN VESSEL DENSITIES ESTIMATED FROM AIS: 2013-17

Vessel Densities by Type



% Change in Vessel Densities generally and within MPAs



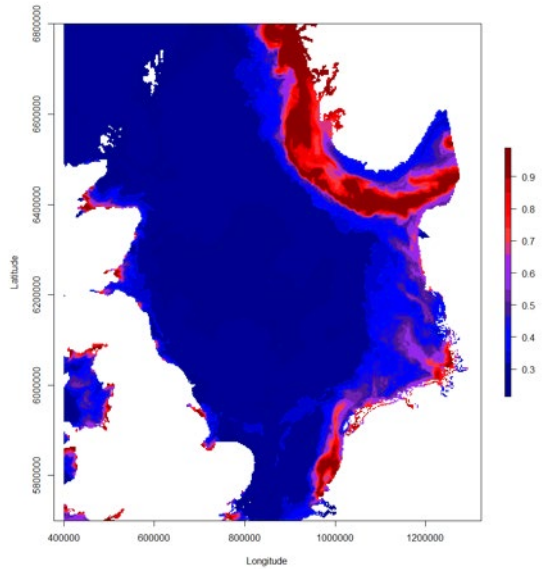


- Increases in most classes of vessel over the time period assessed
- Increases in particular for large and fast vessels
- Increases also in vessel activity in MPAs

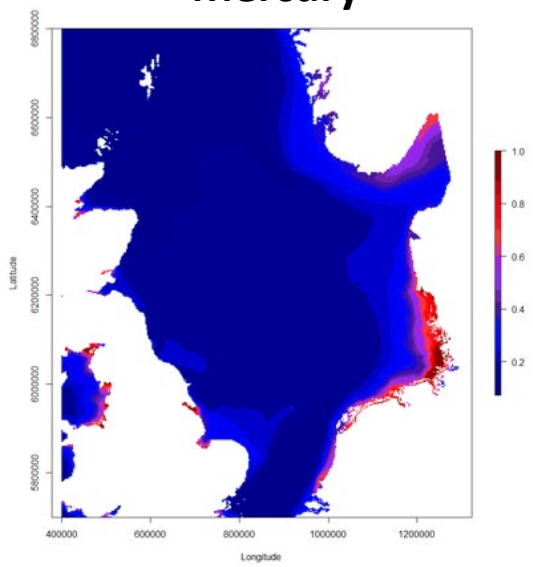
Source: Robbins et al. (2021, in review)

CONTAMINANT CONCENTRATIONS IN WATER FOR THE NORTH SEA

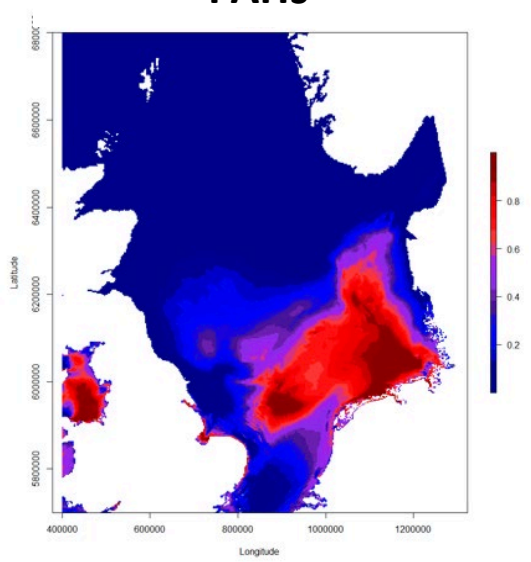
Lead



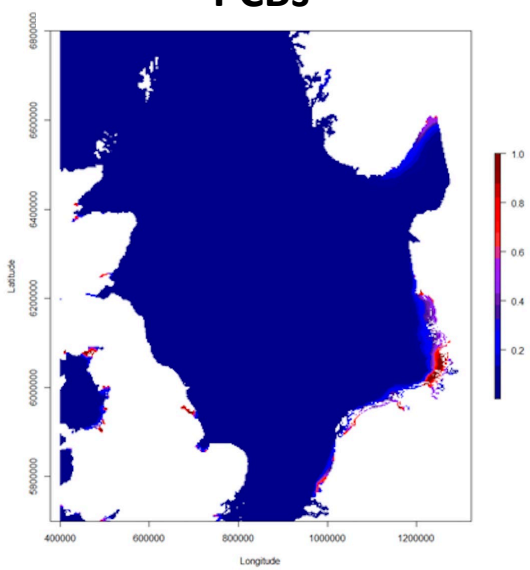
Mercury



PAHs

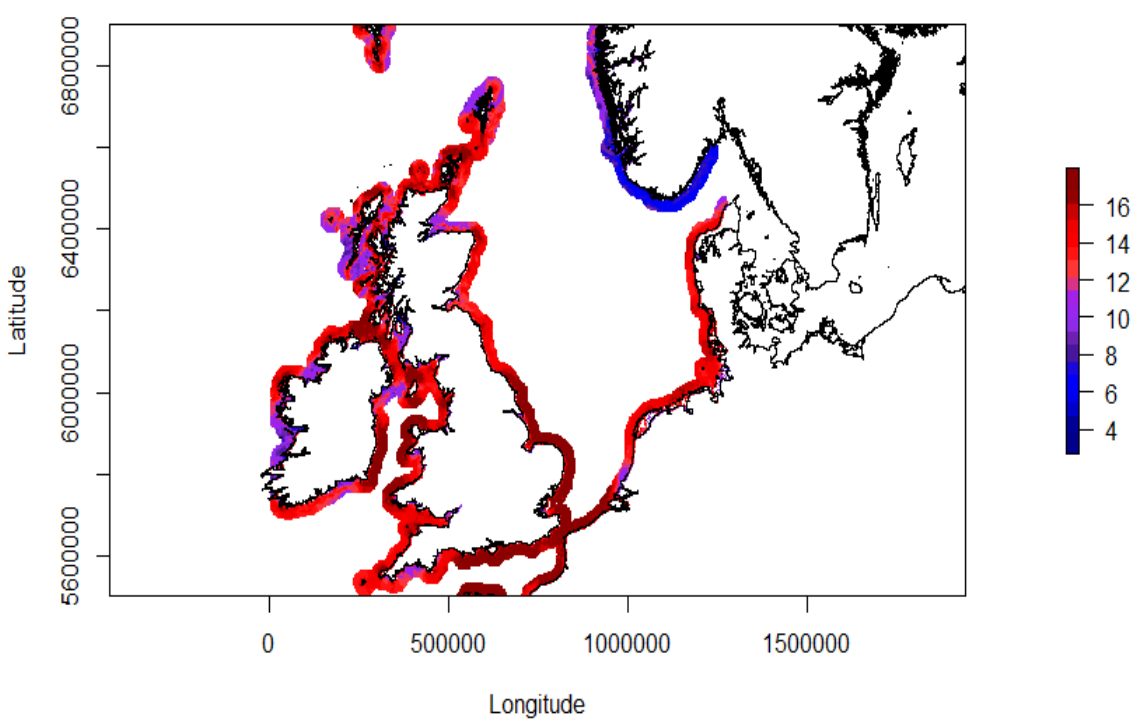


PCBs

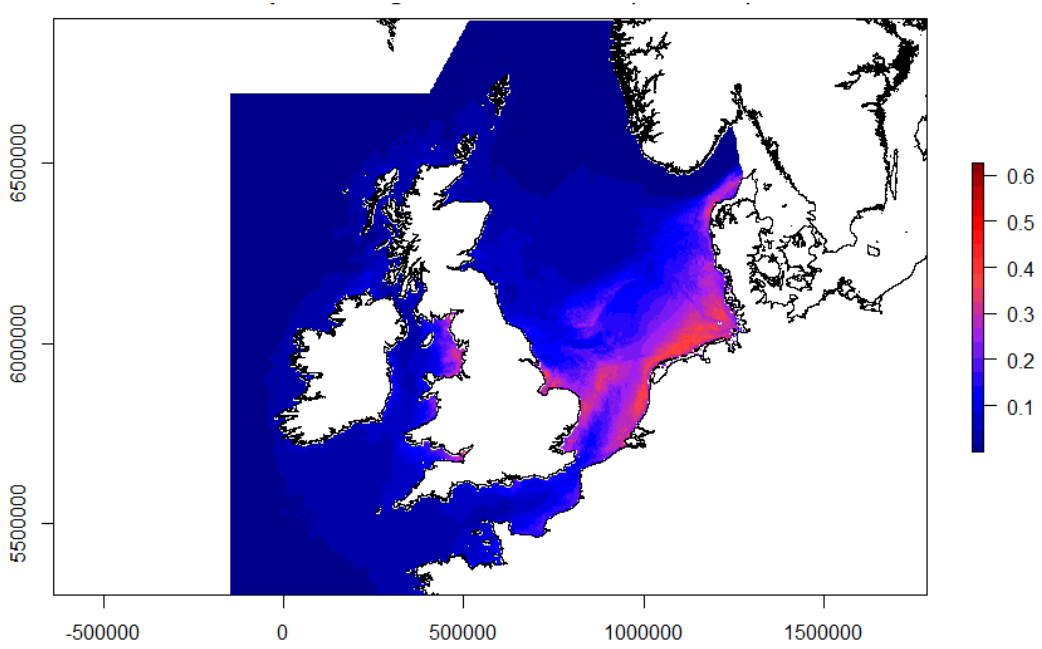


Source: Saunders (2021)

PCBs IN PORPOISES IN THE NORTH & CELTIC SEAS



a) Modelled PCB concentrations



b) Areas where Porpoises at highest risk from PCB (sediment)

Source: Saunders (2021)

Thank you for listening