Threats for divers in German marine areas – how effective are SPAs in the light of fisheries and growing marine industries ?

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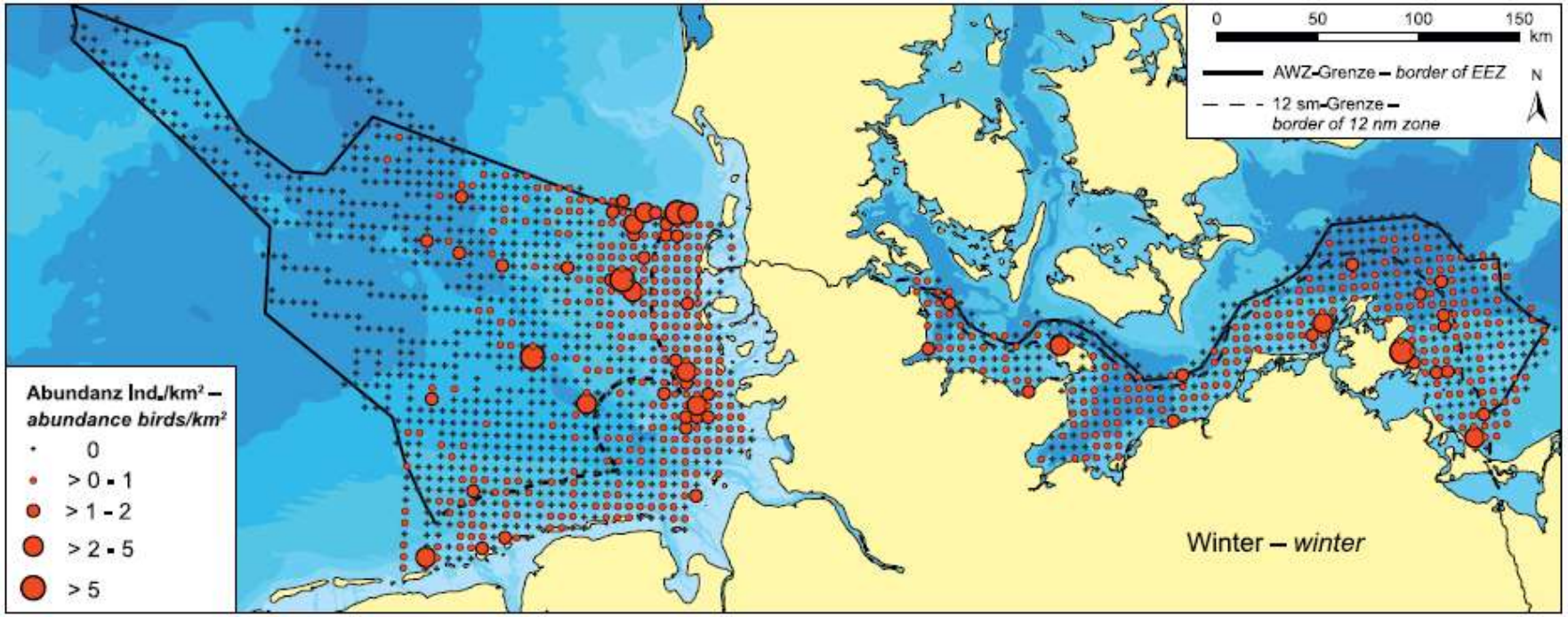
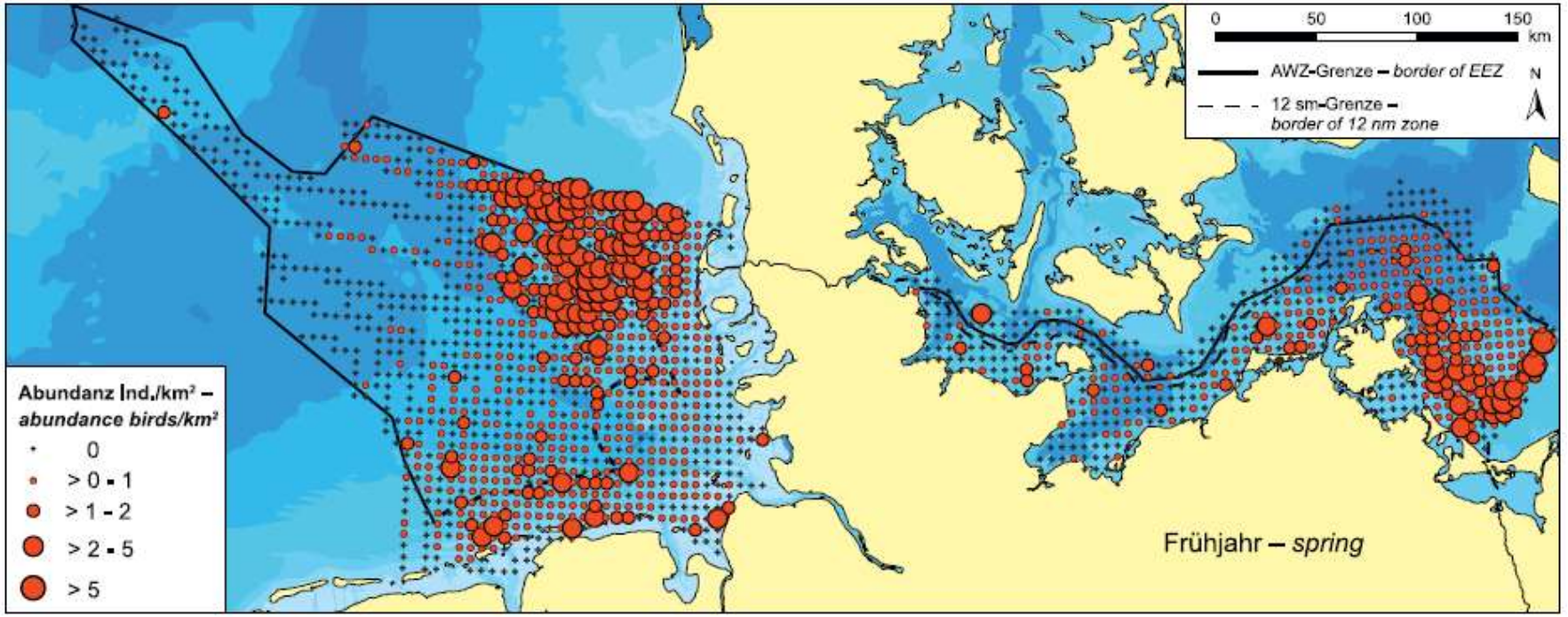
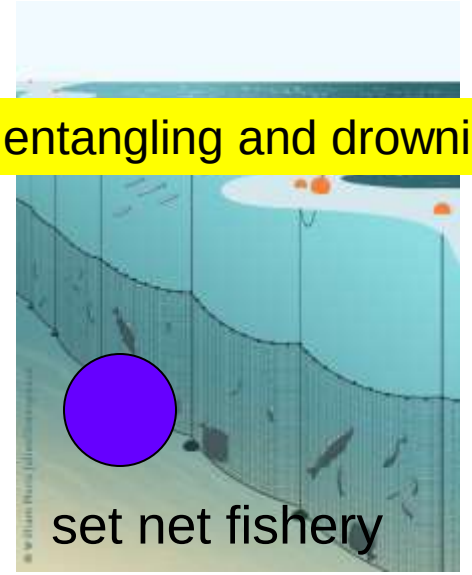
Bettina Mendel
Stefan Garthe



winter:	North Sea	Baltic Sea	total
Red-throated Diver	3,600	3,200	6,800
Black-throated Diver	300	2,400	2,700



spring:	North Sea	Baltic Sea	total
Red-throated Diver	16,500	9,000	25,500
Black-throated Diver	2,000	1,900	3,900



entangling and drowning

set net fishery

oiling

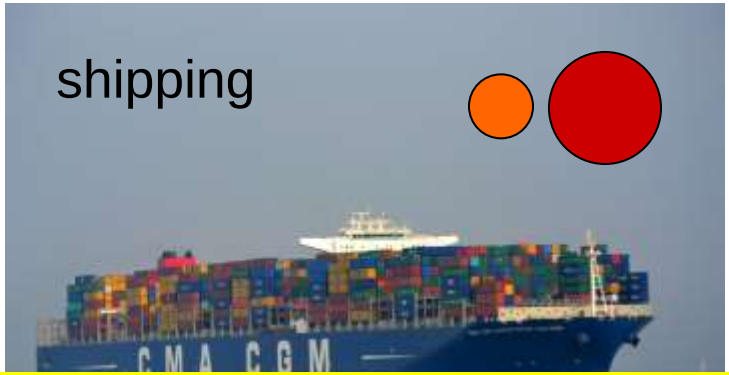
decreased insulation, starving, death

offshore wind farms

distance of avoidance c. 1-2 km, detours, few collisions

Threats causing

- additive mortality
- habitat loss
- additional energy consumption

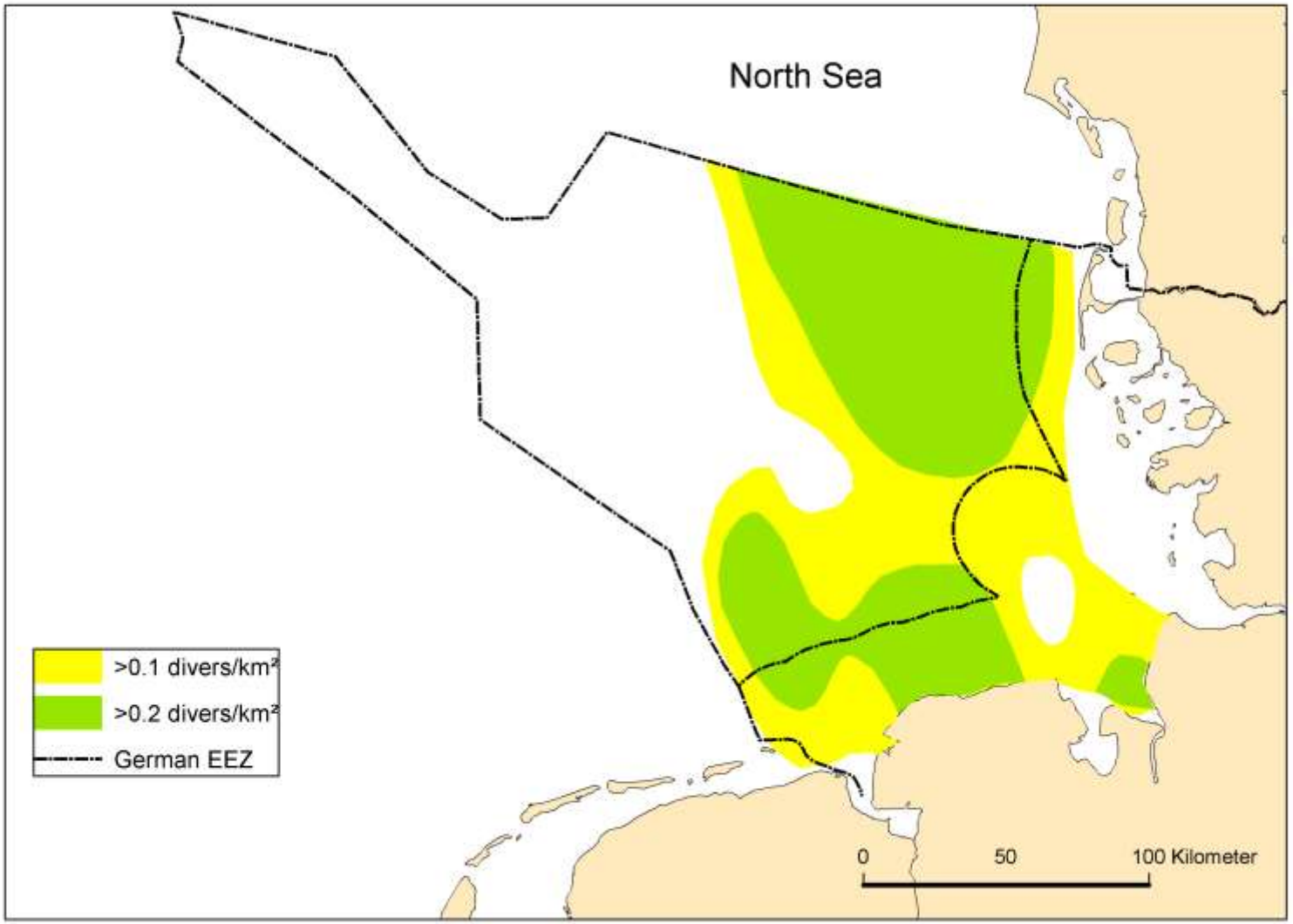


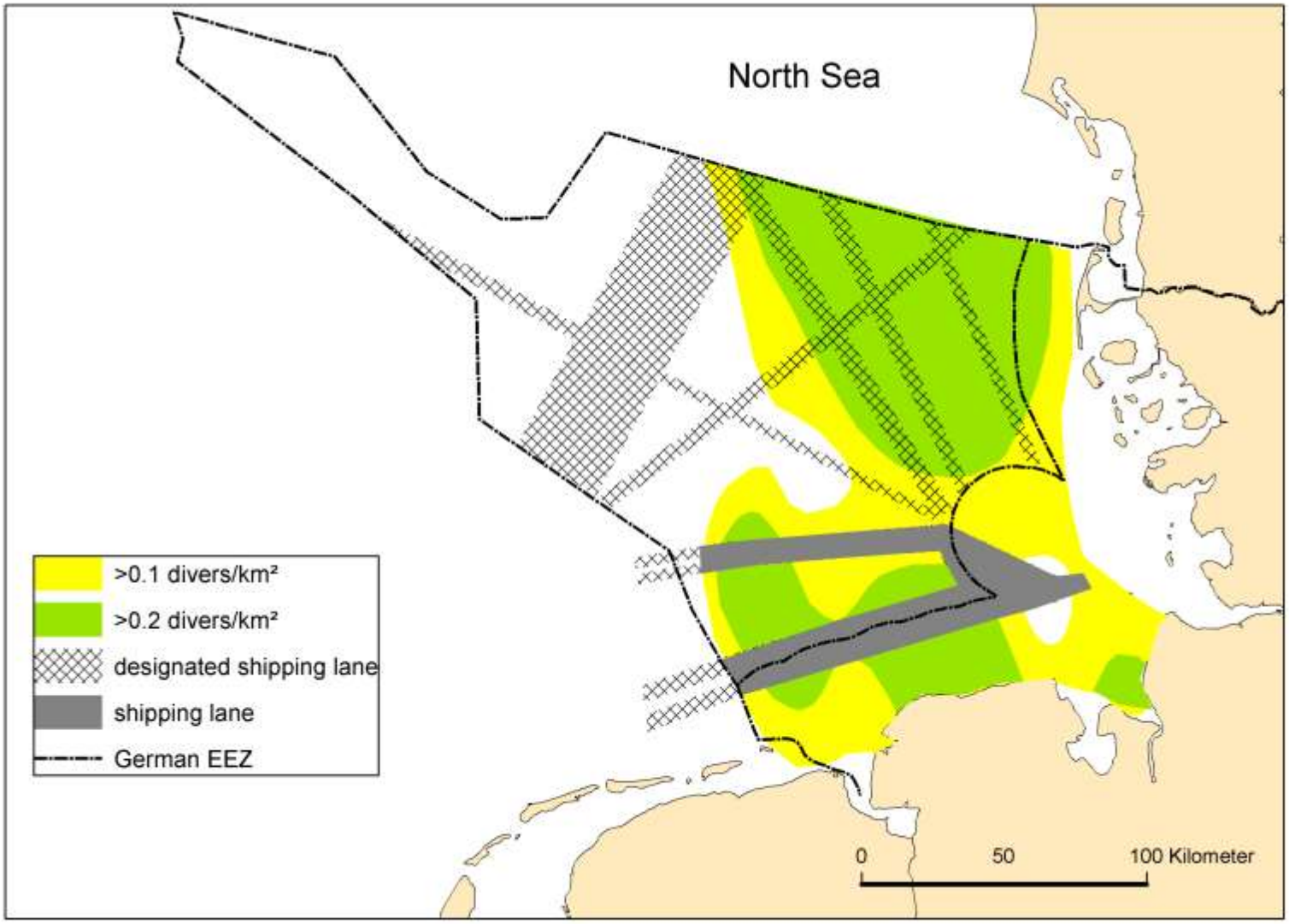
shipping

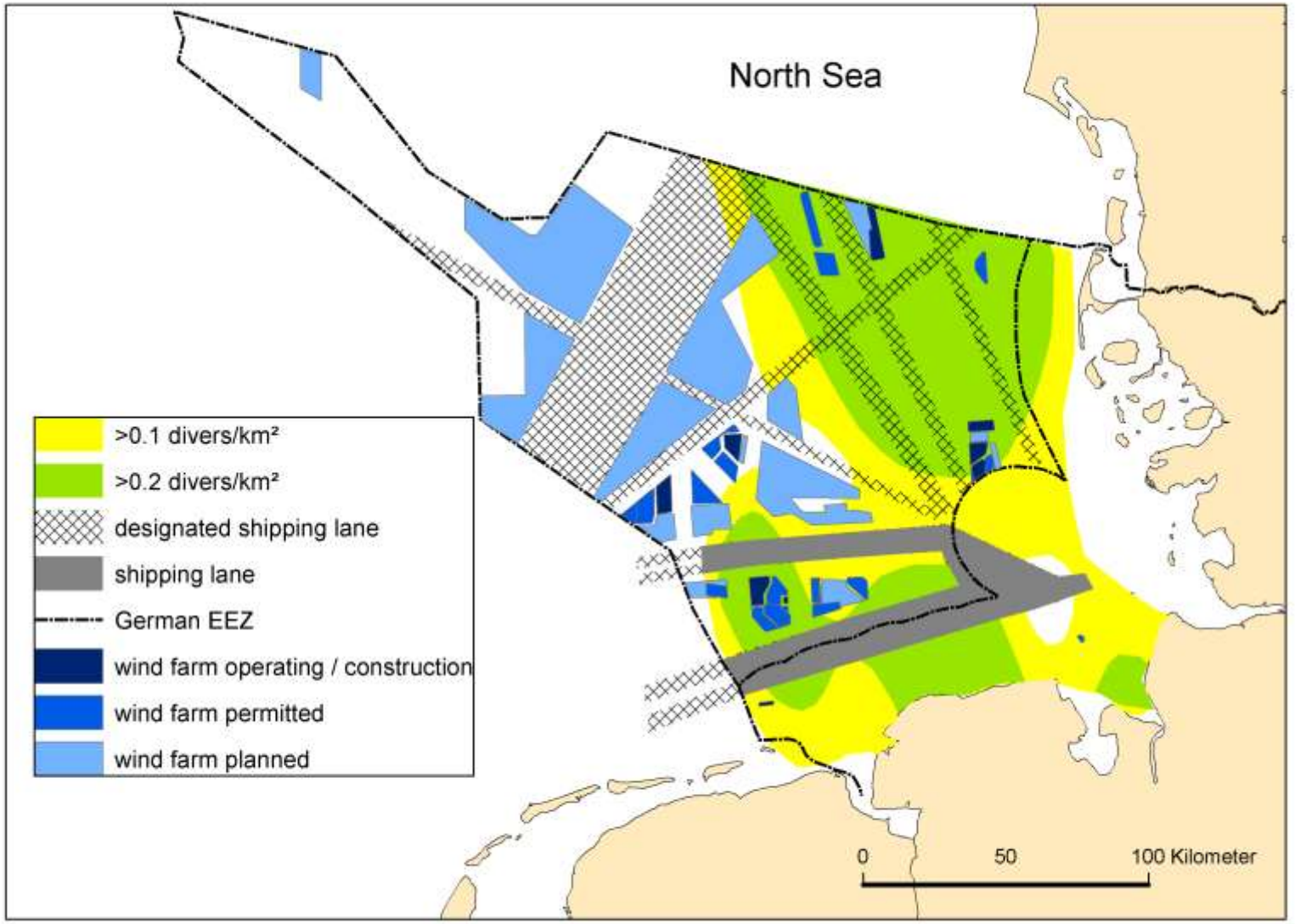
flushing distance: c. 1 km (0,4-3 km)
disturbance effect c. 2 km wide

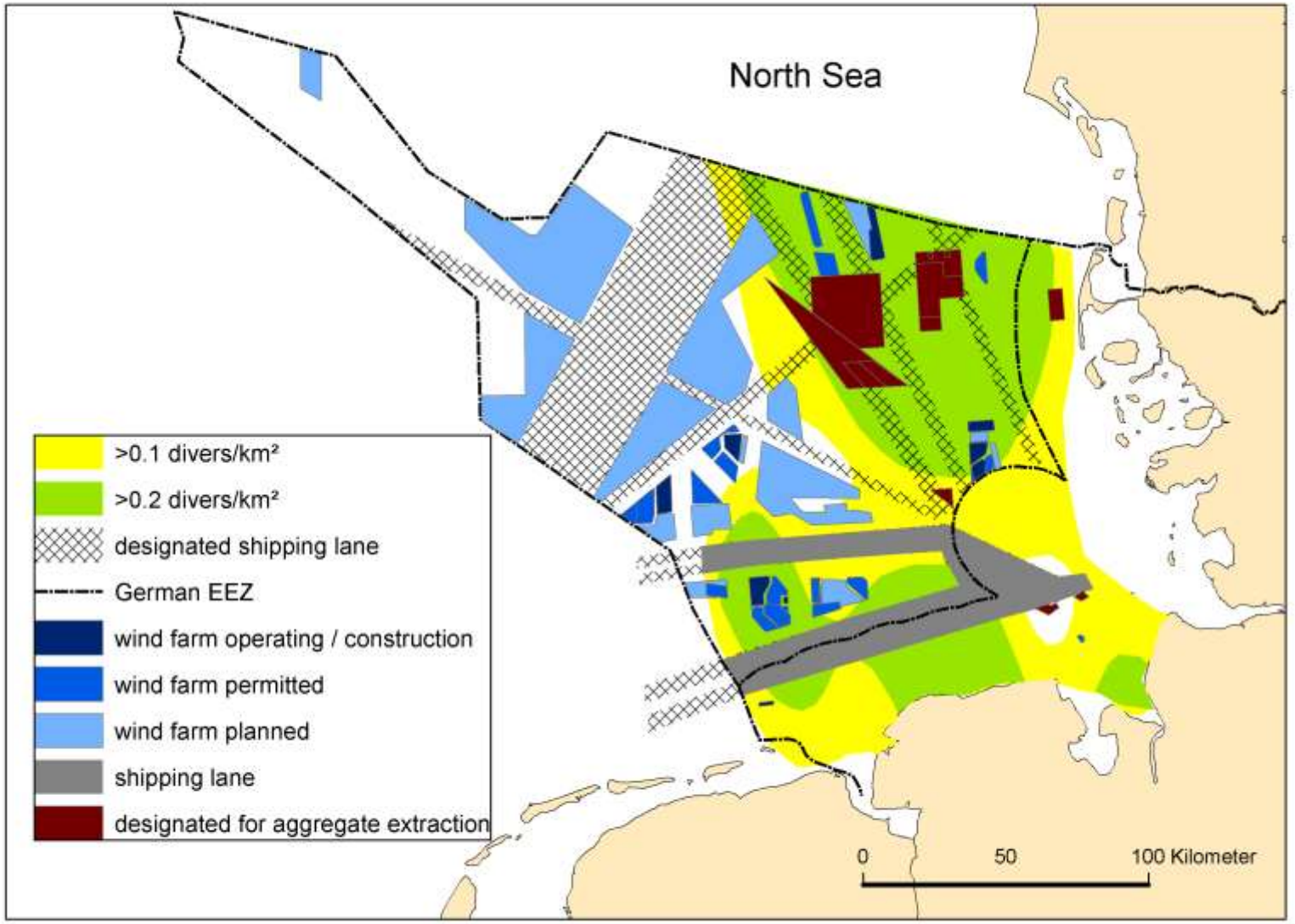
aggregate extraction

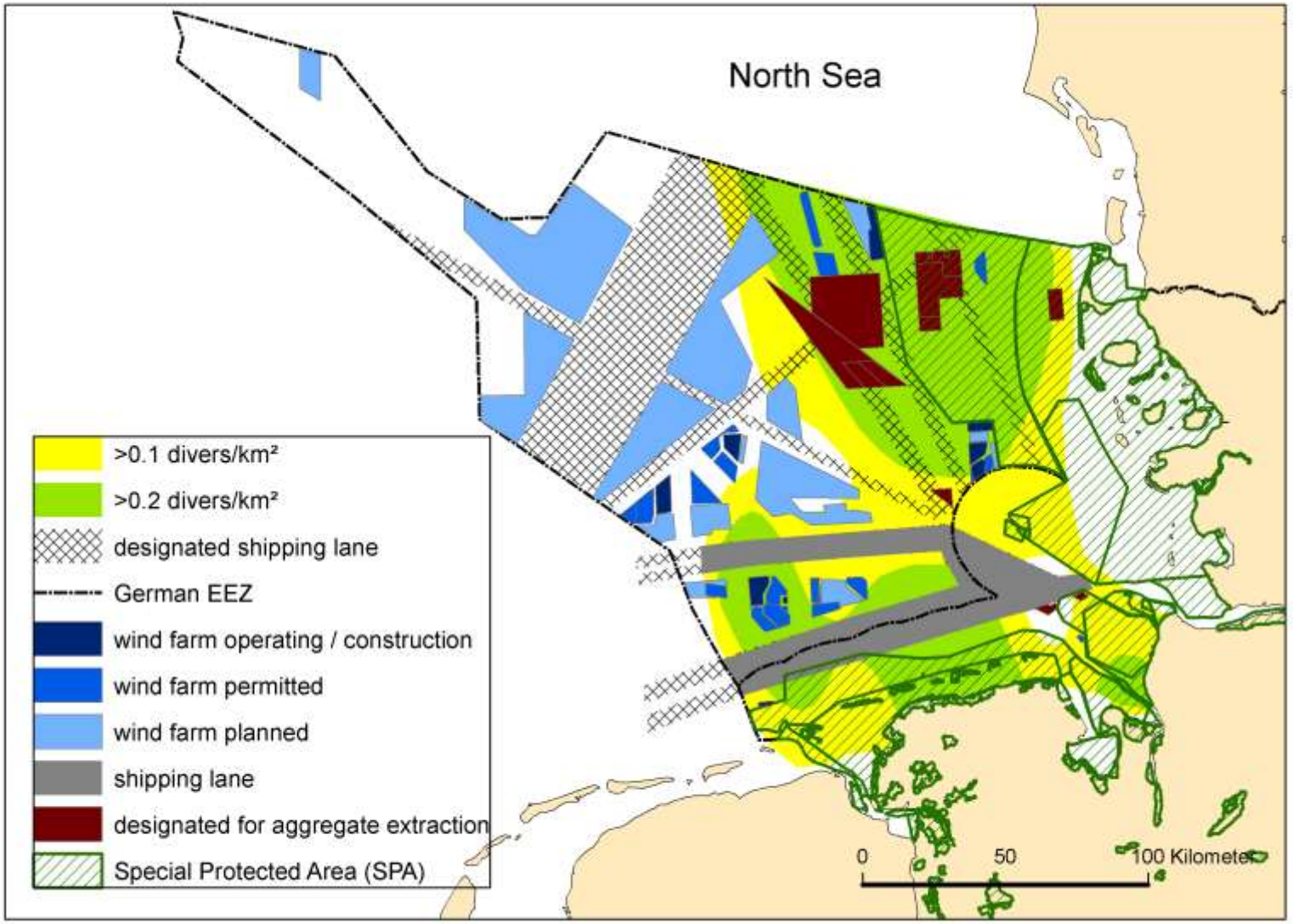
disturbance, impaired foraging conditions

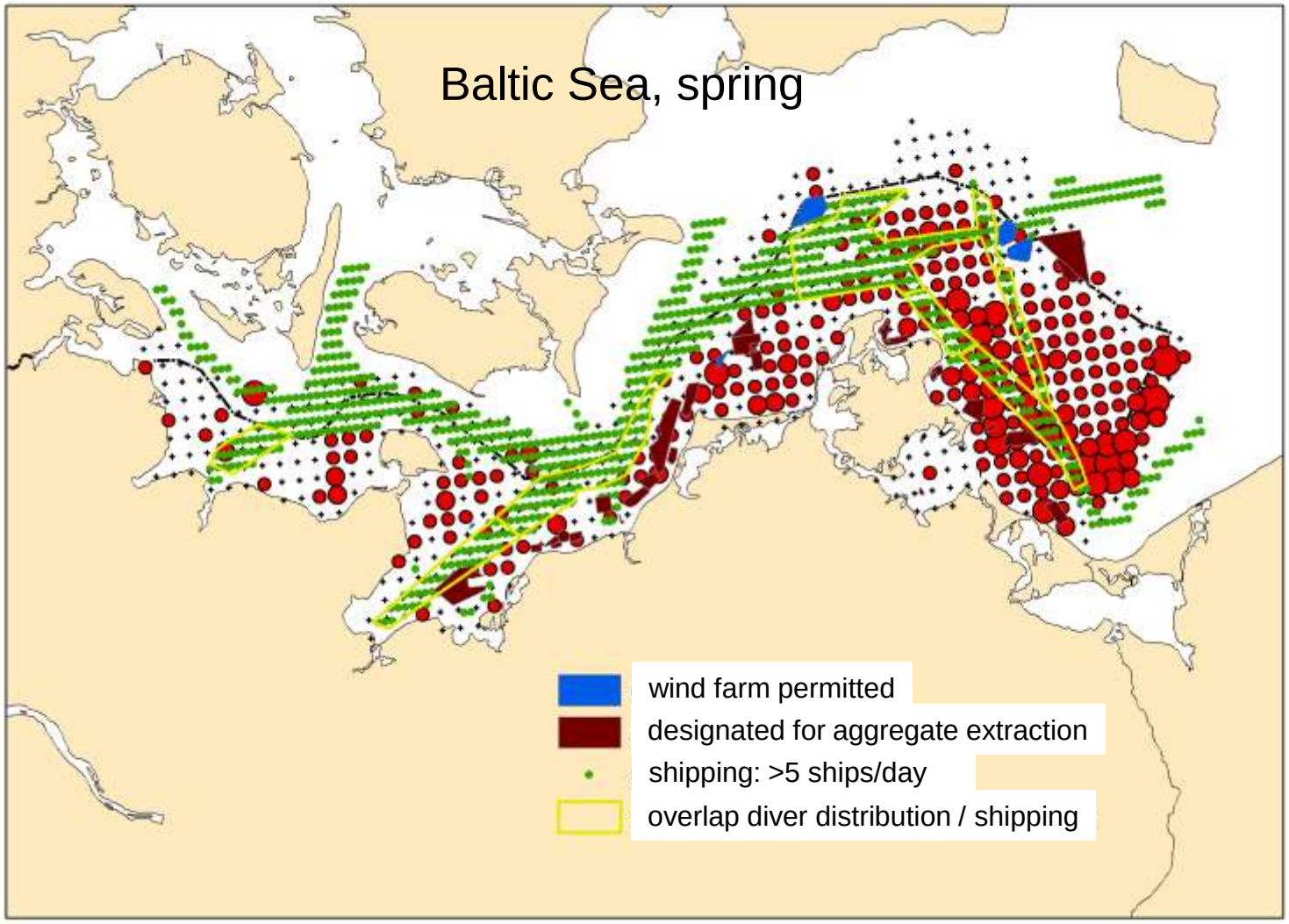

North Sea
>0.1 divers/km²
>0.2 divers/km²
German EEZ
0
50
100 Kilometer

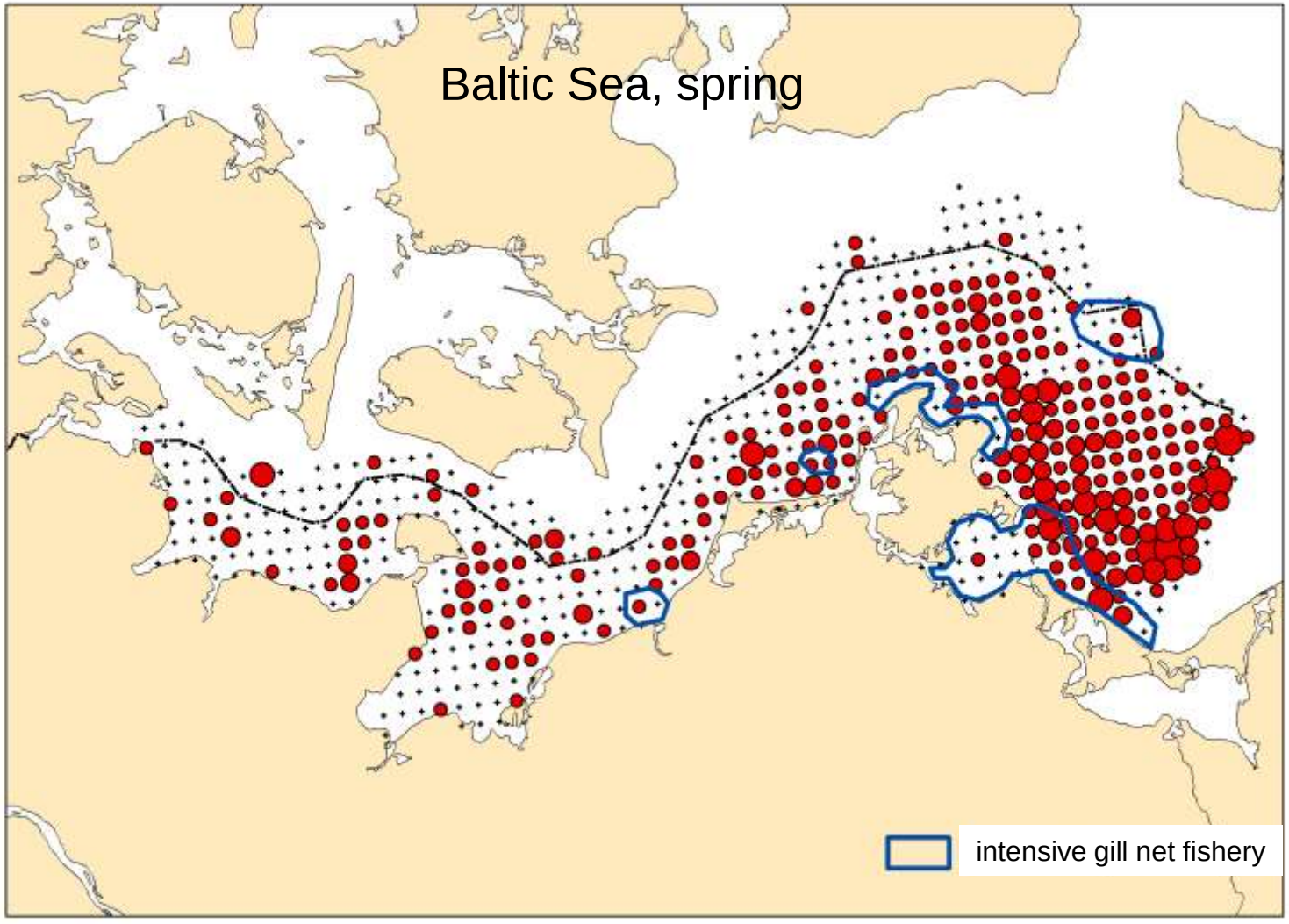

North Sea
>0.1 divers/km²
>0.2 divers/km²
designated shipping lane
shipping lane
German EEZ
0
50
100 Kilometer

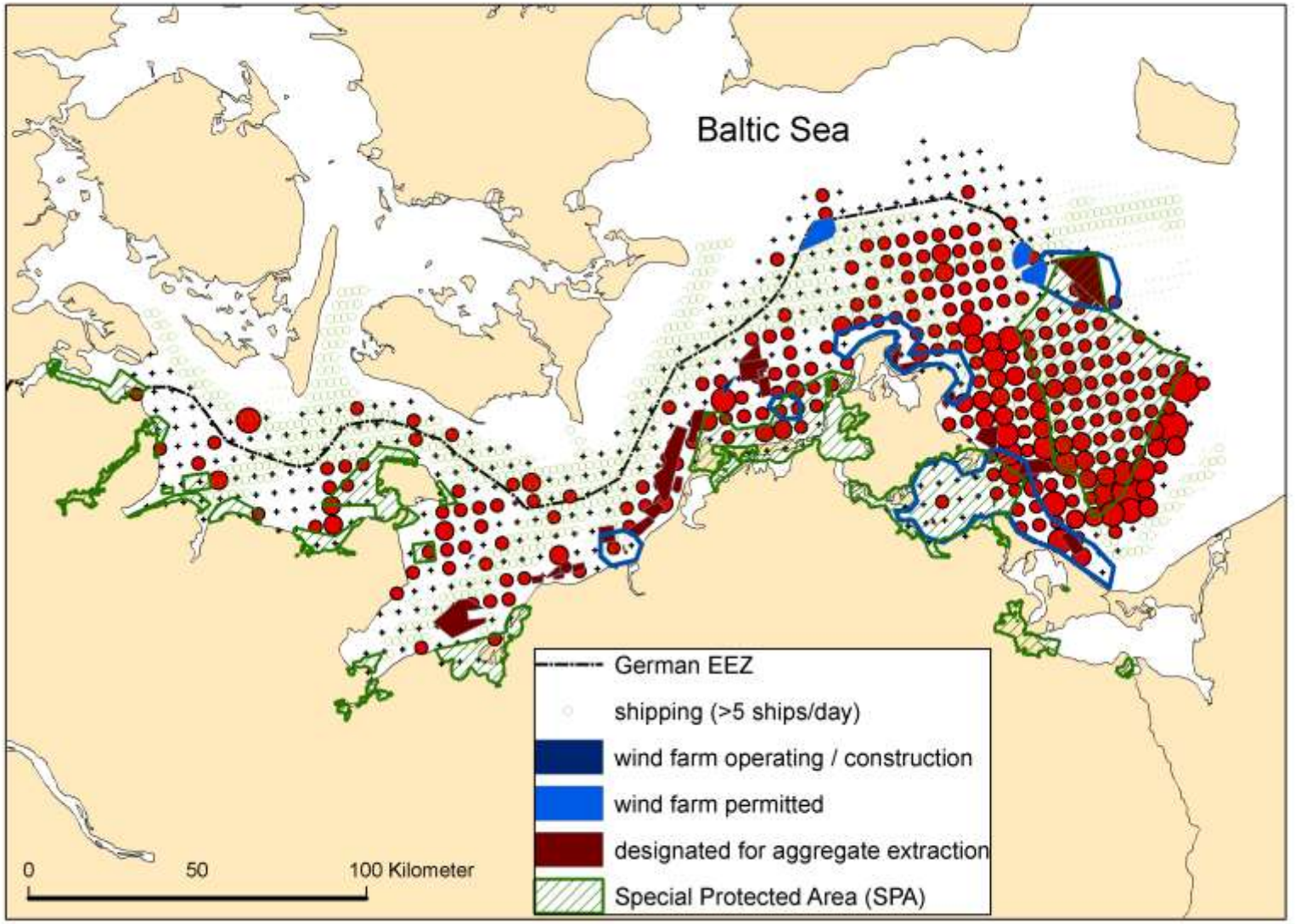

North Sea
>0.1 divers/km²
>0.2 divers/km²
designated shipping lane
shipping lane
German EEZ
wind farm operating / construction
wind farm permitted
wind farm planned
0
50
100 Kilometer

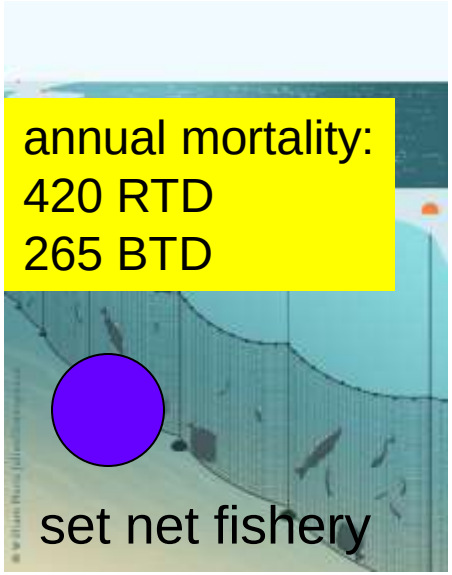

North Sea
>0.1 divers/km²
>0.2 divers/km²
designated shipping lane
German EEZ
wind farm operating / construction
wind farm permitted
wind farm planned
shipping lane
designated for aggregate extraction
0
50
100 Kilometer

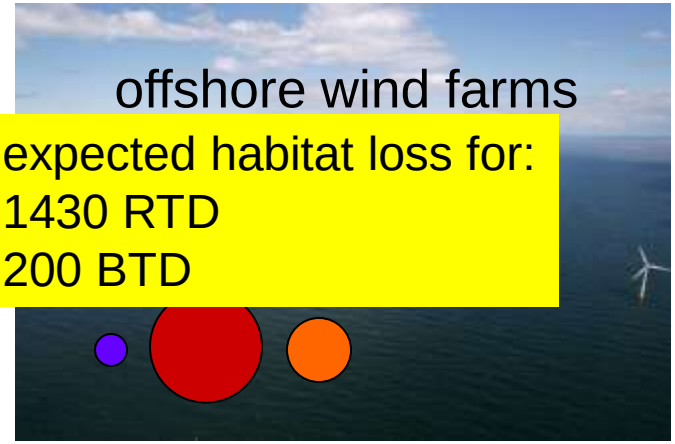

North Sea
>0.1 divers/km²
>0.2 divers/km²
designated shipping lane
German EEZ
wind farm operating / construction
wind farm permitted
wind farm planned
shipping lane
designated for aggregate extraction
Special Protected Area (SPA)
0
50
100 Kilometers


Baltic Sea, spring
wind farm permitted
designated for aggregate extraction
shipping: >5 ships/day
overlap diver distribution / shipping


Baltic Sea, spring
intensive gill net fishery

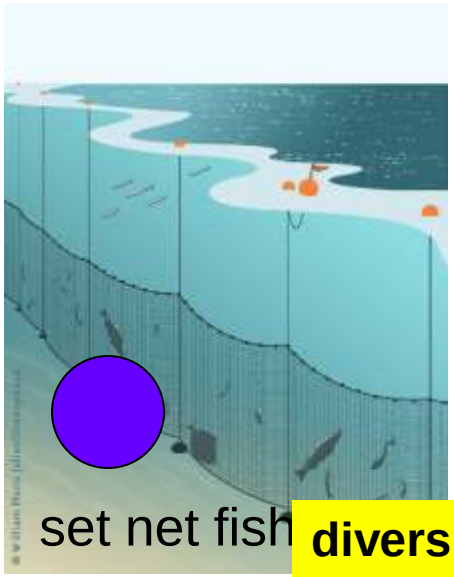

Baltic Sea
German EEZ
shipping (>5 ships/day)
wind farm operating / construction
wind farm permitted
designated for aggregate extraction
Special Protected Area (SPA)
0
50
100 Kilometer





Threats causing
- additive mortality
- habitat loss
- additional energy consumption

diver numbers affected

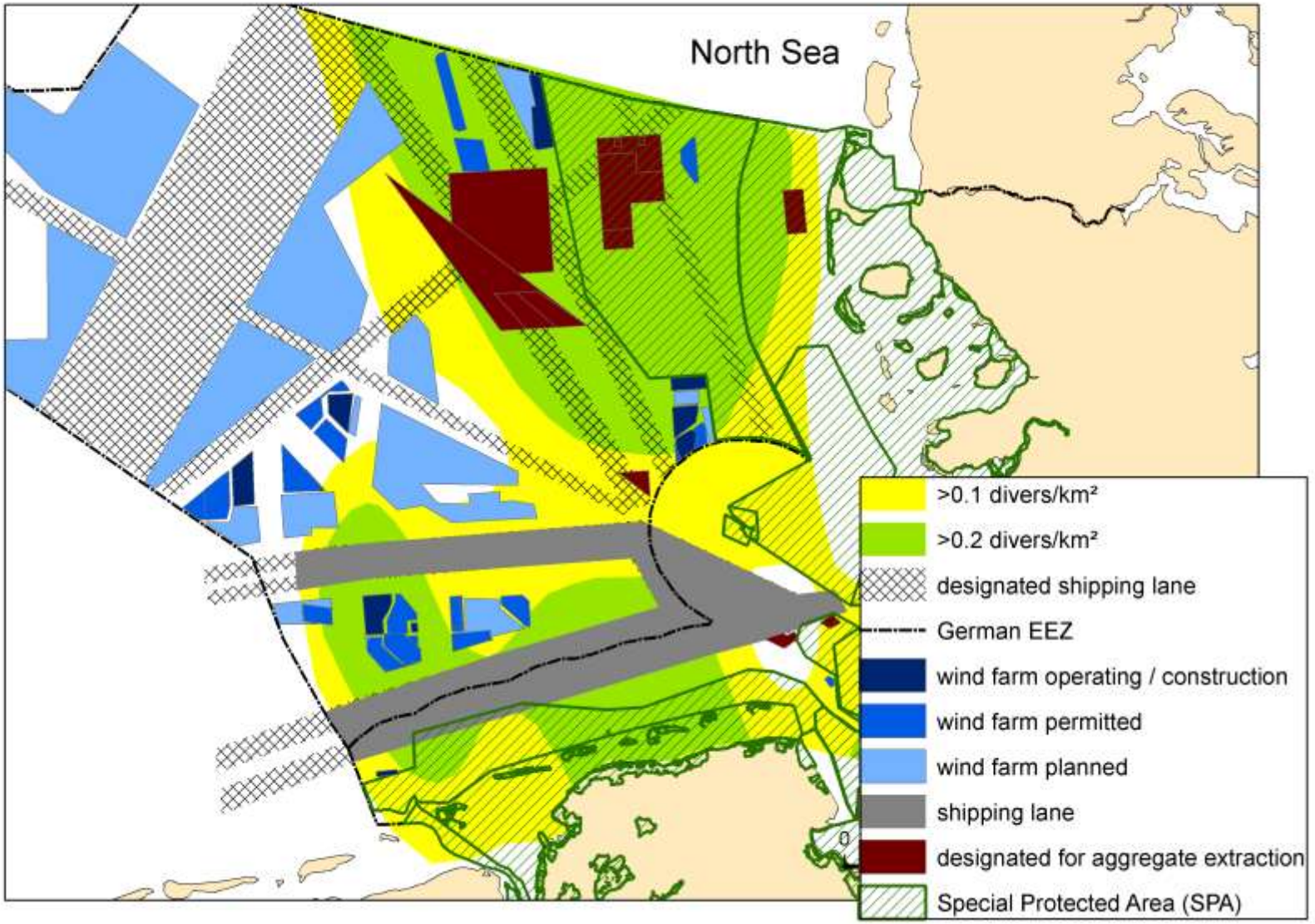


divers numbers affected (% of German spring populations)

annual mortality	450 RTD (1.8 %)	270 BTD (7.0 %)
expected habitat loss	5770 RTD (22.6 %)	830 BTD (21.3 %)

How many divers are living in German marine SPAs ?

		Red-throated Diver	Black-throated Diver
SPA Eastern German Bight			
	winter	540	60
	spring	3300	280
SPA Pomeranian Bay			
	winter	50	270
	spring	750	310
% of German winter population		8.7 %	12.2 %
% of German spring population		15.9 %	15.1 %


North Sea
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designated shipping lane
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wind farm operating / construction
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designated for aggregate extraction
Special Protected Area (SPA)

Are divers protected in German marine SPAs ?

Technical Convention for Natura 2000 sites
of German Federal Agency of Nature Conservation
(Lambrecht & Trautner 2007):

Every direct and permanent usage of a habitat ... as a rule is a serious disturbance.

In a particular case a disturbance can be classified not to be serious if ...

A: ...

B: ...

C: the area directly used by a project is not larger than 1 % of the total area of the habitat used by a given species,

D: 1 % of the area is not exceeded when including other projects are included,

E: other effects of the project are not acting cumulatively.

Are divers protected in German marine SPAs ?

Gill net fishery: no limitation

Shipping: no limitation

Wind farming: currently no subsidies paid in protected areas
=> currently no applications
(but this may change if law for renewable energies is altered)

Aggregate extraction: apparently not applied

Currently protection of divers in German marine SPAs is poor!

Glimmer of hope: Marine Strategy Frame Direction (MSFD): management measures proposed in Germany include restrictions to fishery and shipping

Plea for more information:

data concerning population dynamics from the breeding areas:

- mortality rates
- reproductive rates

new, more accurate estimate of population sizes:

- accumulation of national winter counts all over Europe

Many thanks to Diver enthusiasts in Iceland, U.K., Denmark, Sweden, Finland and Germany for supporting this study!

Download of an extended version (in German with English abstracts and figure captions):

www.gavia-ecoresearch.de

Dierschke, Exo, Medel & Garthe 2012: Vogelwelt 133: 163-194.