

Invasive species in the North Sea and surrounding inland waters

Dr. Pieter Boets

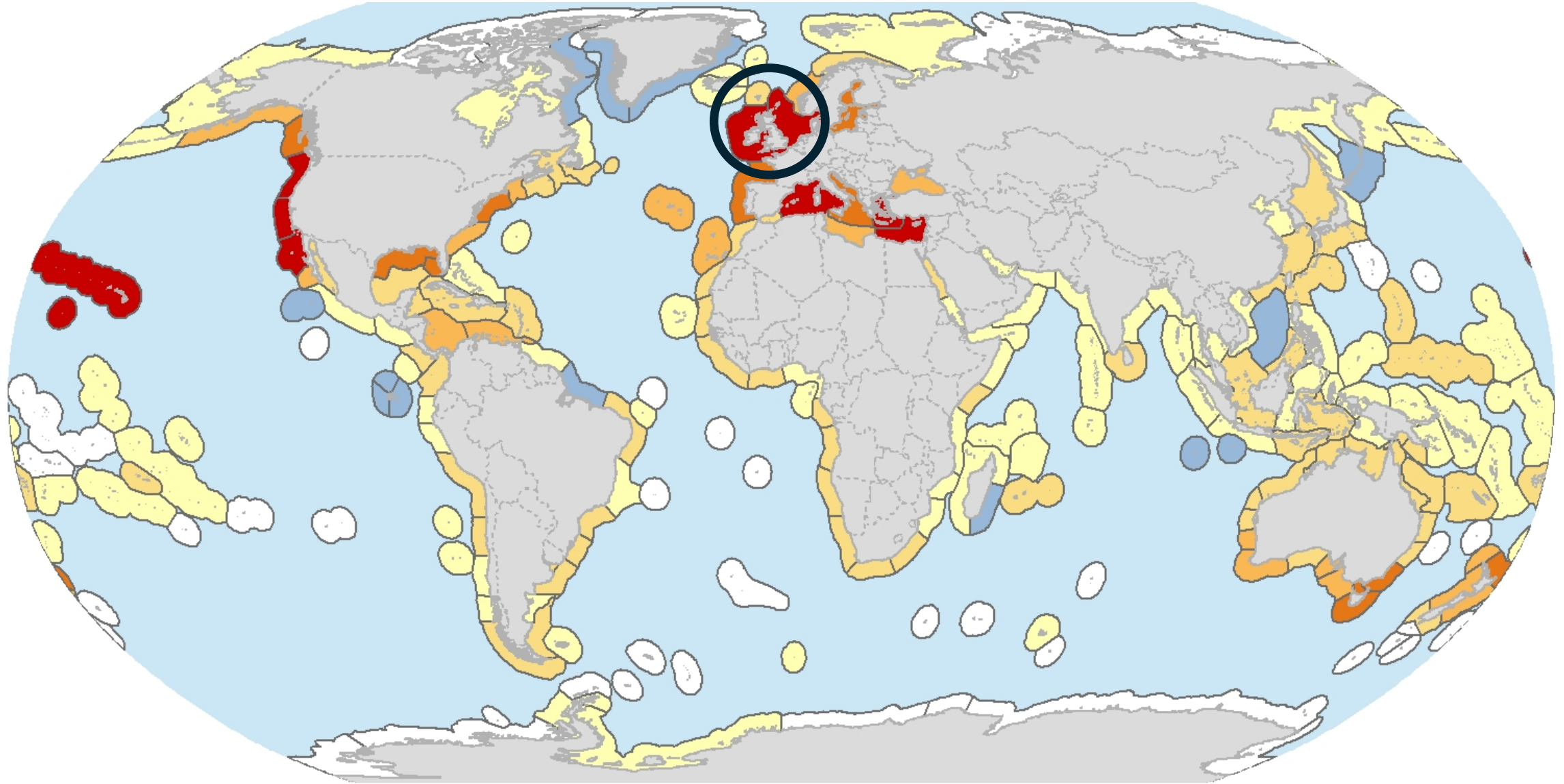
Provincial Centre of Environmental Research

Belgium

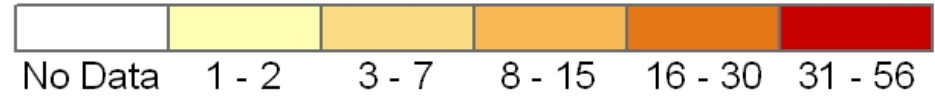


Geopgraphic situation





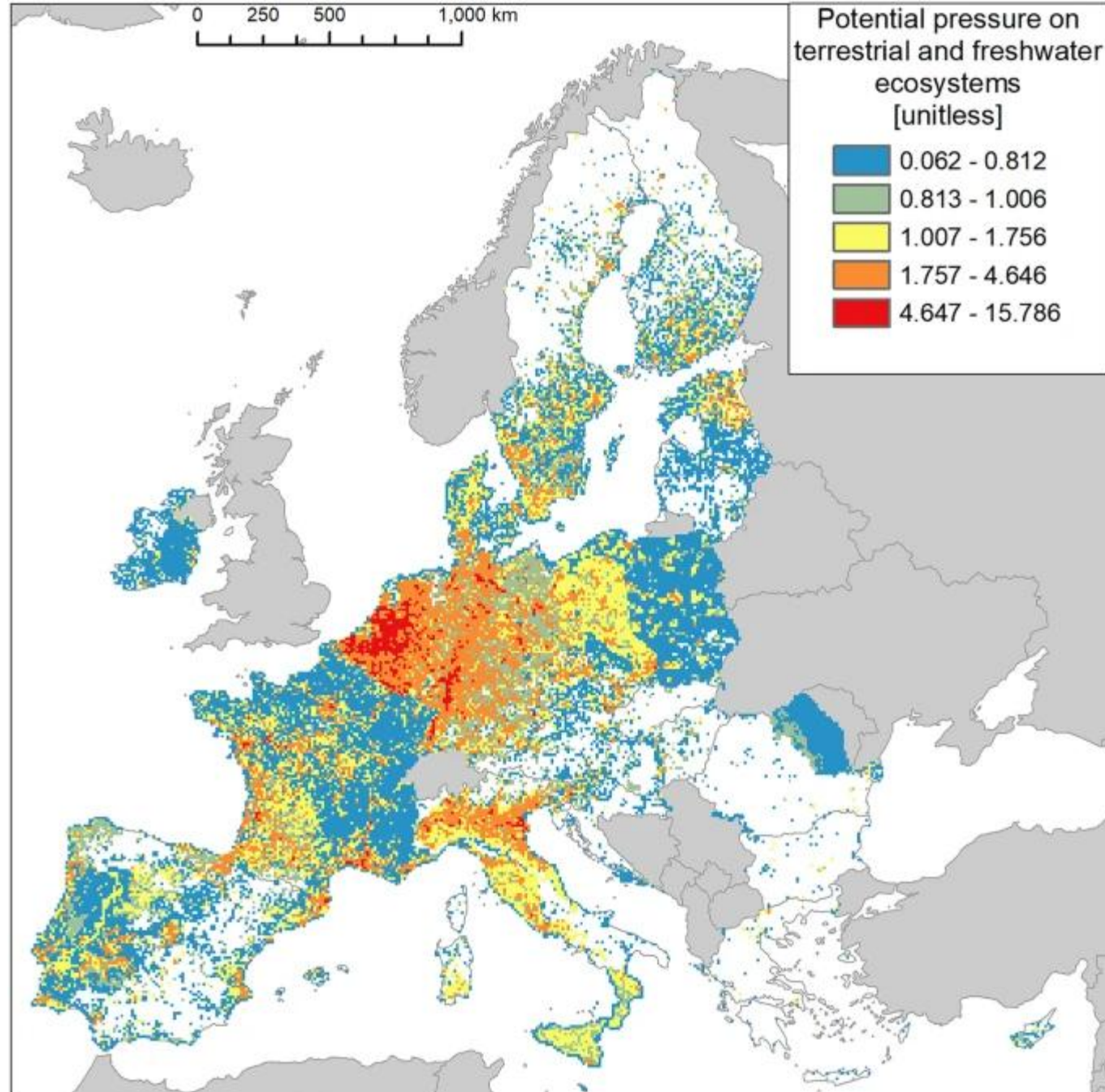
Number of known harmful alien species



Other alien species reported

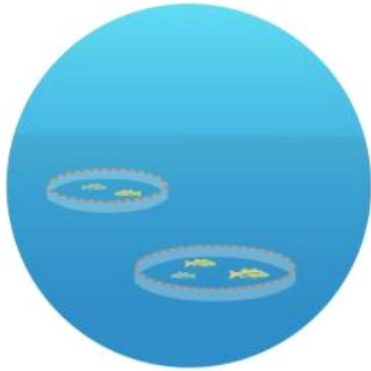


Global map showing the number of harmful alien species by coastal ecoregions. The darker red shades indicate a greater number of species with a high impact on the local ecology. The blue colour indicates ecoregions with alien species that have been described as less harmful. Source: Molnar et al. 2008



Polce, C., Cardoso, A.C., Deriu, I. et al. Invasive alien species of policy concerns show widespread patterns of invasion and potential pressure across European ecosystems. *Sci Rep* 13, 8124 (2023). <https://doi.org/10.1038/s41598-023-32993-8>

Most important vectors



Aquaculture - living import



Canals



Natural spread



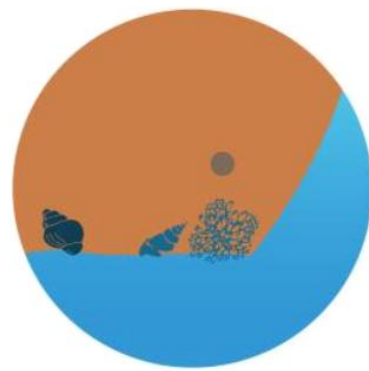
Translocation (deliberate)



Shipping (ballast water)



Shipping (cargo)



Shipping (hull fouling)



Unknown

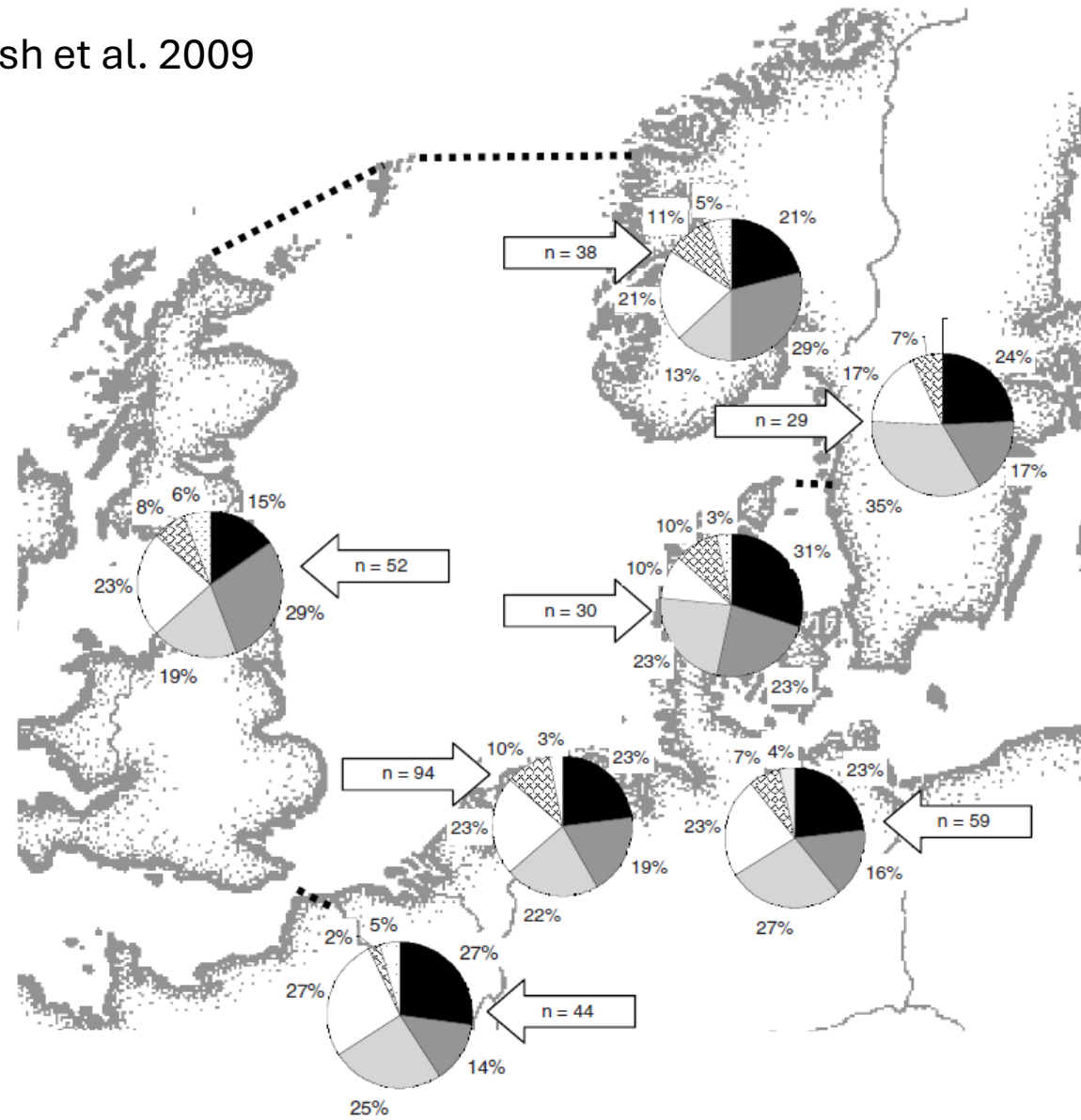


Fig. 29.1 Boundaries of the North Sea (dotted lines). Pie charts show relative importance of likely introduction vectors for NIS (excluding cryptogenic species) per country (clockwise: black = hull fouling, dark grey = aquaculture, stocking, light grey = ballast water, white = unclear vector, square shaded = unknown vector, dot shaded = other vectors). The total number of NIS per country is given next to each pie chart

EU policy framework

- the European Regulation on Invasive Alien Species (Regulation (EU) No. 1143/2014),
- the European Marine Strategy Framework Directive (MSFD, 2008/56/EC),
- the Ballast Water Convention (2004).



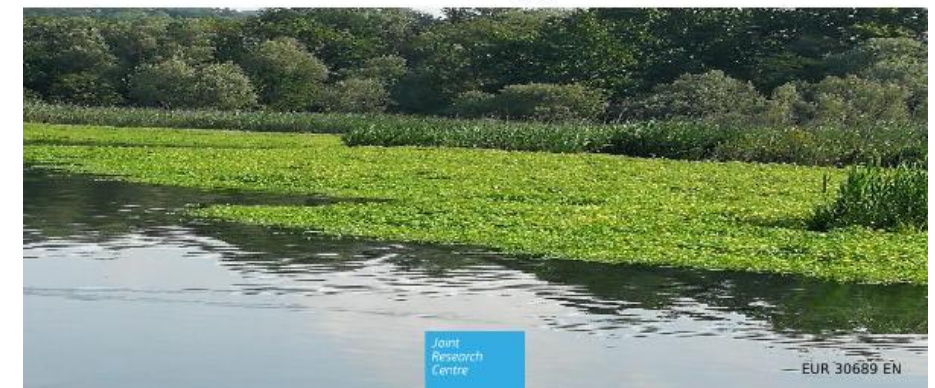
JRC SCIENCE FOR POLICY REPORT

EU Regulation 1143/2014:
assessment of invasive alien
species of Union concern
distribution

*Member States reports
versus JRC baselines*

Cardoso, Ana Cristina; Tsiamis,
Konstantinos; Deriu, Ivan; D
Fabio; Gervasini, Eugenio

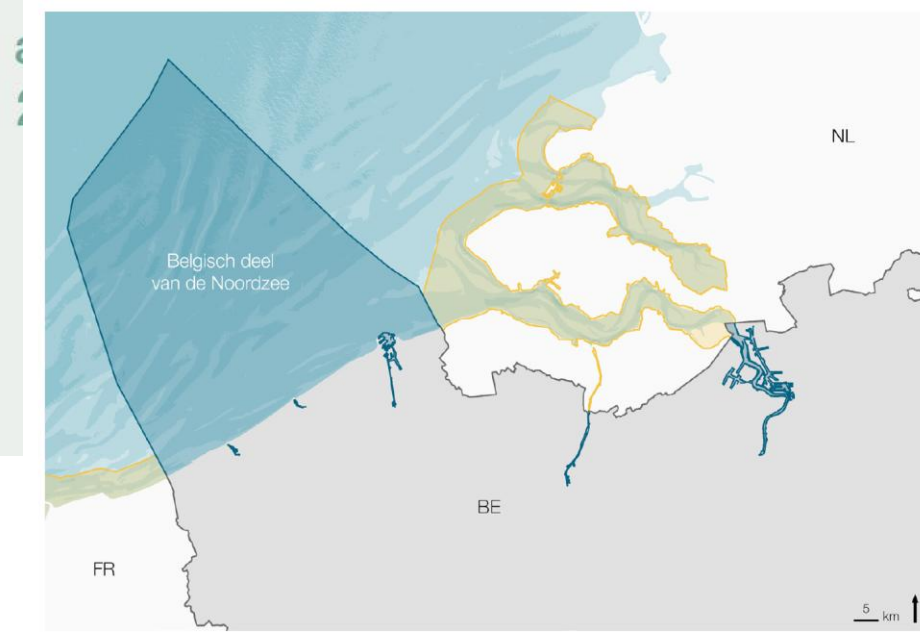
2021



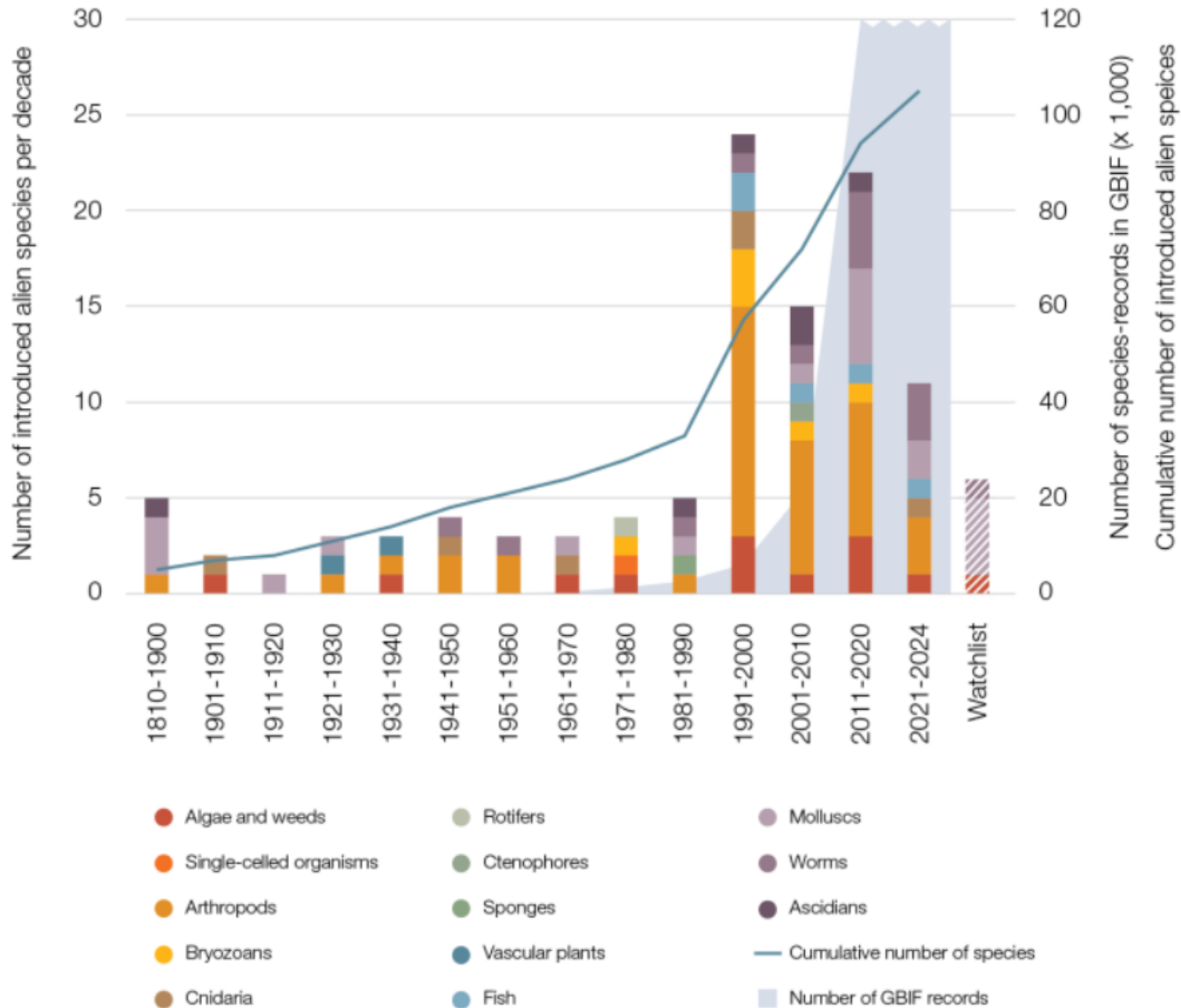
Most recent study

Geïntroduceerde niet-inheemse soorten

in het Belgisch deel van de Noordzee en aanpalende estuaria

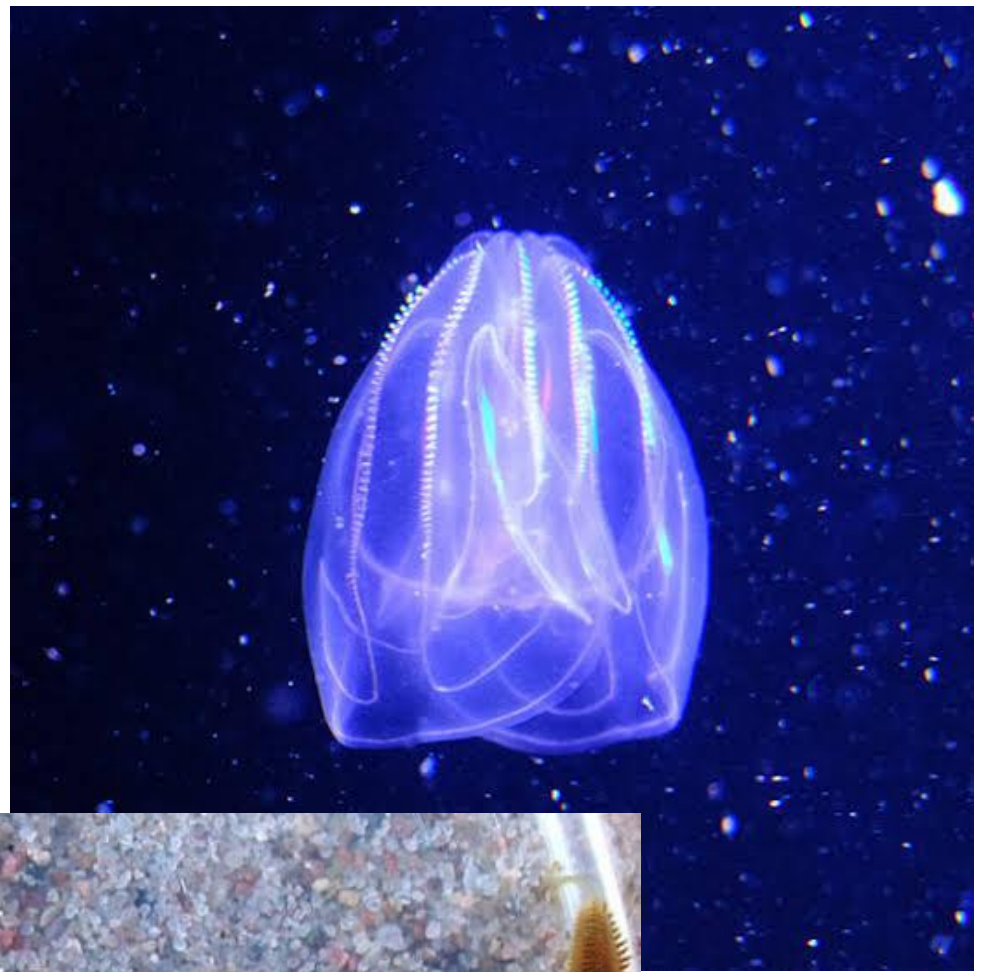


Number of introduced species



Source: VLIZ website

Some of the species ...



Area of origin



Indian Ocean



Mediterranean



NE Atlantic



Ponto-Caspian region



SE Atlantic



SE Pacific



NE Pacific



NW Atlantic



NW Pacific



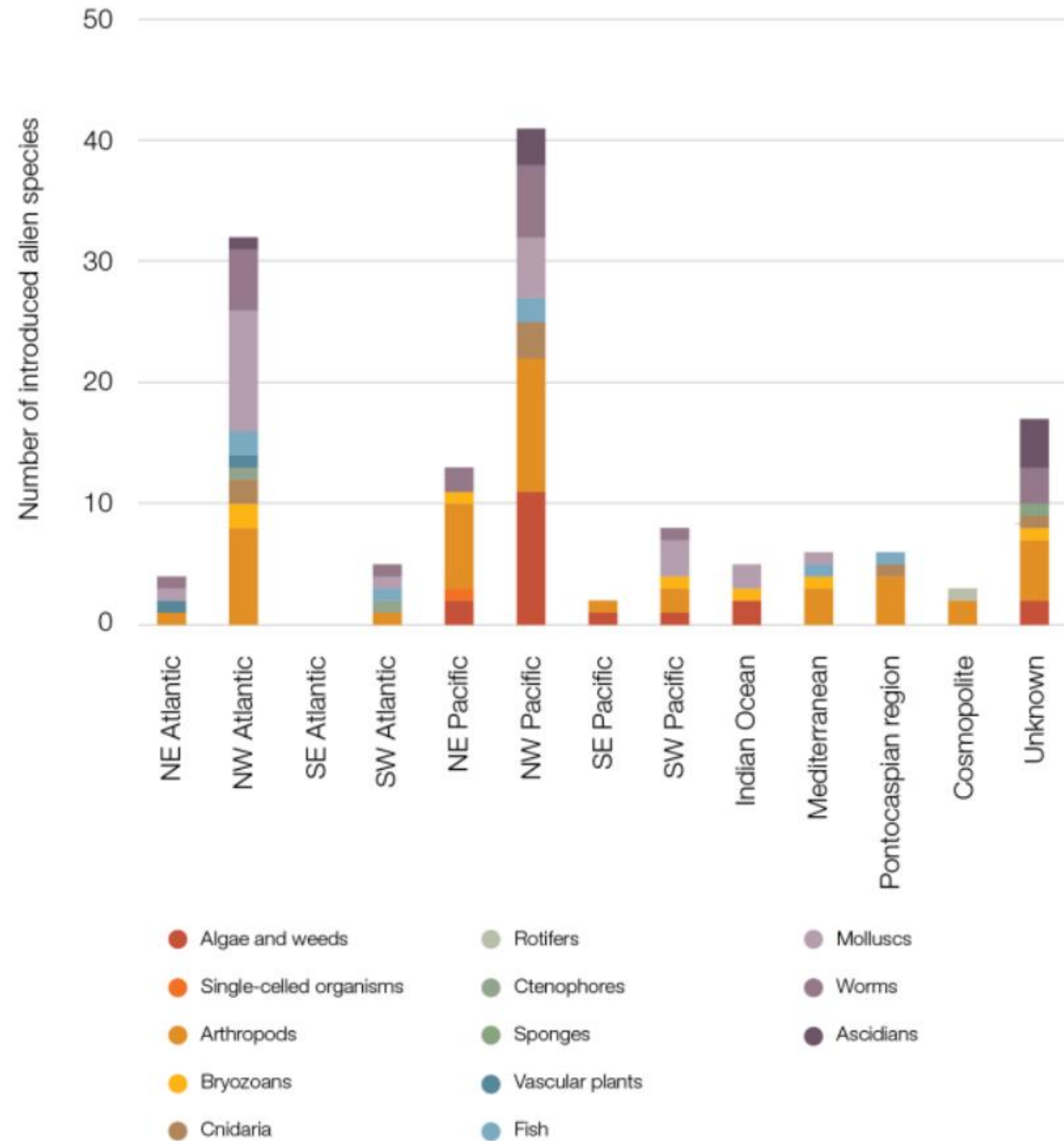
SW Atlantic



SW Pacific



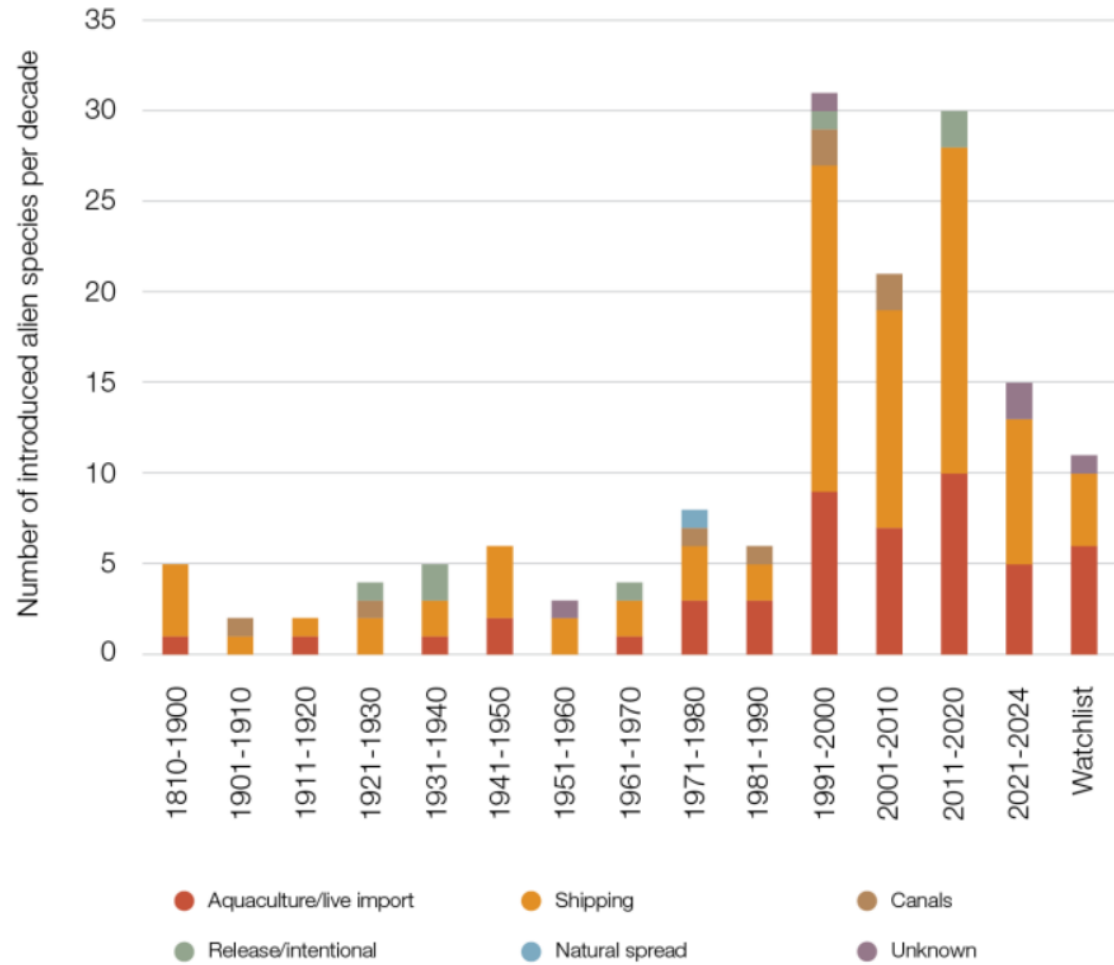
Unknown



Country of the first detected presence in Western Europe of the introduced alien species reported in Belgium

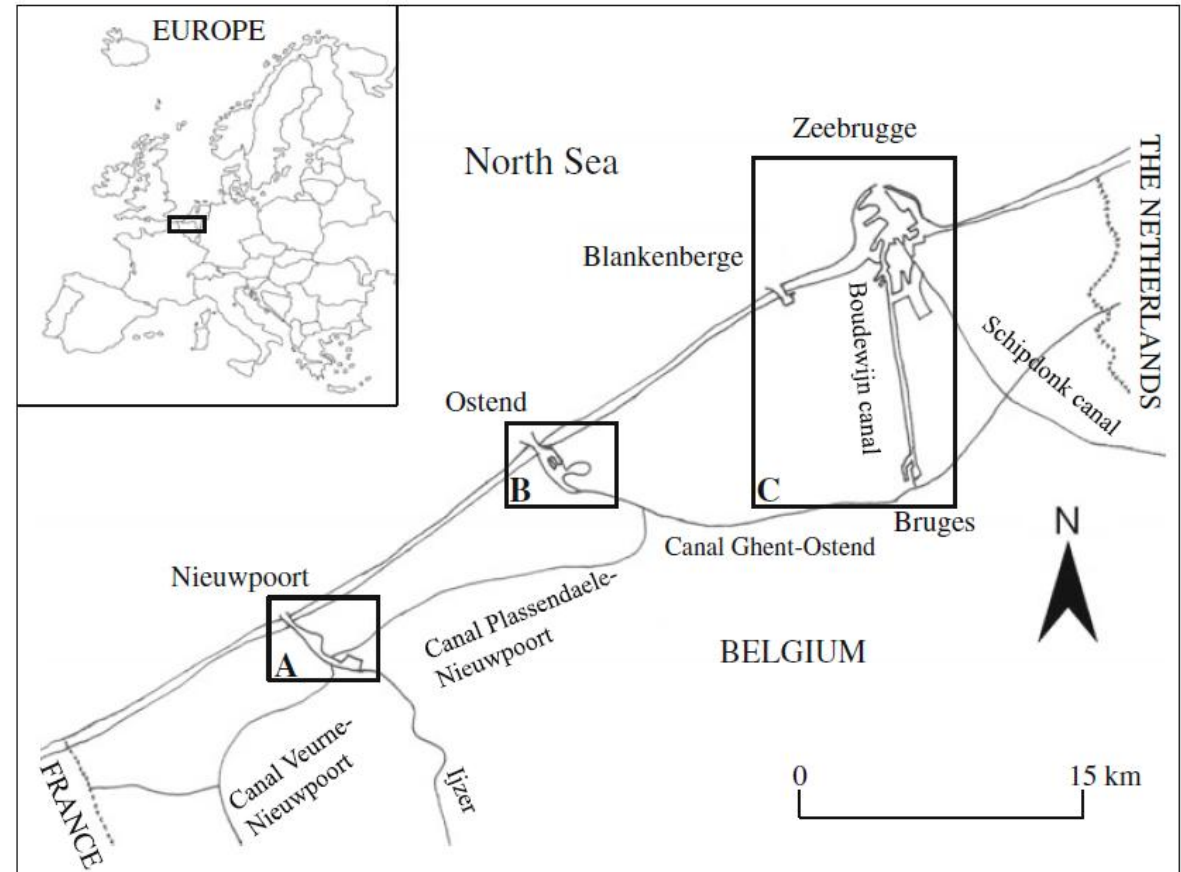


Introduction pathways

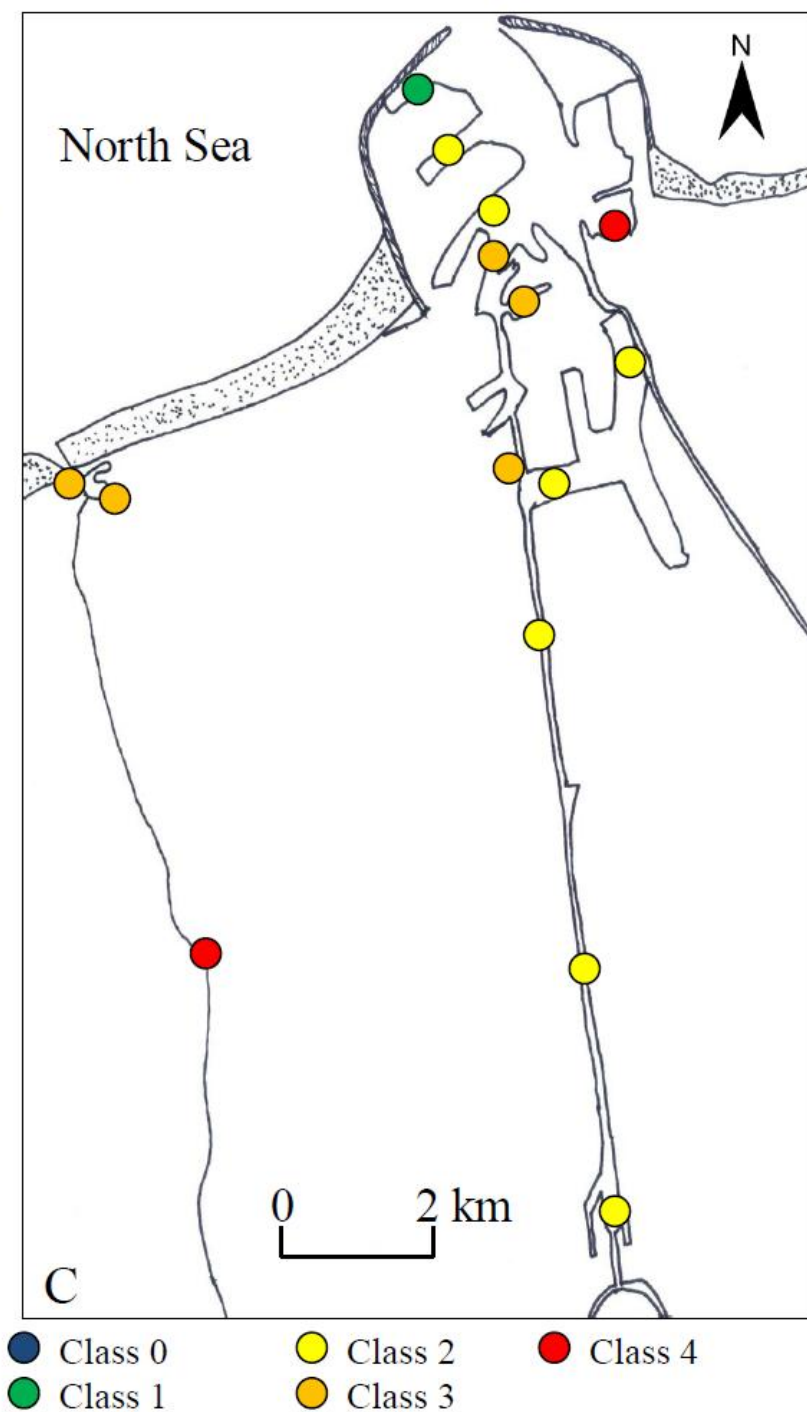
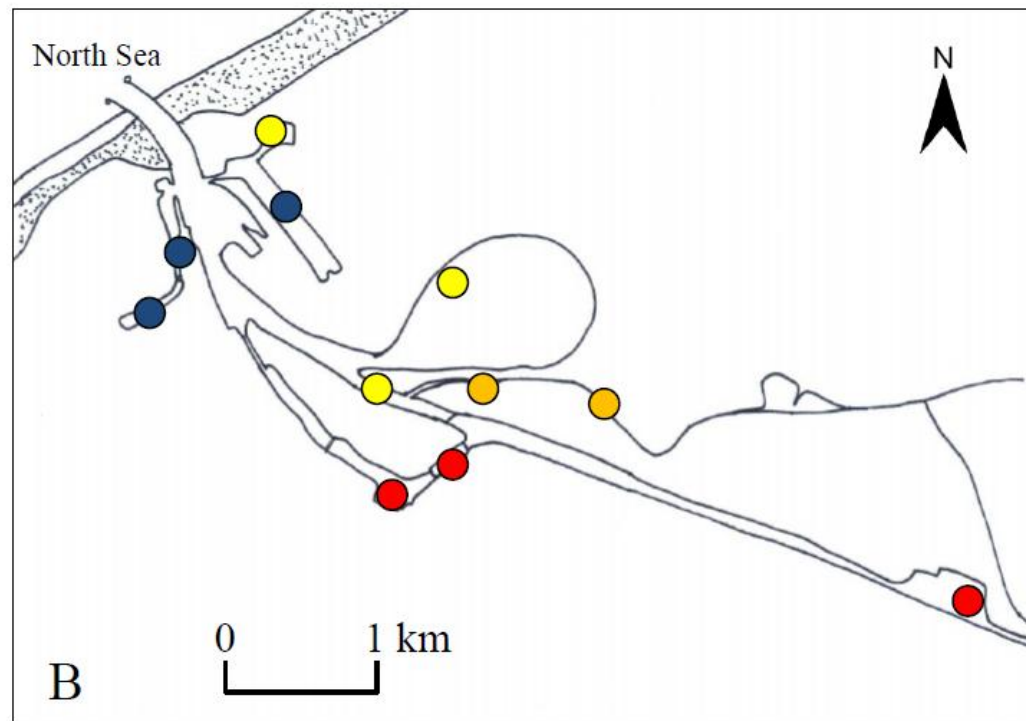
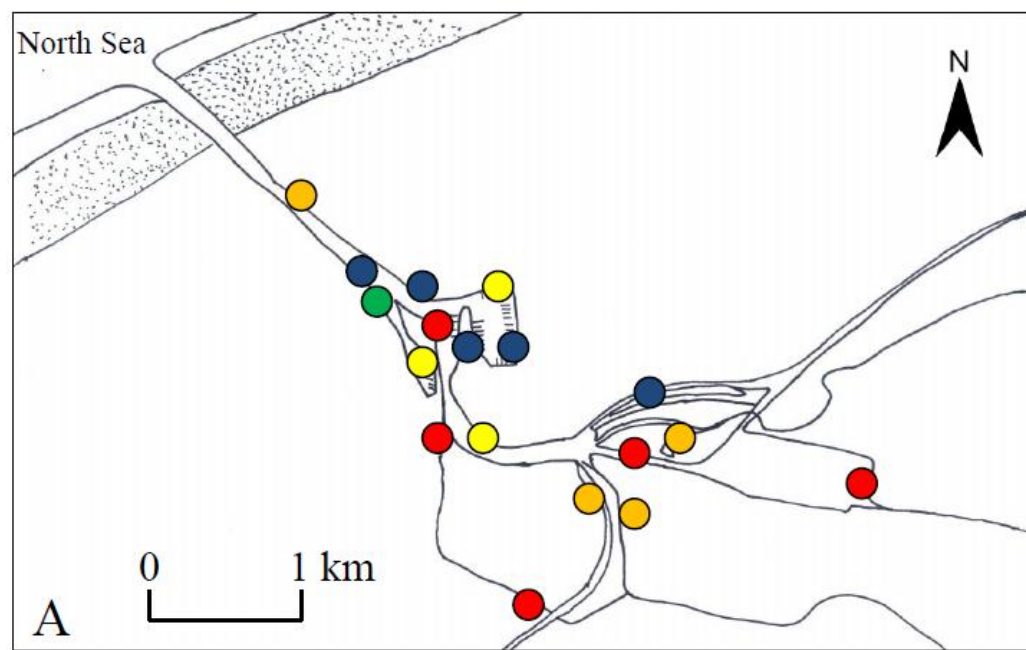


Assessing the importance of alien macro-Crustacea (Malacostraca) within macroinvertebrate assemblages in Belgian coastal harbours

Pieter Boets · Koen Lock · Peter L. M. Goethals



Assessment of site specific contamination index



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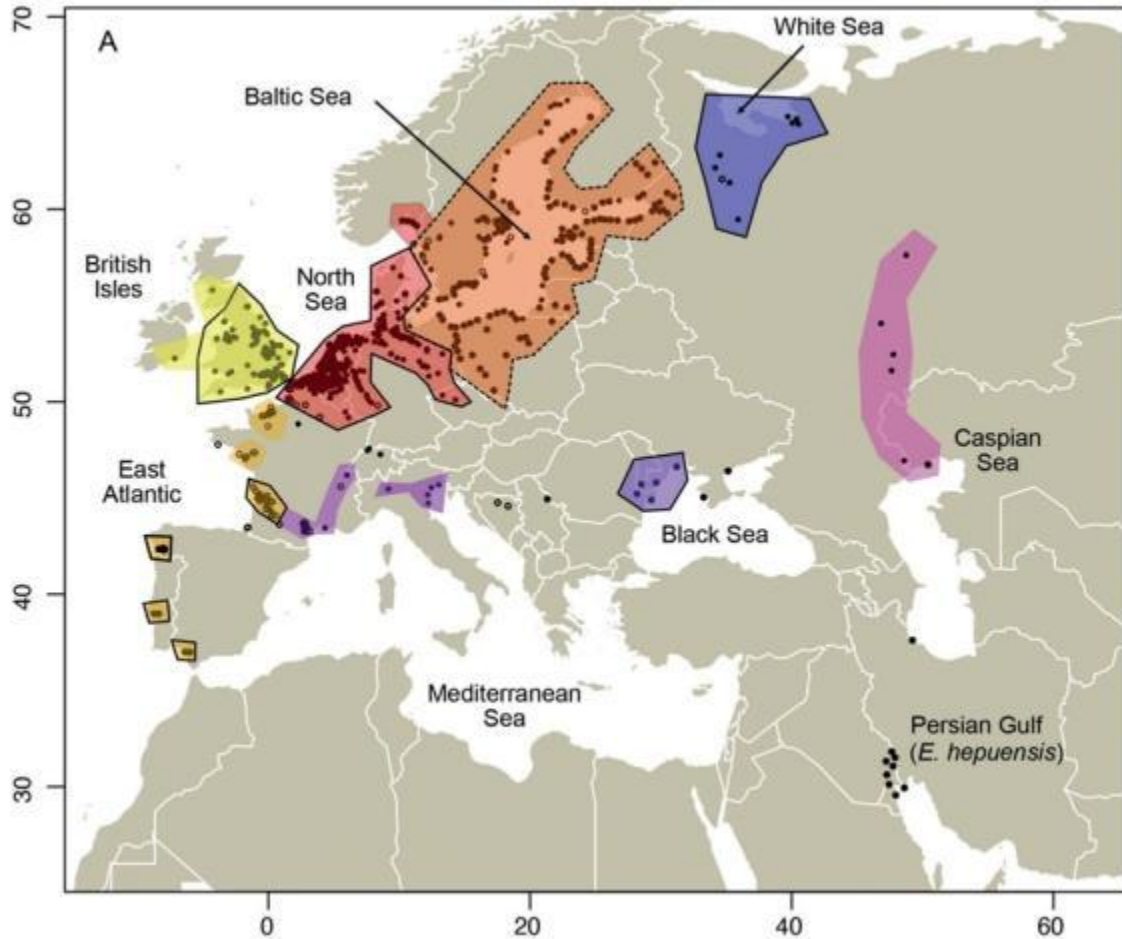
Home

Clancy

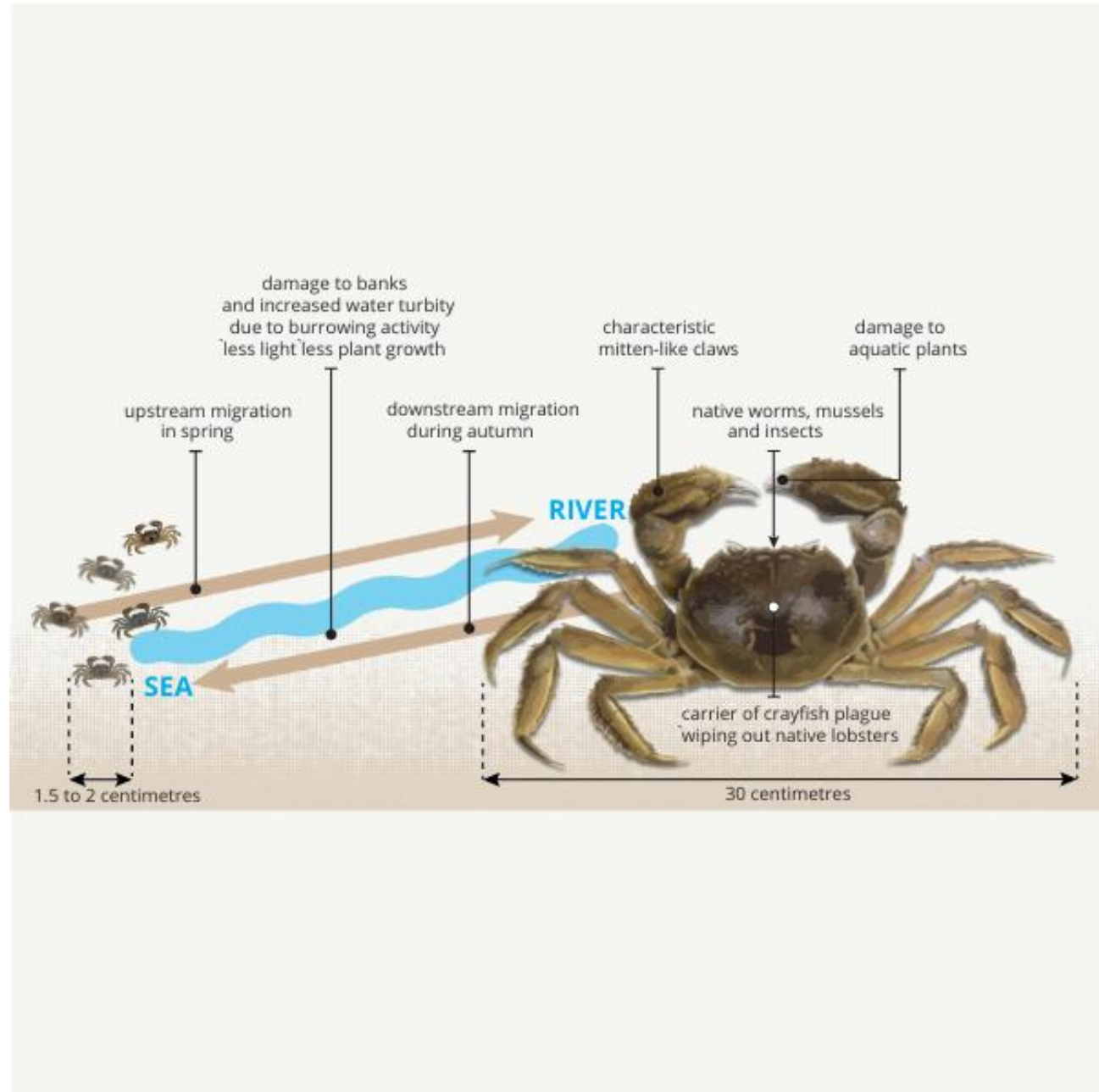
We map the crab! We trap the crab! We fill the gap!



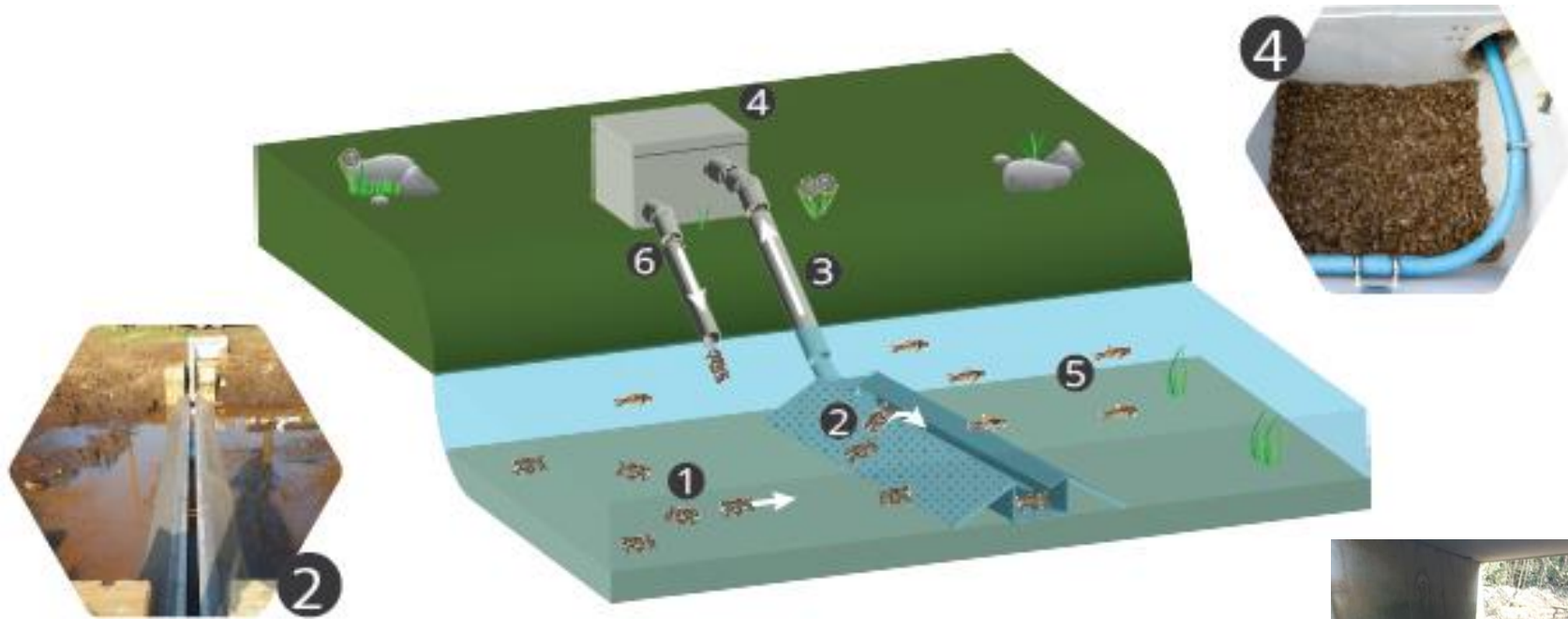
Chinese mitten crab



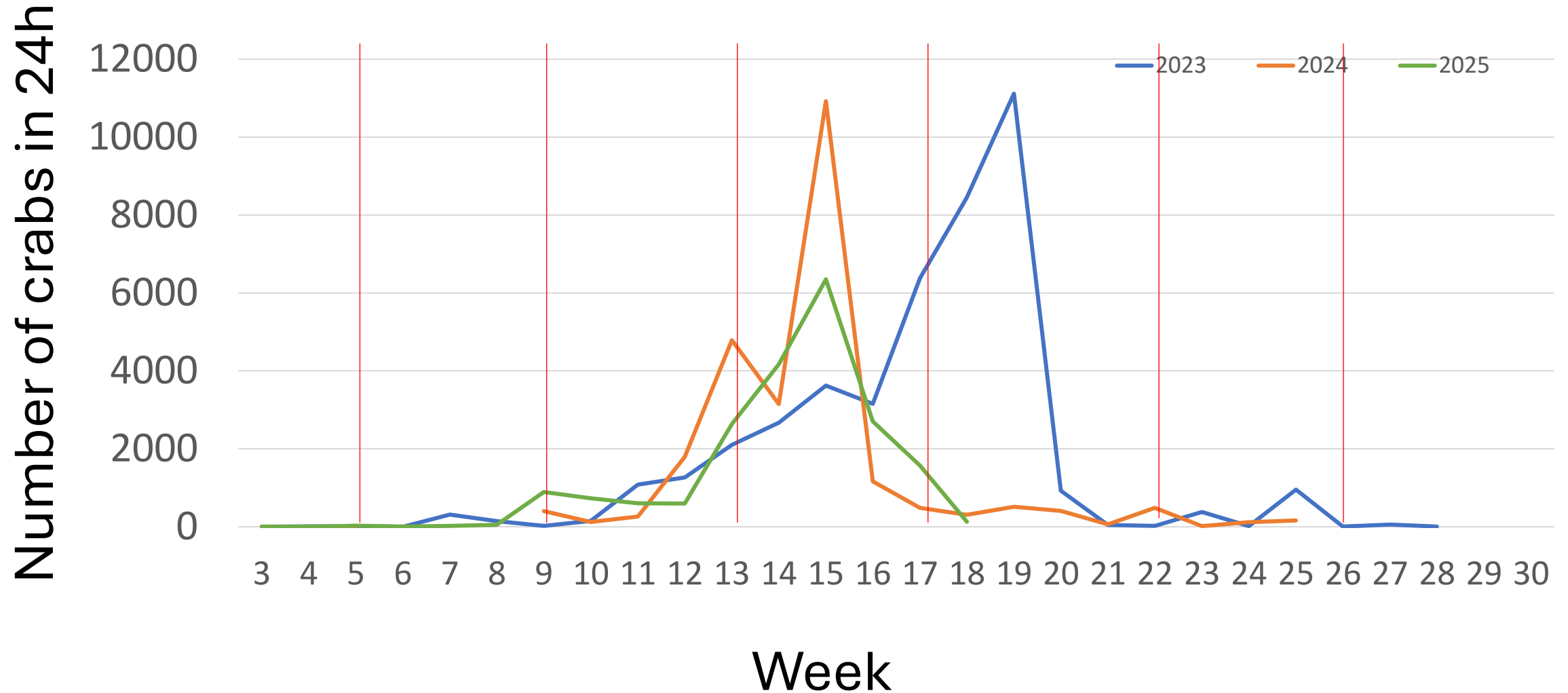
Ewers et al. 2023



Retour trap to manage Chinese mitten crabs



Spring migration @ Merelbeke



What to do with the crabs?



Opportunities and challenges

- Use as animal feed in local zoo?
- Use for human consumption?
- Use the Chitin in medical sector or food industry?

- Need for constant supply
- Contamination of the tissue
- EU regulation
-

Questions?

- Contact

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