



Ministry of Infrastructure
and Water Management

Application of the results of the Wozep- research on birds

Wozep tussenstandbijeenkomst
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Wozep

Research on ecological impact of offshore wind on protected species

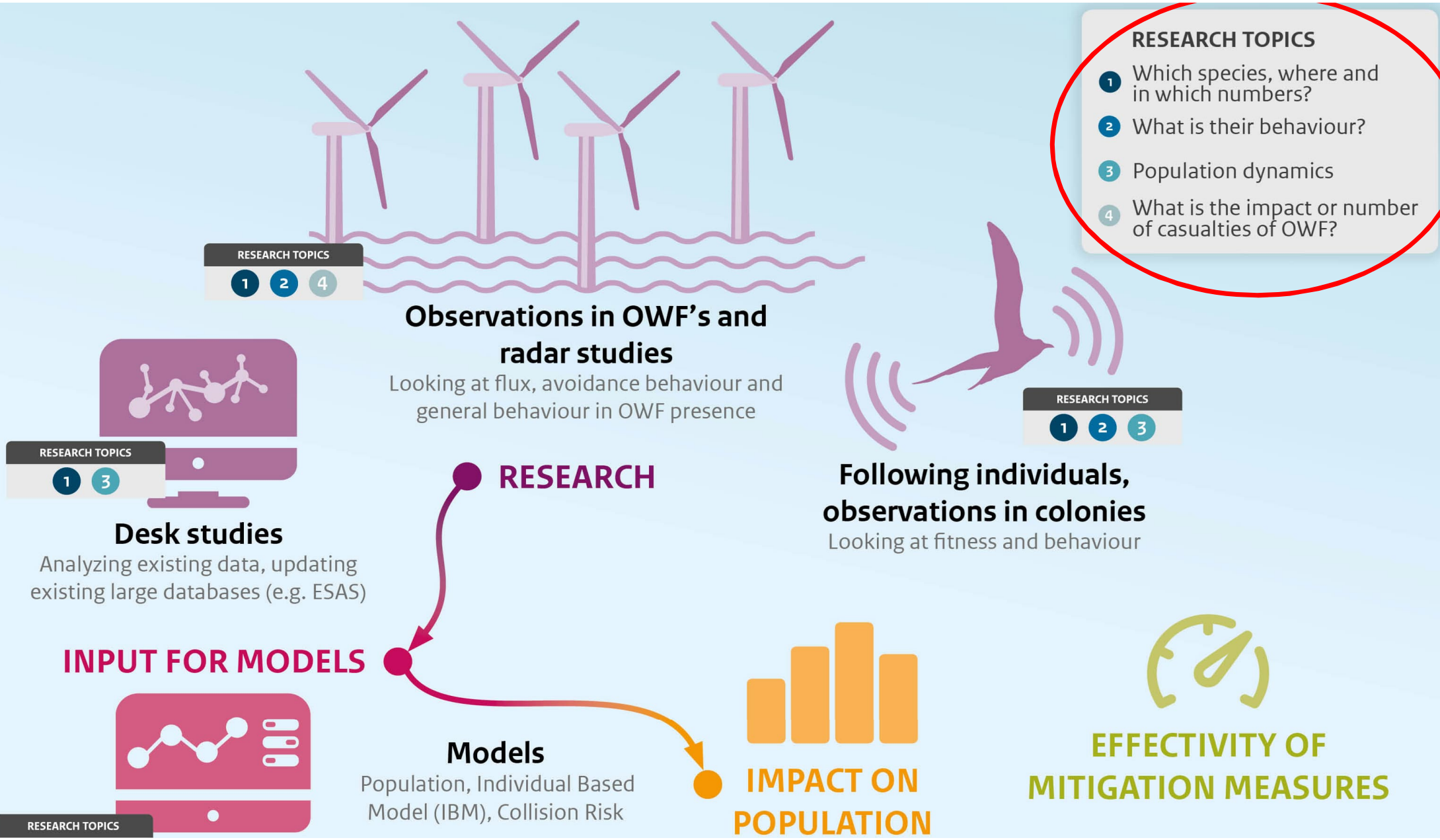
The objectives of Wozep are:

- Reduce uncertainties regarding short and long term impacts of OWF's on protected species
- Determine effectiveness of mitigation measures

[Read infographic >](#)



- › Collision risk
- › Habitat loss
- › Ecosystem effects



RESEARCH TOPICS

- 1 Which species, where and in which numbers?
- 2 What is their behaviour?
- 3 Population dynamics
- 4 What is the impact or number of casualties of OWF?

RESEARCH

INPUT FOR MODELS

IMPACT ON POPULATION

EFFECTIVITY OF MITIGATION MEASURES



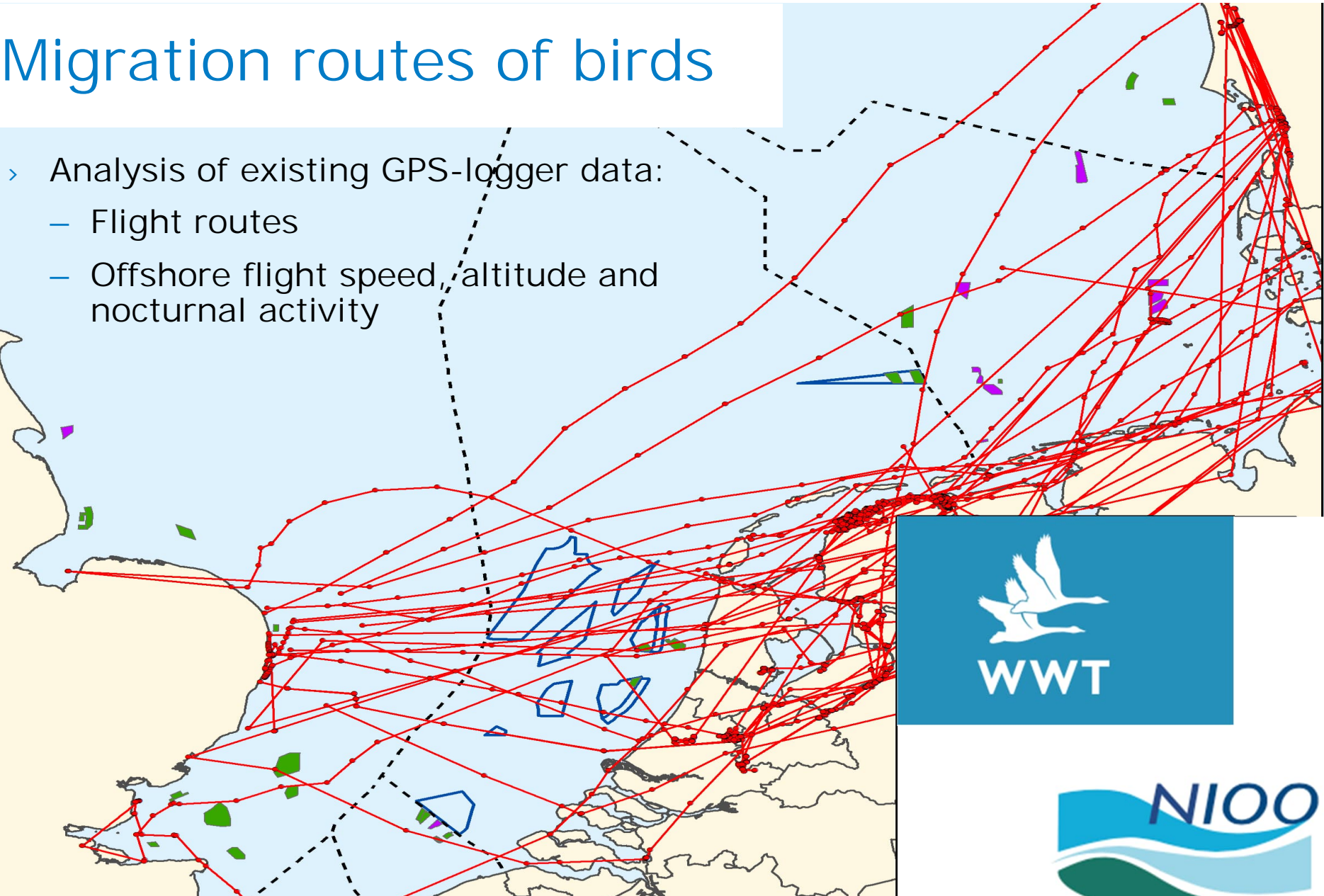
Application of results

- Use in assessments of effects
- Improve methodology of assessment
- Use for (possible) mitigation measures
- Input for marine spatial planning



Migration routes of birds

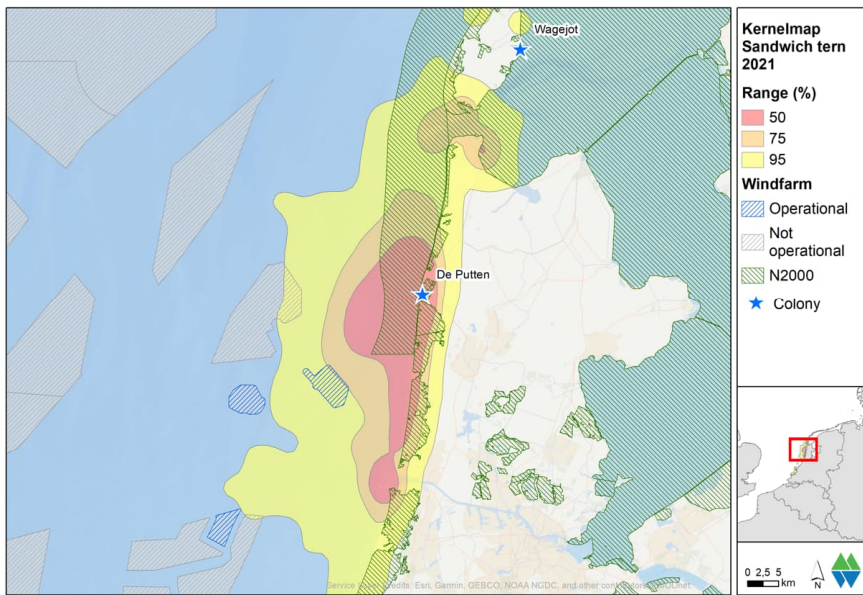
- › Analysis of existing GPS-logger data:
 - Flight routes
 - Offshore flight speed, altitude and nocturnal activity



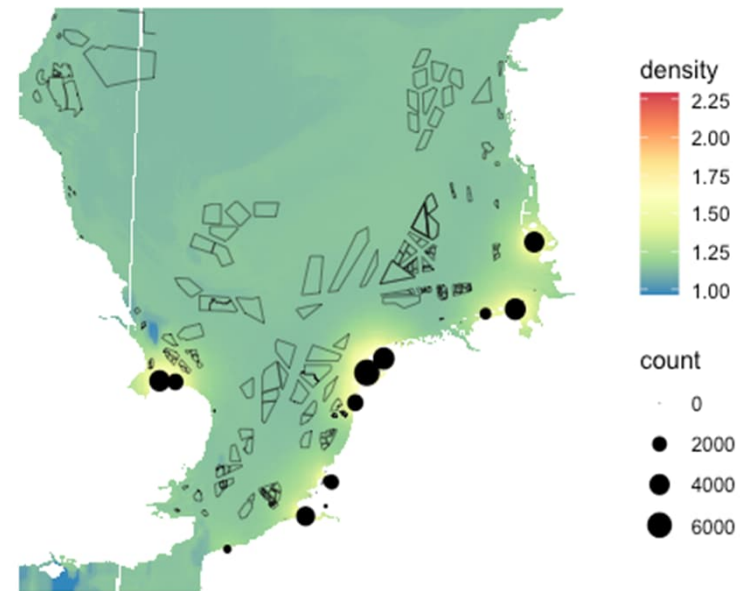


Sandwich tern

Gps-data



Prediction based on gps-data

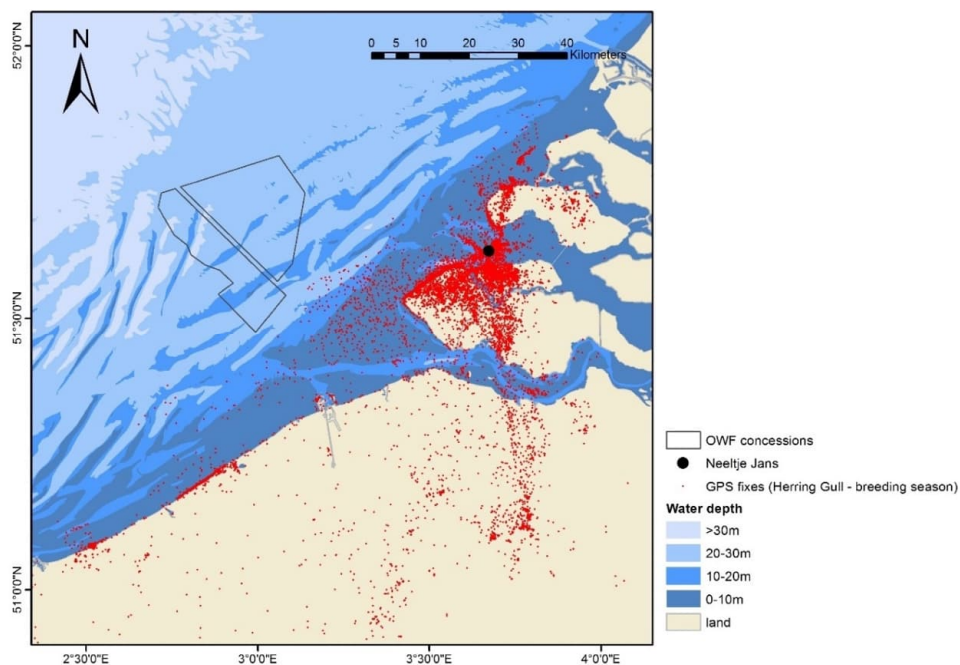


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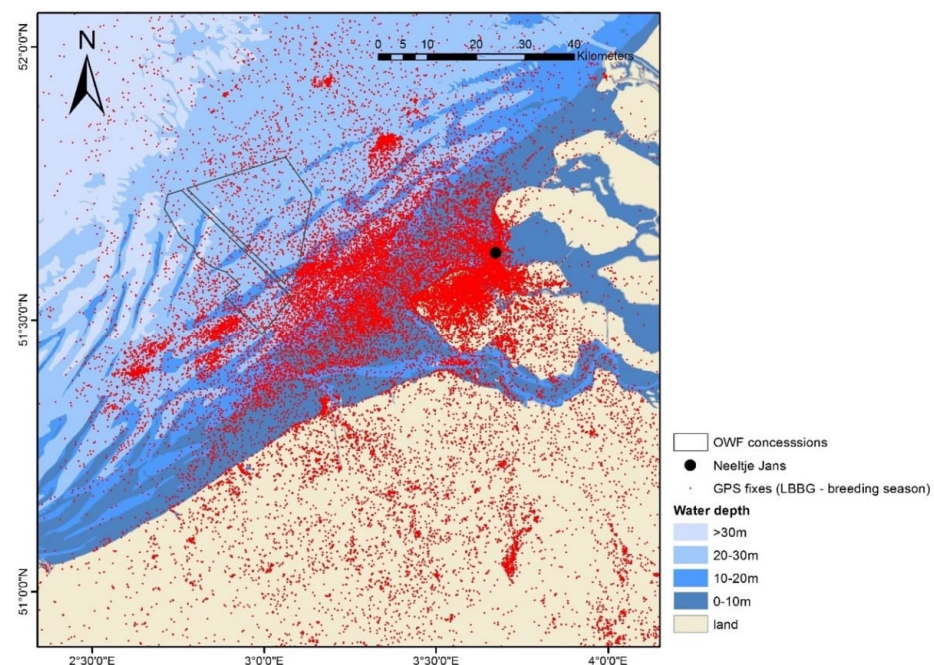


Gulls Neeltje Jans

Herring gull



Lesser black-backed gull



February 15, 2023



INSTITUUT
NATUUR- EN
BOSONDERZOEK

Vlaanderen
is wetenschap

deltamilieu
PROJECTEN



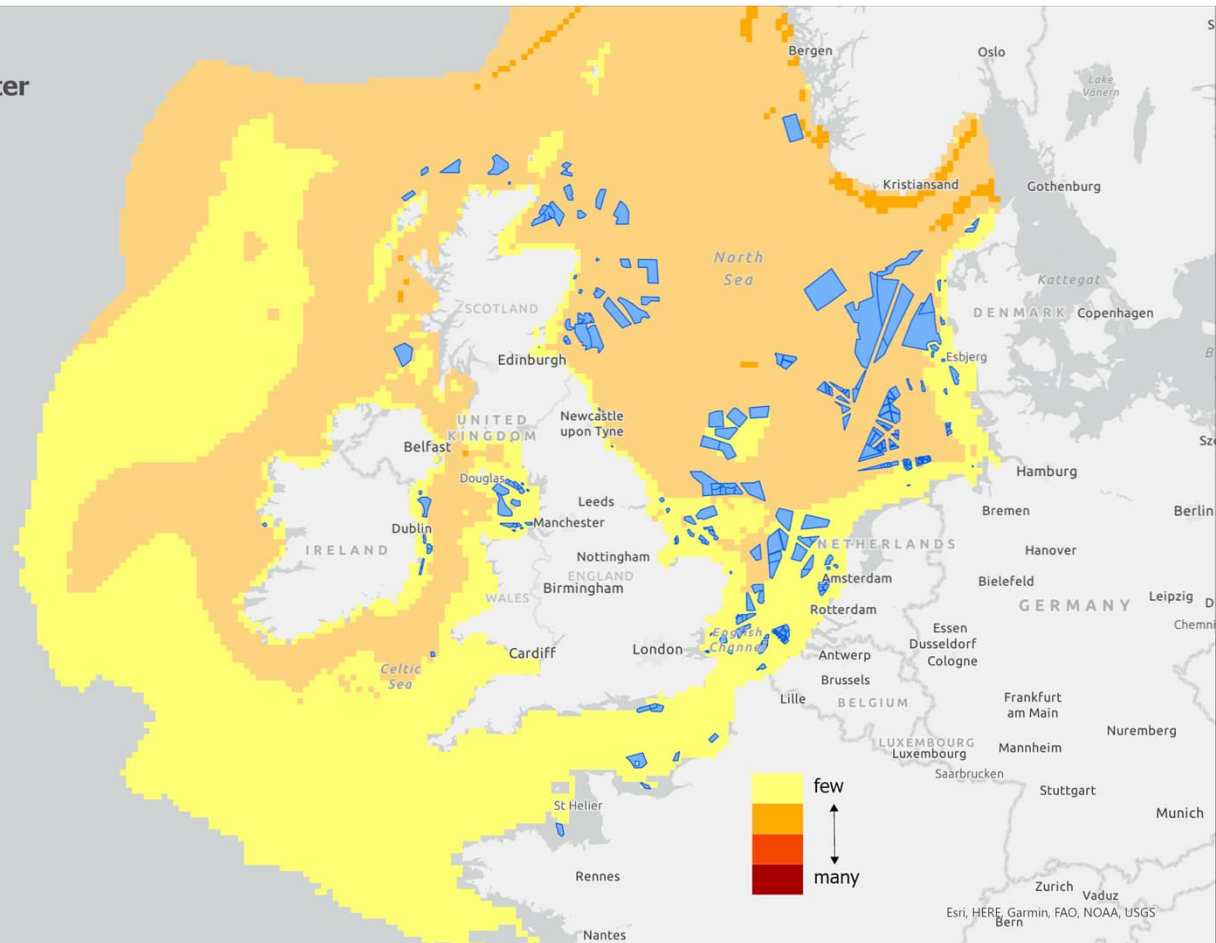


Offshore spatial distribution



- › European Seabirds at Sea (ESAS) database
- › Large scale aerial surveys
 - At least 4-6 times a year
 - Since 1991

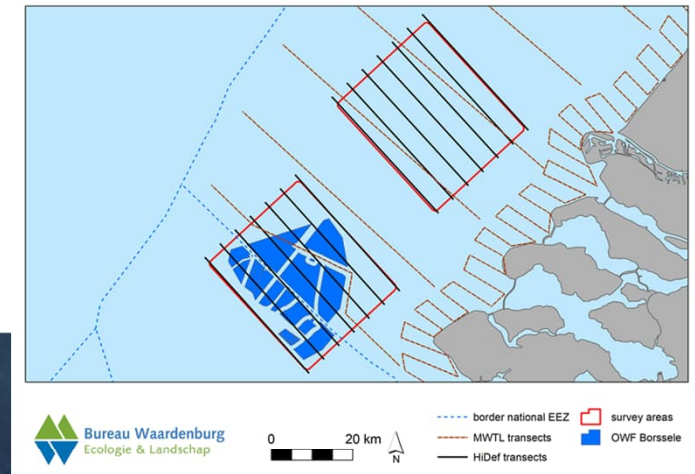
winter





Collecting high definition video footage at and near Borssele OWF

- › Digital aerial surveys within and outside Borssele OWF
 - collecting information on OWF influence
 - images to be used for developing automatic image recognition (machine learning)





Behaviour in OWF's



- Luchterduinen & Borssele windfarms
- Use of radar, camera and visual observations



- Inputparameters for CRM's
- Corridor use





Questions?



Photo: Maarten Platteeuw