Kader Ecologie en Cumulatie
KEC 5.0

Programma

KEC update
14:15 – 14:25 Welkom, KEC 5.0 update – Martine Graafland - RWS ZD
14:25 – 14:45 Aanvaringen - Gerben Ijntema (Waardenburg Ecology)
14:45 – 15:05 Habitatverlies - Floor Soudijn (WMR)
15:05 – 15:25 Onderwatergeluid - Floor Heinis (HWE)
15:25 – 15:35 Ecosystemen - Edwin Verduin – RWS ZD
15:35 – 15:45 Vleermuizen, KRM - Meik Verdonk – RWS ZD
15:45 – 15:55 Vervolgproces - Martine Graafland – RWS ZD
15:55 – 16:00 Afsluiting – Ingeborg van Splunder

Vragen aan eind van elke presentatie, 5 minuten

Doel vandaag:
Nieuwe inzichten, nieuwe kennis, indien aanwezig eerste conceptresultaten

Inhoud KEC

Uitwerking in KEC van:
- Zeezoogdieren (bruinvis, gewone en grijze zeehond), vogels aanvaringen en vogels habitatverlies, vleermuizen, ecosysteemeffecten, en KRMdescriptoren

KEC bestaat uit 3 delen:
- Conceptueel kader (idee achter cumulatie)
- Kennis en methodiek
- Berekeningen

Kennis en methodiekdeel nu meer uitgebreid tov vorige KECs -> nieuwe inzichten meer transparant en beter bruikbaar

Berekeningen -> Daar waar kan kwantitatief, anders kwalitatief.

Scenario KEC plus studiegebied

Scenario KEC 5.0: Aanvullende Routekaart 2030 (alles wat wordt gebouwd t/m 2031)

Studiegebied: 51° NB tot 58° Nb (verspreidingsgebied meeste soorten)

Operationele fase : 40 jaar
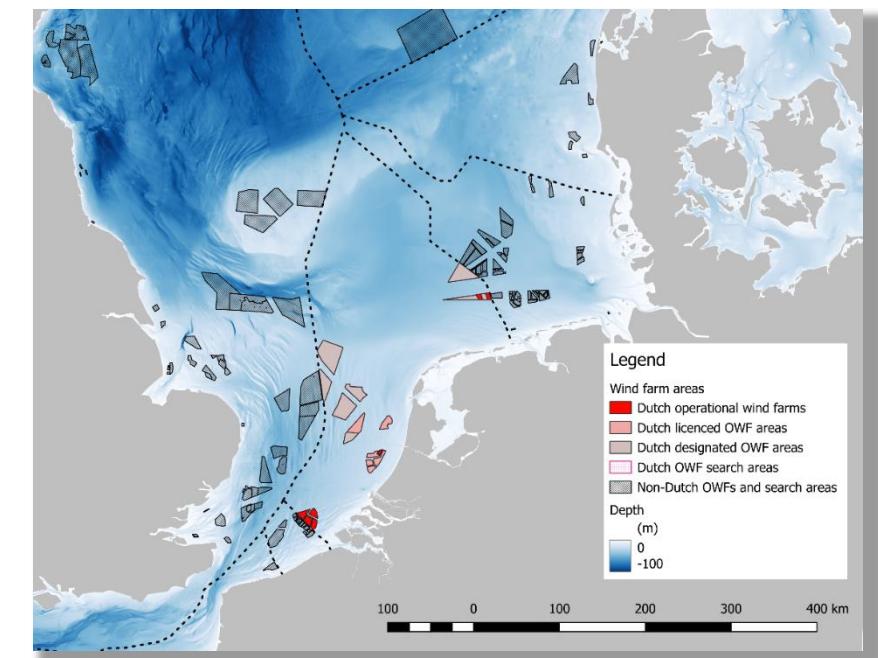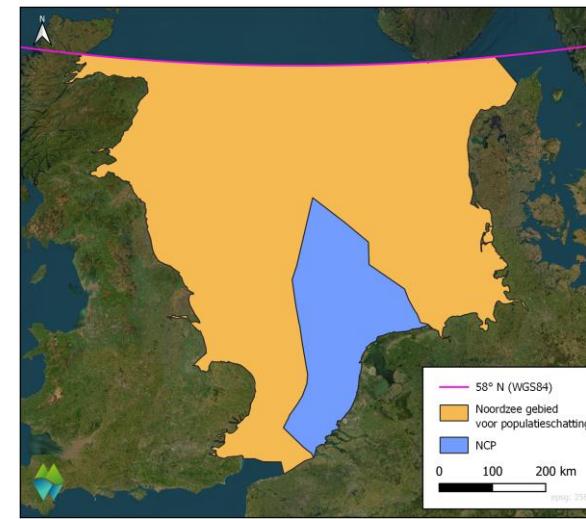
Scope KEC

KEC: Cumulatie windparken op zee

Toetsen aan de ALI.
ALI: grotendeels gebaseerd op de Nederlandse SvI -> relevant voor NL parken

Internationaal: mogelijk andere SvI -> geen toetsing, ma
Bij knelpunt -> beleid aan zet.

ALI (Acceptable Level of Impact)

ALI: doorontwikkelde versie.
-> Eenvoudiger
-> Nog steeds relatieve vergelijking
-> LVVN -> nieuwe werknormen voor KEC 5.0

Gaan nu niet verder op ALI in.
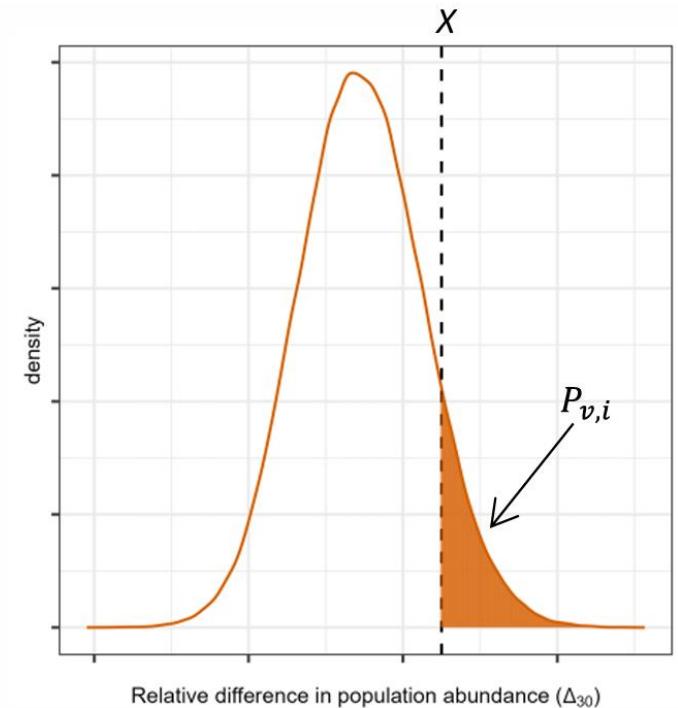
Vleermuizen

- Veel kennisleemtes, o.a. 0-1 slachtoffer/turbine/jaar, populatiegrootte, gedrag in windparken, etc.

- Expertworkshop -> bevestiging kennisleemtes, sommigen nog niet op te lossen, ideeën redeneerlijn

- Redeneerlijn gebaseerd op conversiefactor van gemeten akoestische activiteit samen met heersende windsnelheid vertaald naar een verwacht aantal slachtoffers

- Nu in KEC basis opzet redeneerlijn, voor berekening nader onderzoek nodig -> 2025 Wozep

- Dan verder kijken naar mogelijkheden en uitwerken redeneerlijn -> KEC 6.0

- Vooralsnog op huidige manier berekeningen voor vleermuizen

KRM

- Uitbreiding analyse ten opzichte van KEC 4.0

- Kwalitatieve uitwerking

- Systematische analyse, Descriptoren en Indicatoren

- Uitgewerkt waar ontwikkeling WOZ raken aan KRM

- Vervolgonderzoek MONS/Wozep/overig, bepaalde punten nadere uitwerking nodig hoe KRM toe te passen op WOZ
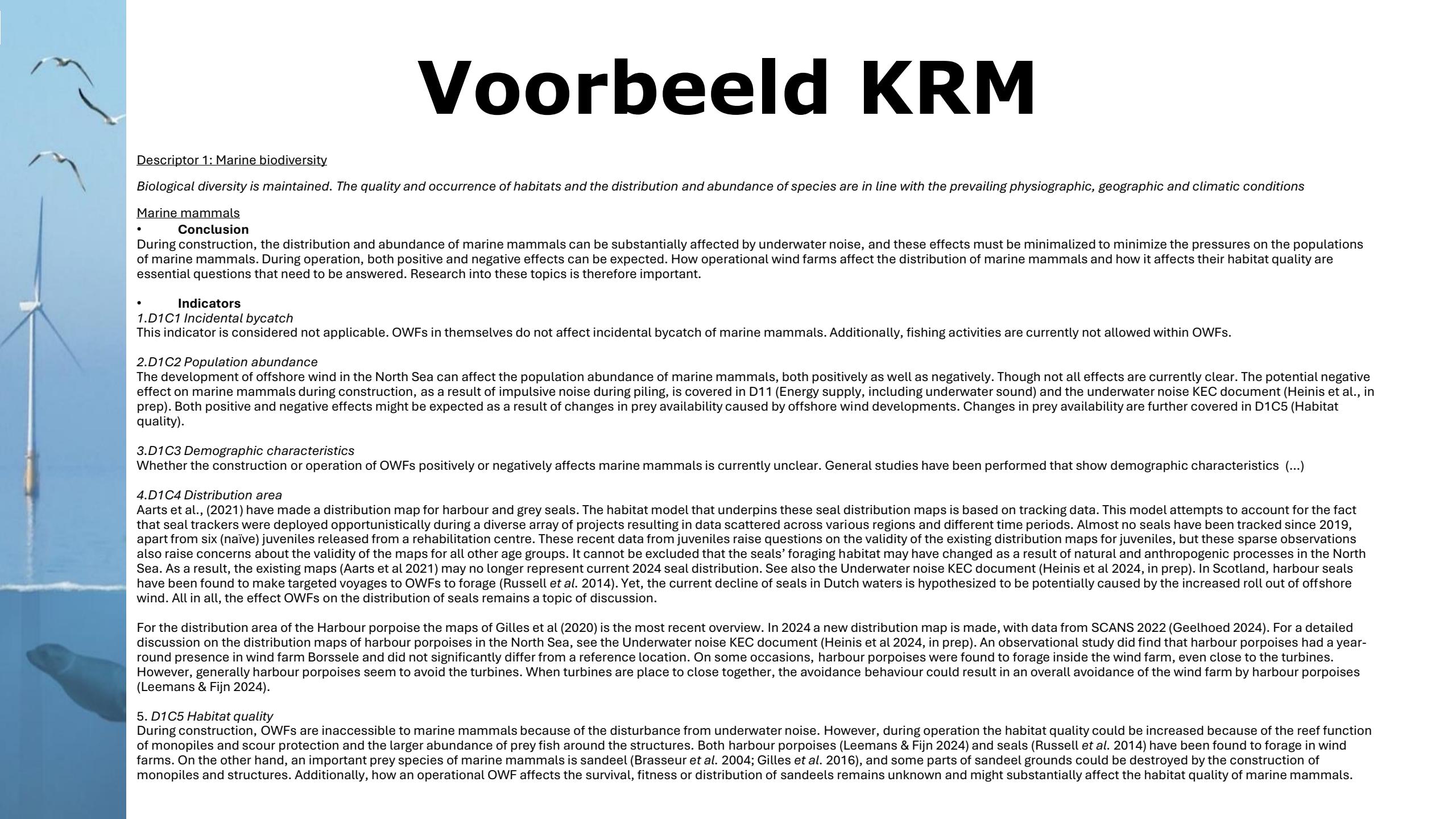
Voorbeeld KRM

Descriptor 1: Marine biodiversity

Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with the prevailing physiographic, geographic and climatic conditions

Marine mammals
• **Conclusion**
During construction, the distribution and abundance of marine mammals can be substantially affected by underwater noise, and these effects must be minimalized to minimize the pressures on the populations of marine mammals. During operation, both positive and negative effects can be expected. How operational wind farms affect the distribution of marine mammals and how it affects their habitat quality are essential questions that need to be answered. Research into these topics is therefore important.

• **Indicators**
1.D1C1 Incidental bycatch
This indicator is considered not applicable. OWFs in themselves do not affect incidental bycatch of marine mammals. Additionally, fishing activities are currently not allowed within OWFs.

2.D1C2 Population abundance
The development of offshore wind in the North Sea can affect the population abundance of marine mammals, both positively as well as negatively. Though not all effects are currently clear. The potential negative effect on marine mammals during construction, as a result of impulsive noise during piling, is covered in D11 (Energy supply, including underwater sound) and the underwater noise KEC document (Heinis et al., in prep). Both positive and negative effects might be expected as a result of changes in prey availability caused by offshore wind developments. Changes in prey availability are further covered in D1C5 (Habitat quality).

3.D1C3 Demographic characteristics
Whether the construction or operation of OWFs positively or negatively affects marine mammals is currently unclear. General studies have been performed that show demographic characteristics (...)

4.D1C4 Distribution area
Aarts et al., (2021) have made a distribution map for harbour and grey seals. The habitat model that underpins these seal distribution maps is based on tracking data. This model attempts to account for the fact that seal trackers were deployed opportunistically during a diverse array of projects resulting in data scattered across various regions and different time periods. Almost no seals have been tracked since 2019, apart from six (naïve) juveniles released from a rehabilitation centre. These recent data from juveniles raise questions on the validity of the existing distribution maps for juveniles, but these sparse observations also raise concerns about the validity of the maps for all other age groups. It cannot be excluded that the seals' foraging habitat may have changed as a result of natural and anthropogenic processes in the North Sea. As a result, the existing maps (Aarts et al 2021) may no longer represent current 2024 seal distribution. See also the Underwater noise KEC document (Heinis et al 2024, in prep). In Scotland, harbour seals have been found to make targeted voyages to OWFs to forage (Russell *et al.* 2014). Yet, the current decline of seals in Dutch waters is hypothesized to be potentially caused by the increased roll out of offshore wind. All in all, the effect OWFs on the distribution of seals remains a topic of discussion.

For the distribution area of the Harbour porpoise the maps of Gilles et al (2020) is the most recent overview. In 2024 a new distribution map is made, with data from SCANS 2022 (Geelhoed 2024). For a detailed discussion on the distribution maps of harbour porpoises in the North Sea, see the Underwater noise KEC document (Heinis et al 2024, in prep). An observational study did find that harbour porpoises had a year-round presence in wind farm Borssele and did not significantly differ from a reference location. On some occasions, harbour porpoises were found to forage inside the wind farm, even close to the turbines. However, generally harbour porpoises seem to avoid the turbines. When turbines are place to close together, the avoidance behaviour could result in an overall avoidance of the wind farm by harbour porpoises (Leemans & Fijn 2024).

5. *D1C5 Habitat quality*
During construction, OWFs are inaccessible to marine mammals because of the disturbance from underwater noise. However, during operation the habitat quality could be increased because of the reef function of monopiles and scour protection and the larger abundance of prey fish around the structures. Both harbour porpoises (Leemans & Fijn 2024) and seals (Russell *et al.* 2014) have been found to forage in wind farms. On the other hand, an important prey species of marine mammals is sandeel (Brasseur *et al.* 2004; Gilles *et al.* 2016), and some parts of sandeel grounds could be destroyed by the construction of monopiles and structures. Additionally, how an operational OWF affects the survival, fitness or distribution of sandeels remains unknown and might substantially affect the habitat quality of marine mammals.

Vervolgproces

Wat gaan we nog doen:
- Nadenken over jullie opmerkingen en die laten verwerken
- Rapporten afronden
- Hopelijk goedkeuring en vaststelling door stuurgroep Wozep
- Rapporten openbaar en bruikbaar, voor eind van het jaar, afhankelijk van vaststelling
- 2025: Internationale review op geheel -> verbetervoorstellen
- 2025: Oppakken punten waar we tegenaan zijn gelopen: o.a. optellen habitatverlies en aanvaringen, hoe omgaan met effecten van trillen, verder uitwerken vleermuizenredeneerlijn, HALOMAR, doorontwikkelen status-aanpak ALI, analyse studiegebied, analyse juiste vogels, methodiek barrièrewerking, etc….

Nabranders?