



Ministry of Infrastructure and the
Environment

Wozep Webinar

7 december 2021

Tussenstand 2021

Wozep projectteam

RWS WVL/ZD

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Rijksoverheid

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 >](#)





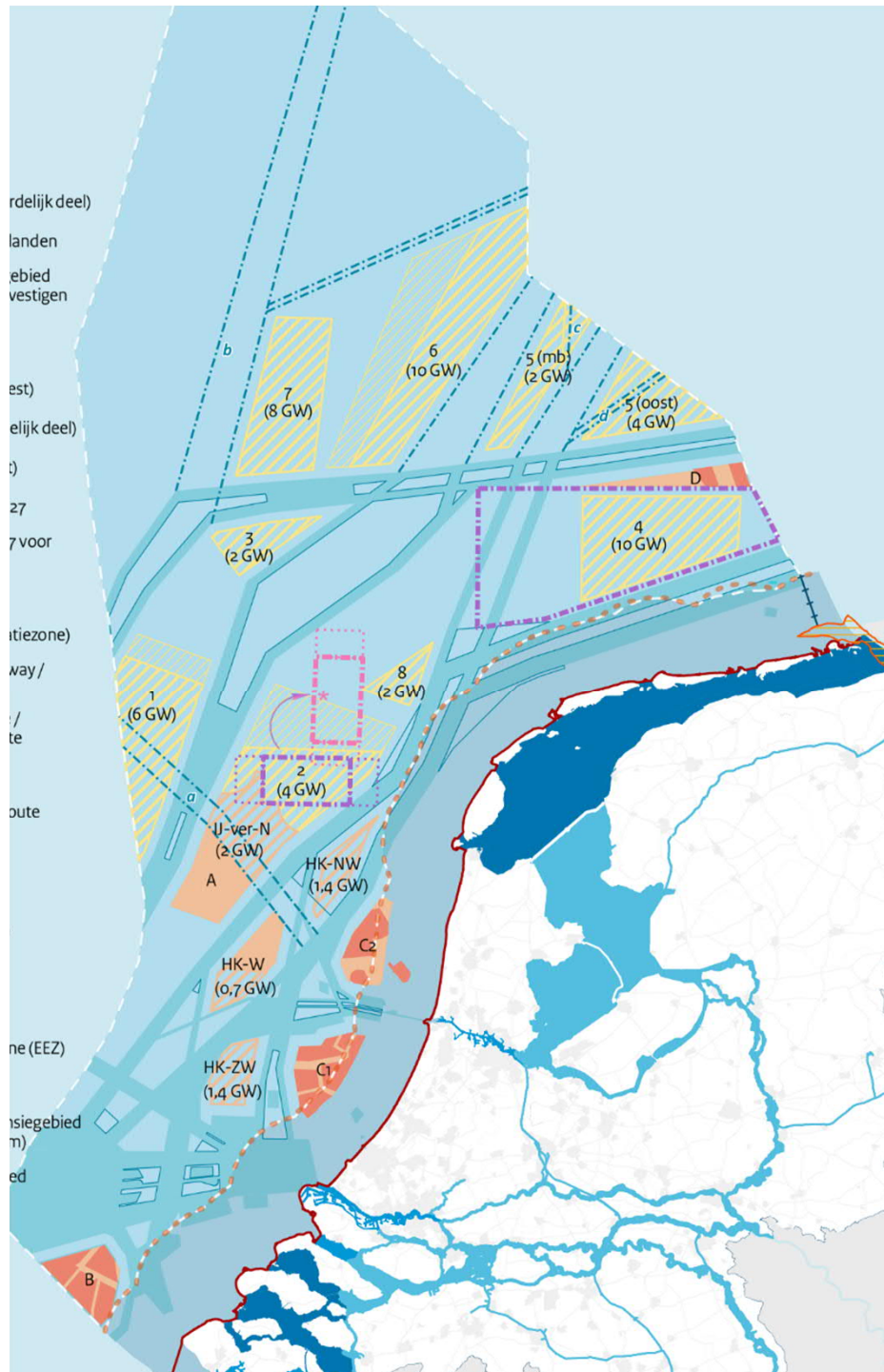
Stand van zaken en ontwikkelingen WoZ

- Wozep 2016-2023, meeste budget in onderzoek omgezet
- Kennis inzet in planproces, routekaart, kavelbesluiten, voorschriften, MER, PB
- Inzet KEC voor doorrekening routekaart
- Nieuw is inzet KEC voor keuze zoekgebieden Programma Noordzee (vanuit afspraak in NZA)
- Inzet populatiemodellen vogels en toepassing Acceptable Levels of Impact (ALI's)



Ontwikkelingen uitrol WoZ

- Routekaart 2030 11 GW
- Versnelling 10,7 GW (16,7 GW doorgerekend)
- Wat betekent dit voor Wozep: versnelling in kennisbehoefte (aanvullend budget)



Birds

The research on birds focuses on habitat loss & displacement and collision risk through different kinds of studies. Results and data from these studies are used as input for several models to calculate the impact on populations.

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?



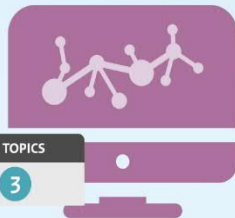
Observations in OWF's and radar studies

Looking at flux, avoidance behaviour and general behaviour in OWF presence



Following individuals, observations in colonies

Looking at fitness and behaviour



Desk studies

Analyzing existing data, updating existing large databases (e.g. ESAS)

INPUT FOR MODELS



Models

Population, Individual Based Model (IBM), Collision Risk



IMPACT ON POPULATION



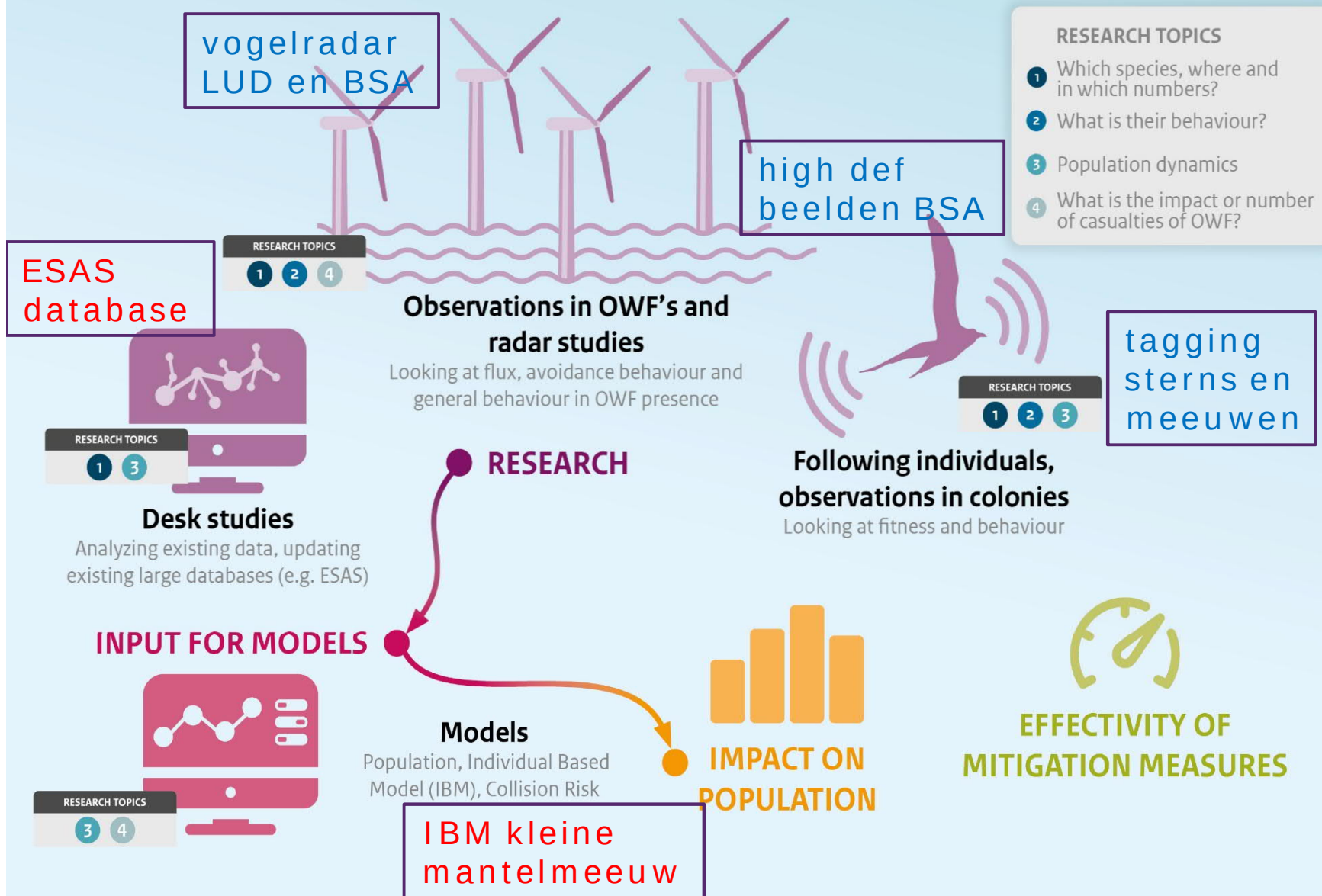
EFFECTIVITY OF MITIGATION MEASURES



Resultaten 2021

Birds

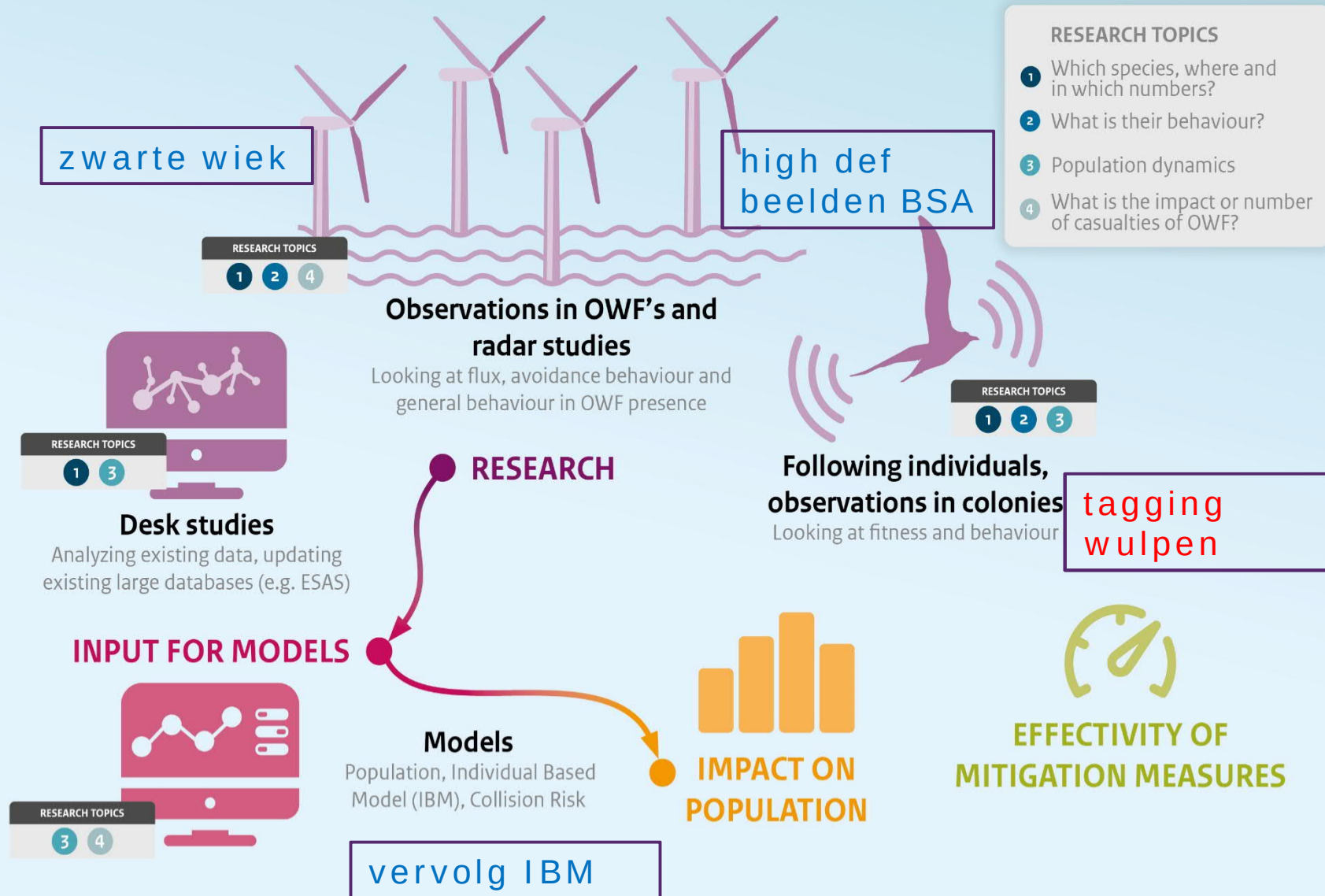
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Plannen 2022

Birds

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Conclusie en toekomstige richting vogels

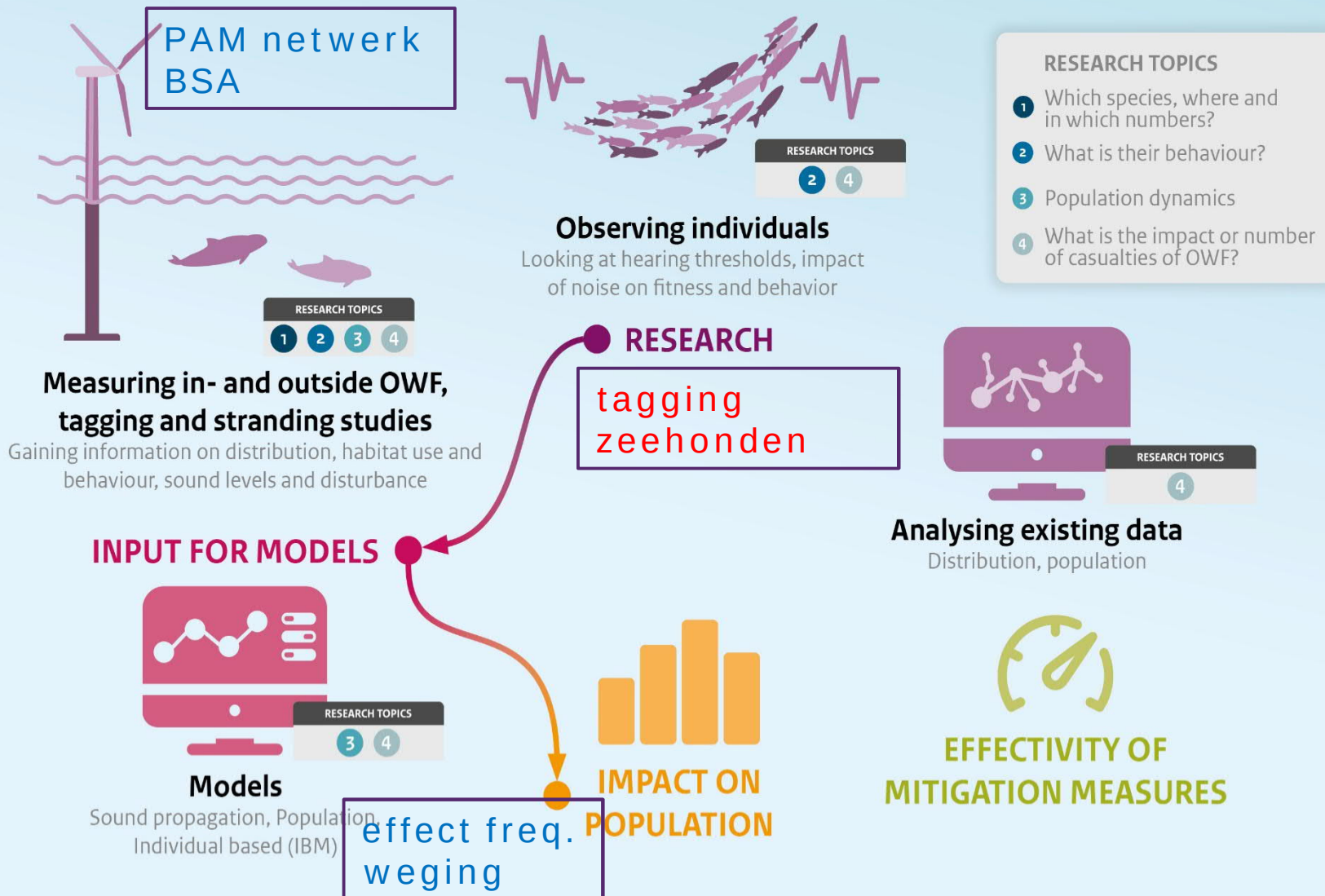
- Meer inzicht in bewegingen kustvogels (meeuwen en sterns) op zee
- Aantoonbaarheid van habitatverlies (en gewenning?) hopelijk met high def. project
- Vogels niet meer splitsen in effecten aanvaringen en habitatverlies maar zeevogels, kustvogel en trekkende niet-zeevogel. Verschillen in afhankelijkheid van Noordzee.
- Vervolg onderzoek trekbanen en trekhoogtes trekvogels
- Versterk samenwerking Noordzee landen (CEAF?) vanwege grensoverschrijdend gebruik NZ kwetsbare soorten
- Kans om ism MONS meer inzicht te krijgen (IBM's, soortbeschermingsplannen)



Resultaten 2021

Marine mammals

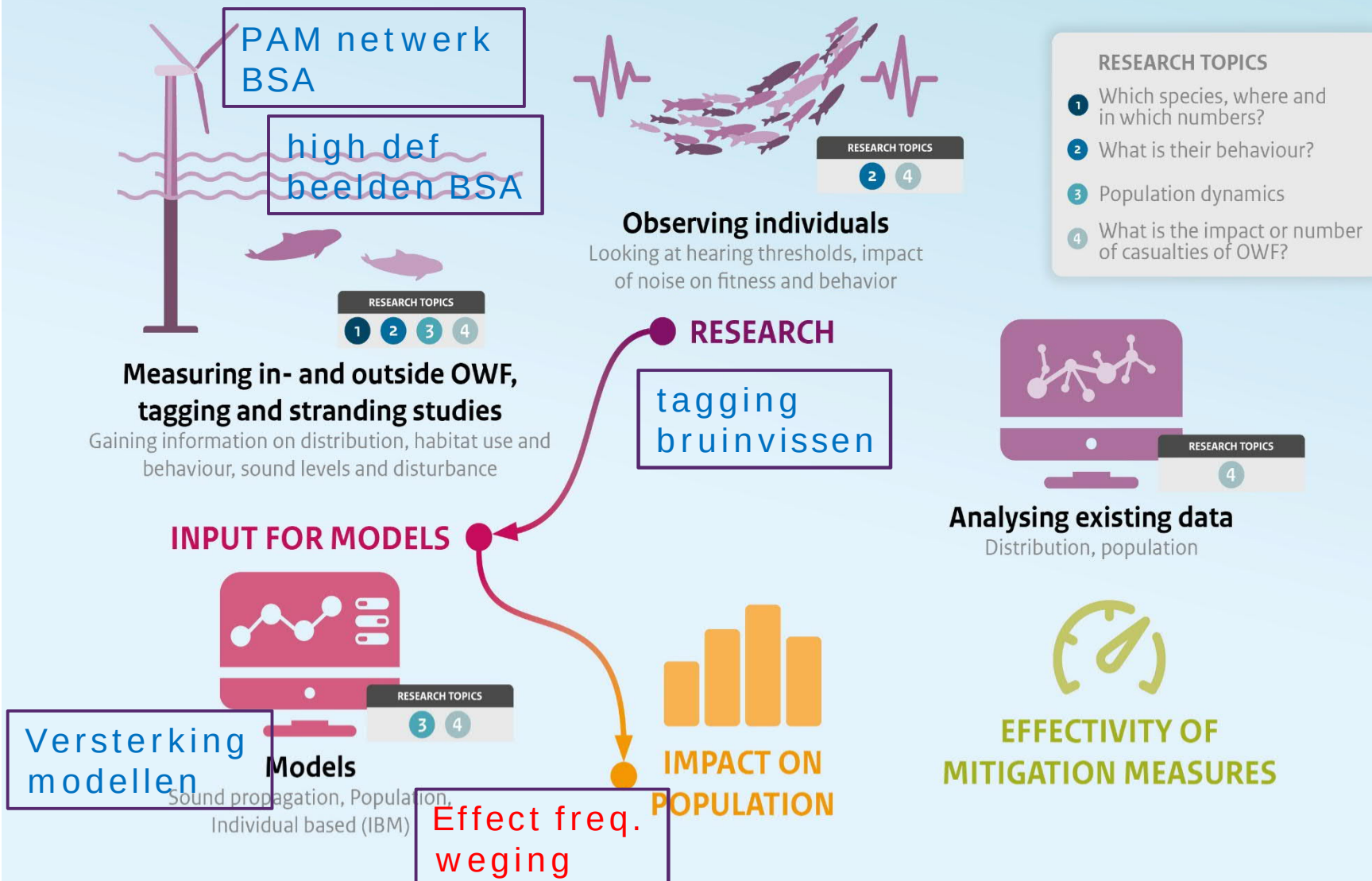
The research on marine mammals is focused on the impact of offshore wind on distribution, habitat use, behaviour and fitness, with a main focus on the impact of underwater noise. This is done through different studies. Results and data from these studies are used as input for several models to calculate the impact on populations.



Plannen 2022

Marine mammals

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Conclusies en toekomstige richting zeezoogdieren

- Werken aan inzicht in hoeverre operationele parken weer gebruikt worden door bruinvissen en zeehonden (terugkeer, operationeel geluid en onderhoudsgeluid)
- Versterking modellen: van iPCOD naar PCOD, vergelijking met Depons, IBM zeehonden
- Wat is het gedrag van bruinvissen? hopelijk met tagging meer zicht op
- Meer inzicht in seizoensvariatie en verspreiding bruinvissen

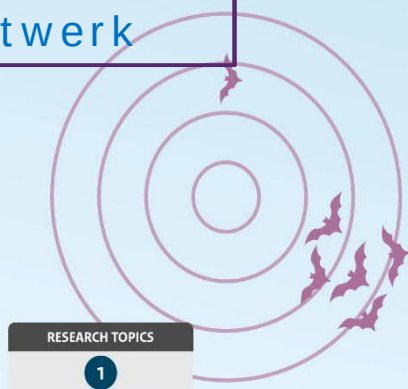


Resultaten 2021

Bats

The research on bats focuses on gaining more knowledge on the specific conditions under which bats are at sea, their activity and behavior in offshore wind farms. This is done through different studies. Currently bat research is still in its early stages as bats are quite an elusive research subject.

kust en zee
netwerk



Batdetector study

Information on spatial and temporal patterns



RESEARCH TOPICS

2

Radio telemetry

Distribution, migration patterns

r.d. en
rosse
vleermuis

RESEARCH TOPICS

- 1 Which species, where and in which numbers?
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Possible future
research

INPUT FOR MODELS



Models



IMPACT ON
POPULATION



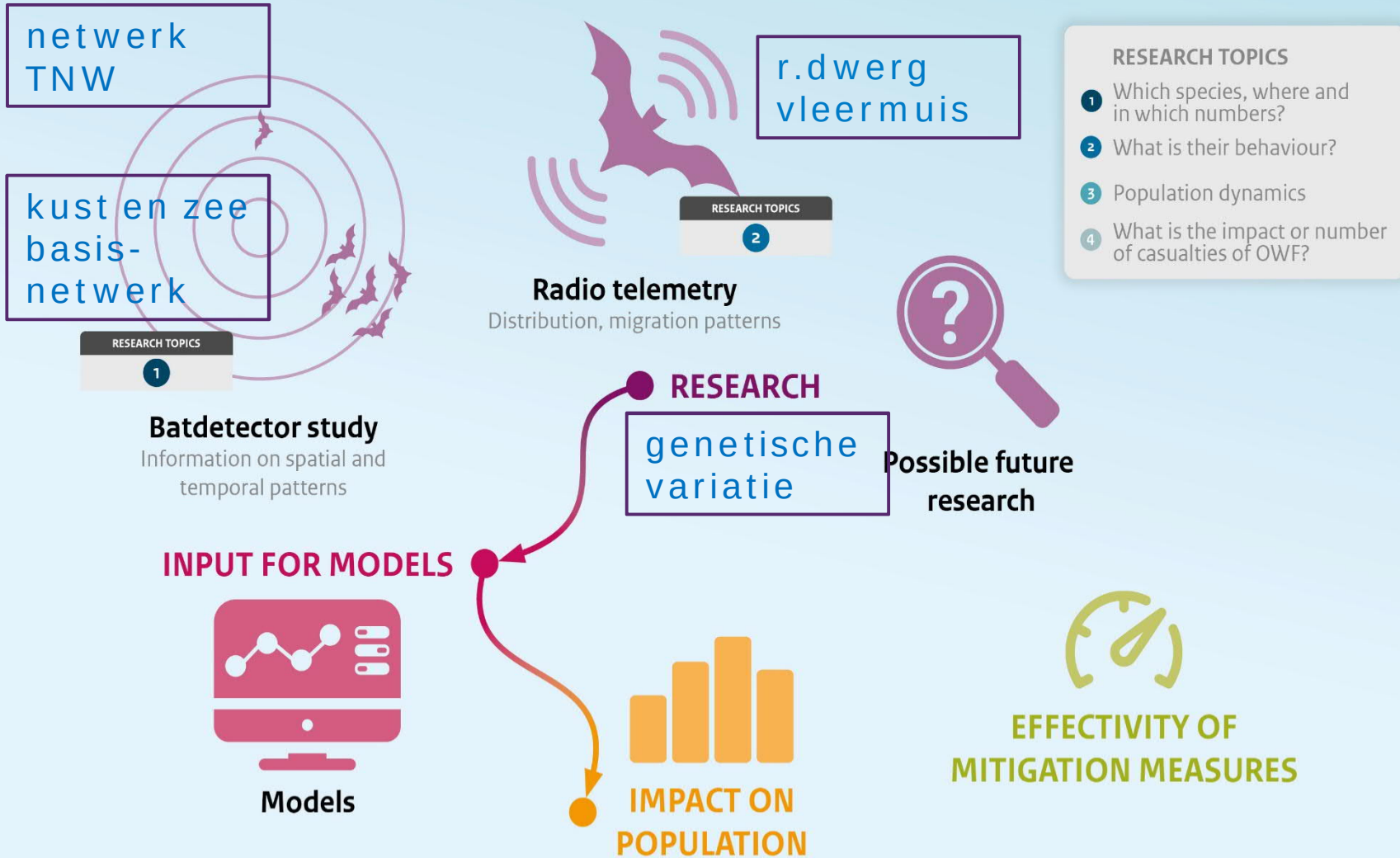
EFFECTIVITY OF
MITIGATION MEASURES



Plannen 2022

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Conclusies en toekomstige richting vleermuizen

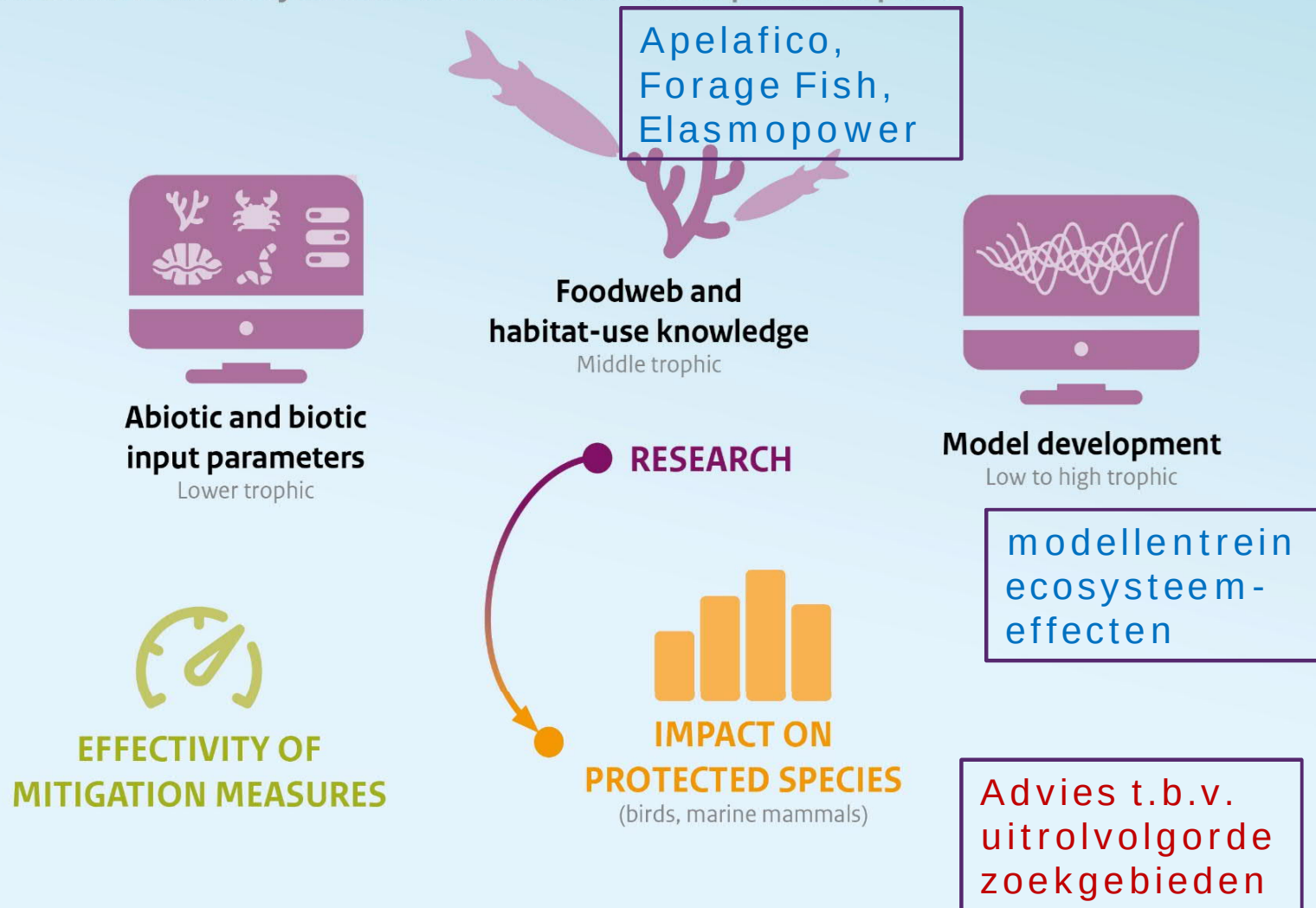
- Voorschrift start stop is onderbouwd en opgesteld vanuit voorzorgsprincipe
- Focus voor data-inwinning batdetectoren verschuift naar ten noorden van de Wadden
- Via genetische variatie kun je iets zeggen over kwetsbaarheid populatie
- Nog zoekende naar kosteneffectieve aanpak te vinden voor bepalen aanvaringslachtoffers



Resultaten 2021

Ecosystem effects

The research on ecosystem effects focuses on gaining more knowledge on the abiotic and biotic parameters that determine the preferred habitat of protected species. Models are being developed to be able to assess the impact of offshore wind on the ecosystem and the knock-on effects on protected species.

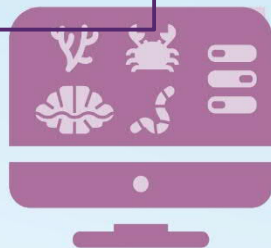


Plannen 2022

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benthos zacht
substraat
survey



**Abiotic and biotic
input parameters**
Lower trophic



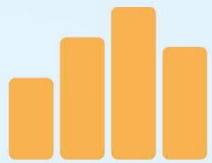
**Foodweb and
habitat-use knowledge**
Middle trophic



Model development
Low to high trophic

RESEARCH


**EFFECTIVITY OF
MITIGATION MEASURES**


**IMPACT ON
PROTECTED SPECIES**
(birds, marine mammals)

modellentrein
ecosysteem-
effecten -
vervolg





Conclusies en toekomstige richting ecosysteemeffecten

- Effect filterfeeders opnemen in model
- Nader inzicht in effect op slib
- Ism MONS: inzet modellentrein en aanvullende metingen tbv validatie modellen
- Doorwerking ecosysteemeffecten naar beschermde soorten; missende schakels zoöplankton en vis: aandacht binnen MONS



Wozep – MONS samenwerking

- Huidige Wozep t/m 2023; Wozep 2 ('24-'30)
- Samenwerking al gestart door meedenken en adviseren aan de voorkant, verkenning gezamenlijke uitbesteding
- MONS rapport en MONS projectentabel – inbreng huidige Wozep projecten
- Delen van data, modellen en ervaring vraaggestuurd, systematiek van programma,
- Wozep korte lijn naar EZK; bundelen vragen MONS en Wozep