



Ministry of Infrastructure
and Water Management

Multi-Year program Wozep 2024-2030

Ambition, process and main
research tracks

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This Presentation

- › Ambition
- › Terms and conditions
- › Research strategy
- › Research Themes
 - Coastal and Sea birds
 - Migratory birds
 - Marine Mammals
 - Bats
 - Ecosystem/Foodweb
 - Cumulative Effect Assessment (KEC)





Ambition

- › Plan further ahead
- › Defined projects and plan, but still adaptive
- › Derived from both ecology and the task for development Wind at Sea (WoZ)
- › Goal oriented
- › Optimal cooperation with MONS projects



Terms and conditions research program

- Scope
 - Juridical, while regarding the ecosystem as a whole
- Goal
 - Reduce scientific uncertainties in the assumptions used
 - Reduce uncertainties about the long term effects
 - Develop knowledge to be used in mitigation
- Ambition
 - Driven by demand
 - Optimal integration with MONS
 - Advisory



Research strategy

- Looking at Knowledge gaps from Bottom Up and Top Down
 - Bottom-Up: Form Ecology
 - Top-Down: From bottlenecks and usage in the WoZ process
- Framework consists of 4 main categories
 - What are the direct and indirect effects of WoZ?
 - What is the spatial distribution and density of the species?
 - What do we know about behaviour? What are they doing where and why?
 - What is their population dynamics?
- Prioritising
- Staying adaptive

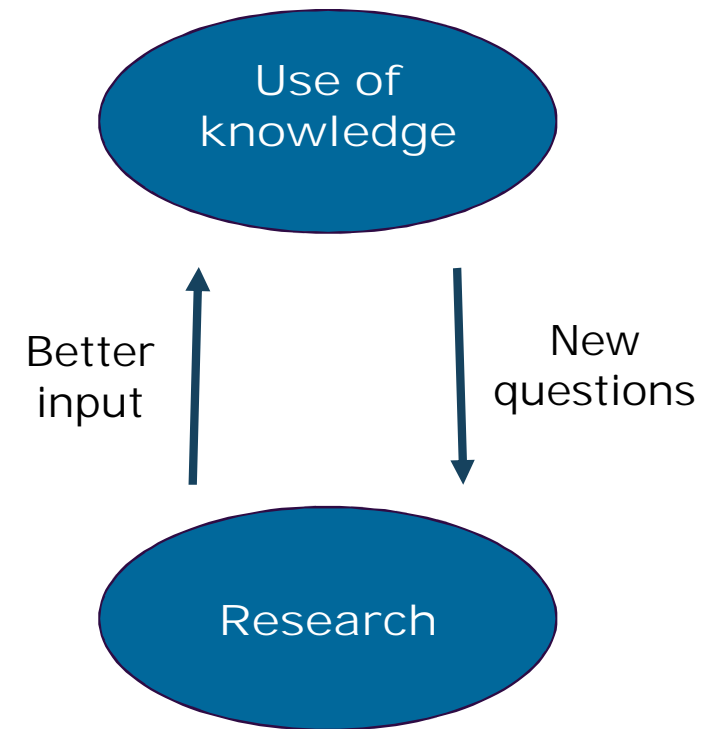


Prioritizing

- › Mainly from Top-Down
 - Which species
 - Planning and process roll out WoZ
- › Where are the largest uncertainties in:
 - Model validation (parameterization)
 - Model development
 - Costs VS Gains

Adaptivity

- › Yearly 'evaluation' and year plans
- › Possibility of 'pop-up' projects





Sea and Coastal birds

- › Main effects: Collisions and Habitat loss

- › Research focus:
 - Extend of habitat loss
 - Driving factors behind distribution
 - Getting insights in Habituation
 - Model improvement and tagging
 - Collisions
 - Register true collisions
 - Improve parameters for Collision risk models
 - Further development of Individual based models (IBM's)
 - Ecosystem modelling
 - Complex models with multiple effects





Migratory birds

- › Main effects: Collisions during mass-migration and barrier effects

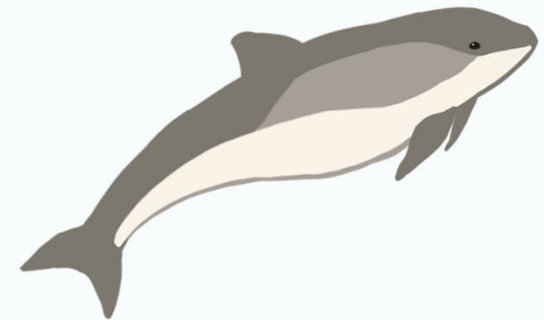
- › Research focus:
 - Relevant species for WoZ
 - Migratory patterns
 - Flight behaviour
 - Population Models
 - Mitigation



Marine Mammals

- › Main effects: Disturbance, habitat suitability

- › Research focus:
 - New foundation techniques, disturbance prevention
 - Improving Porpoise population parameters (e.g. distribution) and modelling
 - Effects operational phase
 - Ecosystem and Habitat suitability
 - Habituation





Bats (Nathusius's pipistrelle)

- › Main effects: Collisions during mass migration in autumn
- › Research focus:
 - Estimating population effects; improving assumptions
 - Flight behaviour
 - Spatial and temporal occurrence North of the Wadden
 - mitigation

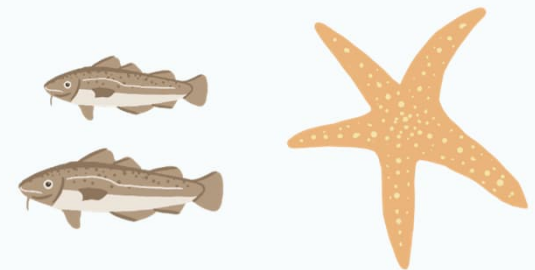




Ecosystem/Food web

- › Main effects: disturbance of the ecosystem and effects on higher foodweb species
- › Research focus:
 - Ecosystem modelling
 - Abiotic parameter improvement (*MWTL/international*)
 - Plankton (*MONS/international*)
 - Benthos (*soft and hard substrate development; MONS/international*)
 - Vis (*vis as food source and EMF; MONS/international*)

Coming 6 months will be used to make these plans and projects more specific





Cumulative Effect Assessment (KEC)

- › Improvement plan KEC
 - Fact Sheets on model use and improvement
- › Further development of the Acceptable Level's of Impact (ALI)
- › New calculations at significant moments



Finalization of the plan

- › Final editing: Now
- › Sharing concept with consultation group: March
- › Finalized and made public: April/May