



Addressing the Biodiversity Impacts of Offshore Wind Projects

MSP days 27.11.2024

Laboratory of Industrial Management / The Sea



Agenda for today



1

SOS presentation and goals for today's work

2

How can biodiversity be integrated in the context of offshore wind development?

3

Biodiversity knowledge sources and gaps

Short individual survey

Discussion about the knowledge sources in small groups

Plenary discussion to identify gaps

4

Next steps and end of day



SOS CENTRE FOR SUSTAINABLE OCEAN SCIENCE

MSP DAYS 27.11.2024



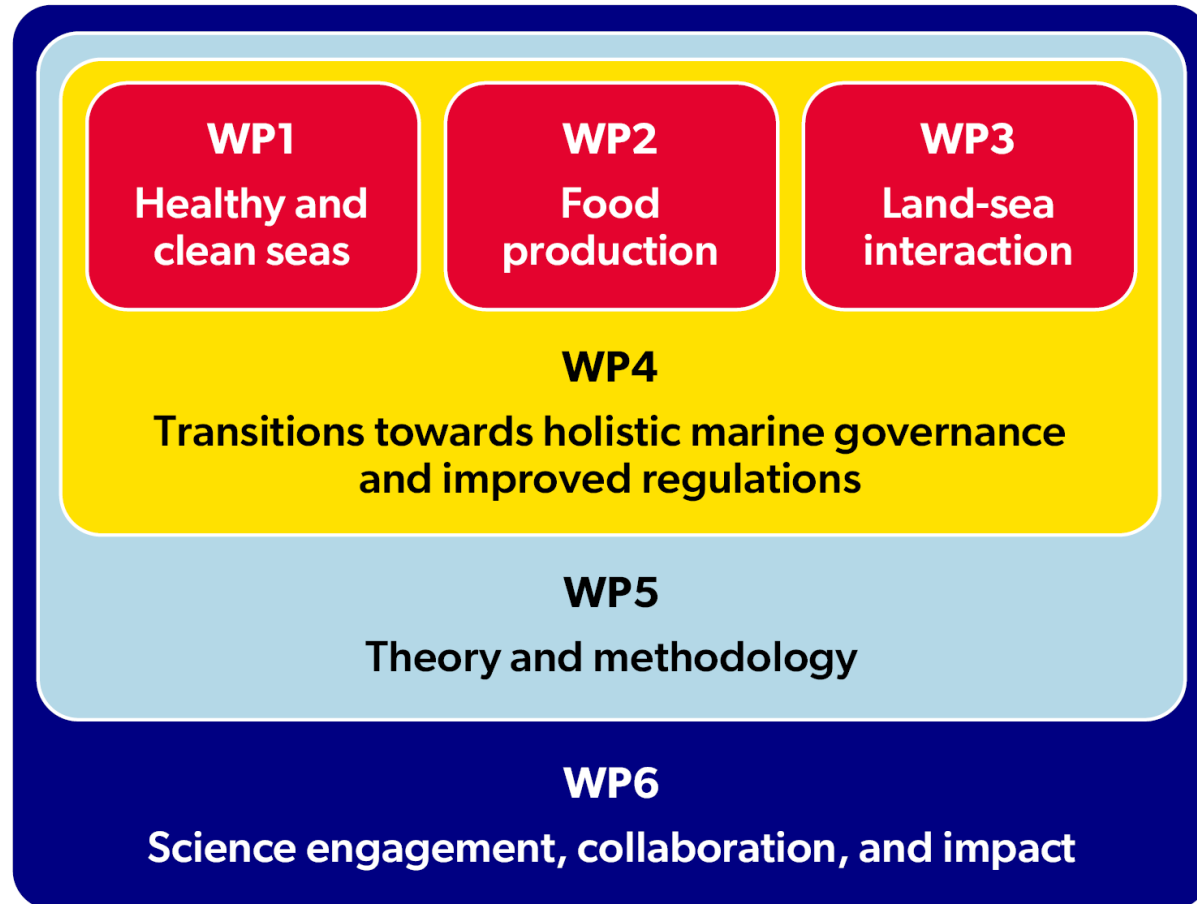
MISSION

We provide transdisciplinary knowledge on wicked problems linked to marine biodiversity and its role in the societal transition to sustainability.

- When and how do human actions interact with marine biodiversity in creating wicked problems?
- What can be done to solve such challenges, in research and in practice?



RESEARCH



The work is structured around 6 work packages.

- WPs 1–3 include specific case-studies of wicked problems.
- WPs 4–6 draw on these, support this work and synthesize the findings.

PEOPLE



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Environmental and Marine Biology



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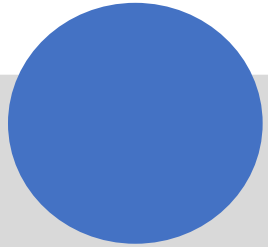


Malla Lehtonen
Research Assistant

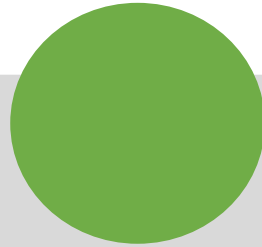


www.abo.fi/sos

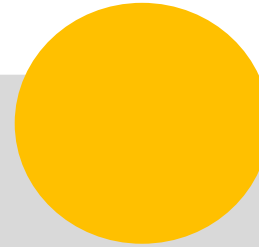
Goals and ways of working



Our goal in this workshop is to increase our shared understanding of biodiversity impacts in ORE projects.

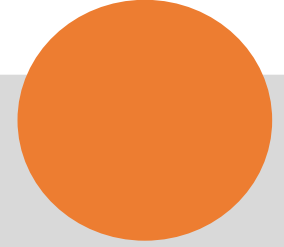


Results from this workshop are utilized in further studies carried out by Åbo Akademi / SOS and key messages from the workshop will be shared with the participants after the event.



Today's working language is English but you are welcome to speak and answer in Finnish as well. We will use Webropol during the workshop.

Your facilitators are from Sweco Finland and Åbo Akademi.



<https://link.webropol.com/s/MSP>



Integrating biodiversity in offshore wind developments

MSc. Thaysa Portela de Carvalho

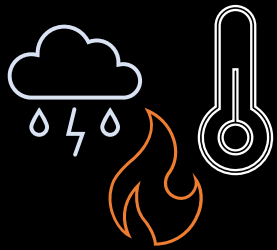
Laboratory of Industrial Management



The Sea



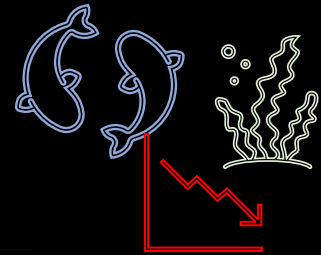
Our planet is being confronted with an extraordinary issue known as the **triple planetary crisis**, which includes three interrelated problems...



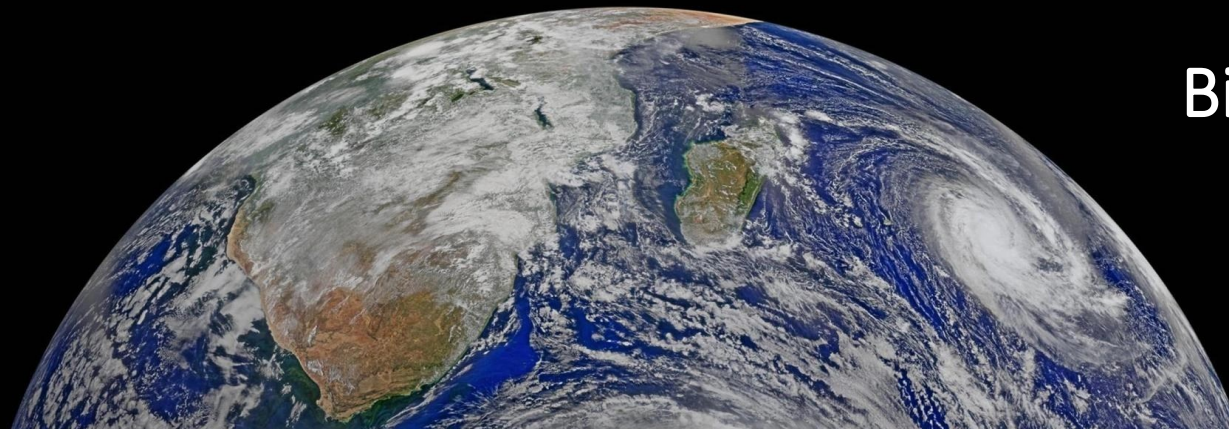
Climate change



Pollution



Biodiversity loss



The Green Deal is the EU's plan to tackle this ongoing triple planetary crisis. The Green Deal places high importance on offshore wind.

Offshore wind energy production is planned to increase by more than 16 times by 2050.

There are also aims to expand marine protected areas to 30 % by 2030.





However, offshore wind can influence marine ecosystems in both positive and negative ways.

Habitat loss/degradation/transformation

Barrier effects or displacement effects

Birds/bats collision

Trophic cascades

Hydrodynamic changes affect the ecosystem

Mortality, injury and behavioural effects associated with vessels

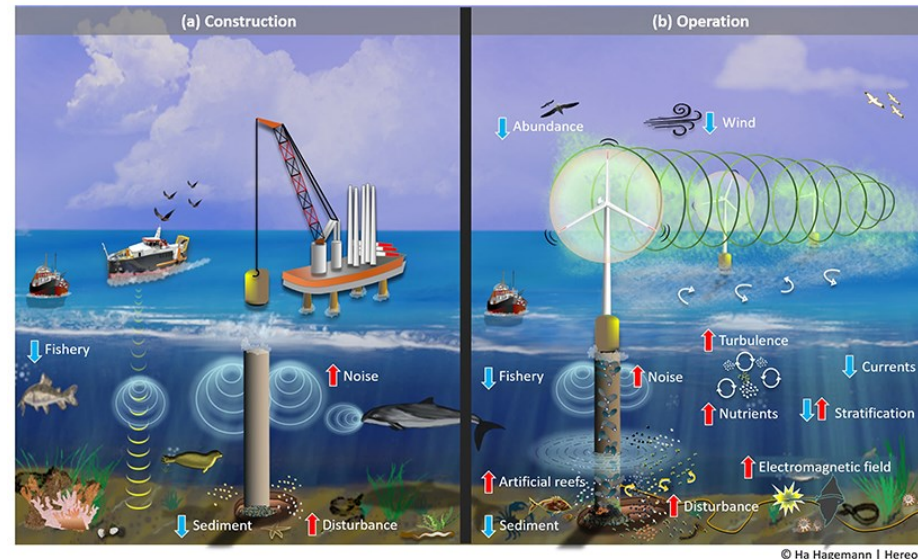
Behavioural effects associated with electromagnetic fields of subsea cables


Mortality, injury and behavioural effects associated with underwater noise

Pollution (e.g. dust, light, solid/liquid waste)



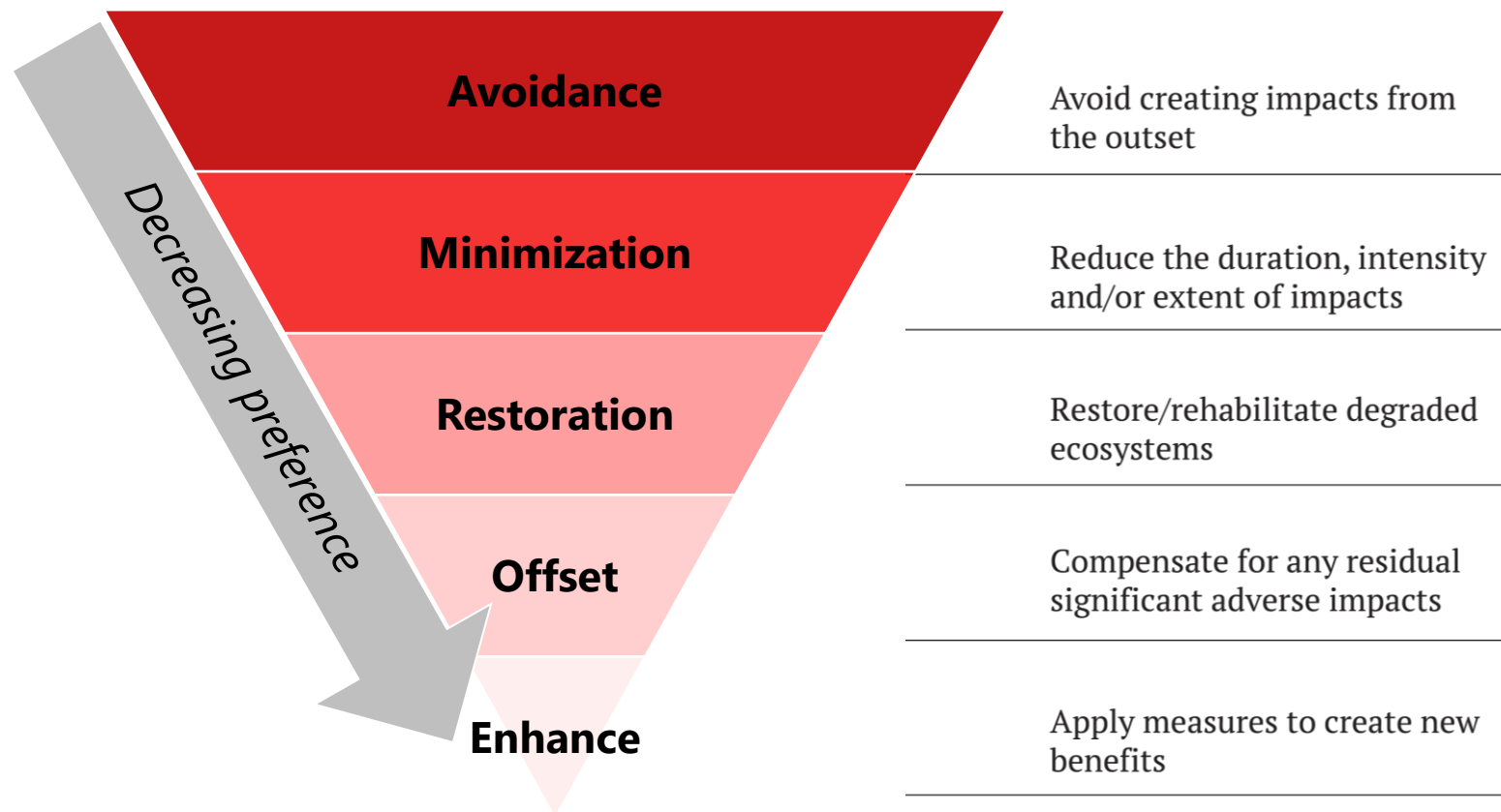
The impacts from offshore wind can differ throughout the different phases of the offshore wind project...



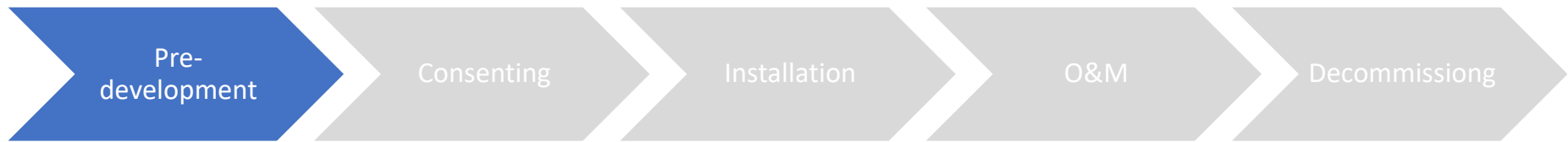
An illustration of a coastal scene. In the foreground, a seagull with white and grey feathers and an orange beak stands on a wooden post. The background features a blue sky with white clouds, several white wind turbines on a blue sea, and a small lighthouse on a yellow cliff to the right. A white speech bubble is positioned in the lower-left quadrant, containing text.

To mitigate and minimize unwanted impacts on marine ecosystems, further research, **meticulous planning**, long-term monitoring, and innovative solutions are key.

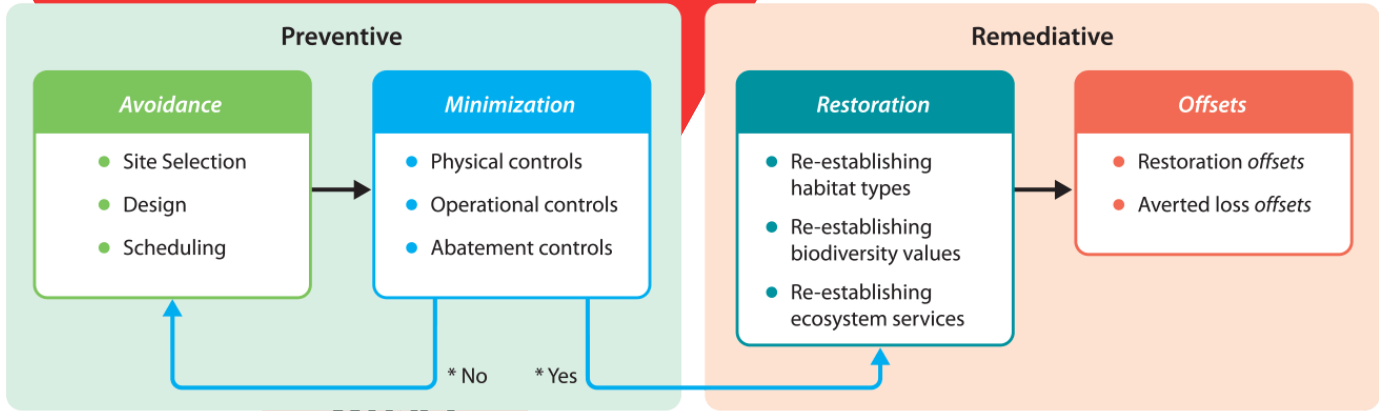
Biodiversity impacts can be addressed through different instruments in several ways.



Biodiversity Mitigation Hierarchy



MSP has a crucial role in identifying feasible sites for offshore wind energy projects, that balance the growth of the blue economy, social and environmental values.

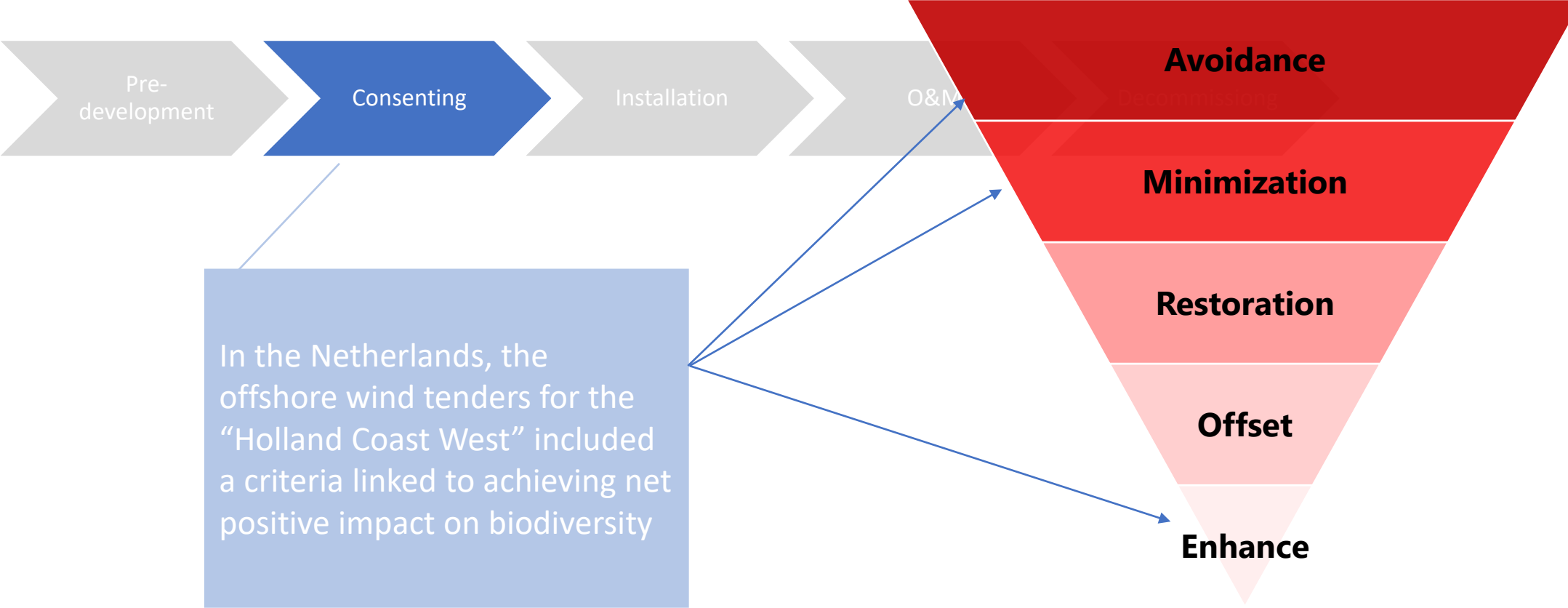


Enhance

Enhance

<http://www.csbi.org.uk/our-work/mitigation-hierarchy-guide/>

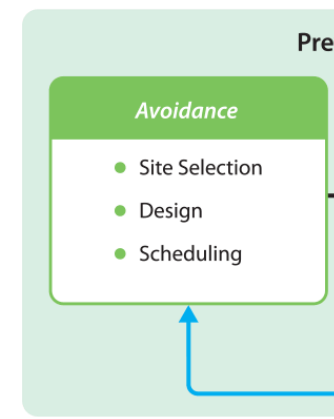
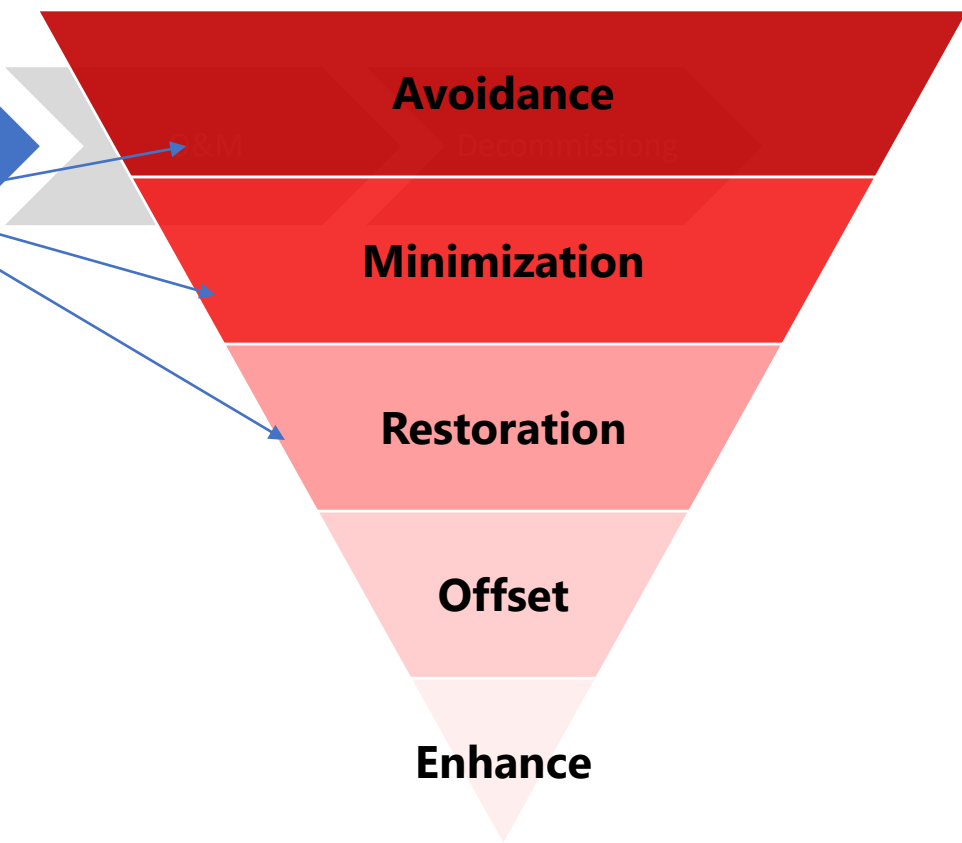
Other countries have started exploring the inclusion of biodiversity criteria in the consenting phase...



In the Netherlands, the offshore wind tenders for the "Holland Coast West" included a criteria linked to achieving net positive impact on biodiversity

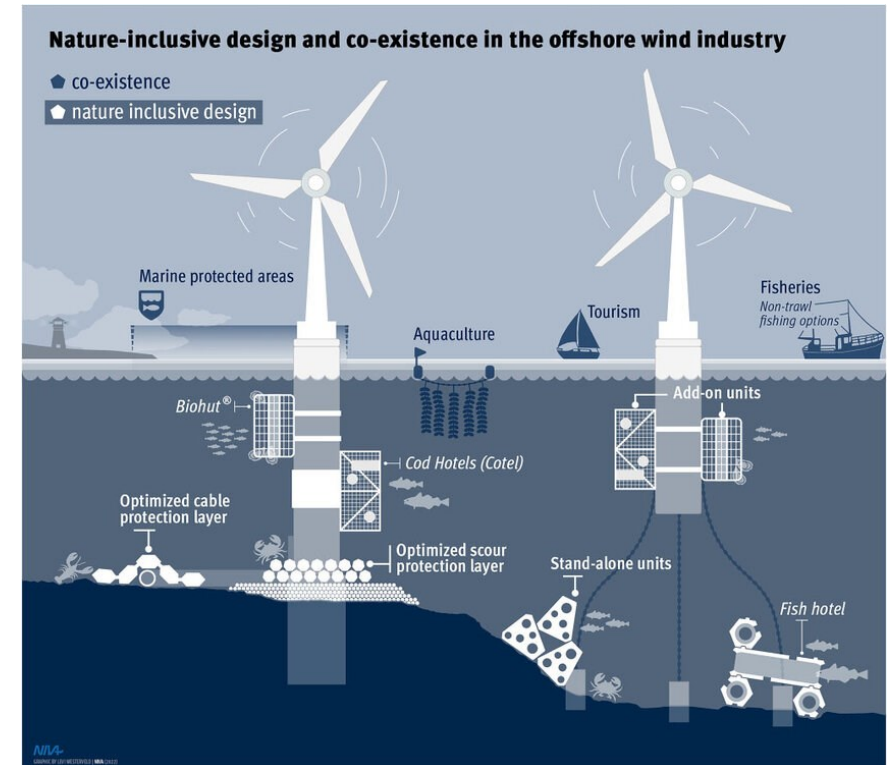


Big bubble curtain



“Emerging” concepts advocated in EU policies and the offshore wind sector to effectively address biodiversity impacts can be understood with the help of MSP

- Co-existence → identification of synergies
- Nature based solutions
- Nature inclusive design
- Nature positive project



10.1093/icesjms/fsad191.

Takeways linked to MSP

- Essential for avoiding negative impacts.
- MSP provides the baseline regarding the ecosystem's status and needs, which can help for example in early identification of restoration demands.
- Also, important in identifying potential positive impacts, especially regarding uses synergies.
- The discussion of nature “enhancement” propositions (or overall other steps in the Mitigation Hierarchy) may not be under the MSP mandate, however exploring how MSP can support the OW sector in better mitigating the impacts may offer an opportunity for engagement.
- Finally, biodiversity monitoring and more research testing different mitigation actions are needed. These can better inform MSP practitioners and improve the coordination of offshore wind activities.

A close-up photograph of two geckos resting on a dark, textured surface. The gecko on the right is in focus, showing its large, glowing blue eyes with a golden-yellow ring. The gecko on the left is slightly out of focus. The word "Kiitos!" is written in red text in the center of the image.

Kiitos!

Biodiversity knowledge sources and gaps



Today we will work in three rounds

1. INDIVIDUAL TASK

What do we base our decisions on now?

Answer a short survey about your work in ORE development and your use of biodiversity knowledge and possible gaps in the process.

2. SMALL GROUP

What types of information do we have?

Discuss your answers in small groups. Do you use similar knowledge sources for similar causes? Have you noticed similar gaps?

3. PLENARY

What kinds of gaps do we have and how to fill them?

Plenary discussion to further identify what kinds of barriers we have in making good biodiversity decisions in ORE development.

1. What do we base our decisions on now?

Fill out a short survey on the topic of biodiversity knowledge and gaps



<https://link.webropol.com/s/MSP>

2. What types of information do we have?

Form groups of 2-4 and go through your answers and thoughts

- **Do you use similar biodiversity knowledge sources?**
- **Do you use them for similar reasons?**
- **Did you recognize any gaps?**

3. What kinds of gaps do we have and how to fill them?

Let's look at the results and discuss together

What kinds of gaps do you recognize?

Are the biggest gaps in knowledge, regulation, laws, governance, or somewhere else?

What recommendations do you have for filling the gaps?

What should happen next?

Placeholder for graphs from webropol:

- Answers to what biodiversity knowledge is used for
 - What sources are being used
 - If there is gaps
 - What kinds of gaps

3. What kinds of gaps do we have and how to fill them?

What kinds of gaps do you recognize?

Are the biggest gaps in knowledge, regulation, laws, governance, or somewhere else?

What recommendations do you have for filling the gaps?

What should happen next?

Next steps and end of the day

Anna and Laura