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ELBE HABITAT FOUNDATION

Nature-based solutions for the Elbe estuary?

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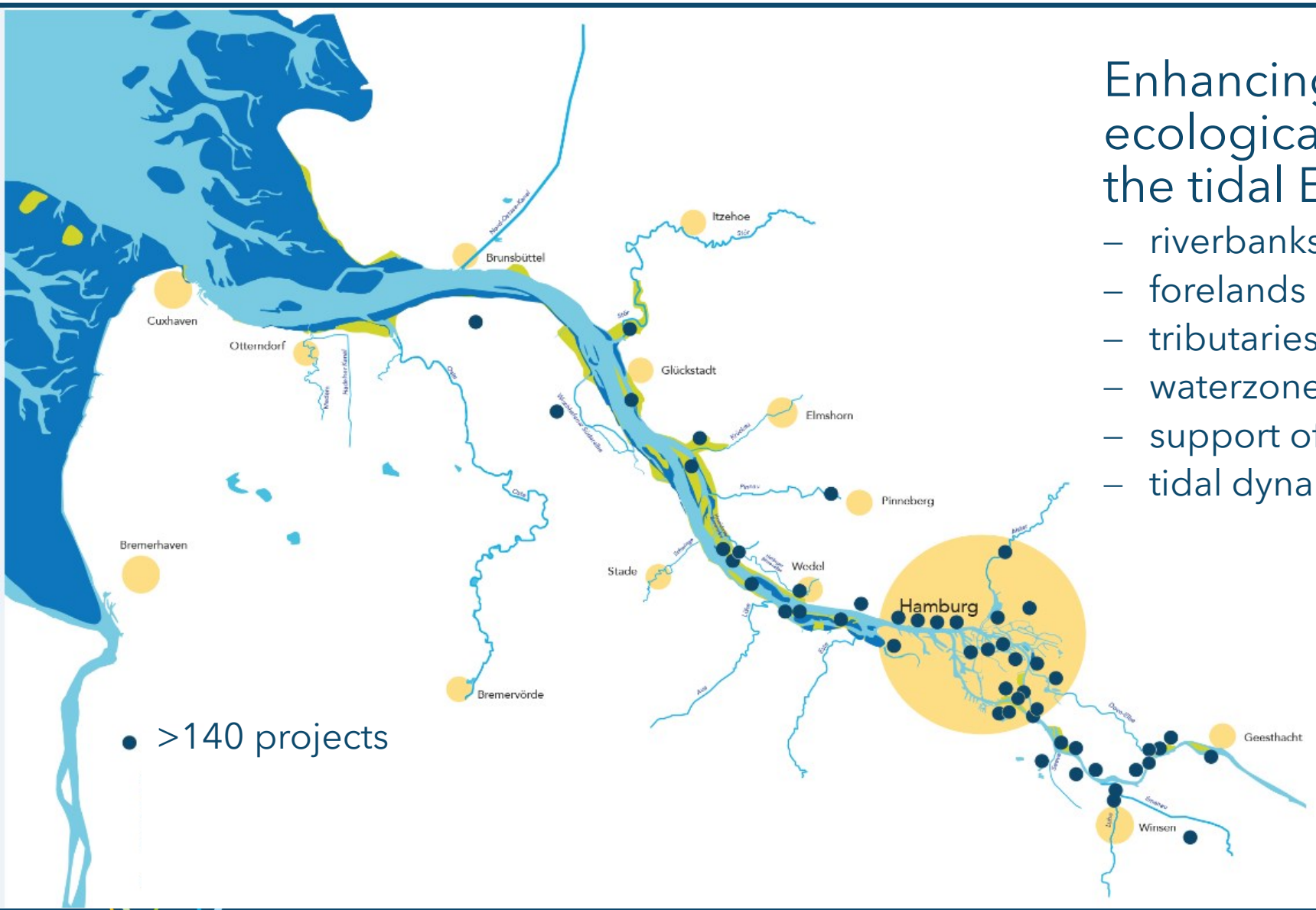

Enhancing the ecological status of the tidal Elbe

- riverbanks
- forelands
- tributaries
- waterzone itself
- support of species
- tidal dynamics

Key Challenges

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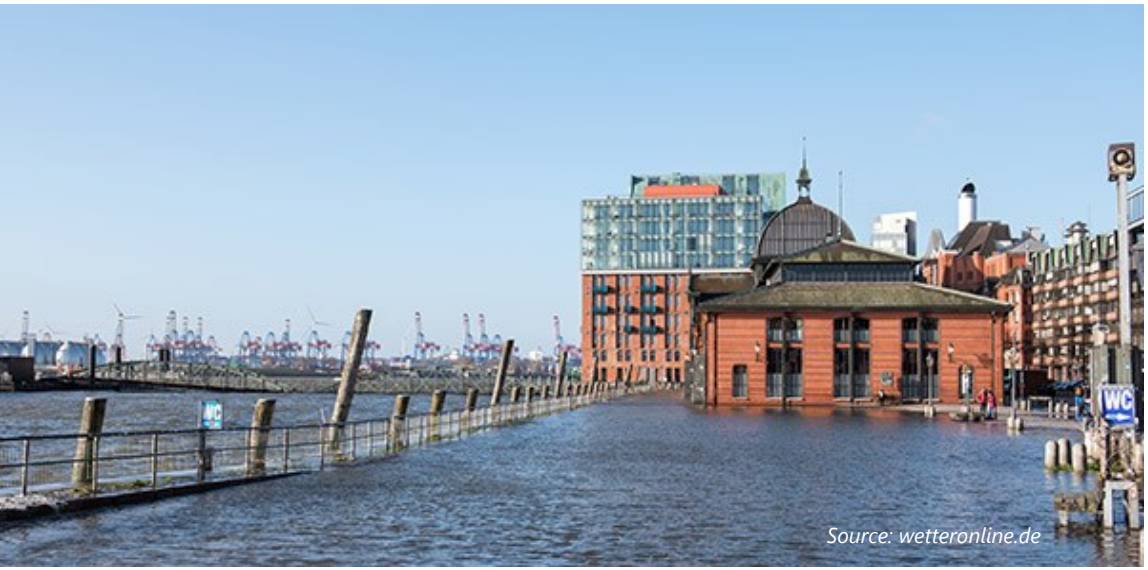

Source: wetteronline.de

- storm surge & sea-level rise
- foreland losses
- ecological connectivity


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Are Our Projects Nature-Based Solutions (NBS)?

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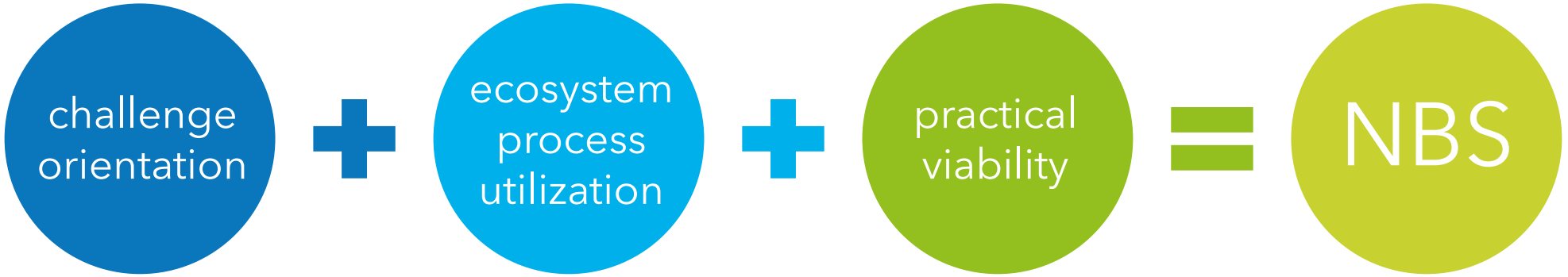
Our view on NBS

- result of a specific normative and socio-technical endeavour
- measures / projects must fulfill key criteria (Albert et al. 2019)



Which problem of social concern is being tackled?

How are ecosystem processes stimulated?

Is it technically, financially and socially feasible?

1. Example: Tidal Creeks

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6 tidal creeks newly built

12 tidal creeks revitalised

area: 20.000 m²

additional mudflat area: 3.000 m²

1. Example: Tidal Creeks

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challenge orientation

- contributing to Natura 2000
- promoting diversity & dynamics in the riverbank zone

✓

ecosystem process utilization

- expanding the influence of dynamic processes
- restoring habitat structures for diverse species

BUT: proof of effectiveness is a question of scale

(✓)

practical viability

- feasibility is given
- availability of land can be the limiting factor
- monitoring is being carried out

✓

2. Example: Floating Islands for the Port Area

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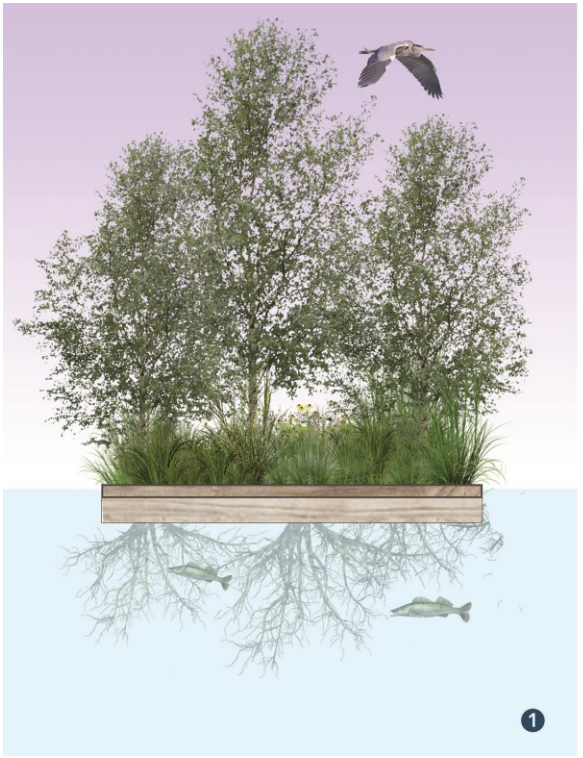
- 6 floating habitat modules constructed as prototypes (6m x 5m each)
- planting with reeds and riparian shrubs planned for mid-April 2024



2. Example: Floating Islands for the Port Area

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challenge orientation

- ecological passability through the port highly restricted
- highly adverse abiotic conditions

(✓)

BUT: How many islands are needed?

ecosystem process utilization

- providing artificial habitats
- floatable, robust construction without using plastics

(✓)

BUT: To what extent it is used by certain species?

practical viability

- technically and financially feasible

(✓)

BUT: Safe berths & area-wide installation still required

3. Example: Training Wall in the Estuary Mouth

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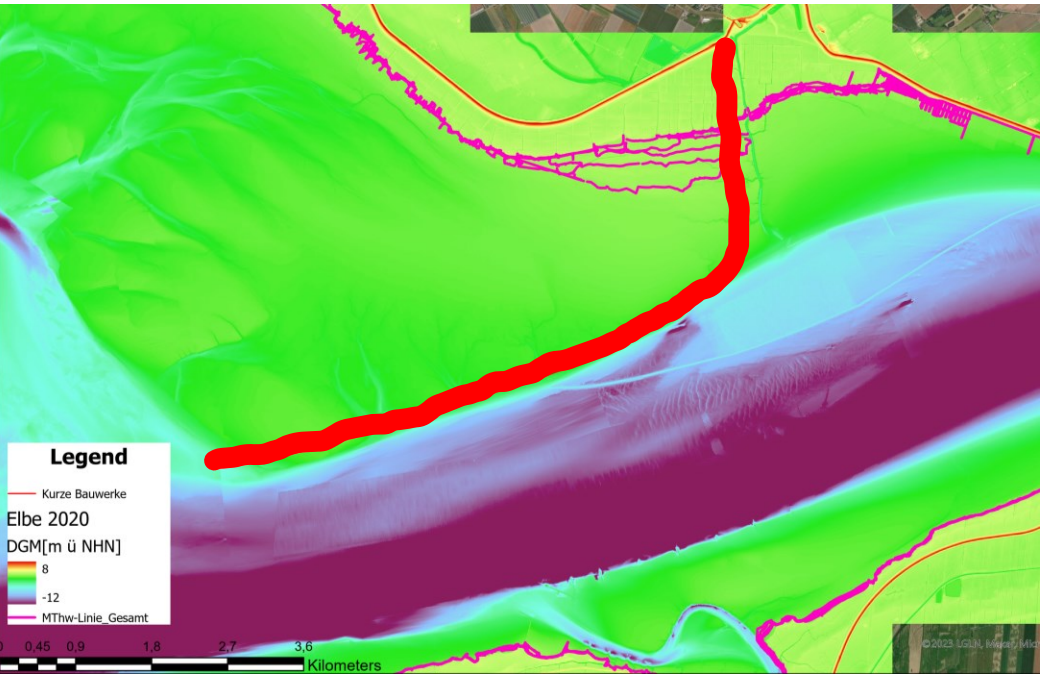
- idea: reinforcing an old training wall
- preliminary study is being carried out
- training walls in the Seine estuary as a role model



training wall: a modelled option

training wall: with tidal flats in the Seine estuary

3. Example: Training Wall in the Estuary Mouth

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challenge orientation

- heavy sediment transport into the inner estuary
- SLR reduces the buffering effect of tidal flats
- input to the public debate on climate adaptation

✓

ecosystem process utilization

- using a massive construction for ecological purposes
- guiding hydrodynamics to promote tidal flat growth

BUT: effectiveness has to be proved

(✓)

practical viability

- technically and financially feasible

BUT: political will is required

(✓)

Conclusion

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Are our examples nature-based solutions?

- depends on the interpretation and evaluation of the NBS criteria
- NBS is an iterative planning task
- reflective and transparent approach important

Thank you!

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