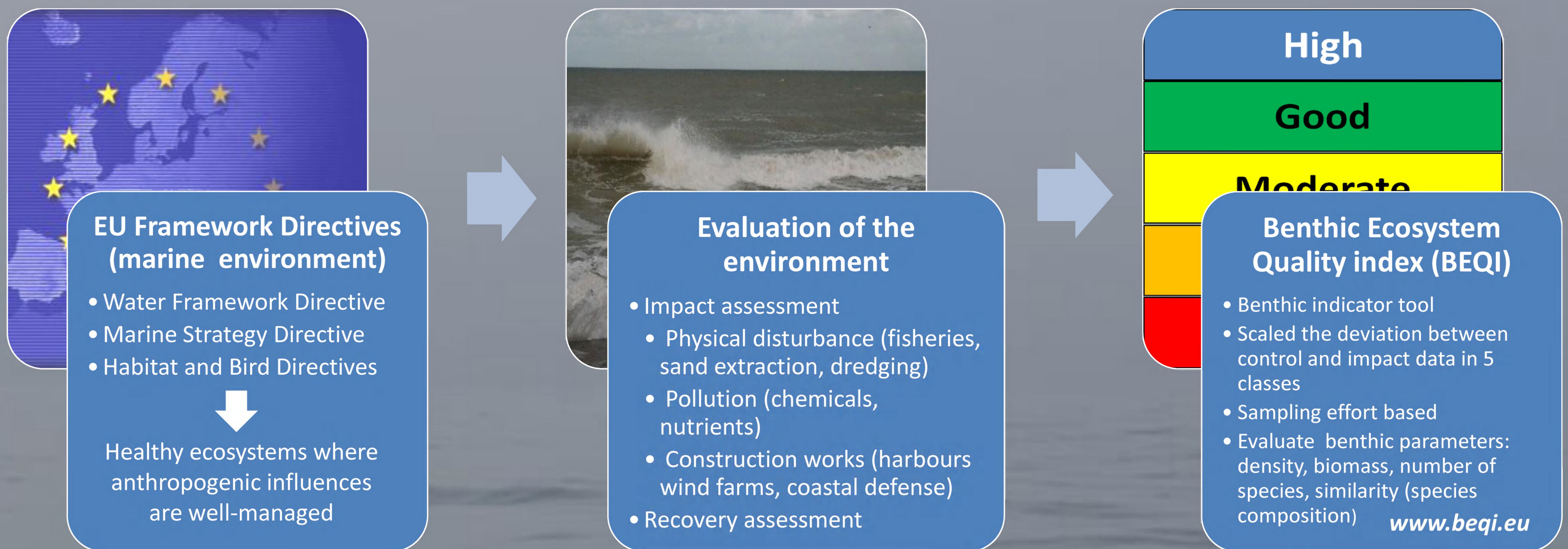


Measuring the impact degree of different pressure types with the Benthic Ecosystem Quality Index (BEQI) H:25

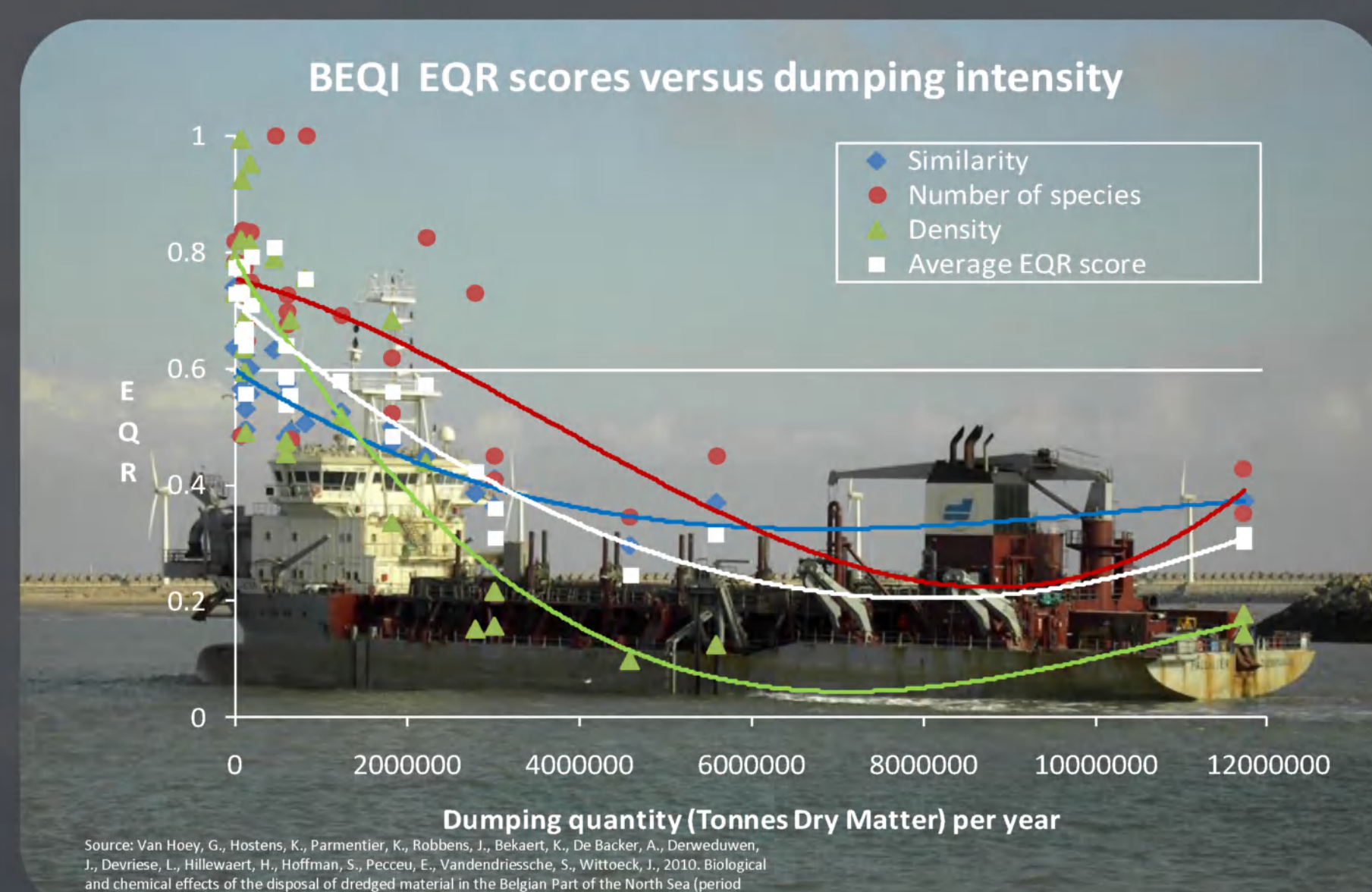


Gert Van Hoey¹, Tom Ysebaert² and Kris Hostens¹



MEASURING IMPACT DEGREES: CASE STUDIES

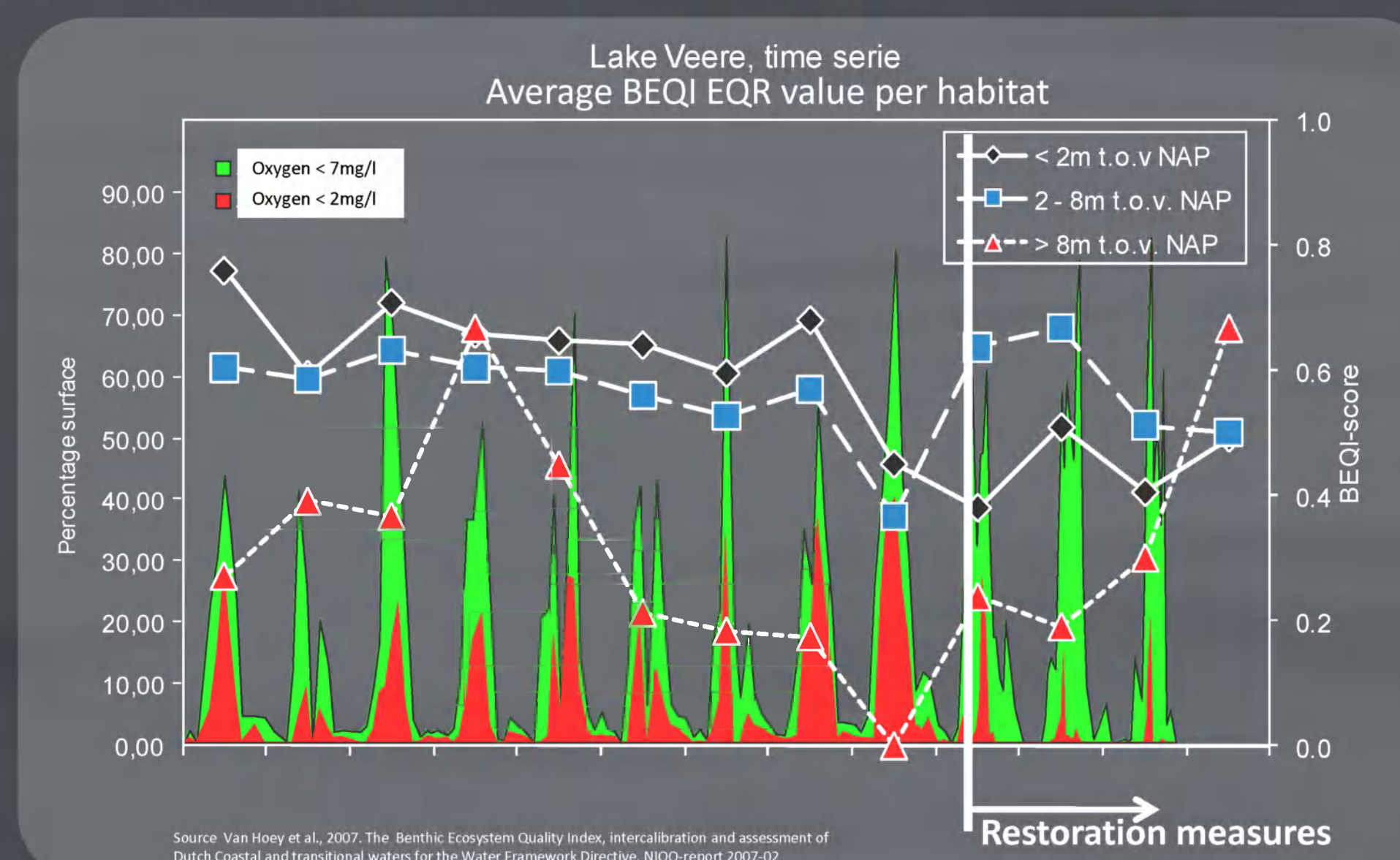
Dumping of dredged material (BE)



Evaluation of the impact at 5 dredge disposal sites (2006-2008) in Belgian Coastal waters

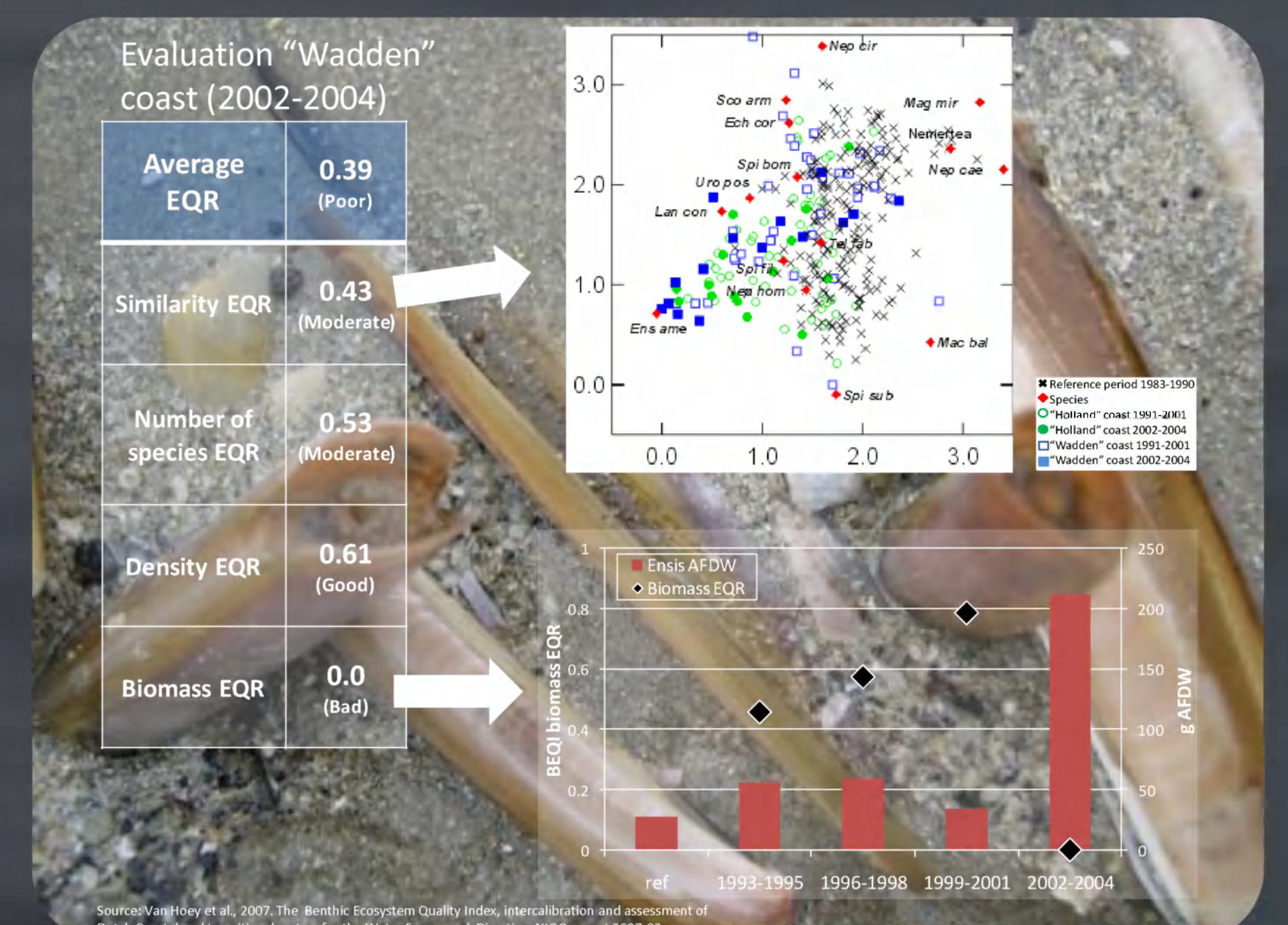
- Benthic community impacted (EQR < 0.6) from a dumping intensity of 1 to 2 million tonnes dry matter per year
- **Impact strongest** on the parameter **density**
- Number of species less impacted
- **Chronic dumping** prevent the development of a **healthy, stable** benthic community

Organic enrichment (Lake Veere, NL)



- Ecological status in Lake Veere bad, mainly in the deepest habitat (< 8m) due to oxygen depletion as a consequence of eutrophication and stratification
- Management action: again water exchange through inlet in Oosterschelde dam
 - **Benthos recovery** in deepest habitat
 - **Other habitats still affected**, partly due to changed salinity patterns

Alien species (*Ensis directus*) (NL coast)



Due to the dominance of *Ensis directus* in fine sandy sediments at Wadden Coast (2002-2004):

- Benthos species composition changed
 - **Similarity EQR moderate**
- Biomass quadrupled in last 10 years
 - **Biomass EQR bad**
- Number of species slightly decreased
 - **Number of species EQR moderate**

The need for adequate control/reference areas

Sampling strategy spatially and temporally adapted to impact type

Impact assessment: Points of attention !!

Biological assessment has to coincide with detailed knowledge on impact frequency and intensity

Indicators summarize patterns, but they do not provide full explanations of observed patterns

CONCLUSION

- **Indicators** are evidence based tools which can be used for the evaluation of anthropogenic impacts in marine systems.
- The BEQI indicator tool is **capable** of measuring the impact degree of different pressure types. The different BEQI parameters combined in the tool, however, may react differently (the degree of impact) on exerted pressures.

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