

REFCOAST – TYPOLOGY, REFERENCE CONDITION AND CLASSIFICATION OF THE BELGIAN COASTAL WATERS

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BWZee – A BIOLOGICAL VALUATION MAP FOR THE BELGIAN CONTINENTAL SHELF

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BACKGROUND:

Implementation EU Water Framework Directive

Coastal Waters: up to 1 NM

BACKGROUND:

Information on biological value marine environment lacking
⇒ needed to develop spatial structure plan

Larger scale: entire Belgian Continental Shelf

TYPOLGY:

System A ↔ System B
~ physical characterisation

- obligatory factors
- optional factors

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different coastal water types

PHASE A

ZONATION:

Bathymetrical } data → large morphological units (sandbanks, gullies)
Morphological }

Finetuning with

- sedimentological
- hydrodynamical
- geological

} data

↓

ecologically relevant zones

DEFINING REFERENCE CONDITIONS:

For each coastal water type
⇒ reference condition
~ high ecological status

Biological quality elements

- phytoplankton
- macroalgae and angiosperms
- benthos

! Problem: probably not existing for Belgium
⇒ other countries

PHASE B

SPATIAL EXTRAPOLATION OF BIOLOGICAL DATA:

Macrobenthic data

Sediment characteristics:

- mean grain size
- silt content

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predictive HABITAT model

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full coverage macrobenthic communities - seabird species distribution maps

Seabirds data

point data

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Spatial Inter-extrapolation

CLASSIFICATION:

Existing classification schemes / indices

e.g. benthos → marine Biotic Index (Borja et al., 2000)
~ organic pollution stress

Extend with physical disturbance

Ecological Quality Ratio

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Classification of all types

Disturbance	Status
No or very minor	High
Slight	Good
Medium	Moderate
Major	Poor
Severe	Bad
	0

EQR = $\frac{\text{Relation of observed values of biological parameters}}{\text{reference values of the biological parameters}}$

CLASSIFICATION:

Physical zones A B C D

Valuation criteria

- rarity
- biological quality
- sensitivity
- replicability
- ...

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classification

- Biologically highly valuable (D)
- Biologically valuable (A, C)
- Biologically less valuable (B)

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Biological valuation map

Preliminary biological valuation map: macrobenthos/no spatial extrapolation

Ghesardyn, H. (2003) Preliminary biological valuation map of the BCS, based on the spatial distribution of the macrobenthos. MSc Thesis, Ghent University.



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