
GAUFRE: Naar een Ruimtelijk Structuurplan voor een Duurzaam Beheer van de Zee



SUMANOS workshop 18/01/2006

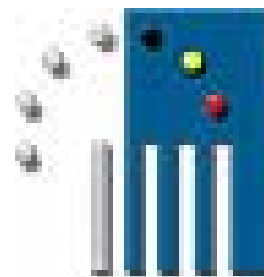
Volckaert Annemie (Ecolas NV)

GAUFRE project team

- Partners



- Gefinancierd door Federaal Wetenschapsbeleid





GAUFRE project: inhoud

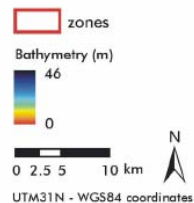
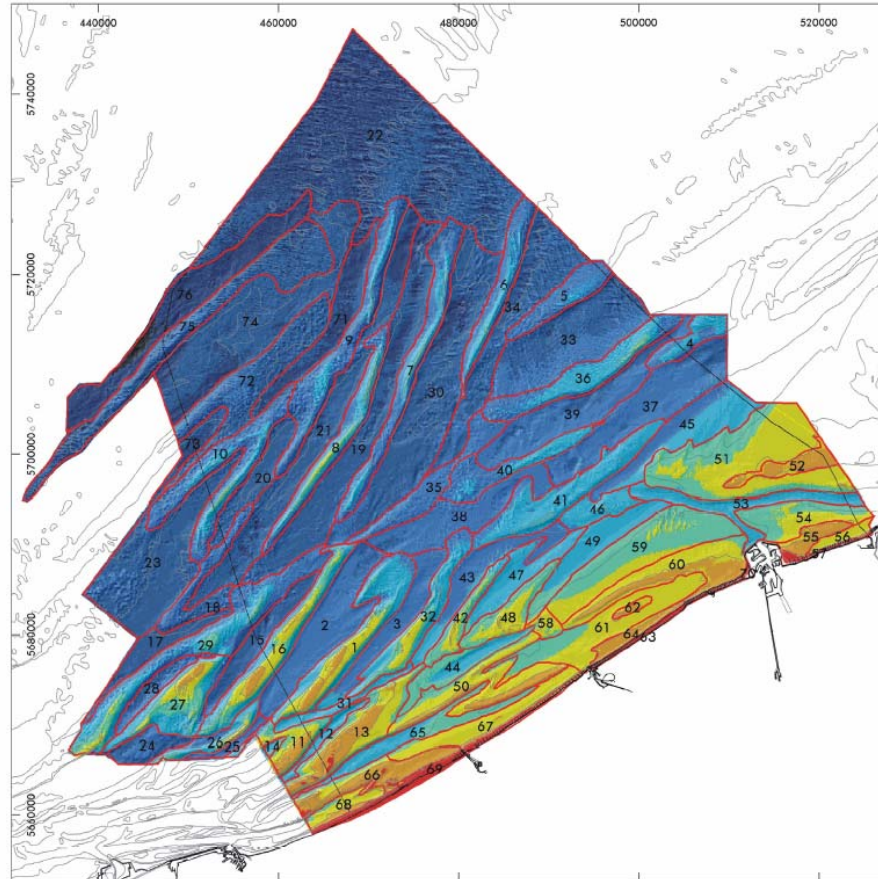
- Wettelijke afbakening
- Activiteiten op het Belgisch deel van de Noordzee (BDNZ)
 - Identificatie & beschrijving
 - Impactanalyse
 - Conflictanalyse
- Scenario's & visies op ruimtelijke planning BDNZ
- Besluiten



Identificatie & beschrijving



Homogene zones



Original data source: Ministry of the Flemish Community, Department of Environment and Infrastructure, Waterways and Marine Affairs Administration, Division Coast, Hydrographic Office

Hydrographic Office of the Netherlands

United Kingdom Hydrographic Office

Data analysis: RCMG - Ghent University

Map preparation: RCMG - Ghent University



May 2005

Belang van het BDNZ



- Scheepvaartroutes
- Ankergebied
- Baggerzones
- Stortzones
- Zand- en grind concessies
- Windenergie concessies
- Kabels en pijpleidingen
- Habitat gebied
- Ramsar gebied
- Militaire oefenzones
- Boeien en meetmasten
- Wrakken
- Historische munitie dumplocatie

Locatie & Intensiteit zandconcessies

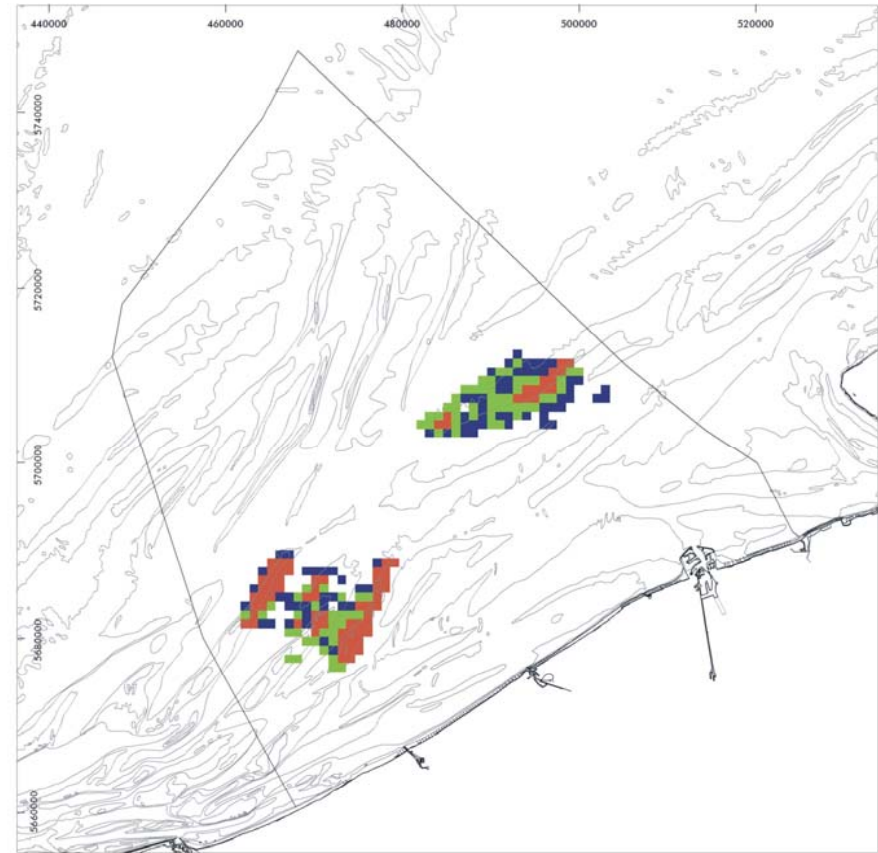


- Control zones sand extraction
- Exploration zone
- Past concession zones



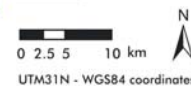
Original data source: Federal Public Service Economy, SMEs, Self-employed and Energy Ministry of the Flemish Community, Department of Environment and Infrastructure, Waterways and Marine Affairs Administration, Division Coast, Hydrographic Office
Map preparation: RCMG - Ghent University

May 2005



Use intensity of sand extraction (number of min/km²)

- 0: absent
- 1: $\leq 13,89$
- 2: $\leq 70,16$
- 3: ≤ 17.639



Original data source: ZAGRI database
Federal Public Service Economy, SMEs, Self-employed and Energy
Ministry of the Flemish Community, Department of Environment and Infrastructure, Waterways and Marine Affairs Administration: Division Coast - Hydrographic Office
Data analysis: RCMG - Ghent University
Map preparation: RCMG - Ghent University

Data cover sand extraction activities from 01 June 2002 - 31 December 2003

May 2005



Impact analyse



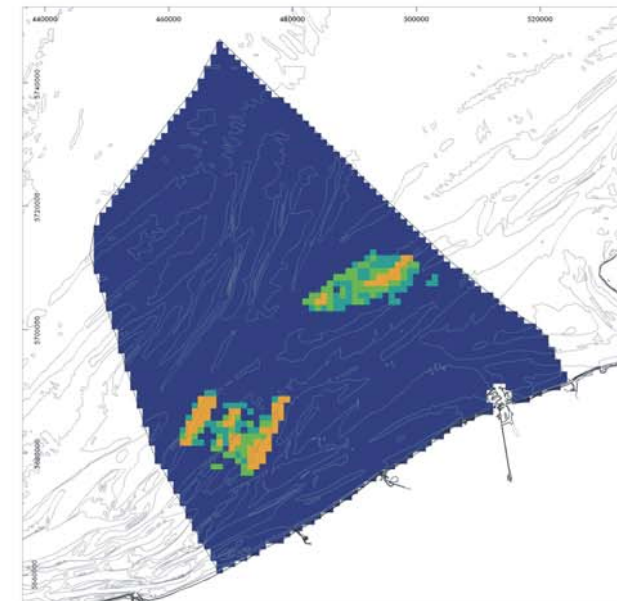
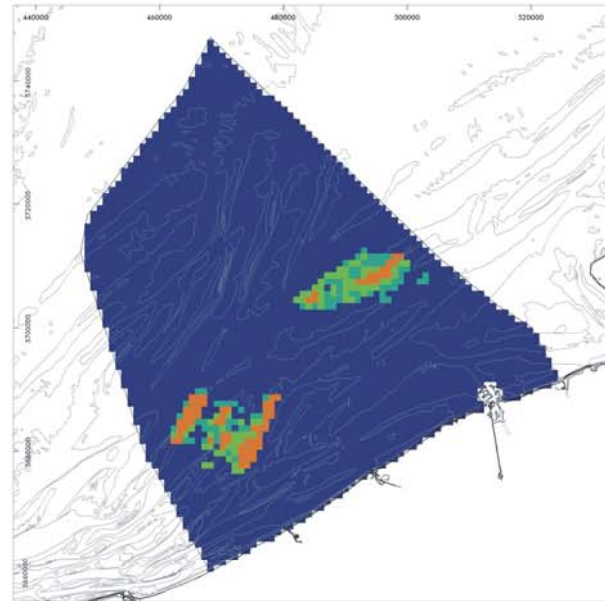
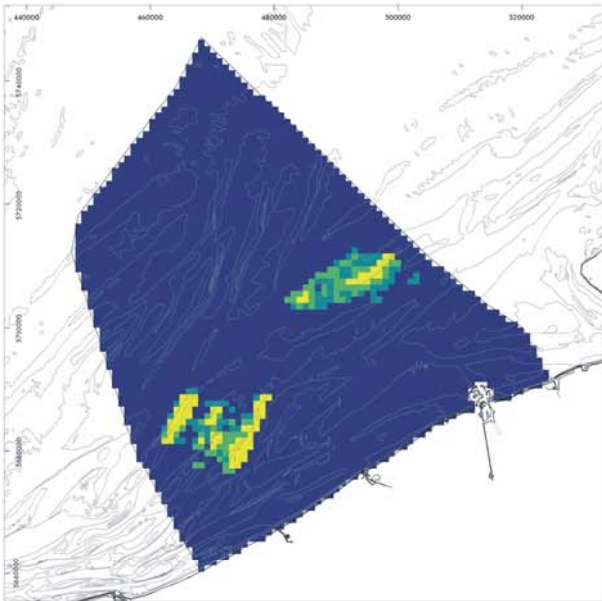
<i>Category</i>	<i>Subcategory</i>	<i>Specification</i>
Physical disturbance	Landscape	Visual disturbance.
	Sediment morphology	Small-scale spatial disturbance.
	Sediment composition	Mostly changes in particle size distribution.
	Waves & currents	Changes in hydrodynamics, direction and magnitude of waves and / or currents.
	Topography	Large-scale spatial disturbance.
	Noise	Increase of the level or amount of sound in the marine environment beyond its natural range.
	Light pollution	Introduction of a source of light that would not naturally occur in the marine environment.
	Temperature	Changes in the environment's natural temperature range.
Chemical disturbance	Turbidity/ light penetration	Change in the extent to which light penetrates the water column.
	Oxygen	Changes in the environment's natural oxygen range.
	Oil	This is restricted to the oil itself excluding micropollutants (PAHs, metals).
	Micropollutants	Introduction of substances that are normally not found in the marine environment. Includes heavy metals, organic pollutants, POP's, pesticides ... etc
	Air pollution	Includes NO _x , VOC, SO _x , CO ₂ ... etc.
	Solid waste	Introduction of all types of garbage and solid waste.
Ecological disturbance	Eutrophication	Due to nutrients outflow, nutrient release or due to waste (e.g. fish offal, sewage).
	Habitat change	Change in the physical, chemical and ecological characteristics.
	Benthos	Change in biodiversity, biomass or interactions of benthic organisms.
	Birds	Change in biodiversity, biomass or interactions of birds.
	Exotic species/ introductions (incl. pathogens)	Introduction of species to the marine environment that do not occur naturally or historically (exotic species) or of disease-producing organisms, either from terrestrial or marine sources (pathogens).
	Fish stocks	Change in biodiversity, biomass or interactions of fish.
Trophic relations	Change in trophic interactions of benthos, birds and fish.	

Impact maps - Sand extraction

Chemical impact

Ecological impact

Physical impact



Relative impact value



High: 9

Low: 0

Original data source: Federal Public Service Economy, SMEs, Self-employed and Energy
Ministry of the Flemish Community, Department of Environment and Infrastructure,
Waterways and Marine Affairs Administration, Division Coast, Hydrographic Office
Impact analysis: ECOLAS NV
Map preparation: RCMG - Ghent University

Data cover sand extraction activities from 01 June 2002 - 31 December 2003

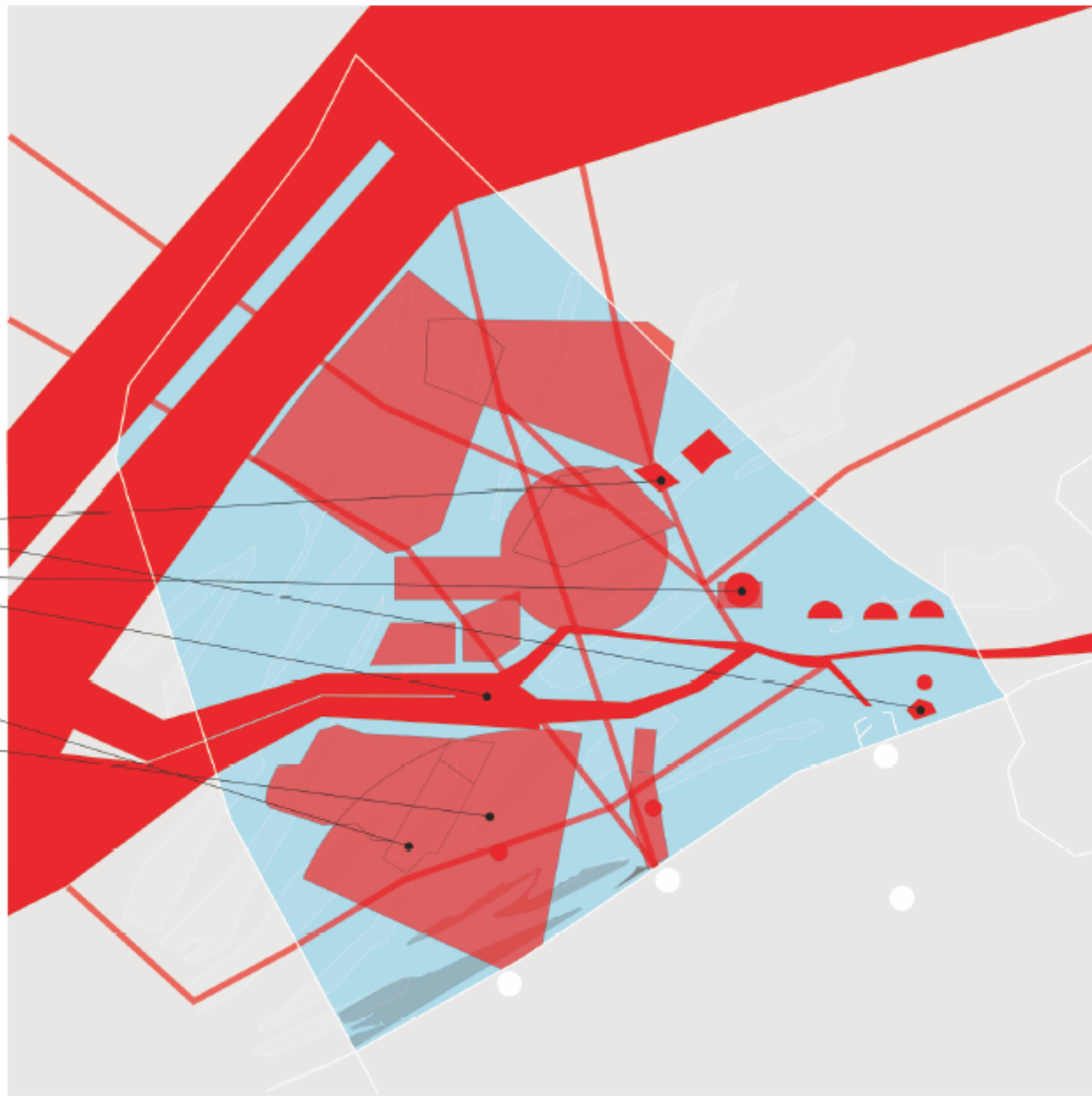
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Conflict analyse



- CONFLICTS**
- no fishing activities possible**
 - wind parks
 - war ammunition disposal site 'Paardenmarkt'
 - dredge disposal sites
 - shipping lanes
 - no fishing activities possible during**
 - sand and gravel extraction
 - military exercises
 - fishing activities could have negative impact on**
 - marine ecosystems and the environment

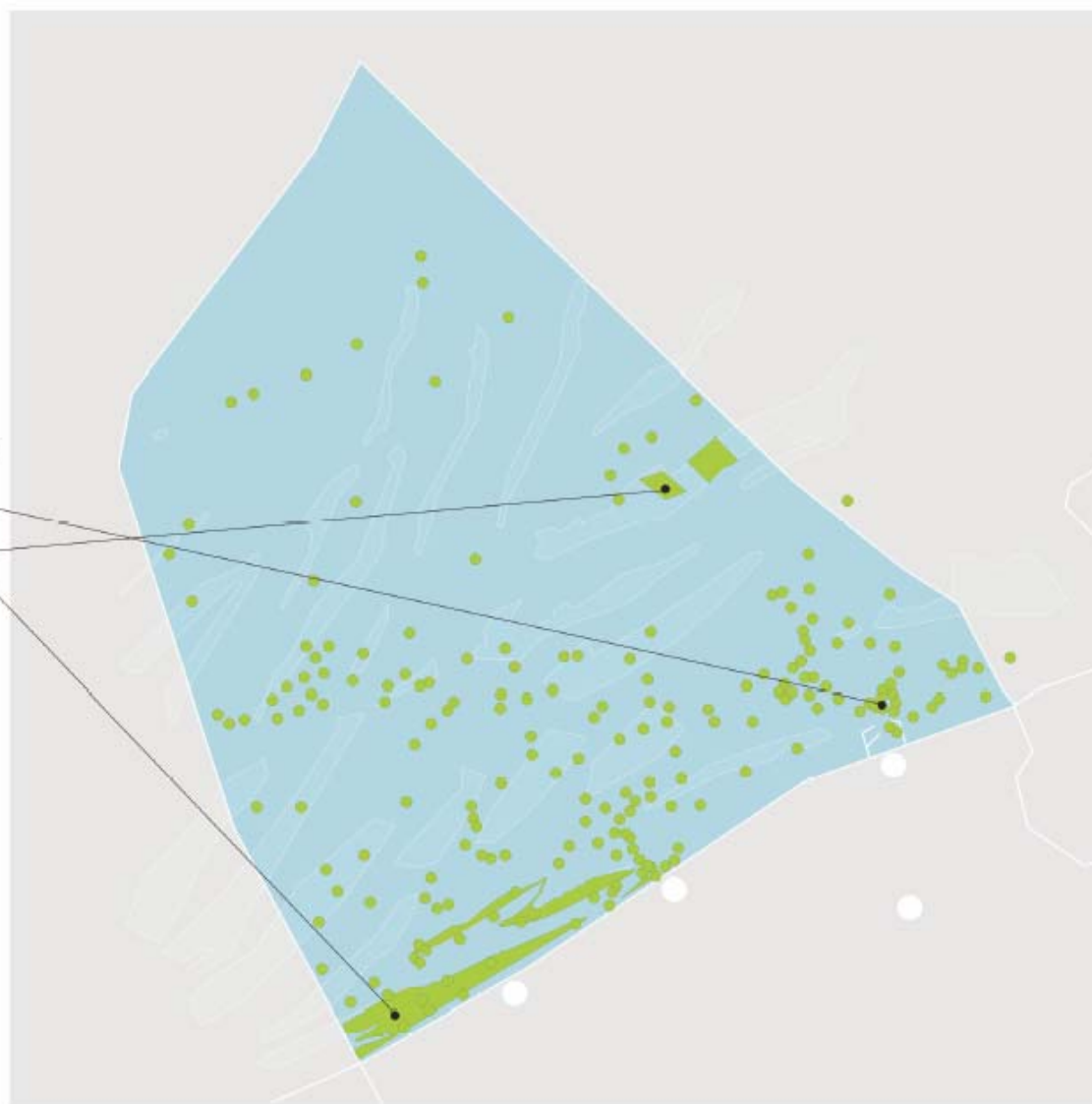


Map II.4h. Fisheries: conflicts with other uses
 (Data analysis and Map preparation: Maritime Institute - Gent University)



POSITIVE EFFECTS

- derelict ships
- wind parks
- Marine Protected Areas



Map II.4i. Fisheries: positive interactions with other uses
(Data analysis and Map preparation: Maritime Institute - Gent University)



Knelpunten

■ Data toelevering

- ❑ Langdurig proces
- ❑ Probleemsectoren (commercieel oogpunt)
- ❑ Complexe datasets (gaps, betrouwbaarheid, etc.)
- ❑ Bruikbaarheid data (recent/gedateerd, info zelf)
- ❑ Geen data voorhanden (kwantitatief vs kwalitatief)

■ Data toelevering

- ❑ Vertrouwensrelatie
- ❑ Goede bronvermelding
- ❑ Gebruik van data voorbehouden aan project tenzij toestemming
- ❑ Efficiënte afstemming met dataleveranciers
- ❑ Meer onderzoek & monitoring afgestemd op noden

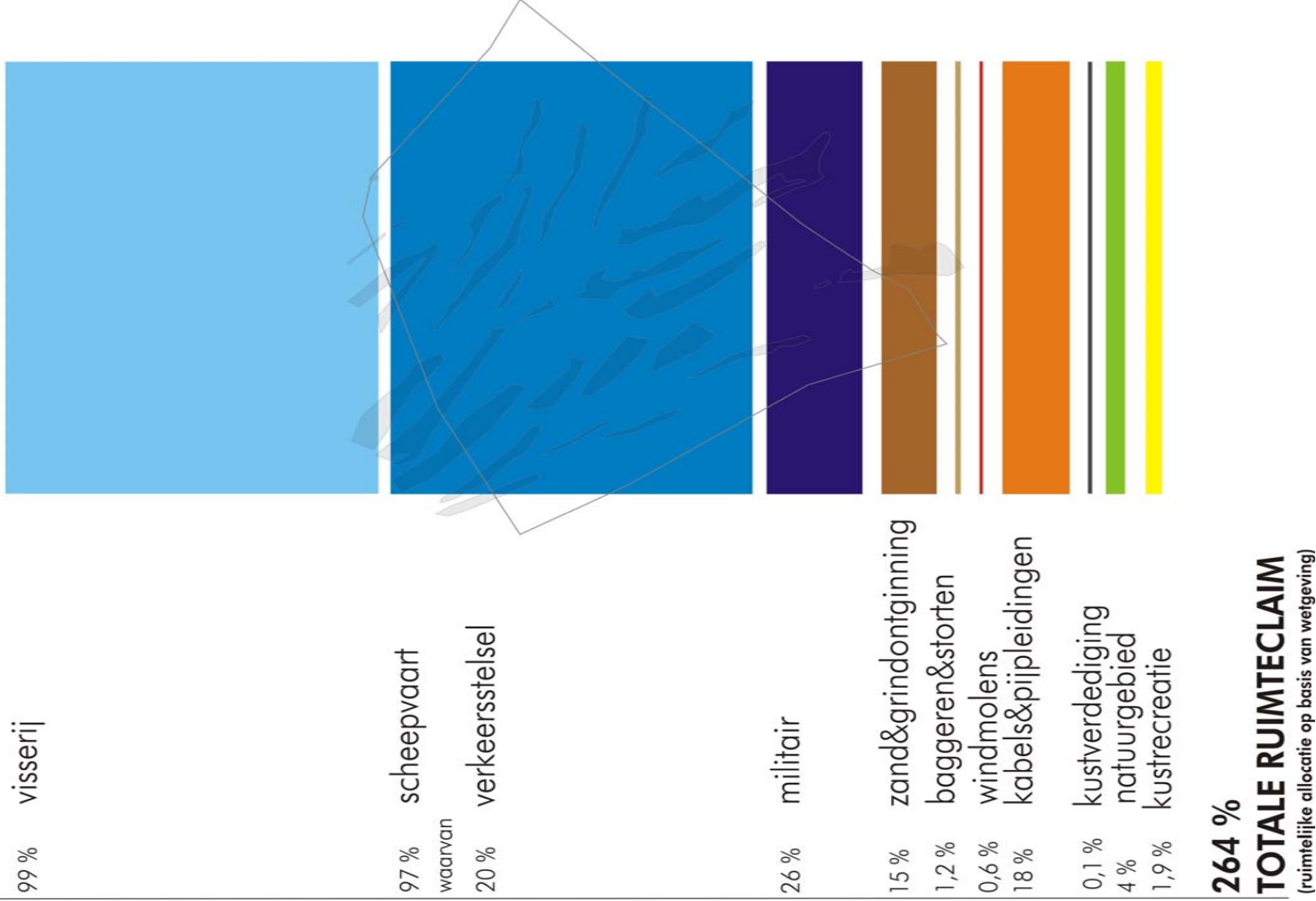
Raakvlakken andere projecten

- MAREBASSE: Management, Research and Budgeting of Aggregates in Shelf Seas related to End-users
- BWZee: Biologische waarderingskaart voor BCP
- TROPHOS: Hogere trofische niveaus in de Zuidelijke Noordzee
- RAMA: Risico analyse van mariene activiteiten op Belgisch deel van de Noordzee
- ...

Scenario's en visies op ruimtelijke planning



Ruimteclaim van de verschillende gebruikers



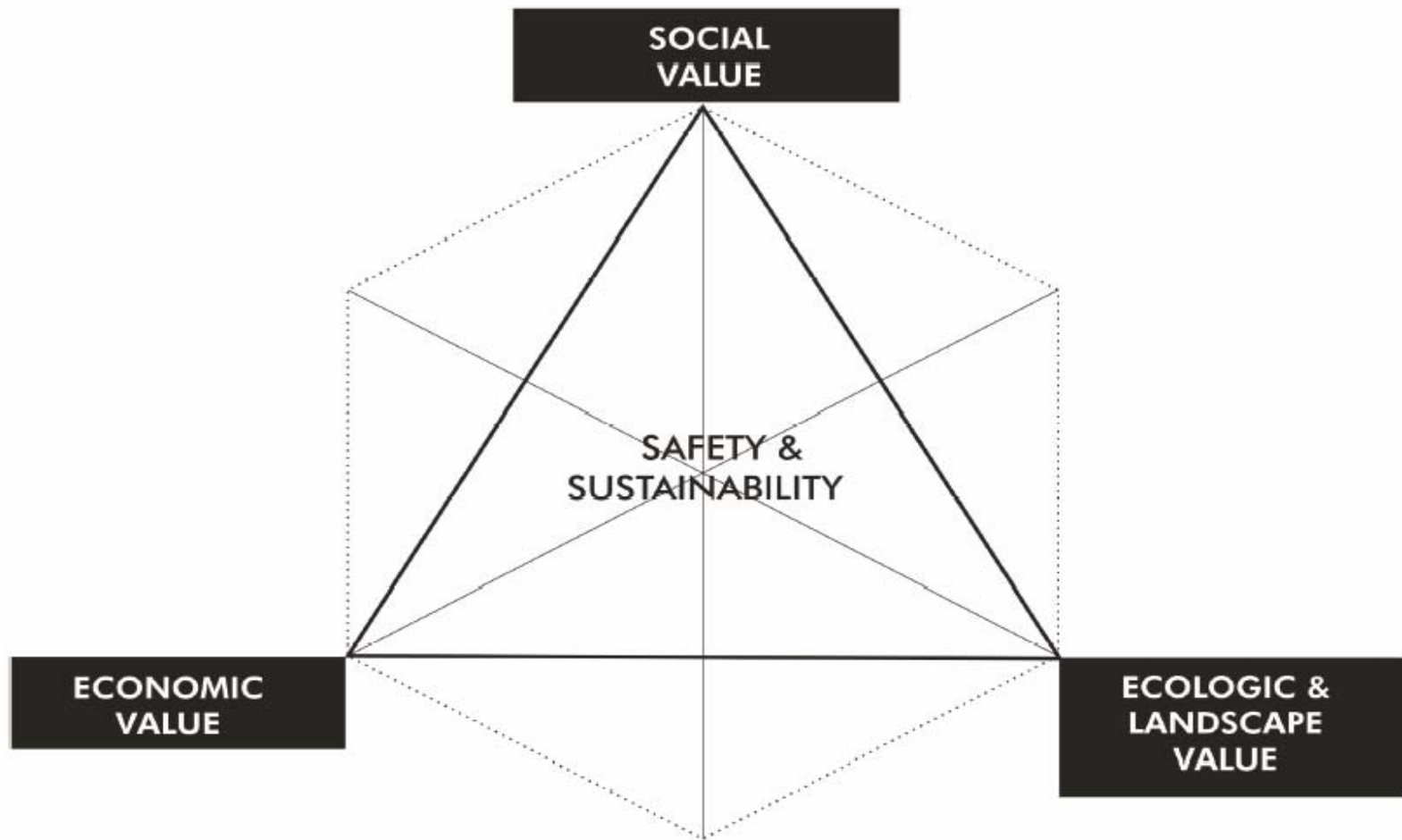


Figure III.1.4.2a. Developing scenarios based on the three core values and relation with the values of safety and sustainability
(Maritime Institute - Gent University)

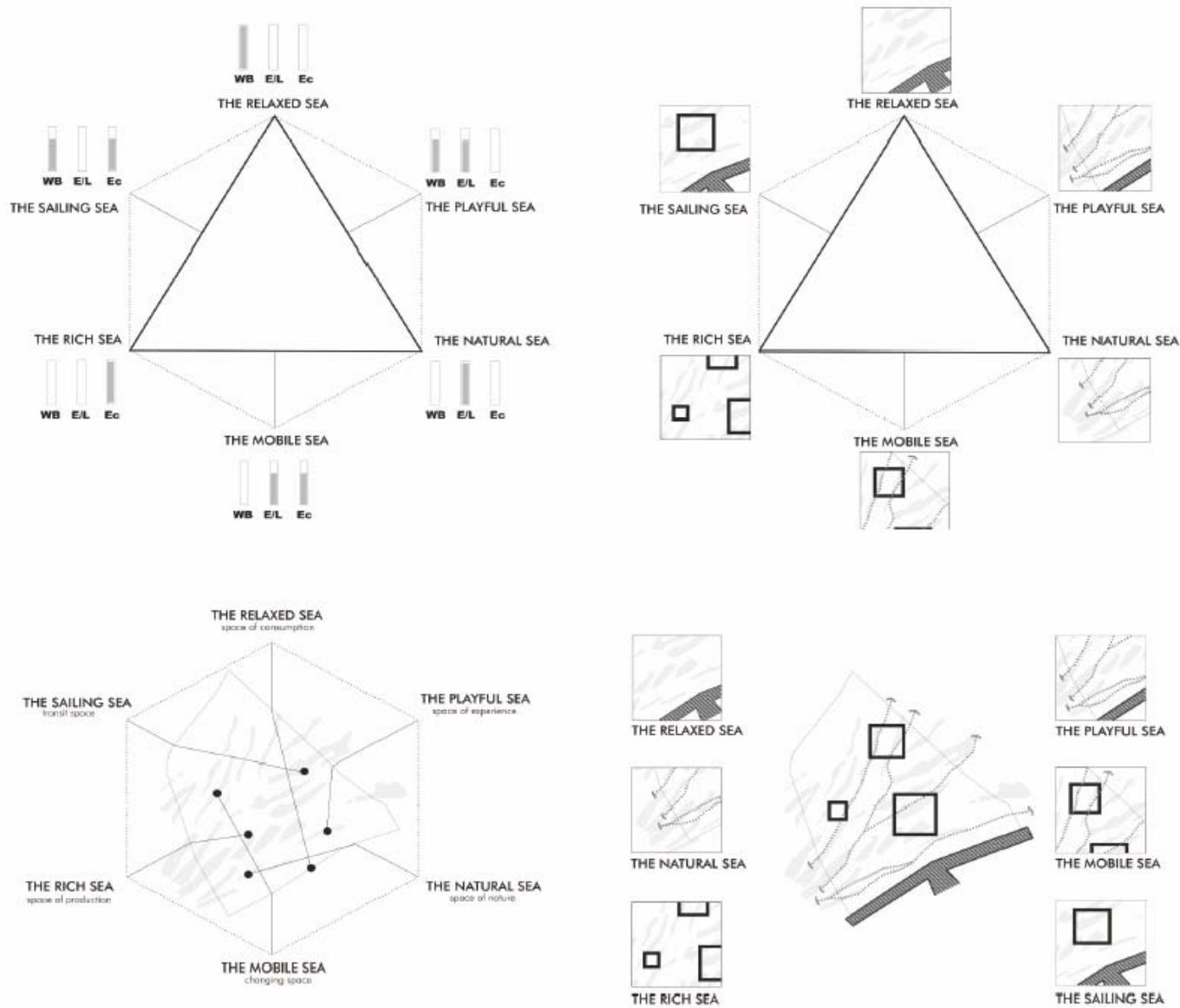
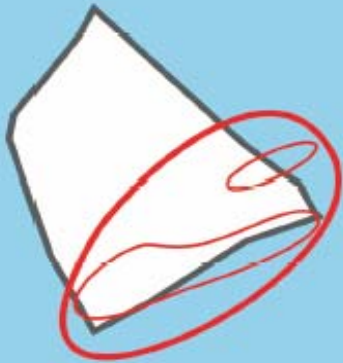


Figure III.1.4.2b. Developing six scenarios for the future of the BPNS
(Maritime Institute - Gent University)

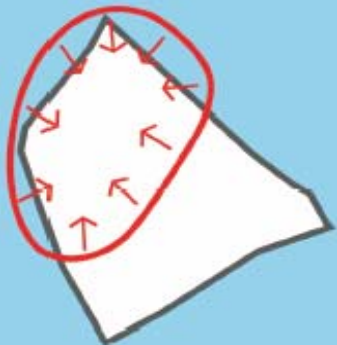
the natural sea



protecting the natural wealth of the shallow coastal area and coastal polders (marine protected areas)



relocating activities to the deep sea

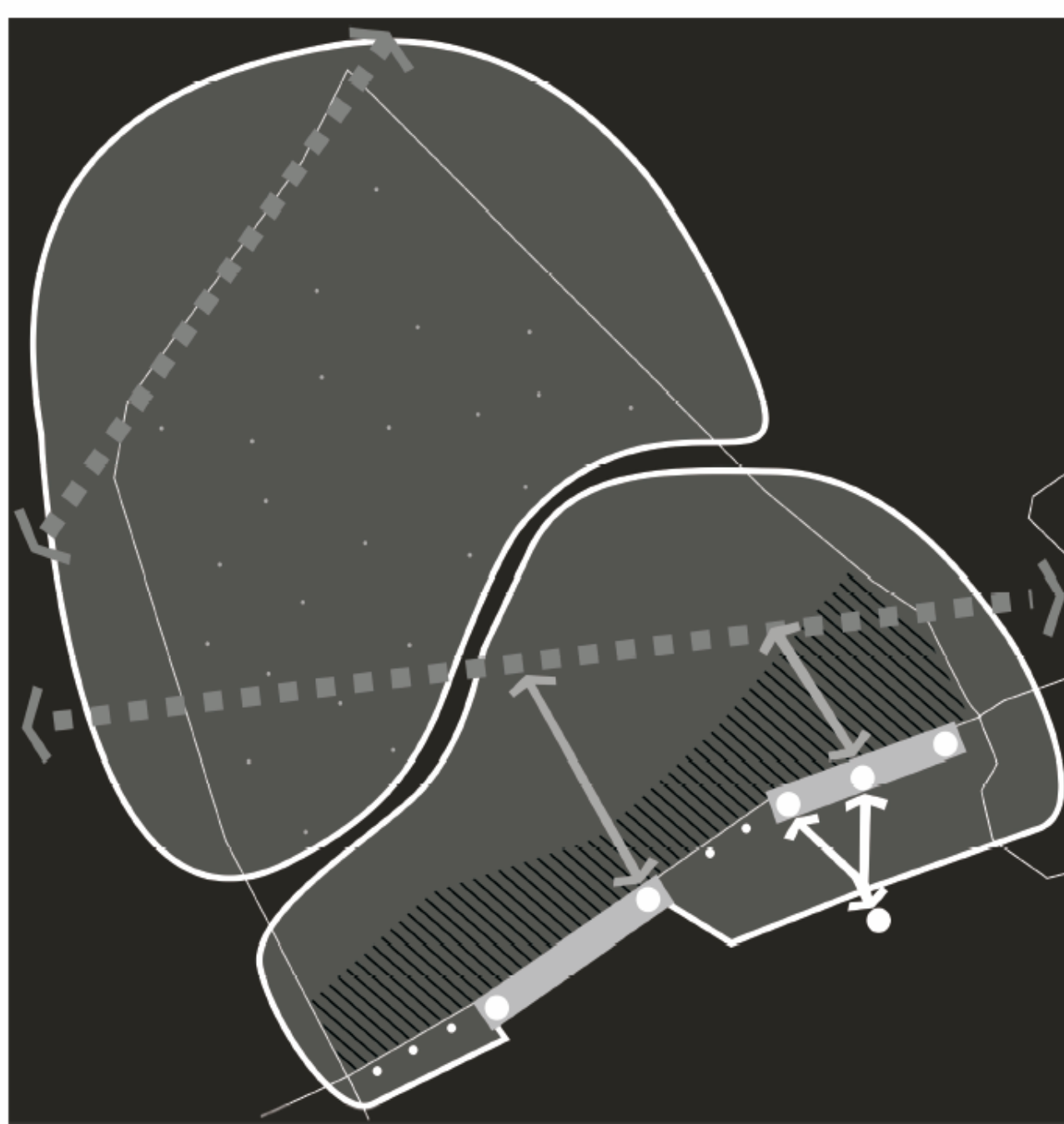


reducing and extensifying activities that cause disturbance to nature
prohibiting activities with an excessive impact on nature

Map III.1.4.2k. Scenario 3: The Natural Sea - spatial concepts

(Structure maps: Maritime Institute - Gent University)





Map III.1.4.2i. Scenario 3: The Natural Sea - spatial structure plan
 (Structure map: Maritime Institute - Gent University)



wind park(s)



economic activities (fishing, sand and gravel extraction,...) and military use



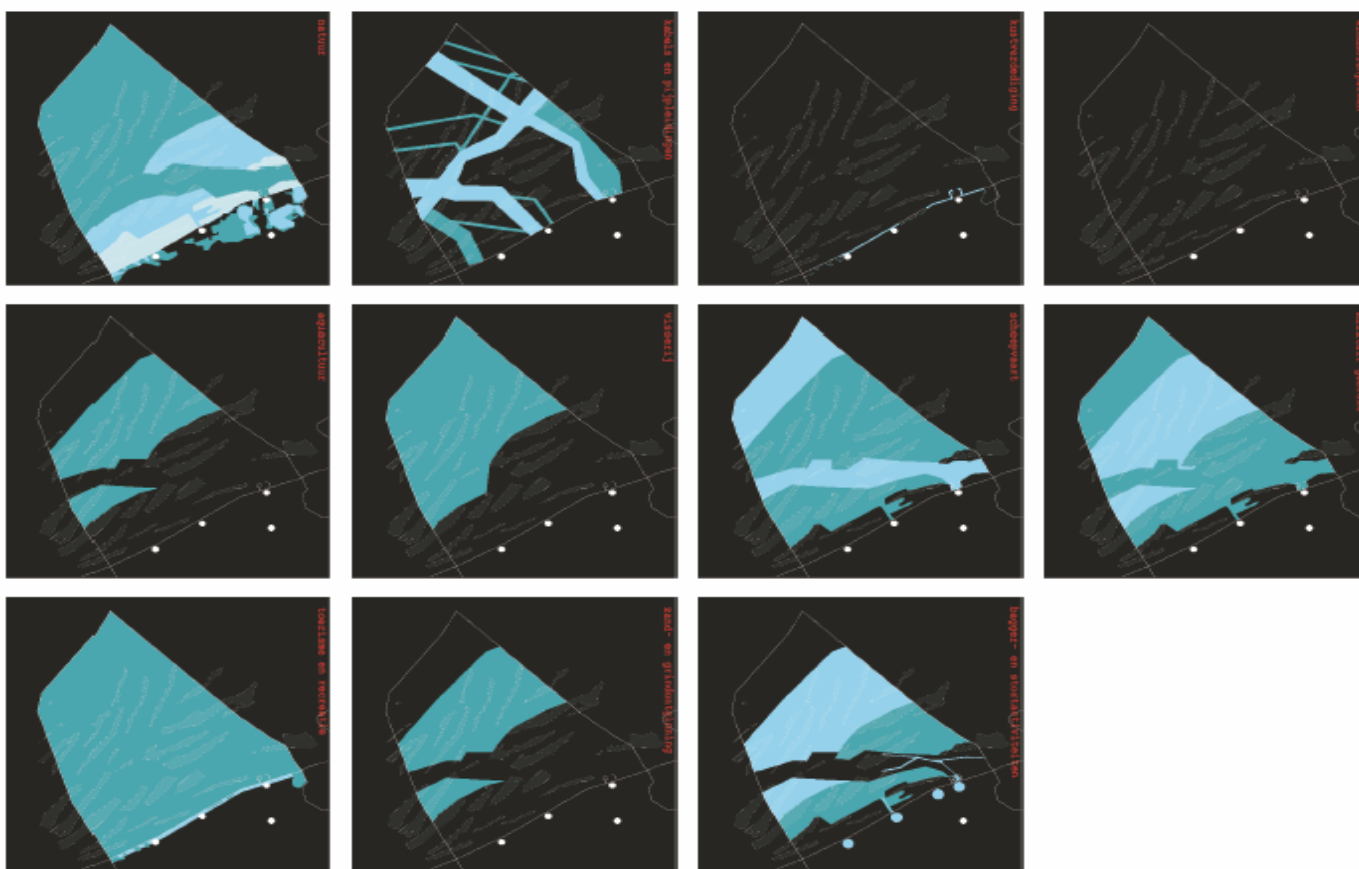
important shipping lanes



important transport axis



nature conservation/ protection area



Map III.1.4.2m. Scenario 3: The Natural Sea - significance for the "uses" of the BPNS

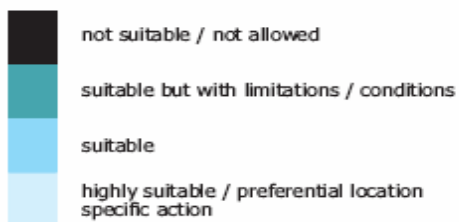
left to right:

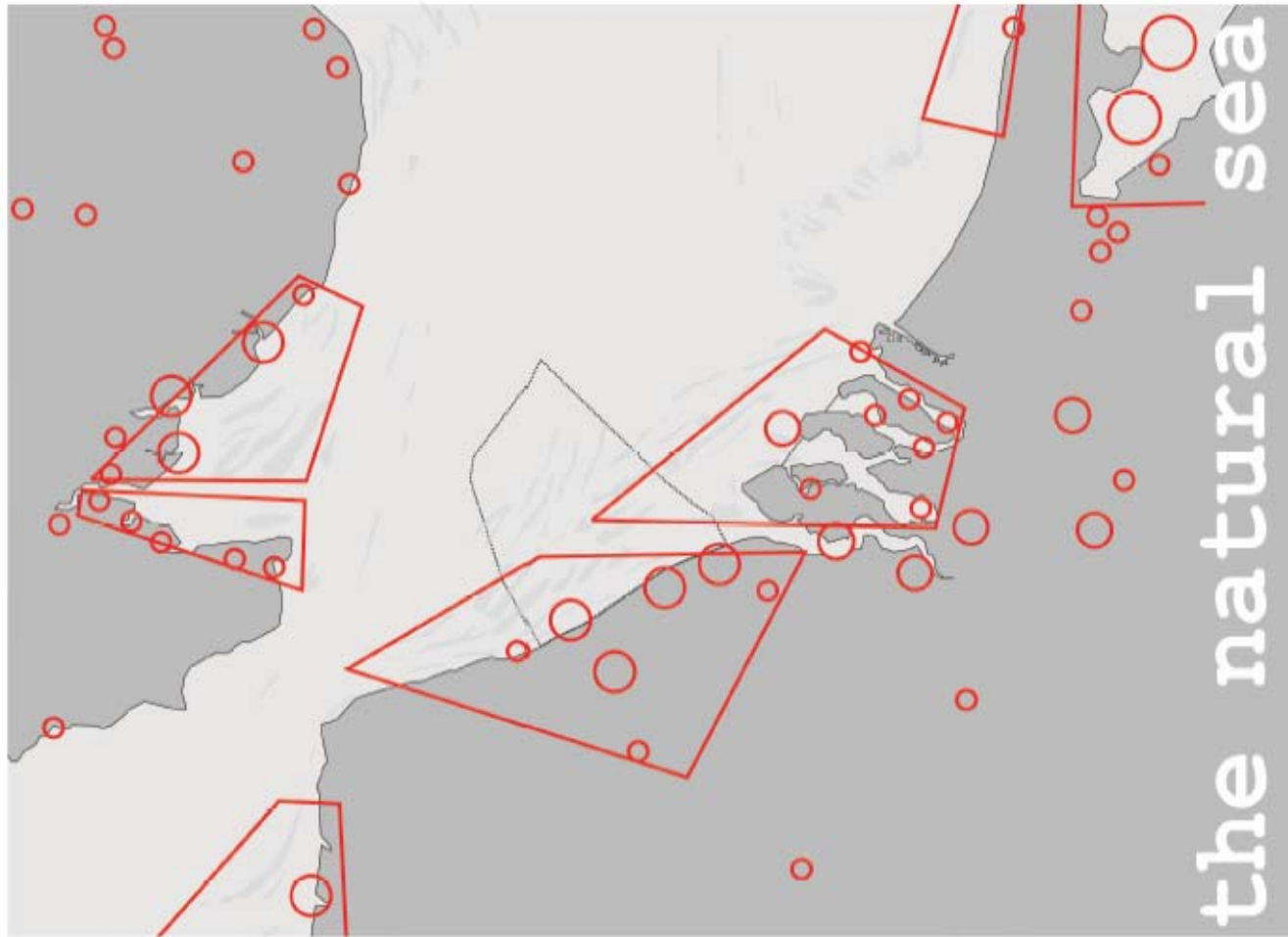
top row: nature conservation - cables & pipelines - coastal defense - wind parks

second row: aquaculture - fishing - shipping - military use

last row: tourism & recreation - sand & gravel extraction - dredging & dumping of dredgings

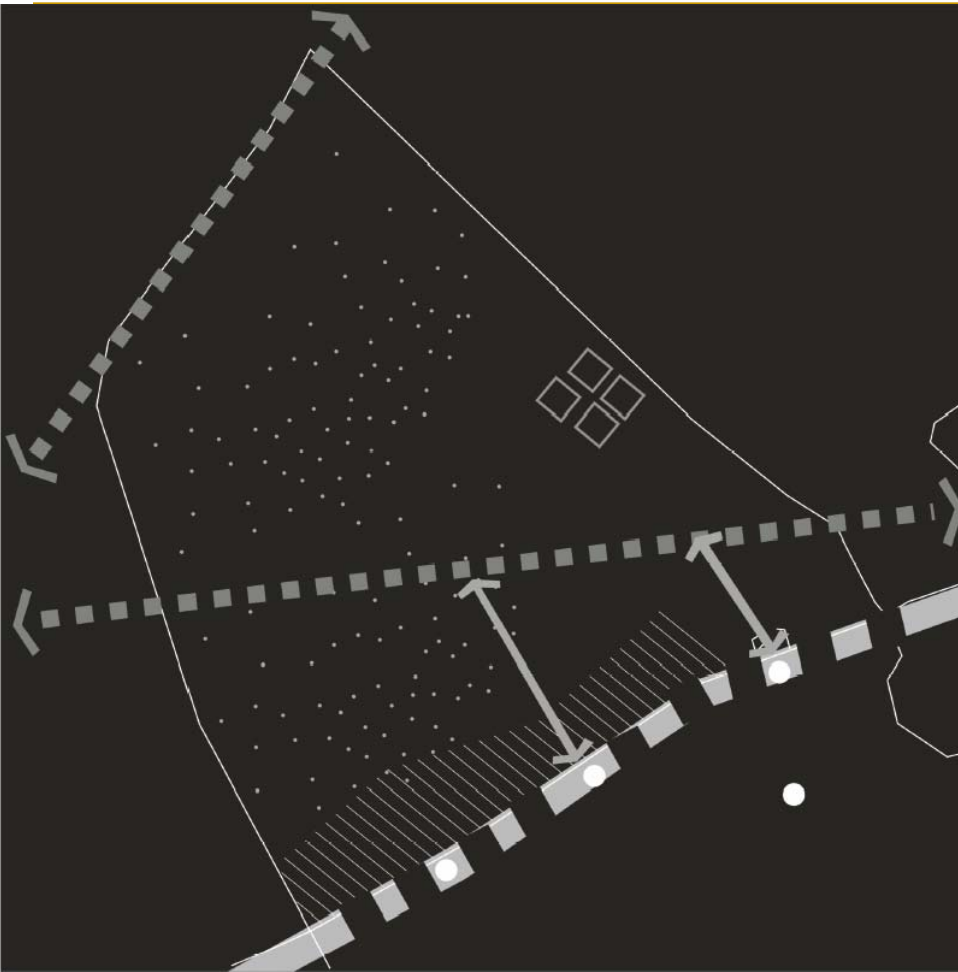
(Structure maps: Maritime Institute - Gent University)















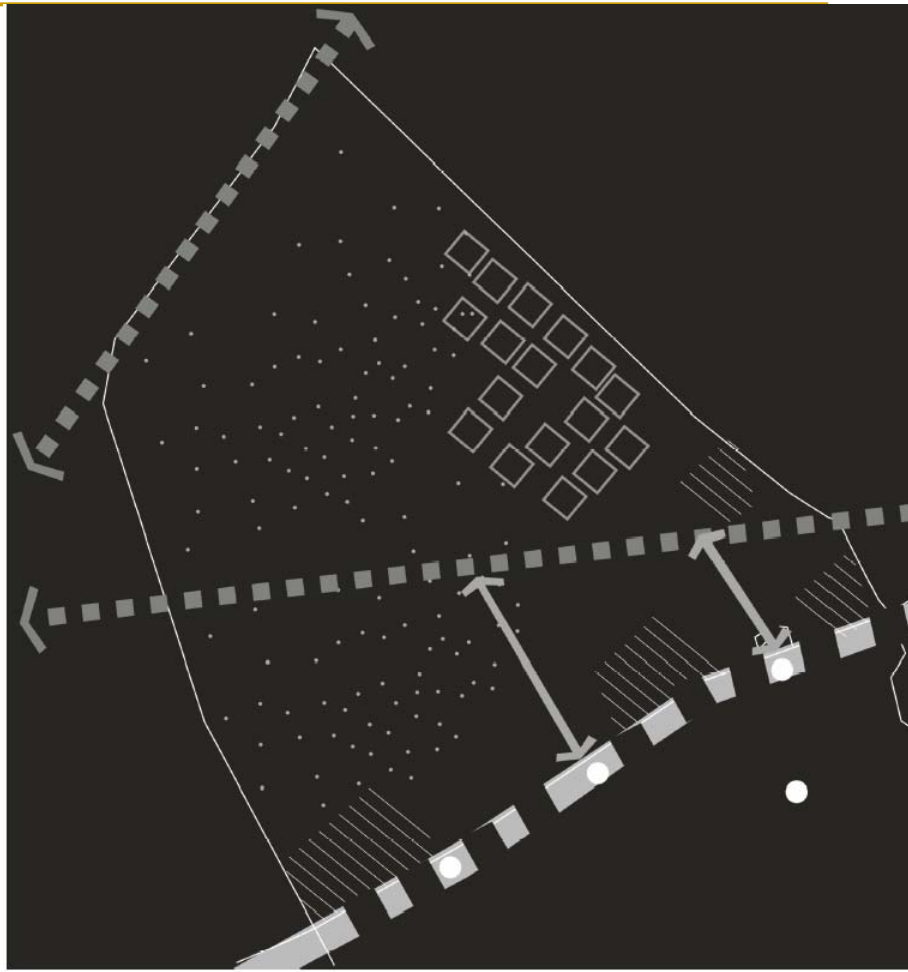
Map III.1.4.2j. Scenario 3: The Natural Sea - the broader context
(Structure map: Maritime Institute - Gent University)















Map III.3a. Workshop results: group 1 - spatial structure plan
 (Structure map: Maritime Institute - Gent University)

-  wind park(s)
-  economic activities (fishing, sand and gravel extraction,...) and military use
-  important shipping lanes
-  important transport axis
-  nature conservation/ protection area
-  coastal defense: soft coastal defense and preservation of natural coastline (if possible)
-  intensifying and reinforcing touristic activities
-  additional anchorage
-  coastal island
-  integration and coordination of planning with neighbouring countries



Map III.3b. Workshop results: group 2 - spatial structure plan
 (Structure map: Maritime Institute - Gent University)

-  wind park(s)
-  economic activities (fishing, sand and gravel extraction,...) and military use
-  important shipping lanes
-  important transport axis
-  nature conservation/ protection area
-  coastal defense: soft coastal defense and preservation of natural coastline (if possible)
-  intensifying and reinforcing touristic activities
-  additional anchorage
-  coastal island
-  integration and coordination of planning with neighbouring countries

Beslissingsregels als basis voor planning

- STAP 1: doelstellingen per sector definiëren adhv beslissingsregels (type & resolutie van gewenste data; identificatie van data gaps)
- STAP 2: management plan met ≠ scenario's adhv multiple- doelstellingen- analyse per sector om een evenwicht te vinden tussen de ≠ doelstellingen voor de ≠ sectoren
- STAP 3: Opstellen van een reeks "open beslissingsregels" die ter discussie staan op een stakeholder vergadering of via publieke participatie

Publieke participatie

- Uitgangspunt: open beslissingsregels gebaseerd op de "extreme scenario's" (zie hierboven)
- Enkele voorbeelden:
 - Zijn mariene beschermde gebieden nodig op BDNZ?
 - Zo ja, één aansluitend gebied of deelgebieden?
- Publieke participatie (11/02/2005): 45 deelnemers
 - Verscheidenheid van gebruikers binnen groep
 - 15 beslissingsregels
 - Hoge graad van concensus binnen groep en tussen de groepen ivm keuze BR (bv. unanimititeit tss groepen voor 8 BR)

Publieke participatie

- Publieke participatie (11/02/2005):
 - Prioriteit toekennen aan de geselecteerde BR
 - Meer verscheidenheid, doch bepaalde patronen
 - Veiligheid zowel op land als zee zeer belangrijk
 - Uitvoer van activiteiten binnen de draagkracht van het milieu
 - Mariene beschermde gebieden mag, indien flexibele status en voorkeur voor één groot gebied
- Appreciatie publieke participatie
 - SUCCES!
 - Communicatie van resultaten; mogelijkheid tot discussie met andere gebruikers en inzicht in elkaars belangen en problemen

Conclusies GAUFRE

- GAUFRE had NIET tot doel een finaal ruimtelijk plan voor de Noordzee te definiëren
- GAUFRE wou enkel een procedure definiëren om tot een ruimtelijk structuurplan te komen
- GAUFRE biedt met de integratie van de wetenschappelijk verzamelde data en GIS analyse een goede basis voor ruimtelijke planning

Eventueel verdere stappen

- Opstellen van ruimtelijk structuurplan van BDNZ op basis van resultaten GAUFRE
- Dit zou bij voorkeur moeten gebeuren in een transnationale context die rekening houdt met grotere delen van of de volledig Noordzee