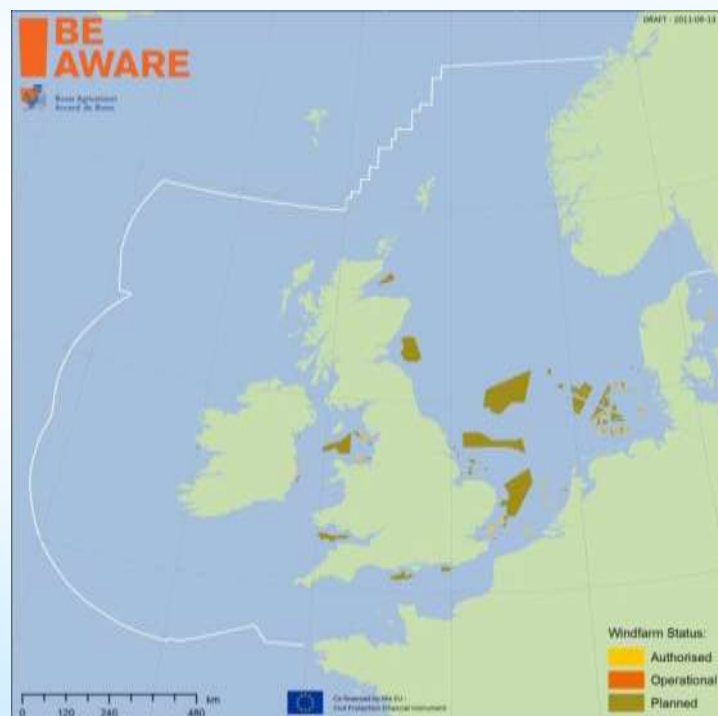




## Step 1A – Proposed selection of sensitive ecological features



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# Introduction

- **Common approach**
  - Striking similarities
    - between countries
    - Brisk study
    - Last workshop BE-AWARE (Tønsberg, NO, sept '12): BRISK as basis for features
- **BRISK**
  - Considered 'best practice'
  - Compatibility between Baltic and North Sea
  - Focus on habitat (incl. benthic communities)
  - Only species when:
    - Higher trophic level organisms
    - Habitat creating species





# Introduction

- **Adapting for the BA area**
  - Intrinsic differences
  - 3D aspects
    - Dispersants as a response scenario
    - High energy
    - Subsurface blow-out scenario
- **New and refined ecological features**
  - 19 habitat features (shoreline, coastal, nearshore, offshore)
  - 8 Species related features
  - 1 'protected area' feature
  - 3 other possible features





# Introduction

- **Key reference documents:**
  - **BRISK**
  - **EC Habitat Directive**
    - Describes and protects the habitats of European importance
  - **OSPAR threatened and declining habitats**
    - Describes and protects the habitats of regional importance
  - **ESI shoreline types**
    - Standard document for the description of shoreline types
    - Used by many countries as a base for their sensitivity maps
  - **To agreed minimum standards for sensitivity mapping**





# Shoreline and coastal environment





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				
<b>Exposed rocky shore and reefs</b>	Rocky shores and stony reefs	1230 Vegetated sea cliffs of the atlantic and baltic coast, 1170 reefs	Littoral chalk communities	Exposed rocky shore, Solid structure, Rocky cliffs, Wave cut platforms in bedrock



## Why include:

- ESI shoreline type
- Not very vulnerable but frequently occurring
- Includes: littoral chalk community
- Mapping: input CPs





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				
<b>Sheltered rocky shore and reefs</b>	Rocky shores and stony reefs	1230 Vegetated sea cliffs of the atlantic and baltic coast, 1170 reef	Littoral chalk communities	Sheltered rocky shore and scraps in bedrock, Solid structures, Riprap and rocky rubble shores



### Why include:

- ESI shoreline type
- Same as BRISK
- Includes: littoral chalk community
- Mapping: input CPs







BE AWARE features

BRISK

EC Habitat Directive/Bird Directive

OSPAR threatened and declining habitats

ESI (shoreline types)

Shoreline and coastal habitat

**Sandy beaches**

Sandy beaches lines

2110 Embryonic shifting dunes,  
1210 Annual vegetation of drift

Fine to medium-grained sand beaches,  
Coarsed grain sand beaches, Mixed  
sand and gravel beaches



### Why include:

- ESI shoreline type
- Same as BRISK
- Not very vulnerable but frequently occurring
- Embryonic dunes
- Mapping: input CPs







BE AWARE features

BRISK

EC Habitat Directive/Bird Directive

OSPAR threatened and declining habitats

ESI (shoreline types)

Shoreline and coastal habitat

## Shingle beaches

(new)

1210 Annual vegetation of drift  
lines, 1220 Perennial vegetation of  
stony banks

Gravel beaches, Riprap structure  
and gravel beaches



### Why include:

- ESI shoreline type
- More vulnerable than sandy beach
- Mapping: input CPs





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				
<b>Tidal sand and mudflats</b>	(new)	1140 Mudflats and sandflats not covered by seawater during low tide	Intertidal mudflats	exposed tidal flats and sheltered tidal flats



### Why include:

- ESI shoreline type
- Very sensitive to oil pollution
- Extended area: the **Wadden Sea**
- Can be split up into sheltered and exposed flats
- Mapping: input CPs





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				
<b>Salt marshes</b>	(new)	1310 Salicornia and other annuals colonizing mud and sand, 1320 Spartina swards, 1330 Atlantic salt meadows		Salt & brackish water marshes



### Why include:

- ESI shoreline type
- Very sensitive with a very long recovery time
- Mapping: input CPs







BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				
<b>Estuaries</b>	Estuaries	1130 Estuaries		(n/a)



## Why include

- EC Habitat Directive
- Same as BRISK
- Large numbers
- Mapping: input CPs





BE AWARE features  
Shoreline and coastal habitat

BRISK

EC Habitat Directive/Bird Directive

OSPAR threatened and declining habitats ESI (shoreline types)

## Large shallow inlets and bays

shallow inlets  
and bays

1160 Large shallow inlets and bays

(n/a)



### Why include

- EC Habitat Directive
- Same as BRISK
- Lower energy than open water
- Mapping: input CPs





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				

## Coastal lagoons

coastal lagoons

1150 Coastal lagoon

(n/a)



### Why include:

- EC Habitat Directive
- Same as BRISK
- Lower energy than open water
- Mapping: input CPs





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				
<b>Underwater sandbanks</b>	underwater sandbanks	1110 Sandbanks which are slightly covered by sea water all the time		(n/a)



## Why include

- EC Habitat Directive
- Same as BRISK
- Effect on deeper sand banks:
  - Brear
  - Sea empress
  - Amoco cadiz
- Mapping: input CPs







BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				
<b>Biogenic reefs</b>	Rocky shores and stony reefs	1170 reefs	Intertidal <i>Mytilus edulis</i> beds on mixed and sandy sediments, <i>Modiolus modiolus</i> beds, <i>Ostrea edulis</i> beds, <i>Sabellaria spinulosa</i> reefs	(n/a)



### Why include

- EC Habitat Directive
- OSPAR threatened and declining habitat
- Sensitive feature
- Habitat formed by organisms
- Mapping: input OSPAR





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				
<b>Maerl beds</b>	(new)		Maerl beds	(n/a)



### Why include

- OSPAR threatened and declining Habitat
- Very sensitive
- Sensitive to disturbance
- Biodiversity hotspot
- Not clear if biogenic reef
- Mapping: input OSPAR





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Shoreline and coastal habitat				
<b>Eelgrass meadows</b>	Eelgrass meadows	1110 Sandbanks which are slightly cover by sea water all the time, 1140 Mudflats and sandflats not covered by seawater at low tide, 1150 Coastal lagoon, 1160 Large shallow inlets and bays	<i>Zostera beds</i>	(n/a)



### Why include:

- OSPAR threatened and declining Habitat
- Same as BRISK
- Sensitive area
- Very diverse ecosystem
- Mapping: input OSPAR





# Open sea







BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Open sea				
<b>Open water</b>	open water	(n/a)		(n/a)



### Why include:

- Same as BRISK
- Low sensitive
- Mapping: BE-AWARE





## Why include:

- “3D” input:
  - Dispersion as an important response option in Bonn
  - Sever storms! (Braer)
  - Blow-out scenario
- Mapping: input OSPAR





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Open sea				
<b>Sea mounts</b>	(new)	(n/a)	seamounts	(n/a)



### Why include:

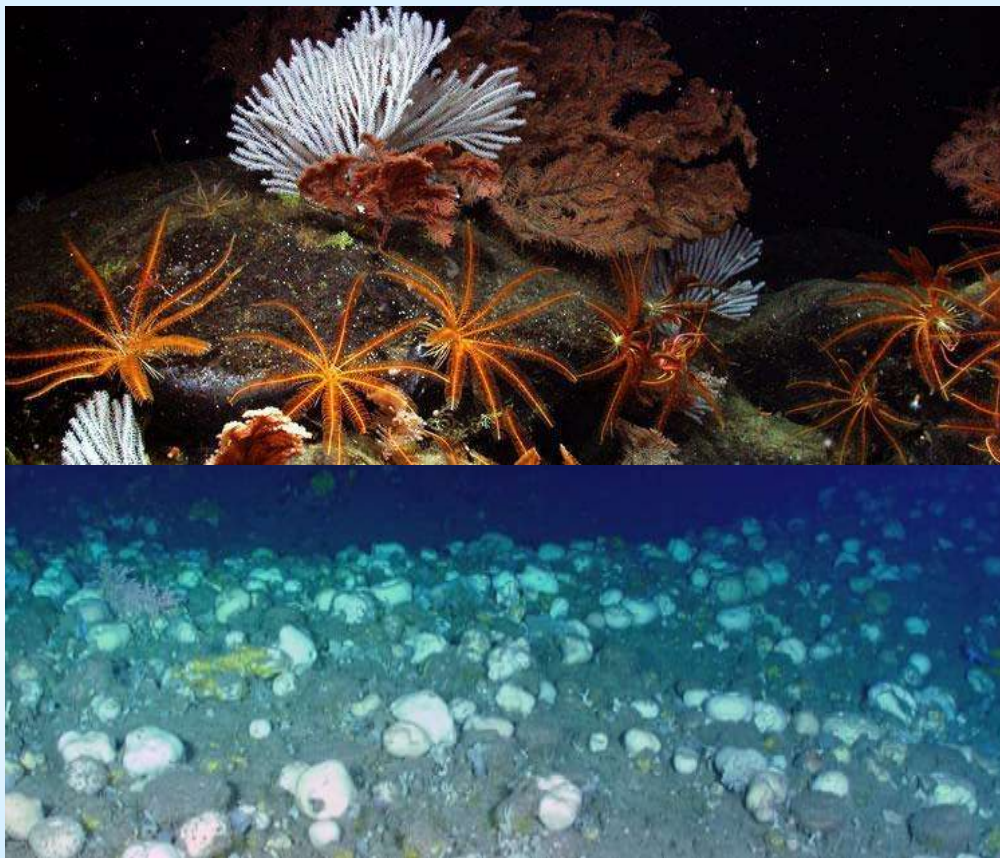
- OSPAR threatened and declining Habitat
- Very sensitive to disturbance
- Biodiversity hotspot
- Mostly long-living deep sea organisms
- Mapping : input OSPAR







BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Open sea				
<b>coral garden, sponge aggregation</b>	(new)	(n/a)	Coral gardens, Deep-sea sponge aggregations	(n/a)



### Why include:

- OSPAR threatened and declining Habitat
- Very sensitive to disturbance
- Biodiversity hotspot
- Mostly long-living deep sea organisms
- Mapping : input OSPAR





BE AWARE features

BRISK

EC Habitat Directive/Bird  
Directive

OSPAR threatened and declining habitats

ESI (shoreline types)

Open sea

**carbonate mounds,  
Lophelia pertusa reefs**

(new)

1170 Reefs

Carbonate mounds, Lophelia  
pertusa reefs

(n/a)



### Why include:

- OSPAR threatened and declining Habitat
- Very sensitive to disturbance
- Biodiversity hotspot
- Mostly long-living deep sea organisms
- Mapping : input OSPAR





## Sea-pen and burrowing megafauna

(new)

(n/a)

Sea-pen and burrowing  
megafauna communities

(n/a)



### Why include:

- OSPAR threatened and declining Habitat
- Rich deep sea habitat
- Effect after the Braer on the Norway Lobster
- Mapping: input OSPAR





# Higher trophic species







BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Species				
<b>Wintering birds</b>	wintering areas for sea and shore birds	EC Bird Directive	Puffinus mauritanicus, Rissa tridactyla, Sterna dougallii	(n/a)



## Why include

- EC Bird Directive
- Same as BRISK
- Very vulnerable
- Higher trophic organisms
- Places with high densities of birds
- Sensitive life stages
- Mapping: input CPs





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Species				
<b>Staging birds</b>	staging area for migrating sea and shore birds	EC Bird Directive	Puffinus mauritanicus, Rissa tridactyla, Sterna dougallii	(n/a)



## Why include

- EC Bird Directive
- Same as BRISK
- Very vulnerable
- Higher trophic organisms
- Places with high densities of birds
- Sensitive life stages
- Mapping: input CPs





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Species				
<b>Breeding birds</b>	Breeding areas for sea and shore birds	EC Bird Directive	Puffinus mauritanicus, Rissa tridactyla, Sterna dougallii	(n/a)

## Why include

- EC Bird Directive
- Same as BRISK
- Very vulnerable
- Higher trophic organisms
- Places with high densities of birds
- Sensitive life stage
- Mapping: input CPs







BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Species				
<b>Moulting birds</b>	moulting areas for sea birds	EC Bird Directive	Puffinus mauritanicus, Rissa tridactyla, Sterna dougallii	(n/a)



## Why include

- EC Bird Directive
- Same as BRISK
- Very vulnerable
- Higher trophic organisms
- Places with high densities of birds
- Sensitive life stage
- Mapping: input CPs





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
Species				
<b>Otters</b>	(new)	Annex II Habitat Directive		(n/a)



### Why include:

- Very vulnerable
- Annex II Habitat Directive
- UN red list
- Coastal populations (e.g. Scotland, Shetlands)
- Mapping: input CP





BE AWARE features

BRISK

EC Habitat Directive/Bird Directive

OSPAR threatened and declining  
habitats

ESI (shoreline types)

Species

## Seals

Breeding, moulting and  
haul-out sides for seals

Annex II Habitat Directive

(n/a)



Kegeirobbe / Gray Seal (Halichoerus grypus)

Jenny Schwebel (17.10.2006)

### Why include:

- Annex II Habitat Directive
- UN red list
- Same as BRISK
- Sensitive life stages
- Mapping: input CPs





## Spawning areas for fish

Spawning areas on shallow water for fish with demersal eggs, Offshore spawning areas for fish with pelagic eggs (cod, sprat)

Annex II Habitat Directive

(n/a)

### Why include:

- Commercially important species
- Sensitive life stages (pelagic)
- Higher trophic level
- Mapping: ICES eggs and larvae maps
  - Areas with the highest larval density







## Nursery areas for fish

Nursery areas for fish on shallow water

Annex II Habitat Directive

(n/a)



### Why include:

- Same as BRISK
- Often in sheltered coastal areas
- sensitive life stages
- Mapping: input CPs



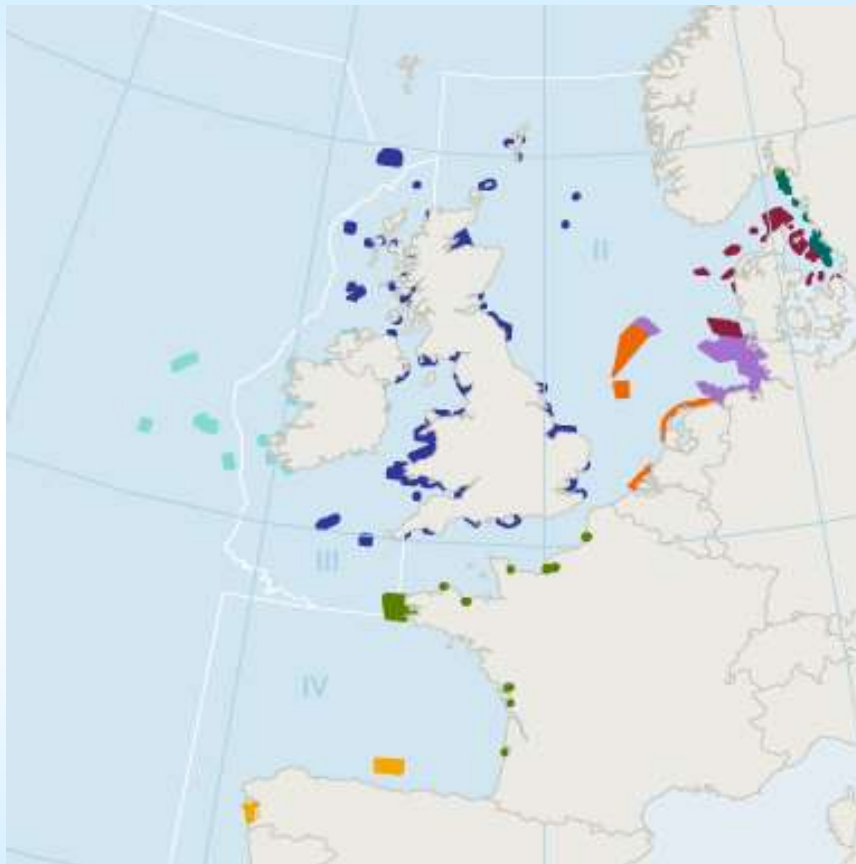


# Protected areas





## Protected Areas



### Why include:

- Natura 2000 Special Area of Conservation (SAC)
- Natura 2000 Special Protected Area (SPA)
- RAMSAR
- OSPAR Marine Protected Areas
- National protected areas
- Mapping EC/OSPAR/CP







# Possible other features





BE AWARE features

BRISK

EC Habitat Directive/Bird Directive

OSPAR threatened and declining habitats

ESI (shoreline types)

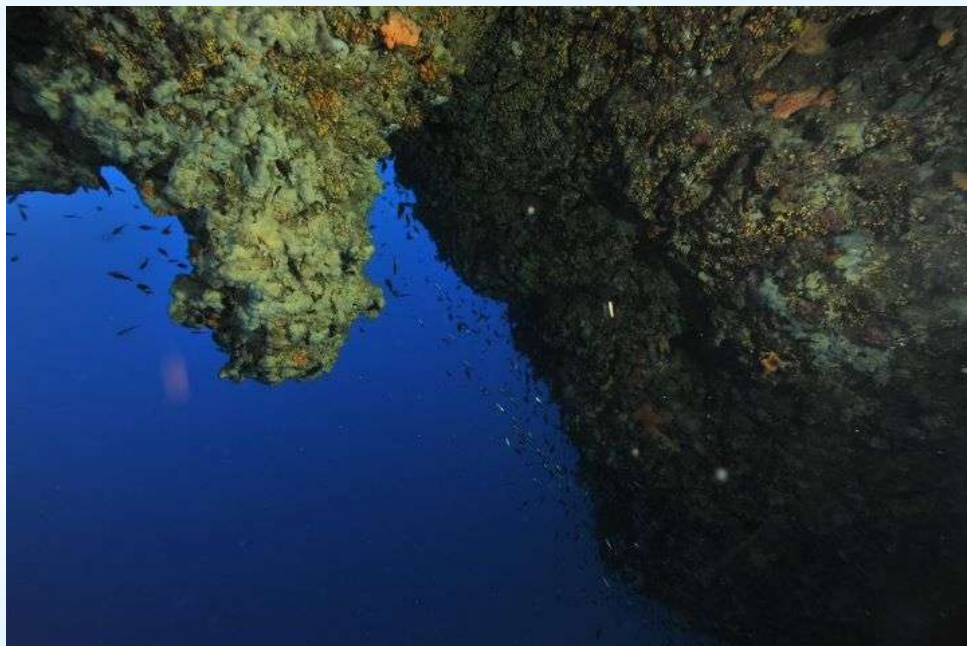
*Possible other features*

**Submerged or partially  
submerged sea caves**

(new)

8330 Submerged or partially  
submerged sea caves

(n/a)



### Why not included (yet):

- Sensitive, but
- Relatively small
- Can be considered under sheltered rocky shore
- (Mapping: input CPs)





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
<i>Possible other features</i>				
<b>Sea turtles</b>	(new)	Annex II Habitat Directive	Caretta caretta, Dermochelys coriacea	(n/a)



### Why not included (yet):

- Sensitive, but
- Ocean wanderers unpredictable, low densities, too wide spread, sporadic occurrence
- (Mapping: input OSPAR)





BE AWARE features	BRISK	EC Habitat Directive/Bird Directive	OSPAR threatened and declining habitats	ESI (shoreline types)
<i>Possible other features</i>				
<b>Harbour porpoise</b>	(new)	Annex II Habitat Directive	Phocoena phocoena	(n/a)



### Why not included (yet)

- No shown effect
- Avoidance behaviour
- Too Widespread occurrence

