

Assessment of Feature Condition- supporting matrices.

Assessment Methodology

According to the SNCB protocol F, a feature must be moderately or highly vulnerable to at least one pressure to be assessed in a vulnerability assessment as likely to be in unfavourable condition.

The sensitivity matrices produced as part of the MB0102 project were consulted to determine which of the ENG features were **highly sensitive** to a pressure with moderate or high confidence. The only features that were not considered in MB0102 were the mobile species of fish - smelt *Osmerus eperlanus*, eel *Anguilla anguilla* and the undulate ray *Raja undulata*. It was therefore determined, through expert judgement that these features are sensitive to fishing and water abstraction (these species are not shown in the Species FOCI tab).

Having determined which ENG features were sensitive to pressures the next stage was to identify the **activities** which give rise to these **pressures**. This stage used the overarching pressures vs activity matrix developed by JNCC (JNCC, 2010). This resulted in the production of an activity vs pressure matrix for each of the applicable ENG features (as presented in the following worksheets).

For this project the activities were further refined to be relevant to the scale of the feature .

Guide to Worksheets

The following worksheets identify only the relevant ENG features (those that were judged sensitive with moderate or high confidence to a pressure by Project MB0102). The rows show all the activities which give rise to pressures (not shown) based on the pressures vs activity matrix (JNCC, 2010). A tickmark in a cell indicates that the activity may potentially impact the condition of the feature as it gives rise to a pressure to which the feature is sensitive. These intersections are based on a generic activities x pressures matrix and therefore do not consider whether the activity may occur within that feature and/or whether the scale of overlap could be relevant.

Where the activity was not considered to occur or overlap at relevant scales the cell was filled in grey. For example beach replenishment is not considered to occur within deep sea mud Broad Scale Habitats. Similarly mael extraction is not considered to impact coastal saltmarshes.

Where the activity was likely to occur and at a relevant scale the cell was filled in yellow and these activities were assessed (where data was available) for the condition assessments.

Summary Key

✓	Activity gives rise to a pressure to which the feature is sensitive with moderate/high confidence- identified from features x sensitivity matrix project MB0102
✓	Activity gives rise to a pressure to which the feature is sensitive with moderate/high confidence but activity does NOT occur within habitat or does not occur at relevant spatial scale
✓	Activity gives rise to a pressure to which the feature is sensitive with moderate/high confidence AND activity occurs within habitat at a relevant spatial scale.

Broadscale Habitats	Pressure theme	Coastal Saltmarsh	Deep Sea Mud	Intertidal sediments dominated by aquatic angiosperms
Activity theme		All	All	All
Energy production	Energy production - at sea (wind turbines)			
	Energy production - at sea (wave turbines)			
	Energy production - at sea (tidal turbines)			
	Energy production - on land (power stations, inc. nuclear)			
Extraction - non-living resources	Extraction - quarrying	✓	✓	✓
	Extraction - navigational dredging (capital, maintenance)	✓	✓	✓
	Extraction - sand & gravel	✓	✓	✓
	Extraction - oil & gas			
	Extraction - water (freshwater catchment; industrial, e.g. power station)			
Extraction - living resources	Harvesting - seaweed		✓	✓
	Bioprospecting		✓	✓
	Extraction - maerl	✓ not this habitat	✓	✓
	Fishing - benthic trawling		✓	✓
	Fishing - hydraulic dredging		✓	✓
	Fishing - pelagic trawling		✓	✓
	Fishing - potting/creeling		✓	✓
	Fishing - recreational		✓	✓
	Fishing - set netting		✓	✓
	Crab Tiling/Bait digging		✓	✓
Fishing - shellfish harvesting		✓	✓	
Food production	Aquaculture - fin fish			
	Aquaculture - shell fish		✓	
Habitat modification	Beach replenishment	✓	✓	✓
Man-made structures (inc. construction phase)	Infrastructure - cables & pipelines (Installation)	✓		
	Infrastructure - cables & pipelines (Operation)			
	Infrastructure - coastal (ports, marinas, leisure facilities)			
	Infrastructure - coastal defence & land claim	✓		
	Infrastructure - offshore (artificial reefs)			
	Infrastructure - offshore (oil & gas platforms)			
	Infrastructure - offshore (wind & wave turbines)			
Military	Military activities			
Recreation	Tourism & recreation		✓	✓
Survey & research	Seismic survey (military, exploration, construction)			
Transport	Shipping			
Waste - gas	Waste gas emission (inc. greenhouse gases) - industry, agriculture, forestry, domestic &			
Waste - liquid	Industrial & agricultural liquid discharges		✓	
	Sewerage disposal		✓	
Waste - solid	Waste disposal - fish waste (land-based processing; processing vessels)			
	Waste disposal - munitions (chemical & conventional)			
	Waste disposal - navigational dredging (capital, maintenance)			
	Waste disposal - quarrying (geological material)			

Habitat FOCI	Pressure theme	Cold water coral reefs	Coral Gardens	Deep Sea sponge aggregations	File Shell Beds	Honeycomb Worm (<i>Sab Alveola</i>)	Horse Mussel Beds (<i>Modiolus modiolus</i>)	Maerl Beds	Mud habitats in deep water	Native Oyster (<i>Ostrea edulis</i> beds)	Peat and clay exposures	Ross worm (<i>Sab spinulosa</i>)	Sea pens and burrowing megafauna	Seagrass beds	Sheltered muddy gravels	Subtidal Chalk	Tide swept channels
Activity theme	Pressure	All	All	All	All	All	All	All	All	All	All	All	All	All	All	All	All
	Activity																
Energy production	Energy production - at sea (wind turbines)																
	Energy production - at sea (wave turbines)																
	Energy production - at sea (tidal turbines)																
	Energy production - on land (power stations, inc. nuclear)																
Extraction - non-living resources	Extraction - quarrying	✓	✓	✓	✓		✓	✓	✓	✓				✓			✓
	Extraction - navigational dredging (capital, maintenance)	✓	✓	✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	unlikey to require dredging
	Extraction - sand & gravel	✓ hard substrate	✓ hard substrate	✓ hard substrate	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓
	Extraction - oil & gas																
	Extraction - water (freshwater catchment; industrial, e.g. power station)	✓															
Extraction - living resources	Harvesting - seaweed	✓	✓	✓		✓	✓		✓			✓		✓			
	Bioprospecting	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓
	Extraction - maerl	✓	✓	✓	✓		✓	✓	✓	✓	✓			✓	✓		✓
	Fishing - benthic trawling	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓		
	Fishing - hydraulic dredging	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	Fishing - pelagic trawling	✓	✓	✓		✓	✓		✓				✓	✓			
	Fishing - potting/creeling	✓	✓	✓		✓	✓		✓				✓	✓			
	Fishing - recreational	✓	✓	✓		✓	✓		✓				✓	✓			
	Fishing - set netting	✓	✓	✓		✓	✓		✓				✓	✓			
	Crab Tiling/Bait digging	✓	✓	✓	✓		✓	✓	✓	✓		✓		✓			
	Fishing - shellfish harvesting	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓		✓	✓
	Food production	Aquaculture - fin fish															
Aquaculture - shell fish		✓	✓	✓	✓		✓		✓	✓			✓			✓	✓
Habitat modification	Beach replenishment	✓	✓	✓	✓		✓	✓	✓	✓			✓		✓	✓	✓
Man-made structures (inc. construction phase)	Infrastructure - cables & pipelines (Installation)																
	Infrastructure - cables & pipelines (Operation)																
	Infrastructure - coastal (ports, marinas, leisure facilities)																
	Infrastructure - coastal defence & land claim																
	Infrastructure - offshore (artificial reefs)																
	Infrastructure - offshore (oil & gas platforms)																
	Infrastructure - offshore (wind & wave turbines)																
Military	Military activities																
Recreation	Tourism & recreation	✓	✓	✓	✓	✓	✓	✓	✓			✓		✓			
Survey & research	Seismic survey (military, exploration, construction)																
Transport	Shipping																
Waste - gas	Waste gas emission (inc. greenhouse gases) - industry, agriculture, forestry, domestic & transport																
Waste - liquid	Industrial & agricultural liquid discharges								✓				✓				
	Sewerage disposal	✓					✓		✓	✓			✓		✓		
Waste - solid	Waste disposal - fish waste (land-based processing; processing vessels)																
	Waste disposal - munitions (chemical & conventional)																
	Waste disposal - navigational dredging (capital, maintenance)	✓	✓	✓	✓		✓			✓	✓				✓	✓	✓
	Waste disposal - quarrying (geological material)	✓	✓	✓	✓		✓			✓	✓				✓	✓	✓

Activity theme	Activity	Alkmaria romijni	Amphianthus dohrni	Arctica islandica	Caecum armoricum	Cruoria cruoriaeformis	Eunicella verrucosa	Gammarus insensibilis	Halicystus auricula	Hippocampus guttulatus	Hippocampus hippocampus	Lecernariopsis campanulata	Leptosammia pruvoti	Lithothamnion coralloides	Ostrea edulis	Padina pavonica	Palinurus elephas	Phymatolithon calcareum	Victorella pavida
Energy production	Energy production - at sea (wind turbines)																		
	Energy production - at sea (wave turbines)																		
	Energy production - at sea (tidal turbines)																		
	Energy production - on land (power stations, inc. nuclear)																		
Extraction - non-living resources	Extraction - quarrying		✓	✓		✓	✓	✓					✓	✓		✓	✓	✓	
	Extraction - navigational dredging (capital, maintenance)	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓
	Extraction - sand & gravel	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓
	Extraction - oil & gas																		
	Extraction - water (freshwater catchment; industrial, e.g. power station)					✓							✓	✓				✓	
Extraction - living resources	Harvesting - seaweed		✓				✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		
	Bioprospecting		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Extraction - maerl	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓
	Fishing - benthic trawling		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Fishing - hydraulic dredging	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Fishing - pelagic trawling		✓					✓		✓	✓	✓	✓		✓		✓		
	Fishing - potting/creeling		✓					✓		✓	✓	✓	✓		✓		✓		
	Fishing - recreational		✓					✓		✓	✓	✓	✓		✓		✓		
	Fishing - set netting		✓					✓		✓	✓	✓	✓		✓		✓		
	Crab Tiling/Bait digging		✓	✓			✓	✓	✓				✓	✓		✓	✓	✓	✓
Fishing - shellfish harvesting	✓	✓		✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Food production	Aquaculture - fin fish																		
	Aquaculture - shell fish	✓	✓		✓		✓	✓					✓	✓	✓	✓	✓		✓
Habitat modification	Beach replenishment	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓
Man-made structures (inc. construction phase)	Infrastructure - cables & pipelines (Installation)																		
	Infrastructure - cables & pipelines (Operation)																		
	Infrastructure - coastal (ports, marinas, leisure facilities)																		
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	Infrastructure - offshore (oil & gas platforms)																		
	Infrastructure - offshore (wind & wave turbines)																		
Military	Military activities																		
Recreation	Tourism & recreation		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
Survey & research	Seismic survey (military, exploration, construction)																		
Transport	Shipping																		
Waste - gas	Waste gas emission (inc. greenhouse gases) - industry, agriculture, forestry, domestic & transport																		
Waste - liquid	Industrial & agricultural liquid discharges																		
	Sewerage disposal		✓					✓							✓				
Waste - solid	Waste disposal - fish waste (land-based processing; processing vessels)																		
	Waste disposal - munitions (chemical & conventional)																		
	Waste disposal - navigational dredging (capital, maintenance)	✓	✓		✓		✓	✓					✓	✓	✓	✓	✓		✓
	Waste disposal - quarrying (geological material)	✓	✓		✓		✓	✓					✓	✓	✓	✓	✓		✓