

WISE Marine – MSFD Dashboards for the 3rd cycle

Methodology

1. Processing and aggregation of Good Environmental Status (GES) assessment results

This methodology explains how national Good Environmental Status (GES) assessment results, reported by Member States under MSFD Article 8 (“Assessment”), are processed and aggregated from feature level (e.g. species groups, habitats) to descriptor and regional level, enabling consistent presentation and comparison of results across marine regions and reporting cycles.

It applies specifically to the MSFD experts’ dashboards on:

- [Marine Area Reported by Descriptor](#)
- [Aggregated GES Assessment Results](#)

1.1. Data processing and harmonisation

GES assessment results are reported at feature level (e.g. species groups, habitats) and are spatially defined using Marine Reporting Units (MRUs), which serve as the spatial assessment units for conducting GES evaluations. These data are harmonised to ensure comparability across Member States and reporting cycles.

To improve clarity and interpretation, the methodology separates for a given descriptor/ecosystem component:

- assessment coverage – from the marine waters reported, areas assessed or not assessed;
- environmental status – from the marine waters assessed, Good Environmental Status achieved or not achieved.

To ensure robust and meaningful results, some features are excluded from regional assessments when reporting coverage is very low (preventing an adequate representation/coverage of their status at the regional level) or the features correspond to secondary criteria not used for status conclusions.

1.2. Aggregation of results

Some descriptors/ecosystem components require aggregation (e.g. D1 Birds, D8 Contaminants), while for others aggregation is not necessary for the following reasons:

- a) The overall status for the descriptor is already reported by the Member State (e.g. D5 Eutrophication).
- b) Only one feature underpinning the descriptor is relevant for determining GES. These correspond to features linked to the “primary” criterion, comparing to other features which relate to secondary criteria (e.g. D2 Non-indigenous species).
- c) Only one criterion underpinning the descriptor is supported by sufficiently robust data to be used in the assessment.

Note that the number of GES descriptors with need for aggregation may be different for each reporting cycle. For further details on the descriptors requiring aggregation, please refer to Tables 1 (2nd reporting cycle) and 2 (3rd reporting cycle) in the Annex.

In addition, results are spatially aggregated from MRU level to marine regions and EU level:

- An area is considered “assessed” when at least one feature has been evaluated (i.e. the status reported is “GES achieved” or “GES not achieved”).
- An area is considered “not assessed” if there are no assessed features (“not assessed”, “not relevant” or “unknown” were reported by data provider)

Environmental status is determined using a “one out, all out” (OOAO) approach. Under this approach:

- GES is achieved only when all assessed features are in good status.
- GES is not achieved when at least one assessed feature is not in good status.

This approach follows the [GD19 - Article 8 MSFD Assessment Guidance](#) (European Commission, 2022. MSFD CIS Guidance Document No. 19, Article 8 MSFD, May 2022), which establishes that an ecosystem component cannot be considered to be in good environmental status if any of its assessed features (e.g. species groups or habitats) fail to achieve GES.

For the aggregation of GES assessment results, an extended “OOAO – How many out?” approach is applied. Building on the standard OOAO principle, this approach provides an indication of progress towards GES by showing how many features do not achieve GES within a given assessment unit.

Therefore, the “GES not achieved” category is further divided into subcategories indicating how many assessed features failed to achieve GES (e.g. 1–5 bird species groups), without identifying the specific features. For example, the subcategory “GES not

achieved for 5 species groups” refers to MRUs where none of the five reported bird species groups (wading, pelagic-feeding, benthic-feeding, surface-feeding, and grazing) achieved GES.

The resulting status information for each MRU (distinguishing features at GES and the number of features not achieving GES) is then aggregated to the level of marine regions. During aggregation, each MRU contributes only once, based on its spatial extent.

1.2.1. Specific approach for Descriptor D3 (Commercially exploited fish and shellfish)

For Descriptor D3, the aggregation methodology differs from other descriptors, as it is based on the number of assessed stocks rather than spatial extent. Aggregation is performed at the level of reported elements (fish species/stocks).

Stocks are classified as “assessed” (“Good”, “Not good”) or “not assessed” (“Not assessed”, “Not relevant”, “Unknown”) and aggregated to marine regions and EU level as percentage shares. Similarly, stocks are classified as “GES achieved” (“Good”) or “GES not achieved” (“Not good”) and aggregated to marine regions and EU level as percentage shares.

1.3. Handling of spatial overlaps

MRUs reported by Member States may spatially overlap, which can affect the aggregation of GES assessment results if not addressed. The overlaps identification and resolution are applied as a data preparation step prior to aggregation. The process is carried out separately for each reporting cycle.

Two types of overlaps are identified and systematically resolved to avoid double counting and ensure consistent aggregation:

1.3.1. Overlaps of MRUs with the same feature

These occur when overlapping MRUs contain assessment results for the same feature within a given descriptor. Overlap analysis is conducted separately for each feature. The resolution depends on the consistency of the reported assessment results:

- If overlapping MRUs have the same GES result, the areas are merged and counted only once.
- If overlapping MRUs have different GES results, the overlapping area is assigned to “Not assessed”

To support interpretation, such areas are further classified as:

- “Not concluded” (overlaps within the same Member State)
- “Area with conflicting results” (overlaps between Member States).

Note that “Not assessed” category clusters then the following results:

- Not assessed (as reported by data provider)
- Not relevant (as reported by data provider)
- Unknown
 - Unknown (as reported by data provider)
 - Area with conflicting results (assigned by data processor within MRU overlap analysis between neighbouring Member States)
 - Not concluded (assigned by data processor within MRU overlap analysis within the same Member State)

1.3.2. Overlaps of MRUs with different features

These occur when overlapping MRUs represent different features within the same descriptor.

For each overlapping area:

- The area is considered “assessed” if at least one feature is assessed; otherwise, it is “not assessed”.
- Environmental status follows a “one out, all out” (OOAO) logic:
 - GES achieved only if all features in the overlap achieve GES;
 - GES not achieved if at least one feature does not achieve GES.

1.4. Application across reporting cycles

The methodology is applied consistently to both the 2nd and 3rd MSFD reporting cycles, with adaptations reflecting differences in data availability and reporting practices.

2. Note on other MSFD Experts' dashboards

Other dashboards, such as those listed below, present data as reported by Member States. The information is typically shown as the number of assessments reported and can be aggregated spatially at country, subregional, regional, or EU level. In some cases, results are also expressed as a percentage of the reported marine area. However, no data have been excluded based on low reporting coverage or because the reported features correspond to secondary criteria.

- [Good Environmental Status \(GES\) Assessments of EU Marine Waters by Integration Level](#)
- [Good Environmental Status \(GES\) Assessments by EU Member State and Descriptor](#)
- [Map of GES Assessment Status across Marine Reporting Units](#)
- [Anthropogenic Pressures Reported under MSFD Article 8 \(GES\)](#)
- [Environmental targets: status and coverage under MSFD Article 10](#)
- [Human activities and related pressures reported under MSFD Article 8 \(ESA\)](#)

ANNEX

Table 1: The 2nd MSFD reporting cycle: Descriptor/Ecosystem component and corresponding features. Rows shaded in blue illustrate where aggregation of features status into relevant descriptor/ecosystem component at the regional and EU levels is needed.

GES Component/ Descriptor/Ecosystem component	Feature	GES aggregated at the level of descriptor/ecosystem component?
PRESSURE-BASED GES DESCRIPTORS FOR WISE-MARINE ASSESSMENTS		
D2 - Non-indigenous species	D2 Non-indigenous species: newly-introduced (D2C1)	No. Only the assessment of the (primary) criterion on 'newly introduced NIS' is relevant to reach a conclusion on GES, and this is then used as a proxy for the descriptor.
	D2 Established non-indigenous species (not used) (D2C2)	
	D2 Adverse effects on species or habitats (not used) (D2C3)	
D3 – Commercially exploited fish and shellfish species	D3 Fish species / stocks	Yes. However, the methodology for aggregation is different and is based on assessment of fish stocks from the Element/Element2 reporting level.
D5 – Eutrophication	D5 Eutrophication (D5C1-D5C5)	No. Aggregation to descriptor/component level is done already by reporting countries.
D6 – Seabed integrity	D6 Physical loss of seabed (D6C1) (not used)	No. This descriptor has not been assessed at EU and regional levels – with a couple of exceptions within D1 'habitats'.
	D6 Physical disturbance to seabed (D6C2) not used)	
	D6 Benthic broad habitats, other benthic habitats (D6C3) (not used)	
D7 – Hydrographical conditions	D7 Hydrographical changes (D7C1) (not used)	No. This descriptor has not been assessed at EU and regional levels. As per the EC Decision defining GES (EC, 2017), all criteria are secondary, so there is no need for a conclusion on status for D7.
	D7 Adverse affects on species and habitats (D7C2) (not used)	
D8 - Hazardous substances and other contaminants	D8 Contaminants: UPBT substances (D8C1)	Yes. But aggregation to descriptor/component level does not include criteria on ' <i>Adverse effects on species or habitats</i> ' (criteria D8C2 and D8C4) because they are secondary.
	D8 Contaminants: non-UPBT substances (D8C1)	
	D8 Acute pollution events (D8C3)	
	D8 Adverse affects on species or habitats (D8C2 and D8C4) (not used)	

D9 – Contaminants in seafood	D9 Contaminants: in seafood (D9C1)	No. Aggregation not needed because the descriptor is only underpinned by one criterion (criterion D9C1).
D10 – Litter	D10 (macro) Litter (D10C1)	No. Aggregation not needed because the assessment is based only on <i>Macrolitter</i> (criterion D10C1) given that reporting on the other criteria was very poor and couldn't be used.
	D10 Litter & micro-litter in species (not used) (D10C3)	
	D10 Micro-litter (not used) (D10C2)	
	D10 Adverse effects on species or habitats (not used) (D10C4)	
D11 - Underwater noise	D11 Impulsive sound (D11C1)	Yes. But the reported data coverage is rather poor; where the GES assessment has been done only by few countries in the North-east Atlantic Ocean.
	D11 Continuous sound (D11C2)	
STATE-BASED GES DESCRIPTORS FOR WISE-MARINE ASSESSMENTS		
D1 - Marine biodiversity: Birds	D1 Birds: pelagic-feeding	Yes
	D1 Birds: surface-feeding	
	D1 Birds: benthic-feeding	
	D1 Birds: grazing	
	D1 Birds: wading	
D1 - Marine biodiversity: Mammals	D1 Mammals: small toothed cetaceans	Yes
	D1 Mammals: baleen whales	
	D1 Mammals: seals	
	D1 Mammals: deep-diving toothed cetaceans	
D1 - Marine biodiversity: Fish	D1 Fish: coastal	Yes
	D1 Fish: demersal shelf	
	D1 Fish: deep-sea	
	D1 Fish: pelagic shelf	
D1 - Marine biodiversity: Marine reptiles/marine turtles	D1 Reptiles: turtles	No. Aggregation not needed because the assessment done by reporting countries is based on only one species group (<i>Reptiles: turtles</i>).
D1 - Marine biodiversity: Cephalopods	D1 Cephalopods: coastal/shelf	No. Aggregation not needed because the assessment is based only on <i>Cephalopods: coastal/shelf</i> .
	D1 Cephalopods: deep-sea	The reporting on <i>Cephalopods: deep-sea</i> was very poor (reported only by MT and PT) and couldn't be used.

D1 - Marine biodiversity: Pelagic habitats	D1 Habitats: pelagic broad	No. Aggregation not needed because the assessment is based only on <i>Habitats: pelagic broad</i> . The reporting on <i>Habitats: pelagic other</i> was very poor (only MRUs classified as "Not assessed" have been reported) and couldn't be used.
	D1 Habitats: pelagic other	
D6 Sea-floor integrity/D1 Biodiversity - benthic habitats	D6&D1 Habitats: benthic broad	Yes
	D6&D1 Habitats: benthic other	
D4 - Marine ecosystems/food webs	D4 Ecosystem: shelf	No. The assessment is based only on <i>Ecosystem: shelf</i> . The reporting on <i>Ecosystem: coastal</i> , <i>Ecosystem: oceanic/deep-sea</i> and <i>Ecosystem, incl. food webs</i> was very poor and couldn't be used.
	D4 Ecosystem: coastal	
	D4 Ecosystem: oceanic/deep-sea	
	D4 Ecosystem, incl. food webs	

Note: Feature types in grey font are proposed to be excluded from WISE-Marine assessments as they have been assessed in less than 8% of the EU's marine waters (in the 2018 reporting), or are secondary features that do not require a status conclusion.

Table 2: The 3rd MSFD reporting cycle: Descriptor/Ecosystem component and corresponding features. Rows shaded in blue illustrate where aggregation of features status into relevant descriptor/ecosystem component at the regional and EU levels is needed.

GES Component/ Descriptor/Ecosystem component	Feature	GES aggregated at the level of descriptor/ecosystem component?
PRESSURE-BASED GES DESCRIPTORS FOR WISE-MARINE ASSESSMENTS		
D2 - Non-indigenous species	D2 Non-indigenous species: newly-introduced (D2C1)	No. Only the assessment of the (primary) criterion on 'newly introduced NIS' is relevant to reach a conclusion on GES, and this is then used as a proxy for the descriptor.
	D2 Established non-indigenous species (not used) (D2C2)	
	D2 Adverse effects on species or habitats (not used) (D2C3)	
D3 – Commercially exploited fish and shellfish species	D3 Fish species / stocks	Yes. However, the methodology for aggregation is different and is based on assessment of fish stocks from the Element/Element2 reporting level.
D5 – Eutrophication	D5 Eutrophication (D5C1-D5C5)	No. Aggregation to descriptor/component level is done already by reporting countries.
D6 – Seabed integrity	D6 Physical loss of seabed (D6C1)	Yes.
	D6 Physical disturbance to seabed (D6C2)	
D7 – Hydrographical conditions	D7 Hydrographical changes (D7C1)	No. Aggregation is not needed. The assessment is based on secondary criterion Hydrographical changes (D7C1) which has sufficient data coverage.
	D7 Physical and hydrological characteristics (D7C1) (not used)	
	D7 Adverse affects on species and habitats (D7C2) (not used)	
D8 - Hazardous substances and other contaminants	D8 Contaminants: UPBT substances (D8C1)	Yes. But aggregation to descriptor/component level does not include criteria on ' <i>Adverse effects on species or habitats</i> ' (criteria D8C2 and D8C4) because they are secondary.
	D8 Contaminants: non-UPBT substances (D8C1)	
	D8 Acute pollution events (D8C3)	
	D8 Adverse affects on species or habitats (D8C2 and D8C4) (not used)	
D9 – Contaminants in seafood	D9 Contaminants: in seafood (D9C1)	No. Aggregation not needed because the descriptor is only underpinned by one criterion (criterion D9C1).

D10 – Litter	D10 (macro) Litter (D10C1)	Yes. The assessment is based on <i>Macro-litter</i> (criterion D10C1) and <i>Micro-litter in the environment (D10C2)</i> given that both are primary criteria with sufficient data coverage.
	D10 Micro-litter in the environment (D10C2)	
	D10 Litter & micro-litter in species (not used) (D10C3)	
	D10 Adverse effects on species or habitats (not used) (D10C4)	
D11 - Underwater noise	D11 Impulsive sound (D11C1)	Yes.
	D11 Continuous sound (D11C2)	
STATE-BASED GES DESCRIPTORS FOR WISE-MARINE ASSESSMENTS		
D1 - Marine biodiversity: Birds	D1 Birds: pelagic-feeding	Yes
	D1 Birds: surface-feeding	
	D1 Birds: benthic-feeding	
	D1 Birds: grazing	
	D1 Birds: wading	
D1 - Marine biodiversity: Mammals	D1 Mammals: small toothed cetaceans	Yes
	D1 Mammals: baleen whales	
	D1 Mammals: seals	
	D1 Mammals: deep-diving toothed cetaceans	
D1 - Marine biodiversity: Fish	D1 Fish: coastal	Yes
	D1 Fish: demersal shelf	
	D1 Fish: deep-sea	
	D1 Fish: pelagic shelf	
D1 - Marine biodiversity: Marine reptiles/marine turtles	D1 Reptiles: turtles	No. Aggregation not needed because the assessment done by reporting countries is based on only one species group (<i>Reptiles: turtles</i>).
D1 - Marine biodiversity: Cephalopods	D1 Cephalopods: coastal/shelf	No. Aggregation not needed because the assessment is based only on <i>Cephalopods: coastal/shelf</i> .
	D1 Cephalopods: deep-sea	The reporting on <i>Cephalopods: deep-sea</i> was very poor and couldn't be used.
D1 - Marine biodiversity: Pelagic habitats	D1 Habitats: pelagic broad	No. Aggregation not needed because the assessment is based only on <i>Habitats: pelagic broad</i> . The data coverage on <i>Habitats: pelagic other</i> is too low and couldn't be used.
	D1 Habitats: pelagic other	

D6 Sea-floor integrity/D1 Biodiversity - benthic habitats	D6&D1 Habitats: benthic broad	Yes
	D6&D1 Habitats: benthic other	
D4 - Marine ecosystems/food webs	D4 Ecosystem: shelf	Yes. The assessment is based on <i>Ecosystem: shelf</i> and <i>Ecosystem: oceanic/deep-sea</i>
	D4 Ecosystem: oceanic/deep-sea	
	D4 Ecosystem: coastal	The reporting on <i>Ecosystem: coastal</i> and <i>Ecosystem, incl. food webs</i> was very poor and couldn't be used.
	D4 Ecosystem, incl. food webs	

Note: Feature types in grey font are proposed to be excluded from WISE-Marine assessments as they have been assessed in less than 8% of the selected 15 MS's marine waters (in the 2024 reporting) or are secondary features that do not require a status conclusion (with exception of D7).