



Comments by
MSFD -NAVI

**Template for the review of Commission Decision 2010/477/EU
concerning MSFD criteria for assessing good environmental status
according to the review manual**

**Descriptor 7: Permanent alteration of hydrographical conditions does not
adversely affect marine ecosystems.**

Document history				
Version	Date	File name	Authors	Description
1.0	23/05/2014	Annex I D7 manual Milieu.docx	Milieu	Approach and results from the Art.12 assessment filled up.
1.1	30/05/2014	Annex I D7 manual Milieu_DC.docx	David Connor (DG ENV)	Comments from DG ENV.
1.2	25/06/2014	ComDecRev_D7_Template_v1.2.docx	Daniel Gonzalez	Structure amended
1.3	18/07/2014	ComDecRev_D7_Template_v1.3.docx	Adolf Stips, Daniel Gonzalez, Clare Coughlan	Amended and filled with results from the in-depth assessment + OSPAR Advice Doc. GES D7 + JRC Technical Guidance on Monitoring for the MSFD. Major revision
2.0	24/07/2014	ComDecRev_D7_v2.docx	Daniel Gonzalez, Clare Coughlan	Further developed and distributed to experts.
2.1	31/07/2014	ComDecRev_D7_v2.1_DC.docx	David Connor (DG ENV)	Comments from DG ENV
2.2	25/09/2014	ComDecRev_D7_v2.2.docx	Adolf Stips, Daniel Gonzalez, Clare Coughlan	Comments from experts and DG ENV merged in one single document.
2.3	25/09/2014	ComDecRev_D7_v2.3.docx	Adolf Stips, Daniel Gonzalez, Clare Coughlan	Comments integrated. Distributed to experts for 2 nd round of comments
3.0	10/10/2014	ComDecRev_D7_v3.0.docx	Adolf Stips, Daniel Gonzalez, Clare Coughlan	Comments integrated. Uploaded to CIRCABC for GES meeting

1 *Disclaimer: The review of MSFD Descriptor 7 is being performed through a collaborative work among*
2 *experts of the network for MSFD Descriptor 7, lead by JRC. The current state of these discussions is being*
3 *reflected in this draft template document. Discussions have not been concluded and final*
4 *recommendations will be prepared in the second review phase.*

5

6 **Template for the Review of Commission Decision 2010/477/EC**

7 **Introduction**

8 The MSFD Committee discussed and concluded an approach and an outline for the process of a review
9 and possible revision of Commission Decision 2010/477/EU on GES criteria (COM DEC) and of MSFD
10 Annex III (see Committee/07/2013/03rev for details). Based on the template in the annex to the
11 mandate of the MSFD Committee, a more detailed manual for the technical phase relating to the review
12 of COM DEC has been developed to guide the parallel preparatory process and discussions per
13 descriptor. The review manual and the potential structure were decided and agreed by the WG GES in
14 March 2014. These are common for all descriptors to ensure coherence in the review approach.

15 Experts should comment on the review template following the approach outlined in the review manual
16 and the general guiding principles laid out below. It is very important to understand that this review
17 template is not a closed document. It has been prefilled in an attempt to highlight relevant aspects and
18 issues that are important for the review of COM DEC. Please keep in mind that experts are free to add
19 any relevant points, questions and information that are not yet included. Input and comments are
20 expected by the experts for all sections, including those that have been prefilled.

21 Part B1 of the review template comprises 4 sections to be developed in accordance with the review
22 manual:

- 23 • Approach
- 24 • Analysis of the implementation process
- 25 • Analysis of the current text of the Decision
- 26 • Identification of issues

27 Part B2 of the review template comprises 5 sections that will describe conclusions, recommendations
28 and proposals resulting from the work developed in Part B1. Experts are asked to start providing input
29 to this part in parallel with Part B1.

30

31 **General guiding principles for the review**

32 The review aims to analyse the results from the first MSFD reporting round on Articles 8, 9, and 10 with
33 a view to update/improve and simplify the COM DEC.

34 Based on the Information in the Art 12 assessment reports (COM(2014)97 final; SWD(2014) 49 final) and
35 the JRC in-depth assessments (JRC IDA D7, 2014) the review template has been prefilled by Milieu, DG

36 ENV and JRC. This should enable the experts group to analyse current shortcomings and propose ways
37 forward, e.g., needs for further guidance and development, but eventually also to develop proposals for
38 amending the COM DEC based on scientific knowledge and experience in the implementation process.

39

40 The current review should lead to a new COM DEC which (is):

- 41 • Simpler
- 42 • Clearer
- 43 • Introduces minimum requirements (to be enhanced by regions and MS, if necessary)
- 44 • Self-explanatory
- 45 • Coherent with other EU legislation
- 46 • Coherent with regional assessment methods (where EU does not exist)
- 47 • Has a clear and minimum list of criteria and methodological standards and related
48 characteristics, pressures and impacts (MSFD Annex III)
- 49 • Ensures that criteria and methodological standards adequately address coverage of the
50 descriptors by the proposed criteria, to lead to complete assessments
- 51 • Coherent with the MSFD terminology

52

53 This review should develop a more coherent approach to the definition of GES based on agreed criteria
54 and methodological standards that can enable assessment of the current state and hence establish
55 whether GES has been achieved and, if not, the gap between the current state and GES.

56

57

Part B1

58
59

Descriptor 7: Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.

60 *Good Environmental Status for Descriptor 7: Permanent alteration of hydrographical conditions does not*
61 *adversely affect marine ecosystems. (Annex I of MFSD)*

62

63

Approach

64

Definition of the Descriptor D7

65 **Hydrography** is the branch of applied sciences that deals with the measurement and description of the
66 **physical features** of oceans, seas, coastal areas, lakes and rivers, as well as with the prediction of their
67 change over time, for the primary purpose of safety of navigation and in support of all other marine
68 activities, including economic development, security and defence, scientific research, and environmental
69 protection¹.

70 **Hydrology** (from the Greek word *hydrologia*, the "study of water") is the study of the movement,
71 distribution, and quality of water throughout the Earth, including the hydrologic cycle, water resources
72 and environmental watershed sustainability².

73 **Hydromorphology** is that new subfield of hydrology that deals with structure and evolution of Earth's
74 water resources. It deals with the origin and dynamic morphology of water resource systems as caused
75 by both natural and anthropogenic influences³. The MSFD and WFD do not define hydromorphology.
76 The WFD considers hydromorphological quality elements for the classification of ecological status. The
77 COM DEC refers to the WFD 'hydromorphological objectives', although this term is not explicitly
78 mentioned in the WFD text.

79 **Hydrographical conditions** (= physical features) include the bathymetry of the seabed, sea level,
80 temperature, salinity, currents, tides, waves and turbidity. This strict definition of hydrography excludes
81 chemical features like pH, alkalinity, oxygen and nutrients from consideration under D7. The definition
82 builds mainly on cases from Water Framework Directive (WFD) and the Flood Directive. Some
83 **hydrographical conditions** outlined under the Marine Strategy Framework Directive (MSFD) are
84 comparable to the hydromorphological conditions referred to under the WFD (Annex II
85 "Characterisation of surface water types" section 1.2.4 coastal waters system B). However, in the MSFD
86 (Annex III, Table 1) several additional characteristics are listed, such as wave exposure and **water**
87 **turbidity**.

¹ [International Hydrographic Organization, www.who.int](http://www.who.int)

² <http://www.newworldencyclopedia.org/entry/Hydrology>

³ <http://engineering.tufts.edu/cee/people/vogel/documents/hydromorphologyEditorial.pdf>

Comment [A1]: We are not sure where this comment originated: WFD Annex V, 1.1.4 highlights both wave exposure and transparency amongst the hydromorphological and physico-chemical quality elements (supporting elements) for coastal water bodies ...

88 The MSFD text does not define what ‘physical features’ are. Table 1 of MSFD Annex III includes an
89 indicative list of elements (features and characteristics) with no further specification on which ones
90 should apply for Descriptor 7. This table would also include other features or characteristics typical of or
91 specific to the marine region or subregion considered. The text of the COM DEC refers to the physical
92 and chemical characteristics listed in Table I Annex III of the MSFD. In terms of comparing and clarifying
93 the definition, some other sources might need to be consulted. Table 2 of MSFD Annex III, regarding
94 pressures and impacts, includes interference with hydrological processes, but these processes are not
95 defined and they only refer to changes in thermal and saline regimes.

96

97 *Comments:*

- 98 - *Do hydrographical conditions and physical features refer to **the same term?***
- 99 - *It can be assumed that features and characteristics refer to the same term*
- 100 - *Suggestion to clarify the definition for **physical features***
- 101 - *Pelagic features such as eddies, fronts and/or river plumes should be considered because of*
102 *their important role on pelagic habitats.*
- 103 - *Discussion is needed on the adequacy of considering certain elements as physical features*
104 *under Descriptor 7 (e.g. bathymetry – geological feature, turbidity – linked to plankton, so*
105 *not independent from Descriptor 5)*
- 106 - *Needs definition for hydrological processes and a clarification of the specific hydrological*
107 *processes that should be considered under the MSDF framework (Pressures and impacts,*
108 *Table 2 ANNEX III of MSFD)*

109

110 Under the WFD, water bodies may be classified as ‘heavily modified water bodies’ when, as result of
111 physical alterations by human activity, their character has been substantially changed and specific
112 requirements must be applied to achieve ‘good ecological potential’, i.e. waters affected by permanent
113 changes to hydrographical conditions such as coastal defence works, land reclamation or building
114 activities. On the other hand, the terms ‘permanent changes’ or ‘hydrographical conditions’ are not
115 referred to in the WFD. This makes it difficult to determine the interaction between assessments under
116 both WFD and MSFD, e.g. if only permanent hydrographical changes will be considered in MSFD. The
117 term ‘permanent’ implies a situation that is not going to be reversed, but it is not defined under the
118 MSFD, although OSPAR has proposed a temporal threshold.

119

120 **Permanent hydrographical changes** can occur due to changes in the thermal or salinity regimes,
121 changes in the tidal regime, sediment and freshwater transport, current or wave action and changes in
122 turbidity. The degree of change and the period over which such change occurs varies considerably,
123 depending on the type of modification. Assessment of the degree of change can be related to both the
124 water column and the sea-floor, and consequently to their biological communities. These types of
125 change are normally triggered by infrastructure building activities, such as extensions or alterations to
126 the coast, or the building of artificial islands and other infrastructural works in the marine environment
127 (such as outfalls from power stations, bridges and causeways to islands, offshore installations). This
128 descriptor addresses all such developments (existing and new infrastructures) and both large- and small-
129 scale structures. Cumulative impact assessment should be considered for assessing the significance of

Comment [A2]: No definitely not

Comment [A3]: Care will be required here as many features are scale-dependent

Comment [A4]: In coastal water bodies, such physical modifications are already assessed under WFD Article 4(3) (existing modifications) or Article 4(7) (new modifications). Care will therefore be required to ensure that duplication is avoided. We understand that this type of issue was recognised by Marine Directors in Rome 24th – 25th November where they agreed that “...as well as taking account of evidence from other Directives when exemptions are applied, in particular the Water Framework Directive. As a consequence, it was advised that Member States should make reference to such existing exemptions when applying Article 14...”

130 the aggregated effect of many small-scale changes. Importance is given to new planning activities that
131 will have to fulfil Environmental Impacts Assessments (EIA).

132

133 *Comments:*

- 134 - *Whether or not a temporal threshold is defined for 'permanent' has consequences for a*
135 *harmonized approach to assess GES for D7.*
- 136 - *Does this mean that temporary hydrographical changes would be excluded from Descriptor*
137 *7?*
- 138 - *There is a lack of specification and coherence between the MSFD text (indicative list of*
139 *characteristics, pressures and impacts in table 2, Annex III, MSFD) and the COM DEC text.*
140 *Some pressures listed under physical loss could and have been applied for assessment of D7.*
141 *In order to assure comparability between MSs, a harmonization/agreement of the*
142 *activities/pressures under D7 should be considered/reached and a clearer link between the*
143 *COM DEC and the Directive should be set for this descriptor.*
144

Comment [A5]: CIS Guidance Document 20 for the WFD confirms that the WFD is not concerned with 'temporary' changes, so it would seem reasonable to take the same approach for the MSFD

145 **Descriptor 7** is primarily a 'pressure' descriptor that focuses on permanently altered hydrographical
146 conditions (often at a localized scale), which predominantly arise from pressures causing structural
147 alteration of the coast or seabed: coastal activities causing topographical changes (e.g. land claim,
148 barrages, sea defences) and coastal and offshore infrastructures (e.g. ports, wind farms, oil rigs,
149 pipelines, heat and brine outfalls). Hence, the pressure is the change in morphology of the seabed/coast
150 or change in habitat (e.g. from sediment to concrete/metal) and hydrographical changes are the **impact**
151 of these alterations. These changes of the hydrographical conditions consequently will act as a pressure
152 that is impacting the habitat or even the ecosystem. Assessment for this descriptor should take into
153 account the **cumulative 'impact'** of all these 'localized activities' that act as pressures, linking them also
154 to the associated physical loss and damage. In this sense the total pressure from D7 needs to be
155 considered with other impacts in the assessments of each seabed and water column habitat under D1
156 and D6.

Comment [A6]: The hydrographic conditions can be affected by the alteration but are not in themselves impacted. It is the sensitive receptors e.g. the habitat/ecosystem mentioned in the next sentence that are impacted.

157 Considering the intention of MSFD to prevent significant negative effects on marine ecosystems
158 (habitats and species) the defining of GES for D7 must be intimately linked to GES in descriptors D1 and
159 D6, and to a lesser extent to D4 and D5, where impacts can occur from changes to the water column and
160 seabed habitats. Changes, such as altered erosion patterns or residence time can modify **local** conditions
161 in a way that negatively impact sensitive species and habitats and can therefore compromise the
162 achievement of the biodiversity and eutrophication descriptors D1, D4, D5 and D6. Consequently the
163 cumulative impact on the ecosystem from pressures resulting from the alteration of hydrographical
164 conditions should ultimately be assessed in these relevant descriptors (D1, D4, D5 and **D6**).

Comment [A7]: Cumulative impacts indeed represent a significant challenge for MSFD implementation. **In coastal water bodies**, the local / water body level effects of an individual modification should have been assessed for compliance with the WFD. However, it is quite possible that, for such developments, the in-combination effects may not have been adequately assessed at a scale of relevance to the MSFD, either by the WFD compliance assessment or by an EIA.

165 *Comments:*

- 166 - *The list of activities/pressures is not exhaustive. This list needs to be defined, and there needs*
167 *to be clarification on how to deal with additional pressures, i.e. Inland activities like river*
168 *damming can also modify the sediment and freshwater transport, giving rise to changes in*
169 *the hydrographical conditions in the **coastline**.*
- 170 - *It is difficult to attribute ecosystem changes to a specific cause or mix of causes. Some*
171 *guidance on cumulative impacts is **recommended**.*

Comment [A8]: Local changes 'can' but often *won't* compromise the achievement of D1 or D5... The impact of such changes and any in-combination effects will be site specific

Comment [A9]: Agree – but see comment [7] above

Comment [A10]: Yes, they can affect the coastline. But such effects should already be addressed by the WFD. Thus reference should be made to the role of the WFD rather than risking duplication.

Comment [A11]: Agree – see comments in [7] above.

172

173 **Linkages with existing relevant EU legal requirements, standards and limit values**

174 The WFD is referred to in the MSFD and specifically in the Commission Decision for Descriptor 7. The
175 WFD explicitly applies to coastal waters (< 1 nautical mile from the baseline). A significant proportion of
176 activities that could cause permanently altered hydrographical conditions take place within coastal
177 waters. It provides definitions for high, good and moderate ecological status for a set of hydrographical
178 conditions (e.g. temperature, salinity, current velocity) that are to a large extent similar to the
179 hydrographical parameters referred to in Annex III of the MSFD. To ensure coherence between WFD and
180 MSFD, the link between GES under the MSFD and Good Ecological Status (GEcS) for coastal waters under
181 the WFD should be clearly stated; including whether it is meant to be linked at assessment level and GES
182 definition, or simply in terms of sharing information and data to be applied under independent
183 assessment methodologies.

184 There are also a number of tools at EU level that support Member States with the control of activities
185 that can result in permanent alterations of hydrographical conditions. Some of these tools are referred
186 to explicitly in the MSFD, such as Environmental Impact Assessment (EIA), Strategic Environmental
187 Assessment (SEA) and Maritime Spatial Planning (MSP).

188 EIAs and SEAs are regulated, respectively, by Directive 2011/92/EU and Directive 2001/42/EC. These
189 directives require that the impacts from the implementation of new projects or strategic plans in the
190 environment are assessed prior to their approval or authorisation. A new EU directive on Maritime
191 Spatial Planning (2014/89/EU) has been recently adopted with the aim of establishing a framework for
192 maritime spatial planning to promote the sustainable growth of maritime economies, the sustainable
193 development of marine areas and the sustainable use of marine resources.

194 The effects of hydrographical changes (such as enhanced erosion) could have a direct impact on
195 (protected) habitats; therefore a clear linkage to the Habitats Directive 92/43/EEC exists.

196

197 *Comments:*

- 198 - How should assessment under MSFD on hydromorphology take into account the benthic
199 assessment done under WFD?
200 - Regarding EIA and SEA, the MSFD refers to the implementation of new projects or strategic
201 plans, but what about existing activities? (e.g. cases where they were not subject to these
202 regulations at the planning stage).

203

204 **Linkages with international and RSC norms and standards**

205 OSPAR has produced a guidance document for the assessment of GES for Descriptor 7: "MSFD Advice
206 document on Good environmental status - Descriptor 7: Hydrographical conditions, a living document -
207 Version 17 January 2012" (OSPAR Advice Doc. GES D7, 2012). OSPAR advises that changes in
208 hydrographical conditions are analysed in a broader context, where not only human-induced changes
209 are taken into consideration but also the cumulative effects of multiple impacts. OSPAR suggests that
210 the use of EIA and SEA processes is important to enable existing and new proposals to be considered in
211 the light of their cumulative impacts on any particular ecosystem components. For coastal waters,

Comment [A12]: We do not understand why only the benthic assessment is mentioned; surely there are also other sensitive receptors?

212 OSPAR links the GES under the MSFD with the Good Ecological Status (GECS) under the WFD. For the
213 setting of targets, OSPAR recommends that emphasis is placed on new and large-scale developments
214 and on the links with descriptors 1, 4 and 6 covering biodiversity, food webs and sea-floor integrity.
215 OSPAR has also adopted guidelines on marine sediment extraction (OSPAR Agreement 03/17/1). OSPAR
216 advises that the most appropriate scale for assessing D7 is one equivalent to EUNIS level 3. They
217 recommend that under the condition that the effects of the permanent changes of hydrographical
218 conditions are restricted to coastal waters, D7 does not need further work, provided these alterations
219 are fully assessed in WFD or EIA and that cumulative effects on marine waters are included.

220 **HELCOM, the Barcelona Convention and the Black Sea Convention** have not produced any guidance
221 documents specifically for Descriptor 7. However, both the HELCOM HOLAS 2010 and the MEDPOL
222 Assessment 2012 refer, even if briefly, to changes in hydrographical conditions. HELCOM has adopted
223 guidelines on marine sediment extraction (HELCOM Recommendation 19/1), and the Barcelona
224 Convention has adopted the Protocol for the Protection of the Mediterranean Sea against Pollution
225 Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil.

226

227 Definition of GES

228 Considering the relative novelty of this descriptor, along with the substantial lack of data and
229 knowledge, so far quantitative boundaries for GES have not been established.

Criterion 7.1	Criterion 7.2
<ul style="list-style-type: none">• There are no EU legal framework and regional frameworks with defined parameters and limit values to define GES boundaries (good/not good)• Area might not be the appropriate parameter for characterisation of the alterations• additional points?	<ul style="list-style-type: none">• There is a lack of a legal frameworks to assess impacts of permanent hydrographical changes• There is lack of knowledge on pressures vs. impacts relationship• Scale of the assessment is not well defined (from habitat to ecosystem)?• additional points?

230

231 With regard to the indicators provided in the COM DEC for Descriptor 7, European or international
232 conventions are mostly without methodological standards, and these need developing. According to
233 OSPAR, the definition of MSFD GES for coastal waters in relation to D7 should, in the first place, be
234 associated with the definition of Good Ecological Status of coastal waters under the WFD (OSPAR Advice
235 Doc. GES D7, 2012). The physical characteristics to be addressed under these criteria should take into
236 account Annex III of the MSFD.

237 At present there is no broadly agreed definition of “**permanent**”. OSPAR recommends that alterations
238 lasting for more than ten years should be considered permanent. Following this approach, human
239 activities whose effect in terms of hydrographical alteration is reversible and lasting less than 10 years,
240 should not be considered for GES of D7. In addition to timescale, potential for recovery should also be
241 factored in.

242

Comment [A13]: This all seems reasonable.

243 OSPAR recommends that emphasis is placed on new and large-scale developments, but existing
244 activities/infrastructure may also have produced, and continue to produce, significant impacts and
245 should be considered. "Large-scale" is not defined, but could be at a scale that considers effects at the
246 ecosystem level. Many human activities occur on smaller scales, but even these activities can produce
247 effect at larger scale, particularly in the case of aggregated impacts. Although there may not be many
248 examples of installations that would be removed in the future, it is not the scale of the installations that
249 is important but rather the scale of the effects. Where appropriate, these changes are considered under
250 the WFD and other Directives (Birds Directive, Habitats Directive, EIA, SEA). There appears to be a gap in
251 guidance for dealing with situations that may occur where the WFD does not apply (e.g. outside of
252 coastal waters) or where EIA is not sufficient, i.e. in identifying cumulative effects. OSPAR recognised the
253 effects of aggregated "small-scale" impacts as important and at the spatial scale of the MSFD and
254 recommends that any cumulative effects of the impact should be part of the GES definition of the
255 Descriptor. However, no guidance on assessing cumulative impacts exists and the development of
256 methodological standards is needed.

Comment [A14]: We agree. This is important.

257 A pure quantitative definition of GES in D7 (as for example <1% of permanently altered area) without
258 considering the impact on the related ecosystem and habitat does not seem to be the intention of
259 MFSD. Instead the extent of damage from relevant activities to a habitat (or ecosystem) could be
260 quantified and the resultant loss or damage to the habitat could then be assessed under D1 and D6.
261 This would relate GES for D7 to the maximum allowable loss and damage to habitat as set under D1 and
262 D6. Consequently GES for D7 should be defined based on the cumulative impact on the ecosystem
263 (based on habitat assessments?) resulting from the alteration of hydrographical conditions that are
264 assessed in the descriptors (D1, D4, D5 and D6).

Comment [A15]: Agree. This is an important challenge for the MSFD and properly-researched, well-informed guidance will be essential.

265 *Comments:*

- 266 - *For harmonization a precise definition of permanent is required.*
- 267 - *Can quantitative boundaries be defined for GES? Effects could be quantified from EIA studies*
268 *and modelling? Issues of definitions of scale seem to creep in here...*
- 269 - *Guidance on cumulative impacts is needed. Modelling is a tool that can be used to*
270 *investigate the accumulation of small-scale impacts*
- 271 - *habitats vs ecosystem ... OSPAR recommends that the most appropriate scale for assessing*
272 *this Descriptor is one equivalent to EUNIS level 3. It should be possible to assess effects on*
273 *each habitat type, but this could be complicated for ecosystems comprising multiple*
274 *habitats. On the other hand, assessing at the habitat level could imply smaller scales.*

Comment [A16]: Regional Environmental Assessment type modelling can indicate envelopes of changes on MSFD scale – significance of these depends on distribution and sensitivity of receptors.

275

276 The "climate sensitivity"

277 The issues covered under Descriptor 7 are likely to be exacerbated by climate change, namely due to
278 increased sea temperatures and rising sea levels that are the consequences of global warming. Defining
279 of GES for this descriptor takes place within the context of global hydrographical changes, such as
280 increased temperatures and wave action. Therefore adequate monitoring of these large-scale changes is
281 an implicit requirement for this descriptor. Also, there is a need for periodic review of the GES definition
282 if, for example, climate change has led to altered extents of coastal habitat (due to sea level rise).

Comment [A17]: Agree. Insofar as hydrographical conditions are concerned, climate change is more likely to affect the Descriptor at a significant scale than will be the case for the majority of individual new infrastructure projects.

283

284

285

286

Analysis of the implementation process D7

287 **Descriptor 7**

288 Five Member States have not defined GES for Descriptor 7 while for the rest there was large variability
289 in the definitions. Most of the definitions were made at a general level and only few countries provided
290 further specification beyond the definition in Annex I of the MSFD by providing lists of features or
291 pressures addressed by GES. Very few countries defined baselines, referring instead to the present
292 situation as regards to the Initial Assessment 2012. Additionally, OSPAR Quality Status Report 2010 and
293 Report WISE WFD I cycle 2010 were each referred to on only one single occasion. References to
294 thresholds were almost non-existent. Some MSs managed to provide an assessment or judgement on
295 their GES for D7, but these assessments were mostly qualitative, subject to a lack of appropriate data
296 sets and knowledge rather than based on cogent Initial Assessment results. According to the MSFD
297 article 12 report, only one Member State reported a GES definition that was considered adequate; the
298 remaining GES definitions were almost equally divided between partially adequate and inadequate.

299 Few Member States mentioned links to the WFD normative definitions of ecological status classifications
300 for coastal water. Although most of the pressures covered by Descriptor 7 occur in coastal zones, the
301 development and integration of such WFD's hydromorphological conditions in the Initial Assessment
302 reports was surprisingly very low. On the other hand, some Member States referred to other existing EU
303 regulatory regimes that should be complied with (e.g. EIA, SEA, Habitats Directive and Birds Directive).
304 However, the process on how to integrate information from other EU legislation into the assessment is
305 missing. Further, the use of biological assessment elements implies a link with the biological descriptors,
306 e.g. descriptors 1, 4 and 6. Moreover, descriptors 3 (fisheries), 5 (eutrophication) and 11 (underwater
307 noise) were mentioned occasionally as having links with hydrographical conditions.

308 A few North-East Atlantic Member States mentioned the OSPAR Advice Doc. GES D7 (2012). This
309 document considers terms that should be included in the definition of GES (e.g. large-scale human
310 activities that take place against a background of broader scale hydrographical changes, or the inclusion
311 of cumulative effects of impacts). Further, advice is given on parameters, monitoring and targets,
312 considering the implementation of indicators by modelling the changes in hydrographical conditions like
313 currents, waves, bottom shear stress and salinity to assess the extent of the possible affected area and
314 the intensity of the changes to determine the effect on habitats.

315 **Criterion 7.1 Spatial characterisation of permanent alterations**

316 Information on relevant pressures to be considered as causing permanent alterations was limited or
317 non-existent in many cases. When available, lists of relevant pressures showed variability among
318 countries. In general, quantitative data was limited regarding both pressures on the water column and
319 on the seabed. Additionally, some countries included acidification as an issue to be considered in
320 Descriptor 7, although its role in the assessment of GES is not well defined and its links to D7 need
321 further consideration. One possible option would be the use of climate change data aimed to identify
322 shifts in existing baselines, allowing appropriate assessment of human activities causing impacts on
323 hydrographical conditions in order to differentiate it from global changes.

324 As the effects on the ecosystem from a change in hydrographical conditions can be caused by change in
325 chemical conditions that are caused by a change in physical conditions, hydro-chemical variables cannot
326 be excluded a priori. But in order to avoid extra complications in assessing GES for D7 changes in hydro-

327 chemical conditions should be only considered, when caused by permanent alterations of the
328 hydrographical conditions.

329 The OSPAR Advice Doc. GES D7 (2012) suggests using as a parameter the area (e.g. km²) where
330 significant, regional scale changes in currents, waves, salinity and temperature occur or are expected
331 (modelling or semi-quantitative estimation).

332 However the impact on the ecosystem under D7 explicitly considers the full water column (in contrast to
333 D6 and to WFD). Hydrographical changes are not restricted to the sea floor, therefore the volume where
334 significant changes do occur, could be a more adequate parameter/indicator than area.

335

336 **Criterion 7.2 Impact of permanent hydrographical changes**

337 Few member States included references to the impacts on habitats of permanent hydrographical
338 changes. The understanding of impacts caused by the pressures considered under Descriptor 7 is rather
339 restricted, with limited available data and knowledge. Some Member States included lists of potentially
340 impacted environment components (such as specific seabed habitats, oxygen levels or current velocity),
341 linking this descriptor to the biodiversity descriptors (descriptors 1, 4 and 6).

342 For indicator 7.2.1, the OSPAR Advice Doc. GES D7 (2012) suggests to use as a parameter the area of
343 habitats and the proportion of the total habitat if that type is significantly affected by the permanent
344 change, for example, in bottom shear stress, waves, temperature or salinity (modelling or semi-
345 quantitative estimation). The suggestion for indicator 7.2.2 is to use as parameter, where not already
346 covered by Natura 2000 in coastal waters, key species and habitat types (including benthic communities
347 – listed by ICG COBAM) significantly affected by the changes in hydrographical conditions, which would
348 need to be determined on a case-by case basis. Links with other descriptors would also need to be
349 determined on a case-by-case basis, for example, the definition of functional habitats within the
350 biodiversity and foodweb descriptors could help to define these key species and habitat types.

351

352 **Regional coherence descriptor 7**

353 Member States in the NE Atlantic region have not fully followed OSPAR Advice Doc. GES D7 (2012) and
354 usually only in its restrictive considerations, focusing only on new activities. Notwithstanding, the
355 regional coherence in this region is considered high. In the Mediterranean the coherence is moderate
356 and in the Baltic it is low. In the Black Sea region, only Bulgaria has defined GES for Descriptor 7 and
357 therefore it was not possible to assess regional coherence. It should be noted that no references are
358 made by MS to existing work carried out under UNEP/MAP (Barcelona Convention) in the
359 Mediterranean Region, or under HELCOM in the Baltic Region, possibly due to the timing of that work in
360 relation to the submission of the initial evaluations.

361

362 **MS good practices**

363 Some countries have specified the environmental components to be taken into account and have given
364 a list of relevant parameters or activities. Some Member States have referred to existing regulatory
365 regimes (other than the WFD) that are to be complied with (e.g. EIA, SEA, Habitats Directive and Birds

Comment [A18]: Agree – this seems reasonable.

Comment [A19]: Areas of changes in e.g. currents are, in themselves, less useful metrics. A change doesn't necessarily affect the ecosystem.

More important to look at the overall % of a vulnerable receptor that is impacted by the pressure – link to Criterion 7.2.

366 Directive). Some Member States have included lists of potentially impacted environment components
367 such as specific seabed habitats, oxygen levels or current velocities, linking this descriptor to the
368 biodiversity descriptors (descriptors 1, 4 and 6).

369

Analysis of the current text of the Decision

370

371

372 *This section contains the original COM DEC text. Experts are asked to analyse the whole text and identify*
373 *those parts to be kept in, to be placed in a guidance document and any improvements or modifications*
374 *that could be made. Suggested changes are made in red. Suggested deletions are struck through.*

375

➤ Original text in COM DEC

376

377 *Good Environmental Status for Descriptor 7: Permanent alteration of hydrographical conditions does not*
378 *adversely affect marine ecosystems. (Annex I of MFSD)*

379

380 Permanent alterations of the hydrographical conditions by human activities may consist for instance of
381 changes in the tidal regime, sediment and freshwater transport, current or wave action, leading to
382 modifications of the physical and chemical characteristics set out in Table 1 of Annex III to Directive
383 2008/56/EC. Such changes may be particularly relevant whenever they have the potential to affect
384 marine ecosystems at a broader scale and their assessment may provide an early warning of possible
385 impacts on the ecosystem. For coastal waters, Directive 2000/60/EC sets hydromorphological objectives
386 that need to be addressed through measures in the context of river basin management plans. A case by
387 case approach is necessary to assess the impact of activities. Tools such as environmental impact
388 assessment, strategic environmental assessment and maritime spatial planning may contribute to
389 evaluate and assess the extent and the cumulative aspects of impacts from such activities. It is however
390 important to ensure that any such tools provide for adequate elements to assess potential impacts on
391 the marine environment, including transboundary considerations.

392

393 7.1. Spatial characterisation of permanent alterations

394

- 395 - Extent of area/volume affected by permanent alterations (7.1.1)

396

397

398 7.2. Impact of permanent hydrographical changes

399

- 400 - Spatial extent of habitats affected by the permanent alteration (7.2.1)

401

- 402 - Changes in habitats, in particular the functions provided (e.g. spawning, breeding and feeding
403 areas and migration routes of fish, birds and mammals), due to altered hydrographical
404 conditions (7.2.2).

405

406

407

➤ To be taken out of the Decision and included in guidance

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411

Identification of issues based on comments from MS experts

412

413

1) Scope and guidance for D7 is lacking

414

a) Due to the lack of common understanding on the scope of this descriptor there are not harmonized approaches. A 'best practice' document based on the previous assessment could facilitate convergence of approaches;

415

b) Descriptor 7 lacks specific guidance document at EU level. In particular guidance is needed to determine scales and processes;

417

c) There is a need to provide clear guidance in the Decision on how to integrate the existing minimum requirements under existing EU legislation (e.g. WFD, EIA, SEA) in the GES definition, in particular on where other legislation is invoked to identify and mitigate any impacts to avoid double accounting for these types of activities. Some member states focused entirely outside of the WFD domain, but this could be too restrictive in terms of consideration of the whole water column (hydrographical conditions under WFD relate only to the quality of surface waters). Guidance on where the gaps in other legislation should be covered by MSFD is needed.

420

d) It has been suggested that GES for D7 could be included in future EIAs so that the required EIA assessment studies should determine whether MSFD applies. In this case all EIAs in the marine environment would be required to assess the effects regarding GES for D7;

422

e) Guidance on monitoring requirements for D7 is lacking;

423

424

2) The pressure impact relation is unclear

425

a) Clarification of the pressure impact chain: the constructions are the original pressure and have an impact on the hydrographical conditions (or not), whereas these (when significantly altered) act then as a pressure on the ecosystem and could impact on that ecosystem (negative or positive).

426

b) Regarding the MSs reports for Articles 8, 9 and 10, differentiation between 'pressures' and 'impacts' needs to be improved to avoid confusion. A clearer link between the Directive and the Decision is needed;

427

c) Clarify the concept that D7 is effectively a pressure descriptor whose impacts need to be considered as part of the assessments of GES (habitat types, eutrophication) under D1, D4, D5 and D6 (would make it impossible to define only GES within D7);

428

d) There is a need to clarify which activities/pressures should be included in the context of D7 with a focus on activities resulting in localized impacts (pressures causing impacts at local scale, e.g. piers, harbours). Note that it is not the scales of the activities that is important – it is the scale of the effects;

429

e) A large number of Member States focus only on the impacts of new activities, however existing installations or activities can have resulted in or also result in further alteration or degradation of the current status;

430

3) Time and space scales for assessment are not defined

431

a) There is a need to clarify the concept of 'permanent alteration' (potentially by defining a simple time scale as "permanent").

432

b) The link between functional groups and hydrographical conditions is still in the research phase and therefore a challenging aspect of D7. This could be referred back to D1/D6 to create a joint framework to assess functional impacts on benthic and pelagic habitats;

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Comment [A20]: We agree – it is important.

Comment [A21]: (i) Care is required to avoid duplication with what will be done in any case to demonstrate WFD compliance in coastal water bodies. (ii) It is questionable the extent to which such an EIA level assessment would be useful for the MSFD unless the intention is to use the information thus derived to inform an in-combination effects assessment undertaken (by the Regulator?) at a strategic level. It is not reasonable to expect a developer to have either the resources or the experience to assess in-combination effects at a scale of relevance to the MSFD. Indeed, the recent amendment to the EIA Directive clarified the extent to which the developer is reasonably expected to address in combination effects.

Comment [A22]: Are these sensitive receptors that can be impacted or just an extension of the pressure

Comment [A23]: We strongly agree. Shipping, for example, is a pressure but only causes impacts on MSFD Descriptors in certain circumstances.

Comment [A24]: Agree. However, in coastal water bodies reference should first be made to the compliance assessment carried out for the WFD and any exemptions granted (e.g. through Article 4(7)) as a result. Care needs to be taken to ensure that the requirements of the two Directives remain compatible...

Comment [A25]: Again, care is required in coastal water bodies, some of which may have met the requirements under the WFD for designation as heavily modified water bodies. Whilst the MSFD does not have such a provision, WFD outcomes must be respected.

Comment [A26]: Agree

Comment [A27]: This is the approach taken in the WFD as a requirement i.e. hydro-morphology is a supporting element. However, this is not the case in the MSFD so we need to be clear: are hydrographical conditions a supporting element or a Descriptor in their own right?

- 456 c) Scales need to be defined: local/intermediate vs. large scales and should be linked to scales used
 457 for D1/D6 habitat assessments; D7 is referring to GES at the ecosystem level, but the pressure is
 458 typically coming from small scale constructions, so there is a large gap in the scales from
 459 pressure to **impact**.
- 460 d) Clarify if the impacts of localized activities should be assessed under consideration of a changing
 461 environment (climate change - several MS have done this).
- 462 e) Should impacts be assessed on habitats or on ecosystems? Presumably the first assessment can
 463 be only done at the habitat level, and afterwards a cumulative IA would be needed to arrive at
 464 the ecosystem level?
- 465
- 466 4) **Baseline, parameters and GES are not well defined**
- 467 a) Is it a quantitative or qualitative descriptor? How could it be made quantitative? Modelling
 468 could be used to help quantify the effects, however there are still regional scale changes in
 469 ecosystem processes that cannot be predicted using ecosystem models at present (e.g. regime
 470 changes);
- 471 b) Thresholds for GES/non GES are almost non-existent;
- 472 c) In the case where the current situation already compromises the achievement of GES for other
 473 descriptors, in particular D1 and D6, additional measures affecting existing activities/
 474 installations might be **necessary**;
- 475 d) Only few countries defined explicit baselines. Most of them used the current situation (Initial
 476 Assessment 2012) as their baseline and considered D7 at GES at the baseline; however, this
 477 ignores the extent of past hydrographical changes on particular **habitat types** (which can be
 478 significant in some coastal areas). Deciding how far back to set the baseline is a complicating
 479 factor and combining this with the cost of removing old constructions explain why most
 480 member states considered the IA 2012 as their baseline and only considered new
 481 developments; this however is not in accordance with the intention of MFSD to achieve GES
- 482 e) There is the need to clarify if descriptor D7 “permanent alteration of hydrographical conditions”
 483 should be extended (or not) to include also hydrochemical conditions (like pH, alkalinity, oxygen,
 484 nutrients) as already done by some MS;
- 485 f) Chemical processes are not within the present definition of hydrographical processes; however
 486 several member states included acidification. If not modified by infrastructural works, it does
 487 not seem appropriate to include parameters such as acidification in the assessment of D7;
- 488 g) Features, pressures and physico-chemical parameters are not well defined nor harmonized for
 489 comparability;

Comment [A28]: ...which is why it is so important to provide properly-researched and well-informed guidance on cumulative and in-combination effects. The residual effects of many small scale constructions (i.e. after WFD (in coastal water bodies) and EIA assessments have been carried out) may not be of concern to the MSFD. So, as noted above, improved understanding and communication of pressure-impact relationships is vital.

Comment [A29]: (i) Care is required not to undermine or contradict the provisions of the WFD in coastal water bodies e.g. Article 4(3); (ii) evidence of a pressure-impact relationship is needed before measures are imposed

Comment [A30]: See comment above

490

491 **ISSUES FOR FURTHER DISCUSSION**

- 492
- 493 • Due to the lack of common understanding on the scope of this descriptor there are no
 494 harmonised approaches. A ‘best practice’ document based on the previous assessment
 could facilitate convergence of approaches;

 - 495 • Clarification of the pressure impact chain: the constructions are the original pressure and
 496 have an impact on the hydrographical conditions (or not), whereas these (when
 497 significantly altered) act then as a pressure on the ecosystem and could impact on that
 498 ecosystem (negative or positive).

- 499
- 500
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- 502
- Time and space scales for assessment need to be defined in accordance with the conclusions reached by the review process. Should impacts be assessed on habitats or on ecosystems? Presumably the first assessment can be only done at the habitat level, and afterwards a cumulative IA would be needed to arrive at the ecosystem level?
- 503
- Baseline, parameters and GES are not well defined and need to be clarified in accordance with the conclusions reached by the review process.
- 504
- 505

506

Part B2

507

GES criteria (in accordance with Art. 9.3)

508 *Any comments, suggestions and input are welcomed.*

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510

511

GES methodological standards (in accordance with Art. 9.3)

512 *Any comments, suggestions and input are welcomed.*

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515

Standardised methods for monitoring for comparability (in accordance with Art. 11.4)

516 *Any comments, suggestions and input are welcomed.*

517 This will require considerable research, so it is too early to make recommendations on standardised methods for
518 monitoring at this point.

519

520

Standardised methods for assessment for comparability (in accordance with Art. 11.4 GES)

521 *Any comments, suggestions and input are welcomed.*

522 This will require considerable research, so it is too early to make recommendations on standardised methods for
523 assessment at this point.

524

525

Rational and technical background for proposed revision

526 *Any comments, suggestions and input are welcomed.*

527

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529

Other related products (e.g. technical guidance, reference in common understanding document)

530 *Any comments, suggestions and input are welcomed.*

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532

533

Reference Documents

534

- 535 • Review of the GES Decision 2010/477/EU and MSFD Annex III Approach and outline for the
536 process, (EC- Committee/07/2013/03rev, 2013);
- 537 • First steps in the implementation of the Marine Strategy Framework Directive - Assessment in
538 accordance with Article 12 of Directive 2008/56/EC, (CSWD, 2014);
- 539 • COM(2014)97 final. REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN
540 PARLIAMENT The first phase of implementation of the Marine Strategy Framework Directive
541 (2008/56/EC) The European Commission's assessment and guidance (EC, 2014);
- 542 • SWD(2014) 49 final. COMMISSION STAFF WORKING DOCUMENT Annex Accompanying the
543 document Commission Report to the Council and the European Parliament. The first phase of
544 implementation of the Marine Strategy Framework Directive. The European Commission's
545 assessment and guidance (EC, 2014);
- 546 • Common Understanding of (Initial) Assessment, Determination of Good Environmental Status
547 (GES) & Establishment of Environmental Targets (Articles 8, 9 & 10 MSFD), (DG GES, 2014);
- 548 • Coherent geographic scales and aggregation rules in assessment and monitoring of Good
549 Environmental Status – analysis and conceptual phase, (Deltares, 2014);
- 550 • Review of Methodological Standards Related to the Marine Strategy Framework Directive
551 Criteria on Good Environmental Status (JRC, 2011);
- 552 • Guidance / Terms of Reference for the task groups 'criteria and methodological standards for
553 the Good Ecological Status (GES) descriptors' (JRC, 2010);
- 554 • CSWP (2011) on the Relationship between the initial assessment of marine waters and the
555 criteria for good environmental status;
- 556 • OSPAR Advice Doc. GES D7. MSFD Advice document on Good environmental status - D7:
557 Hydrographical conditions, a living document - Version 17 January 2012. OSPAR Commission.
558 ISBN 978-1-909159-16-7;
- 559 • Technical guidance on monitoring for the Marine Strategy Framework Directive. JRC Scientific
560 and Technical Reports. Publications Office of the European Union. JRC88073;
- 561 • JRC IDA (2014). In-Depth Assessment of the EU Member States' Submissions for the Marine
562 Strategy Framework Directive under articles 8, 9 and 10. EUR – Scientific and Technical Research
563 series. Luxembourg: Publications Office of the European Union. EUR 26473 EN, 149 pp. doi:
564 10.2788/64014;
- 565 • JRC IDA D7 (2014). In-Depth Assessment of the EU Member States' Submissions for the Marine
566 Strategy Framework Directive under articles 8, 9 and 10 on Hydrographical Conditions
567 Descriptor 7. Luxembourg: Publications Office of the European Union. EUR 26800 EN, 15 pp. doi:
568 10.2788/1124;
- 569

Comment [A31]: The list is missing references to key WFD CIS Guidance documents including CIS guidance document 20 on environmental objectives, and various hydromorphology / heavily modified water body documents