

Additional guidelines for assessing sufficiency of
Natura 2000 proposals (SCIs) for marine habitats
and species



The European Topic Centre on Biological Diversity (ETC/BD) is a consortium of nine organisations under a Framework Partnership Agreement with the European Environment Agency

AOPK-CR ECNC EPASA ILE-SAS ISPRA JNCC MNHN SLU UBA-V

Introduction

Establishment of Natura 2000 network in the marine environment is one of the most immediate challenges for the EU Member States (MS) in the field of biodiversity conservation. In May 2007, the European Commission published specific guidelines on selection of marine Natura 2000 sites¹. Since then, a number of new marine site proposals have been received from several MS and first marine biogeographical seminars for the 5 marine regions (i.e., Atlantic, Macaronesian (Atlantic), Baltic, Mediterranean and Black Sea) are to be organised in the near future.

It is expected that the marine biogeographical seminars will focus on the habitats and species known as 'marine reserves' from the past terrestrial bio-geographical seminars. They shall also focus on other Habitats Directive Annex I habitats and Annex II species known to be present in the marine environment in certain life-cycle stages. Some of these species may have been already covered in the 'terrestrial' seminars regarding their freshwater/inland (e.g., anadromous fish) or coastal (e.g., seals) distribution in other life-cycle stages. The concept of the 'marine environment' in this context includes both inshore and offshore waters of the exclusive economic zone and/or continental shelf where coastal states have a number of sovereign rights, including conservation and management of natural resources.

The site evaluation criteria used in the past biogeographical seminars for terrestrial ecosystems require some examination to see if they are applicable in the marine environment. Some general principles have been already provided by the European Commission in 1997 (Hab. 97/2 rev. 4 18/11/97²) with further clarification on certain species and taxonomic groups by the European Topic Centre on Biological Diversity in 2002 (Habitats SWG 2002-02 rev1³). Still, the issue requires further discussion. Since a considerable amount of work has to be done before the seminars, it is essential to agree on evaluation criteria in advance. The European Topic Centre on Biological Diversity (ETC/BD) was asked to prepare this working paper for the above purpose.

This paper is only a guiding document indicating which criteria could be used in sufficiency evaluations and their relative importance in decision-making. Its aim is not to provide solutions for every situation as all conclusions will be achieved through case-by-case (species/MS, habitat/MS) scientific discussions involving all stakeholders. The paper includes five habitat types from the Habitats Directive Annex I and 16 species from Annex II, which are truly or partly 'marine'. This list, however, could be further discussed and revised along with finalising reference lists for each Member State.

Habitats

Three main criteria have been used to assess representation of terrestrial habitats: (1) proportion of habitat area within Natura 2000 network at Member State level per bio-geographical region, (2) habitat distribution and (3) variation. An overview

¹ http://ec.europa.eu/environment/nature/natura2000/marine/docs/marine_guidelines.pdf

² http://biodiversity.eionet.europa.eu/activities/Natura_2000/crit

³ http://biodiversity.eionet.europa.eu/activities/Natura_2000/gen_princ

of the relevance of these criteria for evaluation of marine Natura 2000 sites is presented in Table 1.

The proportion of habitat area within Natura 2000 network at the national scale has been one of the most important criteria in terrestrial biogeographical seminars. Habitat area could also be used in the marine environment but only if there are reasonably reliable quantitative data of total national resource (area). To test this, we used MS's Article 17 reports to assess data availability. Criteria relevance was quoted 'high' if use of marine habitat area seemed possible but 'low' when information was lacking. In some cases, however, 'low' relevance could be indicated not only because of lack of information, but due to complex nature of some habitats or specific difficulties in assessing habitat area (e.g., submerged caves). In addition, detailed statistics are shown in the 'notes' section of the Table 1, providing the number of countries per region that have reported their national areas, according to Article 17 reports. Sometimes MS did not report the habitat area (and the species populations, see below) but number of localities or number of grids where the habitat is present according to their national grid systems. Such information was also considered useful enabling at least an approximate quantitative assessment of the proportion of habitat within the Natura 2000 network.

Where quantitative data on habitat areas are available, it would be possible to apply the arbitrary sufficiency levels 20-60% for non-priority habitats and >60% for priority habitats (e.g., *Posidonia* beds) as suggested in the 'Criteria for assessing national lists of pSCIs at the biogeographical level' (Hab. 97/2 rev. 4 18/11/97).

Where quantitative data on habitat areas are absent, other criteria such as distribution and variation could be used until new scientific information becomes available.

Habitat distribution is clearly an important criterion to ensure that the proposed Natura 2000 network includes habitat areas from different parts of the Member State (especially in case of large states) and biogeographical region where it occurs. Distribution is a more important criterion when a habitat occurs widely across large parts of the European Union; therefore, the relevance of this criterion was evaluated using the latest consolidated maps from the Article 17 Consultation Tool website.

Habitat variation, which may correlate with the distribution, is characteristic for several marine habitats according to the present 'Interpretation manual of the European Union habitats (EU27)⁴'. It is important to include all major variations in the Natura 2000 network. Although variation cannot be evaluated directly using Natura 2000 database, i.e., no analyses possible within a habitat code, additional available scientific information will be considered. Nevertheless, such information exists for some Member States and they could be asked to provide additional information on variation (e.g., noting subtypes present on each site) ahead of any seminars.

An additional criterion that could help in discussions about sufficiency is the habitat conservation status in the country and/or the region under question. The Article 17 Consultation Tool website provides a good background for decision-making. For example, if the conservation status is judged to be 'Unfavourable-

⁴ http://ec.europa.eu/environment/nature/legislation/habitatsdirective/docs/2007_07_im.pdf

bad' (see User Manual of the Article 17 Consultation Tool⁵) accordingly a greater proportion of national area of the habitat within Natura 2000 network could be expected. Designation of Natura 2000 sites alone may not guarantee improvement of conservation status but in some cases it can be a significant contribution if conservation is dependent of some level of site management.

⁵ <http://biodiversity.eionet.europa.eu/article17>

Table 1. Possible use of evaluation criteria for marine habitat types⁶.

Code	Habitat	Criteria relevance			Notes
		1. Total area	2. Distri- bution	3. Vari- ation	
1110	Sandbanks	High	High	High	National area of the habitat available for 21 of 26 countries per region. Variation described among seas and within seas (e.g., grain size, plant and animal communities). All three criteria should be considered.
1120*	Posidonia beds	High	High	Low	National area of the habitat available for 6 of 7 countries per region. Distribution limited to the Mediterranean sea. Both total area and distribution aspect should be considered. As a priority habitat, a proportion of habitat coverage over 60% would be expected.
1170	Reefs	Low	High	High	National area of the habitat available for 19 of 24 countries per region, however, available maps mostly show potential rather than actual distribution. Reefs are known to be very varied and the factors like origin (abiotic vs biotic), species composition, water depth and presence of currents should be considered so that the overall network of proposed sites would ensure representation of all sub-types of this habitat.
1180	Submarine structures made by leaking gases	Low	Low	High	National area of the habitat available for 1 of 4 countries per region. Use of national area to assess sufficiency apparently difficult. This is a habitat with restricted distribution, i.e., reported only from 3 member states in a relatively small area. Although it is not a priority habitat, all known areas should be completely or partly protected providing that all varieties of the habitat (i.e. bubbling reefs and pockmarks) are included. This, however, could be revised if new information about the distribution and rarity of the habitat becomes available. To date, few sites are proposed from Kattegat (DK) and in the North Sea (UK).
8830	Submerged or partially submerged caves	Low	High	Low	National area of the habitat available for 7 of 15 countries per region. Use of national area to assess sufficiency apparently difficult as the data are absent for more than a half of member states hosting this habitat type. More than 80 existing sites have this habitat type, but nearly all are inshore sites. Apparently, some representation of offshore submerged caves (i.e., known areas to

⁶ The habitat 'large shallow inlets and bays' (1160) was deleted from the table and is not any more considered as marine habitat.

Additional guidelines for assessing sufficiency of N2000 proposals (SCIs) for marine habitats and species

Code	Habitat	Criteria relevance			Notes
		1. Total area	2. Distri- bution	3. Vari- ation	
					date) is needed from all EU sea areas.

Species

The three main criteria used to assess representation of species in terrestrial ecosystems were (1) proportion of national population within Natura 2000 network, (2) species distribution and genetic variation and (3) physical and biological factors that would be essential to consider in order to provide adequate protection during different life-cycle stages or other specific requirements of the species concerned. Table 2 shows how these criteria could be applied for the evaluation of the marine Natura 2000 sites.

Proportion of species population within Natura 2000 network has been often used in the past terrestrial bio-geographical seminars. Species population sizes could also be used in the marine environment but only when such quantitative data are available. The Article 17 reports were used to assess data availability on marine species populations.

Criteria relevance was quoted 'high' if use of marine species population seemed possible but 'low' when information on populations was lacking. Detailed statistics on MS reporting are shown in the 'notes' section of the Table 2. The proportion of countries per bio-geographical region that have reported national population sizes of a species is shown there.

There could be problems, however, to assess national population sizes with highly mobile marine species (e.g., cetaceans, turtles, fish) even if data exist. In such cases a use of regional population sizes (e.g., North Sea) as a reference could be considered if data are available.

Where quantitative data on population sizes are available, it would be possible to use the arbitrary sufficiency guides 20-60% for non-priority species and >60% for priority species as suggested in the 'Criteria for assessing national lists of pSCI at bio-geographical level (Hab. 97/2 rev. 4 18/11/97).

It is important to achieve good representation of sites from the whole distribution range of the species in the European Union, including marginal areas of its distribution range and isolated enclaves where species occurs regularly. If a species has large distribution range, the importance of this criterion is high, and accordingly less if a species has small distribution range. Similarly it is important to achieve a good representation of species' genetic variation, i.e. sub-species and local populations with differences in ecology and/or behaviour.

Site protection for species is based on protection of species' typical habitats determined by different physical and biological factors. This aspect is less important in highly mobile or migratory species with large home ranges that utilise a number of different habitats during different stages of their life-cycle. Physical and/or biological factors are essential in site selection for species with narrow specialisation and specific habitat requirements. But in general, the importance of this criterion correlates with knowledge on species ecology. When the species is poorly known, there are less physical and biological factors which can be considered.

An additional criterion that could help in discussions about sufficiency is the species conservation status in the country and/or the region under question. For example, if the conservation status is judged to be 'Unfavourable-bad', a larger proportion of the national species population within Natura 2000 network could

be expected. A similar approach has been earlier used in the terrestrial biogeographical seminars using IUCN criteria or national red lists. Of course, designation of Natura 2000 sites alone may not guarantee improvement of conservation status but in some cases it can be a significant contribution.

Table 2. Possible use of evaluation criteria for marine species.

Code	Species	Criteria relevance			Notes
		1. Population	2. Distribution and genetic variation	3. Physical and biological factors	
1349	<i>Tursiops truncatus</i>	Low	High	High	National population sizes reported for 14 of 18 countries per region. Although population assessments exist, there could be difficulties to select best sites because of large home-ranges and mobility. It would be advisable to select sites to encompass the wide distribution and seasonal movements (if known) corresponding to different periods of life-cycle of the species, where particular areas essential to their life and reproduction can be identified.
1351	<i>Phocoena phocoena</i>	Low	High	High	National population sizes reported for 17 of 19 countries per region. Although population assessments exist, there could be difficulties to select best sites because of large home-ranges and mobility. It would be advisable to select sites to encompass the wide distribution and seasonal movements (if known) corresponding to different life-cycle stages of the species, where particular areas essential to their life and reproduction can be identified.
1364	<i>Halichoerus grypus</i>	High	High	High	National population sizes reported for 16 of 18 countries per region. Population assessments exist and main breeding and haul out areas should be included as areas of the life and reproduction of the species, although it could be difficult where these are on ice.

Code	Species	Criteria relevance			Notes
		1. Popu- lation	2. Distri- bution and genetic variation	3. Physical and biologi- cal factors	
					Important to encompass geographical distribution, both inshore and offshore areas, but there could be difficulties in selecting foraging sites due to lack of faithfulness to a particular area. The species could be associated with several marine habitats, particularly 1110 and 1160.
1365	<i>Phoca vitulina</i>	High	High	High	National population sizes reported for 12 of 15 countries per region. Population assessments exist and main breeding and haul out areas should be included as areas essential to the life and reproduction of the species. Important to encompass geographical distribution, both inshore and offshore areas, but there could be difficulties in selecting foraging sites due to lack of faithfulness to a particular area. The species could be associated with several marine habitats, particularly 1110 and 1160.
1366*	<i>Monachus monachus</i>	High	High	High	National population sizes reported for all 6 counties per region. Population assessments exist. Due to priority status, and the size of world population (less than 500 animals), all known sites of regular occurrence, especially in the Atlantic, should be proposed as pSCIs. Breeding sites possibly include partially submerged caves (8830). Site proposals should include also feeding habitats if such information exists.
1938	<i>Phoca hispida botnica</i>	High	Low	Low	National population sizes reported for 4 of 5 countries per region. Population assessments exist. Proposals should include known ice-breeding areas, which are unfortunately dependent on climatic conditions. There could be difficulties in selecting foraging

Code	Species	Criteria relevance			Notes
		1. Popu- lation	2. Distri- bution and genetic variation	3. Physical and biologi- cal factors	
					sites due to lack of faithfulness to a particular area.
1224*	Caretta caretta	High	High	High	National population sizes reported for 8 of 17 countries per region. Population assessments exist for ES, EL, CY and FR., i.e. countries with largest populations, however, even for those not all bio-geographical regions are covered. Not always clear to which life-cycle stage and habitats these population estimates can be attributed. Nesting habitats could be covered by the Mediterranean beach/dune habitat types. Sites should be designated also for other life-cycle stages than nesting where scientific evidence support regular presence in significant numbers.
1227*	Chelonias mydas	Low	Low	High	National population sizes reported for 7 of 13 countries per region, but even where data available, nearly in all cases the number of localities (not individuals) is presented. Nesting habitats (CY only) could be covered by the Mediterranean beach/dune habitat types. Sites should be designated also for other life-cycle stages than nesting where scientific evidence support regular presence in significant numbers.
1095	Petromyzon marinus	Low	High	High	National population sizes reported for 16 of 25 countries per region. Population assessments and available maps are apparently attributed to the reproduction stage in rivers and little is known about numbers and distribution at sea. Marine sites for the species should be designated where scientific evidence indicates regular presence in significant numbers, availability of typical

Additional guidelines for assessing sufficiency of N2000 proposals (SCIs) for marine habitats and species

Code	Species	Criteria relevance			Notes
		1. Popu- lation	2. Distri- bution and genetic variation	3. Physical and biologi- cal factors	
					habitat (if known), or regular presence of host fish species (if known).
1099	Lampetra fluviatilis	Low	High	High	National population sizes reported for 19 of 28 countries per region. Population assessments (sometimes only grids or localities) and available maps are apparently attributed to the reproduction stage in rivers and tell little about numbers and distribution in the sea. Marine sites for the species should be designated where scientific evidence indicates regular presence in significant numbers, availability of typical habitat (if known), or regular presence of host fish species (if known).
1100*	Acipenser naccarii	Low	Low	High	Distribution only in IT; no real population estimate, number of grids for the Continental region and no data for the Mediterranean region. Shown only distribution for the spawning period in rivers. Apparently no data on best sites (concentrations) in the Upper Adriatic Sea where the species is supposed to spend much of its life. Research required.
1101*	Acipenser sturio	Low	Low	High	Populations are small and scattered. Population estimate of spawning fish only from FR, while number of localities or grids provided by IT, EL, ES. No numbers or distribution maps for the marine area, especially offshore, nevertheless, sites should be designated, if such information becomes available.
1102	Alosa alosa	Low	High	High	National population sizes reported for 9 of 20 countries per region. Population assessments (sometimes only grids or localities) and available maps are apparently attributed to the

Code	Species	Criteria relevance			Notes
		1. Popu- lation	2. Distri- bution and genetic variation	3. Physical and biologi- cal factors	
					reproduction stage in rivers and tell little about numbers and distribution in the sea. Marine sites for the species, which is coastal with aggregations around major catchments of reproduction, should be designated where scientific evidence indicates regular presence in significant numbers.
1103	<i>Alosa fallax</i>	Low	High	High	National population sizes reported for 18 of 27 species per region. Population assessments (sometimes only grids or localities) and available maps are apparently attributed to the reproduction stage in rivers and tell little about numbers and distribution in the sea. Marine sites for the species, which is coastal with aggregations around major catchments of reproduction, should be designated where scientific evidence indicates regular presence in significant numbers.
1113*	<i>Coregonus oxyrhynchus</i>	High	Low	High	The species reported from DK only, population estimate given, but apparently applies to the inland reproduction stage. Habitats Directive Annex I, however, tells that sites should be designated for 'anadromous populations of the species in certain sectors of the North sea'. Such areas apparently should be investigated.
2578	<i>Gibbula nivosa</i>	Low	Low	High	Endemic to MT. No distribution or population data reported. Historic data from 11 bays. Ecology little known. Coastal: up to 4m depth. Associated with <i>Posidonia</i> beds (1120), thus this habitat may at least partly cover the species. Other suitable habitat types are described, which could provide clues for site selection.

Concluding remarks

It appears that the greatest problem Member States may face during site selection process is poor knowledge of the distribution and numbers during the marine phase in many migratory lamprey, fish and turtle species. Usually quantitative data are available for inland or coastal reproduction areas and for these the Natura 2000 sites should have been already designated. Similarly it is more challenging to select sites for wide-ranging species (e.g., harbour porpoise) which, according to available information, rarely have any distinct areas of concentration; this fact will be taken into account when assessing sufficiency for such species.

Before starting the evaluation process, Member States have to agree on the reference lists of species and habitats for marine biogeographical regions. Draft lists are presented as Tables 3 and 4 for further examination and comments. These lists are based on the conclusions of the past biogeographical seminars and data received from the Member States during the Article 17 reporting process. The reference lists should not be considered simply as a checklist of species and habitats occurring in the Member States and respective marine regions. The positive mark 'X' means that Member States have an obligation to designate sites for a species or a habitat in that particular marine region.

Table 3. Draft reference list for marine habitats and regions⁷. States and regions are arranged alphabetically. Abbreviations for the marine regions: MATL – marine Atlantic, MBLA – marine Black Sea, MBAL – marine Baltic Sea, MMED – marine Mediterranean, MMAC – marine Macaronesian. Record abbreviations: x – present in the Member State / marine region; ‘?’ – presence of the habitat is not certain and needs further examination; scientific reserve.

MS-marine region	1110 Sandbanks	1120* Posidonia beds	1170 Reefs	1180 Submarine structures	8330 Sea caves
BE-MATL	X				
BG-MBLA	X		X		X
CY-MMED	X	X	X		X
DE-MATL	X		X		
DE-MBAL	X		X		
DK-MATL	X		X	X	
DK-MBAL	X		X	X	X
EE-MBAL	X		X		
EL-MMED	X	X	X		X
ES-MATL	X		X	?	X
ES-MMAC	X				X
ES-MMED	X	X		?	X
FI-MBAL	X		X		
FR-MATL	X		X	X	X
FR-MMED	X	X	X		X
IE-MATL	X		X		X
IT-MMED	X	X	X		X
LT-MBAL	X		X		
LV-MBAL	X		X		
MT-MMED	?	X	X		X
NL-MATL	X		X		
PL-MBAL	X		X		
PT-MATL	X		X		X
PT-MMAC	X		X		X
RO-MBLA	X		X	?	X
SE-MATL	X		X		
SE-MBAL	X		X		

⁷ The habitat ‘large shallow inlets and bays’ (1160) was deleted from the table and is not any more considered as marine habitat.

MS-marine region	1110 Sandbanks	1120* Posidonia beds	1170 Reefs	1180 Submarine structures	8330 Sea caves
SI-MMED	X	X	X		
UK-MATL	X		X	X	X
UK-MMED			X		X

Table 4. Draft reference list for marine species and regions. States and species are arranged alphabetically. Abbreviations for the marine regions: MATL – marine Atlantic, MBLA – marine Black Sea, MBAL – marine Baltic Sea, MMED – marine Mediterranean, MMAC – marine Macaronesian. Record abbreviations: x – Member State / marine region hosts marine areas that are essential to the life and reproduction of the species; ‘?’ – the presence of the species is not certain and needs further examination; scientific reserve; e – exception: species present but not covered by the Annex II.

MS- marine region	<i>Acipenser naccarii</i>	<i>Acipenser sturio</i>	<i>Alosa alosa</i>	<i>Alosa fallax</i>	<i>Caretta caretta</i>	<i>Chelonia mydas</i>	<i>Coregonus oxyrinchus</i>	<i>Gibbula nivosa</i>	<i>Halichoerus grypus</i>	<i>Lampetra fluviatilis</i>	<i>Monachus monachus</i>	<i>Petromyzon marinus</i>	<i>Phoca hispida bottnica</i>	<i>Phoca vitulina</i>	<i>Phocoena phocoena</i>	<i>Tursiops truncatus</i>
BE-MATL				X					X	X		X		X	X	X
BG-MBLA		?		?	?	?									X	X
CY-MMED					X	X					X					X
DE-MATL			?	X			?		X	?		?		X	X	X
DE-MBAL			X	X					X	X		X		X	X	
DK-MATL			X	X			X		X	X		X		X	X	
DK-MBAL			?	X					X	X		X		X	X	
EE-MBAL									X	X			X			
EL-MMED	?	X		X	X	X					X	?			X	X
ES-MATL			X	X	X	X						X			X	X
ES-MMAC					X	X										X
ES-MMED		X	X	X	X	X					X	X			X	X
FI-MBAL									X	e		e	X			
FR-MATL		X	X	X	X	X			X	X		X		X	X	X
FR-MMED			X	X	X	X				X		X				X
IE-MATL			X	X					X	X		X		X	X	X
IT-MMED	X	X	?	X	X	?				X	X	X				X
LT-MBAL				X					?	X		?	?		?	
LV-MBAL				?					?	X		?	?		?	
MT-MMED				X	X	?		X								X

Additional guidelines for assessing sufficiency of N2000 proposals (SCIs) for marine habitats and species

MS- marine region	<i>Acipenser naccarii</i>	<i>Acipenser sturio</i>	<i>Alosa alosa</i>	<i>Alosa fallax</i>	<i>Caretta caretta</i>	<i>Chelonia mydas</i>	<i>Coregonus oxyrinchus</i>	<i>Gibbula nivosa</i>	<i>Halichoerus grypus</i>	<i>Lampetra fluviatilis</i>	<i>Monachus monachus</i>	<i>Petromyzon marinus</i>	<i>Phoca hispida botnica</i>	<i>Phoca vitulina</i>	<i>Phocoena phocoena</i>	<i>Tursiops truncatus</i>
NL-MATL		?	?	X	?	?			X	X		X		X	X	?
PL-MBAL				X					X	X		X	?	?	X	?
PT-MATL		X	X	X	?	?			?	X		X	?	?	X	X
PT-MMAC					X	X			?		X	X		?	?	X
RO-MBLA		?		?											X	X
SE-MATL									X					X	X	
SE-MBAL									X	e		e	X	X	X	
SI-MMED					X											X
UK-MATL			X	X					X	X		X		X	X	X
UK-MMED					X	X										X