Natura 2000 Seminars

Natura 2000 Biogeographical Process

Second Mediterranean Natura 2000 Seminar
Limassol - Cyprus, 14 – 16 November 2017

Seminar Input Document

An initiative of the European Commission

NATURA 2000

Prepared by: EUROPARC-Spain, ECNC, ILE SAS

Authors: Diego García Ventura & Marta Múgica (Oficina Técnica de EUROPARC-España Fundación Fernando González Bernáldez)
The factsheets contained in the annexes to this document have been prepared by Luboš Halada, in consultation with other ETC-BD colleagues.

Editing: Neil McIntosh, Glynis van Uden & Jinthe Roelofs (ECNC)

Funding: European Commission as part of contract number 07.0307/2012/60517/SER/B.3.

Event: For more information on this seminar, see the Natura 2000 Communication Platform: http://ec.europa.eu/environment/nature/natura2000/platform/events/second_mediterranean_natura_2000_seminar_2017_en.htm

Relevant documents can be found here: http://ec.europa.eu/environment/nature/natura2000/platform/knowledge_base/135_mediterranean_region_en.htm

Table of Contents

1 Introduction

The Natura 2000 Biogeographical Process was launched by the European Commission in 2011 to assist Member States in managing Natura 2000 as a coherent ecological network. The Process provides practical means to exchange the information, experience and knowledge that are required to identify and define common solutions and develop cooperative actions, which can be delivered to ensure progress towards the EU 2020 Biodiversity Strategy targets, in particular Targets 1 & 2.

As responsibility for implementation of Natura 2000 and ensuring progress towards the EU's Biodiversity Strategy targets lies with Member States, they are key actors in the Natura 2000 Biogeographical Process. The Process also provides an opportunity to mobilise expert networks and inputs from other key stakeholders, including NGOs. This is important in order to tap into the direct experience of Natura 2000 practitioners, expert stakeholders and Member States' representatives with specific responsibilities for implementation of Natura 2000. This underlines the strategic and operational importance of the Process, the integrated inputs required from diverse actors and the opportunities available to develop concrete collaborative actions for future implementation.

As a long-term, continuing process, since the first Boreal Natura 2000 Biogeographical Seminar in Finland in 2012, the strategic orientations of the Natura 2000 Biogeographical Process have been further developed – these are described in Annex 2 to this document. The Fitness Check evaluation of the EU Nature Directives has revealed that the effectiveness of the Directives has been constrained by, among other factors, the lack of and insufficient targeting of funding, limited stakeholder awareness and cooperation, and gaps in knowledge. It has also highlighted the need to put in place effective conservation systems, enabling delivering the Directives' objectives, having full regard to the socio-economic context in which they operate[1]. As part of the follow-up to the Fitness Check evaluation the Commission has proposed to refocus the Natura 2000 Biogeographical Process, for the latter to better contribute to the establishment of coherent, effective and efficient conservation systems throughout the EU. The Process should in particular deliver improved coherence in conservation status evaluation and setting conservation objectives and priorities. It should promote the identification of best practices in conservation management, in seizing funding opportunities, in dealing with communication and stakeholder involvement and in improving governance of Natura 2000 the network in order to optimise conservation results at biogeographical level. The Process should deliver strengthened cooperation and sharing of experience on common challenges, including those related to the specific socio-economic context and to cross-border issues and agree biogeographical-level roadmaps for cooperative action.

[1] See SWD(2016) 472 final, section 7.

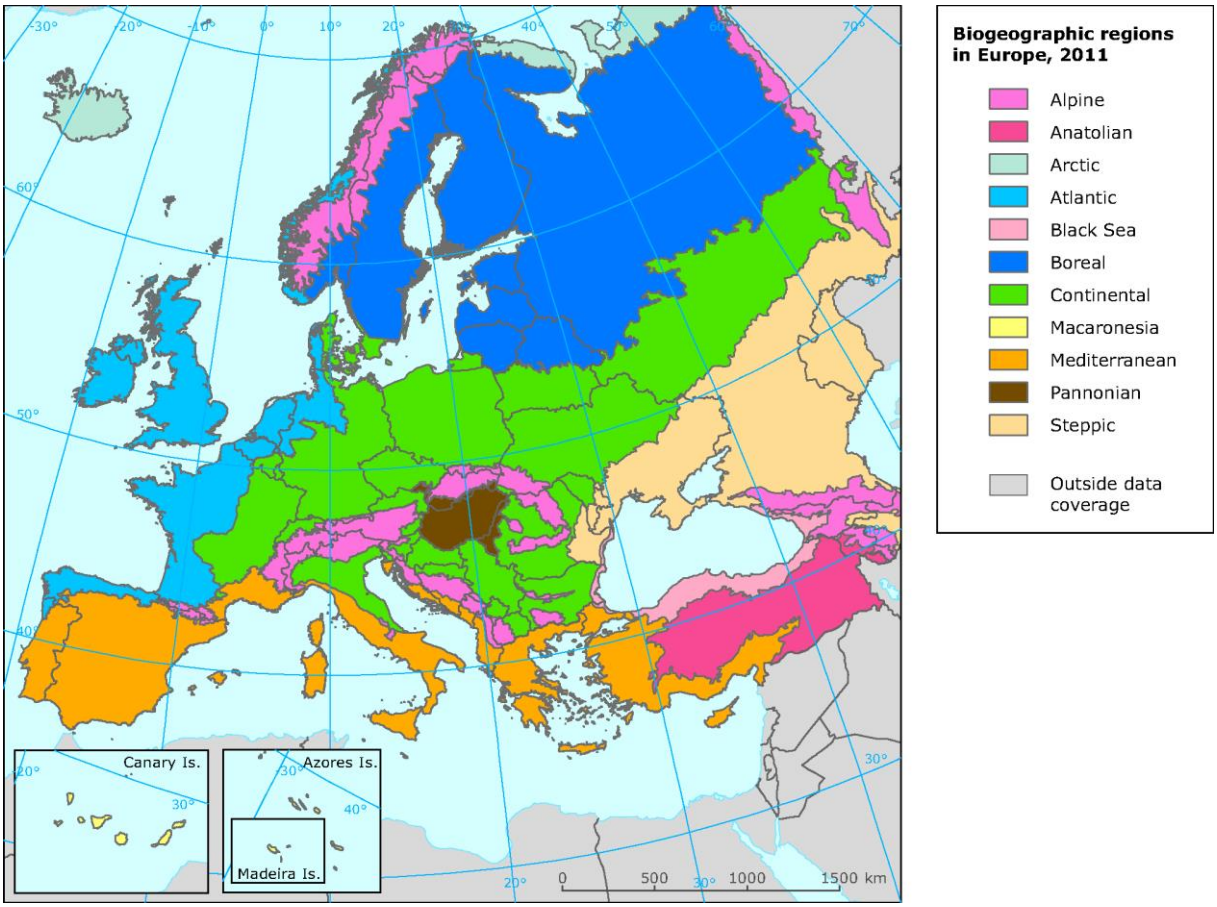

Figure 1 Biogeographical regions (European Environment Agency)

2 The 2nd Mediterranean Natura 2000 Biogeographical Seminar

The second Mediterranean Natura 2000 Seminar is being hosted by Terra Cypria, the Cyprus conservation foundation, gratefully acknowledge the generous support of the Environment Department and the Forestry Department of the Ministry of Agriculture, Rural Development & Environment, Cyprus. It provides an important opportunity for participants to improve and strengthen the implementation of Natura 2000 in the region and ensure progress towards the EU 2020 Biodiversity Strategy targets. Progress includes building common understanding of practical management and thematic issues identified as being of common priority, stimulating new know-how about effective management approaches, and developing cooperation and networking activities on issues of shared importance.

Therefore, this Seminar is regarded as a milestone in a continuing process of networking, information sharing and knowledge building, of direct benefit to stakeholders across the Mediterranean biogeographical region. Over three days, the Mediterranean Seminar will aim to generate concrete outputs as identified by participants, which can be further developed following the Seminar. Although some attention will be given to reviewing progress since the first Mediterranean Seminar (held in Thessaloniki, Greece, 26 – 28 May 2014), the focus is very much forward-looking; this will include:

- Taking stock of the activities implemented since the Kick-off Seminar and identifying and agreeing further concrete actions and cooperation priorities, which can be developed and taken forward by various actors in the region – with the aim of reaching favourable conservation status (FCS);
- Identifying possible new conservation issues/priorities – new cooperation actions based, in particular, on the lessons learnt from the latest State of Nature Report, including a 'Roadmap' of agreed future collaborative actions;
- Compiling sources of information and experience that capitalise on completed projects, available guidance and potential new proposals to increase synergies and collaboration opportunities.

The Seminar will also discuss:

- The possibilities and practicalities of identifying restoration priorities, including the so-called 'low hanging fruit' (LHF), i.e. habitat and species whose conservation status could be improved in the short-term using reasonably straightforward management measures. This reflects the urgency to demonstrate progress towards achieving the targets of the EU 2020 Biodiversity Strategy in the short to medium term;
- How to develop the most useful form of cooperation and implementation strategies for biogeographical level favourable reference values (FRVs);
- Any additional conservation issues of common interest that will have been identified in the expert consultation process preceding the Seminar.

In order to help re-focusing the work at the second Mediterranean Natura 2000 Seminar this seminar will be organised around four large thematic clusters in the context of which also more specific issues related to the so-called 'top 23' habitat types can be addressed as appropriate. The four 'Habitat Working Groups' of the first Mediterranean Seminar will be replaced by four 'Thematic Working Groups' corresponding to the following thematic clusters:

1. **Assessment and sustainable development of ecosystems** (setting restoration priorities, interpretation of habitats, favourable reference values,…)
2. **Conservation objectives & monitoring and evaluation** (approaches to integrated planning, ways to monitor and evaluate the effectiveness of conservation measures,…)
3. **Effective governance model for integrated approaches to implementation of Natura 2000** (effective Natura 2000 governance structures, participatory approaches…)
4. **Addressing threats and pressures on Mediterranean habitats & species** (ways to assess and mitigate negative impacts and management pressures, dealing with ecological connectivity,…)

Specifically, the Seminar will identify and, where possible, agree a biogeographical-level roadmap for cooperative action, including future practical management actions that are required to improve favourable conservation status. Future actions, identified by participants for further development and realisation, can take place at local, regional, cross-border levels or transnational levels: the actions may take the form of further expert meetings, networking events, future projects and new collaborations with the clear goal of strengthening the implementation of Natura 2000 in the Mediterranean biogeographical region. Through the Process' networking events, as well as the Natura 2000 Communication Platform, collaboration amongst all stakeholders will be encouraged and enhanced.

Therefore, the primary purpose of the Process is to provide practical means to ensure progress towards achievement of the favourable conservation status (FCS) of habitats and species of European Community importance in the Mediterranean biogeographical region. By focusing on common priorities and shared interests identified by experts as being important to improve habitat management, the objective of the Seminar is to help Mediterranean Member States and expert stakeholders to identify and agree on a number of collaborative, concrete actions that can be followed up to address the main common priorities and shared issues identified. Subject to the views of participating experts, the scope of focus within the Natura 2000 Biogeographical Process can also be extended to cover species management.

2.1 The Mediterranean Seminar Document[2]

This document serves as a point of reference for discussions during the Seminar. It presents, in digested form, the contributions from habitat management experts from 6 of the 9 Mediterranean EU Member States[3], gathered during an online consultation exercise. Their first-hand expert knowledge has been complemented with information presented in published sources, in particular, habitat-related guidance and publications produced by the national authorities, the European Commission and the European Topic Centre on Biological Diversity (ETC-BD).

The core of this document (chapter 3 to chapter 5) addresses thematic issues and presents summary accounts for the Mediterranean habitat groups originally selected for priority consideration in 2014. In addition, the document takes into account the 'Low Hanging Fruit' approach and habitats identified as 'Low Hanging Fruits'. Each habitat group chapter focuses on issues, challenges, the scope for (collaborative) solutions and opportunities and examples of best practices. Using the latest Article 17 reports, detailed factsheets for each of the 44 Mediterranean habitats considered in this report are

[2] The 2nd Mediterranean Seminar Document is available on the Natura 2000 Platform for download from the following link: http://ec.europa.eu/environment/nature/natura2000/platform/knowledge_base/135_mediterranean_region_en.htm
[3] Croatia, Cyprus, France, Greece, Italy, Malta, Portugal, Spain, United Kingdom.

presented in annexes 4 to 7. The factsheets were produced by ILE-SAS in consultation with the ETC-BD.

2.2 Habitats selected for priority consideration and 'Low Hanging Fruit' Habitats

This 2nd Mediterranean Seminar focuses attention on ways to effect progress towards the achievement of favourable conservation status (FCS) for those habitats and species of Community interest that have been identified for specific consideration in the Mediterranean biogeographical region. Reflecting the urgency to demonstrate progress towards achieving the targets of the EU 2020 Biodiversity Strategy in the short to medium term, the Seminar also provides an opportunity to consider new methods which can help to identify priorities for action. This includes the idea of addressing the so-called 'low hanging fruit' (LHF). The LHF methodology, developed by the ETC-BD in consultation with the European Commission, was circulated during the Mediterranean expert consultation exercise, and is annexed to this document for ease of reference – see Annex 3.

In summary though, benefiting from the latest Article 17 reports (2007–2012) and working together with the European Topic Centre on Biological Diversity (ETC-BD), the LHF approach involves identifying those species and/or habitats for which measurable improvements of conservation status could be reached by means of some measures which are straightforward to implement and achievable in the short term. Therefore, this Seminar will also enable participants to discuss the 'Low Hanging Fruit' approach and how it may be used to ensure increased progress towards reaching favourable conservation status for particular habitats. This will be considered along with progress and possible scope for increased cooperation with regard to those Mediterranean habitats originally selected for priority consideration. In addition, of course, it is worth emphasising that other habitats, or species, or thematic issues, which expert stakeholders may wish to discuss and work on together, are open for discussion especially if there may be scope for practical cooperation and collaborative actions in the Mediterranean region.

Based on this approach, 23 Mediterranean habitats have been identified as Low Hanging Fruits (LHF). It is noted that 2 LHF habitats are also included in the 23 Mediterranean habitats previously identified for priority consideration. In total, therefore, 44 Mediterranean habitats are considered in this document: it summarises their current status, management issues and threats, as well as possible solutions, which may form the basis for future cooperative actions in the Mediterranean region.

In the online consultation conducted to help prepare this document, Mediterranean experts were asked to share their knowledge and practical experience of dealing with the thematic issues identified for discussion during the Seminar: in addition, experts were asked to share their knowledge and insights about the status of all the habitats, including their views on the Mediterranean LHF habitats identified. All Mediterranean habitats are listed in Table 1 below.

Table 1. Overview of all habitats per habitat group in the Mediterranean biogeographical region

Coastal and marine habitat group			
Habitats Directive code	**Habitat name**	**Low Hanging Fruit**	**Priority consideration habitat**

1110	Sandbanks which are slightly covered by sea water all the time		Yes
1120	Posidonia beds (*Posidonia oceanicae*)		Yes
1150	Coastal lagoons		Yes
1170	Reefs		Yes
1310	*Salicornia* and other annuals colonising mud and sand		Yes
1410	Mediterranean salt meadows (*Juncetalia maritimi*)		Yes
1420	Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)		Yes
1520	Iberian gypsum vegetation (*Gypsophiletalia*)	Yes	
2110	Embryonic shifting dunes		Yes
2150	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)	Yes	
2230	*Malcomietalia* dune grassland		Yes
2250	Coastal dunes with *Juniperus spp.*		Yes
Freshwater habitat group			
Habitats Directive code	**Habitat name**	**Low Hanging Fruit**	**Priority consideration habitat**
3150	Natural eutrophic lakes with *Magnopotamion* and *Hydrocharition*-type vegetation	Yes	
3170	Mediterranean temporary ponds		Yes
3230	Alpine rivers and their ligneous vegetation with *Myricaria germanica*	Yes	
3240	Alpine rivers and their ligneous vegetation with *Salix elaeagnos*	Yes	
3250	Constantly flowing Mediterranean rivers with *Glaucium flavum*	Yes	
3280	Constantly flowing Mediterranean rivers with *Paspalo-Agrostidion* species and hanging curtains of *Salix* and *Populus alba*	Yes	
3290	Intermittently flowing Mediterranean rivers of the *Paspalo-Agrostidion*		Yes
92D0	Southern riparian galleries and thickets (*Nerio-Tamaricetea* and *Securinegion tinctoriae*)		Yes

92A0	*Salix alba* and *Populus alba* galleries		Yes
Grassland, heath and scrub habitat group			
Habitats Directive code	**Habitat name**	**Low Hanging Fruit**	**Priority consideration habitat**
4010	Northern Atlantic wet heaths with *Erica tetralix*	Yes	
4030	European dry heaths	Yes	
5140	*Cistus palhinhae* formations on maritime wet heaths	Yes	
5220	Arborescent matorral with *Ziziphus*	Yes	
5320	Low formations of *Euphorbia* close to cliffs	Yes	
5330	Thermo-Mediterranean and pre-desert scrub		Yes
5430	Endemic phryganas of *the Euphorbio-Verbascion*	Yes	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-brometalia*) (*Important orchid sites)	Yes	Yes
6220	Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea*		Yes
6310	Dehesas with evergreen *Quercus spp.*	Yes	Yes
6520	Mountain hay meadows	Yes	
8240	Limestone pavements	Yes	
Forest habitat group			
Habitats Directive code	**Habitat name**	**Low Hanging Fruit**	**Priority consideration habitat**
9180	*Tilio-acerion* forest of slopes, screens and ravines	Yes	
9260	*Castanea sativa* woods		Yes
9320	*Olea* and *Ceratonia* forests		Yes
9330	*Quercus suber* forests		Yes
9340	*Quercus ilex* and *Quercus rotundifolia* forests		Yes
9430	Subalpine and montane *Pinus uncinata* forests (*If on gypsum or limestone)	Yes	
9510	Southern Apennine *Abies alba* forests	Yes	

9540	Mediterranean pine forests with Mesogean pines		Yes
9560	Endemic forests with *Juniperus spp.*	Yes	
91M0	Pannonian-Balkanic turkey oak-sessile oak forests	Yes	
91L0	Illyrian oak-hornbeam forests	Yes	

2.3 Thematic issues

Based on replies to the Mediterranean expert consultation and in discussion with the host, several thematic issues have been identified as a useful basis for specific discussion during the 2nd Mediterranean Seminar. These are:

1. Assessment and sustainable development of ecosystems
2. Conservation objectives & monitoring and evaluation
3. Effective governance model for integrated approaches to implementation of Natura 2000
4. Addressing threats and pressures on Mediterranean habitats & species

The themes will be of particular interest during the 2nd Mediterranean Natura 2000 Seminar mainly because of the scope they may hold for possible cooperation and collaborative actions, including cross-border projects and initiatives. Also, there are several current projects and best practice experience and examples related to these themes which will provide useful 'food for thought' to trigger discussions.

Importantly, the themes identified for discussion are observed to be directly relevant to the objectives of the EC's Nature Action Plan: An Action Plan for nature, people and the economy (COM(2017) 198 final). The Action Plan recognises the specific contribution of Natura 2000 and the significant opportunities that may arise from improved implementation of the Birds and Habitats Directives. The objectives of the Nature Action Plan are:

- To realise the full potential of the Directives to achieve healthy ecosystems, whose services benefit people, nature and the economy;
- To boost their contribution towards reaching the EU's biodiversity targets for 2020;
- To improve the Directives' coherence with broader socio-economic objectives.

The approach taken in the Nature Action Plan to achieve these objectives identifies four 'priority areas of Action'; these are:

- Improving guidance and knowledge and ensuring better coherence with broader socio-economic objectives;
- Building political ownership and strengthening compliance;
- Strengthening investment in Natura 2000 and improving synergies between EU funding instruments;
- Improved communication and outreach, engaging citizens, stakeholders and communities.

The Nature Action Plan provides an important framework for the Natura 2000 Biogeographical Process in general and the 2nd Mediterranean Natura 2000 Seminar in particular. Subject to the views of participants at the Seminar, there are opportunities to consider and share views about, for example:

- Issues related to integrated management planning linked to a multiple benefits agenda – for example, flood mitigation; coastal zone management; forestry management; locally-led and results-based agri-environmental schemes.
- Approaches to setting restoration priorities, including considerations of scale and scope for cooperation, as well as ways to improve and better structure coordination of such approaches.
- Methods and means to initiate, continue or improve communication about Natura 2000, particularly in terms of public engagement and outreach – for example, the value of working with Mediterranean flagship species and/or habitat types to communicate the importance and purpose of Natura 2000 in tangible ways; also, effective solutions which may be applied, specifically related to management of conflicts.
- The approach used to identify 'low-hanging fruit' and appropriate cooperative management actions which could be developed and implemented in order to accelerate progress towards improving the conservation status or achieving favourable conservation status of LHF habitats; setting conservation objectives at different scales; dealing with potentially conflicting conservation priorities; experience with favourable reference values – at which levels can these usefully be set?

Such ideas are most obvious in relation to, for example, concepts of nature-based solutions where Natura 2000 sites' ecosystems and their services are being managed in order to protect against floods. Also, there are equally opportunities to increase outreach and extend public engagement in Natura 2000 conservation management through, for example, collaborative work on flagship species or habitat types. In addition though, there is also evidence of the growing awareness of opportunities to strengthen implementation of Natura 2000 by consciously linking natural and cultural heritages. Particularly in the Mediterranean region, though certainly not exclusively, there are possible multiple benefits to be derived from the strength of connections between people and place, including customs and traditions – for example, to promote eco-tourism and enhance visitor numbers. In addition, there may be scope as part of the Natura 2000 Biogeographical Process to incorporate social, cultural and ecological aspects relevant to nature and its conservation. The concept of working through and with Natura 2000 in order to generate and achieve cross-cutting multiple benefits, often across sectors, and in order to integrate diverse priorities into different policy agendas is of particular interest.

3 Thematic clusters

In this chapter the thematic clusters, as defined for the Second Mediterranean Natura 2000 Seminar, will be discussed. First a short summary of comments per thematic cluster is provided, followed by a chapter per thematic cluster that discusses the issues in more detail.

3.1 Summary of comments received for all thematic clusters

As part of the consultation exercise, the following feedback has been received from Mediterranean experts, summarised per thematic cluster of the Natura 2000 Biogeographical Process.

Assessment and sustainable development of ecosystems

Insufficient legal and planning implementation, infrequent application of ecosystem services assessment approaches, lack of application of knowledge to management and common assessment methodologies, or different interpretation of habitat types are some of the barriers to be tackled in achieving an improvement of Natura 2000 conservation assessment.

Encouraging cooperation through networking, training events and guidance documents has been mostly aimed at overcoming these obstacles, in order to disseminate the projects and experiences already available. Proper assessment of other public policies strongly linked to Natura 2000 conservation (such CAP, LIFE, Water Framework Directive) is basic to relate objectives and provide effective funding, as well as standardised procedures for assessing conservation status.

Conservation objectives & monitoring and evaluation

Most of the experts highlight the difficulty in setting conservation priorities and objectives from the local to the biogeographical level. Any attempt to define biogeographical-level targets for conservation needs adequate favourable reference values (FRV). For this, it is necessary to have a common framework or policy guidelines to define and integrate priorities and targets, as well as criteria to provide clarification when conflicts arise between the conservation objectives of habitats and species in a given site or region.

Management monitoring protocols are poorly developed and not properly balanced with the Article 17 periodical request. These protocols should be standardised, based on the best quality data available, and should take conservation objectives into account. There is a clear need to gather and share all the data and information produced by stakeholders involved in management and conservation.

Effective governance model for integrated approaches to implementation of Natura 2000

Conservation of the Natura 2000 network involves a lot of European, national, regional and local policies and bodies, which are often not sufficiently coordinated or have different (or opposing) objectives. Communication between these administrative bodies, researchers and site managers is weak and usually lacks the proper forums to work.

Experts mentioned several measures, mainly at the local level, that could build effective governance schemes: lobbying policymakers; recognising the important role of communication experts; participation of NGOs in Natura 2000 management; and leadership of local stakeholders in restoration programmes or twinning programmes between Natura 2000 sites.

Addressing threats and pressures on Mediterranean habitats & species
The main pressures reported by experts are agriculture and farm intensification; water management; urbanisation; mass tourism; infrastructure networks; and illegal hunting; as well as the global threat of climate change.

In addition to the concrete measures and actions reported in the habitat groups chapters, a more precise assessment of the efficiency of greening measures and the cost-effectiveness of CAP policy is crucial, due to the strong relation between productive systems and habitat & species conservation in the Mediterranean region. Wider research actions at the biogeographical scale and the modelling of pressure effects on habitats should provide criteria for decision-making. At the local level, conservation measures indicated in management plans and other instruments should be assessed. The results of this assessment could be shared through a database platform.

3.2 Assessment and sustainable development of ecosystems

3.2.1 Description

The focus of this group are practical issues relating to the management of habitat types and species. In particular fundamental approaches and concepts that can be addressed at biogeographical region level. Existing and already applied methods will be discussed to understand the feasibility of reaching common understanding across the Mediterranean biogeographical region in relation to the interpretation of habitat types; Favourable Reference Values; Standardized procedures for assessing conservation status and possible criteria to (where possible) upgrade from national to biogeographical level, including appropriate indicators and targets to be achieved.

There are still problems regarding the **interpretation of habitats**. The large number of vegetation relevés stored in main European databases can play a fundamental role to improve the consistency of interpretation and resolve this issue. The group will discuss how and what types of guidelines, based on the available databases, may usefully be developed to tackle interpretation issues. This group will aim to create a roadmap of concrete future steps and defined recommendations.

3.2.2 Most pressing common issues and specific challenges

Experts identified several pressing common issues in Mediterranean Natura 2000 conservation. These range from insufficient legal and planning implementation, lack of knowledge and common assessment methodologies, changes expected in public policies related to conservation, and lack of cooperation between conservation stakeholders.

With respect to legal and planning implementation, some experts mentioned delays in approving Natura 2000 management plans. In other cases, once approved, they are not implemented adequately or in ways that may give rise to conflicts. A lack of effective assessment of these management tools is detected and proper coordination between different administrative bodies (from local to biogeographical level) is required.

There is not much scientific knowledge about how to adequately assess ecosystem services, proper identification of habitats, and how some Natura 2000 habitats work. Some taxonomic groups (invertebrates, algae) and habitats (e.g. 9320) are not well-known, or robust information and ecological information is absent. The lack of updated habitat cartography is another point that requires to be addressed. On the other hand, applied knowledge and practical experiences should be better harvested and routinely applied in order to improve Natura 2000 management practices. The main challenge that needs to be tackled is ensuring good communication between all stakeholders involved in and required for Natura 2000 management – for example, public administrations, NGOs, site managers, local communities, land owners, Natura 2000 site users such as hunters and scientific experts/researchers.

Some experts point to a lack of assessment of the CAP and its greening package on habitats and species of Community interest, and gaps between coverage of Natura 2000 sites and high nature value agri-livestock systems. The surface, quality and connectivity of these areas are being reduced as a consequence of intensified exploitation, urbanisation or afforestation.

Topics to be discussed at the Seminar include a common interpretation of the habitat types, the establishment of favourable reference values, and criteria to establish restoration priorities. The aim is to produce a roadmap of the next steps that can be developed by various actors where that would lead to improved and stronger implementation of Natura 2000. The Process needs the feedback and field experience of Natura 2000 managers, so their participation in future meetings will be encouraged.

3.2.3 Opportunities for cooperative work, suggestions for improvement

Most experts highlight the need to disseminate information on all concepts, projects, research studies and management measures considered to be good practices, especially to better inform policymaking, as well as its implementation (i.e. CAP reform processes, LIFE unit): also, Natura 2000 management experience can be useful to positively engage and influence other stakeholders not linked to the environment and nature sector, but who are key to addressing conservation targets. Networking, integrated training events and guidance documents could trigger and increase cooperation activity, as could visits between Natura 2000 managers from different Mediterranean countries focused on sharing experiences and best practices. It would also be useful to include non-EU Mediterranean countries and seek to stimulate cross biogeographical region cooperation where that would be relevant..

There are several networks related to Mediterranean habitat types working at low levels of connection (most of them receiving EU political and financial support) that would benefit from being more extensively coordinated and brought together in order to share their experience with Natura 2000: in some cases, it may be necessary to reactivate some knowledge networks. This could be useful, for example, to check that habitats are understood in the same way in all the countries and to provide more consistent interpretations of habitat and species types (especially on cross-border sites with different management schemes). The potential of easily accessible networks focused on sustainable management practices related to reducing the risk of forest fire, climate change and tourism would also be areas where such interchanges and experience sharing would be highly welcome.

Large mammals and birds, and some types of habitats, are still the main beneficiaries of EU and Member States funding. According to the last Article 17 report, there are other species with a worse conservation status, such as fish, invertebrates and plants. A future improvement opportunity for example would be to better harmonise funding efforts based on Article 17 reporting data and linked with other prioritisation criteria.

3.2.4 Examples of good practices, resources

More examples are found in chapter 5.3.

Name	Short explanation
LIFE CHARCOS. Temporary Ponds: a natural habitat to be protected LIFE12NAT/PT/997 http://lifecharcos.lpn.pt/en/	A new tool is proposed to assess the conservation status of Mediterranean temporary ponds based on the presence of some species, mainly plant species (in south-west Portugal, 18 eighteen indicators have been identified for favourable ponds: 15 plants, one large branchiopod and two amphibian taxa). This tool is an alternative to other common, but time-consuming, methods and can be readily used by trained practitioners. To be replicated in other regions, the tool first has to be adapted by regional experts, but once this has been done, it enables the collection of comparable data and the geographical scaling-up of the assessments.
STEPPE FARMING. Sustainable farming in SPAs of Castilla-La Mancha (Spain) for steppe birds conservation LIFE15/NAT/ES/000734 https://estepasdelamancha.es/en/	Conservation of steppe birds included in Annex I of the Birds Directive through marketing and promotion of sustainable products from Natura 2000 sites.
Conservation status assessment of Natura 2000 habitats at site level https://www.researchgate.net/project/Conservation-status-assessment-of-Natura-2000-habitats-at-site-level	This project aims to provide reliable tools to assess the conservation status of natural habitats in the context of the Habitats Directive. The habitats so far studied are 1410 (Mediterranean salt meadows), 3170 (Mediterranean temporary ponds) and 2250 (Coastal dunes with *Juniperus spp.*).

3.2.5 Setting priorities – additional references

a. Prioritised Action Framework

The development of a prioritised action framework (PAF) by each Member State is foreseen by Article 8 (4) of the Habitats Directive. PAFs include each country's plans to fulfil their legal obligations and implement Natura 2000: as such, the PAFs are vital planning tools providing a framework of priorities of conservation actions needed, activities to be financed, and an integrated overview of how to achieve

them. Also, PAFs describe how various relevant EU and national financial instruments will be integrated (e.g. rural development under the Common Agricultural Policy, Structural and Cohesion Funds, European Maritime and Fisheries Fund). In the PAF document Member States specify their financing needs for Natura 2000. The aim of the exercise is to focus on the most important priorities, as well as opportunities to increase complementarity and consistency between the information contained in the Prioritised Action Frameworks and relevant programmes. The European Commission has developed a document outlining a possible format for a PAF: 'Format for a Prioritised Action Framework (PAF) for Natura 2000 for the EU Multiannual Financing Period 2014–2020', available here: http://ec.europa.eu/environment/nature/natura2000/financing/docs/PAF.pdf

According to the Fitness Check of the Birds and Habitats Directives (2016, SWD(2016) 472 final), nearly all Member States have prepared PAFs, with different levels of ambition and quality: also, despite indications that PAFs, when well prepared and supported, are making a positive contribution to securing funding for Natura 2000 including use of EU funding instruments, the extent to which the PAFs have strengthened integration of Natura 2000 into the main EU sectoral funds has still to be determined.

b. Setting restoration priorities

The second Boreal Natura 2000 Seminar in Vilnius, Lithuania, in 2016 tackled the topic of approaches to setting restoration priorities and discussing methods used in different Member States. The participants suggested that to properly assess trade-offs between biodiversity and ecosystem services, between different habitats, and between methods such as restoration and protection, systematic evaluation of the restoration related to the ecosystem service potential would help.

Priorities can be different at national and biogeographical or EU levels: however, a prioritising exercise using spatial prioritisation tools such as zonation may be helpful to determine restoration priorities. Experience shared during the second Boreal Natura 2000 Seminar revealed that funds can be better targeted if there is appropriate choice of priorities of sites/habitats to restore: in addition, participants at the Seminar concluded that prioritising is essential in order to maximise the effect of the restoration and efficiency of money spent. The approaches discussed during the second Boreal Natura 2000 Biogeographical region Seminar have been further discussed during a follow-up workshop in Finland in September 2017. The outputs from the Seminar and also the follow-up workshop may be useful references about approaches for restoration which could be usefully considered and potentially applied in the Mediterranean region.

c. Low Hanging Fruits

The Low Hanging Fruits (LHF) approach was discussed for the first time in the Natura 2000 Biogeographical Process in 2016 during the second Boreal and Atlantic Natura 2000 Seminars: it was also discussed during the second Alpine Seminar in 2017. Low hanging fruits (LHF) is a concept proposed for consideration by Natura 2000 stakeholders which may be useful to accelerate progress towards achieving Target 1 of the Biodiversity Strategy. LHF are the habitats for which FCS can be reached quicker and easier than for others: this may be one way to help identify and consider conservation actions which may be applied to improve conservation status or result in a positive (reportable) trend by each MS. In consultation with the EC, identification of LHF was conducted using a methodology developed by the EEA and its ETC-BD – the so-called LHF approach is based on the

results of the most recent reporting results[4] under Article 17 of the Habitats Directive and takes into account how to measure progress towards Target 1[5].

3.3 Conservation objectives & monitoring and evaluation

3.3.1 Description

In many Natura 2000 sites, monitoring of conservation measures established for Special Areas of Conservation is still lacking. This is central to effective management planning however. Monitoring is an integral part of the management planning process, and especially effective when used to evaluate the impact of conservation measures and progress towards conservation objectives. This group will focus on practical experiences of monitoring and evaluating the effectiveness of conservation measures; tools and approaches used and, setting conservation objectives. The group will seek to highlight an agreed way forward to improve the effectiveness of monitoring conservation measures in the Mediterranean biogeographical region.

Time will also be given to discussing **approaches to setting restoration priorities**. Effective monitoring is necessary with a view to assessing and evaluating the results of applied conservation and restoration measures in terms of conservation impacts on habitats and species and to adapt the measures where necessary. Knowledge of best practices is critical to achieve (cost) effective restoration measures and meet targets. Conservation goals are best achieved when restoration of habitats is prioritized. This group will discuss and highlight aspects which are important to take into consideration when prioritizing restoration efforts in the Alpine biogeographical region. It will also address the 'Low hanging fruit' approach.

3.3.2 Most pressing common issues and specific challenges

Some experts pointed to the difficulty in setting conservation priorities from local to biogeographical level. The main approaches aim at maintaining habitats and species in a stable or increasing trend at local scale, but without a standard reference state for them, and the biogeographical perspective is in general absent. On the other hand, other challenges specifically mentioned include a lack of funds for adequately implementing management plans , which includes implementation of management measures, as well as monitoring.

Integrating the conservation and restoration priorities into the framework established by the EU Directives on Nature, Water and Marine environment, and launching action plans for habitat types and species on a biogeographical scale are some of the challenges to be discussed during the Seminar.

From experts' comments, it would appear that there is a degree of consensus that monitoring in relation to conservation objectives is seldom properly done: areas of opportunity include steps to better define monitoring protocols and their practical application. More frequent and consistent monitoring practices applied at local levels and coordinated by Member States would improve Article 17 data and reporting. Such a step would, for example, help to ensure that conservation objectives are in a constant review process (according to an adaptive management approach): in addition, knowledge

[4] http://art17.eionet.europa.eu/article17/reports2012/
[5] https://circabc.europa.eu/w/browse/958b5817-8c76-4342-afcc-cdbbd27196eb

gains from improved and more consistent approaches to monitoring could help to clarify when several habitat and species objectives for a given site or region are in opposition (i.e. old-growth forests vs. regeneration of grassland/scrub to ensure long-term persistence).

Monitoring systems should take into account the need to propose numerical conservation objectives (so-called 'success thresholds'). Standard protocols (function, structure and surface) are needed in order to carry out long-term monitoring and to establish a database to evaluate conservation status. The promotion of citizen science approaches for monitoring and assessment is seen to be an interesting way to achieve this and to improve social acceptance and the long-term continuity of conservation initiatives.

3.3.3 Opportunities for cooperative work, suggestions for improvement

Mediterranean experts identified several opportunities for cooperative work in relation to improving the elaboration of conservation objectives and monitoring systems. Guidance documents about setting conservation objectives at site, region/state and biogeographical level should be developed to help practitioners and to ensure ecological coherence, as well as flow charts on the effect of management measures and standard protocols for monitoring linked to common databases.

There should be more national to biogeographical analysis, but more emphasis should be made on the quality of the data, which is generally captured at local to regional scale. The Article 17 report is the basis of EU-level assessments, but heterogeneity in the sources among regions and states can impact the results.

There is a clear need to gather all the information produced by all stakeholders involved in management and conservation. Sharing data on a larger scale (EU, Member States) allows more powerful analyses and wider scope of situations. Technical assistance and guidance for stakeholders to promote citizen science could be useful here.

A practical way to improve Natura 2000 management and monitoring approaches could be to organise specific thematic workshops on the different worst situation Mediterranean habitats to encourage different stakeholders to work together on transnational projects. This could be developed through specific LIFE projects for example, as well as through the Natura 2000 Biogeographical Process.

3.3.4 Needs and opportunities to define biogeographical level targets for conservation and restoration

Most experts who responded to the consultation exercise agree that there should be adequate favourable reference values (FRV) prior to defining biogeographical level targets. FRV should be based on the best available information from monitoring frameworks, and they should be present in management plans and other instruments linked to Natura 2000 conservation. There is a need for common agreement or policy guidelines to define priorities and targets, and better coordination of efforts and experiences already launched from site to biogeographical scale (good practices, LIFE projects, etc.).

Expert recommendations about specific habitats in which cooperative working could start on FRVs across the Mediterranean biogeographical region are highlighted in the habitat group chapter.

3.3.5 Examples of good practices, resources

More examples are found in chapter 5.3.

Name	Short explanation
INTCATCH Project. Technological advances to reduce monitoring costs http://www.intcatch.eu/index.php	INTCATCH will change the way in which river and lake water monitoring is implemented. The project will accomplish this by developing efficient, user friendly water monitoring strategies and systems based on innovative technologies that will be able to provide real-time data for important parameters. The new business model will transform water governance by facilitating sustainable water quality management by community groups and NGOs using a decision support system and eco-innovative technologies. The INTCATCH systems will be implemented and validated in the urban London and rural Great Ouse rivers in the UK and in Lake Garda (Italy), and will be demonstrated in Lake Yliki (Greece) and in the River Ter (Spain).
Improving knowledge and increasing awareness for wetland restoration in Attica Region (Greece) EEA GRANTS GR02-0006 https://eeagrants.org/project-portal/project/GR02-0006	The project addresses the lack of knowledge on Attica wetlands and the difficulties in accessing necessary environmental information for the competent authorities, such as the Region of Attica (Environment and Water Directorates) and the Management Body of Schinias, to document wetland protection and rehabilitation measures. The project contributes to the objective of the EEA programme for integrated management of marine and inland water resources and is expected to increase knowledge and awareness in regard to Attica wetlands as water-related ecosystems that face serious environmental problems and biodiversity loss.
RESECOM. Monitoring network for flora and HCI in Aragón (Spain) LIFE12 NAT/ES/000180 www.liferesecom.com	A LIFE+ project to arrange a network of trained professionals (rangers, technicians) and volunteers to monitor the distribution, occupancy, and population abundance of plant species and some habitats of the Aragón Region included in the Habitats Directive and the Nature 2000 network. Its objective is to provide the EU with information to assess their 'favourable' or 'unfavourable' status in the long run by following some standard and solid protocols.

3.4 Effective governance model for integrated approaches to implementation of Natura 2000

3.4.1 Description

This group will focus on discussing approaches to integrating Natura 2000 into wider society – it will consider approaches used for integrated planning, governance arrangements that positively engage stakeholders, respecting cultures and the role of traditional knowledge, and the economic value of managing habitats and their ecosystem services. Natura 2000 management plans are important tools to achieve biodiversity goals. While being practical tools to support conservation planning, to be effective in achieving biodiversity goals, they should be integrated with other plans (such as forest plans, river plans, park plans, etc.). Also, good and inclusive governance structures are essential for strengthening implementation of Natura 2000 at local and/ or regional levels – engagement and direct involvement of stakeholders are critical for site management, conservation status assessment and monitoring. The semi-natural habitats in the Mediterranean biogeographical region derive from traditional management practices and land uses. In particular, this group will seek to compare best practices in such areas.

3.4.2 Most pressing common issues and specific challenges

Most of the experts identified a lack of effective governance models which would be useful to achieve integrated management of Natura 2000 sites. They pointed to a lack of coordination among different European and national policies (CAP, Water Framework Directive, Natura 2000 management instruments, agri-environment schemes, etc.) and bodies. Furthermore, this is compounded by the fact that implementation of objectives is usually the responsibility of different agencies, which may have opposing views, different political support, or can even be oriented to exploitation rather than conservation.

Other experts highlight the lack of funds and communication between researchers, administration and Natura 2000 site managers as a reason contributing to inadequate development of effective (integrated) governance schemes.

3.4.3 Opportunities for cooperative work, suggestions for improvement

At the local level, some effective governance schemes do exist, especially where used to support integration of the different management plans for complex Natura 2000 sites (e.g. wetlands, forests, etc.) or local management strategies which capitalise on traditional uses' knowledge and modern technology in order to deliver crucial ecosystem services (water and climate regulation): this is seen to be especially true in urban and peri-urban areas. Inclusive approaches are needed to improve the dialogue between practitioners, conservationists and people living in rural communities. Ecosystem service schemes and the role of communication experts are tools that should be used much more widely. The active involvement of non-governmental organisations in the implementation of management plans should be pro-actively encouraged.

Restoration programmes should be led with local stakeholders managing the sites. For example, grassland restoration depends on the shepherds' investment to conserve grasslands and their need to increase their grazing. It has to be based on management plans that cover ecological and grazing issues

(periods, flock size, etc.). On rivers, eradication of invasive plants should be done with associations and users that are directly concerned by the subject and can get involved in the action for several years.

Measures proposed by the experts include working groups, guidelines for transferring environmental information to policymakers, the development of policy papers that could be easily transformed into legislation, in addition to collaboration with other Mediterranean regions as regards the benefits and involvement of residents in Natura 2000 sites, with the aim of better protecting and managing these areas. There are significant opportunities to exchange experiences, especially where that would involve work with other Natura 2000 sites in other countries to spread information regarding local management and governance procedures. Improved use of existing networks to that end should are certainly seen to be worth considering. Some examples of initiatives that may benefit from such an approach are identified by experts – for example, in relation to participative fauna and flora inventories, where local communities contribute to an atlas of local biodiversity.

Twinning between Natura 2000 sites on concrete actions and similar subjects is identified as a practical and 'ready-made' way to develop this approach. One useful tool that could be developed and shared would be a catalogue of actions carried out by twinned Natura 2000 sites that provides an overview about examples of instruments, benefits and other elements to take into account before undertaking a similar action. Related to this, some examples of twinning between schools at Natura 2000 sites and environmental education programmes have been launched, led by local organisations.

3.4.4 Examples of good practices, resources

More examples are found in chapter 5.3.

Name	Short explanation
LIFE REDBOSQUES - Knowledge and training networks for the effective management of Natura 2000 Mediterranean forest habitats in Spain LIFE15 GIE/ES/000809 http://www.redbosques.eu/english-version	The RedBosques project aims to improve the management of Spanish Mediterranean forests included in Natura 2000, facilitating access of practitioners to state-of-the-art knowledge. The ultimate goal is that forest managers effectively include biodiversity conservation and climate change adaptation objectives in their daily practice.
LIFE-IP INTEMARES. Integrated, Innovative and Participatory Management for Natura 2000 network in the Marine Environment LIFE15 IPE/ES/000012 http://fundacion-biodiversidad.es/es/biodiversidad-marina-y-litoral/proyectos-propios/life-ip-paf-intemares	The main objective of the LIFE-IP INTEMARES project is to implement the PAF for Natura 2000 in the Spanish marine Natura 2000 network and ensure that, upon completion, Spain has a consolidated network of marine Natura 2000 sites managed in a demonstrative, effective and integrated way, with the active participation of the sectors involved and with research as a basic tool for decision-making.
GIS of Provence regional parks (France) http://sit.pnrpaca.org/cartotheque/index.html	One tool used for the governance in Provence regional parks is the high performance GIS database. Data is shared with municipalities, landowners, hikers, event organisers, forestry technicians and other regional parks.

3.5 Addressing threats and pressures on Mediterranean habitats & species

3.5.1 Description

In the Mediterranean biogeographical region rural depopulation, invasive alien species and climate change are amongst several important threats to the conservation status of Natura 2000 habitats and species. This group will focus on identifying the main management practices required to adapt or mitigate such threats, as well as ways to increase resistance and resilience. Widespread priority species and habitats, appropriate assessment under Article 6(3) and ecological connectivity will be under discussion. The group will seek to highlight agreed ways forward to improve the effectiveness of conservation measures in the Mediterranean biogeographical region.

3.5.2 Most pressing common issues and specific challenges

Agriculture and farm intensification (ploughing of natural areas, use of pesticides, loss of traditional rotations, nitrogen surplus and other impacts) are identified as critical issues in most Mediterranean habitats. The mechanisms by which these practices are challenging biodiversity conservation in managed lands are not fully understood. Another critical issue in setting sustainable forest and agrosystems exploitation is the species' tolerance limits for habitat quality deterioration.

Related to this, some experts pointed out a lack of buffer zones around some habitats (particularly wetlands and halophilous habitats), consistent with a gradual shift from high-value farmland habitats to natural habitats, precisely due to the intensity of exploitation in areas outside the valuable natural areas.

Other specific pressing issues mentioned are water management (overexploitation of groundwater and its effects on wetlands), urbanisation, mass tourism, infrastructure networks (roads, energy) and illegal hunting. Tourism in particular is of special concern as long as it demands clean water, waste treatment and new spaces for urban development. In some countries, the absence of solid reference information about the location of species & habitats and deficiencies in SIC cartography prevents the proper management of Natura 2000 values.

Obviously, climate change must be taken into account in all these scenarios as a pressing issue.

3.5.3 Opportunities for addressing threats and pressures to Mediterranean habitats & species

There is a need for more precise assessment of the efficiency of greening measures implemented and a discussion about the cost-effectiveness of CAP policy in environmental terms. There should be common proposals from Mediterranean countries to the European Parliament and Commission on agri-environmental schemes and greening package which can be proposed during the next CAP reform. A joint workshop on this issue would be useful to help elaboration of issues involved in sustainable Natura 2000 management in farmlands, as well as wider consideration of the environmental and agriculture policy cross-overs – for example, in relation to use of available funds, as well as specific instruments such as the Environmental Impact Assessment (EIA), especially when that would lead to halting habitat loss or increasing biodiversity rich habitats.

Several experts suggested the development of guidance documents and flow charts to determine how to address threats and pressures on each specific type of habitat and species in the Directive annexes, as well as cooperation with other countries and the development of initiatives concerning information, knowledge and experience exchange. Wider research actions (at biogeographical scale) and modelling of the effects of pressures on habitats should also improve knowledge gaps and provide criteria for decision-making.

3.5.4 Examples of good practices, resources

More examples are found in chapter 5.3.

Name	Short explanation
OrientGate. Integrating Climate Knowledge into Planning http://www.orientgateproject.org/	The main objective of the project is to communicate up-to-date climate knowledge for the benefit of policymakers, including urban planners, nature protection authorities, regional and local development agencies, and territorial and public works authorities. The project is coordinated by the Euro-Mediterranean Centre on Climate Change.
ECOFLOW Project http://ecoflow.gr/en/	The ECOFLOW project aims to create a systematic and standardised procedure for assessing ecologically acceptable flows in rivers and streams whose flow regime is impacted by water resource development. The flow of running waters sustains the web of life and the ecological quality of waters in an entire river basin. Flow regime impairment has been little-studied in Greece, and remains a much neglected aspect of the national legislation, despite the widespread conflicts over water resource management and uses. A specialised consortium of scientists and relevant industry corporations will work together to achieve pioneering research and technological development and provide an important contribution to water-quality protection on a nationwide level.
LIFE ALBUFERA - Integrated management of three artificial wetlands in compliance with the Water Framework, Birds and Nitrates Directives LIFE12 ENV/ES/000685 http://lifealbufera.org/index.php/en/	The LIFE ALBUFERA project aims to demonstrate effective management of artificial wetlands in a natural area to achieve a double objective: improving water quality and improving the habitat of important bird species. It thus hopes to demonstrate a means of meeting the requirements of the European Water Framework Directive and the objectives of the Birds and Habitats Directives.

4 Habitat groups

This chapter provides an overview of the Mediterranean biogeographical region organised into four habitat groups. Mediterranean experts were requested to participate in an online consultation in which they could address the status of Mediterranean habitats. In addition, annexes 4 to 8 contain individual factsheets per habitat, combined per habitat group, which provide detailed information on each habitat's status. These annexes have been developed in consultation with the ETC-BD. This chapter summarises current pressures, opportunities to improve the conservation status, and other relevant observations, per habitat group.

4.1 Coastal and marine habitat group

4.1.1 Summary description

Ten habitats have been selected for priority consideration (Table 2). Two habitats – habitat 1520 in Spain and 2150 in Portugal – have been identified as `Low Hanging Fruit´ (LHF): the overall improvement of both habitats is possible by improving only one parameter (Structure & functions.

Based on Article 17 reporting, six habitats were reported to have unfavourable-inadequate conservation status, and five habitats were reported as unfavourable-bad (habitat 1420 with deteriorating trend). The conservation status of habitat 1170 is unknown. Five habitats present a negative trend assessment, four are stable and three have an unknown trend. Most of the changes in overall conservation status since the 2001–2006 report are not considered genuine, but due to the use of different methods.

Sandbanks, *Posidonia* beds, coastal lagoons and reefs are poorly represented in Mediterranean Natura 2000 sites (from 3.8 % coverage for sandbanks to 34 % for coastal lagoons). Halophilous and dune habitats are well represented (and, in some cases, overestimated), except for habitats 1520 (33 %) and 2230 (48 %). The percentage of habitat 2150 has not been calculated because of missing data in Portugal.

Table 2. Mediterranean coastal and marine habitat group

Coastal and marine habitat group			
Habitats Directive code	**Habitat name**	**Low Hanging Fruit**	**Priority consideration habitat**
1110	Sandbanks which are slightly covered by sea water all the time		Yes
1120	Posidonia beds (*Posidonia oceanicae*)		Yes
1150	Coastal lagoons		Yes
1170	Reefs		Yes
1310	*Salicornia* and other annuals colonising mud and sand		Yes

1410	Mediterranean salt meadows (*Juncetalia maritimi*)		Yes
1420	Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)		Yes
1520	Iberian gypsum vegetation (*Gypsophiletalia*)	Yes	
2110	Embryonic shifting dunes		Yes
2150	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)	Yes	
2230	*Malcomietalia* dune grassland		Yes
2250	Coastal dunes with *Juniperus spp.*		Yes

4.1.2 Issues, pressures and threats

The main threat for sandbanks, *Posidonia* beds, coastal lagoons and reefs is the high pressure of human activities in the littoral and their impacts (urbanisation, changes in hydraulic conditions, water pollution, sand and benthos removal, harvesting aquatic resources). Invasive species (*Caulerpa taxifolia, C. racemosa, Lophocladia lallemandii*) also threaten some *Posidonia* bed sites. In the case of coastal lagoons, experts pointed out that water management is carried out at basin level, not at Natura 2000 site level, so site management should be applied outside the limits to be really effective.

Halophilous habitats (13**, 14** and 15**) are sensitive to functional disruption of oscillation dynamics in soil moisture and salinity (dykes, floods, drying channels), which could affect seed banks and their viability. Agricultural pressure, overgrazing and outdoor recreation (trampling) contribute to habitat loss and fragmentation. Mining activities are the principal impact in habitat 1520, despite the great resilience of this habitat. The invasive neophyte *Spartina versicolor* threatens vegetal communities of habitat 1410.

Dune habitats depend on sediment dynamics near the coast. The main impacts are urbanisation, coastal engineering works that modify the coast, mechanical cleaning of beaches (disruption of the detrital trophic chain) and sand extraction. Uncontrolled access to beaches (cars, walkers) and exotic invasive species (*Carpobrotus edulis*, *Acacia sp.*, *Cortadeira selloana*) contribute to fragmentation and habitat loss.

4.1.3 Management and conservation measures and actions

Experts pointed to habitats 1150, 1410, 1310, 1120 and 2250 as having specific opportunities to be developed in the future in order to improve their conservation status. In general, cooperation with the MedWet initiative and cooperation within the Habitats and Water Framework Directives are strongly recommended. Habitats 1310 and 1410 could be easily preserved through a relatively cheap purchase scheme, due to their small areas and their unproductive character. They could also benefit from the

land set-aside programmes of the new CAP. Habitat 1310 needs a better and clearer definition, due to its wide spectrum condition.

Land-use planning, legal protection of the habitats, establishment of protected sites and, definitively, an integrated coastal zone management approach are needed in order to stop urbanisation and other human activities affecting the littoral (fishing, collecting, harvesting aquatic resources). Good agricultural practices and waste and sewage management in the watershed are crucial to avoid system collapses. Tourism planning and restrictions must be taken into account, in addition to other management measures such as seagrass-friendly moorings for boats, fencing of sensitive zones, and channelling beach access through footbridges. In general, experts highlighted that the study and modelling of sediment transport is to be made on a wide scale.

Restoration actions based on restocking and reinforcement programmes are desirable for seagrass, once threats and pressures have been removed and monitoring systems have been launched. In the case of coastal lagoons, salt water penetration routes should be maintained and undisturbed, natural lagoon areas should be strictly protected. Management of fisheries (compliance with moratoriums) and regulation of trawling and diving are needed for reef improvement. A minimum distance between seagrass and reef habitats and desalination plants, thermal power plants and dragging activities must be applied.

Once protected and restored, non-intervention is recommended to maintain halophilous habitats in a good state of conservation. Overgrazing and overfertilisation must be avoided in the surrounding areas. Due to the association of several of these habitats with salt pans, it is recommended to avoid hard transformation of the salt pans into intensive production systems (salt, fish ponds). An appropriate quarry squares restoration in gypsicolous sites (without topsoil covering) must be practised in habitat 1520 restoration, as well as measures to avoid trampling of vegetation and lichen crust.

In the case of dune preservation, mechanical cleaning of beaches should be avoided and replaced by more selective methods, such as manual cleaning of macro-waste. Fencing to allow sand to stack and restoration through small nurseries of local dune plants are recommended, as well as footbridges to protect dune systems from trampling. Forest management plans focused on conservation are expected for habitat 2250, especially when either pinewoods or other tree layers meet.

4.1.4 Working together on favourable reference values (FRV)

Coastal habitats (such as 1120) are mentioned by experts as a good starting point for setting FRV, due to their relative homogeneity across the Mediterranean and the high threat level.

On the other hand, some experts consider that proper FRV have not been defined for salt steppe-lands (habitat 15**), because there is insufficient information about minimum habitat or population sizes to ensure a long term conservation programme. Related to this, they recommend the exchange of knowledge and experiences between the Mediterranean and Pannonian regions.

4.2 Freshwater habitat group

4.2.1 Summary description

This group includes lentic, lotic and riparian forest habitats in the Mediterranean region. Five habitats have been selected as LHF and four habitats were originally selected for priority consideration (Table 3). Based on Article 17 reporting, all the habitats have an unfavourable-inadequate conservation status, most of them with a negative trend. Only two habitats (3170 and 3240) are stable. Habitat 3280 is the only one for which the assessment of change in overall conservation status from the 2001–2006 report is considered genuine (no change).

Classification as LHF is motivated by the fact that only one parameter (Structure and functions) in only one country needs to be improved in order to achieve overall improvement. These countries are Italy (habitats 3150, 3250), France (3230, 3280) and Spain (3240).

Freshwater and riparian habitats are moderately well represented in Mediterranean Natura 2000 sites. Around 50 % of all habitats are covered by Natura 2000, and close to 100 % in the case of habitats 3150 and 3230. Some problems of estimation and data availability are found in habitats 3150, 3290 and 92A0.

Table 3. Mediterranean freshwater habitat group

Freshwater habitat group			
Habitats Directive code	**Habitat name**	**Low Hanging Fruit**	**Priority consideration habitat**
3150	Natural eutrophic lakes with *Magnopotamion* and *Hydrocharition*-type vegetation	Yes	
3170	Mediterranean temporary ponds		Yes
3230	Alpine rivers and their ligneous vegetation with *Myricaria germanica*	Yes	
3240	Alpine rivers and their ligneous vegetation with *Salix elaeagnos*	Yes	
3250	Constantly flowing Mediterranean rivers with *Glaucium flavum*	Yes	
3280	Constantly flowing Mediterranean rivers with *Paspalo-Agrostidion* species and hanging curtains of *Salix* and *Populus alba*	Yes	
3290	Intermittently flowing Mediterranean rivers of the *Paspalo-Agrostidion*		Yes
92D0	Southern riparian galleries and thickets (*Nerio-Tamaricetea* and *Securinegion tinctoriae*)		Yes

92A0	*Salix alba* and *Populus alba* galleries		Yes

4.2.2 Issues, pressures and threats

The Article 17 report highlights pollution, changes in water quality and hydrological regime, and invasive alien species as the main pressures in Mediterranean freshwater habitats. Sources of pollution are diffuse pollution from intensive agriculture and livestock effluents and direct spills from urban and industrial activities. Canalisation, water deviation and abstractions have a critical impact mainly in those habitats with an alternating dry and aquatic phase, such as 3170 and 3290.

Quarrying and sand extraction is the main threat in habitat 3250. Replacement with non-native trees and agriculture and livestock pressure have an important impact in riparian habitats.

Experts mentioned that the abandonment of traditional use of pond areas is overlooked in habitat 3170, despite intensive land use. Extensive grazing promotes soil compaction and avoids terrestrial plant encroachment on pond areas, which causes a decline in characteristic plant species of this habitat.

4.2.3 Management and conservation actions

In general terms, habitats of this group depend strongly on water management, which is mainly linked to the implementation of the Water Framework Directive, in turn considered by the experts consulted as largely disconnected from HCI conservation. They also pointed out that the watershed may be a better scale for water management than Natura 2000 site boundaries. Cooperation within the MedWet initiative and cooperation within the Habitats and Water Framework Directives are strongly recommended.

Most of the experts consulted chose habitat 3170 (Mediterranean temporary ponds) as having specific opportunities for development in the future in order to improve its conservation status. Each pond system is different and can be easily conserved without significantly affecting any major human activities. Sharing experiences about the conservation of habitat 3170 should contribute to finding points in common, as is done by the EPCN (European Pond Conservation Network) initiative, as well as to better explaining its value and ecosystem services to stakeholders. Other habitats focused on by the experts are 3290 (poorly known; a better understanding is expected), 3280 (with significant aesthetic value and traditionally well-received and protected by local communities) and 92D0.

Conservation of lentic habitats implies a good knowledge of their hydraulic dynamic. Land-use management in catchment areas, regulation of activities that could affect this dynamic and water quality should be taken into account. It is important to control livestock-carrying capacity in order to maintain clear vegetation structures. In habitat 3170, other measures related to extensive grazing, such as a conditioned grazing season (completely covering the dry phase), were indicated by the experts consulted.

Removal and re-naturalisation of flow-regulating structures (dykes, embankments, weirs) are the main challenge for the conservation of Mediterranean lotic habitats, as well as the control of water abstraction and water pollution (spill removal). Buffer zones along the streams (banks, uncultivated areas near the banks, fences to avoid trampling and other threats) are important to control diffuse pollution from fertilisation and livestock inputs. A good conservation status of riparian vegetation is linked to diffuse pollution catch also in Mediterranean rivers.

No intervention on the water regime upstream should be allowed in habitat 92D0; the best conserved stands should be preserved as propagation centres. The same measures should be applied in habitat 92A0 (i.e. ecotypes of *Populus alba* well adapted to semi-arid environments, substrates and saline soils), all integrated in forest management plans focused on conservation: resources must be oriented primarily to maintaining the alluvial character of these forests. In some cases, trees can be treated and regenerated in coppice. In general, the establishment of hydrological plans that consider not only the water demands of the different human activities but also the ecological demands is important for riparian forests conservation.

4.2.4 Working together on favourable reference values (FRV)

Based on the results obtained by some experts in the application of the Water Framework Directive, they consider freshwater habitats as a good starting point for setting FRV. Specifically, they pointed to habitats 3170 (it has similar characteristics, threats and problems all around the Mediterranean), 3280 (an emblematic but poorly known Mediterranean habitat whose hydrological pressures will be minimised only by the establishment of FVR), 92A0 (its FRV are linked to good conditions on the water bodies it is connected to) and 92D0.

4.3 Grassland, heath and scrub habitat group

4.3.1 Summary description

Of the 12 Mediterranean grassland, heath and scrub habitats, ten have been classified as LHF and four were originally selected for priority consideration. Two habitats (6210 and 6310) are selected for both priority consideration and LHF (Table 4).

Based on Article 17 reporting, all habitats present unfavourable-inadequate conservation status, except for two habitats (5220 and 6310) which have been rated as unfavourable-bad. The general trend of these habitats is negative, except for habitat 4030 (stable) and habitat 6220 (unknown). The change in overall conservation status from the 2001–2006 report is not considered genuine in seven habitats, but as due to different methods used in the assessment and better information in several countries. Habitats 4010 and 6520 are in the Mediterranean region distributed only in Portugal and France, respectively. Habitat 5140 is endemic to Portugal.

Classification as LHF is motivated by the fact that only one parameter in only one country needs to be improved in order to achieve overall improvement. Area should be improved in Portugal (for habitats 4010, 5140 and 8240) and in France (5320, 6210 and 6520). Improvement to Structure and functions is key in Spain (habitats 4030, 5220 and 6310) and Italy (5430).

The representation of these habitats in Natura 2000 sites is varied. Coverage of habitats 4010, 5220 and 6220 does not exceed 30 %, while for some habitats (6520 and 8240) coverage is around 100 %. Five habitats could not be calculated correctly because of missing/unavailable data.

Table 4. Mediterranean grassland, heath and scrub habitat group

Grassland, heath and scrub habitat group			
Habitats Directive code	**Habitat name**	**Low Hanging Fruit**	**Priority consideration habitat**
4010	Northern Atlantic wet heaths with *Erica tetralix*	Yes	
4030	European dry heaths	Yes	
5140	*Cistus palhinhae* formations on maritime wet heaths	Yes	
5220	Arborescent matorral with *Ziziphus*	Yes	
5320	Low formations of *Euphorbia* close to cliffs	Yes	
5330	Thermo-Mediterranean and pre-desert scrub		Yes
5430	Endemic phryganas of *the Euphorbio-Verbascion*	Yes	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-brometalia*) (*Important orchid sites)	Yes	Yes
6220	Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea*		Yes
6310	Dehesas with evergreen *Quercus spp.*	Yes	Yes
6520	Mountain hay meadows	Yes	
8240	Limestone pavements	Yes	

4.5.3. Issues, pressures and threats

The main pressures and threats identified are caused by landscape changes, generally related to modification of agri-livestock practices: abandonment of mowing or grazing (leading to succession; market pressures and CAP are highlighted by experts as the main reasons for the abandonment of certain breeds and pastoral management regimes) or, on the contrary, intensification (fertilisation and intensive grazing or mowing), and habitat removal for arable land or urbanisation. Dehesas with evergreen *Quercus spp.* have additional problems linked to a lack of tree recruitment and disease

phenomena (called `seca´ in Spain). Wild overgrazing (deer, wild boar) must be taken into account in some cases.

Fire is another threat in several countries, as well as foot-racing events and other outdoor activities (vehicle/foot trampling and related erosion processes, taking of plants). Quarrying and mining have a considerable impact in those habitats dependent on rocky substrates (habitats 5320 and 8240). Non-native species (genus *Agave, Carpobrotus, Pennisetum, Mimosa, Opuntia, Acacia…*) are one of the main threats in three habitats (4030, 5320 and 5330) according to the Article 17 reporting.

4.5.4. Management and conservation actions

Habitats 6310, 6220, 6210 and 5330 have been selected by the experts consulted as habitats which have specific opportunities for future development to contribute to improving their conservation status. In the case of habitats 6220 and 6310, a fairly good protection and even regeneration could be achieved through CAP tools. A very wide spectrum habitat such as 6220 would benefit from the collection of available information.

The future cover of heaths, scrubs and grassland in the Mediterranean is strongly linked to the future of traditional agri-livestock systems and ecological succession. Abandonment of land use implies a reduction of these habitats, but it could be a good opportunity for improvement in others (mainly forest habitats). Some experts consider that, without viable economic opportunities, there is no reason for pastures (e.g. habitat 6220) to continue to be exploited, and their artificial maintenance is ecologically questionable. This crucial discussion should be part of this Seminar and of future meetings aimed at tackling management targets for this kind of habitat at the biogeographical level.

In the case of existing traditional agri-livestock, increased access to and use of agricultural and conservation funding are considered imperative to the improvement of the (regular) management of these habitats. Changes in CAP conditionality (e.g. consideration of grasslands under forest units or rocky habitats as productive) should be taken into account.

The maintenance of traditional agriculture and grazing landscapes has been the usual way of stopping succession to woodland and conserving these habitats. In the absence of this, controlled cutting or burning could be applied restrictively under conservation and effectiveness criteria. Administrative measures, such as public transit control and prohibition of changes to land use that entail the direct destruction of the habitat, are strongly recommended.

Adaptation of agriculture (decrease of fertilisation, control of water abstraction from groundwater) and connectivity improvement are needed in semi-arid habitats such as 5220. Control of outdoor recreation and coastal urbanisation removal are the main measures for habitat 5320, in addition to the eradication of invasive alien species.

In the case of habitat 5140, a small-scale conservation approach is needed through restoration projects, administrative measures (prohibition of transit, control of residues deposition), improvement of connectivity and the establishment of a network of micro-reserves, and better scientific studies on habitat.

The problem of the absence of natural regeneration in habitat 6310 could be solved by cycles of abandonment/reopening, distributed in rotation in local patches (cycles of about twenty years).

4.5.5. Working together on favourable reference values (FRV)

Although most of the experts highlighted that all habitats would benefit from a common FRV in general, this could be particularly useful across the Mediterranean region. However, experts did not specify particular habitats for this group: only one suggestion about the strength of the network between Spain and Portugal aimed at setting FVR for habitat 6310 was mentioned.

4.6. Forest habitat group

4.6.1. Summary description

Six of the 11 forest habitats have been selected as LHF, and five of them were originally selected for priority consideration. Based on Article 17 reporting, ten habitats were rated as having unfavourable-inadequate conservation status, and three as unfavourable-bad (9260, 9430 and 9560).

All habitats have a negative trend, except for habitats 91M0 and 91L0 (unknown) and 9540 (stable). The change in overall conservation status from the 2001–2006 report is not considered genuine in eight habitats, but due to the use of different methods in the assessment and better information expected in several countries. Habitats 9510 and 91L0 are in the Mediterranean region distributed only in Italy.

The general representation of forest habitats in Natura 2000 sites is poor: six habitats do not exceed 30 %, and only two exceed 50 % (9430 and 9510). Problems of overestimation or missing data are reported for four habitats.

Table 5. Mediterranean forest habitat group

Forest habitat group			
Habitats Directive code	**Habitat name**	**Low Hanging Fruit**	**Priority consideration habitat**
9180	*Tilio-acerion* forest of slopes, screens and ravines	Yes	
9260	*Castanea sativa* woods		Yes
9320	*Olea* and *Ceratonia* forests		Yes
9330	*Quercus suber* forests		Yes
9340	*Quercus ilex* and *Quercus rotundifolia* forests		Yes

9430	Subalpine and montane *Pinus uncinata* forests (* If on gypsum or limestone)	Yes	
9510	Southern Apennine *Abies alba* forests	Yes	
9540	Mediterranean pine forests with Mesogean pines		Yes
9560	Endemic forests with *Juniperus spp.*	Yes	
91M0	Pannonian-Balkanic turkey oak-sessile oak forests	Yes	
91L0	Illyrian oak-hornbeam forests	Yes	

4.6.2. Issues, pressures and threats

The main pressures reported for forests in the Mediterranean biogeographical region are inadequate or inappropriate forest management measures, in particular in relation to removal of dead and dying trees, forest replanting (of both native and non-native trees), fire, forest clearance, wild and domestic grazing in forests, and invasive non-native species. Some diseases (e.g. `seca´ in Spain) must be taken into account for future scenarios.

Human-related pressures include habitat fragmentation caused by urbanisation and the construction of roads, paths or leisure facilities (such as skiing complexes in the case of habitat 9510), and hydrological changes caused by human activities.

4.6.3. Management and conservation measurements and actions

The experts consulted selected habitats 9540, 9340, 9320, 9260 and 9330 as having specific opportunities for development in the future in order to improve their conservation status. In the case of habitats 9260, 9330 and 9540, political decisions regarding agriculture and environmental issues in agricultural funding (e.g. reforestation in agricultural lands in CAP) should be revised through cooperation between different administration bodies. Some lesser-known taxonomic groups in habitats 9340 and 9540 (such as insects and fungi) should be monitored.

On the other hand, some experts consider that the LHF habitats 9180 and 9430 occupy areas where exploitation is naturally difficult, so less conflict is expected. In the case of habitat 9560, some experts consider that enough knowledge has been gathered for the safeguarding of this habitat type and its variants, and capitalising on this knowledge with some specific measures (ex situ conservation of reproductive material and genetic mapping) could lead to a lasting favourable conservation status. Other experts advise that, despite their widespread and expanding condition, extremely rare variants such as *Juniperus drupacea* forests in Greece need special care due to their rarity (present only in one location).

Abandonment of land use implies a reduction of grassland, heath and scrub habitats, but it could be a good opportunity for improvement and increase of area in forest habitats. This crucial discussion

should be part of this Seminar and of future meetings aimed at tackling management targets for this kind of habitat at the biogeographical level.

Adequate forest management is the main umbrella measure to implement in Natura 2000 forest sites. Forest planning (and related planning such as fire prevention) must include conservation targets in order to maintain heterogeneous covers with all the dynamic phases of the forest represented (cleared under several densities, natural regeneration stands, old-growth or 'mature' stands). This measure promotes biodiversity and increases forest resilience to fire and climate change. Some forest adaptation measures are proposed for future climate change scenarios (e.g. reducing excessive tree densities in habitat 9340).

In terms of cooperation, forest habitat types could benefit from the exchange of good management and local governance practices, protection from extreme weather events and forest fires, conservation of genetic diversity and protection from invasive species and pathogens.

Management interventions (heavy machines) should be minimised or replaced by soft ones in forest treatments. Exclusion of grazing and wild herbivorous control should be recommended in most forests with recruitment problems or fragmentation. In general, removal of dead and dying forest should be minimised.

The elimination of exotic species (*Opuntia sp., Agave Americana*) is important for habitat 9560. The legal minimum periods between corks should be strictly observed in habitat 9330, due to the susceptibility of freshly corked cork to fire.

4.6.4. Working together on favourable reference values (FRV)

Several forest habitats were selected by experts as interesting to work on together in setting FRV. In general, as forest habitats have a longer tradition of research into the relation between composition, structure and functions, experts suggested that it may be easier to establish FRV.

Habitats 9320 and 9340 were mentioned specifically due to their high resilience to climate change, which makes them valuable for retaining woody vegetation. Habitat 9560 is well known and there is enough knowledge gathered related to their conservation. Other habitats mentioned are 9540, 92C0 (*Platanus orientalis* and *Liquidambar orientalis* woods – *Platanion orientalis*) and 93A0 (Woodlands with *Quercus infectoria - Anagyro foetidae-Quercetum infectoriae*).

5 Additional information derived from the expert consultation

5.1 Low Hanging Fruits

As part of the expert consultation exercise in preparing for the 2nd Mediterranean Natura 2000 Seminar, experts were invited to propose those habitats which, in their opinion, an LHF approach could be foreseen. The lowest hanging fruits as identified by Mediterranean experts are presented in Table 6. Habitats considered by Mediterranean experts to be potentially Low Hanging Fruits are listed in Table 7; they were not classified as such by the ETC-BD. Due to the size limitations of the table, habitats are only shown when they were mentioned and a country is only shown when an expert from that country mentioned a lowest hanging fruit.

Table 6. Lowest Hanging Fruits based on results of online expert consultation

	Greece	Spain
1520. Iberian gypsum vegetation (*Gypsophiletalia*)		1
3150. Natural eutrophic lakes with *Magnopotamion* and *Hydrocharition*-type vegetation		1
3280. Constantly flowing Mediterranean rivers with *Paspalo-Agrostidion* species and hanging curtains of *Salix* and *Populus alba*	1	
6310. Dehesas with evergreen *Quercus spp.*		2
9560. Endemic forests with *Juniperus spp.*	2	1
9180. *Tilio-acerion* forest of slopes, screens and ravines		1

Table 7. Potential other Low Hanging Fruit habitats proposed by experts in the online expert consultation

	Cyprus	France	Spain
1510. Mediterranean salt steppes (*Limonietalia*)		1	1
2*. (Dune habitat types)		1	
6620. Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea*			1
7220. Petrifying springs with tufa formation (*Cratoneurion*)			1
92C0. *Platanus orientalis* and *Liquidambar orientalis* woods (*Platanion orientalis*)	1		
9320. *Olea* and *Ceratonia* forests		1	
9390. Scrub and low forest vegetation with *Quercus alnifolia*	1		
93A0. Woodlands with *Quercus infectoria* (*Anagyro foetidae-Quercetum infectoriae*)	1		
9540. Mediterranean pine forests with Mesogean pines	1		
9590. *Cedrus brevifolia* forests (*Cedrosetum brevifoliae*)	1		

5.2 Species

In the online consultation, experts mentioned several species and actions related to species management that may benefit from greater cooperation between Mediterranean stakeholders – these include opportunities for cooperation in relation to the following:

Group	Species	Cooperation benefits foreseen
Birds	*Streptopelia turtur*	Common actions at biogeographical level
	Tetrax tetrax	High nature-value farming systems
	Pterocles alchata	High nature-value farming systems
	Pterocles orientalis	High nature-value farming systems
	Neophron percnopterus	Coincident conservation actions at wider scale
	Aquila fasciata	Restoration actions. Help of regions holding healthiest populations. Monitoring
	Gyps fulvus	Conservation & monitoring
Mammals	All species of Mediterranean cetaceans	Not specified

Some experts highlighted the underestimated status of some taxonomic groups (invertebrates, algae, fungi, mosses) in the Nature Directives. As a general rule, other experts encourage cooperation for all those species which appear exclusively in the Mediterranean biogeographical region.

5.3 Examples of good practices, (LIFE/ Interreg etc.) projects and other resources

Resources	Description
PROJECTS	
BID-REX https://www.interregeurope.eu/bid-rex/	An Interreg project that aims to facilitate the use of biodiversity information and increase the impact of ERDF allocation in the preservation of nature by providing decision-making processes with appropriate biodiversity information, improving data flow and improving the prioritisation and application of actions. It enables the exchange of approaches, tools and methods that have proven useful for bridging the existing gap between environmental information availability and decisions.
BIODEHESA - Dehesa ecosystems: development of policies and tools for biodiversity conservation and management (In Spanish) LIFE11 BIO/ES/000726 http://www.biodehesa.es/	The 'bioDEHESA' project aims to promote sustainable, integrated management of dehesas by demonstrating and disseminating action plans which deal with the main challenges involved in their conservation. The project intends to create a network of 40 pilot dehesas that will trial activities and management practices to enhance dehesa conservation and biodiversity. As well as various conservation measures, the project will test other related horizontal services that support the integrated management of dehesas, including an oak decline assessment service, a moisture deficiency diagnostic tool, nursery protocols and a geographic information system (GIS). The network will develop a monitoring system and identify indicators.
Biodiversity in Standards and Labels for the Food Industry http://www.business-biodiversity.eu/en/food-standards	The Global Nature Fund, Lake Constance Foundation, Agentur AUF! (Germany), the Fundación Global Nature (Spain), Solagro and agoodforgood (France) and Instituto Superior Técnico (Portugal) have initiated the EU LIFE Project 'Biodiversity in Standards and Labels for the Food Industry'. The main objective is to improve the biodiversity performance of standards and labels in the food industry, by supporting standard organisations to include efficient biodiversity criteria in their schemes, and motivating food processing companies and retailers to include biodiversity criteria in their sourcing guidelines.
EKLIPSE project http://www.eklipse-mechanism.eu/	EKLIPSE aims to create the conditions for efficient interface between science, policy and society on biodiversity and ecosystem services.
European Biodiversity Observation Network; ongoing; FP7 http://www.eubon.eu/	The main objective of EU BON is to build a substantial part of the Group on Earth Observation's Biodiversity Observation Network (GEO BON). A key feature of EU BON is the delivery of near-real-time relevant data – both from on-ground observation and remote sensing – to the various stakeholders and end users ranging from local to global levels. EU BON supports national and international authorities, as well as private stakeholders and the general public with integrated and scientifically sound biodiversity data analyses. The project intends to develop a full-scale model for a durable mechanism for higher level integration of biodiversity information providers and users through a network of networks approach scalable from local to global biodiversity observation systems.

EU-wide monitoring methods and systems of surveillance for species and habitats of Community interest; FP6 http://eumon.ckff.si/	EuMon objectives are to develop time- and cost-effective methods for implementing monitoring schemes on biodiversity and standardise them across Europe, by: reviewing available methods and approaches to monitor abundance and trends in species and habitats of Community interest; evaluating the appropriateness of and recommending improvements for these methods and approaches; designing methods that allow an evaluation and cost-effective improvement of the contribution of Natura 2000 and other conservation activities to the achievement of the 2010 target; developing methods for prioritising among species and habitats based on rankings of national responsibilities for their conservation; assessing how the work of amateur naturalists contributes to monitoring the achievement of the 2010 target and to develop recommendations on how they could be encouraged to work most effectively within this framework; making the framework, its recommendations, and the set of tools publicly available via an Internet portal.
FRAINETTO WOODS Mnt.ATHOS - Rehabilitation of Coppice Quercus frainetto woods (9280) and Quercus ilex woods (9340) to high forest LIFE 03/NAT/GR/000093 http://www.ekby.gr/LIFE-Athos/en/1.Project.ID/AgioOros_id.htm	The objective of the project was to change the coppice Quercus frainetto and Quercus ilex woods to high forest in the pSIC Athos peninsula. The main task was the implementation of selective-inversion thinning on an area of 500 ha during a three-year period. This action was facilitated by a preliminary technical study and a wide knowledge of the inversion thinning process. The impact of this rehabilitation would increase diversity by enhancing flora, especially understorey vegetation, and by increasing the structural diversity of the forest. Rehabilitation would also reduce fire risk to these habitat types. A monitoring system was planned to assess the results of this action. Members of the target groups of professionals working in the forest and nature conservation sectors would become acquainted with the benefits of this process for sustainable management. Finally, the project would produce a guide to forest rehabilitation that could become a valuable tool for the restoration of all coppice forest habitat types. These woods are important for nature conservation on a European scale, and very few occur in Natura 2000 sites. The conversion aimed to return the woods to their natural condition as at the end of the 19th century.
FRESH LIFE - Demonstrating Remote Sensing integration in sustainable forest management; LIFE14 ENV/IT/000414https://freshlifeproject.net/	The FRESH LIFE project aims to promote remote sensing (i.e. drones fitted with multispectral sensors) for forest mapping as a method which is less expensive and time-consuming than current data collection systems based on forest inventories. One of the outcomes of the project will be mapping of indicators related to the maintenance of forest resources and their contribution to carbon sequestration, forest health and biodiversity.
Knowledge, Assessment, and Management for Aquatic Biodiversity and Ecosystem Services across EU policies (AQUACROSS); H2020; ongoing http://aquacross.eu/	AQUACROSS aims to support EU efforts to enhance the resilience and stop the loss of biodiversity of aquatic ecosystems as well as to ensure the ongoing and future provision of aquatic ecosystem services. It focuses on advancing the knowledge base and application of the ecosystem-based management concept for aquatic ecosystems by

	developing cost effective measures and integrated management practices. AQUACROSS considers the EU policy framework (i.e. goals, concepts, time frames) for aquatic ecosystems and builds on knowledge stemming from different sources (i.e. WISE, BISE, Member State reporting, modelling) to develop innovative management tools, concepts, and business models (i.e. indicators, maps, ecosystem assessments, participatory approaches, mechanisms for promoting the delivery of ecosystem services) for aquatic ecosystems at various scales.
Land Stewardship Network of Spain LIFE10 INF/ES/540 http://www.landstewardship.eu/	LandLife aims to communicate the value of land stewardship as an effective and successful tool for nature and biodiversity conservation in the Western Mediterranean.
LIFE Canal de Castilla - Wetland restoration and management: Canal de Castilla Special Protection Area LIFE06 NAT/E/000213 http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=LIFE06_NAT_E_000213_LAYMAN.pdf	The project aimed to implement a programme for the recovery, management, and monitoring of 35 small wetlands associated with the Canal of Castile including three SPAs and one SCI. The project proposed to recover wetlands that have been seriously disturbed and even drained in recent years, as well as to manage helophytic vegetation to achieve habitats that are suitable for the needs of species of water birds listed in Annex I of Directive 79/439EEC. This concerns particularly species such as the bittern (*Botaurus stellaris*) and aquatic warbler (*Acrocephalus paludicola*).
LIFE La Mancha Wetlands LIFE+10 NAT/ES/000563 http://www.humedalesdelamancha.es/index.php/en/	The LIFE project 'La Mancha Wetlands' entailed the restoration of sand salt steppes (1510) in Castilla-La Mancha Region wetlands (Spain).
LIFE Olivares Vivos - Olive Alive: Towards the design and certification of biodiversity friendly olive groves LIFE14 NAT/ES/001094 http://www.olivaresvivos.com/en/	The LIFE Olivares Vivos project aims to define an innovative model of olive growing with high demonstration value. The model will be agriculturally, economically and socially viable, while contributing to halting the loss of biodiversity in the EU by 2020.
LIFE SMART4Action - Sustainable Monitoring And Reporting To Inform Forest- and Environmental Awareness and Protection LIFE13 ENV/IT/000813 http://www.ise.cnr.it/projects/smart4action	LIFE SMART4Action intends to redesign forest monitoring and its information and reporting system in Italy by creating an improved, cost-effective monitoring system that can continue at the national level in a sustainable way.
LIFE+INDEMARES LIFE07 NAT/E/000732	The six-year LIFE+INDEMARES project studied the deep-sea habitats, pelagic species and seabirds that represent the

http://www.indemares.es/en	enormous biodiversity of Spanish seas, and analysed the human use of these areas. The aim was understand natural and socio-economic values in order to complete the Natura 2000 network for marine environments in Spain.
Platform for wildlife monitoring integrating Copernicus and ARGOS data; ongoing; H2020 http://eo4wildlife.eu/	The project will develop a platform that will enable the processing of geospatial environmental simulations using Sentinel Earth Observation data that are intelligently combined with other observation sources. Specifically, the EO4wildlife platform will enable the integration of Sentinel data, ARGOS archive databases and real-time thematic databank portals, including Wildlifetracking.org, Seabirdtracking.org, and other Earth Observation and MetOcean databases, locally or remotely, and simultaneously.
Research and Monitoring for and with Raptors in Europe, EURAPMON http://www.eurapmon.net/	An ESF Research Networking Programme that ran from May 2010 until May 2015. The aim of EURAPMON was to strengthen the contribution of research and monitoring for and with raptors in Europe to the delivery of biodiversity, environmental and human health benefits, including maintenance and recovery of raptor populations and their habitats, and reduced chemicals threats to ecosystem and human health.
Sentinel alpine pastures (In French)	A large programme has been set up to work with pasture stakeholders: Sentinel alpine pastures. The main aims are to measure several parameters of Mediterranean pastures and to discuss with breeders and shepherds how to deal with what is happening.
The BioScore model (Biodiversity impact assessment using species sensitivity Scores) https://www.synbiosys.alterra.nl/bioscore/aboutBioScore2.html	The project has been developed in order to provide a tool able to assess the impacts of policy measures on biodiversity in Europe. BioScore 2.0 supports the analysis of potential impacts of future changes in human-induced pressures on European terrestrial biodiversity: mammals, vascular plants, breeding birds and butterflies). Compared to the previous version, BioScore 2.0 is based on improved species monitoring data and improved response relationships to describe species' probability of occurrence in relation to the environmental factors of concern.
The MedWet initiative http://medwet.org/	MedWet is a regional intergovernmental network operating within the framework of the Ramsar Convention and also involving other key actors, dedicated to promote and support multistakeholder policies and actions on the ground for the conservation, restoration and sustainable use of Mediterranean wetlands. MedWet encourages and supports governments to adopt policies and implement actions on the ground in favour of the conservation and the sustainable use of Mediterranean wetlands. To do this MedWet creates synergies with a wide range of intergovernmental and non-governmental partners.
The Water Framework Directive http://ec.europa.eu/environment/water/water-framework/index_en.html	Within the context of freshwater ecosystems, some experts mentioned the Water Framework Directive as the best approximation to freshwater monitoring.

EVENTS	
Developing conservation management objectives and condition indicators for monitoring on Natura 2000 sites; April 2017, Litoměřice, Czech Republic http://eurosite.org/events/monitoring-natura-2000-sites/	A key purpose of the workshop was to exchange experiences of objective setting for habitats and species on Natura 2000 sites and translating conservation management objectives into performance indicators in order to measure progress towards reaching these objectives.
Natura 2000 Monitoring workshop; October 2015, Spain http://ec.europa.eu/environment/nature/natura2000/platform/events/217_natura_2000_monitoring_workshop_en.htm	The workshop addressed three main topics regarding conservation management and monitoring of Natura 2000 sites: the roles of new technologies in informing site management, species monitoring projects and habitat monitoring projects.
Workshop Vegetation databases and Natura 2000; March 2017, Germany http://ec.europa.eu/environment/nature/natura2000/platform/events/287_vegitation_databases_workshop_en.htm	This workshop evaluated the role of vegetation plot databases and their role for inventories, management and monitoring of Natura 2000 sites.
PUBLICATIONS & DATABASES	
'Favourable Reference Values' Discussion paper for the Expert Group on Reporting under the Nature Directives; compiled by Karel Chobot http://bit.ly/2sbzWEx	The paper explains the method of setting FRV.
Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España (In Spanish) http://www.mapama.gob.es/es/biodiversidad/temas/espacios-protegidos/red-natura-2000/rn_tip_hab_esp_bases_eco_preliminares.aspx	Complete information, based on the best scientific knowledge available, on the types of Spanish ecosystems that are included in Annex I of the Habitats Directive.
Camacho et al. Aguas continentales retenidas. Ecosistemas leníticos de interior (In Spanish) http://bit.ly/2r1dGj8	This presents a system called ECLECTIC, to assess lakes, ponds, and all the standing water habitat types codified as 31** in Annex I of the Habitats Directive.
Commission Note on Setting conservation objectives for	The purpose of this note is to provide guidance to assist Member States in setting conservation objective for Natura 2000 sites.

Natura 2000 sites EU COM http://bit.ly/2njkLaF	
Commission Note on Establishing conservation measures for Natura 2000 sites http://bit.ly/2s9J8JR	The purpose of this note is to provide guidance to assist Member States in establishing conservation measures for Natura 2000 sites.
Database of long-term monitoring programmes in Spanish protected areas (In Spanish) http://www.redeuroparc.org/actividades/conservacion/seguimiento-en-areas-protegidas	The database presented aims to compile the multiplicity of long-term monitoring initiatives currently under way in many Spanish protected areas, as a means of making them accessible to the community of managers and researchers, to encourage the exchange of information, and to advance towards greater integration of monitoring systems and their incorporation into wider networks.
EUNIS habitat classification https://www.eea.europa.eu/themes/biodiversity/eunis/eunis-habitat-classification	The EUNIS habitat classification is a comprehensive pan-European system to facilitate the harmonised description and collection of data across Europe through the use of criteria for habitat identification. It is hierarchical and covers all types of habitat types from natural to artificial, from terrestrial to freshwater and marine.
Garde L. et al., 2011. Les pelouses sommitales du Luberon, sentinelles du réchauffement climatique évolution des écosystèmes pâturés sur trente ans, 1982-2011 **Michel L., 2015. Suivi de l'état de conservation des habitats agropastoraux d'intérêt communautaire** (In French)	Favourable reference values is one of the subjects covered by the survey carried out on the Grand Luberon grasslands regarding resources for grazing and biodiversity. The results should be compared with other sites to help adapt surveys and practices. The update of habitats mapping is an opportunity to analyse the link between habitats evolution and human activities, grazing, etc. and restoration programmes, and to define management guidance.
Guidance on Natura 2000 and forests Part I-II, part III, FAQ	These documents outline the key provisions of Natura 2000 in the context of other relevant EU policies and initiatives concerning forests. The documents also aim to promote the integration of Natura 2000 conservation objectives into the management of Natura 2000 forests.
Management forest plans. Tools for forest conservation in protected areas (In Spanish) http://www.redeuroparc.org/system/files/shared/manual11.pdfç	Practical tool for the elaboration of forest management projects that contribute to more effectively achieving the objectives of the protected areas in which they are located.
MS.MONINA – Monitoring Natura 2000 Habitats of European Community Interest at the local, regional and continental scales; by Stefan Lang, Geoff Smith and Jeroen	Good case study from the COPERNICUS project which presents the potential of GMES for the monitoring of European protected habitats and species at the local, regional and continental scales.

Vanden Borre http://www.copernicus.eu/sites/default/files/library/SuccessStory_MSMONINA_Winog.pdf	
National programmes for habitats/vegetation mapping (various websites)	France: http://www.cbn-alpin.fr/actions/habitats/carhab.html Italy : www.vegitaly.it Spain : http://www.mapama.gob.es/es/biodiversidad/servicios/banco-datos-naturaleza/informacion-disponible/habitat.aspx
Natura 2000 management in Luberon Regional Park,France (In French) https://www.parcduluberon.fr/wp-content/uploads/2017/02/rapport_annuel_PNRL_2015.pdf	Example of a French regional park scheme for managing Natura 2000 sites in France.
Pröbstl U., Prutsch A. Natura 2000. Outdoor Recreation and Tourism. A guideline for the application of the Habitats Directive and the Birds Directive http://bit.ly/2s3vGI3	A guideline presenting requirements, consequences and opportunities of Natura 2000 for the tourism and outdoor sector together with good case studies.
Protected areas in a global change context (In Spanish) http://www.redeuroparc.org/system/files/shared/Publicaciones/manual_13_planificacion_adaptacion.pdf	This manual contains a review of the state of the issue in Spanish protected areas, general criteria for management in the context of global change, and a section dedicated to the incorporation of adaptation criteria in the design of management plans and adaptation measures.
Publication about sports in protected areas	A German BfN publication about sports in protected areas. Guide to good practices for holding mountain races in Natural Protected Areas (EUROPARC-Spain): http://www.redeuroparc.org/system/files/shared/Publicaciones/europarc_manual12_ingles_0.pdf
Red List of European Habitats http://ec.europa.eu/environment/nature/knowledge/redlist_en.htm	The document reviews the current status of all natural and semi-natural terrestrial, freshwater and marine habitats, and highlights the pressures they face. The methodology used is a modified version of the IUCN Red List of Ecosystems categories and criteria. The Red List complements the data collected on Annex I habitat types through Article 17 reporting as it covers a much wider set of habitats than those legally protected under the Habitats Directive.
Report of the workshop: Setting Favourable Reference Values (FRVs) for Annex I bird species in Cyprus as	The report summarises the workshop, which aimed to formulate a robust methodology for calculating FRVs for birds. The initial focus was on Birds Directive Annex I bird species found at Oroklini Lake, including *Himantopus himantopus* and *Vanellus spinosus*,

part of the LIFE project: Restoration and Management of Oroklini Lake SPA in Cyprus http://admin.brainserver.net/uploads/oroklini/Deliverables/FRVworkshopReport_LIFEOROKLINI.pdf	but the methodology adopted could then be applicable to all bird species of Cyprus and elsewhere.
Setting Favourable Reference Values for Annex I bird species at Oroklini marsh as part of the LIFE project: 'Restoration and Management of Oroklini Lake SPA in Larnaca, Cyprus' LIFE10 NAT CY 000716 OROKLINI http://bit.ly/2rMLcL0	This report describes the process of developing a set of methods for determining FRVs for populations of Cyprus birds at both site and national levels, and applies these methods to the six Annex I species that regularly breed or have bred at Oroklini.
Review of Favourable Conservation Status and Birds Directive Article 2 interpretation within the European Union Natural England Commissioned Report NECR176	The report explains the approach that ten Member States have used in interpreting FCS and setting associated favourable reference values (FRVs), in particular with regards to widespread species with extensive populations outside Natura 2000 sites, and what approach Member States have used in determining appropriate population levels and wider habitat requirements for wild birds (in compliance with the Birds Directive).
Review of Member State approaches for setting FRVs (chapter 1) https://circabc.europa.eu/sd/a/0182df2a-0c3a-4b65-9125-dc4db0735be6/MSApproaches%20AdHG%20FRVs%20092016.pdf	This document presents a review of the responses in the questionnaires completed by Member State representatives involved in Article 12 (Birds Directive) and Article 17 (Habitats Directive) reporting, on current values and reference values for HD features for the period 2007–2012. Specific methods used by Member States in setting FRVs are included as well.
Synthesis of approaches for setting FRVs – CIRCABC (chapter 2) https://circabc.europa.eu/d/a/workspace/SpacesStore/4f1c4d01-5509-4517-9663-dad007214df/Synthesis%20AdHG%20FRVs%20092016.pdf	This paper presents building blocks and a preliminary synthesis of approaches for setting FRVs based on the Member State questionnaires (chapter 1, see above), opinions and reviews by consortium partners (unpublished) as well as discussions with the Ad hoc group on FRVs and within the project team.
The manuals for species and habitats of Community interest in Italy http://www.isprambiente.gov.it/en/archive/ispra-events/2016/10/towards-a-national-plan-of-biodiversity-	Istituto Superiore per la Protezione e la Ricerca Ambientale in Italy developed handbooks for monitoring all Italian species and habitats of Community interest, in order to provide operational tools for the preparation of the 4th Report for the period 2013–2018.

monitoring-the-manuals-for-species-and-habitats-of-community-interest	
The Prioritised Action Framework (PAF) for Natura 2000	To be checked in each Member State.
The state of nature in the EU http://ec.europa.eu/environment/nature/pdf/state_of_nature_en.pdf	Reporting under the EU Habitats and Birds Directives 2007–2012.

Annexes

ANNEX I Overview of responses Online Expert Consultation

COUNTRY	*EXPERTS*
Croatia	0
Cyprus	2
France	2
Greece	3
Italy	1
Malta	0
Portugal	1
Spain	6
United Kingdom	0
Total	**15**

ANNEX II Core purpose and messages of the Natura 2000 Biogeographical Process

The contribution of the Natura 2000 Biogeographical Process to the EU 2020 Biodiversity Strategy

The Natura 2000 Biogeographical Process is a vital means to ensure progress to delivering the EU 2020 Biodiversity Strategy. As a reminder, the headline target is:

> *'Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.'*

Synergies should also be sought with the other targets of the EU Biodiversity Strategy, in particular

> **target 1**: '*To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100% more habitat assessments and 50% more species assessments under the Habitats Directive show an improved conservation status; and (ii) 50% more species assessments under the Birds Directive show a secure or improved status*' and
>
> **target 2**: '*By 2020, ecosystems and their services are maintained and enhanced by establishing **green infrastructure** and **restoring** at least 15 % of degraded ecosystems*.'

Through the Natura 2000 Biogeographical Process, there are vital opportunities available for all stakeholders to contribute to this agenda. Joint actions developed in the context of the Process create new scope to generate greater synergies, realise shared benefits and establish new ways to demonstrate the integral value of Natura 2000 for reaching societal goals and conservation objectives.

Aims and objectives of the Natura 2000 Biogeographical Process

As a reminder, the primary aims and objectives of the Natura 2000 Biogeographical Process are:

- To ensure significant and practically oriented progress towards the EU 2020 Biodiversity Strategy Targets, in particular Targets 1 and 2;
- To achieve this through improved and strengthened implementation on Natura 2000, in ways that help Member States to fulfil their legal obligations under the Nature Directives;
- To strengthen common understanding of the critical role of the Natura 2000 Network in achieving favourable conservation for habitat types and species subject to protection in Natura 2000;
- To identify future priorities and conservation objectives for Natura 2000, based on relevant data from Article 12 and 17 reports, and facilitate the formulation of 'strategic cooperation objectives', which may be applied and implemented at a biogeographical level;
- To establish a practical framework for networking that helps put in place practical management actions designed to maintain or achieve favourable conservation status for those habitats and species that fall within Member States' territories;

- To develop cooperation between Member States, stakeholder organisations, environmental NGOs and specialist networks that will lead to new 'know-how' to support the achievement of favourable conservation status.

The following points highlight key features of the Natura 2000 Biogeographical Process:

- Participation in the Natura 2000 Biogeographical Process is voluntary;
- The Process provides added value means to work collectively towards achieving the legal obligations of the Nature Directives;
- The Process offers a practical framework for networking, sharing information and experience and building knowledge about the most effective ways to reach and maintain favourable status for habitats and species of European Community importance – this includes opportunities to identify and promote the multiple benefits (environmental, social and economic) linked to such actions;
- The Process focuses on practical habitat (and/ or species) management and restoration activities and provides a framework to share best practices, compare approaches, build contacts, exchange information and build new knowledge;
- The Process is supported by follow-up networking events designed to further build practical knowledge and capacity, along with a dedicated Natura 2000 Platform to communicate and share information.

Developing the strategic orientation of the Natura 2000 Biogeographical Process

The Natura 2000 Biogeographical Process is integral to the '**Action Plan for nature, people and the economy'** as adopted by the European Commission on 27 April 2017. In particular, Action 6 of the Nature Action Plan reflects this with the explicit aim being to bring together public authorities and stakeholders from different Member States at the biogeographical region level to address common challenges, including on cross-border issues.

Under this action, the Commission, in cooperation with Member States and stakeholders will (2017-2019):

- Refocus the Natura 2000 Biogeographical Process to enable it to better contribute to the establishment of coherent, effective and efficient conservation systems for the Natura 2000 network throughout the EU through:
    - Improved coherence in evaluating conservation status of protected habitats and species and setting conservation objectives and priorities at biogeographical level
    - Identification and promotion of best practices in conservation management approaches to deliver conservation results at biogeographical level, also with a view to seizing funding opportunities (see also Actions 8, 9, 10, 11) and to identifying actions that deliver multiple ecosystem service benefits, e.g. climate resilience and mitigation
    - Strengthened cooperation and sharing of experience on common challenges and opportunities, such as communication and stakeholder involvement, multiple benefits of the Natura 2000 network and cross-border issues, e.g. the potential of supporting green infrastructure.
- Agree biogeographical-level roadmaps for cooperative action.
- Complete the second round of Natura 2000 Seminars and organise thematic events in all biogeographical regions, including the marine regions.
- Further develop the Natura 2000 Communication Platform to make it more user-friendly and effective.

ANNEX III ETC-BD - Supporting elements for the Second Mediterranean Natura 2000 Seminar

This annex updates the 23 previously identified priority consideration Mediterranean habitat types using 2013 Article 17 data, and the results of applying the Low Hanging Fruit approach. This document is available on the page for the Mediterranean region on the Natura 2000 Communication Platform.

ANNEX IV Habitat factsheets – coastal and marine habitat group (12 factsheets)

The habitat factsheets for the coastal and marine habitat group are available on the page for the Mediterranean region on the Natura 2000 Communication Platform.

ANNEX V Habitat factsheets – freshwater habitat group (9 factsheets)

The habitat factsheets for the freshwater habitat group are available on the page for the Mediterranean region on the Natura 2000 Communication Platform.

ANNEX VI Habitat factsheets – grassland, heath and scrub habitat group (12 factsheets)

The habitat factsheets for the grassland, heath and scrub habitat group are available on the page for the Mediterranean region on the Natura 2000 Communication Platform.

ANNEX VII Habitat factsheets – forest habitat group (11 factsheets)

The habitat factsheets for the forest habitat group are available on the page for the Mediterranean region on the Natura 2000 Communication Platform.