# Natura 2000 Seminars

## Natura 2000 Biogeographical Process

## Second Alpine Natura 2000 Seminar
## Padova - Italy, 21 – 23 June 2017

## Seminar Input Document

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NATURA 2000

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Event: For more information on this seminar, see the Natura 2000 Communication Platform: http://ec.europa.eu/environment/nature/natura2000/platform/events/second_alpine_natura_2000_seminar_en.htm

Relevant documents can be found here: http://ec.europa.eu/environment/nature/natura2000/platform/knowledge_base/134_alpine_region_en.htm

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## 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 1 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 optimize 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

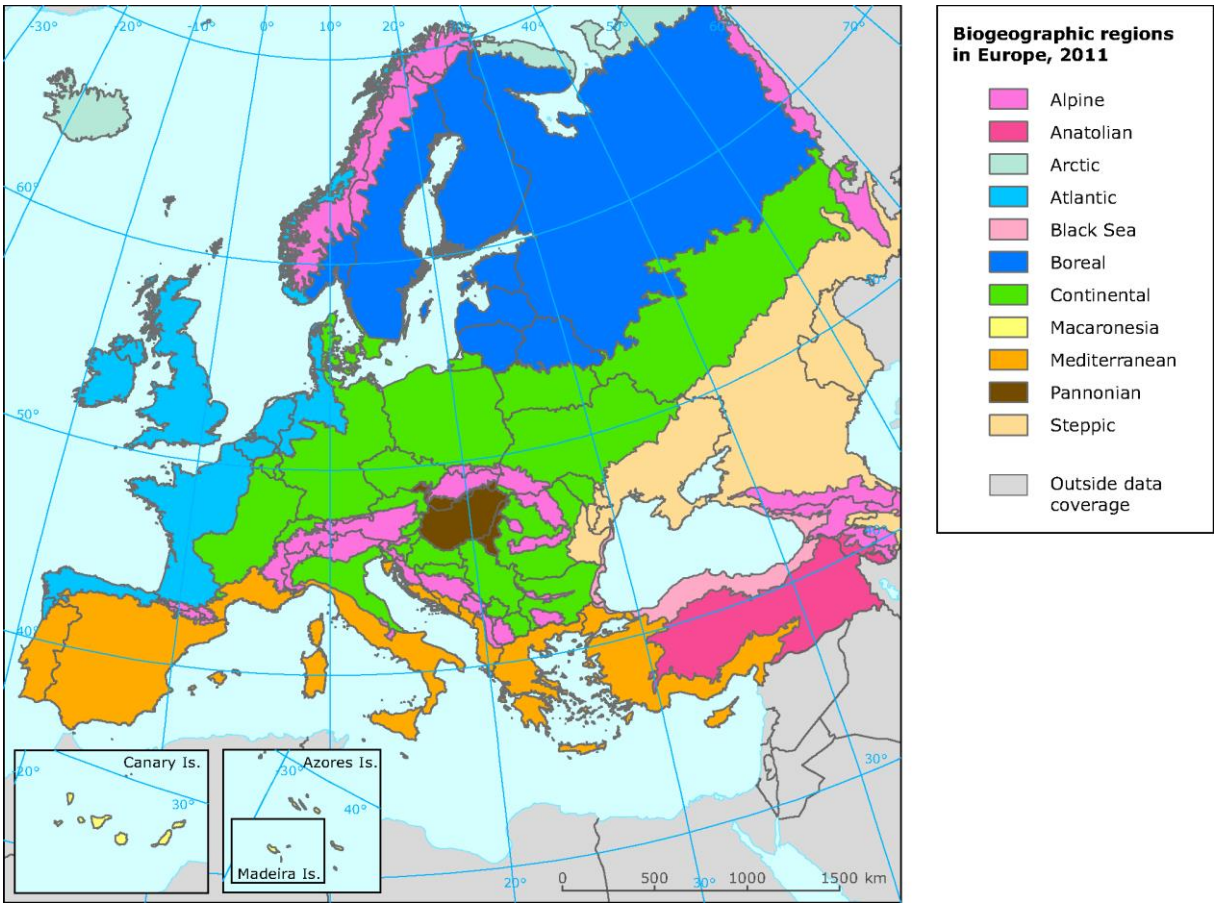


Figure 1 Biogeographical regions (European Environment Agency)

## 2 The 2nd Alpine Natura 2000 Biogeographical Seminar

The second Alpine Natura 2000 Seminar is being hosted by the Department of Land, Environment, Agriculture and Forestry (TESAF) - University of Padova. 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 Alpine Biogeographical Region. Over three days, the Alpine 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 Alpine Seminar (held in Graz, Austria, 25 – 26 October, 2013), the focus is very much forward-looking - this will include:

- Taking stock of the activities implemented since the kick-off seminar and identify and agree 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-focussing the work at the second Alpine 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 20' habitat types habitat types can be addressed as appropriate. The four 'Habitat Working Groups' of the first Alpine Seminar will be replaced by four 'Thematic Working Groups' corresponding to the following thematic clusters:

1. **Setting conservation status, objectives and priorities** (setting restoration priorities, interpretation of habitats, favourable reference values,…)

2. **Conservation measures and their effectiveness** (approaches to integrated planning, effective Natura 2000 governance structures, participatory approaches, …)
3. **Monitoring and evaluation** (ways to monitor and evaluate the effectiveness conservation measures,…)
4. **Addressing threats & pressures to Alpine habitats and species** (ways to assess and mitigate negative impacts, 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 trans-national 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 Alpine 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 Alpine 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 Alpine 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 Alpine 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 the 13 Alpine 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 6) addresses thematic issues and presents summary accounts for the Alpine habitat groups originally selected for priority consideration in 2013. 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, a detailed fact sheet for each of the 38 Alpine habitats considered in this report are presented in annexes 4 to 8. The fact sheets were produced by ILE-SAS in consultation with the ETC-BD.

[2] The 2nd Alpine 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/134_alpine_region_en.htm

[3] Austria, Bulgaria, Croatia, Finland, France, Germany, Italy, Poland, Romania, Slovakia, Spain, Sweden

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

This 2nd Alpine Seminar focuses attention on ways to achieve 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 Alpine 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 has been previously circulated during the Alpine expert consultation exercise, it is annexed to this document for ease of reference – see Annex 3.

In summary though, benefitting 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 Alpine 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 Alpine region.

Based on this approach, 20 Alpine habitats have been identified as Low Hanging Fruits (LHF). It is noted that 3 LHF habitats are also included in the 21 Alpine habitats previously identified for priority consideration. In total, therefore, 38 Alpine 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 Alpine region.

In the online consultation conducted to help prepare this document, Alpine 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 Alpine LHF habitats identified. All Alpine habitats are listed in Table 1 below.

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

| **Freshwater habitat group** | | | |
|---|---|---|---|
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 3140 | Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. | | Yes |
| 3150 | Natural eutrophic lakes Magnopotamion Hydrocharition | Yes | Yes |

| | | | |
|---|---|---|---|
| 3220 | Alpine rivers and the herbaceous vegetation along their banks | | Yes |
| 3230 | Alpine rivers and their ligneous vegetation with *Myricaria germanica* | | Yes |
| 3240 | Alpine rivers and their ligneous vegetation with *Salix elaeagnos* | | Yes |
| 3260 | Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachio*n vegetation | | Yes |
| 3180 | Turloughs | Yes | |
| **Bogs, mires and fens habitat group** | | | |
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 7110 | Active raised bogs | | Yes |
| 7140 | Transition mires and quaking bogs | | Yes |
| 7230 | Alkaline fens | | Yes |
| 7220 | Petrifying springs with tufa formation (*Cratoneurion*) | Yes | |
| **Forest habitat group** | | | |
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 91D0 | Bog woodland | | Yes |
| 91E0 | Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) | | Yes |
| 9130 | *Asperulo-Fagetum* beech forests | | Yes |
| 9180 | *Tilio-Acerion* forests of slopes, screes and ravines | | Yes |
| 9260 | *Castanea sativa* woods | Yes | Yes |
| 9410 | Acidophilous *Picea* forests | Yes | Yes |
| 91H0 | Pannonian woods with Quercus pubescens | Yes | |
| 91L0 | Illyrian oak-hornbeam forests (Erythronio-Carpinion) | Yes | |
| 91M0 | Pannonian-Balkanic oak forests | Yes | |
| 91WO | Moesian beech forests | Yes | |
| 91Z0 | Moesian Silver lime woods | Yes | |

| | | | |
|---|---|---|---|
| 9050 | Fennoscandian herb-rich forests with *Picea abies* | Yes | |
| 9110 | *Luzulo-Fagetum* beech forests | Yes | |
| 9170 | *Galio-Carpinetum* oak hornbeam forests | Yes | |
| 9270 | Hellenic beech forests with *Abies borisii-regis* | Yes | |
| 9510 | Southern Apennine *Abies alba* | Yes | |
| 9560 | Endemic forests with *Juniperus* spp. | Yes | |
| **Grassland habitat group** | | | |
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 6210 | Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) ( * important orchid sites) | | Yes |
| 6230 | * Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) | | Yes |
| 6410 | *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) | | Yes |
| 6430 | Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels | | Yes |
| 6510 | Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) | | Yes |
| 6520 | Mountain hay meadows | | Yes |
| 62D0 | Oro-Moesian acidipjilous grasslands | Yes | |
| **Heath and scrub habitat group** | | | |
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 40A0 | Subcontinental peri-Pannonic scrub | Yes | |
| 4070 | Bushes with *Pinus mugo* and *Rhododendron* | Yes | |
| 4080 | Sub-Arctic *Salix* spp. Scrub | Yes | |

### 2.3 Thematic issues

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

1. Setting conservation status objectives and priorities
2. Conservation measures and their importance
3. Monitoring and evaluation
4. Addressing threats and pressures to Alpine habitats and species

The themes will be of particular interest during the 2nd Alpine 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 Alpine 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 Alpine 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 Alpine Region, though certainly not exclusively, there are possible multiple benefits to be derived from to 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 in different policy agendas is of particular interest.

# 3 Thematic clusters

In this chapter the thematic clusters, as defined for the Second Alpine 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 Alpine experts, summarised per thematic cluster of the Natura 2000 Biogeographical Process.

**Setting conservation status, objectives and priorities**

Differences in definitions of different habitats and their Favourable Conservation status, ambiguity in (scientific) information and outdated info, knowledge gaps about species distributions, unifying of approaches and uncertainty about how to manage Natura 2000 habitats: these are all factors that hinder setting conservation status, objectives and priorities.

To overcome these obstacles, cooperation is very important. Cooperation with all stakeholders involved, sharing of best and worst practices via networking and knowledge sharing events can all contribute. A clear guide for management and monitoring would be helpful as well. The existence of a systematic evaluation tool or using zonation software for example, will make it easier to set conservation status, objectives and priorities.

**Conservation measures and their effectiveness**

Factors identified as limiting the effectiveness of conservation measures include a lack of a cross-border framework, the existence of knowledge gaps (which can also be exacerbated by uncertainty about what measures work effectively and/ or because of lack of political commitment to implementation of measures) and a lack of funding. Uncertainty about the interpretation of what constitutes 'effectiveness' also causes problems – for example, it can hinder development of meaningful and achievable nature conservation objectives, especially when differing views exist between stakeholders about what conservations measures are considered appropriate.

In the future (even) more information should be shared, about best practices, but also failures. Sharing should take place at across borders, but also within countries, and in a language that the involved stakeholders understand. In addition to this, a better link between the CAP and Natura 2000, and the establishment of more protected areas would benefit conservation. The role of and contribution of land owners in particular is essential: there is a need for greater and more proactive engagement to enable greater numbers of land owners to practice conservation.

**Monitoring and evaluation**

For monitoring and evaluation of habitats and species, financial and human resources are often not sufficient. There is also a lack of proper monitoring schemes and data are sometimes missing or not reliable. Comparing data is not always straightforward, as methods can differ per Member State.

Most of the suggestions for improvement of the situation currently focus on the need for and value of exchanging of best practices, unifying methodologies to increase consistency and greater cooperation among stakeholders. Also, awareness raising and better communicating the knowledge about methods and practices that there is, is an opportunity. Introducing different levels of monitoring intensity can also help to improve monitoring efficiency.

**Addressing threats and pressures to Alpine habitats and species**

There are many significant pressures and threats which impact on Alpine habitats and species – these include: climate change, intensification of forestry, mining activities, road and hydropower constructions, changing demands of agriculture and livestock, knowledge gaps about threats and tourism and sports. To anticipate on these threats and develop meaningful approaches for effective conservation management, cooperation is critical: cooperation can take many forms. In particular, local animation and awareness raising, to encourage inhabitants of an area to value their area, will increase understand and help conservation to be successful. Additional protected areas and greater consistency within and around Natura 2000 areas are seen to be important. For the hydropower issue, it is important to compare and implement different directives at the same time. Also, the use of drones for conservation requires to be further explored as this technology is seen to hold opportunities for conservation, especially for monitoring purposes.

## 3.2 Setting conservation status, objectives and priorities

### 3.2.1 Description

**Interpretation of habitats – vegetation relevés and databases** is still considered problematic. The large number of vegetation relevés stored in main European databases can play a fundamental role to improve consistency of interpretation of habitats definitions and resolve this issue. The group will discuss how and what types of guidelines, based on the available databases, may be usefully developed to tackle interpretation issues. One output from this group could be a roadmap of concrete future steps and defined recommendations.

This group will focus on approaches for **identifying appropriate indicators and targets to be achieved**. Already existing and applied methods will be discussed to understand their feasibility in the Alpine biogeographical region. To help in this regard, the group could benefit from the results of the Workshop on “Developing conservation management objectives and condition indicators for monitoring on Natura 2000 sites” held in Czech Republic, April 2017. The outputs from this workshop, organised as part of the Natura 2000 Biogeographical Process, will be presented and discussed during the second Alpine Natura 2000 Seminar.

**Time will also be given to discussing approaches to set restoration priorities**. In this area, knowledge of best practices is seen in particular to be critical to achieve (cost) effective restoration measures and meet targets. This group will consider how conservation goals may be best achieved when restoration of habitats is prioritized. In addition, the group will discuss what aspects are important to take into consideration when prioritizing restoration efforts in the Alpine biogeographical region. The group will also discuss the 'Low hanging fruit' approach.

### 3.2.2 Most pressing common issues and specific challenges

Experts identified several challenges regarding setting conservation objectives. These range from clarifying basic definitions, knowledge gaps regarding the distribution of habitats and species, divergent methodologies used in reporting and a lack of cooperation and integration with other sectors. Conservation management planning would benefit from closer integration of approach with other sectors, especially when there may be competing expectations regarding Natura 2000 sites.

One of the main pressing issues identified remains that there continue to be unclear definitions of the habitat types of community interest. A lack of common agreed understanding about habitat definitions is further exacerbated by different interpretations about favourable reference values (FRVs) and questions about the underpinning scientific rationale. Many definitions are ambiguous, lists of species defining a habitat type are not updated but are based on outdated publications, and often, do not reflect practical knowledge. In many cases, it continues to be difficult for contributing experts to see how their knowledge and experience are incorporated within Member States' Article 17 reports. Managers struggle to translate FRVs into regional, local and site level conservation targets. Different approaches in habitats definitions lead to inconsistency in the assessment at biogeographical level, which makes them difficult to compare among Member States (MS).

Knowledge gaps in distribution of habitats and species, particularly outside Natura 2000 sites, are also identified as being a particular challenge. Some groups, for example beetles, are more critical than others. Moreover, the ecological requirements of some habitats and species are just not clear in some cases.

Difficulties in unifying approaches and methods of managing Natura 2000 sites in all Member States continue to be present. An underlying cause here is that, often, cooperation among stakeholders on regional, national, and biogeographical level is insufficient or absent. Moreover, weak or inadequate cooperation between closely related sectors is also an issue e.g. harmonization of forestry planning and conservation objectives, disparities with aims of agriculture, wildlife management and water sectors.

Some experts believe that the EU's Nature Directives should provide clearer directions about how to manage the Natura 2000 network: basically, there is a view that, although the Nature Directives have been useful to achieve designation of sites, gaps in knowledge remain about how to manage Natura 2000 sites as an ecological network. Furthermore, experts continue to feel uncertain about the effects of various policies from other sectors on nature conservation: in general, it is observed that in many cases holistic, landscape-scale approaches in site management are missing.

### 3.2.3 Opportunities for cooperative work, suggestions for improvement

One of the most common suggestions for improvement, as with comments provided by experts referred to in other groups, was the need to continue with networking and knowledge building events that provide opportunities to share experience and information, especially about project-based initiatives. Furthermore, it was commented that such networking is the more effective when the events are specifically inclusive of all stakeholders: the logic suggested here is that effective management for Natura 2000 requires inclusive and integrated approaches. Experts recognise the need for better cooperation with, for example, landowners, local authorities and environmental NGOs. Also, increased collaboration with researchers was identified as being required in many cases.

Picture 1: knowledge sharing at the 2nd Boreal Natura 2000 seminar, October 2016

Experts are supportive of greater cross-border cooperation, especially when that would result in improved alignment of conservation status assessments and management processes. Again, dedicated workshops or bilateral meetings are seen to be of particular value in this area. In general, there is seen to be a need for more joint projects that target development of practical ways to align methodologies and share knowledge across the region. In particular, experts identified that joint projects on species and habitats mapping would be of real value, as well as projects which demonstrate 'how to' approaches for the development of management plans, especially which target better integration with other sectors.

Additionally, experts commented that there is a lack of guidance to address how to align management and monitoring practices across the biogeographical region. In this regard, for example, experts identified that guidance about how to standardize monitoring approaches, set conservation objectives, assess favourable conservation status and set priorities for conservation actions, prioritize conservation measures and applying the low-hanging-fruit approach would be beneficial. In this regard, even when there is guidance available, there are continuing needs to raise awareness about the fact that it exists and then, additionally, where possible, demonstrate how guidance has been applied in different circumstances. Here, the need for increased sharing of and sign-posting to project-based best practices and 'replicable' or model case studies would be particularly useful: equally, greater efforts to improve sharing of knowledge via online platforms and printed documents, such as definition bibliographies, data collection methods and uses based on guidelines, should be made. Experts also highlighted that such information resources should preferably be available in national languages.

### 3.2.4 Examples of good practices, resources

More examples are found in chapter 5.3.

| Name | Short explanation |
|---|---|
| **Forest-Alp NATURA 2000 - Priority forest, sub-alpine and alpine habitats in Romania**<br>LIFE05 NAT/RO/000176<br>http://bit.ly/2rKZHis | The overall objective was to prepare the designation of Romanian Natura 2000 sites for forests, sub-alpine and alpine habitats. The project aimed to identify, map and describe potential sites of Community importance (SCIs) according to the Habitats Directive. As an outcome of the project 56 pSCI were identified, a 'Habitat Manual' for forest, sub-alpine and alpine habitats of Community interest in Romania – a basic reference concerning Natura 2000 in the country was developed, guidelines for the monitoring and management of target habitats were published. |
| **EUNIS habitat classification**<br>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. |
| **Synthesis of approaches for setting FRVs – CIRCABC** (chapter 2)<br>https://circabc.europa.eu/d/a/workspace/ | This paper presents building blocks and a preliminary synthesis of approaches for setting FRVs based |

| | |
|---|---|
| SpacesStore/4f1c4d01-5509-4517-9663-bdad007214df/Synthesis%20AdHG%20FRVs%20092016.pdf | on the MS 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. |

### 3.2.5 Setting priorities – additional references

a. Prioritized Action Framework

Development of a prioritized action framework (PAF) by each Member State is foreseen by Article 8 (4) of the Habitats Directive. PAFs for Natura 2000 sites are vital planning tools providing a framework of priorities of conservation actions needed, activities to be financed and provide an integrated overview of how to achieve them. This way PAFs also should increase uptake of different relevant EU financial instruments (e.g. rural development under Common Agriculture Policy, Structural and Cohesion Funds, European Maritime and Fisheries Fund). By this document Member States are specifying their financing needs for Natura 2000. The aim of the exercise is to focus on the most important priorities, as well as complementarity and consistency between the information contained in the Prioritized Action Frameworks and the relevant programmes. The European Commission developed a document outlining "Possible 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 Commissions SWD document on 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. Further, "there are indications that when well prepared and supported, they have made a positive contribution to securing funding for Natura 2000 under EU funding instruments. However, 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 biogeographical seminar in Vilnius, Lithuania in 2016 tackled the topic of approaches to setting restoration priorities and discussing methods used in different Member States. 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.

c. Low Hanging Fruits

Low hanging fruits (LHF) is a concept proposed by the EC in 2015 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, therefore actions towards improving their state would be prioritized in the MS and biogeographical level. Identification of LHF was conducted using a methodology developed by the EEA and its ETC-BD based on the results of the most recent reporting results[4] under Art.17 of the Habitats Directive and taking into account the method on how to measure progress towards Target 1[5].

The LHF approach was discussed for the first time in 2016 in the second Boreal and Atlantic Natura 2000 Seminars.

### 3.2.6 Developing conservation management objectives and condition indicators for monitoring on Natura 2000 sites

Prioritizing conservation actions is considered important as improving or managing a habitat to benefit one species may be detrimental to another e.g. coppicing is beneficial for many butterfly species but prevents old growth forest developing; moreover, increasing area for one habitat may require loss for another. Priorities can therefore differ at individual site level – for example, maintaining the cover of 5130 Juniperus communis vs. removing Juniper in favour of 6120 Semi-natural dry grasslands and scrubland facies on calcareous substrates' vs. allowing development of '9150 Medio-European limestone beech forests of the Cephalanthero-Fagion'. Additionally, there might be different priorities on the national level.

Still, management planning at different levels needs to conducted and in a coherent manner. Planning with the priority of the site (bottom up) is considered to make best use of the local knowledge, however, might omit the 'overall picture'. Equally though, planning with the priority of the national priorities (top down) can secure coherency with other priorities, although it may give inappropriate recommendations for individual sites.
(source: http://eurosite.org/wp-content/uploads/2_Conservation_targets.pdf).

Such challenges demonstrate that management for Natura 2000 can be complex. Good practices examples about how to tackle management objectives are helpful, but no single solution can be applied.

'Condition indicators' are a set of attributes and targets of a habitat or species that can be monitored in order to describe evidence of success of conservation objective. They set upper and lower limits with concise definitions of habitat condition. They can be used to develop efficient and reliable monitoring methods that will show the effect of conservation measures and further on adapting management strategy. See the presentations on setting condition indicators for assessment by remote sensing, using condition indicators to link biodiversity and management in the Berry Head SAC, an attempt in Sweden to standardise indicators between sites, for comparability.

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

See other materials used during the Natura 2000 Biogeographical Process workshop in April 2017 that took place in the Czech Republic: "*Developing conservation management objectives and condition indicators for monitoring on Natura 2000 sites*".

## 3.3 Conservation measures and their effectiveness

### 3.3.1 Description

The 'conservation measures and their effectiveness' 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. In particular, this group will seek to compare best practices in such areas.

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 in wider contexts, they benefit greatly when integrated with other plans (such as forest plans, river plans, park plans, etc.). Inclusive governance structures increase the effectiveness of management plans and can be critical 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. Semi-natural habitats in the Alpine biogeographical region derive from traditional management practices, it is important to prevent this relationship with land from disappearing.

By comparing experiences and approaches with integrated management planning and stakeholder engagement, this group will indicate what factors should be considered and taken into account in order to realise good Natura 2000 governance models in the Alpine biogeographical region.

### 3.3.2 Most pressing common issues and specific challenges

One example of a pressing common issue regarding the successful implementation of conservation measures, as identified by experts from the Alpine region, is a lack of a cross-border framework for evaluation of measures and their effectiveness. There are so-called knowledge gaps. Knowledge gaps can also relate to political gaps, for example when discussions about reindeer herding in the northern Alpine region do not lead to practical outcomes, there is still a knowledge gap for site managers. Related to the lack of a cross-border framework, is a lack of tools for species monitoring and research.

Assessing the effectiveness of measures can also lead to practical uncertainties, as it is not always clear how effectiveness is defined. It can take a long time before effectiveness can actually be measured and seen, leading to difficulties in assessing it. Ensuring a closer 'fit' between conservation objectives, existing legislation and planning instruments can be highly complex, especially when there is competition for available resources. Specifically, inadequate funding is experienced as a significant bottleneck to ongoing and continuous conservation monitoring: stop-start approaches often occur, limiting the effectiveness of monitoring by contributing to incomplete data, and frustrates assessment about what conservation measures work.

A specific challenge in the Alpine region stems from difficulties in incorporating Natura 2000 priorities into existing legislation and planning instruments: for example, the translation of conservation objectives into silvicultural measures. Forest owners and/or administrators often have different views

about conservation needs in their forest areas, and expectations from forest owners and Natura 2000 administrators do not always correspond.

### 3.3.3 Cultural changes and the role of traditional knowledge

According to Alpine experts, it is important that representatives of local communities are involved (as direct stakeholders) in the development of, for example forestry or grassland, management plans at all stages. Specific research on the similarities and differences between cultural and ecological values is seen to be required, so that integrated approaches can be developed in order to increase the benefits that arise from better understanding and closer cooperation. It is also important to listen to both residents and visitors. The year 2018 will be the European Year of Cultural Heritage, in which extra attention will be given to Europe's cultural heritage and values.

Picture 2: Reindeer herding by Sami in Lapland. Source: Colorado College

### 3.3.4 Opportunities for enhancing conservation measures and their effectiveness

Alpine experts identified several opportunities for cooperative work in relation to improving conservation measures and their effectiveness. One opportunity that several experts mentioned was improved sharing of research and best-practices: this should happen more often and with all stakeholders involved. One area ripe for improvement would be to share good monitoring protocols, where factors directly related to the objectives of Natura 2000 are identified and then specifically monitored. Information about the distribution of species (that move across borders and are therefore influenced by the connectivity between Natura 2000 sites), ecology and conservation actions of species and habitat types should be shared with all stakeholders. Project objectives should be very clear and operational and easily understandable and accessible for all stakeholders too. Also, because the effect of conservation measures will often only be seen after a long time, 'effectiveness' should be measured in the long-term: where appropriate though, for short-term effects, biostatics is proposed to be used as a scientific monitoring tool.

Cross-border cooperation can be improved in very practical ways by, first of all, getting to know the actors at the other side of borders better. Also, in the case of conflicting conservation at border areas, ad hoc assistance or some kind of forum for discussion would facilitate communication exchanges, leading to more coherent conservation at both sides of a border.

Apart from cross-border cooperation, communication platforms about practical measures, especially for the forestry sector, on national levels could also be helpful. Information should also be provided in the national language, to ensure the data is understandable for all actors. Also, sharing knowledge about large predators and many species, which may have been the subject of a LIFE or national funded project (for example, focusing on characteristics of the populations, observed behaviour, socio-economic and historical context etc.) needs to better cascade down to local levels. More comprehensive knowledge is also required about, for example, species' expected responses to climate change.

Significant benefits are seen to flow from developing stronger links and cooperation with (private) land owners: this requires appropriate and continuing investment of resources. In this regard, for example, setting up dedicated advisory services, for example for farmers, foresters and land users, would be helpful. Such advisory services though are seen to require first-and-foremost the involvement of conservation experts and stakeholders together in order to be effective: in addition, it is seen to be important that such services would be able to help in practical matters, such as help with funding measures and paper work. It is necessary though, to have a contact person in the region to build trustful networks and to provide targeted support with specific measures. Equally, it would be essential to encourage land users to ask anything related to their management, without fear of penalties. It is important that any key liaison or contact person is (and is seen to be) neutral - for example, Land care Associations fulfil this task in many regions in Germany/Bavaria and the Alpine region. Raising awareness, generally, and specifically in ways that encourage land owners to know more about Natura 2000 as a network and better understand the 'fit' between their land and surrounding areas is also important: such practical steps will be useful and more effective in positively involving them in nature conservation.

The direct links between the CAP and Natura 2000 requires to be made more explicit. A clear and rapid implementation of agricultural support schemes is, according to Alpine experts, essential to ensure that local actors have both visibility and financial guarantees. Delays in the current programme, whether these stem from application of specific rules or actual payments, must be avoided to ensure that implementation of Natura 2000 priorities are not jeopardised. Also, more areas need to be protected so the ongoing habitat loss is halted. Anthropogenic factors on the natural development of ecosystems should be reduced.

Conservation should become more attractive, it should be (more) profitable to 'do' conservation. This maybe requires new political and financial solutions and instruments within the EU. A better distribution of money, long-term funding, compensation or tax dispensation is also seen to be necessary.

### 3.3.5 Examples of good practices, resources

More examples are found in chapter 5.3.

| Name | Short explanation |
|---|---|
| SPARE **(Strategic Planning for Alpine River Ecosystems)** http://www.alpine-space.eu/projects/spare/ | The project aims at contributing to a further harmonization of human use requirements and protection needs, it shows how strategic approaches for the protection and management of rivers can be improved across administrative and disciplinary borders, it provides a pan-Alpine overview of priority rivers with high protection need. |
| GREENDANUBE - Conservation and integrated management of Danube islands Romania. **LIFE06 NAT/RO/000177** http://bit.ly/2r9ftRC | The project aimed to improve the conservation status and management practice of natural and semi-natural floodplain forest on eight selected Danube islands. It planned to revise forestry plans and the promotion of a new approach that |

| | |
|---|---|
| | combines sustainable management and conservation of species and their habitats. |
| **LIFE11/NAT/RO/823** | LIFE project about ecological restoration of forest and and aquatic habitats in the upper Dambovita valley, Muntii Fagaras. |

### 3.4 Monitoring and evaluation

#### 3.4.1 Description

This group will focus on ways to monitor and evaluate the effectiveness of conservation measures, including tools and approaches used for monitoring.

Monitoring is an integral part of the management planning process. However, monitoring of conservation measures established for Special Areas of Conservation is still lacking in many Natura 2000 sites although it is central to effective management planning. 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 adopt the measures where necessary.

Picture 3: Butterfly monitoring. Source: Butterfly Conservation Europe

New technologies, especially for remote sensing, and novel approaches are increasingly important to tackle current and future biodiversity issues. This group will focus on identifying appropriate monitoring tools in light of the current and next reporting periods. Participants will be encouraged to highlight ways forward to improve the effectiveness of monitoring and evaluating conservation measures in the Alpine biogeographical region. The group will also discuss the 'Low hanging fruit' approach.

#### 3.4.2 Most pressing common issues and specific challenges

A lack of adequate financial and human resources is often noted by experts as impacting negatively on the opportunities to implement effective monitoring and evaluation systems. Specifically, several experts report that monitoring schemes are not in place for some habitats and vegetation in their countries, therefore, in some cases, data on distribution is missing. For example, in Romania it is reported that there is no overall monitoring program in place, except for forest habitats where data from National Forest Inventory are used: hence, in general, reporting has been conducted based on historical data and experts opinion.

Monitoring and evaluation methods and approaches used across the region differ in each Member State: in addition, within a country, different approaches can even be used at regional levels. This means that data collected often cannot be compared. In addition, experts reported that often the reliability of data is highly variable which tends to result in rather subjective approaches being applied in monitoring methods. Another difficulty relates to use of indicators for monitoring purposes: often, it is not clear what indicators, criteria and/or threshold levels should be used to monitor and assess conservation status with regard to structures and functions. Improved and more consistent

coordination of monitoring activities and sharing of collected data would be a considerable step forward in such cases.

### 3.4.3 Opportunities for cooperative work, suggestions for improvement

Most of the suggestions for improvement of the situation currently focus on the need for and value of exchanging of best practices, unifying methodologies to increase consistency and greater cooperation among stakeholders. In addition though, there is clearly an important need to (more continuously) raise awareness about work being conducted to improve monitoring and evaluation practices, in particular coordination initiatives at pan-European and project levels. In many cases currently, there appears to be a general need to develop more consistent and effective communication (and outreach), especially where that would clearly sign-post relevant experts to sources of information and also ensure that their inputs and insights are actually used.

Best practises of data collection and monitoring should be shared in the form of published guidelines, as well as during meetings. Specifically, dedicated workshops focusing on sharing ideas and assessing the pros and cons of the various methods applied by different Member States would be of significant value. One idea to improve coordination suggested, was to hold a series of workshops on monitoring and evaluation subjects (voluntarily) led and organised by recognised authorities in different Member States – such workshops would be targeted at relevant national and regional experts and the outcomes would be to improve knowledge sharing about practical monitoring and evaluation approaches.

Improved Pan-European scale monitoring studies to assess standardized and comparative monitoring methods was also identified as being necessary, especially to help ensure coordinated cascades of knowledge and data. In addition, such pan-European level working should aim to confirm common or standardized protocols designed to improve consistent data collection methods and analysis approaches in practice. Ideally, even if not possible for whatever reason across Europe, there should be more consistency of approach at least in the neighbouring countries.

The need for and value of improved cooperation was frequently mentioned in the expert consultations. Specifically, greater dialogue and coordination effort are necessary in order to find common points of interest and to help develop results that would, in practical terms, increase mutual benefits. In addition, greater cooperation between sectors is identified as being necessary to foster more integrated approaches directly involving, for example, relevant agencies, academic staff and researchers, Natura 2000 site managers, NGOs and stakeholder representatives. Such “inclusive cooperation” approaches would be particularly valuable for scientific studies of species ecology and conservation biology, as well as monitoring success rates of different conservation measures. The opportunity to develop pilot research projects was highlighted, especially where that would be inclusive of and designed for integrative ‘on the ground’ application and improvement of monitoring and evaluation practices.

Another idea to improve monitoring efficiency, taking into account budgetary limits, was to introduce different levels of monitoring intensity – i.e. ranging from quick assessments to cover high numbers of sampling sites in wide ranges, to more precise, time-consuming and expertise-requiring sampling methods where required and when possible.

### 3.4.4 Examples of good practices, resources

More examples are found in chapter 5.3.

| Name | Short explanation |
|---|---|
| **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 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. |
| **RESECOM** 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 (HD) 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. |
| **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.<br>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. |

### 3.4.5 Other sources of potentially useful information in National languages

- IN ITALIAN: Regarding landscape change the landscape Guidelines for Alto Adige, see http://www.provincia.bz.it/natura-territorio/temi/linee-guida-natura-paesaggio-alto-adige.asp
- IN FRENCH: For "hard to detect" species (such as Buxbaumia viridis), we've tried to assess the relevant parameters and bias before setting monitoring on such a species : Louvrier (2014) "Etude de détectabilité de la Buxbaumie verte dans le Parc national des Ecrins". Etude de détectabilité de la buxbaumie verte dans le Parc national des Ecrins, rapport, LOUVRIER J., Centre d'Ecologie Fonctionnelle et Evolutive, CNRS, 52 p., 2014
- IN FRENCH: A network of stakeholders has decided to set up in common a monitoring method for Annex 1 habitats in the French Alps : Bonnet (2012) "Mise en place d'un plan alpin d'actions sur le Caricion bicoloris atrofuscae (code : 7240)". The first step is to select elements of the

concerned habitat to be monitored. For the present project, it has been decided to select a restricted list of characteristic species and to consider that the co-occurrence of a couple of them is enough to consider the occurrence of the habitat. The monitoring is based on samples (grid unity) on the whole French Alps. This protocol allows us to monitor as well as to keep track on any type of degradation. This protocol will also be used for 6150 habitat (siliceous alpine and boreal grasslands) (start in 2017 summer).

## 3.5 Addressing threats & pressures to Alpine habitats and species

### 3.5.1 Description

In the Alpine biogeographical region land abandonment, 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 practical steps that can be developed to increase resistance and resilience. The group will seek to identify and highlight ways forward to improve the effectiveness of conservation measures in the Alpine biogeographical region.

### 3.5.2 Most pressing common issues and specific challenges

In the expert consultation exercise in the run-up to the 2nd Alpine seminar, experts identified the most pressing common issues and specific challenges related to 'threats & pressures to Alpine habitats and species'.

Climate change is perhaps the most critical issue, mainly because many climate sensitive species are local and fall out with the EU directives. Similarly, the character of many Alpine Natura 2000 sites is changing as a result of temperature rises. One example of a direct result of climate change is that *Limicola falcinellus* is leaving the southern mires in Finland and moving to Alpine regions.

Other pressures identified relate to forest habitats, for example, intensification of forestry, more logging (both illegal and legal) and poor forest management, and all of which contribute to forest habitat loss and forest degradation. This also results in more fragmentation and degraded forests are more prone to diseases and invasive alien species.

Mining activities (in Lapland for example) and constructions like roads and hydro electrical power facilities are putting pressure on Alpine habitats and species too. For example habitats 3220 and 3240 experience a high pressure by new hydropower plants, flood protection projects and torrent control. Changing demands of agriculture and livestock cause extra pressure too: for example, habitat 9070 is negatively affected by land abandonment, whereby pastoral systems become prone to collapse due to lack of grazing. Tourism and sports can pose threats, but they can also be advantageous if they are used as sources of

Picture 4: Grazing by bison in the Carpathians.
Source: Rewilding Europe

financing for conservation management purposes. This highlights a significant tension, particularly evident in the Alpine region where it is not always clear if a pressure is actually a threat or can be turned into an advantage. What is clearly though that there are significant knowledge gaps about threats, which is further compounded by inconsistencies in interpretation of definitions and methodologies between countries and across regions.

### 3.5.3 Opportunities for addressing threats & pressures to Alpine habitats and species

Alpine experts also shared their ideas and suggestions about specific needs and opportunities for cooperative work in relation to addressing particular threats and pressures to Alpine habitats and species.

Cooperative projects on large scale, which aim to assess threats to species with well-defined and standardized monitoring and survey protocols, are seen to be a huge opportunity: for example, a cross-border project to align a framework of threats and pressures along with assessment methods within the Alpine region would be one highly desirable and much needed outcome from these cooperative projects. Experiences, methods and knowledge would preferably be shared via a website that can be accessed by all Member States. In addition, there are distinct added-value opportunities to be gained from extending approaches, currently applied for priority species and habitats, to species and habitats currently not identified as priorities in the region. Taking wider ecosystem-based approaches would yield information which can be applied to focus on practical management solutions: such information should not only be used to inform policies. It is seen to be essential that information be made available in more languages to ensure that everyone can understand the information.

Maintenance of good practices in livestock activities is essential to the conservation status of habitats in mountain areas: there are important practical ways to support traditional livestock management activities, but in ways that are more clearly linked and better aligned to the objectives of Natura 2000.

The importance of outreach and interpretation in and around Natura 2000 sites to raise awareness among local communities should not be underestimated. With local support, issues around Natura 2000 are easier to address. Awareness should be raised about both the ecological and cultural value of historic and contemporary forms of land use in alpine regions. Also, work should be carried out together with indigenous people, for example with the Sami in Lapland.

More areas of total protection would also benefit Alpine habitats and species. However, where that is not possible, more inclusive approaches to conservation of non Natura 2000 areas merit exploration. As a solution for pressures from hydropower plants, joint implementation of the Habitat Directive, Birds Directive and the flood protection directive is seen to be an urgent priority. Tourism and sports could be an increasingly important opportunity to support conservation management in general: not only can different stakeholders be engaged directly, they can be a source of finance for conservation management. The development of using drones for conservation should be further explored as well.

### 3.5.4 Examples of good practices, resources

More examples are found in chapter 5.3.

| Name | Short explanation |
|---|---|
| Publication about sports in protected areas | A German BfN publication about sports in protected areas |
| Sentinel pastures | A big program has been set up to work with pasture practitioners: Sentinel pastures. The main ideas are to measure several parameters of alpine pastures and to discuss with breeders and shepherds on how to deal with what's going on. |
| 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 tourism and outdoor sector together with good case studies. |

# 4 Habitat groups

This chapter provides an overview of the Alpine Biogeographical Region organised in five habitat groups. Alpine experts were requested to participate in an online consultation in which they could address the status of Alpine habitats. In addition, annexes 4 to 8 contain individual fact sheets 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, factors needed to improve the conservation status, and other relevant observations, per habitat group.

## 4.1 Freshwater habitat group

### 4.1.1 Summary description

Of the seven freshwater habitats, six habitats (3140, 3150, 3220, 3230, 3240, and 3260) have been selected for priority consideration. Habitat (3180) has been identified with 'Low Hanging Fruit' (LHF) status and, since only one parameter (structure and functions) in one country (Italy) needs to be improved in order to achieve overall improvement in the conservation status, habitat 3150 has also been classified as LHF.

Based on Article 17 reporting, five habitats were reported to have unfavourable-inadequate conservation status, of which the habitat 3140 has stable trend and habitat 3220 has deteriorating trend. Two habitats have been reported to have unfavourable-bad conservation status, habitat 3230 with deteriorating trend. From the reporting countries, habitat 3180 is present only in Slovenia, though a small part of the habitat is also located in Croatia (new Member State joining EU in 2013). The overall conservation status of rivers and lakes in Alpine region is negative.

Table 4. Alpine freshwater habitat group

| **Alpine freshwater habitats** | | | |
|---|---|---|---|
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 3140 | Hard oligo-mesotrophic waters with benthic vegetation | | Yes |
| 3150 | Natural eutrophic lakes Magnopotamion Hydrocharition | Yes | Yes |
| 3180 | Turloughs | Yes | |
| 3220 | Alpine rivers and the herbaceous vegetation along their banks | | Yes |
| 3230 | Alpine rivers and their ligneous vegetation with Myricaria germanica | | Yes |
| 3240 | Alpine rivers and their ligneous vegetation with Salix elaeagnos | | Yes |
| 3260 | Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation | | Yes |

### 4.1.2 Factors contributing to a Favourable Conservation Status

Increased and more cohesive funding for management of rivers and lakes in Alpine region, as well as greater cooperation between different sectors (e.g. nature conservation, water management, forest management, agriculture, tourism etc.), would be a major benefit to ensure continuity of management measures necessary to achieve and maintain favourable conservation status of Alpine freshwater habitats.

The habitats would benefit also from more efficient uptake of measures listed under the Water Framework Directive and Floods Directive by the Member States, as well as better and more consistent integration into River Basin Management Plans and Flood Risk Management Plans.

Other key factors also identified by the experts as contributing to improved conservation status include: improved knowledge (e.g. on species and habitats distribution) and definition of habitats (including reference species); update of indicators to assess the conservation status; improved cooperation between stakeholders, state institutions, landowners, active participation of NGOs and scientists; exchange of expertise on development and implementation of management plans and actions listed in Alpine Member States' Priority Action Frameworks (PAFs).

### 4.1.3 Issues, pressures and threats

The majority of experts identified the following activities as the main pressures negatively affecting conservation status of rivers and lakes in Alpine region: small hydropower plants, agriculture and tourism and recreational activities. For freshwater habitats in the Alpine region, pollution of surface waters, sand and gravel extraction and small hydropower projects are identified as the biggest pressures. Particularly, pollution from agriculture (fertilisation, use of biocides, hormones and chemicals), as well as irrigation, are considered as significant threats to the habitats.

In the Article 17 report, changes in water quality and hydrological regime are pressures across all freshwater habitats. Other pressures that were reported under Article 17 are: canalisation, water deviation, small hydropower projects, dykes, embankments, migration barriers, waste disposal, recreation and sport (leisure fishing).

### 4.1.4 Management and conservation measures and actions

Restoration and/or improvement of water quality and hydrological regime, regulation of the extraction of natural resources, establishment of more Protected Areas and increased (new) legal protection of species and habitats are considered the main conservation measures to be implemented to improve the conservation status of rivers and lakes in Alpine region. Other important conservation measures listed in the Article 17 report are: management of water abstraction, waste removal, reduction if invasive non-native species and succession of vegetation, control of grazing and use of chemicals in agriculture, regulation of recreation and sport activities. It is noted that habitats 3150 and 3220 would benefit from increasing their representation in the Natura 2000 network. In addition, establishment of protected 'zones' for water resources would contribute to the improvement of conservation status of habitat 3180 in particular.

Contributing experts consider improved coordination of funding for implementation of Habitats Directive and Water Framework Directive as one of the main conservation measures for rivers and

lakes in Alpine region. To reduce water pollution from agriculture, they suggest establishment of alternative water supply facilities for the cattle.

#### 4.1.5 Other comments

Rivers and lakes are very sensitive to changes in hydrological regime and water quality. Activities on the sites and in their close vicinity must be carefully planned (e.g. SEA, EIA) and potential risks and negative impacts assessed in advance.

There are several best practice examples on rivers restoration in the Member States that can be transferred to and replicated on the other sites. It is proven that successful restoration of freshwater ecosystems has a positive impact on both biodiversity and socio-economic situation of local communities. However, in particular tourism activities in floodplains need to be carefully planned and monitored as recreation, sport and fishing have been identified as one of the main threats to rivers and lakes in Alpine region.

Experts underline the need to establish and implement harmonized monitoring schemes and programmes across Member States. In addition, increased harmonization of DG Agri and DG Environment priorities and implementation of (better) integrated management plans for river basins are also mentioned as important factors for conservation and management of freshwater ecosystems.

### 4.2 Bogs, mires and fens habitat group

#### 4.2.1 Summary description

Of the four wetlands habitats, three habitats (7110, 7140, and 7230) were originally selected for priority consideration and one (7220) has LHF status. Based on Article 17 reporting, three wetland habitats continue to have unfavourable-inadequate conservation status, though it is noted that 7110 has close to unfavourable-bad status. Despite one habitat (7140) having favourable conservation status, the overall conservation status for bogs, mires and fens in the Alpine region is negative.

Table 5. Alpine bogs, mires and fens habitats

| **Bogs, mires and fens habitat group** | | | |
|---|---|---|---|
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 7110 | Active raised bogs | | Yes |
| 7140 | Transition mires and quaking bogs | | Yes |
| 7220 | Petrifying springs with tufa formation (Cratoneurion) | Yes | |
| 7230 | Alkaline fens | | Yes |

#### 4.2.2 Factors contributing to a Favourable Conservation Status

Increased and more consistent (continuing) funding for continuous management of bogs, mires and fens is seen to be required, mainly to prevent succession of vegetation. This would be a major benefit

to ensure continuity of management measures necessary to achieve and maintain favourable conservation status.

For wetlands management, there are several examples of good practice applying a combination of proactive and restoration management measures. Greater exchange of best practice experiences would help to contribute to proper management of the habitats in Alpine region.

Improvement of knowledge (e.g. on species and habitats distribution) and definition of habitats (including reference species), update of indicators to assess the conservation status, improved cooperation between stakeholders, state institutions, landowners, active participation of NGOs and scientists, exchange of expertise on development and implementation of management plans and actions listed in PAFs, as well as improved funding, were identified by experts as the main factors contributing to a Favourable Conservation Status.

### 4.2.3 Issues, pressures and threats

Agriculture, recreation and sport activities, mining and invasive non-native species were noted by experts as the main pressures and threats to bogs, mires and fens in the Alpine region. For wetland habitats, human-induced changes in hydrological conditions (water abstraction, drying-out) and pollution are identified as the biggest pressure. Particularly, pollution of surface waters and pollution from agriculture (grazing, fertilisation, use of biocides and chemicals) are considered as significant threats.

In the Article 17 report, human-induced changes in water regime and pollution, including use of chemicals and biocides in agriculture are pressures across all wetland habitats. Peat extraction is a significant pressure for *7110, 7140 and 7230. Abandonment of agricultural activities and lack of grazing and mowing are selected as significant threats to alkaline fens (7230). Other pressures that were reported under Article 17 are forest plantation, biocenotic evolution (succession of vegetation), sand and gravel extraction, water abstraction and discharges, waste disposal, recreation and sport.

### 4.2.4 Management and conservation actions

Restoration and/or improvement of hydrological regime and establishment of protected areas and/or legal protection of species and habitats are considered the main conservation measures to be applied to improve the conservation status of wetland habitats in the Alpine region. From Article 17 reports, it is noted that all wetland habitats would benefit from regulation of the exploitation of natural resources, improvement of water quality and regulation of recreation and sport activities.

Experts consider improved coordination of funding for implementation of Habitats Directive and Water Framework Directive as one of the main conservation measures for wetlands in Alpine region. They also select restoration of traditional use of bog/wetland biomass as an important conservation measure to improve conservation status of wetlands.

### 4.2.5 Other comments

Bogs, mires and fens habitats are very sensitive to changes in hydrological regime and water quality. Activities on the sites and in their close vicinity must be carefully planned (including conducting

Strategic Environmental Assessments and Environmental Impact Assessments) and potential risks and negative impacts assessed in advance.

Particularly for active raised bogs (*7110), it is important that management plans (especially grazing and mowing management) are based on detailed knowledge of the particular site conditions and history.

Experts underline the need to establish and implement harmonized monitoring schemes and programmes across Member States. Harmonization of DG Agri and DG Environment priorities is also mentioned as an important factor for conservation and management of freshwater ecosystems.

## 4.3 Forest habitat group

### 4.3.1 Summary description

Of the 17 forest Alpine habitats, four (91D0, 91E0, 9130, and 9180) were selected originally for priority consideration; eleven (91H0, 91L0, 91M0, 91WO, 91Z0, 9050, 9110, 9170, 9270, 9510, and 9560) were classified as LHF; and two (9260 and 9410) are selected for both priority consideration and LHF.

Based on Article 17 reporting, only habitat 91D0 was reported to have favourable status. Thirteen habitats were reported to have unfavourable-inadequate status, and three unfavourable-bad.

The Alpine Steering Committee decided to select habitats 9260 and 9410 for the first Alpine seminar because forest habitats were insufficiently represented. These habitats were also classified as LHF because, in both cases, to achieve improvement it is sufficient to change from a negative to a stable trend in the category U1 (unfavourable-inadequate), and the improvement of only one parameter (Structure & functions) in one country (Italy) is needed.

The main reason for classification of the other LHF habitats was that it is necessary to change trend in only one category in one or two countries in order to achieve overall improvement. Other reasons are that five of the LHF habitats are also well represented in Natura 2000 sites, and improvement of only one parameter in one or two countries is sufficient to achieve overall improvement.

This is the first time that habitats 91W0, 91Z0, and 9270 have been included in Article 17 reporting. In the Alpine biogeographical region of the EU, these habitats are restricted to Bulgaria, which was not obliged to report previously.

Forest habitats are fairly well represented in Natura 2000 sites. Habitats with high representation (60–90 %) are 91M0, 91W0, 91Z0, 9510, and 9560; fairly good representation (30–40 %): habitats 91E0, 9130, 9180, 9410, 9110, and 9170; and low to poor representation (8–30 %): habitats 91D0, 9260, 91H0, 91L0, 9050, and 9270.

Table 6. Alpine forest habitats

| **Forest habitat group** | | | |
|---|---|---|---|
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 91D0 | Bog woodland | | Yes |

| | | | |
|---|---|---|---|
| 91E0 | Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) | | Yes |
| 9130 | *Asperulo-Fagetum* beech forests | | Yes |
| 9180 | *Tilio-Acerion* forests of slopes, screes and ravines | | Yes |
| 9260 | *Castanea sativa* woods | Yes | Yes |
| 9410 | Acidophilous *Picea* forests | Yes | Yes |
| 91H0 | Pannonian woods with Quercus pubescens | Yes | |
| 91L0 | Illyrian oak-hornbeam forests (Erythronio-Carpinion) | Yes | |
| 91M0 | Pannonian-Balkanic oak forests | Yes | |
| 91WO | Moesian beech forests | Yes | |
| 91Z0 | Moesian Silver lime woods | Yes | |
| 9050 | Fennoscandian herb-rich forests with *Picea abies* | Yes | |
| 9110 | *Luzulo-Fagetum* beech forests | Yes | |
| 9170 | *Galio-Carpinetum* oak hornbeam forests | Yes | |
| 9270 | Hellenic beech forests with *Abies borisii-regis* | Yes | |
| 9510 | Southern Apennine *Abies alba* | Yes | |
| 9560 | Endemic forests with *Juniperus* spp. | Yes | |

### 4.3.2 Factors contributing to a Favourable Conservation Status

Contributing experts identified that adapting forest management and establishing protected areas and wilderness sites could contribute to the improvements needed. Increasing representation in Natura 2000 sites could help in the implementation of proposed measures and prevention of further pressures. In general, the introduction of (legal) measures to regulate the exploitation of natural resources, grazing in forests, burning, and recreational activities are seen to be of benefit to conservation status. Mapping and monitoring of the best preserved and most vulnerable habitats would also provide valuable information for forest management.

### 4.5.3. Issues, pressures and threats

The main pressures reported for forests in the Alpine 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), burning, forest clearance, succession, grazing in forests, and invasive non-native species.

Human-related pressures include skiing and other outdoor recreational activities, the construction of roads and electricity and phone lines, urbanisation, the collection of forest products, and hydrological changes caused by human activities.

Other pressures reported are: habitat fragmentation, climate change, peat extraction, disease and parasites, and water pollution.

#### 4.5.4. Management and conservation actions

The adaptation of forest management to address the identified pressures was considered essential for all habitats. In addition, the development of inclusive management approaches whereby all stakeholders and local communities are directly involved in forest management is seen to be essential in improving forest habitats' conservation status. In this regard, establishing integrated management planning approaches is highly recommended.

Proposed measures are: legal protection of habitats and species; establishing wilderness areas; regulation of human disturbances such as road construction, outdoor recreational activities, and hunting; regulation of natural resources exploitation; management of landscape features; restoration of forest habitat; and improving forest protection.

The restoration of hydrological conditions is considered very important for habitats 91D0 and 91E0.
The establishment of protected sites and increasing the representation of forest habitats in Natura 2000 sites could help in the implementation of proposed measures and prevention of further pressures.

Italy indicated that no measure is known or it is impossible to carry out specific measures in habitat 9510, which In the Alpine biogeographical region is restricted to Italy. However, it is probably possible to adapt forest management to some extent to address the reported pressures (intensive forest management and use and planting using non-native trees). It may also be feasible to take measures to regulate outdoor sport, leisure and recreational activities, skiing complexes, and construction of roads and paths. A large part of the habitat area is already located in Natura 2000 sites, which could facilitate the implementation of regulation measures and the adaptation of forest management.

#### 4.3.3 Other comments

Approaches to forest management can take various forms. For instance, the elaboration of forestry schemes in accordance with the principles of sustainable management have been suggested for habitats 9260 and 91Z0. For habitat 9180 it has been suggested that management interventions should be kept to a minimum. Habitat 9050 is mostly a human-influenced, semi-natural forest that needs frequent management activities to maintain it in good condition.

### 4.6. Grassland habitat group

#### 4.6.1. Summary description

Of the seven grassland habitats, six (6210, 6230, 6410, 6430, 6510, and 6520) were selected originally for priority consideration. In the Alpine biogeographical region, habitat 62D0 is distributed only in the mountains of Bulgaria. Habitat 62D0 has been classified as LHF because only one parameter (Structure

and functions) needs to be improved in order to achieve overall improvement, 96.5 % of the area of habitat 62D0 is located in Natura 2000 sites, and no high-intensity pressures were reported.

Based on Article 17 reporting, three habitats were reported to have unfavourable-inadequate conservation status, of which habitats 6430 and 62D0 with stable trend and habitat 6210 with deteriorating trend. Four habitats were reported to have unfavourable-bad conservation status, of which habitats 6230, 6510, and 6520 with deteriorating trend and habitat 6410 with negative trend.

Almost all habitats are fairly well represented in Natura 2000 sites: relatively high proportion of habitats 62D0 (96 %), 6410 (57–83 %), and 6520 (30–70 %); about half of habitats 6210 and 6230; and over half of habitat 6430. Habitat 6510 has a low representation in the Natura 2000 network.

Table 7. Alpine grassland habitats

| **Grasslands habitat group** | | | |
|---|---|---|---|
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 6210 | Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) ( * important orchid sites) | | Yes |
| 6230 | * Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) | | Yes |
| 6410 | *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) | | Yes |
| 6430 | Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels | | Yes |
| 6510 | Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) | | Yes |
| 6520 | Mountain hay meadows | | Yes |
| 62D0 | Oro-Moesian acidipjilous grasslands | Yes | |

### 4.6.2. Factors contributing to a Favourable Conservation Status

Increased access to and use of agricultural subsidies are seen to be imperative to improve (regular) management of grassland habitats. However, additional sources of new funding would be required for the restoration of abandoned grasslands, as this is usually expensive and agricultural subsidies are insufficient for these activities.

For habitat 62D0, the regulation of grazing, monitoring of the habitat condition and implementation of regulations for the national parks are identified by Roussakova (2015)[6] as the main measures to be taken. The fact that almost all of the area of habitat 62D0 is located in Natura 2000 sites and in National and Nature Parks could facilitate the implementation of such measures.

### 4.6.3. Issues, pressures and threats

The main pressures and threats identified are caused by modification of cultivation practices: abandonment of mowing or grazing (leading to succession) or, on the contrary, intensification (fertilisation and intensive grazing or mowing), and grassland removal for arable land.

Many pressures are related to other human activities, such as improved access; construction of roads and paths; outdoor sport, leisure and recreational activities; increasing urbanisation; sand and gravel extraction; and removal of terrestrial plants. Afforestation is reported as a pressure for four of the seven habitats (6230, 6410, 6430, and 6510). Human-induced changes in hydrological conditions (including water abstractions and drying-out) and groundwater pollution were reported for habitats 6410 and 6520. Other pressures reported include discharges and landfills, quarries, invasive non-native species, and erosion.

### 4.6.4. Management and conservation measurements and actions

The most important measure proposed was the maintenance of grasslands. A number of experts also proposed establishing new protected areas or increasing the size of existing sites, adapting crop production and other agriculture-related measures, legal protection of (non Natura 2000) habitats and species, regulation of natural resources and land exploitation, restoration of the hydrological regime, forestry measures, management of landscape features, and other spatial measures.

In order to improve the overall conservation status of grasslands in the Alpine biogeographical region, it is essential to ensure regular management of suitable intensity and the restoration of abandoned grasslands. In addition, the management of surface and groundwater is especially crucial for habitat 6410.

Increased habitat restoration is necessary as, in most cases, the actual habitat areas are smaller than the reference values. Restoration measures include removal of scrub and trees, removal of alien species, restoration of the hydrological regime where necessary, and the implementation of suitable agricultural management. It is noted though that, for restoration to be effective, management will probably be more intensive during the transitional period. Grazing intensity should be determined based on site conditions.

### 4.6.5. Other comments

Grassland management objectives vary from site to site, and even within one site different goals may be set for different areas. When planning the management of a grassland habitat, it is important to take into account site-specific objectives and targets, as well as local/regional land use and livestock husbandry traditions, practices and techniques.

[6] Roussakova, V. (2015): Subalpine acidophilic xerophytic grasslands. – In: Biserkov, V., Gussev, Ch. (eds): *Red Data Book of the Republic of Bulgaria. Vol. 3 – Natural habitats.* http://e-ecodb.bas.bg/rdb/en/vol3/27E4.html

## 4.7. Heath and scrub habitat group

### 4.7.1. Summary description

The overall conservation status of all three heath and scrub habitats in the Alpine region is unfavourable-inadequate, with habitats 40A0 and 4080 having stable trend, and habitat 4070 deteriorating trend. The habitats were selected as LHF because only one parameter (Structure & functions) needs to be improved in order to achieve overall improvement in conservation status, and because they are well-represented in the Natura 2000 network: up to 60 % of habitat 40A0 is located in Natura 2000 sites, 72 % of habitat 4070, and 50 % of habitat 4080.

Table 8. Alpine heath and scrub habitats

| **Heath and scrub habitat group** | | | |
|---|---|---|---|
| **Habitats Directive code** | **Habitat name** | **Low Hanging Fruit** | **Priority consideration habitat** |
| 40A0 | Subcontinental peri-Pannonic scrub | Yes | |
| 4070 | Bushes with *Pinus mugo* and *Rhododendron* | Yes | |
| 4080 | Sub-Arctic *Salix* spp. Scrub | Yes | |

### 4.7.2. Factors contributing to a Favourable Conservation Status

Better regulation of activities related to human disturbances, such as skiing complexes and recreational activities, and road building, would benefit the achievement of favourable conservation status.

### 4.7.3. Issues, pressures and threats

A broad range of pressures were reported. High-intensity pressures include disturbances caused by human activities (sport and leisure structures, road construction, and sand and gravel extraction); modification of cultivation practices; grazing; human-induced changes in hydraulic conditions; and species composition change.

### 4.7.4. Management and conservation measures and actions

Better regulation of human disturbances such as road building, gravel extraction and conversion to agricultural land is needed. Although each habitat is well-represented in Natura 2000 sites, establishment of wider protected areas would help as there are already good conditions for the control or regulation of the main disturbances caused by human activities. In Italy, for instance, it is noted that there is space for the designation of new protected sites: the relatively small total habitat area of habitat 40A0 (up to 3 km2) would benefit from implementation of additional regulatory measures.

### 4.7.5. Other comments

Habitat 4070 represents climax vegetation in the sub-alpine zone of mountains, and thus the elimination of disturbing factors is crucial for improvement of its structure, in particular through the

regulation of sport and recreation as well as building activities in the mountains. In countries in which most or all (more than 80 %) of the area of habitat 4080 is located in Natura 2000 sites, the establishment of new protected sites is still regarded as highly relevant and needed.

# 5 Additional information derived from the expert consultation

## 5.1 Low Hanging Fruits

In table 2, the lowest hanging fruits as identified by Alpine experts are presented. In table 3, habitats considered by Alpine experts potentially to be Low Hanging Fruits are listed – these were not classified as such by the ETC-BD. Due to 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 2. Low***est*** Hanging Fruits based on results of online expert consultation

| | Austria | Bulgaria | Finland | Italy | Romania | Slovakia | Spain | Sweden |
|---|---|---|---|---|---|---|---|---|
| **3150** Natural eutrophic lakes Magnopotamion Hydrocharition | | | | 1 | | | | |
| **7220** Petrifying springs with tufa formation (*Cratoneurion*) | | | 1 | | | | | |
| **9050** Fennoscandian herb-rich forests with *Picea abies* | | | 2 | | | | | 1 |
| **9110** *Luzulo-Fagetum* beech forests | | | | 1 | | 1 | | |
| **62D0** Oro-Moesian acidipjilous grasslands | | 1 | | | | | | |
| **4070** Bushes with *Pinus mugo* and *Rhododendron* | 1 | | | 1 | 1 | | | |
| **4080** Sub-Arctic *Salix* spp. Scrub | | | 2 | | | | 1 | |

Table 3. Potential other Low Hanging Fruits habitats proposed by experts in the online expert consultation

| | Finland | France | Romania | Sweden |
|---|---|---|---|---|
| 7240 | | 1 | | |
| 6150 | | 1 | | |
| 6xxx traditionally managed grassland | | 1 | | |
| Forest habitat types (protection of unprotected national forest) | 1 | | | 1 |
| 4060 | | | 1 | |
| 9530 | | | 1 | |
| 91Q0 | | | 1 | |
| 8110 | | | 1 | |
| 8120 | | | 1 | |
| 8160 | | | 1 | |
| 8210 | | | 1 | |
| 8220 | | | 1 | |
| 8230 | | | 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 Alpine Member States – these include opportunities for cooperation in relation to the following:

| Group | Species | Cooperation benefits foreseen |
|---|---|---|
| **Insects** | Carabus variolosus | Population assessment, monitoring and conservation biology. |
| | Buprestis splendens | Share of best-practice knowledge. |
| | Rosalia alpine | Standardization of monitoring protocols. |
| | Rhysodes sulcatus | Share of best-practice knowledge. |
| **Birds** | Dendrocopos leucotos | Sharing of best-practice knowledge. |
| | Strix uralensis | Conservation management for the species spread and sustainability. |
| | Aegolius funereus | Sharing of best-practice knowledge in conservation and monitoring. |
| | Glaucdium passerinum | Sharing of best-practice knowledge in conservation and monitoring. |
| | Tetrao urogallus | Sharing of best-practice knowledge in conservation management. |
| **Fish** | Hucho hucho (fish spawning on gravel) | Large-scale river restoration to achieve bigger and autochthonous populations. Other species and Habitat types will also benefit. |
| | Thymallus thymallus (fish spawning on gravel) | Large-scale river restoration to achieve bigger and autochthonous populations. Other species and Habitat types will also benefit. |
| **Amphibians** | Bombina variegata | habitat restoration in a larger scale to achieve bigger and stable populations, any other amphibians living on slopes and in valleys and several freshwater an wetland Habitat types will benefit too. |
| | Tritturus cristatus | Habitat restoration in a larger scale to achieve bigger and stable populations, any other amphibians living on slopes and in valleys and several freshwater an wetland Habitat types will benefit too. |
| **Mammals** | Ursus arctos | (Better) transboundary connections. |
| | Canis lutra | (Better) transboundary connections. |
| | Lutra lutra | (Better) transboundary connections. |
| **Plants** | Eryngium alpinum | Comparison with situations in the Alps would contribute to better understand it and to set up an alpine monitoring and common conservation action. |

## 5.3 Examples of good practices, (LIFE) projects, 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 improve the prioritization 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. |
| **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 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. |
| **RESECOM** 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 (HD) 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. |
| **LIFE TREMEDAL** LIFE11 NAT/ES/000707 http://www.lifetremedal.eu/en/ | This LIFE Natura project has, among other, an objective to provide up to date and homogenized information for the Atlantic Biogeographic Region and the Iberian Peninsula and their transition zones in regard to the presence and distribution, as well as the classification and characterization of the peat bog habitats. The project identified common indicators to assess the states of conservation of the habitats studied by the project in the enclaves where the actions of restoration were carried out. Available in Spanish: http://www.lifetremedal.eu/site/wp-content/uploads/D1_INDICADORES_COMUNES.pdf |
| **The T.E.N. Project** (Trentino Ecological Network) LIFE11/NAT/IT/000187 http://www.lifeten.tn.it/ | The project aimed at achieving a multi-purpose Ecological Network on the provincial territory of Trentino in Italy that will set new standards for a long-term strategic vision of Natura 2000 management that is economically sustainable and socially well accepted. Projects actions included: creation of a database on species and habitats; identification of conservation priorities; monitoring; elaboration of action plans for the management of species of particular value. |
| **Ecological Restoration of Forest and Aquatic Habitats in the Upper Dambovita Valley, Muntii Fagaras** LIFE11/NAT/RO/823 | The project aimed at saving the remaining virgin and quasi-natural forests in the upper Dambovita Valley by identification and evaluation of virgin forests, based on information gained from mapping and remote sensing, purchase the land and developing the Management Plan of the Natura 2000 site that will include non-management approach. It also elaborated and |

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| http://www.carpathia.org/ro/life-project/ | implemented river restoration plan of the Dimbovita basin preceded by inventory and assessment. Conservation success was monitored using indicator species, methodology for identification of virgin forests, fish monitoring and Inventory of aquatic eco-system were developed. |
| **Forest-Alp NATURA 2000 - Priority forest, sub-alpine and alpine habitats in Romania** LIFE05 NAT/RO/000176 http://bit.ly/2rKZHis | The overall objective was to prepare the designation of Romanian Natura 2000 sites for forests, sub-alpine and alpine habitats. The project aimed to identify, map and describe potential sites of Community importance (SCIs) according to the Habitats Directive. As an outcome of the project 56 pSCI were identified, a 'Habitat Manual' for forest, sub-alpine and alpine habitats of Community interest in Romania – a basic reference concerning Natura 2000 in the country was developed, guidelines for the monitoring and management of target habitats were published. |
| **GREENDANUBE - Conservation and integrated management of Danube islands Romania.** LIFE06 NAT/RO/000177 http://bit.ly/2r9ftRC | The project aimed to improve the conservation status and management practice of natural and semi-natural floodplain forest on eight selected Danube islands. It planned to revise forestry plans and the promotion of a new approach that combines sustainable management and conservation of species and their habitats. |
| Project SESIL | Project SESIL is about Halting the expansion of invasive plant species in the Mureș Floodplain Natural Park. |
| Clearcut Restoration Project | This project is about the reconstruction of forest habitats on the Dambovita valley in severe erosion areas caused by inappropriate logging. |
| LIFE11/NAT/RO/823 | LIFE project about ecological restoration of forest and and aquatic habitats in the upper Dambovita valley, Muntii Fagaras. |
| LIFE+11 NAT/RO/825 | Conservative management for 4070* and 9260 habitats of ROSCI 0129 North of Western Gorj, Gorj district. |
| LIFE05 NAT/RO/000176 | Forest-Alp NATURA 2000 - Priority forest, sub-alpine and alpine habitats in Romania. |
| LIFE06 NAT/RO/000177 | GREENDANUBE - Conservation and integrated management of Danube islands Romania |
| LIFE to ad(d)mire wetland restoration Project in Sweden | A LIFE project about wetlands in the Boreal region, however, knowledge about the best practices can also be used for the Alpine region. |
| Vindel River LIFE - Restoration of tributaries of the Vindel river combined with monitoring and evaluation of ecological responses of species and habitats | A LIFE project in the Boreal region, however, knowledge about the best practices can also be used for the Alpine region. |
| Sentinel pastures | A big program has been set up to work with pasture practitioners: Sentinel pastures. The main ideas are to measure several parameters of alpine pastures and to discuss with breeders and shepherds on how to deal with what's going on. |
| The Bosland partnership | A partnership between the Agency for Nature and Forests, the city of Lommel, Inverde and Sibelco, financed through LIFE: 'LIFE Together – To get heath restored'. The Bosland partnership developed a successful participatory approach for the area, |

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|---|---|
| | including local entities and ministries. This model is of potential interest to all biogeographical regions, not just Alpine. |
| **SPARE** (Strategic Planning for Alpine River Ecosystems) http://www.alpine-space.eu/projects/spare/ | The project aims at contributing to a further harmonization of human use requirements and protection needs, it shows how strategic approaches for the protection and management of rivers can be improved across administrative and disciplinary borders, it provides a pan-Alpine overview of priority rivers with high protection need. |
| **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.<br>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. |
| **Platform for wildlife monitoring integrating Copernicus and ARGOS data;** ongoing; H2020; http://www.copernicus.eu/projects/eo4wildlife | The project will develop a platform that will enable to process geospatial environmental stimulations 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. |
| **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 monitor the achievement of the 2010 target and to develop recommendations 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. |
| **Knowledge, Assessment, and Management for AQUAtic Biodiversity and Ecosystem** | 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 |

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|---|---|
| **Services aCROSS EU policies (AQUACROSS);** H2020; ongoing; http://aquacross.eu/ | services.<br>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. |
| **The BioScore model (Biodiversity impact assessment using species sensitivity Scores)** https://www.synbiosys.alterra.nl/bioscore/aboutBioScore2.html | 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. |
| **FRESh LIFE - Demonstrating Remote Sensing integration in sustainable forest management;** LIFE14 ENV/IT/000414; https://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. |
| **LIFE SMART4Action - Sustainable Monitoring And Reporting To Inform Forest- and Environmental Awareness and Protection** LIFE13 ENV/IT/000813 http://www.corpoforestale.it/smart4action | LIFE SMART4Action intends to redesign forest monitoring and its information and reporting system in Italy by creating an improved, cost-effective forest monitoring system enabling forest monitoring to continue at national level in a sustainable way. |
| **LIFE+ ForBioSensing PL - Comprehensive monitoring of stand dynamics in Białowieża Forest supported with remote sensing techniques** LIFE13 ENV/PL/000048 http://www.forbiosensing.pl/ | The aim of the ForBioSensing project is to develop and apply a monitoring methodology for large forest areas using innovative techniques. This will involve point-scale monitoring (field measurements on sample plots) through to large-scale area monitoring using remote sensing techniques. This information will improve the efficiency of operations carried out for forest ecosystems protection and will further the study of forest biodiversity. |
| **Val d'Aoste - Monitoring and management of the wetlands included in the NATURA 2000 programl;** LIFE97 NAT/IT/004171; http://ec.europa.eu/environm | The principal objective of the project was to define a coordinated and homogeneous management model for this type of wetland in order to safeguard its function as biological reserve. |

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| ent/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=233 | |
| **EVENTS** | |
| **International Meeting on the Conservation of High Mountain Lakes** July 2017, Italy, http://bit.ly/2rtT04z | This workshop is focused on the role of the Natura2000 sites and protected areas, on the recent research development, and on management strategies and specific experiences to achieve long-term conservation of high mountain lake ecosystems. |
| **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/ | The workshop focused on how to translate conservation management objectives into performance indicators in order to measure progress towards reaching these objectives. |
| **Interdisciplinary workshops on silvicultural measures and nature conservation in Natura 2000 forests** 2016 - 2017, Germany, Austria http://natura2000.wald.or.at/ | Series of four workshops under the project „Arbeitsplattform NATURA2000.Wald“, which aims to develop a framework concept for the different forest habitat types and species listed in Annex II in Austria. Silvicultural measures and the impacts on selected forest habitats and species were elaborated during four workshops from October 2016 until May 2017. Possible management strategies that contribute to the favourable conservation status of forest habitats and species were evolved in working groups. |
| Meetings | As is the case in many regions in France, a network of Natura 2000 facilitators organized at the departmental level (about 3 meetings per year) and regional (1 meeting / year) allows exchange on local issues. |
| Developments in Sweden. | A recent Swedish court decision and a new national strategy for protecting forests may decrease the area loss of forest habitat types in the Alpine region. |
| **Developing conservation management objectives and condition indicators for monitoring on Natura 2000 sites**; April 2017; Czech Republic http://bit.ly/2r6rysm | 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. |
| **Alpine Grassland Monitoring and Assessment Workshop**; May 2015, Italy; http://ec.europa.eu/environment/nature/natura2000/platform/events/159_alp_grassland_monitoring_and_assessment_workshop_en.htm | The workshop sought to provide elements to stimulate an advance in the field of conservation status assessment of Alpine Grasslands as a means to inform and help implement better conservation measures. The participants agreed on a roadmap to develop a joint approach for Alpine grassland conservation status assessment as a significant contribution to better informed conservation objectives and management practices and a more harmonised reporting at EU level. |
| **Workshop Vegetation databases and Natura 2000**; March 2017; Germany; | This workshop evaluates the role of vegetation plot databases and their role for inventories, management and monitoring of N2000 sites. |

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| http://ec.europa.eu/environment/nature/natura2000/platform/events/287_vegitation_databases_workshop_en.htm | |
| **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. |
| **PUBLICATIONS** | |
| **Commission note on Setting conservation objectives for Natura 2000 sites** EU COM http://bit.ly/2njkLaF | The purpose of this note is to provide guidance to assist Member States in setting conservation objective for Natura 2000 sites. |
| **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. |
| **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 |
| **Guidance on Natura 2000 and forests** Part I-II, part III, FAQ | The documents are outlining the key provisions of Natura 2000 in the context of other relevant EU policies and initiatives concerning forests. The documents also aim at promoting the integration of Natura 2000 conservation objectives into the management of Natura 2000 forests. |
| **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. 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. |
| **Camacho & al. Aguas continentales retenidas. Ecosistemas leníticos de interior.** http://bit.ly/2r1dGj8 (In Spanish) | This presents a system called ECLECTIC, to assess lakes, ponds, and all the standing water habitat types, codified in the Annex I of the HD as 31XX. |
| **The Prioritized Action Framework** (PAF) for Natura 2000 | To be checked in each Member State |
| **Pröbstl U., Prutsch A., Natura 2000 Outdoor Recreation and Tourism.** A guideline for the | A guideline presenting requirements, consequences and opportunities of Natura 2000 for tourism and outdoor sector together with good case studies. |

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| application of the Habitats Directive and the Birds Directive http://bit.ly/2s3vGI3 | |
| **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. |
| **„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. |
| **Report of the workshop: 'Setting Favourable Reference Values (FRVs) for Annex I bird species in Cyprus as part of the LIFE project: Restoration and Management of Oroklini Lake SPA in Cyprus".** http://admin.brainserver.net/uploads/oroklini/Deliverables/FRVworkshopReport_LIFEOROKLINI.pdf **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 | The report summarises the workshop that 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, but the methodology adopted could then be applicable to all bird species of Cyprus and elsewhere. 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 http://bit.ly/2rddHAS | The report explains 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** | This document presents a review of the responses in the questionnaires filled by Member State representatives |

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| **setting FRVs** (chapter 1) https://circabc.europa.eu/sd/a/0182df2a-0c3a-4b65-9125-dc4db0735be6/MSApproaches%20AdHG%20FRVs%20092016.pdf | 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 MS 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-bdad007214df/Synthesis%20AdHG%20FRVs%20092016.pdf | This paper presents building blocks and a preliminary synthesis of approaches for setting FRVs based on the MS 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 silver geranium (Geranium argenteum L.) and the Petit Prince dilemma. | A paper, appeared in Nature de Provence n°2, that sums up a protocol used for Annex II species. |
| Information about Natura 2000 management for the Midi-Pyrénées. | In the former Midi-Pyrénées region, a website gathers information on habitat management. Opportunities could exist to extend the website to cover a wider area. |
| Publication about sports in protected areas | A German BfN publication about sports in protected areas |
| Integrating management plans | Natura 2000 management plans can be integrated into other plans if they exist. The choice of which approach to follow, such as the integration of different plans, is left to the discretion of Member States. Recent papers [*see for example: Trentanovi G, Campagnaro T, Rizzi A et al. (submitted): "Synergies of planning for forests and planning for Natura 2000: evidences and prospects from northern Italy", Journal for Nature Conservation*] have outlined that the most common choice is not to use existing instruments, but rather to introduce new instruments outside the existing implementation style. The paper asserts that greater effort should be given to integrating regulatory requirements rather than overlapping them, as that would promote effective and socially responsible policy to be adopted. A good example of this approach can be found in the SACs Conservation Measures SACs of Veneto region which can be found here. |
| Best practice sharing by Landcare Associations. | Several Landcare Associations have best practice examples for the implementation of measures through advisory service and cooperation with land users for:<br>1) preparation/maintenance for grazing areas around summer farms<br>2) renaturation/conservations of bogs and wet meadows and the use of its biomass<br>3) maintenance of creeks and small rivers<br>4) conservation of landscape elements |

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| **MS.MONINA– Monitoring NATURA 2000 Habitats of European Community Interest at the local, regional and continental scales** by Stefan Lang, Geoff Smith and Jeroen Vanden Borre http://www.copernicus.eu/sites/default/files/library/SuccessStory_MSMONINA_Winog.pdf | Good case study from COPERNICUS project which presents the potential of GMESfor the monitoring of European protected habitats and species at the local, regional and continental scales. |
| **BIOSCORE 2.0 A species-by-species model to assess anthropogenic impacts on terrestrial biodiversity in Europe.** https://www.synbiosys.alterra.nl/bioscore/download/v2/Bioscore_rapport_FINAL_v2.pdf | The report describes the model concept and methodology underlying BioScore2.0, and illustrates the type of results that can be obtained with the model. Furthermore, it discusses both the methodology and the results. |
| "**A methodology for monitoring rare plant species designed by a network of conervation stakholders**" Bonnet, Fort, Dentant, Bonet & Till-Bottraud (2015); Acta Botanica Gallica: Botany Letters, 162(1) http://agris.fao.org/agris-search/search.do?recordID=US201500185234 | The paper describes a series of nested protocols to monitor populations at different spatial scales (levels). Each monitoring level is set up to answer to a specific aim and corresponds to a protocol shared by all the network actors. |
| **The manuals for species and habitats of Community Interest** http://www.isprambiente.gov.it/en/archive/ispra-events/2016/10/towards-a-national-plan-of-biodiversity-monitoring-the-manuals-for-species-and-habitats-of-community-interest | 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. |
| **National programs for habitats/vegetation mapping.** (various websites) | France (http://www.cbn-alpin.fr/actions/habitats/carhab.html), Italy (www.vegitaly.it), Czech Republic (http://www.sci.muni.cz/botany/vegsci/vegetace.php?lang=en), Sweden (http://www.slu.se/en/departments/forest-resource-management/environment/?si=A002FC0D2673CF3C3875773D2ED89989&rid=900529168&sn=sluEPi6-prodSearchIndex), Poland (http://www.iop.krakow.pl/cn2000/monitoring/) |

**Annexes**

**ANNEX I Overview of responses Online Expert Consultation**

| ***COUNTRY*** | ***EXPERTS*** |
|---|---|
| Austria | 1 |
| Bulgaria | 1 |
| Croatia | 0 |
| Finland | 3 |
| France | 3 |
| Germany | 3 |
| Italy | 2 |
| Poland | 0 |
| Romania | 1 |
| Slovakia | 1 |
| Slovenia | 1 |
| Spain | 1 |
| Sweden | 2 |
| **Total** | **19** |

**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 organize 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 Alpine Natura 2000 seminar**

This annex updates the 21 previously identified priority consideration Boreal 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 Alpine region on the Natura 2000 Communication Platform.

**ANNEX IV Habitat factsheets – freshwater habitat group (7 factsheets)**

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

**ANNEX V Habitat factsheets – bogs, mires and fens habitat group (4 factsheets)**

The habitat factsheets for the bogs, mires and fens habitat group are available on the page for the Alpine region on the Natura 2000 Communication Platform.

**ANNEX VI Habitat factsheets – forest habitat group (17 factsheets)**

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

**ANNEX VII Habitat factsheets – grassland habitat group (7 factsheets)**

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

**ANNEX VIII Habitat factsheets – heath and scrub habitats (3 factsheets)**

The habitat factsheets for the heath and scrub habitats group are available on the page for the Alpine region on the Natura 2000 Communication Platform.