

**ENHANCEMENT AND GOVERNANCE
OF PROTECTED AREAS
IN BOSNIA AND HERZEGOVINA:**
Guidelines for management policies,
for the monitoring of species and habitats
of national and community interest and
for the creation of a national database

ENHANCEMENT AND GOVERNANCE OF PROTECTED AREAS IN BOSNIA AND HERZEGOVINA:

Guidelines for management policies, for the monitoring of species and habitats of national and community interest and for the creation of a national database

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PART I - EU POLICIES AND MANAGEMENT TOOLS FOR NATURE AND BIODIVERSITY

1.1 INTRODUCTION

Biodiversity, or biological diversity, is defined in Article 2 of the United Nations Convention on Biological Diversity (CBD) as "the variability among living organisms from all sources, including, inter alia, terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems."

Biodiversity manifests itself at three different levels:

1. **Genetic Diversity:** The first level pertains to the genes within a single species. Each living organism possesses its own genetic characteristics, leading to diversity within its DNA.
2. **Species Diversity:** The second level is observed between species. Within the same environment or ecosystem, a diverse range of living organisms coexist and interact with one another. This includes different plant species, a variety of invertebrate and vertebrate animals, and a vast array of microorganisms, such as protozoa, bacteria, and viruses.
3. **Ecosystem Diversity:** The third level is evident between different ecosystems. Earth is home to a high variety of environments, including rivers, lakes, dunes, grasslands, and forests, each representing distinct ecosystems.

The conservation of biodiversity and the sustainable use of natural resources are pressing issues, especially in light of the significant alterations to the natural environment caused by human activities. Interest in biodiversity and its protection has grown over time, becoming one of the global emergencies identified as early as 1992 by the United Nations Conference on Environment and Development in Rio de Janeiro.

For many years, the scientific community has recognized that simply creating Protected Areas (such as parks and nature reserves) is insufficient to ensure the survival of many wild species and habitats. It is also essential to implement measures beyond protected territories to mitigate the factors threatening biodiversity. This requires integrating criteria that support biodiversity conservation into spatial planning.

This concept has inspired two European directives: the Habitats Directive and the Birds Directive. These directives represent the main innovative tools in legislation concerning nature and biodiversity conservation. They emphasize the importance of a broad geographical perspective on biodiversity protection. Consequently, the conservation approach that previously focused on individual species must now be complemented by actions aimed at protecting all aspects of biological diversity across its three fundamental levels: genetic, species, and ecosystems.

Recent advancements in ecology and biology have underscored the necessity of operating within a network of areas to protect habitats and species. This network should represent vital populations and adequate habitats for all species and typical ecosystems of Europe, reflecting their variability and biogeographical diversity.

This dynamic approach aims to ensure the continuity of migratory movements, facilitate genetic flows among various species, and guarantee the long-term vitality of both natural and semi-natural habitats.

Bosnia and Herzegovina is characterized by numerous areas that are crucial for biodiversity protection, featuring interesting habitats that are not effectively safeguarded. Currently, conservation policies are planned for less than 10% of these areas.

In this context, during surveys and technical meetings conducted by ISPRA as part of the NaturaBosniaHerzegovina project, several critical issues have been identified, summarized as follows:

- Problems in the governance of nature protection and protected areas, stemming from fragmented competencies and conflicting political, social, and economic interests.
- Ongoing difficulties in integration within the country, which hinder the ability to conduct studies and analyses of the natural territory in a consistent and national manner.
- Challenges in delineating and implementing protection and sustainable use policies for areas of high natural value.
- Stalemates in legislative initiatives aimed at both existing and future protected areas.
- Potential and shortcomings in the collection, organization, and management of natural data.

The purpose of this report is to provide a series of recommendations and guidelines based on the Institute's established experience and the international reference framework. These recommendations aim to support the institutions of Bosnia and Herzegovina, starting from local public bodies, parks, and municipalities, and extending to various government branches of the Entities that comprise the country. The goal is to help overcome current challenges and align with environmental protection and enhancement standards in relation to the procedures for accessing the European Community.

1.2 EU POLICIES FOR NATURE AND BIODIVERSITY

1.2.1 The EU Biodiversity Strategy

In May 2011, the European Union adopted the EU Biodiversity Strategy to 2030, which includes key commitments for nature protection by 2030:

1. **Legally protect at least 30% of the EU's land area and 30% of its seas** and integrate ecological corridors into a cohesive trans-EG87
2. European nature network.
3. **Strictly protect at least one-third of EU protected areas**, including all existing primary and old-growth forests within its territory.
4. **Effectively manage all protected areas**, establishing clear conservation objectives and measures, and subjecting them to adequate monitoring.

The actions outlined in the Strategy are implemented through various sectoral policies supported by different EU funding programs.

Through this strategy, the EU commits to protecting at least 30% of its marine and terrestrial areas, encompassing forests, peatlands, grasslands, and coastal ecosystems. Moreover, it aims to ensure that at least 10% of these marine and terrestrial areas, including existing primary forests and other carbon-rich ecosystems, remain undisturbed.

Some Planned Measures:

- **Incentivize the creation of urban green spaces:** According to a European Parliament report, increasing green spaces in urban areas can enhance the physical and mental health of citizens. Consequently, MEPs have proposed the establishment of a European platform for green cities, urging the Commission to set ambitious, particularly binding targets for urban biodiversity. These objectives include:
 - A minimum quota of green roofs on new buildings.
 - Support for urban agriculture.
 - Ensuring the prohibition of chemical pesticides.
 - Reducing the use of fertilizers in EU urban green spaces.

-
- **Reduce the impact of agriculture:** The European Parliament endorses the targets established for 2030, which aim to dedicate at least 25% of existing agricultural land to organic farming, with an increase expected in the medium and long term. Furthermore, additional reduction targets agreed upon with the Commission focus on:
 - Reducing the use of pesticides and hazardous chemicals by 50%.
 - Reducing the use of fertilizers by at least 20%.
 - Cutting nutrient losses by at least 50% by 2030.

EU Pollinators Initiative

Finally, the EU Pollinators Initiative is noteworthy as it aims to counter the decline of pollinators in the EU and contribute to global conservation efforts by enhancing knowledge and addressing losses.

The 2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development is an action program signed in 2015 by the governments of the 193 UN member countries. It represents a commitment to peace, international cooperation, and security. The signatory countries pledge to achieve, to the best of their ability, the 17 objectives outlined in the Agenda by 2030.

The 2030 Agenda emerged from the recognition that the current development model of human society is no longer sustainable for our planet. A key innovative aspect of the program is the understanding that sustainability encompasses not only environmental considerations but also other dimensions of development. The overall objective is to end poverty, combat inequality, promote economic development and social inclusion, and address climate change-related challenges, all with a strong emphasis on sustainability and respect for environmental capacity.

Our planet requires robust, attentive, and sustainable policies and actions to address the serious environmental problems caused by human impact and resource exploitation.

Endangered Species in Europe

To protect endangered species, the European Parliament has adopted its position on the "EU Biodiversity Strategy for 2030: Bringing Nature Back into Our Lives," which addresses the main causes of biodiversity loss and establishes legally binding targets.

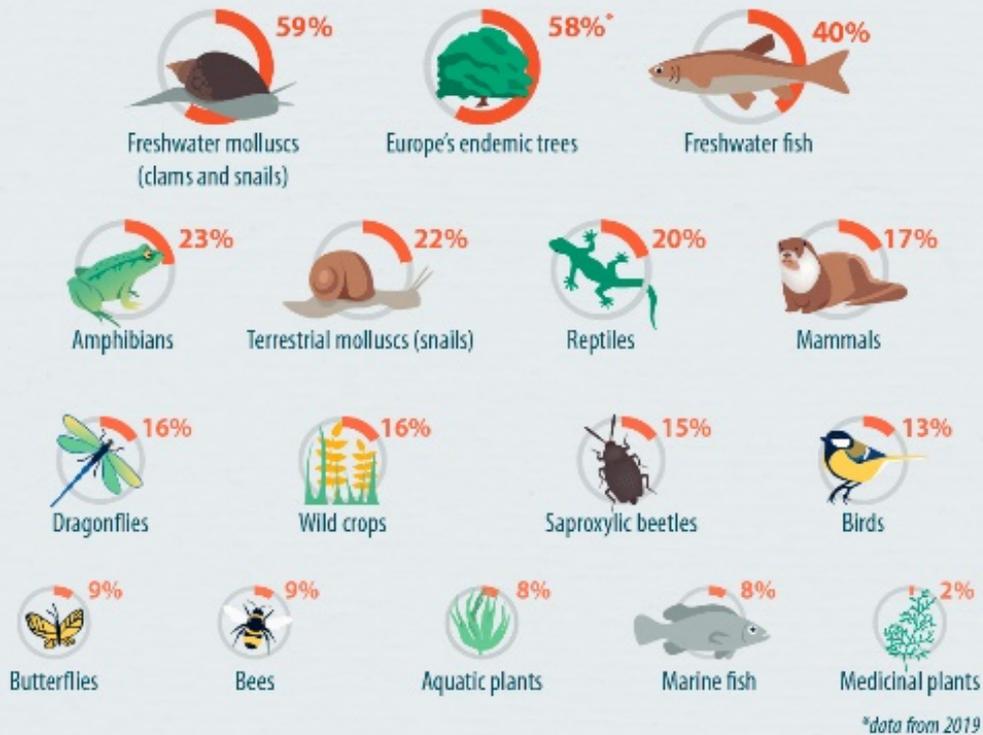
The International Union for Conservation of Nature (IUCN) has created a Red List of threatened species in Europe to illustrate the current state of biodiversity on the continent and to call for action to protect and conserve endangered species.

According to the Red List, there are 1,677 European species at risk out of a total of 15,060. Among the most threatened species in need of protection are various snails, clams, and fish. Additionally, over half of Europe's endemic trees, including the horse chestnut, *Heberdenia excelsa*, and *Sorbus* species, are threatened. Approximately one-fifth of amphibians and reptiles are also in danger. Among the mammals most at risk in Europe are the Arctic fox, the European mink, the Mediterranean monk seal, the North Atlantic right whale, and the polar bear. Furthermore, pollinators are declining, with one in ten species of bees and butterflies at risk of extinction.

BIODIVERSITY IN EUROPE

What are the most endangered species in Europe?

(% at risk)



Source: IUCN European Red List (2015 and 2019)

europarl.eu

The biodiversity in Europe

Habitats Directive and Birds Directive

The Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC) are the cornerstones of EU nature conservation policy.

The Habitats Directive has been transposed by all Member States and is implemented through national legislative procedures. In Italy, for example, it was transposed through regulation **D.P.R. n.357/1997, modified by D.P.R. n.120/2003**. This directive aims to promote the maintenance of biodiversity by conserving natural habitats and species across Europe. It establishes appropriate measures to identify, classify, and protect a range of habitats and species that are particularly important for conservation. This includes the designation of Natura 2000 sites, which form an ecological network throughout the Union, consisting of Sites of Community Importance (SCI) that subsequently become Special Areas of Conservation (SAC) after a lengthy designation process.

The Birds Directive, originally established as **The Birds Directive 79/409/EEC** and later repealed and replaced by the codified version of Directive 2009/147/EC of the European Parliament and Council on 30 November 2009, published in the Official Journal of the European Union on 26 January 2010 (series L 20), focuses on the conservation of wild birds and is integrated within the provisions of the Habitats Directive.

The Birds Directive recognizes habitat loss and degradation as the most significant threats to the conservation of wild birds. Therefore, it aims to protect the habitats of species listed in Annex I and regularly returning non-listed migratory species through a coherent network of Special Protection Areas (SPAs). These areas include the most suitable territories for the survival of these species. Unlike SCIs, which require a lengthy designation process, SPAs are designated directly by Member States and automatically become part of the Natura 2000 network.

The Directive calls on Member States to adopt a general regime for the protection of species, which includes a series of prohibitions on specific activities that directly threaten or disturb them. The trade in live or dead specimens or parts thereof is also prohibited, with some exceptions for species listed in Annex III (III/1 in all Member States; III/2 in States that request it and in agreement with the Commission).

The Directive acknowledges the legitimacy of hunting for species listed in Annex II (II/1 in all Member States; II/2 in the specified states) and provides guidelines for sustainable hunting practices. It prohibits the use of mass or non-selective trapping or killing methods, particularly those listed in Annex IV a). Additionally, it prohibits hunting using the means of transport specified in Annex IV b).

In 2014, as part of its efforts to enhance existing legislation, the European Commission initiated a fitness check of the two directives—the Habitats and Birds Directives. This review emphasized that while these nature protection directives are fit for purpose within the broader EU biodiversity policy, achieving their objectives and realizing their full potential depend on significantly improving their implementation.

1.3 NATURA 2000 NETWORK

Natura 2000 is the name given by the EU to a coordinated and coherent system of areas, known as the Network, intended for the conservation of biodiversity present in the territories of member countries. This network is founded on:

- **Directive 79/409/EEC:** The Birds Directive, which aims to conserve numerous bird species and identify areas for their protection.
- **Directive 92/43/EEC:** The Habitats Directive, which seeks the long-term maintenance of natural habitats and the conservation of threatened or rare species of flora and fauna at the Community level.

The main objective of Natura 2000 is to safeguard biodiversity by maintaining natural resources—both natural and semi-natural habitats, as well as wild flora and fauna—in a state of "satisfactory conservation" across the Community territory. Consequently, the identification of Nature Network Sites is crucial for protecting areas that are vital for various species or habitat types listed in the Habitats and Birds Directives. These areas are considered of EU-wide significance because they are endangered, vulnerable, rare, or endemic. They are subject to special conservation measures due to their biodiversity content, which includes both habitats (natural and semi-natural) and plant and animal species.

The establishment of the network also aims to ensure the continuity of migratory movements and genetic flows among various species, thereby guaranteeing the long-term viability of natural habitats. In this context, importance is placed not only on areas of high naturalness but also on contiguous territories that are essential for connecting areas that have become spatially distant yet are ecologically functional.

In May 1992, the European Union initiated the process of establishing the ecological network known as the 'Natura 2000 Network' through the enactment of the Habitats Directive 92/43/EEC. This network serves as the main instrument of the Union's policy for biodiversity conservation.

Unlike Natura 2000 areas, **nature reserves, national parks, and other nationally or regionally protected sites** are established exclusively under national or regional laws, which may vary from one member country to another. These sites may be designated for various purposes and may also encompass species or habitats beyond those for which the Natura 2000 network was created. As a result, these areas do not hold the same status as Natura 2000 sites. However, some nationally or regionally protected sites may also be designated as Natura 2000 sites if they are important for species and habitats of EU significance. In such cases, the provisions of EU directives apply unless national legislation stipulates stricter rules.

Natura 2000, therefore, aims to introduce a different approach to land use and resource exploitation, focusing on sustainable development and the vital maintenance of ecosystems. It is recognized that certain human activities, such as many **traditional agricultural practices**, are essential for the protection of biodiversity and must be considered important factors in conservation management.

The innovative elements can therefore be schematically summarized as:

- **network approach:** Each site of Community interest is a node in a network, a place of interconnection. The term '**coherent network**' is used, and Member States are invited to identify the gateways to ensure connectivity.
- **flexible and non-rigid regulation of protection:** This approach allows for the choice of appropriate management plans tailored to local realities, capable of addressing both the need to guarantee biological resources for future generations and socio-economic and cultural needs.
- **recognition of the role of several human activities in the production of biodiversity:** This includes many traditional agroforestry practices. Therefore, the object of conservation is not only natural habitats but also some semi-natural ones, where traditional practices are considered an important factor in conservation management.

Based on the Natura 2000 Network, which provides for active land management, traditional practices may continue if they do not negatively impact the species or habitat types for which the site has been

designated. A case-by-case assessment must be conducted to determine whether an actual impact exists. If a negative impact is identified, it should be studied to ascertain its extent and the best ways to reduce or eliminate it (e.g., by relocating activities to another area of the site or adjusting procedures and timing) so that it no longer contributes to the deterioration or degradation of the species and habitats for which the site was designated.

Hunting is another example of an activity that may continue in a Natura 2000 site if it does not negatively impact the species or habitat types for which the site was designated. The Birds and Habitats Directives recognize hunting as a legitimate form of sustainable activity and do not a priori prohibit its practice within Natura 2000 sites. On the contrary, the directives establish a framework for controlling hunting activity to ensure a balance between hunting and the long-term interest of maintaining healthy and sustainable populations of huntable species, while also managing invasive species.

With regard to the obligations arising from the application of the Habitats Directive, an important novelty is the **Effect Assessment** of plans and projects pertaining to **Sites of Community Importance (SCI)**. The effect assessment is a preliminary procedure aimed at analyzing the significance of the effects of plans/projects (PP) on the habitats and species of SCIs.

Natura 2000 Sites

The identification of **Natura 2000 Sites** is based on the presence of habitats and species defined as '**of Community interest**' because they are recognized as '**particularly threatened, fragmented, or outstanding examples of typical features of biodiversity in the Union's territory.**'

These general premises give rise to the peculiarities of Natura 2000 sites in terms of the contribution that each of them makes to the coherence of the network, which, by definition, "must ensure the maintenance or, if necessary, the restoration of habitats and species of Community interest at a favourable conservation status" (Article 3 of the Habitats Directive).

The choice of sites is based on **scientific criteria**. Under the Birds Directive, EU Member States are required to designate the 'most suitable territories', in terms of number and area, for the protection of the bird species listed in Annex I of the directive, as well as migratory species. Under the Habitats Directive, Member States are required to designate sites necessary to ensure that the natural habitat types listed in Annex I and the habitats of species listed in Annex II are maintained or, where appropriate, restored to a favourable conservation status in their natural range.

The sites are selected and proposed by the Member States. Subsequently, the European Environment Agency (EEA) assists the European Commission in analyzing the proposals and assessing the contribution of the proposed sites to the conservation of each habitat type and species at the biogeographical level. Once the sites proposed under the Habitats Directive are deemed sufficient, the relevant lists are adopted by the Commission, and the Member States designate them as Special Areas of Conservation (SACs) as quickly as possible and within a maximum of six years.

The ecological requirements of habitat types and species encompass all the ecological needs, including the abiotic and biotic factors that are considered indispensable for ensuring the conservation of habitat types (i.e., the specific structure of the habitat and the functions necessary for its long-term maintenance, its typical species, etc.) and species present on the site, including their relations with the physical environment (air, water, soil, vegetation, etc.).

These requirements are based on scientific knowledge and should be defined on a case-by-case basis, which means that they may vary not only depending on the species or habitat type within a site but also for the same species or habitat types from one site to another. Moreover, they are not dependent on socio-economic considerations.

- ✓ **Special Protection Areas (SPAs)** according to the **Birds Directive**: Territories most suitable in number and size for the conservation of bird species.
- ✓ **Sites of Community Importance (SCI)** according to the **Habitats Directive**: Areas suitable for the protection of habitats and species of flora and fauna listed in the annexes to the Directive.

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- ✓ **Special Areas of Conservation (SAC)** according to the **Habitats Directive**: Delimited after defining conservation measures for SCIs.

SPAs are Natura 2000 sites designated under the Birds Directive, while SCIs and SACs are sites designated under the Habitats Directive. An SCI and a SAC concern the same site, and the only distinction is the level of protection. SCIs are officially adopted by the European Commission and are therefore subject to the protection provisions of Article 6(2), (3), and (4), whereas SACs are SCIs designated by the Member States by virtue of a legal act, in which the measures necessary to ensure the conservation of the species and habitat types of EU importance that are present there apply.

Relevant Lists of Species and Habitats

- ✓ **Annex I of the Habitats Directive**: List of natural habitats of Community interest whose conservation requires the designation of Special Areas of Conservation. The asterisk (*) in front of the name indicates that it is a priority species.
- ✓ **Annex II of the Habitats Directive**: Animal species (mammals, reptiles, amphibians, fish, arthropods, molluscs) and plant species whose conservation requires the designation of Special Areas of Conservation. The asterisk (*) in front of the name indicates that it is a priority species.
- ✓ **Annex I of the Birds Directive**: Bird species for which special habitat conservation measures must be taken to ensure the survival and reproduction of the species in their area of distribution.

Definition of Priority Habitats and Species

- ✓ **Priority Habitats***: Natural habitat types that are in danger of disappearing in the territory and for which priority conservation measures must be envisaged.
- ✓ **Priority Species**: Animal and plant species for which priority conservation measures must be envisaged.

1.4 MANAGEMENT IN NATURA 2000

Conservation Objectives

Objectives serve to define the specific contribution that each site makes to achieving the ultimate objective of the Habitats Directive. Thus, conservation objectives at the site level must define the conservation status that species and habitats must attain in order for each site to contribute in the best possible way to achieving the objectives of the Directive.

These are often quantitative objectives, such as maintaining the population of a particular species at a given minimum number of individuals or improving the conservation status of a habitat type from category C to B within 10 years. If a habitat/species is in a satisfactory conservation status, the objective is to maintain the status quo, and in many cases, no active management measures need to be identified. By way of example:

- ✓ **Site X** was designated because of its importance for the habitat type: "Semi-natural grassland formations (6210)." According to the standard form, this habitat type is in an unsatisfactory conservation condition (indicated as class C in the standard form). The conservation objective set for this site can therefore be to increase the conservation of the habitat type to class A - excellent - within 10 years, considering that the habitat type is in a very unsatisfactory conservation status in the region. The necessary conservation measures established under Article 6(1) are designed to achieve this objective.
- ✓ **Site Y** was designated because it hosts a large area of "active raised bogs (7110)." According to the standard form, the habitat type is in excellent condition (indicated as class A in the standard form). Therefore, the conservation objective set for the site is simply to maintain this condition, even if the habitat types have an unsatisfactory conservation status in the region. No conservation measures have been established under Article 6.1, as the site does not require active management measures to maintain the existing condition.

The establishment of clear conservation objectives for Natura 2000 is essential to ensure that each site in the network contributes as effectively as possible to the overall objective of the two nature directives.

Conservation objectives are site-specific and should be based on a sound knowledge of the area and the species/habitats present, their ecological needs, and any threats and pressures on their continued presence in the site. This is because each Natura 2000 site presents a unique set of biotic, abiotic, and socio-economic conditions, which may vary considerably from site to site, even if they host the same habitats and species.

The identification of conservation objectives falls under the responsibility of the competent authorities of each Member State. Conservation objectives should be set by the competent authorities for all Natura 2000 sites. Nevertheless, it may happen that the procedure is delayed and that conservation objectives are not yet defined. In this case, it is the responsibility of the competent authorities to inform interested parties of the implications of designating an area as a Natura 2000 site.

The minimum requirement of the standard form is to **avoid the degradation of all habitats and species present on the site to a significant extent**. In the absence of scientific information, a precautionary approach should prevail.

Conservation Measures

Conservation measures are the actual interventions and actions to be put in place for a Natura 2000 site in order to achieve the identified conservation objectives and to address the pressures and threats faced by the species and habitats present there.

The Habitats Directive (Article 6.2) requires Member States to take appropriate measures to avoid the deterioration of natural habitats as well as any significant disturbance of the species for which the areas have been designated. The Birds Directive (Article 4.4) requires the prevention of deterioration of habitats of bird species in general. In this context, for a Member State, **'taking appropriate measures'** means taking the necessary legal and/or contractual steps to ensure that the deterioration of natural habitats and significant disturbance of the species for which the site has been designated is avoided.

The 'appropriate measures' to be taken by the Member States are not limited to intentional acts but also refer to any event that may occur accidentally (fires, floods, etc.), provided that such an event is foreseeable and that precautionary measures can be implemented to reduce the risks to the site. Unpredictable natural disturbances that are an integral part of ecosystem dynamics (storms, fires, floods, etc.) are not to be considered as deterioration.

Furthermore, the obligation on Member States to take 'appropriate measures' is not limited to human activities, but also encompasses certain natural developments that may lead to the deterioration of the conservation status of species and habitats present on the site. By way of example, in the case of natural accretion occurring in semi-natural habitat types, measures may be necessary to halt this process if it may have a negative impact on the species or habitat types for which the site has been designated (CJEU judgment in Case C-6/04). The provision does not apply if the process cannot be influenced by active management (e.g. climate change-induced degradation).

Conservation measures can vary between:

- ✓ **'no intervention'**: No additional measures are needed to manage the site compared to the way it has been managed so far.
- ✓ **'simple' measures**: These may include avoiding disturbance during the breeding season, maintaining regular mowing or haymaking activities, or increasing the amount of dead trees in the forest.
- ✓ **'major' restoration activities**: These include the total removal of non-native species or, for example, the hydrological restoration of a wetland, replanting certain species, reintroductions, and repopulations.

In some cases, non-intervention and strict protection can also be considered conservation measures, particularly for habitats and species that are very vulnerable to any kind of human intervention and whose survival requires strictly protected refuge areas.

The procedure for establishing the necessary conservation measures for each Natura 2000 site is not an optional provision but is binding on all Member States. Consequently, the conservation measures that are deemed necessary must be established and implemented for each Natura 2000 site (CJEU, Case C-508/04).

However, it is useful to distinguish the measures considered necessary for the conservation and restoration of the species and habitat types present in the site from measures that are considered desirable and that 'would be good to implement if the means and opportunities to do so exist.' The latter can ideally be identified within the Natura 2000 management plan as best-practice measures aimed at improving the overall level of biodiversity on the site, although they are not included among the mandatory requirements for the site.

The implementation of conservation measures does not always involve active management or restoration measures, such as the removal of invasive exotic species or the diversification of forest stand structure, but may also include protective measures, such as avoiding disturbing a species during the breeding season.

Management Plans

The **Management Plan** is configured as a **planning tool** whose adoption is necessary only when the specific situation of the site does not allow a satisfactory conservation status to be guaranteed through the implementation of measures. Its main objective is to ensure the presence of habitats and species in optimal conditions that have determined the identification of the site, implementing the most appropriate protection and management strategies.

With the management plan, the best solutions for managing the site can be defined both in terms of conservation measures and the definition of development activities and initiatives. The drawing up of the plan can, in fact, be an opportunity to stimulate the sensitivity of local communities to the importance of nature conservation. In any case, the management of a site, whatever its contribution to the network, must respond to a single obligation of result: to safeguard the efficiency and ecological functionality of habitats and/or species to which the site is 'dedicated,' thus contributing on a local scale to achieving the general aims of the Habitats Directive.

Although they are not mandatory under the Habitats Directive, Natura 2000 management plans are very useful tools because they:

- provide a comprehensive record of the conservation objectives and the ecological conditions and needs of the habitats and species present on the site, so that it is clear to everyone what is being conserved and why.
- analyze the socio-economic and cultural context of the area and the interactions between different land uses and the species and habitats present.
- provide a framework for open debate among all stakeholder groups and help reach consensus on the long-term management of the site, creating a sense of shared ownership of the end result.
- help to find practical management solutions that are sustainable and more easily integrated into other land uses.
- provide a tool to establish the respective responsibilities of the various socio-economic actors, authorities, and NGOs in implementing the necessary conservation measures identified.

Monitoring

According to Article 11 of the Habitats Directive, Member States shall ensure the monitoring of the conservation status of natural habitats and species of Community interest. This status, for all species and habitats of EU importance, is assessed regularly (every six years) as part of the regular reports submitted by Member States to the Commission under Article 17 of the Habitats Directive and Article 12 of the Birds Directive. The aim is to determine the conservation status of each species or habitat type throughout its natural range within the EU.

Four classes have been adopted: satisfactory (FV), unsatisfactory-inappropriate (U1), unsatisfactory-poor (U2), and unknown (XX). Article 17(1) requires Member States to provide information on the conservation measures applied in Natura 2000 sites, as well as an assessment of the impacts of these measures.

The goal, of course, is for all habitat types and species to reach a favourable conservation status, as defined in the Habitats Directive. However, this achievement will take time. Habitat types and species have been selected because they are threatened or rare and therefore, for the most part, already start from a poor conservation status. Consequently, a certain amount of time will have to elapse before the implemented conservation measures 'bear fruit' by improving the overall conservation status of species or habitats across the EU.

Monitoring and evaluation of results are crucial for adapting conservation objectives and measures to any significant developments, whether natural or otherwise, that may affect the conservation of habitats and species of Community interest present in the site.

1.5 TERRESTRIAL PROTECTED AREAS IN EUROPE

1.5.1 Protected Terrestrial Areas in Europe

According to data published by Eurostat, between 2011 and 2020, protected land areas in the countries of the European Union (EU27) increased from approximately 758,000 to 764,000 km², marking an increase of just under 6,000 km² (+0.50%). The largest increases in protected areas occurred in France with +2,000 km², followed by Spain with +941 km², while Italy ranks fourth for increases over the decade with +572 km². In some countries, there has been a decrease in protected areas, especially in Sweden, which saw a reduction of -1,235 km².

Directives and Rules

The central theme underlying protection is the need to counter biodiversity loss. We depend on the natural wealth of our planet for food, energy, raw materials, clean air, and water that make life possible and underpin our economies. Therefore, it is essential to prevent a loss of biodiversity; any loss can undermine not only the natural environment but also our economic and social goals.

At the end of 2019, the European Commission adopted the European Green Deal, an ambitious vision for a sustainable green transition that is both fair and socially just. The protection of biodiversity is one of its focus areas.

Additionally, the biodiversity strategy includes as one of its objectives the increase in the size of the trans-European Natura network through the expansion of sites to reach the 30% target.

Many Natura 2000 protected areas are already linked by natural and semi-natural landscapes that provide ecosystem services such as pollination, soil fertility, flood control, and recreation. These areas are also essential for climate change mitigation and disaster risk reduction.

This context also includes the Emerald Network, which consists of a network of areas of special conservation interest. Its implementation was initiated by the Council of Europe with the adoption of Recommendation No. 16 (1989) of the Standing Committee of the Bern Convention. To protect rare and threatened species and habitats at the European level, Bern Convention Resolutions 4 and 6 list European species and habitats in need of special protection measures, designating them as 'Emerald' species or habitats. The network is established in each contracting party or observer state to the convention, involving all European member states, some non-EU states, and some African states.

Each State Party undertakes to take the necessary measures to conserve the specific value of the protected areas it proposes. Emerald species and habitats in these areas must not be endangered. Management plans for the areas must be drawn up, and measures for the protection and interconnection of the species and habitats concerned must be adopted, integrating the relevant sectoral policies in a timely manner.

Each member country is obliged to designate and protect, at the national level, a sufficient number of areas to safeguard 'Emerald' species and habitats. EU countries fulfill this commitment through the Natura 2000 network.

Altogether, these areas form a green infrastructure network that covers the whole of Europe. Studies suggest that nature is best protected within this network, which encompasses a larger area that provides the required services and suffers less ecosystem pressure.

Governance: Instruments and Measures

In Europe, there are different levels of governance (local, regional, national) to protect soil and its resources and to determine how they are used. Some of these measures are closely linked to certain economic sectors. Examples include the EU's Common Agricultural Policy, which requires farmers to adopt a set of practices to achieve 'good agricultural and environmental conditions,' and the Seventh Environmental Action Programme, which steers EU environmental policy until 2020 and includes the non-binding commitment of 'zero net land consumption by 2050' to halt the expansion of urban areas into forests and agricultural land.

Despite these measures, there is no coherent and comprehensive set of policies on soil and land. In a recent report, the European Court of Auditors points out that risks related to desertification and soil degradation are increasing and that policy measures are not coherent. The Court recommends, among other things, establishing a method for assessing the extent of desertification and soil degradation in the EU, providing Member States with guidance on soil conservation, and achieving neutrality in terms of soil degradation.

The task of taking action on the field to achieve these policy goals is not solely the responsibility of individual stakeholders, such as farmers, consumers, and urban planners. Indeed, while our choices as consumers (e.g., not using personal care products containing microplastics), our eating habits, and farming practices may impact soil and land health, many other factors and stakeholders are also at play. Market prices of food and land, soil productivity, climate change, and pressure from urban sprawl are all factors that can push farmers to adopt monoculture or intensive farming practices to remain economically viable.

Not surprisingly, many farming communities across Europe suffer from land abandonment, and especially in areas of low agricultural productivity, young people are moving to the cities. Similarly, individual planners may aim to limit the expansion of cities by converting brownfield sites into new urban areas, but the authorities often lack the resources to do so. In many cases, the reclamation and rehabilitation of land in industrial areas may be more expensive than infrastructure expansion and building on agricultural land.

1.5.2 An Example: The Classification and Management of the Protected Area System in Italy

Protected natural areas are sites where it is necessary to guarantee, promote, conserve, and enhance the natural heritage of animal and plant species, geological singularities, scenic and panoramic values, and ecological balances.

In Italy, there are currently **843 Terrestrial Protected Areas** and Terrestrial Areas with a seaward part, which include:

- **25 National Parks**
- **148 State Nature Reserves**
- **134 Regional Nature Reserves**
- **365 Regional Nature Reserves**
- **171 other Protected Areas** of different classifications and denominations.

The protected land area amounts to over **3 million hectares**, or **10.5%** of the national land area, in line with the objectives defined in the **CBD** (Rio Convention, 1992). It consists largely of National Parks (46.4%) and Regional Nature Parks (40.8%).

National Parks

National Parks consist of land, river, lake, or marine areas that contain one or more intact or partially altered ecosystems due to human intervention. These areas include one or more physical, geological, geomorphological, or biological formations of international or national importance for their naturalistic, scientific, aesthetic, cultural, educational, and recreational values, necessitating State intervention for their conservation for present and future generations.

Regional and Interregional Nature Parks

Regional and interregional nature parks consist of land, river, and lake areas, as well as potentially stretches of sea facing the coast, all of which hold natural and environmental value. These parks form a homogeneous system within one or more bordering regions, characterized by the natural assets of the locations, the landscape and artistic values, and the cultural traditions of the local populations.

Nature Reserves

Nature Reserves consist of land, river, lake, or marine areas that contain one or more naturalistically significant species of flora and fauna or present one or more ecosystems important for biological diversity or the conservation of genetic resources. Nature reserves can be state or regional, depending on the relevance of the natural features they contain.

Wetlands of International Interest (Ramsar Convention)

Wetlands of international interest consist of marshy areas, swamps, peat bogs, or natural or artificial areas of water, whether permanent or transient, including areas of seawater whose depth, at low tide, does not exceed six meters. These areas may be considered of international importance under the Ramsar Convention on Wetlands of International Importance (1971).

Other Protected Natural Areas

Other protected natural areas include areas (such as oases of environmental associations, suburban parks, etc.) that do not fall into the previous classes. They are divided into publicly managed areas, established by regional laws or equivalent measures, and privately managed areas, established by formal public measures or by contractual acts such as concessions or equivalent.

1.5.3 The Management Instruments

The Park Regulations

The park regulations govern the activities permitted within the park territory, respecting the park's characteristics. In particular, they regulate:

- the types and methods of construction of works and artifacts.
- the conduct and circulation of the public by any means of transport.
- the performance of scientific and biosanitary research activities.
- limits on noise and light emissions.
- the performance of activities entrusted to youth employment, voluntary work, particularly in therapeutic communities, and alternative civil service.
- accessibility in the park area through routes and facilities suitable for the disabled, handicapped, and elderly.

The Park Plan

The **Park Authority** pursues the protection of natural and environmental values through the **Park Plan**, which regulates the following:

- the general organization of the territory.
- the constraints, public and private uses, and the relative implementation rules, with reference to the various areas or parts of the plan.
- the vehicular and pedestrian accessibility systems, particularly regarding paths, accesses, and facilities reserved for the disabled, handicapped, and elderly people.
- the systems of equipment and services for the management and social function of the park, including museums, visitor centers, information offices, camping areas, and agro-tourism activities.
- the guidelines and criteria for interventions on flora, fauna, and the natural environment in general.

The Plan is drawn up by the Park Authority within six months of its establishment and is adopted by the Region within the following four months, after consulting the local authorities.

Initiatives for Economic and Social Promotion

To promote initiatives for the economic and social development of the communities living within the park, the **Park Community** draws up a multiannual economic and social plan within a year of its establishment. The plan provides for:

- a. the granting of subsidies.
- b. the provision of equipment, purification and energy-saving plants, services, and facilities for tourism and nature conservation.
- c. the facilitation or promotion, also in cooperative form, of traditional crafts, agro-silvo-pastoral activities, cultural and social services, and restoration activities
- d. initiatives aimed at encouraging the development of tourism and local activities while respecting the park's conservation requirements.
- e. activities and interventions aimed at encouraging youth employment and voluntary work, as well as accessibility and enjoyment, particularly for people with disabilities.
- f. the organization, in agreement with the region or regions concerned, of special training courses, at the end of which the official and exclusive title of park guide is awarded.

The plan is valid for four years.

The Park's Forest Fire Prevention Plan

A further management tool for the National Park, envisaged by the framework law on forest fires (L. 353/2000), integrates the cognitive aspects highlighted in other tools with specialized information on the subject (all with relative mapping). The overall information and its processing on GIS are decisive in the planning and management of the protected territory to protect against forest fires. The plan provides:

- Regulatory elements, information on forest fire prevention agreements, contact persons, etc.
- Existing planning (silvo-agro-pastoral) and description of the territory (geo-morphological, vegetation/land use, etc.), including urban-forest interface areas.
- Analysis of past fires, predisposing factors, determining causes, classification, and mapping of fire risk areas, severity, and hazard.
- Objectives, priorities, identification of forest fire prevention interventions to be implemented, and their zoning.
- Procedures followed and liaison between the various institutions in the event of a fire.
- Monitoring and annual updates.

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PART II

GUIDELINES FOR THE DEVELOPMENT OF A NATIONAL DATABASE FOR THE SURVEILLANCE AND MONITORING OF SPECIES AND HABITATS IN BOSNIA AND HERZEGOVINA

2.1 FOREWORD

The path that Bosnia and Herzegovina is following for accession to the European Union cannot overlook the importance of addressing all aspects—both legislative and technical-operational—related to the protection of the natural environment. Within the framework of this project, ISPRA, in collaboration with the CISP as Leader Partner and other technical-scientific partners, has developed guidelines for managing these issues. This report focuses on the topic of naturalistic databases, which are essential for the surveillance and monitoring of species and habitats in the country.

Clearly, the guidelines are inspired by the regulatory and operational practices that have been consolidated in Europe regarding these topics, aiming to orient analyses and proposals towards implementation as soon as possible as a member state.

The framework begins with the consideration, already introduced in the previous chapter, that, according to the provisions of Article 11 of the Habitats Directive, Member States are required to ensure the surveillance of the conservation status of habitats (Annex 1: **Habitats_Directive_habitats.xls**) and species (Annex 2: **Habitats_Directive_species.xls**) of Community interest throughout their national territory¹.

To identify the areas to be designated as Sites of Community Importance (SCIs) or Special Protection Areas (SPAs), the distribution of the species and habitats mentioned in the annexes of Directive 92/43/EEC should be determined with a good level of detail.

The monitoring results must be transmitted to the European Commission in accordance with Article 17 of the Habitats Directive, which mandates a National Report on the status of implementation of the provisions of the Directive every six years. The data must be reported for each habitat and species at the biogeographical level using the format prepared by the European Commission. This format includes a general section with information on the implementation of the Directive and a section relating to the assessment of the conservation status of habitats and species (Annex 3: **Reporting Format Art_17_Natura 2000.doc**).

For the organization of the data in information systems, please refer to the document "The Natura 2000 Data Flow" (<https://www.eea.europa.eu/themes/biodiversity/document-library/natura-2000/the-natura-2000-data-flow/view>) and Annex 4: **Natura 2000 Dataflow Doc 2017.doc**.

Further detailed information can be found on the Reference Portal for Natura 2000: <https://cdr.eionet.europa.eu/help/natura2000>.

In the case of Bosnia and Herzegovina, endemic and range-restricted species and habitats may, with appropriate justification, be proposed for inclusion in the Annexes of Directive 92/43/EC.

¹ Data from: <https://cdr.eionet.europa.eu/help/natura2000>

2.2 MONITORING AND SURVEILLANCE OF HD AND IUCN SPECIES PRESENT IN THE COUNTRY. ANALYSIS OF THE EXISTING SITUATION AND REFERENCE FRAMEWORK

Surveys historically conducted on the territory by competent research groups and databases at the sub-national level must be consolidated into a national list. This list should first be based on the species indicated in the annexes of Directive 92/43/EC, along with indications of the survey locations.

The data of the surveyed species can be associated with threat categories at a global level (IUCN Global Red List, [IUCN Red List](#)), European level (European Red Lists: [European Red List](#)), or local level (Red Lists at the sub-national level²). Endemic, locally protected, and/or range-restricted species may be proposed for inclusion in the directive annexes or included in monitoring activities.

Georeferenced surveys of species can be found in the list of endemic taxa of South-Eastern Europe ([Endemic Taxa](#)), and for relevant databases of endemic species whose classical localities are found in the EEA area (vascular plants, mammals, amphibians, and beetles), see: [GBIF Dataset](#).

There are also reports on individual taxonomic groups³ also related to GIS-type structures⁴ such as those stored in the information systems of the Herpetological Society of Bosnia and Herzegovina ([Herpetological Society](#)).

In the Federation of Bosnia and Herzegovina, many species have been analyzed, and their data organized into red lists⁵. An Information System has already been established by the federal authorities, known as the 'Information System for Nature Conservation of the Federation of Bosnia and Herzegovina' ([Information System](#)). This system includes a list of species distributed in the FBiH, categorized by threat according to IUCN criteria ([Red List of FBiH](#)) and a Register of Protected Species of the FBiH ([Index of Protected Species of FBiH](#)). Additionally, there are specialized databases for various species groups⁶.

Similarly, a computerised checklist of botanical species⁷ exists for the Republic of Srpska, while the Biodiversity Database of the RS (<http://e-priroda.rs.ba/en/>) includes a list of reported species that have a category of threat according to IUCN criteria (<http://e-priroda.rs.ba/en/endangeredspecies/>) and a Register of Protected Species of the RS (<http://e-priroda.rs.ba/en/protectedspecies/>).

² Es. Red List of FBiH, <http://e-prirodafbih.ba/en/endangeredspecies/> e Red List of RS, <http://e-priroda.rs.ba/en/endangeredspecies/>

³Lubarda, B., Stupar, V., Milanovic, Dj., & Stevanovic, V. (2014). Chorological characterization and distribution of the Balkan endemic vascular flora in Bosnia and Herzegovina. *Botanica Serbica*, 38(1), 167-184; https://www.researchgate.net/publication/316830849_Crvena_lista_gmizavaca_Chordata_Vertebrata_Reptilia_Federacije_Bosne_i_Hercegovine;

⁴Koljanin, Dragan & Brujić, Jugoslav & Stupar, Vladimir & Milanović, Đordije. (2023). Notes on the distribution and conservation status of some rare plants of wet habitats in Bosnia and Herzegovina. 14. 15-29. 10.5281/zenodo.8027089.

⁵Crvena lista flore FBiH. <https://www.fmoit.gov.ba/upload/file/okolis/Crvena%20lista%20Flore%20FBiH.pdf>; <https://www.fmoit.gov.ba/upload/file/okolis/Crvena%20lista%20Flore%20FBiH.pdf>.

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⁶ Lelo, Suvad. (2015). Crvena lista listorožaca (Coleoptera: Scarabaeoidea) Federacije Bosne i Hercegovine. *Prilozi fauni Bosne i Hercegovine*. 11. 13-28.

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⁷Ček Lista Vaskularne Flore Republike Srpske. <http://florasrpske.rs.ba/checklist/>

To comply with the criteria set out in Directive 92/43/EC, it is a priority to associate field names or links between fields in the lists and databases that enable the characterization of species and their locations directly with those used in the National Reports (Annex 5 sheet: **National Checklist Fields.xls**, **SpeciesChecklistField**). This annex indicates the fundamental fields for the national checklist, highlighting species present in the Directive and identified for Bosnia and Herzegovina in the IUCN lists (sheet **HDvsIUCN species**) and in the surveys conducted by CISP, CeSbIN, and the University of Perugia in activities carried out in the Perućica Forest, Sutjeska National Park, Blidinje Nature Park, and Konjuh Protected Landscape.

Reference should also be made to the European Red Lists ([European Red List](#)) and to the data in the IUCN reports for Bosnia and Herzegovina (see, for example, Annex 6: **Species_IUCN_Bosnia_Herzegovina.xls**), in which species are identified by taxonomic group with possible reference to those included in the Directive⁸.

The already completed fields of these datasets can assist in investigating the risk categories, threats, and pressures on the species, justifying, based on the data collected at the local, regional, and national scales, their inclusion in protected areas under Directive 92/43/EC and Directive 2009/147/EC.

Based on the gaps identified during the screening phases at the national or sub-national level, particularly concerning conservation status and characterization of impacts, the necessary detailed monitoring can be developed appropriately.

2.2.1 Surveys of Species

The directive requires that surveillance activities be carried out, conservation measures be implemented, and their effectiveness evaluated. To this end, field surveys for species-specific trend measurement purposes must contain a set of point information (Annex 7: **Format for Taxa Sample.docx**).

The dataset of biogeographic regions ([EEA Biogeographic Regions](#)) contains the official delineations used in the Habitats Directive (92/43/EEC) and for the EMERALD network established under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention).

For Annex II species, there is also a third section on populations and conservation measures.

To overcome the problem of the inhomogeneity of cartographic data from the various countries, the European Commission has provided for the use of a single geographical reference system, based on a grid with 10x10 km cells, referring to the European LAEA5210 - ETRS89 projection system, created by the European Environment Agency (<https://www.eea.europa.eu/data-and-maps/data/eea-reference-grids-2/gis-files/europe-10-km-100-km/view>).

Starting from the distribution maps, range maps can be elaborated, represented as an envelope within which the areas where the presence of the species is found are located. The specific tool developed by the European Commission ([EEA Range Tool](#)) is used for this purpose. By using the distribution maps as input, it automatically generates the range map. The tool also provides the size of the area within each biogeographical region where the species is present, which is data required in the reporting format.

Another key concept is that of trend, which indicates a direct change in parameters over time (such as range area, population size, and habitat quality and area for the species). The EC guideline is to assess trends over two reporting cycles, i.e., 12 years.

For each taxon, the reporting system requires the compilation of a sheet for each biogeographical region in which it occurs, divided into two sections: national level and biogeographical level.

⁸ Data from <https://www.iucnredlist.org/search> and matched with the Checklists for Annex I habitat types and Annex II, IV and V species (https://cdr.eionet.europa.eu/help/habitats_art17/Reporting2025/Art%2017%20checklist_v1.1%20DRAFT.xlsx)

2.2.2 Species Reporting Phase

The Habitats Directive (92/43/EEC) mandates that the assessment of the conservation status of species of Community interest listed in its Annexes II, IV, and V be carried out with reference to three fundamental parameters: distribution range (range), population size, and habitat of the species (Annex 8: **Species Reporting.docx**).

For each of these parameters, it is necessary to define the current status, past trends over short and long periods (12 and 24 years, respectively), and future prospects. The assessments, conducted individually for each parameter and for each habitat or species, converge into a matrix that allows for the classification of the overall assessment.

Clearly, in the absence of information, recourse can be made to expert judgment, which should be motivated based on references to data sources (cartographic, bibliographic, personal observations).

2.3 MONITORING AND SURVEILLANCE OF HD HABITATS OR HABITATS OF POSSIBLE UNION INTEREST IN THE NATIONAL TERRITORY

Regarding Natura 2000 habitats, in the absence of national-level mapping, it appears that algorithms for identifying structural characteristics, status, and pressures have not been applied, except at the local scale.

The list of European Union habitats according to Annex 1 of the Habitats Directive and its subsequent updates can be found in Annex 9: **Natura 2000 Habitat List.xlsx**, which includes examples of those identified in Sutjeska, Blidinje, and Konjuh, along with the pressures identified by CeSbiN and UNIPG.

This list does not encompass all habitats worthy of protection in Bosnia and Herzegovina that are also of European significance. Several habitats deserving protection were reported during research conducted in these and other natural areas of Bosnia and Herzegovina.

In general, for integrations, primary reference can be made to the European Red List of Habitats (<https://sdi.eea.europa.eu/data/65576285-06b1-43b4-bd31-8085e36750dc>). If possible, it would be appropriate to refer the identified habitats to the EUNIS classification (<https://eunis.eea.europa.eu/habitats-code-browser-revised.jsp>), whose distribution in terms of rarity and extent in the territory may justify their inclusion in the Natura 2000 habitat list.

2.3.1 Survey for Habitats

A format (Annex 11: **Reporting Format Habitat.docx**) has been prepared for the reporting phase, based on the specific data collection requirements for reporting under the Directive. This includes the verification of the effectiveness of the conservation measures implemented in the Special Areas of Conservation (SACs).

For methodologies for analyzing the conservation status of habitats, please refer to the CeSbiN fact sheets on habitat parameters, which are included in the studies on the biodiversity of the Perućica Forest, Sutjeska National Park, and Blidinje Nature Park. These studies encompass all data requested by the format.

The cartography must be updated every six years. Any animal species relevant for assessing the conservation status of the habitat can be subjected to identification and census. The biological quality of the soils can be assessed using the QBS-ar index⁹.

⁹ see.: Microarthropod communities as a tool to assess soil quality and biodiversity: a new approach in Italy <https://www.sciencedirect.com/science/article/pii/S0167880904000970>; New indices for the evaluation of biological soil

2.3.2 Reporting Phase for Habitat

A format (Annex 11: **Reporting Format Habitat.docx**) has been prepared for the reporting phase, based on the specific data collection needs for reporting under the Directive, including the verification of the effectiveness of conservation measures implemented in the SACs.

For methodologies for analyzing the conservation status of habitats, please refer to the CeSbIN sheets relating to the parameters associated with habitats, contained in the studies on the biodiversity of the Perućica Forest, Sutjeska National Park, and Blidinje Nature Park.

The national cartography, in addition to direct surveys, can be based on semi-automatic photointerpretation in a GIS environment using thematic layers such as DTM, slopes, exposure, altitude, geomorphology, geology, hydrology, pedology, permeability, pH, texture, solar radiation, bioclimatic belts, thermotype, ombrotype, etc. Following the application of the model and its results, a sampling scheme is developed with targeted field inspections for the creation and production of geometries linked to topological rules. The final map is then validated, measuring the representativeness of the obtained cartography (polygons) at the declared reference scale.

Delimitation by photointerpretation may encounter limitations in transitional habitat situations. Therefore, integration with floristic-vegetation data collected directly in the field, as well as with geo-lithological or other datasets that can provide information on the potential distribution of the habitat, is necessary.

In cases of mixed deciduous and coniferous forests or grasslands distributed along gradients, the distinction by photointerpretation alone may not be satisfactory. In this case, it is necessary to supplement with floristic data.

Subsequently, the final cartographic restitution can be issued with an indication of the metadata (photointerpretation, satellite/orthophoto scenes and thematic layers) used for possible modelling.

For the same habitats, data relating to indicators of structure, functionality, and prospects of conservation can be deduced from the phytosociological survey or obtained directly from the survey itself.

Anthropic activities must be estimated by the operators based on the presence and intensity of the phenomena. In this regard, an analysis of the types of silvo cultural activities that have affected and are currently affecting the habitat will be conducted, focusing on the periodicity, type, and extent of the interventions, as well as analyzing the effects of these activities on the specific composition of the undergrowth and the dominant layer.

In grasslands and meadows, sample measurements of the total organic nitrogen concentration in the soil organic horizon, along with monitoring of floristic and species richness, can provide insights into possible over-fertilization, particularly in diachronic studies. Under optimal conditions, soil moisture can also be measured at a depth of 15-20 cm at different times of the year.

The effects and extent of grazing and/or mowing must be assessed by comparing the frequency of these activities with the cover values of species indicative of under-utilization and neglect or overuse, such as load grazing and mowing intensity.

When monitoring the sample areas, special attention should be paid to any invasive alien species. The list of pressures, threats, and conservation measures is based on the central EIONET register ([EIONET Register](#)). Information on their importance, location, and assessment should be provided.

fertility: the QBS ar. <https://www.microbiologiaitalia.it/test-microbiologici/qbs-ar/>; Qualità biologica dei suoli Emiliano-Romagnoli. <https://ambiente.regione.emilia-romagna.it/it/geologia/suoli/proprietà-e-qualità-dei-suoli/qualità-biologica-dei-suoli>

2.4 MONITORING AND DEFINITION OF SPAS UNDER THE BIRDS DIRECTIVE

Central to the implementation and success of Directive 2009/147/EC is a good level of information on the status and trends of bird species, as required by Article 12 of that Directive. Data and information are needed in a structured and comparable format so that the Commission can compile and analyze the data. The legal basis for providing the data in a structured format is Article 12.1, second paragraph.

The Article 12 reporting report consists of two main parts:

- Part A - General reporting format, providing an overview of information on implementation and general measures taken under Directive 2009/147/EC.
- Part B - Reporting format on the status and trends of bird species, including information on pressures, conservation measures, and Special Protection Zone coverage.

The document 'Explanatory Notes in Support of the Reporting Format Referred to in Article 12 of Directive 2009/147/EC (Birds Directive)' ([Explanatory Notes](#)) provides information and guidance on how to complete the different data fields of the Article 12 reporting format (Part A and Part B). It mainly consists of descriptions of the information to be reported in each field and the basic requirements that the reported information must fulfil.

More detailed descriptions of the concepts and methods for the reported information are provided in the guidelines 'GUIDELINES ON CONCEPTS AND DEFINITIONS. Article 12 of Directive 2009/147/EC Reporting Period 2019-2024' ([Guidelines](#)).

Additional documentation that should be used for the correct compilation of the report format is made available online through the "Article 12 Reference Portal" ([Reference Portal](#)).

Similarly to the Habitats Directive, every six years, Member States must report on the population status of bird species protected by the Birds Directive. All the information in the National Report is compiled in a database (in Microsoft Access format), with a pre-set structure and graphic interface, by the EEA and made available to Member States through a download from the Reference Portal for Article 12 of the EIONET network website ([EIONET Network](#)).

In the same portal, you can find other tools necessary for data collection, map processing, identification of species codes, and related pressures or threats, as well as the guidelines with which all reporting complies.

The Birds Directive does not distinguish between priority and non-priority species. However, the LIFE Regulation provides for the possibility to adopt a list of bird species considered priorities for funding under the LIFE programme. LIFE projects that focus on practical conservation measures for any listed species or subspecies can benefit from a higher EU co-financing rate, up to 75%.

The current version of the list ([Current List](#)), approved by the Ornithological Committee on 28 April 2021, takes into account the latest available data on the status and trends of bird populations in the EU (as reported by Member States to the Commission in 2019).

The report form must be completed according to the instructions in the explanatory notes. Further information can be found online in the aforementioned "Article 12 Reference Portal."

The format of each tab consists of eight sections, relating to information on:

1. the specific species or population being treated;
2. the size of the population;
3. the population trend;
4. distribution and range;
5. the area trend;
6. progress in the Adoption of Management Plans-The progress made in the adoption of plans for the management of species includes Species Action Plans (SAPs), Management Plans (MPs), or Brief Management Statements (BMSs).
7. main pressures and threats affecting the species.
8. population of SPAs and the conservation measures adopted in these areas.

To identify the status of bird species, it is appropriate to refer to the EU Checklist, which indicates the species reported for Bosnia and Herzegovina (Annex 12: **Bird Species Checklist.xlsx**). Additionally, the situation for inclusion in the list of species according to the **IUCN Global List** (Annex 6: **Species_IUCN_Bosnia_Herzegovina**, Aves sheet) and according to the European Red List should be considered (see: European Red List of Birds 2021 [European Red List](#)).

2.5 DESIGNATION OF SCI/SAC/SPA AREAS

The National Ministry responsible for the Environment designates its own SPAs and proposes the Sites of Community Importance (SCIs) to the EU Commission based on the indications provided by the subnational local authorities, which issue their administrative acts identifying the candidate areas. For each candidate area, the present habitats and species of Community interest are reported through the forms.

Based on the national lists proposed by the member states, the European Commission adopts a Decision containing the list of SCIs for each biogeographical region. Only upon the issuance of the Commission Decisions are the SCIs considered designated. The Ministry responsible for environmental protection then publishes the lists of national SCIs for each biogeographical region through its decrees.

Pursuant to the Birds Directive, it is the Member States that directly designate the SPAs, selecting the sites most suitable for the conservation of wild avifauna, which automatically become part of the Natura 2000 network without further ratification by the European Union.

SPAs are formally designated at the time of data transmission to the European Commission; subsequently, the competent Ministry publishes the list of SPAs with a decree.

Both the Federation of Bosnia and Herzegovina ([Zaštićena Područja FBiH](#)) and the Republika Srpska ([Republika Srpska Protected Sites](#)) have already identified various areas that exhibit noticeable geological, biological, ecosystemic, or landscape diversity, which are important as habitats for bird species. Most of these areas include habitats foreseen by the Habitats and Birds Directives, but there is a need for greater knowledge of their distribution at a national level, as well as detailed comparative cartographic production. Furthermore, integration with habitats of local importance or those unrelated, for geographical reasons, to the current lists of Natura 2000 habitats produced by the EU is necessary.

LIST OF ACRONYMS

BiH	Bosnia and Herzegovina
RS	Srpska Republic
ISPRA	Higher Institute for Environmental Protection and Research
CISP	International Committee for the Development of Peoples
CeSbIN	BioNaturalistic Studies Center (Genoa)
UNIPG	University of Perugia (Dept. of Chemistry, Biology and Biotechnology)
CBD	Convention on Biological Diversity
EU	European Union
SCA	Area of Special Conservation
SCI	Site of Community Importance
EC	European Commission
SPA	Area of Special Protection
EEA	European Environmental Agency
CJEU	Court of Justice of the European Union
NGO	Non Governmental Organisation
HD	Habitat Directive
IUCN	International Union for Nature Conservation
SEE	South East Europe
GIS	Geographic Information System
LAEA	Lambert Azimuthal Equal-Area (projection)
ETRS	European Terrestrial Reference System
QBS-ar	Soil Biological Quality
SAP	Species Action Plan
MP	Management Plan
BMS	Brief Management Statement

LIST OF ANNEXES

Annex 1 Habitat Directive habitats

Annex 2 Habitat Directive species

Annex 3 Reporting format referred to in article 17 of Directive 92/43/EEC (Habitats Directive)

Annex 4 Natura 2000 dataflow

Annex 5 National Checklist Fields

Annex 6 Species IUCN Bosnia Herzegovina

Annex 7 Format for taxa sample

Annex 8 Species reporting

Annex 9 Natura 2000 Habitat List

Annex 10 Format for habitat sample

Annex 11 Reporting Format on Habitat

Annex 12 Bird species Checklist

ANNEX 1

HABITAT DIRECTIVE HABITATS

<https://drive.google.com/drive/folders/1SGldLTn5LpjHoH62jvySDDwSvGe2Lk31?usp=sharing>

ANNEX 2

HABITAT DIRECTIVE SPECIES

<https://drive.google.com/drive/folders/1SGldLTn5LpjHoH62jvySDDwSvGe2Lk31?usp=sharing>

ANNEX 3

REPORTING FORMAT REFERRED TO IN ARTICLE 17 OF DIRECTIVE 92/43/EEC (HABITATS DIRECTIVE)

The Reporting format referred to in Article 17 has five main parts:

- **Part A – General Report:** This section provides an overview of the implementation and general measures taken under **Directive 92/43/EEC**.
- **Part B – Report Format on the ‘Main Results of the Surveillance under Article 11’ for Annex II, IV, and V Species of Directive 92/43/EEC (Species Reports):** This part offers background information for the assessment of the conservation status of a species.
- **Part C – Assessing Conservation Status of a Species (Species Evaluation Matrix):** This evaluation matrix is used to assess the conservation status of a species using the information in the Part B reports. The assessment conclusions for each species are also reported in the respective Part B report.
- **Part D – Report Format on the ‘Main Results of the Surveillance under Article 11’ for Annex I Habitat Types of Directive 92/43/EEC (Habitat Type Reports):** This part provides background information for the assessment of the conservation status of a habitat type.
- **Part E – Assessing Conservation Status of a Habitat Type (Habitat Type Evaluation Matrix):** This evaluation matrix is used to assess the conservation status of a habitat type using the information in the Part D reports. The assessment conclusions for each habitat type are also reported in the respective Part D report.

Each of these sections contains several data fields that must be filled in according to the instructions provided in the **explanatory notes**. The explanatory notes offer the necessary guidance for completing the fields and reference other essential materials, such as reference documents and technical guidance, which are available in the online **‘Article 17 reference portal’**.

Main sections of the Article 17 report format

<p>Part A - General report format</p> <ol style="list-style-type: none"> 1. Main achievements under Directive 92/43/EEC 2. General information on the implementation of Directive 92/43/EEC – links to information sources of the Member State and information on coherence of the Natura 2000 network 3. Reintroduction of Annex IV species (Art. 22.a of Directive 92/43/EEC) 	<p>This section needs to be filled once covering the Member State as a whole.</p>
<p>Part B - Report format on the 'main results of the surveillance under Article 11' for Annex II, IV and V species of Directive 92/43/EEC</p> <p>NATIONAL LEVEL</p> <ol style="list-style-type: none"> 1. General information 2. Maps 3. Information related to Annex V species (Article 14 of Directive 92/43/EEC) <p>BIOGEOGRAPHICAL / MARINE LEVEL</p> <ol style="list-style-type: none"> 4. Biogeographical and marine regions 5. Range 6. Population 7. Habitat for the species 8. Main pressures and threats 9. Conservation measures 10. Future prospects 11. Conclusions 12. Natura 2000 (proposed Sites of Community Importance (pSCIs), Sites of Community Importance (SCIs) and Special Areas of Conservation (SACs) coverage for Annex II species of Directive 92/43/EEC 13. Complementary information 	<p>This section must be completed for all relevant species of a Member State, following the guidance provided in the explanatory notes and the relevant checklists available in the online 'Article 17 reference portal.'</p>
<p>Part D - Report format on the 'main results of the surveillance under Article 11' for Annex I habitat types of Directive 92/43/EEC</p> <p>NATIONAL LEVEL</p> <ol style="list-style-type: none"> 1. General information 2. Maps <p>BIOGEOGRAPHICAL / MARINE LEVEL</p> <ol style="list-style-type: none"> 3. Biogeographical and marine regions 4. Range 5. Area covered by habitat 6. Structure and functions 7. Main pressures and threats 8. Conservation measures 9. Future prospects 10. Conclusions 11. Natura 2000 (proposed Sites of Community Importance (pSCIs), Sites of Community Importance (SCIs) and Special Areas of Conservation (SACs) coverage for Annex I habitat types of Directive 92/43/EEC 11. Complementary information 	<p>This section must be completed for all Annex I habitat types of a Member State, in accordance with the guidance provided in the explanatory notes and the relevant checklists available in the online 'Article 17 reference portal.'</p>

PART A - GENERAL REPORT FORMAT

0 MEMBER STATE	Use two-digit code according to list in the Reference portal						
1 MAIN ACHIEVEMENTS UNDER DIRECTIVE 92/43/EEC							
<p>Free Text</p> <ul style="list-style-type: none"> Main Achievements: Briefly describe the main achievements under Directive 92/43/EEC during the reporting period, with a special emphasis on the Sites of Community Importance (SCIs) and Special Areas of Conservation (SACs) within the Natura 2000 network. Success Story Example: If available, briefly describe at least one success story. This can pertain to any habitat type or species that demonstrates a genuine improvement in conservation status and/or an overall positive trend in conservation status during the reporting period. The improvements described should be driven by conservation measures and should focus on the current reporting period, although they may include measures that began earlier. <p>If a Member State wishes to include additional documentation beyond what is requested in this format, it should mention such documentation as Annexes, along with their filenames, at the end of this free text section. The relevant files should be uploaded to the EEA's Reporting Mechanism along with the rest of the report. If possible, please provide a translation into English.</p> <table border="1" data-bbox="151 869 1439 1193"> <tr> <td data-bbox="151 869 890 925">1.1 Text in national language</td> <td data-bbox="890 869 1439 925"><i>Maximum 2-3 pages</i></td> </tr> <tr> <td data-bbox="151 925 890 981">1.2 Translation into English <i>Optional</i></td> <td data-bbox="890 925 1439 981"></td> </tr> <tr> <td data-bbox="151 981 890 1193">1.3 Name, code and season of feature(s) in success stories</td> <td data-bbox="890 981 1439 1193"> <ul style="list-style-type: none"> a) <i>Habitat type</i> b) <i>Biogeographical/marine region of habitat type</i> c) <i>Species</i> d) <i>Biogeographical/marine region of species</i> </td> </tr> </table>		1.1 Text in national language	<i>Maximum 2-3 pages</i>	1.2 Translation into English <i>Optional</i>		1.3 Name, code and season of feature(s) in success stories	<ul style="list-style-type: none"> a) <i>Habitat type</i> b) <i>Biogeographical/marine region of habitat type</i> c) <i>Species</i> d) <i>Biogeographical/marine region of species</i>
1.1 Text in national language	<i>Maximum 2-3 pages</i>						
1.2 Translation into English <i>Optional</i>							
1.3 Name, code and season of feature(s) in success stories	<ul style="list-style-type: none"> a) <i>Habitat type</i> b) <i>Biogeographical/marine region of habitat type</i> c) <i>Species</i> d) <i>Biogeographical/marine region of species</i> 						
2 GENERAL INFORMATION ON THE IMPLEMENTATION OF DIRECTIVE 92/43/EEC– LINKS TO INFORMATION SOURCES OF THE MEMBER STATE AND INFORMATION ON COHERENCE OF THE NATURA 2000 NETWORK							
<i>Provide a link to Internet address(es) for national information sources where the requested information can be found or explain how to access this information.</i>							
2.1 General information on Directive 92/43/EEC	<i>URL/text</i>						
2.2 Information on the network of proposed Sites of Community Importance (pSCIs), Sites of Community Importance (SCIs) and Special Areas of Conservation (SACs)	<i>URL/text</i>						
2.3 Monitoring schemes (Art. 11 of Directive 92/43/EEC)	<i>URL/text</i>						
2.4 Protection of species (Art. 12–16 of Directive 92/43/EEC)	<i>URL/text</i>						
2.5 Impact of measures referred to in the Art. 6.1 on the conservation status of Annex I habitats and Annex II species (Art. 17.1 of Directive 92/43/EEC)	<i>URL/text</i>						
2.6 Transposition of the Directive (legal texts)	<i>URL/text</i>						
<p>2.7 Measures taken to ensure the coherence of the Natura 2000 network (Art. 10 of Directive 92/43/EEC) (Free text)</p> <p><i>General description of the main measures taken (overview at national level, activities taken including legal measures, systematic studies, links to online resources - do not give detailed site by site descriptions).</i></p>							

3 REINTRODUCTION OF ANNEX IV SPECIES (ART. 22.a of DIRECTIVE 92/43/EEC)	
<i>Repeat fields 3.1 to 3.8 for each species as needed.</i>	
3.1 Species code	<i>Select code from species checklist in the Reference portal</i>
3.2 Species scientific name	<i>Select species name from species checklist in the Reference portal</i>
3.3 Alternative species scientific name <i>Optional</i>	
3.4 Common name <i>Optional</i>	<i>In national language</i>
3.5 Reintroduction period	
3.6 Reintroduction location and number of individuals reintroduced	<i>a) Location b) Number of individuals</i>
3.7 Is the reintroduction successful?¹⁰	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Too early to say
3.8 Additional information on the reintroduction <i>Optional</i>	<i>Free text</i>

¹⁰Indicating if natural reproduction has already taken place and/or population is growing

PART B – REPORT FORMAT ON THE 'MAIN RESULTS OF THE SURVEILLANCE UNDER ARTICLE 11' FOR ANNEX II, IV AND V SPECIES OF DIRECTIVE 92/43/EEC

NATIONAL LEVEL

1 GENERAL INFORMATION	
1.1 Member State	<i>Use two-digit code according to list in the Reference portal</i>
1.2 Species code	<i>Select code from species checklist in the Reference portal</i>
1.3 Species scientific name	<i>Select species name from species checklist in the Reference portal</i>
1.4 Alternative species scientific name <i>Optional</i>	<i>Scientific name used at the national level if different to 1.3</i>
1.5 Common name <i>Optional</i>	<i>In national language</i>
2 MAPS	
<i>Distribution of the species within the Member State concerned.</i>	
2.1 Sensitive species	<i>The spatial information provided relates to a species (or subspecies) to be treated as 'sensitive'</i> <input type="checkbox"/> YES <input type="checkbox"/> NO
2.2 Year or period	<i>Year or period when distribution was last updated</i>
2.3 Distribution map	<i>Submit a map along with the relevant metadata, adhering to the technical specifications outlined in the Explanatory Notes. The standard for species distribution is based on 10x10 km ETRS 89 grid cells using the LAEA (EPSG:3035) projection.</i>
2.4 Distribution map Method used	<i>Select one of the following methods:</i> a) <i>Complete survey or a statistically robust estimate</i> b) <i>Based mainly on extrapolation from a limited amount of data</i> c) <i>Based mainly on expert opinion with very limited data</i> d) <i>Insufficient or no data available</i>
2.5 Additional maps <i>Optional</i>	<i>MS can submit an additional map, deviating from standard submission map under 2.3 and/or a range map</i>
2.6 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under fields 2.1–2.5</i> <i>Free text</i>

3 INFORMATION RELATED TO ANNEX V SPECIES (ART. 14 OF DIRECTIVE 92/43/EEC)							
3.1 Is the species taken in the wild/exploited?	<p><i>Is the species taken in the wild or exploited? If the answer is NO, then do not fill in the remaining fields of this section. If the reply is YES and the Conservation Status is Favourable, tick in 3.2 if measures are needed. Then continue to field 3.3 for all species with Unfavourable conservation status and for species with Favourable status for which measures are needed. Complete fields 3.4 and 3.5 for all Annex V species, regardless of their conservation status.</i></p>				<input type="checkbox"/> YES <input type="checkbox"/> NO		
3.2 Are measures needed for the species (only for species in favourable conservation status)?	<p><i>If the species is in FV status are measures needed under Art. 14?</i></p>				<input type="checkbox"/> YES <input type="checkbox"/> NO		
3.3 Which of the measures in Art. 14 have been taken?	<p><i>Mark the relevant fields for all species with Unfavourable Conservation Status in one or more biogeographical or marine regions where the species occurs, as well as for species with Favourable Status for which measures are needed.</i></p>						
	a) regulations regarding access to property				<input type="checkbox"/> YES <input type="checkbox"/> NO		
	b) temporary or local prohibition of the taking of specimens in the wild and exploitation				<input type="checkbox"/> YES <input type="checkbox"/> NO		
	c) regulation of the periods and/or methods of taking specimens				<input type="checkbox"/> YES <input type="checkbox"/> NO		
	d) application of hunting and fishing rules which take account of the conservation of such populations				<input type="checkbox"/> YES <input type="checkbox"/> NO		
	e) establishment of a system of licences for taking specimens or of quotas				<input type="checkbox"/> YES <input type="checkbox"/> NO		
	f) regulation of the purchase, sale, offering for sale, keeping for sale or transport for sale of specimens				<input type="checkbox"/> YES <input type="checkbox"/> NO		
	g) breeding in captivity of animal species as well as artificial propagation of plant species				<input type="checkbox"/> YES <input type="checkbox"/> NO		
	h) other measures, if yes, describe				<input type="checkbox"/> YES <input type="checkbox"/> NO		
<p><i>If 'yes, other measures' have been taken, describe those measures</i> Free text</p>							
3.4 Hunting bag or quantity taken in the wild regardless of conservation status - for Mammals and Acipenseridae (Fish)	a) Unit	Use reporting unit as in field 6.2 a)					
	b) Statistics/ quantity taken	Provide statistics/quantity taken per hunting season or per year (where season is not used) over the reporting period					
		Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
Min. (raw, i.e. not rounded)							

	Max. (raw, i.e. not rounded)						
	Unknown						
3.5 Hunting bag or quantity taken in the wild Method used	<p>Select one of the following methods:</p> <p>a) Complete survey or a statistically robust estimate</p> <p>b) Based mainly on extrapolation from a limited amount of data</p> <p>c) Based mainly on expert opinion with very limited data</p> <p>d) Insufficient or no data available</p>						
3.6 Additional information <i>Optional</i>	<p>Other relevant information, complementary to the data requested under fields 3.1– 3.5</p> <p>Free text</p>						

BIOGEOGRAPHICAL LEVEL

Complete for each biogeographical region or marine region concerned.

4 BIOGEOGRAPHICAL AND MARINE REGIONS

4.1 Biogeographical or marine region where the species occurs	<p>Choose one of the following:</p> <p>Alpine, Atlantic, Black Sea, Boreal, Continental, Mediterranean, Macaronesian, Pannonian, Steppic, Marine Atlantic, Marine Mediterranean, Marine Black Sea, Marine Macaronesian and Marine Baltic Sea</p>
4.2 First time reporting	<p>Please indicate if this is the first reporting round for this species in this biogeographical/marine region (excluding situations involving a change to species name or code between reporting periods)</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>
4.3 Additional information	<p>Please indicate the nature of the first-time reporting. Any other additional information is optional.</p>
4.4 Sources of information	<p>For data reported in the sections below provide relevant available bibliographic references and/or link to Internet site(s)</p>

5 RANGE

Range within the biogeographical/marine region concerned.

5.1 Surface area	<p>Total surface area of the range within biogeographical/marine region concerned in km²</p>
5.2 Change and reason for change in surface area of range	<p>Is there a change between reporting periods? (If yes, more than 1 option b) to f) can be chosen)</p> <p>a) no, there is no change</p> <p>b) yes, due to genuine change</p> <p>c) yes, due to improved knowledge/more accurate data</p> <p>d) yes, due to the use of different method</p> <p>e) yes, but nature of change is unknown</p> <p>f) yes, due to other reasons</p>

		<p><i>The change is mainly due to (select one of the reasons below):</i></p> <p>a) <i>genuine change</i> b) <i>improved knowledge or more accurate data</i> c) <i>the use of a different method</i> d) <i>unknown</i> e) <i>other reasons</i></p>	
5.3 Short-term trend Period		<p><i>2013 - 2024 (rolling 12-year time window) or period as close as possible to that. The short-term trend should be used for the assessment of range</i></p>	
5.4 Short-term trend Direction		<p><i>Select one of the following:</i></p> <p>a) <i>stable</i> b) <i>increasing</i> c) <i>decreasing</i> d) <i>uncertain</i> e) <i>unknown</i></p>	
5.5 Short-term trend Magnitude	<i>Optional</i>	a) <i>Estimated Minimum</i>	<i>Percentage change over the period indicated in the field 5.3. If a precise value is known, please provide the same value under both minimum and maximum</i>
		b) <i>Estimated Maximum</i>	<i>Percentage change over the period indicated in the field 5.3. If a precise value is known, please provide the same value under both minimum and maximum</i>
		c) <i>Pre-defined range</i>	<p><i>Where a precise value is not known (5.5 a & b) provide a range. The ranges are provided with a positive or negative sign.</i></p> <p><input type="checkbox"/> <i>0 – 12%</i> <input type="checkbox"/> <i>13-25%</i> <input type="checkbox"/> <i>26 – 50%</i> <input type="checkbox"/> <i>51 – 100%</i> <input type="checkbox"/> <i>>100%</i></p>
		d) <i>Unknown</i>	<i>Indicate if the trend magnitude is unknown</i>
5.6. Short-term trend Magnitude Type of estimate	<i>Optional</i>	<p><i>Best estimate / multi-year mean / 95% confidence interval / minimum/pre-defined range</i></p>	
5.7 Short-term trend Method used		<p><i>Select one of the following methods:</i></p> <p>a) <i>Complete survey or a statistically robust estimate</i> b) <i>Based mainly on extrapolation from a limited amount of data</i> c) <i>Based mainly on expert opinion with very limited data</i> d) <i>Insufficient or no data available</i></p>	
5.8 Long-term trend Period	<i>Optional</i>	<p><i>2000 - 2024 (rolling 24-year time window) or period as close as possible to that.</i></p>	
5.9 Long-term trend Direction	<i>Optional</i>	<p><i>Select one of the following:</i></p> <p>a) <i>stable</i> b) <i>increasing</i> c) <i>decreasing</i> d) <i>uncertain</i> e) <i>unknown</i></p>	
5.10 Long-term trend Magnitude	<i>Optional</i>	a) Minimum	<i>Percentage change over the period indicated in the field 5.8. If a precise value is known provide the same value under both minimum and maximum</i>

	b) Maximum	Percentage change over the period indicated in the field 5.8. If a precise value is known provide the same value under both minimum and maximum						
5.11 Long-term trend Method used <i>Optional</i>	<p>Select one of the following methods:</p> <p>a) Complete survey or a statistically robust estimate</p> <p>b) Based mainly on extrapolation from a limited amount of data</p> <p>c) Based mainly on expert opinion with very limited data</p> <p>d) Insufficient or no data available</p>							
5.12 Favourable reference range	<p>a) In km² or</p> <p>b) if a precise favourable reference range is unknown indicate if the range is:</p> <p><input type="checkbox"/> approximately equal to the favourable reference range (less than 2% smaller)</p> <p><input type="checkbox"/> between 2% and 10% smaller than the FRR</p> <p><input type="checkbox"/> between 11% and 50% smaller than the FRR</p> <p><input type="checkbox"/> between 51% and 100% smaller than the FRR</p> <p>c) Indicate if favourable reference range is unknown</p> <p>d) Indicate method used to set reference value (multiple methods can be chosen)</p> <table border="1"> <tr> <td><input type="checkbox"/> Model-based approach</td> <td>Indicate the quality of information available: High/Moderate/Low</td> </tr> <tr> <td><input type="checkbox"/> Reference-based approach</td> <td>Indicate the quality of information available: High/Moderate/Low</td> </tr> <tr> <td><input type="checkbox"/> Expert opinion</td> <td>Expert opinion</td> </tr> </table> <p><input type="checkbox"/> Other (elaborate in Additional information 5.14)</p>		<input type="checkbox"/> Model-based approach	Indicate the quality of information available: High/Moderate/Low	<input type="checkbox"/> Reference-based approach	Indicate the quality of information available: High/Moderate/Low	<input type="checkbox"/> Expert opinion	Expert opinion
<input type="checkbox"/> Model-based approach	Indicate the quality of information available: High/Moderate/Low							
<input type="checkbox"/> Reference-based approach	Indicate the quality of information available: High/Moderate/Low							
<input type="checkbox"/> Expert opinion	Expert opinion							
5.13 Range when Directive came into force <i>Optional</i>	Indicate the surface area (km ²) at the date of entry of the Directive into force (free text).							
5.14 Additional information <i>Optional</i>	Other relevant information, complementary to the data requested under fields 5.1–5.13 Free text							

6 POPULATION

Population within the biogeographical/marine region concerned.

6.1 Year or period	Year or period when population size was last determined	
6.2 Population size (in reporting unit)	a) Unit	Use unit according to check list in the Reference portal
	b) Minimum	Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value(d)
	c) Maximum	Number (raw, i.e. not rounded) Provide either interval (b and c) and/or best single value (d)
	d) Best single value	Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value (d)

	e) Class	<p>Population class (1 to 14, provide where reporting individuals and where the number is not precisely known)</p> <table> <thead> <tr> <th>Class</th> <th>Population size</th> </tr> </thead> <tbody> <tr><td>1</td><td>0-50</td></tr> <tr><td>2</td><td>50-100</td></tr> <tr><td>3</td><td>100-500</td></tr> <tr><td>4</td><td>500-1000</td></tr> <tr><td>5</td><td>1000-5000</td></tr> <tr><td>6</td><td>5000-10 000</td></tr> <tr><td>7</td><td>10 000-50 000</td></tr> <tr><td>8</td><td>50 000-100 000</td></tr> <tr><td>9</td><td>100 000-500 000</td></tr> <tr><td>10</td><td>500 000-1 000 000</td></tr> <tr><td>11</td><td>1 000 000-5 000 000</td></tr> <tr><td>12</td><td>5 000 000-10 000 000</td></tr> <tr><td>13</td><td>10 000 000-50 000 000</td></tr> <tr><td>14</td><td>50 000 000-100 000 000</td></tr> </tbody> </table>	Class	Population size	1	0-50	2	50-100	3	100-500	4	500-1000	5	1000-5000	6	5000-10 000	7	10 000-50 000	8	50 000-100 000	9	100 000-500 000	10	500 000-1 000 000	11	1 000 000-5 000 000	12	5 000 000-10 000 000	13	10 000 000-50 000 000	14	50 000 000-100 000 000
Class	Population size																															
1	0-50																															
2	50-100																															
3	100-500																															
4	500-1000																															
5	1000-5000																															
6	5000-10 000																															
7	10 000-50 000																															
8	50 000-100 000																															
9	100 000-500 000																															
10	500 000-1 000 000																															
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13	10 000 000-50 000 000																															
14	50 000 000-100 000 000																															
6.3 Type of estimate	<i>Best estimate / multi-year mean / 95% confidence interval / minimum</i>																															
6.4 Quality of extrapolation to reporting unit <i>Optional</i>	<i>High / Moderate / Low</i>																															
6.5 Additional population size <i>(using population unit other than reporting unit)</i> <i>Optional</i>	a) Unit	<i>Use unit according to list in the Reference portal</i>																														
	b) Minimum	<i>Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value (d)</i>																														
	c) Maximum	<i>Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value (d)</i>																														
	d) Best single value	<i>Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value (d)</i>																														
6.6 Type of estimate <i>Optional</i>	<i>Best estimate / multi-year mean / 95% confidence interval / minimum</i>																															
6.7 Population size Method used	<p>Select one of the following methods:</p> <p>a) Complete survey or a statistically robust estimate</p> <p>b) Based mainly on extrapolation from a limited amount of data</p> <p>c) Based mainly on expert opinion with very limited data</p> <p>d) Insufficient or no data available</p>																															
6.8 Change and reason for change in population size	<p>Is there a change between reporting periods? <i>(If yes, more than 1 option b) to f) can be chosen)</i></p> <p>a) no, there is no change</p> <p>b) yes, due to genuine change</p> <p>c) yes, due to improved knowledge/more accurate data</p> <p>d) yes, due to the use of different method</p> <p>e) yes, but nature of change is unknown</p> <p>f) yes, due to other reasons</p>																															

	<p>The change is mainly due to (select one of the reasons below):</p> <p>a) genuine change</p> <p>b) improved knowledge or more accurate data</p> <p>c) the use of a different method</p> <p>d) unknown</p> <p>e) other reasons</p>	
6.9 Short-term trend Period	<p>2013 - 2024 (rolling 12-year time window) or period as close as possible to it. The short-term trend should be used for the assessment of population</p>	
6.10 Short-term trend Direction	<p>Select one of the following:</p> <p>a) stable</p> <p>b) increasing</p> <p>c) decreasing</p> <p>d) uncertain</p> <p>e) unknown</p>	
6.11 Short-term trend Magnitude	a) Estimated Minimum	Percentage change over the period indicated in the field 6.9. If a precise value is known, please provide the same value under both minimum and maximum
	b) Estimated Maximum	Percentage change over the period indicated in the field 6.9. If a precise value is known, please provide the same value under both minimum and maximum
	c) Pre-defined range	Where a precise value is not known (6.11 a & b) provide a range. The ranges are provided with a positive or negative sign. <ul style="list-style-type: none"> <input type="checkbox"/> 0 – 12% <input type="checkbox"/> 13 - 25% <input type="checkbox"/> 26 - 50% <input type="checkbox"/> 51 – 100% <input type="checkbox"/> >100%
	d) Unknown	Indicate if the trend magnitude is unknown
6.12 Short-term trend Magnitude Type of estimate	<p>Best estimate / multi-year mean / 95% confidence interval / minimum/pre-defined range</p>	
6.13 Short-term trend Method used	<p>Select one of the following methods:</p> <p>a) Complete survey or a statistically robust estimate</p> <p>b) Based mainly on extrapolation from a limited amount of data</p> <p>c) Based mainly on expert opinion with very limited data</p> <p>d) Insufficient or no data available</p>	
6.14 Long-term trend Period <i>Optional</i>	<p>2000 –2024(rolling 24-year time window) or period as close as possible to it.</p>	
6.15 Long-term trend Direction <i>Optional</i>	<p>Select one of the following:</p> <p>a) stable</p> <p>b) increasing</p> <p>c) decreasing</p> <p>d) uncertain</p> <p>e) unknown</p>	
6.16 Long-term trend Magnitude	a) Minimum	Percentage change over the period indicated in the field 6.14. If a precise value is known provide the same value under both minimum and maximum

<p><i>Optional</i></p>	<p>b) Maximum</p>	<p>Percentage change over the period indicated in the field 6.14. If a precise value is known provide the same value under both minimum and maximum</p>
	<p>c) Confidence interval</p>	<p>Indicate confidence interval if a statistically reliable sampling scheme is used</p>
<p>6.17 Long-term trend Method used</p> <p><i>Optional</i></p>	<p>Select one of the following methods:</p> <p>a) Complete survey or a statistically robust estimate</p> <p>b) Based mainly on extrapolation from a limited amount of data</p> <p>c) Based mainly on expert opinion with very limited data</p> <p>d) Insufficient or no data available</p>	
<p>6.18 Favourable reference population</p>	<p>a) Population size (with unit) or</p>	
<p>b) if a precise favourable reference population is unknown indicate if the population is:</p>		
<p><input type="checkbox"/> approximately equal to the favourable reference population (less than 5% smaller)</p>		
<p><input type="checkbox"/> between 5% and 25% smaller than the FRP</p>		
<p><input type="checkbox"/> between 26% and 50% smaller than the FRP</p>		
<p><input type="checkbox"/> between 51% and 100% smaller than the FRP</p>		
<p>c) Indicate if favourable reference population is unknown</p>		
<p>d) Indicate method used to set reference value (multiple methods can be chosen)</p>		
<p><input type="checkbox"/> Model-based approach</p>		<p>Indicate the quality of information available: High/Moderate/Low</p>
<p><input type="checkbox"/> Reference-based approach</p>		<p>Indicate the quality of information available: High/Moderate/Low</p>
<p><input type="checkbox"/> Expert opinion</p>		
<p><input type="checkbox"/> Other (Elaborate in Additional information 6.20)</p>		
<p>6.19 Population size when Directive came into force</p> <p><i>Optional</i></p>	<p>Indicate the population size at the date of entry of the Directive into force (free text).</p>	
<p>6.20 Additional Information</p> <p><i>Optional</i></p>	<p>Other relevant information, complementary to the data requested under fields 6.1–6.19</p> <p>Free text</p>	

7 HABITAT FOR THE SPECIES											
7.1 Sufficiency of area and quality of occupied habitat	<p>a) <i>Is area of occupied habitat sufficient (for long-term survival)?</i></p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p> <p><input type="checkbox"/> Unknown</p> <p>b) <i>Is quality of occupied habitat sufficient (for long-term survival)?</i></p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p> <p><input type="checkbox"/> Unknown</p> <p>c) <i>If NO to a) is there a sufficiently large area of <u>unoccupied</u> habitat of suitable quality (for long-term survival)?</i></p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p> <p><input type="checkbox"/> Unknown</p>										
7.2 Sufficiency of area and quality of occupied habitat Method used	<p>Select one of the following methods:</p> <table border="1"> <thead> <tr> <th><u>Area of habitat</u></th> <th><u>Quality of habitat</u></th> </tr> </thead> <tbody> <tr> <td>a) Complete survey or a statistically robust estimate</td> <td>a) Complete survey or a statistically robust estimate</td> </tr> <tr> <td>b) Based mainly on extrapolation from a limited amount of data</td> <td>b) Based mainly on extrapolation from a limited amount of data</td> </tr> <tr> <td>c) Based mainly on expert opinion with very limited data</td> <td>c) Based mainly on expert opinion with very limited data</td> </tr> <tr> <td>d) Insufficient or no data available</td> <td>d) Insufficient or no data available</td> </tr> </tbody> </table>	<u>Area of habitat</u>	<u>Quality of habitat</u>	a) Complete survey or a statistically robust estimate	a) Complete survey or a statistically robust estimate	b) Based mainly on extrapolation from a limited amount of data	b) Based mainly on extrapolation from a limited amount of data	c) Based mainly on expert opinion with very limited data	c) Based mainly on expert opinion with very limited data	d) Insufficient or no data available	d) Insufficient or no data available
<u>Area of habitat</u>	<u>Quality of habitat</u>										
a) Complete survey or a statistically robust estimate	a) Complete survey or a statistically robust estimate										
b) Based mainly on extrapolation from a limited amount of data	b) Based mainly on extrapolation from a limited amount of data										
c) Based mainly on expert opinion with very limited data	c) Based mainly on expert opinion with very limited data										
d) Insufficient or no data available	d) Insufficient or no data available										
7.3 Short-term trend Period	2013 - 2024 (rolling 12-year time window) or period as close as possible to it. The short-term trend should be used for the assessment of habitat for species										
7.4 Short-term trend Direction	Select one of the following: <p>a) stable</p> <p>b) increasing</p> <p>c) decreasing</p> <p>d) uncertain</p> <p>e) unknown</p>										
7.5 Short-term trend Method used	Select one of the following methods: <p>a) Complete survey or a statistically robust estimate</p> <p>b) Based mainly on extrapolation from a limited amount of data</p> <p>c) Based mainly on expert opinion with very limited data</p> <p>d) Insufficient or no data available</p>										
7.6 Long-term trend Period	2000 - 2024(rolling 24-year time window) or period as close as possible to it.										
<i>Optional</i>											
7.7 Long-term trend Direction	Select one of the following: <p>a) stable</p> <p>b) increasing</p> <p>c) decreasing</p> <p>d) uncertain</p> <p>e) unknown</p>										
<i>Optional</i>											

7.8 Long-term trend Method used <i>Optional</i>	<i>Select one of the following methods:</i> <i>a) Complete survey or a statistically robust estimate</i> <i>b) Based mainly on extrapolation from a limited amount of data</i> <i>c) Based mainly on expert opinion with very limited data</i> <i>d) Insufficient or no data available</i>
7.9 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under fields 7.1–7.8</i> <i>Free text</i>

8 MAIN PRESSURES AND THREATS	
8.1 Characterisation of pressures	
a) Pressure	<i>List a maximum of 20 pressures using the code-list provided in the Reference portal and fill b) to f) for pressures.</i>
b) Timing	<input type="checkbox"/> <i>in the past but now suspended due to measures</i> <input type="checkbox"/> <i>ongoing</i> <input type="checkbox"/> <i>ongoing and likely to be in the future</i> <input type="checkbox"/> <i>only in future</i>
c) Scope (proportion of population affected)	<i>Fill in for 'ongoing' and 'ongoing and likely to be in the future':</i> <input type="checkbox"/> <i>whole >90%</i> <input type="checkbox"/> <i>majority 50 – 90%</i> <input type="checkbox"/> <i>minority <50%</i>
d) Influence (on population or habitat of the species)	<i>Fill in for 'ongoing' and 'ongoing and likely to be in the future':</i> <input type="checkbox"/> <i>High influence</i> <input type="checkbox"/> <i>Medium influence</i> <input type="checkbox"/> <i>Low influence</i>
e) Invasive alien species of Union concern	<i>Fill where pressure on 'IAS of Union concern' is selected. Please select from relevant species-list (see Article 17 reference portal)</i>
f) Other invasive alien species <i>Optional</i>	<i>Fill where pressure 'other invasive alien species - other than species of Union concern' is selected. Please select from EASIN database (see Article 17 reference portal)</i>
8.2 Methods used <i>Optional</i>	<i>Select one of the following methods:</i> <i>a) Complete survey or a statistically robust estimate</i> <i>b) Based mainly on extrapolation from a limited amount of data</i> <i>c) Based mainly on expert opinion with very limited data</i> <i>d) Insufficient or no data available</i>
8.3 Sources of information <i>Optional</i>	<i>If available, provide sources of information (URL, metadata) supporting evidence of pressures</i>
8.4 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under field 8.1</i> <i>Free text</i>

9 CONSERVATION MEASURES	
9.1 Status of measures	<p>Are measures needed?</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p> <p>If yes, indicate the status of measures (select only one option):</p> <p>a) Measures identified, but none yet taken</p> <p>b) Measures needed but cannot be identified</p> <p>c) Part of measures identified have been taken</p> <p>d) Most/all of measures identified have been taken</p> <p>If no, a justification must be provided in free text field 9.7</p>
9.2 Scope of measures taken	<p>Fill if c) Part of measures identified have been taken or d) Most/all of measures identified have been taken (9.1) was selected:</p> <p>Do these impact:</p> <p>a) <50%</p> <p>b) 50 – 90%</p> <p>c) >90%</p> <p>of the population</p>
9.3 Main purpose of the measures taken	<p>A. Indicate the main purpose(s) of measures taken:</p> <p>a) Maintain the current range, population and/or habitat for the species</p> <p>b) Expand the current range of the species (related to 'Range')</p> <p>c) Increase the population size and/or improve population dynamics (improve reproduction success, reduce mortality, improve age/sex structure) (related to 'Population')</p> <p>d) Restore the habitat of the species (related to 'Habitat for the species')</p> <p>B. Where more than one option is selected above, indicate the main (primary) purpose (i.e. select only one option):</p> <p>Maintain current state / expand range / increase, improve population/restore habitat</p>
9.4 Location of the measures taken	<p>Indicate the location of measures taken (indicate only one option):</p> <p>a) Only inside Natura 2000</p> <p>b) Both inside and outside Natura 2000</p> <p>c) Only outside Natura 2000</p>
9.5 Response to the measures (when the measures start to neutralize the pressure(s) and produce positive effects)	<p>Indicate the time frame of the response to measures (with regard to the main purpose in field 9.3) (indicate only one option):</p> <p>a) Short-term response (within the current reporting period, 2019 - 2024)</p> <p>b) Medium-term response (within the next two reporting periods, 2025-2036)</p> <p>c) Long-term response (after 2036)</p>
9.6 List of main conservation measures	<p>List a maximum of 20 measures using code list provided in the Reference portal</p>
9.7 Additional information Optional	<p>Other relevant information, complementary to the data requested under fields 9.1–9.6</p> <p>Free text</p>

10 FUTURE PROSPECTS		
10.1 Future prospects of parameters	a) Range	<i>Good / Poor / Bad / Unknown</i>
	b) Population	<i>Good / Poor / Bad / Unknown</i>
	c) Habitat of the species	<i>Good / Poor / Bad / Unknown</i>
10.2 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under field 10.1</i> <i>Free text</i>	

11 CONCLUSIONS		
<i>Assessment of conservation status at end of reporting period</i>		
11.1 Range	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
11.2 Population	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
11.3 Habitat for the species	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
11.4 Future prospects	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
11.5 Overall assessment of Conservation Status	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
11.6 Overall trend in Conservation Status	<i>Indicate the trend (qualifier) for FV, U1 and U2: improving / deteriorating / stable / unknown</i>	
11.7 Change and reasons for change in conservation status and conservation status trend	<i>Indicate whether there is a change from the previous reporting round and (if yes) the nature of that change. More than one option (b to f) can be chosen.</i>	
	Overall assessment of conservation status (11.5)	Overall trend in conservation status (11.6)
	<i>a) no, there is no difference</i>	<i>a) no, there is no difference</i>
	<i>b) yes, due to genuine change</i>	<i>b) yes, due to genuine change</i>
	<i>c) yes, due to improved knowledge/more accurate data</i>	<i>c) yes, due to improved knowledge/more accurate data</i>
	<i>d) yes, due to the use of different method(including taxonomical change or use of different thresholds)</i>	<i>d) yes, due to the use of different method(including taxonomical change or use of different thresholds)</i>
	<i>e) yes, but nature of change is unknown</i>	<i>e) yes, but nature of change is unknown</i>
	<i>f) yes, due to other reasons</i>	<i>f) yes, due to other reasons</i>
	<i>The change is mainly due to (select only one option): genuine change improved knowledge or more accurate data the use of a different method unknown other reasons</i>	<i>The change is mainly due to (select only one option): genuine change improved knowledge or more accurate data the use of a different method unknown other reasons</i>
11.8 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under fields 11.1–11.7</i> <i>Free text</i>	

12 NATURA 2000 (PROPOSED SITES OF COMMUNITY IMPORTANCE (PSCIs), SITES OF COMMUNITY IMPORTANCE (SCIs) AND SPECIAL AREAS OF CONSERVATION (SACs) COVERAGE FOR ANNEX II SPECIES OF DIRECTIVE 92/43/EEC		
12.1 Population size inside the pSCIs, SCIs and SACs network <i>(on the biogeographical/marine level including all sites where the species is present)</i>	a) Unit	<i>Use reporting unit as in field 6.2 a)</i>
	b) Minimum	<i>Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value(d)</i>
	c) Maximum	<i>Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value (d)</i>
	d) Best single value	<i>Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value (d)</i>
12.2 Type of estimate	<i>Best estimate / multi-year mean / 95% confidence interval / minimum</i>	
12.3 Additional population size <i>(using population unit other than reporting unit in field 6.2)</i> <i>Optional</i>	a) Unit	<i>Use reporting unit</i>
	b) Minimum	<i>Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value(d)</i>
	c) Maximum	<i>Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value (d)</i>
	d) Best single value	<i>Number (raw, i.e. not rounded). Provide either interval (b and c) and/or best single value (d)</i>
12.4 Type of estimate <i>Optional</i>	<i>Best estimate / multi-year mean / 95% confidence interval / minimum</i>	
12.5 Population size inside the network Method used	<i>Select one of the following methods:</i> <i>a) Complete survey or a statistically robust estimate,</i> <i>b) Based mainly on extrapolation from a limited amount of data,</i> <i>c) Based mainly on expert opinion with very limited data,</i> <i>d) Insufficient or no data available</i>	
12.6 Short-term trend of population size within the network Direction	<i>Short-term trend of population size within the network over the period indicated in field 6.8. Select one of the following:</i> <i>a) stable</i> <i>b) increasing</i> <i>c) decreasing</i> <i>d) uncertain</i> <i>e) unknown</i>	
12.7 Short-term trend of population size within the network Method used	<i>Select one of the following methods:</i> <i>a) Complete survey or a statistically robust estimate</i> <i>b) Based mainly on extrapolation from a limited amount of data</i> <i>c) Based mainly on expert opinion with very limited data</i> <i>d) Insufficient or no data available</i>	
12.8 Short-term trend of habitat for the species within the network Direction	<i>Short-term trend of habitat of the species within the network over the period indicated in field 7.3. Select one of the following:</i> <i>a) stable</i> <i>b) increasing</i> <i>c) decreasing</i> <i>d) uncertain</i> <i>e) unknown</i>	

<p>12.9 Short-term trend of habitat for the species within the network Method used</p>	<p>Select one of the following methods: a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available</p>
<p>12.10 Additional information <i>Optional</i></p>	<p>Other relevant information, complementary to the data requested under fields 12.1–12.9 <i>Free text</i></p>

<p>13 COMPLEMENTARY INFORMATION</p>	
<p>13.1 Justification of % thresholds for trends <i>Optional</i></p>	<p>In case a MS is not using the indicative value of 1% per year in the assessment matrix when assessing trends, this should be duly justified in this free text field</p>
<p>13.2 Trans-boundary assessment <i>Optional</i></p>	<p>Where two or more Member States have conducted a joint conservation status assessment for a trans-boundary population of a usually wide-ranging species, this should be explained here. Clearly note the Member States involved, the percentage of the total population in the Member States concerned, how the assessment was carried out, and any joint initiatives taken to ensure common management of the species (e.g., population management plan).</p>
<p>13.3 Other relevant information <i>Optional</i></p>	<p>Other relevant information not specific for the section of this format. <i>Free text</i></p>

Part C - ASSESSING CONSERVATION STATUS OF A SPECIES

General evaluation matrix

(per biogeographical / marine region within a MS)

Parameter	Conservation Status			
	Favourable ('green')	Unfavourable - Inadequate ('amber')	Unfavourable - Bad ('red')	Unknown (insufficient information to make an assessment)
Range (within the biogeographical region concerned)	Stable (loss and expansion in balance) or increasing <u>AND</u> not smaller than the 'favourable reference range'	Any other combination	Large decline: Equivalent to a loss of more than 1% per year within period specified by MS <u>OR</u> more than 10% below favourable reference range	<i>No or insufficient reliable information available</i>
Population	Population(s) not lower than 'favourable reference population' <u>AND</u> reproduction, mortality and age structure not deviating from normal (if data available)	Any other combination	Large decline: Equivalent to a loss of more than 1% per year (indicative value MS may deviate from if duly justified) within period specified by MS <u>AND</u> below 'favourable reference population' <u>OR</u> More than 25% below favourable reference population <u>OR</u> Reproduction, mortality and age structure strongly deviating from normal (if data available)	<i>No or insufficient reliable information available</i>
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) <u>AND</u> habitat quality is suitable for the long-term survival of the species	Any other combination	Area of habitat is clearly not sufficiently large to ensure the long-term survival of the species <u>OR</u> Habitat quality is bad, clearly not allowing long-term survival of the species	<i>No or insufficient reliable information available</i>

Parameter	Conservation Status			
	Favourable ('green')	Unfavourable - Inadequate ('amber')	Unfavourable - Bad ('red')	Unknown (insufficient information to make an assessment)
Future prospects (as regards to population, range and habitat availability)	Main pressures and threats to the species not significant; species will remain viable on the long-term	Any other combination	Severe influence of pressures and threats to the species; very bad prospects for its future, long-term viability at risk.	No or insufficient reliable information available
Overall assessment of CS	All 'green' OR three 'green' and one 'unknown'	One or more 'amber' but no 'red'	One or more 'red'	Two or more 'unknown' combined with green or all "unknown"

Part D - REPORT FORMAT ON THE 'MAIN RESULTS OF THE SURVEILLANCE UNDER ARTICLE 11' FOR ANNEX I HABITAT TYPES OF DIRECTIVE 92/43/EEC

NATIONAL LEVEL

1 GENERAL INFORMATION	
1.1 Member State	<i>Use two-digit code according to list in the Reference portal</i>
1.2 Habitat code	<i>Select code from habitat checklist in the Reference portal (do not use subtypes)</i>

2 MAPS	
Distribution of the habitat type within the Member State concerned	
2.1 Year or period	<i>Year or period when distribution was last determined</i>
2.2 Distribution map	<i>Submit a map together with relevant metadata following the technical specifications in the Explanatory Notes. The standard for habitat distribution is 10x10km ETRS 89 grid cells, LAEA (EPSG:3035) projection.</i>
2.3 Distribution map Method used	<i>Select one of the following methods: a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available</i>
2.4 Additional maps <i>Optional</i>	<i>MS can submit an additional map, deviating from standard submission map under 2.2 and/or a range map</i>
2.5 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under fields 2.1–2.4 Free text</i>

BIOGEOGRAPHICAL LEVEL

Complete for each biogeographical region or marine region concerned.

3 BIOGEOGRAPHICAL AND MARINE REGIONS	
3.1 Biogeographical or marine region where the habitat occurs	<i>Choose one of the following: Alpine, Atlantic, Black Sea, Boreal, Continental, Mediterranean, Macaronesian, Pannonian, Steppic, Marine Atlantic, Marine Mediterranean, Marine Black Sea, Marine Macaronesian and Marine Baltic Sea</i>
3.2 First time reporting	<i>Please indicate if this is the first reporting round for this habitat in this biogeographical/marine region</i> <input type="checkbox"/> YES <input type="checkbox"/> NO
3.3 Additional information	<i>Please indicate the nature of the first-time reporting. Any other additional information is optional.</i>
3.24 Sources of information	<i>For data reported in the sections below provide relevant available bibliographic references and/or link to Internet site(s)</i>

4 RANGE		
<i>Range within the biogeographical/marine region concerned</i>		
4.1 Surface area	<i>Total surface area of the range within biogeographical/marine region concerned in km²</i>	
4.2 Change and reason for change in surface area of range	<i>Is there a change between reporting periods? (If yes, more than 1 option b) to f) can be chosen)</i>	
	<p>a) <i>no, there is no change</i> b) <i>yes, due to genuine change</i> c) <i>yes, due to improved knowledge/more accurate data</i> d) <i>yes, due to the use of different method</i> e) <i>yes, but nature of change is unknown</i> f) <i>yes, due to other reasons</i></p> <p><i>The change is mainly due to (select one of the reasons below):</i> a) <i>genuine change</i> b) <i>improved knowledge or more accurate data</i> c) <i>the use of a different method</i> d) <i>unknown</i> e) <i>other reasons</i></p>	
4.3 Short-term trend Period	<i>2013 - 2024 (rolling 12-year time window) or period as close as possible to that. The short-term trend should be used for the assessment of range</i>	
4.4 Short-term trend Direction	<i>Select one of the following:</i> a) <i>stable</i> b) <i>increasing</i> c) <i>decreasing</i> d) <i>uncertain</i> e) <i>unknown</i>	
4.5 Short-term trend Magnitude	<i>a) Estimated Minimum</i>	<i>Percentage change over the period indicated in the field 4.3. If a precise value is known, please provide the same value under both minimum and maximum</i>
	<i>b) Estimated Maximum</i>	<i>Percentage change over the period indicated in the field 4.3. If a precise value is known, please provide the same value under both minimum and maximum</i>
	<i>c) Pre-defined range</i>	<i>Where a precise value is not known (4.5 a & b) provide a range. . The ranges are provided with a positive or negative sign.</i> <input type="checkbox"/> <i>0 – 12%</i> <input type="checkbox"/> <i>13 - 25%</i> <input type="checkbox"/> <i>26 – 50%</i> <input type="checkbox"/> <i>51 – 100%</i> <input type="checkbox"/> <i>>100%</i>
	<i>d) Unknown</i>	<i>Indicate if the trend magnitude is unknown</i>
4.6 Short-term trend Magnitude Type of estimate	<i>Best estimate / multi-year mean / 95% confidence interval / minimum/pre-defined range</i>	
<i>Optional</i>		

4.7 Short-term trend Method used	<p>Select one of the following methods:</p> <p>a) Complete survey or a statistically robust estimate</p> <p>b) Based mainly on extrapolation from a limited amount of data</p> <p>c) Based mainly on expert opinion with very limited data</p> <p>d) Insufficient or no data available</p>	
4.8 Long-term trend Period <i>Optional</i>	<p>2000 - 2024 (rolling 24-year time window) or period as close as possible to that.</p>	
4.9 Long-term trend Direction <i>Optional</i>	<p>Select one of the following:</p> <p>a) stable</p> <p>b) increasing</p> <p>c) decreasing</p> <p>d) uncertain</p> <p>e) unknown</p>	
4.10 Long-term trend Magnitude <i>Optional</i>	a) Minimum	<p>Percentage change over the period indicated in the field 4.8. If a precise value is known provide the same value under both minimum and maximum</p>
	b) Maximum	<p>Percentage change over the period indicated in the field 4.8. If a precise value is known provide the same value under both minimum and maximum</p>
4.11 Long-term trend Method used <i>Optional</i>	<p>Select one of the following methods:</p> <p>a) Complete survey or a statistically robust estimate</p> <p>b) Based mainly on extrapolation from a limited amount of data</p> <p>c) Based mainly on expert opinion with very limited data</p> <p>d) Insufficient or no data available</p>	
4.12 Favourable reference range	<p>a) In km² or</p>	
	<p>b) if a precise favourable reference range is unknown Indicate if the <u>range</u> is:</p> <p><input type="checkbox"/> approximately equal to the favourable reference range (less than 2% smaller)</p> <p><input type="checkbox"/> between 2% and 10% smaller than the FRR</p> <p><input type="checkbox"/> between 11% and 50% smaller than the FRR</p> <p><input type="checkbox"/> between 51% and 100% smaller than the FRR</p>	
	<p>c) Indicate if favourable reference range is unknown</p>	
	<p>d) Indicate method used to set reference value (multiple methods can be chosen)</p>	
	<input type="checkbox"/> Model-based approach	<p>Indicate the quality of information available: high/moderate/low</p>
	<input type="checkbox"/> Reference-based approach	<p>Indicate the quality of information available: high/moderate/low</p>
	<p><input type="checkbox"/> Expert opinion</p> <p><input type="checkbox"/> Other (elaborate in Additional information 4.13)</p>	
4.13 Range when Directive came into force <i>Optional</i>	<p>Indicate the surface area (km²) at the date of entry of the Directive into force (free text).</p>	

4.14 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under fields 4.1–4.13 Free text</i>
--	--

5 AREA COVERED BY HABITAT		
<i>Area covered by the habitat type within the range in the biogeographical/marine region concerned</i>		
5.1 Year or period	<i>Year or period when surface area was last determined</i>	
5.2 Surface area <i>(in km²)</i>	a) Minimum	<i>Provide either interval (a and b) and/or best single value (c)</i>
	b) Maximum	<i>Provide either interval (a and b) and/or best single value (c)</i>
	c) Best single value	<i>Provide either interval (a and b) and/or best single value (c)</i>
5.3 Type of estimate	<i>Best estimate / 95% confidence interval / minimum</i>	
5.4 Surface area Method used	<i>Select one of the following methods:</i> <i>a) Complete survey or a statistically robust estimate</i> <i>b) Based mainly on extrapolation from a limited amount of data</i> <i>c) Based mainly on expert opinion with very limited data</i> <i>d) Insufficient or no data available</i>	
5.5 Change and reason for change in surface area	<i>Is there a change between reporting periods?</i> <i>(If yes, more than 1 option a) to f) can be chosen)</i> <i>a) no, there is no change</i> <i>b) yes, due to genuine change</i> <i>c) yes, due to improved knowledge/more accurate data</i> <i>d) yes, due to the use of different method</i> <i>e) yes, but nature of change is unknown</i> <i>f) yes, due to other reasons</i>	
	<i>The change is mainly due to (select one of the reasons below):</i> <i>a) genuine change</i> <i>b) improved knowledge or more accurate data</i> <i>c) the use of a different method</i> <i>d) unknown</i> <i>e) other reasons</i>	
5.6 Short-term trend Period	<i>2013 - 2024 (rolling 12-year time window) or period as close as possible to it. The short-term trend should be used for the assessment of area covered by habitat type</i>	
5.7 Short-term trend Direction	<i>Select one of the following:</i> <i>a) stable</i> <i>b) increasing</i> <i>c) decreasing</i> <i>d) uncertain</i> <i>e) unknown</i>	
5.8 Short-term trend Magnitude	<i>a) Estimated Minimum</i>	<i>Percentage change over the period indicated in the field 5.6. If a precise value is known, please provide the same value under both minimum and maximum</i>

5.15 Favourable reference area	b) if a precise favourable reference area is unknown Indicate if the <u>area</u> is:	
	<input type="checkbox"/> approximately equal to the favourable reference area (less than 2% smaller)	
	<input type="checkbox"/> between 2% and 10% smaller than the FRA	
	<input type="checkbox"/> between 11% and 25% smaller than the FRA	
	<input type="checkbox"/> between 26% and 50% smaller than the FRA	
	<input type="checkbox"/> between 51% and 100% smaller than the FRA	
c) Indicate if favourable reference area is unknown		
d) Indicate method used to set reference value (multiple methods can be chosen)		
<input type="checkbox"/> Model-based approach	Indicate the quality of information available: high/moderate/low	
<input type="checkbox"/> Reference-based approach	Indicate the quality of information available: high/moderate/low	
<input type="checkbox"/> Expert opinion		
<input type="checkbox"/> Other (Elaborate in Additional information 5.17)		
5.16 Surface area when Directive came into force <i>Optional</i>	Indicate the surface area (km ²) at the date of entry of the Directive into force (free text).	
5.17 Additional information <i>Optional</i>	Other relevant information, complementary to the data requested under fields 5.1–5.16 Free text	

6 STRUCTURE AND FUNCTIONS

6.1 Condition of habitat	a) Area in good condition	Minimum	In km ²
		Maximum	In km ²
	b) Area in not-good condition	Minimum	In km ²
		Maximum	In km ²
	c) Area where condition is not known	Minimum	In km ²
		Maximum	In km ²
6.2 Condition of habitat Method used	Select one of the following methods: a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available		
6.3 Short-term trend of habitat area in good condition Period	2013 - 2024 (rolling 12-year time window) or period as close as possible to it. The short-term trend is to be used for the assessment of structure and functions		
6.4 Short-term trend of habitat area in good condition Direction	Select one of the following: a) stable b) increasing c) decreasing d) uncertain e) unknown		

6.5 Short-term trend of habitat area in good condition Method used	Select one of the following methods: a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available
6.6 Typical species	Has the list of typical species changed in comparison to the previous reporting period? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide the updated list as an additional spreadsheet and fill field 6.7
6.7 Typical species Method used <i>Optional</i>	If the list or the methodology has changed, describe method(s) used to assess the status of typical species as part of the overall assessment of structure and functions
6.8 Additional information <i>Optional</i>	Other relevant information, complementary to the data requested under fields 6.1–6.7 Free text

7 MAIN PRESSURES AND THREATS	
7.1 Characterisation of pressures	
a) Pressure	List a maximum of 20 pressures using the code-list provided in the Reference portal and fill b) to f) for pressures.
b) Timing	<input type="checkbox"/> in the past but now suspended due to measures <input type="checkbox"/> ongoing <input type="checkbox"/> ongoing and likely to be in the future <input type="checkbox"/> only in future
c) Scope (proportion of area affected)	Fill in for 'ongoing' and 'ongoing and likely to be in the future': <input type="checkbox"/> whole >90% <input type="checkbox"/> majority 50 – 90% <input type="checkbox"/> minority <50%
d) Influence (on area or habitat condition)	Fill in for 'ongoing' and 'ongoing and likely to be in the future'. <input type="checkbox"/> High influence <input type="checkbox"/> Medium influence <input type="checkbox"/> Low influence
e) Invasive alien species of Union concern	Fill in the information where pressure on 'Invasive Alien Species (IAS) of Union concern' is selected. Please select from the relevant species list (see Article 17 reference portal).
f) Other invasive alien species <i>Optional</i>	Fill in the information where pressure on 'other invasive alien species - other than species of Union concern' is selected. Please select from the EASIN database (see Article 17 reference portal).
7.2 Methods used <i>Optional</i>	Select one of the following methods: a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available
7.3 Sources of information <i>Optional</i>	If available, provide sources of information (URL, metadata) supporting evidence of pressures
7.4 Additional information <i>Optional</i>	Other relevant information, complementary to the data requested under field 7.1 Free text

8 CONSERVATION MEASURES	
8.1 Status of measures	<p>Are measures needed?</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p> <p>If yes, indicate the status of measures (select only one option):</p> <p>a) Measures identified, but none yet taken</p> <p>b) Measures needed but cannot be identified</p> <p>c) Part of measures identified have been taken</p> <p>d) Most/all of measures identified have been taken</p> <p>If no, a justification must be provided in free text field 8.7</p>
8.2 Scope of measures taken	<p>Fill if c) Part of measures identified have been taken or d) Most/all of measures identified have been taken (8.1) was selected:</p> <p>Do these impact:</p> <p>a) <50%</p> <p>b) 50 – 90%</p> <p>c) >90%</p> <p>of the area</p>
8.3 Main purpose of the measures taken	<p>A. Indicate the main purpose(s) of measures taken:</p> <p>a) Maintain the current range, surface area or structure and functions of the habitat type</p> <p>b) Expand the current range of the habitat type (related to 'Range')</p> <p>c) Increase the surface area of the habitat type (related to 'Area covered by habitat')</p> <p>d) Restore the structure and functions, including the status of typical species (related to 'Specific structure and functions')</p> <p>B. Where more than one option is selected above, indicate the main (primary) purpose (i.e. select only one option):</p> <p>Maintain current state / expand range / increase habitat area / improve habitat condition</p>
8.4 Location of the measures taken	<p>Indicate the location of measures taken (indicate only one option)::</p> <p>a) Only inside Natura 2000</p> <p>b) Both inside and outside Natura 2000</p> <p>c) Only outside Natura 2000</p>
8.5 Response to the measures (when the measures start to neutralize the pressure(s) and produce positive effects)	<p>Indicate the time frame of the response to measures (with regard to the main purpose indicated in field 8.3) – (indicate only one option):</p> <p>a) Short-term response (within the current reporting period, 2019 - 2024)</p> <p>b) Medium-term response (within the next two reporting periods, 2025 - 2036)</p> <p>c) Long-term response (after 2036)</p>
8.6 List of main conservation measures	<p>List a maximum of 20 measures using code list provided in the Reference portal</p>
8.7 Additional information <i>Optional</i>	<p>Other relevant information, complementary to the data requested under fields 8.1–8.6</p> <p>Free text</p>

9 FUTURE PROSPECTS		
9.1 Future prospects of parameters	a) Range	<i>Good / Poor / Bad / Unknown</i>
	b) Area	<i>Good / Poor / Bad / Unknown</i>
	c) Structure and functions	<i>Good / Poor / Bad / Unknown</i>
9.2 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under field 9.1 Free text</i>	

10 CONCLUSIONS		
<i>Assessment of conservation status at end of reporting period</i>		
10.1 Range	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
10.2 Area	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
10.3 Specific structure and functions (incl. typical species)	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
10.4 Future prospects	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
10.5 Overall assessment of Conservation Status	<i>Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)</i>	
10.6 Overall trend in Conservation Status	<i>Indicate the trend (qualifier) for FV, U1 and U2 (select one option):</i> a) <i>improving</i> b) <i>deteriorating</i> c) <i>stable</i> d) <i>unknown</i>	
10.7 Change and reasons for change in conservation status and conservation status trend	<i>Indicate whether there is a change from the previous reporting round and (if yes) the nature of that change. More than one option (a to f) can be chosen.</i>	
	Overall assessment of conservation status (10.5)	Overall trend in conservation status (10.6)
	<i>a) No, there is no difference</i>	<i>a) No, there is no difference</i>
	<i>b) yes, due to genuine change</i>	<i>b) yes, due to genuine change</i>
	<i>c) yes, due to improved knowledge/more accurate data</i>	<i>c) yes, due to improved knowledge/more accurate data</i>
	<i>d) yes, due to the use of different method</i>	<i>d) yes, due to the use of different method</i>
	<i>e) yes, but nature of change is unknown</i>	<i>e) yes, but nature of change is unknown</i>
	<i>f) yes, due to other reasons</i>	<i>f) yes, due to other reasons</i>
	<i>The change is mainly due to (select only one option): genuine change / improved knowledge or more accurate data / the use of a different method/ unknown/ other reasons</i>	<i>The change is mainly due to (select only one option): genuine change / improved knowledge or more accurate data / the use of a different method/unknown/ other reasons</i>
10.8 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under fields 10.1–10.7 Free text</i>	

11 NATURA 2000 (PROPOSED SITES OF COMMUNITY IMPORTANCE (PSCIs), SITES OF COMMUNITY IMPORTANCE (SCIs) AND SPECIAL AREAS OF CONSERVATION (SACs) COVERAGE FOR ANNEX I HABITAT TYPES OF DIRECTIVE 92/43/EEC		
11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network <i>(In km² in biogeographical/marine region including all sites where the habitat is present)</i>	a) Minimum	<i>Provide either interval (a and b) and/or best single value(c)</i>
	b) Maximum	<i>Provide either interval (a and b) and/or best single value (c)</i>
	c) Best single value	<i>Provide either interval (a and b) and/or best single value (c)</i>
11.2 Type of estimate	<i>Best estimate / 95% confidence interval / minimum</i>	
11.3 Surface area of the habitat type inside the network Method used	<i>Select one of the following methods:</i> a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available	
11.4 Short-term trend of habitat area within the network Direction	<i>Short-term trend of habitat area within the network over the period indicated in the field 5.6.</i> <i>Select one of the following::</i> a) stable b) increasing c) decreasing d) uncertain e) unknown	
11.5 Short-term trend of habitat area within the network Method used	<i>Select one of the following methods:</i> a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available	
11.6 Short-term trend of habitat area in good condition within the network Direction	<i>Short-term trend of habitat area in good condition within the network over the period indicated in the field 6.3. Select one of the following:</i> a) stable b) increasing c) decreasing d) uncertain e) unknown	
11.7 Short-term trend of habitat area in good condition within network Method used	<i>Select one of the following methods:</i> a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available	
11.8 Additional information <i>Optional</i>	<i>Other relevant information, complementary to the data requested under fields 11.1–11.7</i> <i>Free text</i>	

12 COMPLEMENTARY INFORMATION

12.1 Justification of % thresholds for trends <i>Optional</i>	<i>In case a MS is not using the indicative suggested value of 1% per year when assessing trends, this should be duly justified in this free text field</i>
12.2 Other relevant information <i>Optional</i>	<i>Other relevant information not specific for the sections of this format. Free text</i>

Part E - ASSESSING CONSERVATION STATUS OF A HABITAT TYPE

General evaluation matrix

(per biogeographical/marine region within a MS)

Parameter	Conservation Status			
	Favourable ('green')	Unfavourable – Inadequate ('amber')	Unfavourable - Bad ('red')	Unknown (insufficient information to make an assessment)
Range (within the biogeographical/marine region concerned)	Stable (loss and expansion in balance) or increasing <u>AND</u> not smaller than the 'favourable reference range'	Any other combination	Large decrease: Equivalent to a loss of more than 1% per year within period specified by MS <u>OR</u> More than 10% below 'favourable reference range'	<i>No or insufficient reliable information available</i>
Area covered by habitat type within range¹¹	Stable (loss and expansion in balance) or increasing <u>AND</u> not smaller than the 'favourable reference area' <u>AND</u> without significant changes in distribution pattern within range (if data available)	Any other combination	Large decrease in surface area: Equivalent to a loss of more than 1% per year (indicative value MS may deviate from if duly justified) within period specified by MS <u>OR</u> With major losses in distribution pattern within range <u>OR</u> More than 10% below 'favourable reference area'	<i>No or insufficient reliable information available</i>

¹¹ There may be situations where the habitat area has decreased as a result of management measures to restore another Annex I habitat or habitat of an Annex II species. The habitat could still be considered to be at 'Favourable Conservation Status' but in such cases give details in the Complementary Information section ('Other relevant information') of Part D

Parameter	Conservation Status			
	Favourable ('green')	Unfavourable – Inadequate ('amber')	Unfavourable - Bad ('red')	Unknown (insufficient information to make an assessment)
Specific structure and functions (including typical species¹²)	Structures and functions (including typical species) in good condition and no significant deteriorations / pressures	Any other combination	More than 25% of the area is unfavourable as regards its specific structures and functions (including typical species) ¹³	No or insufficient reliable information available
Future prospects (as regards range, area covered and specific structures and functions)	The habitats prospects for its future are excellent / good, no significant impact from threats expected; long-term viability assured	Any other combination	The habitats prospects are bad, severe impact from threats expected; long-term viability not assured.	No or insufficient reliable information available
Overall assessment of CS	All 'green' OR three 'green' and one 'unknown'	One or more 'amber' but no 'red'	One or more 'red'	Two or more 'unknown' combined with green or all 'unknown'

¹²See definition of typical species in the Explanatory Notes and Guidelines

¹³ E.g. by discontinuation of former management, or is under pressure from significant adverse influences, e.g. critical loads of pollution exceeded

ANEX 4

Natura 2000 data flow

Natura 2000 data flow document

Document History

Version	Date	Author(s)	Remarks
	08/12/2011	Brian MacSharry, Jérôme Bailly Maitre, Sabine Roscher	ETC/BD delivery to the EEA (Rania Spyropoulou)
	10/12/2013	Sabine Roscher	ETC/BD delivery to the EEA (Rania Spyropoulou)
	29/01/2015	Natalia Orio (Bilbomatica), Mette Lund	Links to technical documentation in OneNote library. Other updates mainly to section 2, 4 and 5.
	18/11/2016	Laura Gavilan, Natalia Orio, Rene Deprez, Mette Lund	Mini-check and Union List sections updated. Many smaller updates throughout the document.
	17/03/2017	Mette Lund	Comments from November 2016 progress meeting integrated
	25/04/2017	Mette Lund	Comments from March 2017 progress meeting integrated
	19/06/2017	René Deprez, Laura Gavilan	Updated information on notifications, acceptance and Union Lists
	31/10/2017	Joanna Karlsen	Document in EEA template and light English editing
	10/01/2018	Mette Lund	Update on Natura 2000 viewer, comments from Nov 2017 progress meeting Integrated

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Foreword/Preface

The Natura 2000 data flow document is continuously updated as the data flow is maturing, tools developed and the automation of the data processing becoming more complete.

Updated sections in this version of the document is the Notifications and official acceptance of the delivery and The Union Lists and the results of decisions reached in the Natura 2000 progress of meetings between DG ENV B3, ETC/BD, EEA and its contractor (Bilbomatica) during 2016-2017.

1. The Member States databases

1.1. Content of the database – the Standard Data Form (SDF)

The Standard Data Form (SDF) defines the data to be provided by the Member States to the Commission. The first version of the SDF was published in 1997; the revised version¹⁴ was published in Official Journal on 30 July 2011.

The revised version withdrew some fields which were either not used or not considered to give added value. On the other hand, one field has been added to the new revised SDF

- Percentage of marine area in the site (2.3)

The majority of data categories of the revised SDF have been restructured in order to make the resulting data better to use for analysis as required by the policy process. Thereof the ecological information (data on species and habitat types) and the information on threats and pressures with impact on the site are the most relevant.

The revision process did also take into account the standardisation process carried out in the context of the revision of the reporting sheets for the Habitats Directive Article 17 reporting and the Birds Directive Article 12 reporting as well as INSPIRE data specifications.

Overview on the content of the actual SDF

The SDF includes the following information categories:

- Site identification (Site type, code, name, designation date, respondent, update date)
- Site location (coordinates, area, length, administrative units, biogeographical regions, percentage marine area)
- Ecological information
 - Habitat types present on the site and site assessment for them
 - Species covered by the Birds and Habitats Directives
 - Other important species of flora and fauna (e.g. HD Annex IV and V species, red list species)
- Site description
 - General character, importance, ownership, documentation
 - Impacts and activities with effect on the site (positive and negative impacts, with ranking in high, medium, low impact)
- Site protection status (designation types, relation to other sites)
- Site management (existence of management plans, link to management plans)
- Maps (incl. Inspire ID)

¹⁴Commission Implementing Decision of 11 July 2011 concerning a site information format for Natura 2000 sites (2011/484/EU)

The full text of the SDF and explanatory notes can be found here: [Commission Implementing Decision of 11 July 2011 concerning a site information format for Natura 2000 sites \(notified under document C\(2011\) 4892\)](#)

1.2. Structure of the database

For the delivery of data according to the SDF, the 'Natura 2000 Database template' was developed in the relational database management system MS-Access. The preferred transfer format is however now an XML file as xml allows for immediate automatic QAs to be executed on the uploaded data. The XML schema is available in the Data Dictionary¹⁵. Although MS Access database format (mdb; accdb) is still accepted as well.

The 'Natura 2000 database template' contains :

1. Tables to store data related to the Natura 2000 sites
 - major entities are sites, habitats, species, impacts on site, management, ownership
 - for a complete list see the ER diagram in Annex 2
2. Tables that contain code lists ('reference' tables)
 - Biogeographical regions and marine regions
 - Species and Bird species code lists
 - National Designation codes (same code list as for CDDA dataflow)
 - Habitat types (as listed in the Annex of the Habitats Directive)
 - Impacts (same code list as for Habitats Directive Article 17 reporting)
 - NUTS regions

A cross-walk between the structure of the old database template and the new one is shown in Annex 7.

1.3. Spatial data

The spatial data consists of boundaries of the sites with accompanying attribute information which enables the boundaries to be linked to the tabular data. All spatial data is to be geometrically valid and have a projection. The exact specifications are available from the Natura 2000 reference portal, see section 3.1.

The site code allows joining the descriptive data to the spatial objects. Furthermore the SDF contains a field for the INSPIRE ID, that links to spatial objects which will in future be delivered by INSPIRE service.

1.4. XML Schema

Taken into account the well-known advantages of XML and basic principles of ReportNet, an XML schema has been developed in order to allow for upload of Member States data as XML document (alternative to the current often used data base file .mdb). The structure of the schema reflects the seven major information items of the SDF and the data base template. XML documents that are uploaded to ReportNet must validate against the XML schema. The Natura 2000 software uses the same XML schema to validate user entries and export format

The XML schema is downloadable from the Natura 2000 reference portal (http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal).

¹⁵http://dd.eionet.europa.eu/schema/natura2000/sdf_v1.xsd/view;jsessionid=99C31FD2C18A4596BB2B81D4823005CC

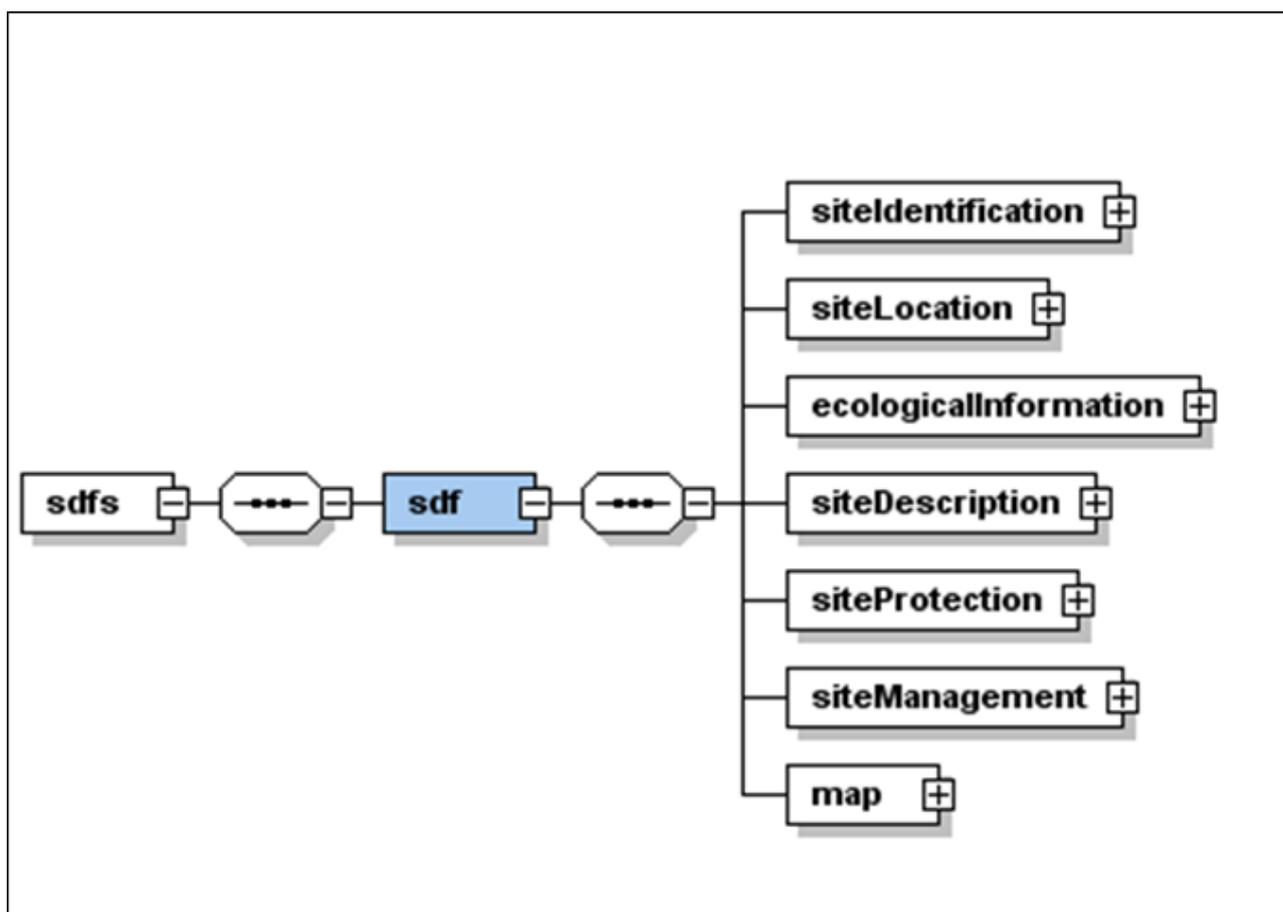


Figure 1 – Main elements of the XML schema

2. Natura 2000 software: the SDF manager

In order to support Member States in the management of the SDF data and its import according to the agreed transfer formats, a software was provided by the EEA. A first version (beta release) of the software was introduced in December 2011 and since 2012 the software is maintained by the EEA.

The software package together with release notes and user manual is available in the Natura 2000 Reference Portal¹⁶.

In 2014, the software, now known as the SDF Manager, was adapted to support the dual reporting process for the Emerald Network. The Natura 2000 and Emerald Networks are complementary responses to the Bern Convention. The Emerald Network is implemented by European countries that are not EU members. The SDF for Emerald reporting is aligned with the SDF for Natura 2000 reporting to streamline the reporting process and facilitate the reuse of tools.

Since 2015, the source code for the SDF Manager has been available on GitHub at <https://github.com/eea/eionet.nat2000.sdfmanager/releases>.

¹⁶http://bd.eionet.europa.eu/activities/Natura_2000/N2000_software

Main Functionalities of the SDF Manager are:

- **Manage SDFs**
 - Allows users to edit already imported sites and create new sites based on the updated SDF.
- **Import SDFs**
 - Enables users to import SDFs into the application from the following formats for future processing:
 - Old Access Database schema
 - New Database schema
 - New XML schema
- **Export SDFs**
 - Allows users to export one or multiple SDFs in the following formats:
 - Old Access Database schema (.mdb)
 - New Database schema
 - New XML schema
- **Perform Checks**
 - Enables users to conduct quality assurance checks on the data registered in the application.

3. Upload of data via ReportNet

The data coordinators from Member States upload the Natura 2000 data, including both tabular and spatial data, to the ReportNet Central Data Repository (CDR). The requirements for data uploads have been discussed between DG Environment and the EEA. The following sections address the upload of the Standard Data Form and are based on the relevant reference documents¹⁷ regarding the reporting of Natura 2000, which can be found in the Documentation section of the Natura 2000 Reference Portal.

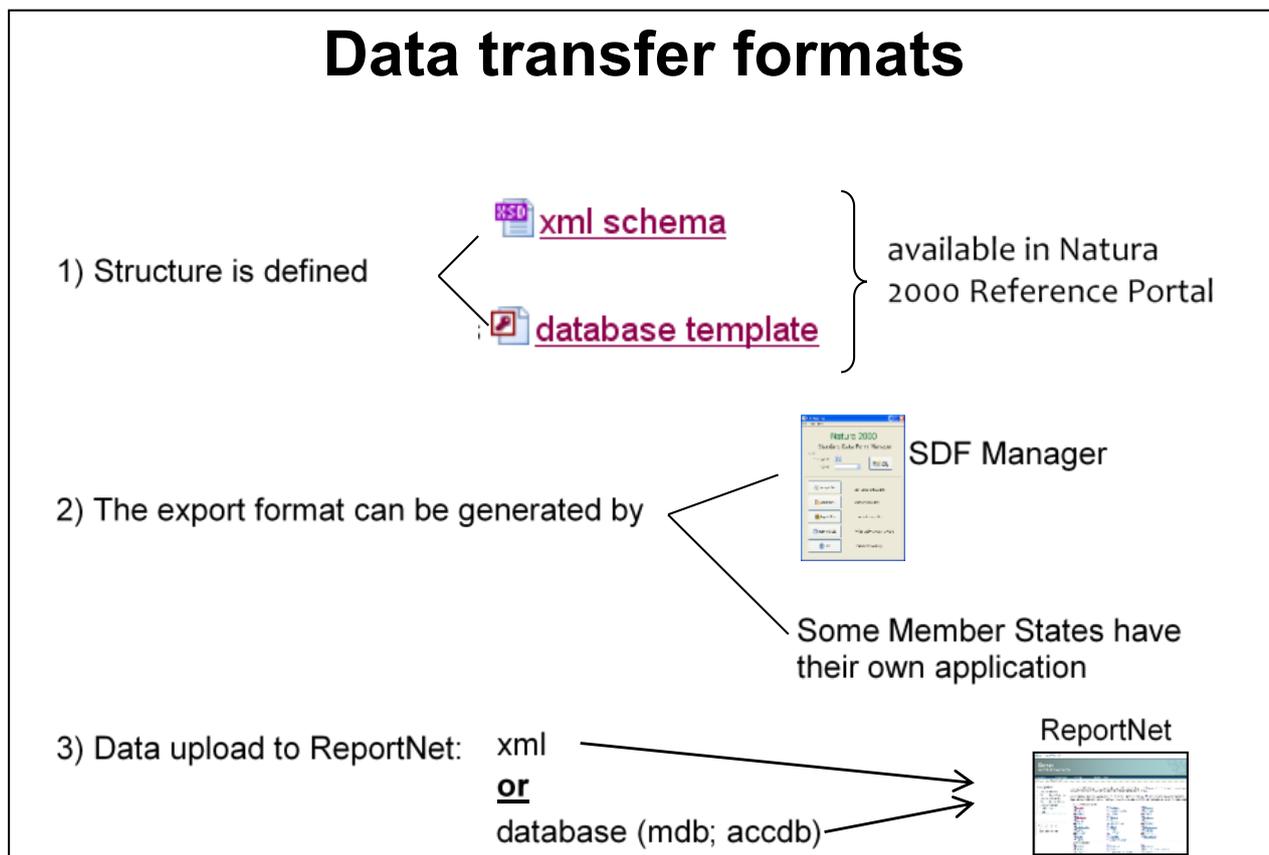


Figure 2- Overview on the data transfer formats for the tabular data which can be used by Member States to upload data to ReportNet. If both xml and MS Access formats are available, the xml file is seen as the master delivery.

¹⁷ https://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

3.1. Requirements for the upload of data

The general principles for uploading data to the CDR were agreed upon by DG Environment, the Member States, and the EEA (Doc Hab 09-02/06¹⁸, Note to the attention of the Habitats Committee, Brussels, 5.2.2009). These are progressing over the time, always adapting to new knowledge and technical evolution.

Submitting electronic Natura 2000 datasets via ReportNet principles

I. For descriptive data, the complete dataset in electronic format must be provided whenever there is a change in the area of the site or in the information regarding species or habitats. Descriptive data should be submitted in a single database. The Standard Data Form (SDF) can be provided in .pdf or .doc format for new or modified sites, but this is not mandatory.

II. For spatial data, the complete dataset in electronic format must be provided for each modification. PDF maps can be submitted for new or modified sites, but they will not replace the spatial data.

III. Descriptive data must be delivered according to the agreed SDF format (see the Natura 2000 Reference Portal for the officially agreed database template or XML schema).

IV. Member States should only submit the latest updated complete national datasets. Consistency of data from different regions, particularly in Member States with a federal structure, must be ensured.

V. Member States should always provide both descriptive and spatial datasets.

VI. Member States should submit a single descriptive database that includes both Special Protection Areas (SPAs) and Sites of Community Importance (SCIs).

VII. Each submission must be accompanied by a document explaining or justifying the changes that have occurred in the datasets.

VIII. The official status of the submitted data should be confirmed by a letter from the Permanent Representation. Only then will the datasets be considered and validated.

Further details regarding the Natura 2000 electronic data deliveries are provided in the guidelines¹⁹ available in the Natura 2000 Reference Portal.

3.2. Notifications and official acceptance of the delivery

The ReportNet service is used for sending notifications and providing feedback to reporters on their deliveries within the Natura 2000 data flow. After a data delivery is uploaded, an automatic acknowledgment receipt is sent back to the national data coordinators, who then forward it through their Permanent Representation to DG Environment to formalize the delivery.

All data are retrieved from ReportNet and placed in a common storage environment, where they are processed overnight to generate Quality Assurance and Quality Control (QAQC) reports the following day. These reports are then uploaded as feedback to the Member States. The status of data deliveries is documented by DG Environment using a standardized Excel table known as the Mini-check Overview Table (MCOT). This MCOT is primarily designed for internal use by DG Environment and allows for increased traceability of the uploaded files to ReportNet and the workflow for each file. The MCOT records the Natura 2000 upload activity over the course of a year, with each data upload on ReportNet represented in a single line.

¹⁸ <https://www.eea.europa.eu/themes/biodiversity/document-library/natura-2000/reporting-guidelines-for-natura-2000/reference-documents-relevant-for-the/habcomm2009-submitting-electronic-natura-2000/habcomm2009-submitting-electronic-natura-2000> (please copy-paste the link to your browser)

¹⁹ http://bd.eionet.europa.eu/activities/Natura_2000/Folder_Reference_Portal/Reporting%20guidelines%20update%201.3-March%202012.pdf

3.2.1. The mini-check Overview Table

An annual Excel table, known as the 'Mini-check Overview Table' (MCOT), is maintained to track the data flow. While the manual mini-check is still performed, it has diminished in importance since the Quality Assurance and Quality Control (QAQC) reports are generated overnight. However, if any obvious shortcomings or missing elements are identified since the upload, these will be immediately reported back to the corresponding Member State (MS) representative, and the QAQC will not be conducted. Issues that could block further processing of the data include missing explanatory notes or missing projection files.

Once the data has passed through the initial stages of the mini-check and the automated report is generated, DG Environment makes a decision regarding the acceptance of the data delivery. If any changes to the data delivery have been discussed in separate official correspondence, this must also be noted in the document, either by copying the correspondence here or by referring to it (including the ARES registration number).

The table (see below) has the following structure:

- Member State
- Date of Upload on ReportNet
- Registration Number in EC Internal Registry of Notification Email (ARES)
- Date of the Official Confirmation Letter from the Permanent Representation
- Registration Number in EC Internal Registry of Permanent Representation Letter (ARES)
- Content Type: Spatial and/or tabular? Normally, it should be complete, but exceptions may still exist.
- Basic Assessment of First Check: 'ok/no' or 'follow-up?'
- Four Columns for QAQC: Descriptive (i.e., tabular) data, spatial data, comparative data (each with the number of PDF pages), and date of upload on ReportNet.
- QA/QC Status: 'ok' or 'no'. If 'no', the MS needs to submit a new dataset.
- URL of ReportNet Upload
- Remarks
- Example: For the year 2015, 19 Member States submitted new data, resulting in 54 uploads on ReportNet.

Table 1 - Example of the table "Mini-check overview table" (MCOT)

MS	Date of upload	ARES reg.	Date Letter/Email Perm Rep	ARES number	Upload Notification		content		1st check		QAQC			to harvest for EU-dbase	ReportNet Address	MS
					Spatial	Tab	ok	ok	DESCR	SPATIAL	COMP.	WHEN?				
LT	17/02/2016	853273			both	both	ok	ok	212	-	3	19/2	no	http://cdr.eionet.europa.eu/lt/lt/	LT	
ES	18/02/2016	864208			both	both	ok	ok	1060	-	3	19/2	ok	http://cdr.eionet.europa.eu/es/es/	ES	
RO	25/02/2016	1066898			both	both	ok	ok	278	-	2	7/3	ok	http://cdr.eionet.europa.eu/ro/ro/	RO	
LT	2/03/2016	1100113			both	both	ok	ok	212	-	3	7/3	ok	http://cdr.eionet.europa.eu/lt/lt/	LT	
SI	16/03/2016	1341040	13/03/2017	1392059	both	both	ok	ok	14	-	2	18/4	ok	http://cdr.eionet.europa.eu/si/si/	SI	
RO	11/04/2016	1744924			both	both	ok	ok	254	2	2	18/4	ok	http://cdr.eionet.europa.eu/ro/ro/	RO	
MT	25/04/2016	1948294	27/04/2016	2029198	both	both	ok	ok	19	-	2	28/4	ok	http://cdr.eionet.europa.eu/mt/mt/	MT	
UK	24/05/2016	2420232	30/05/2016	3186580	both	both	ok	ok	73	-	-	27/5	ok	http://cdr.eionet.europa.eu/gb/gb/	UK	
FR	13/06/2016	2733524			both	both	ok	ok	log	-	-	-	no	http://cdr.eionet.europa.eu/fr/fr/	FR	
FR	4/07/2016	3184955			both	both	ok	ok	438	-	8	3/8	ok	http://cdr.eionet.europa.eu/fr/fr/	FR	
BG	8/07/2016	3959584			both	both	ok	ok	242	-	2	2/8	ok	http://cdr.eionet.europa.eu/bg/bg/	BG	
ES	20/07/2016	3961690	3/08/2016	4080952	both	both	ok	ok	1061	-	6	2/8	ok	http://cdr.eionet.europa.eu/es/es/	ES	
LV	15/08/2016	4432128			both	both	ok	ok	115	-	2	18/8	ok	http://cdr.eionet.europa.eu/lv/lv/	LV	
UK	15/09/2016	5345687	22/09/2016	5507164	both	both	ok	ok	73	-	4	16/9	no	http://cdr.eionet.europa.eu/gb/gb/	UK	
DE	27/09/2016	5575336	27/09/2016	5690235	both	both	ok	ok	3019	-	4	11/10	ok	http://cdr.eionet.europa.eu/de/de/	DE	
UK	27/09/2016	5580494			both	both	ok	ok	73	-	-	-	no	http://cdr.eionet.europa.eu/gb/gb/	UK	
BG	28/09/2016	5623978	4/10/2016	5794123	both	both	ok	ok	241	-	2	10/10	ok	http://cdr.eionet.europa.eu/bg/bg/	BG	
CZ	30/09/2016	5720641	6/10/2016	5910869	both	both	ok	ok	133	-	2	10/10	ok	http://cdr.eionet.europa.eu/cz/cz/	CZ	
IE	30/09/2016	5724606	22/01/2017	414869	both	both	ok	ok	67	-	2	10/10	ok	http://cdr.eionet.europa.eu/ie/ie/	IE	
HU	30/09/2016	5726845	5/10/2016	5789998	both	both	ok	ok	268	-	2	10/10	ok	http://cdr.eionet.europa.eu/hu/hu/	HU	
FR	30/09/2016	5728545			both	both	ok	ok	413	-	8	10/10	ok	http://cdr.eionet.europa.eu/fr/fr/	FR	
LV	30/09/2016	5729299	6/02/2017	741586	both	both	ok	ok	114	-	2	10/10	ok	http://cdr.eionet.europa.eu/lv/lv/	LV	
AT	6/10/2016	5832561	7/10/2016	6282379	both	both	ok	ok	76	-	3	10/10	ok	http://cdr.eionet.europa.eu/at/at/	AT	
FR	11/10/2016	5869425			both	both	ok	ok	411	-	8	24/10	ok	http://cdr.eionet.europa.eu/fr/fr/	FR	

For the final EU-wide database and its connected products, only the most recent upload from a Member State (MS) is considered, as it is presumed to represent the most up-to-date Natura 2000 data available to the national authorities.

3.2.2. Files saved in WebDav

In parallel to the MCOT, where the approach is made on an annual basis, another table has been created to allow to keep track in one glance databases that have been provided by each Member State over the time. So, this table has a MS oriented approach.

It has the following structure:

- DATE section
 - Date of upload (in ReportNet) or of the CD or disquette
 - Date of the Officialisation Letter from Permanent Representation
 - Date of annexed pieces or communications
- DESCRIPTIVE DATA section
 - Content (n2k, sci or spa)
 - Format: xml/mdb (this column has been added at a later stage)
 - Completeness: c or p are depending on the content; if the content is a complete SPA dataset of the MS, than 'c' is marked here
 - If partial, which part ?
 - Number of sites
- SPATIAL DATA section
 - Content
 - C / P
 - If P, which part ?

- Maps & SDF: sometimes, though this is not obligatory, MS provide maps and/or sdf in pdf, jpg or word format. This is indicated in this column
- Carriers (CD, disquette, floppy) or Upload from ReportNet
- Date of the congregated EU wide dataset for which the respective national datasets were used

Comments to the structure:

- The date marked in bold corresponds to the file name (in webdav, always YYYY-MM-DD)
- Initially the letter of the Permanent Representation has always been THE date we had to refer to when mentioning a dataset. The reference date had to be changed due to the automation of the data handling process
- Experience has shown that a third date column was necessary, as some MS mainly referred to the date of the internal communication, more than to the letter sent by the Permanent Representation, or the date of upload. This column was not in the prototype of this table, it has been added afterwards, this explains why some boxes still need to be filled in

Table 2 - Example of the table "Files saved on WebDav", here 'The Netherlands'

NL	DATE Upload or Support	DATE Perm Rep Letter	other correspondence if no BI	DESCR database			SPATIAL db			JPG / PDF		carriers	NL		
				content	xml/mdb	p/c	if p, which part	nbr	content	p/c	if p, which part			sdf	maps
3	1999-01-14	1999-02-09		n2k		p	modified sites	17	-	-	-	-	1	disquette	
4	1999-03-02	1999-03-25	-	n2k		c		90	-	-	-	-	-	disquettes	
5	2003-05-16	2003-05-19		sci		c		142	-	-	-	-	477	D + 2 disquette	end2003
6	2004-02-19	-	2004-02-20	n2k		c		211	-	-	-	-	-	CD	
6	2004-03-05	2004-03-15	2004-02-01	n2k		c		211	n2k	c	-	-	140	CD	end 2004
7	2005-10-19	2005-10-26	-	sci		c		141	-	-	-	-	3	CD	end2005
8	2007-03-08	2007-03-23	-	sci		c		141	-	-	-	4	-	CD	
9	2007-07-20	2007-08-03		spa		c		77	spa	c	-	-	44	CD	end2007
10	2007-08-30	2007-09-14		sci		c		142	-	-	-	-	-	CD	end2007
11	2008-12-15	2008-12-22		sci		p	marine	4	sci	p	marine	4	19	CD	end2008
12	2009-03-27	2009-03-27		sci		c		145	-	-	-	-	1	CD	
13	2009-05-12	2009-05-19		sci		c		146	n2k	c	-	4	19	CD	end2009
14	2010-10-04	2010-10-05		n2k		c		215	n2k	c	-	-	1	ReportNet + C	end2010
15	2011-10-06	2011-10-06	2011-10-06	n2k		c		203	n2k	c	-	-	-	ReportNet	end2011
16	2012-10-31	2012-10-31	2012-10-30	n2k	mdb	c		203	n2k	c	-	-	-	ReportNet	end2012(bt)
17	2013-10-01	2013-10-03	-	n2k	xml	c		199	n2k	c	-	-	-	ReportNet	end2013(bt)
18	2014-06-23	2014-06-23	-	n2k	xml	c		195	n2k	c	-	-	-	ReportNet	end2014(bt)
19	2014-09-30	2014-10-07	-	n2k	xml	c		194	n2k	c	-	-	-	ReportNet	end2014(bt)
20	2015-09-30	2015-10-16	-	n2k	xml	c		194	n2k	c	-	-	-	ReportNet	end2015
21	2016-12-22	2017-01-16	-	n2k	xml+	c		195	n2k	c	-	-	-	ReportNet	end2016

These tables, the MCOT and the WebDav overview table, have been created for internal use, enabling a fast reply to all kind of requests to DG ENV.

4. The production of the European Natura 2000 database

The Natura 2000 processing system includes an online data management application known as the “Natura 2000 web app” (<http://nature.eea.europa.eu/>), which allows the DG Environment unit D3 to manage the production of both the European Official and Public databases at any time. The application provides the option to select which delivered files will be used for the creation of the European database. The following sections, along with Annex 5, describe the processes available through the Natura 2000 web app.

4.1. Transfer of data from Reportnet to the common workspace

The datasets, including both tabular and spatial data, are downloaded by DG Environment from ReportNet to a common workspace maintained by the European Environment Agency (EEA). This common workspace, known as Natura 2000 WebDAV, is shared among the EEA, the European Topic Centre on Biological Diversity (ETC/BD), and DG Environment.

The Natura 2000 processing system, developed by Bilbomatica on behalf of the EEA, screens the WebDAV for new files. Two processes are automatically launched every night.

The first process, called the Data Preparation Tool, unzips files, searches for all required files and data, and copies them from WebDAV to the work directory. The second process, known as the

Import Tool, manages and verifies the information (both tabular and spatial) contained in the files.

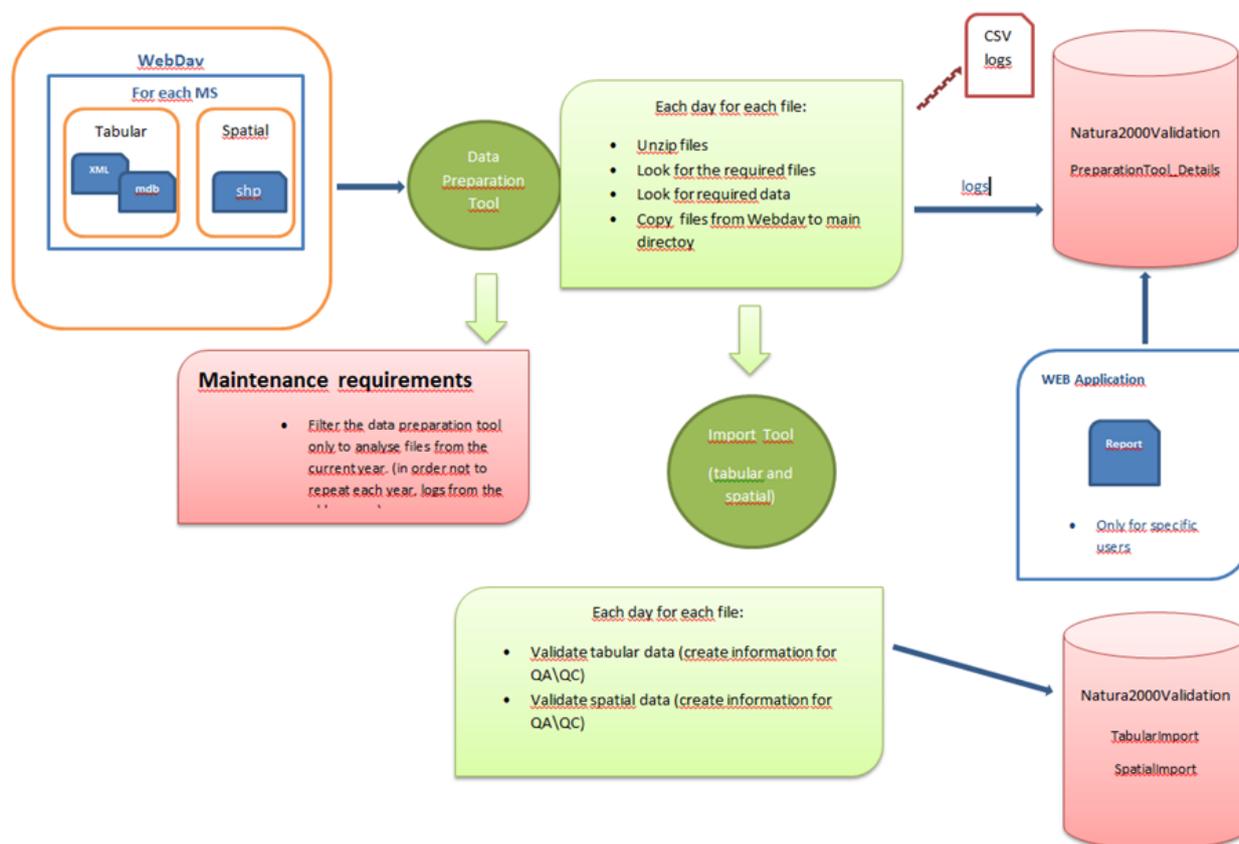


Figure 3 – Transfer of data files from the WebDav to the Natura 2000 system

The Natura2000 processing system compiles the data delivery change reports with the logs of these two processes.

To see technical documentation of these processes go to the [OneNote library](#).

The following schema gives an overview on the Natura 2000 processing system.

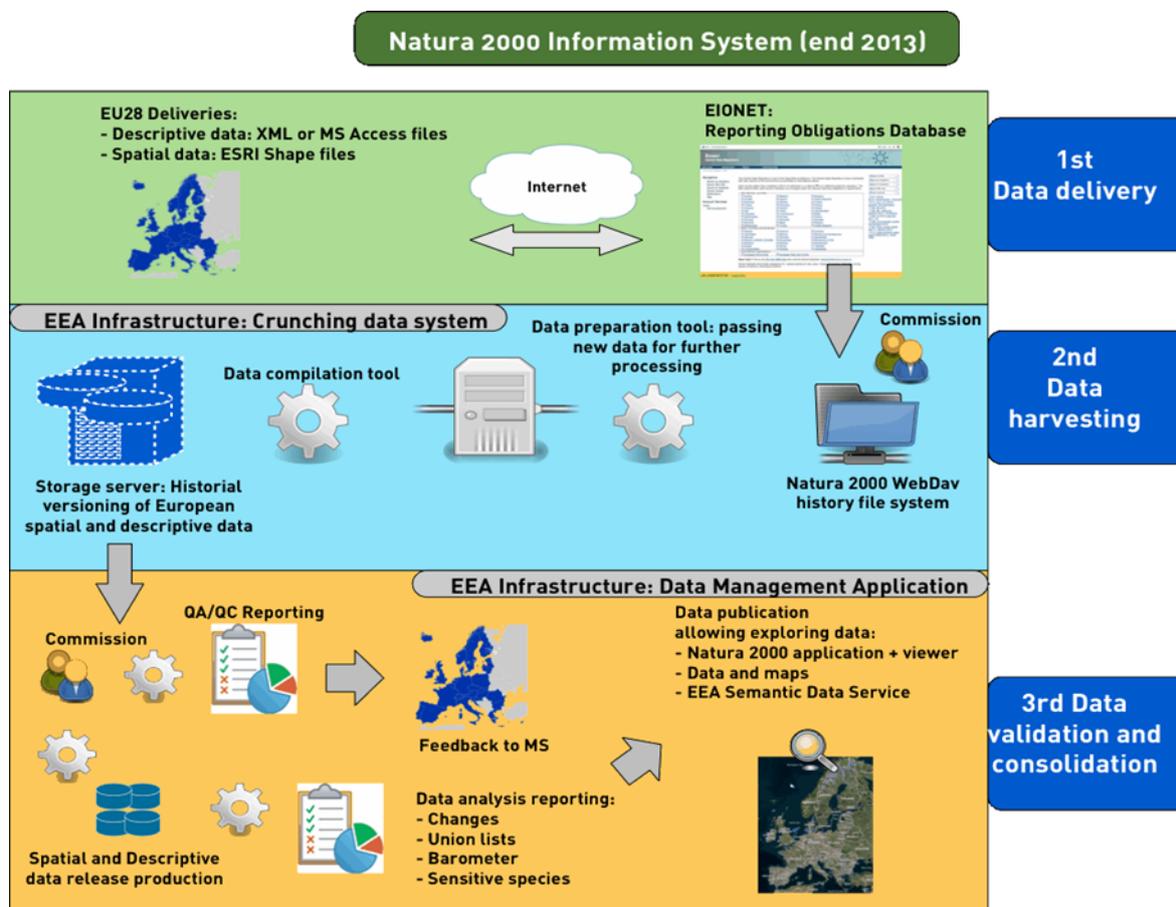


Figure 4 - Scheme taken from presentation given by Bilbomatica in November 2013

4.2. Compilation of the Natura 2000 databases

The Release Maintenance manages the three kinds of releases:

1. Temporary release - This intermediate database is the basis for the QA/QC reports (Descriptive, Spatial and Comparative)
2. Official release – The consolidated final internal European database incl. sensitive information
3. Public release – The consolidated final public European database excl. sensitive information

Release maintenance is described in the [OneNote library](#).

All data (both tabular and spatial) submitted by Member States undergo an automated validation check, which is utilized to produce Quality Assessment and Control (QA/QC) reports. The QA/QC process focuses on three key aspects: 1) the consistent representation of the site in both the tabular and spatial datasets; 2) the comparison of the centroid position of the boundary, as calculated using Geographic Information Systems (GIS), with the latitude and longitude values provided in the tabular data; and 3) the comparison of the area, as calculated using GIS, with the values supplied in the tabular data.

Once the data has passed the QA/QC process, it is reprojected to the European projection (ETRS LAEA 5210), and the datasets are merged to form the European dataset.

After the data is validated, quality-checked, and approved, a consolidated EU-wide database is produced, known as the Official Release. This database contains the original data submitted by Member States and is used for internal analysis; it is referred to as the 'internal' dataset and is not shared with external parties.

To make the data publicly available (the Public Release), it must undergo two additional operations: filtering out sensitive information and cleaning up any significant spelling errors and duplications.

4.2.1. 'Cleaning up' process

To create the consolidated European public database, corrections are made to the original data submitted by Member States. These corrections are necessary to ensure that the Member State data meets the technical requirements of the European database and to enhance its usability. The original data, as delivered, is retained, and any necessary corrections do not alter the content of the data but are purely technical in nature. The cleaning process is carried out automatically, and the following corrections are made:

- Duplicate records in all tables are removed.
- Empty strings and fields containing only spaces are converted to NULL.
- Non-UTF16 codes that create XML issues are replaced with their hexadecimal codes.
- A species name field is created to eliminate 90% of the syntax errors in species names (for search purposes).

For an explanation of the different parts of the clean-up process, see Annex 1.

4.2.2. Filter for sensitive data

For certain species, confidentiality is necessary to protect against collection activities that may pose a significant threat. Therefore, the Habitats Committee has agreed that sensitive data on these species will not be disclosed externally. The Commission must ensure that datasets shared with other organizations (including other Commission services, researchers, international organizations, etc.) or made available to the public do not contain this sensitive information.

The revised Standard Data Form (SDF) includes a field where Member States can indicate whether information on specific species is sensitive, referred to as the 'sensitive information flag.'

4.2.3. Technical documentation

All the technical documentation is available in the EEA OneNote library. It contains information about the infrastructure and the workflows of the Natura2000 processing system: [OneNote Library](#)

5. Products of Natura 2000

Products derived from the Natura 2000 process are divided into primary and secondary products. The secondary products are derived from the primary products.

5.1. Primary products

5.1.1. Tabular data

The tabular data consists of the quality assured merged version of the Member State datasets and covers all 28 EU countries. The database consists of 12 tables which are linked as illustrated below.

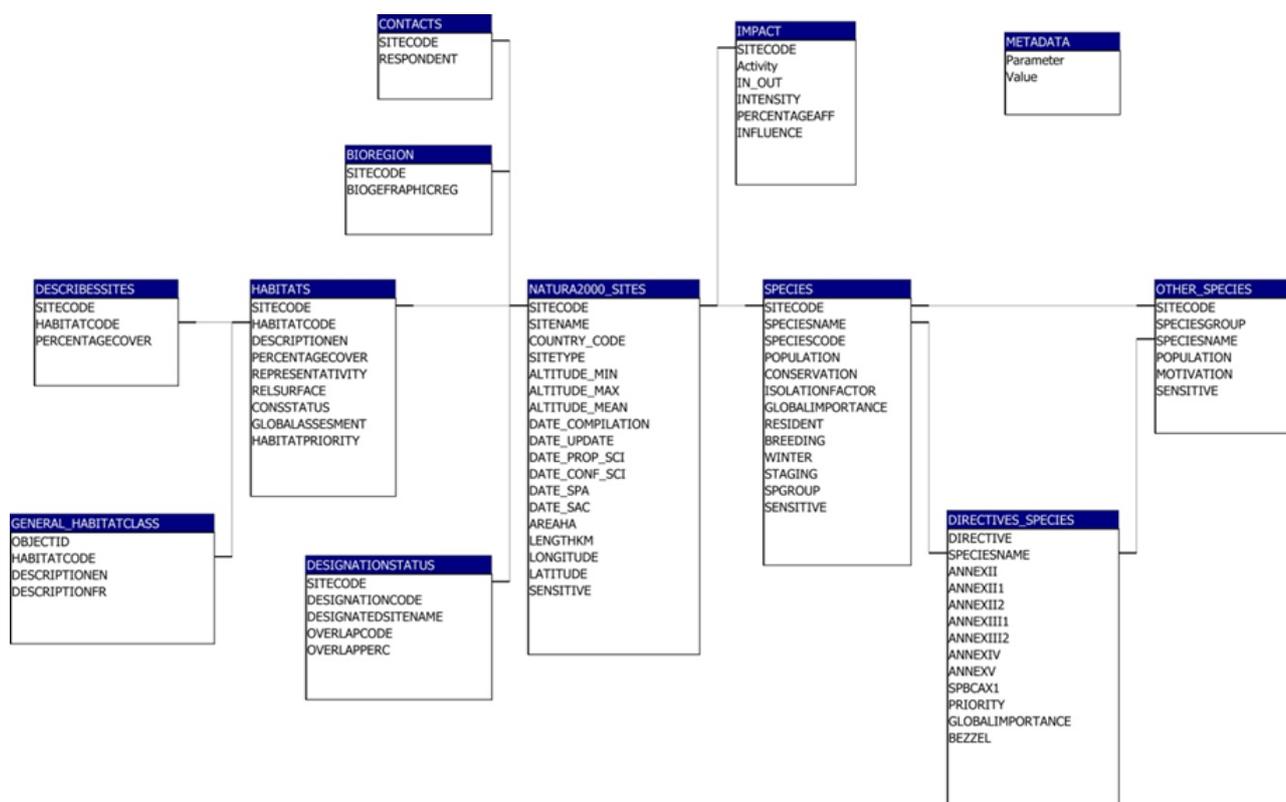


Figure 5 - Relationship diagrams of the tabular data

The Official internal database consists of all records, including those of sensitive species, while the Public database excludes sensitive species. It is important to emphasize that the internal database should be used by all parties when working on Natura 2000, and the specific version of the database must be clearly referenced in all subsequent analyses.

The internal version as well as the public version of the database is available in MS Access database (.mdb) format via the Natura 2000 web app while the public version of the database can also be freely downloaded from the EEA web site²⁰.

²⁰http://www.eea.europa.eu/ds_resolveuid/DAT-68-en

5.1.2. Spatial data

The spatial data consists of the quality assured Member State data being merged into an EU wide dataset in the ETRS LAEA 5210 projection. The spatial dataset contains the following attributes.

Attribute	
SITECODE	Unique identifier; used to link to the tabular data
SITENAME	Name of the site; can be used to link to the tabular data
SITETYPE	Denotes whether the site is an SCI, SPA or both
RELEASE_DA	Release date
MS	Member State

The spatial dataset is generalised to a scale of 1:100 000, therefore the boundaries of the sites in this dataset will not be as precise as the boundaries in the Member States supplied dataset.

The data is available as shape files via the Natura 2000 web app or as shape and sqlite files from the EEA website²¹.

5.2. Secondary products

5.2.1. Validation reports

The QA/QC reports for the tabular and spatial data per Member State and per reporting period are available via the Natura 2000 web app. These reports identify errors in the data. See also Annex 5.

5.2.2. Maps

A series of maps²² are generated for each Member State and for Europe as a whole. The maps show the sites designated under the Birds Directive, Habitats Directive and those sites covered by both Directives (the 'C types' sites).

5.2.3. Statistics

The Natura 2000 barometer includes Natura 2000 area statistics on SPA and SCI/SCA by MS and EU.

Since 2016 the process of the Barometer has been automated and it can be executed from the Natura2000 web application. With the web app the barometer can be generated for a selected release, see also Annex 5 and 6.

For more technical information please visit the [OneNote library](#).

5.2.4. The Union lists

The Union Lists are official lists of SCI (Sites of Community Importance designated under the Habitats Directives) by biogeographical region. There are nine Union Lists, one for each biogeographical region (Alpine, Atlantic, Black Sea, Boreal, Continental, Macronesian, Mediterranean, Pannonian and Steppic).

²¹http://www.eea.europa.eu/ds_resolveuid/DAT-68-en

²²http://www.eea.europa.eu/ds_resolveuid/3B09AE16-6E15-427B-93BF-148583C06475

The information included in the Lists is site code, site name, area, coordinates of the site centroid, and priority (highlight the presence of a priority habitat type or species). These lists are updated annually in order to include (or not) all changes in the above fields (name, area, coordinates and priority). Member States revise changes in the Union Lists and the Habitats Committee subsequently approve the Union Lists. After approval, the Lists are published in the Official Journal of the European Union²³.

The steps involved in the creation of the Union lists are outlined below (see also Figure 6):

1. **Union List Database**

The provisional Union Lists are automatically generated in MDB format through the Natura 2000 web application, based on the latest Official database (Get Natura 2000 Data Products > Export of the Union List data of Natura 2000). Using this database as a basis, the ETC/BD reviews the lists, adding marine sites to the corresponding terrestrial biogeographical list and ensuring that all sites are correctly categorized by their biogeographical region(s).

2. **Production of the Union Lists Changes Reports**

A changes table, which highlights the differences between the Official database and the previous Official database, is automatically generated by the Natura 2000 web application. This table can be exported in various formats, such as PDF or XML. Additionally, the ETC/BD manually produces documents detailing changes in sites added or deleted, changes in area, name, coordinates, and priority features, categorized by biogeographical region and by Member State. These documents are referred to as Union Lists Changes Reports.

Furthermore, the ETC/BD ensures that all changes included in the changes reports are properly explained by the Member States. If explanations are lacking, specific questions are directed to the Member States. Typically, submissions of official data are accompanied by a document explaining or justifying the changes that have occurred in the datasets. The ETC/BD pays special attention to sites that are deleted, to any area reduction (especially when it exceeds 5% of the Site of Community Importance (SCI) area), and to the deletion of priority features.

3. **Comparison of Draft Union Lists with the Previous Official Union Lists**

The draft lists prepared by the ETC/BD are compared with the previous Union Lists that were officially approved by the Habitats Committee using comparison software. This comparison occurs in parallel with the production of the Union Lists Changes Reports to facilitate the identification of changes in area, length, coordinates, and priority. All changes between the previous official Union Lists and the current draft Union Lists must be reflected in the Union Lists Changes Reports categorized by Member State and by biogeographical region.

4. **Consultation Period**

The draft Union Lists are subject to a consultation period with Member States. The ETC/BD sends the draft Union Lists, along with the changes reports that justify all modifications, to DG ENV (D3, Frank Vassen). After their perusal, DGENV D3 send them out to the Member States. All changes need to be properly explained by MS in the documents that accompany the official deliveries. When this is not the case, MS are asked for explanations in the Union Lists Changes Report. Based on the consultation period, the Union Lists are modified where necessary. After taking into account MS's comments and amendments, the Final Draft Union Lists are again sent to Member States.

5. **Last-Minute Changes**

The ETC/BD considers last-minute changes to all modifications requested by the Member States after the Final Draft Union Lists have been prepared.

²³http://ec.europa.eu/environment/nature/natura2000/biogeog_regions/index_en.htm

In 2017 it was decided that priority features with non-significant “representativity” (for habitats) and non-significant “population” (for species) will no longer be considered a priority. Non-significant representativity/population is indicated with the D category in the Standard Data Form.

Two change reports generated by the Natura 2000 web app (see Annex 5) are used for the Union List work:

- **Descriptive Data Delivery Change report**
- **Union Lists Change Report**

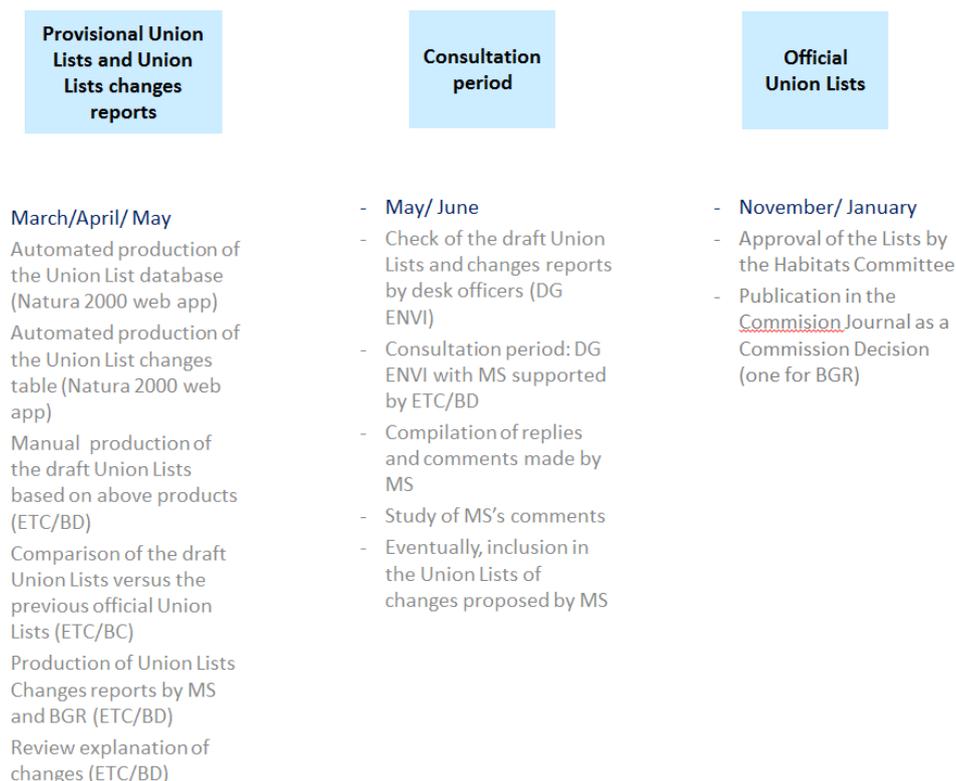


Figure 6 - Overview on the Union Lists workflow

5.2.5. Natura 2000 Internal Viewer

The ‘internal’ Natura 2000 viewer is similar to the public viewer but with added functionality in terms of visualising statistics, enhanced searches and a site boundaries historical viewer. Information about sensitive species is available. The dataset used by the viewer is the Official dataset. This viewer is accessible to the DG Environment, the EEA and the ETC/BD.

5.2.6. Natura 2000 Public Viewer

The Natura 2000 public viewer²⁴ enables the user to visualise the Natura 2000 network and search for sites, habitats and species. Information about sensitive species is not available in the public viewer. The data shown via the public viewer is the Public dataset.

²⁴<http://natura2000.eea.europa.eu/>

The main search and display functions are

- search a Natura 2000 site (by name or code)
- search all sites for a species (by name or code)
- search all sites for a habitat type (by name or code)
- search EU distribution area (for a species or a habitat type)
- search EU breeding distribution area (for a bird species)

There are three display options for species: **standard dots / type of site use / population size**

There are three display options for habitat types: **standard dots / habitat area / degree of conservation**

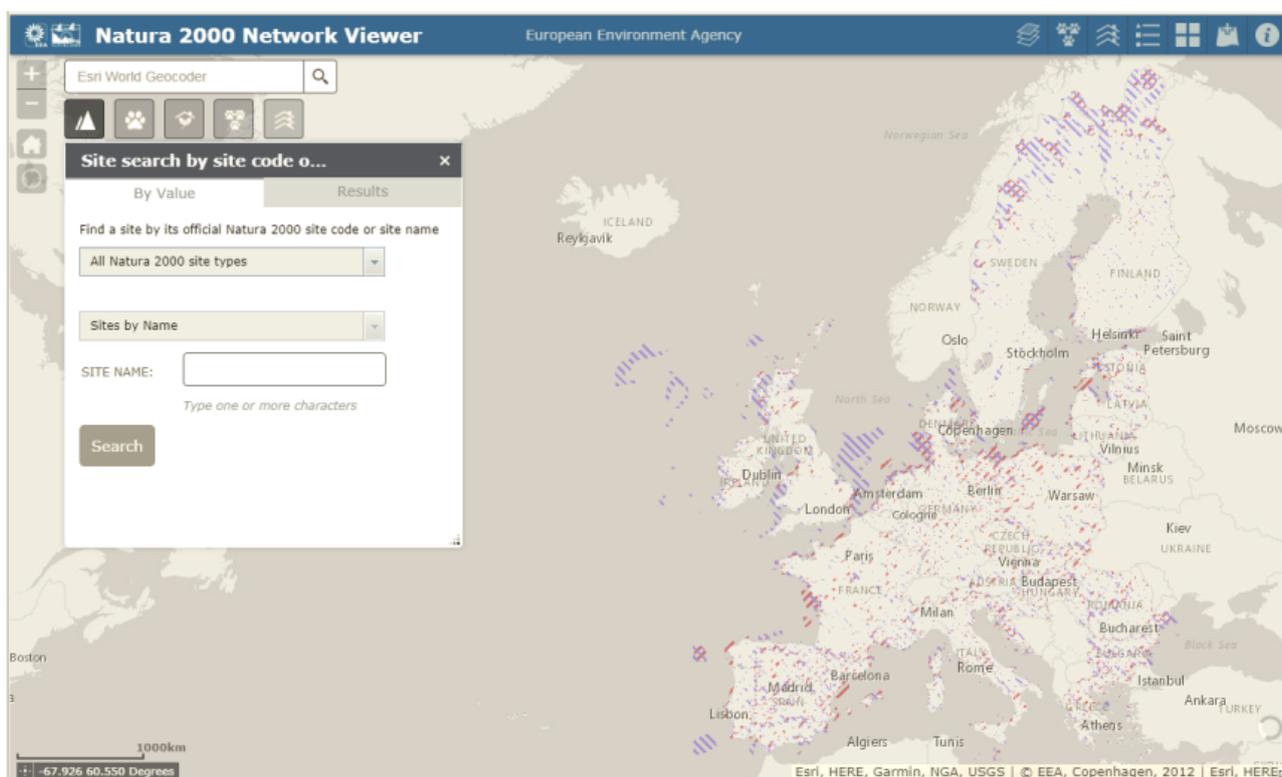


Figure 7 - The Natura 2000 public viewer

The Natura 2000 viewer includes as well:

- Article 17 and 12 distributions, conservation status, area coverage and population
- Biogeographical regions, Land parcels purchased with LIFE co-funding.
- The possibility to add data to the map by searching for layers in ArcGIS Online, entering URLs, or uploading local files in different formats (SHP, CSV, GPX and GeoJSON).
- Users with an EEA organisational ArcGIS Online account can save their maps including additional layers. Other users cannot save their mashups.

For more information in relation with viewer please visit the [OneNote library](#).

5.2.7. Overview of map viewers

An overview of Natura 2000 viewers are available at

<http://eea.maps.arcgis.com/apps/PublicGallery/index.html?appid=4f9dafe066884d96b6f1298ef21e38cb>

The map viewers are

- Natura 2000 map viewer (in production)
- Barometer viewer (close to ready)
- Natura 2000 and Corine land cover viewer (draft)
- Natura 2000 historical viewer (draft)

Annex 1: Description of the clean-up processes

Clean up duplicates records in all tables

Some datasets sent by Member State contain duplicate records meaning that there are identical repetition of entries e.g. for a site. These duplicates are removed inter alia to guarantee the correct calculation of statistics.

Empty strings, fields containing only spaces are all converted into NULL

'Empty fields' within the tables often contain spaces, these are removed, in addition the empty strings²⁵ are set to NULL²⁶ which explicitly means that the value is non-existent.

Non UTF16 Codes creating XML issues are replaced by their Hex Code

UTF16²⁷ is a character encoding capable of encoding the entire Unicode repertoire. In some cases the databases contains other character encodings, these are replaced by their Hexadecimal Code in order to allow for the conversion to XML.

A species name field is created that removes 90% of the syntax errors in the species names (For search purposes). The steps are

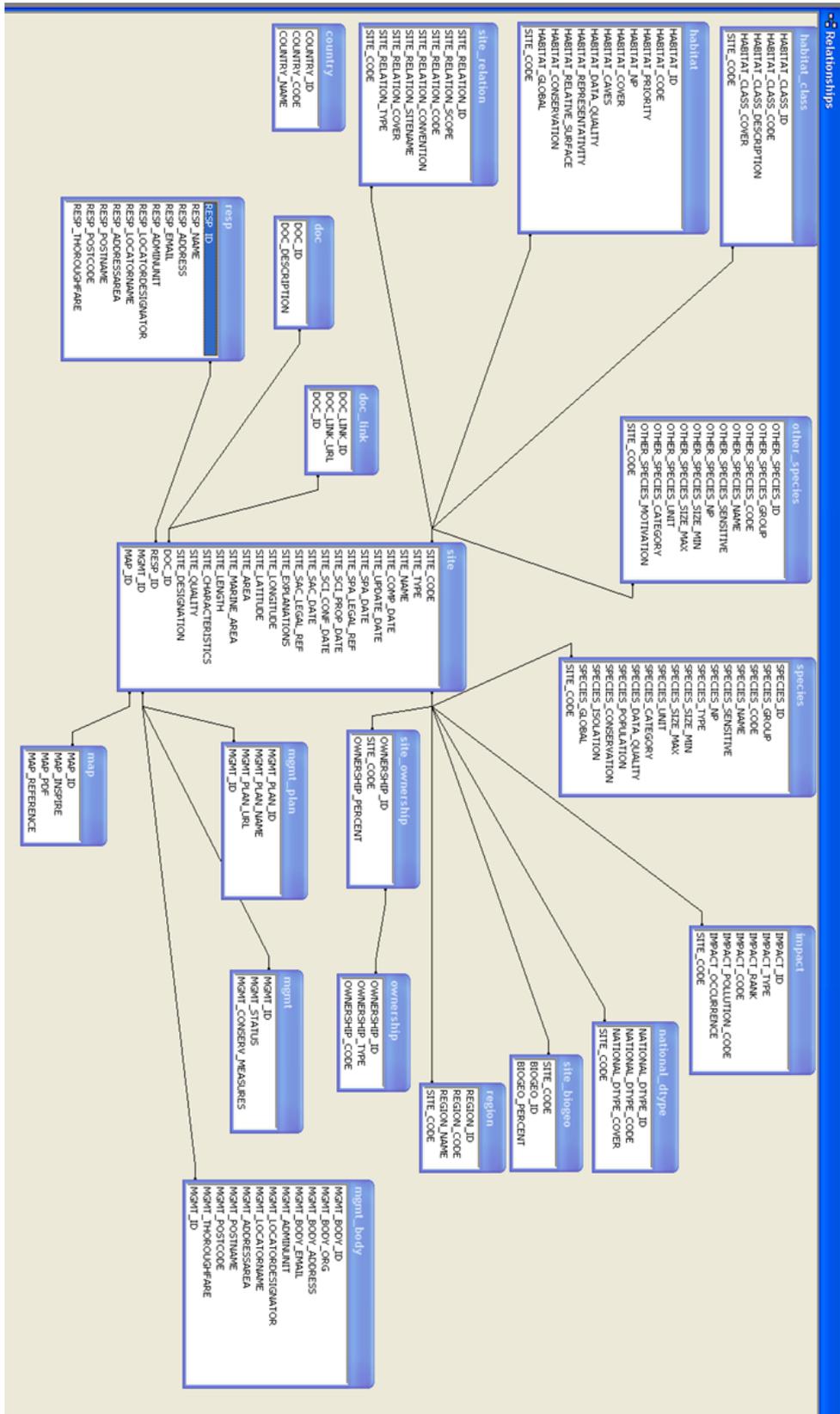
- Step 1 : Remove front and back spaces
- Step 2 : Remove all -/v, -/v, -/st, -/sh, -/e ...etc
- Step 3 : Remove all with some name date at the end of the line
- Step 4 : Remove numbers,>, A-?
- Step 5 : Remove duplicated spaces, ' ', ' ', '[', ']'
- Step 6 : Replace odd content,(Roem. & Schult.,",',A,i,*,=...)
- Step 7 : Remove leading spaces once more
- Step 8 : Set lower/upper case
- Step 9 : Fix ('l.'To'L.'),
- Step 10 : Remove all doubles, finish with ''
- Step 11 : Remove ., &,(,)
- Step 12 : Replace oa,au,ea,ae,ui,eu,eo,ia,ei,ea,oe,i=y

²⁵A string is a sequence of symbols that are chosen from a set or alphabet

²⁶Null is a character with the value zero.

²⁷16-bit UCS/Unicode Transformation Format is a variable-length character encoding for Unicode. Unicode is a industry standard which allows the representation of and manipulation of text as expressed in most of the worlds writing systems.

Annex 2: Entity-Relationship Diagram Natura 2000 Database template used by Member States for data transfer



Annex 3: Natura 2000 reference portal

The Natura 2000 reference portal²⁸ is an aid to the Standard Data Form. This portal provides a set of code list used in the Standard Data Form.

3. Reference Portal for Natura 2000

The Reference Portal for NATURA 2000 is part of the Standard Data Form (SDF). The portal provides those elements of the SDF which are subject to change over time and subject to changes due to technical developments. These elements are reference documents (e.g. the coding of species), technical support material (e.g. data-model, applications) as well as guidelines to ensure a consistent use of the SDF by all Member States and to outline the technical and administrative procedures on how to submit data to the Commission.

- [Standard Data Form](#)

1) ISO 3166 country-code (SDF field: 1.2)

Each Natura 2000 site is recognized by a unique code, whereof the first two characters form the country code. The EU rule of the use of the 2-letter ISO 3166 country-code is applied (see [iso.org](#)). **Exception:** UK is used instead of GB in order to keep the existing coding for site identifiers

English Name	ISO code	English Name	ISO code
Austria	AT	Italy	IT
Belgium	BE	Latvia	LV
Bulgaria	BG	Lithuania	LT
Croatia	HR	Luxembourg	LU
Cyprus	CY	Malta	MT
Czech Republic	CZ	Netherlands	NL
Denmark	DK	Poland	PL
Estonia	EE	Portugal	PT
Finland	FI	Romania	RO
France	FR	Slovakia	SK
Germany	DE	Slovenia	SI
Greece	GR	Spain	ES
Hungary	HU	Sweden	SE
Ireland	IE	United Kingdom	UK

Maintained by: International Organisation for Standardization (ISO), last updated: 24.5.2013

2) List of SCIs per Biogeographical Region (SDF field: 1.7)

The list of sites per biogeographical region, containing for each site the date of its first appearance on the community list is currently under preparation and will be checked with the Habitats Committee before being uploaded here*. For some countries due to the change of site-codes and names between community list publications, bilateral contacts may be needed before finalising a first draft

Maintained by: DG Environment, European Environment Agency (EEA), last updated: 12.04.2011

3) Marine Boundaries (SDF field: 2.3)

For the calculation of the percentage of marine area the Mean High Water Mark should be applied. However some Member States need to apply a different definition due to national legislation.

- [Overview definition marine boundary](#)

Maintained by: DG Environment, European Environment Agency (EEA), (based on input by Member States), last updated: 18.05.2011

4) NUTS regions (SDF field: 2.5)

NUTS is the Nomenclature of territorial units for statistics of Europe, which is maintained by EUROSTAT. For the SDF field 2.5 the NUTS level2 is used.

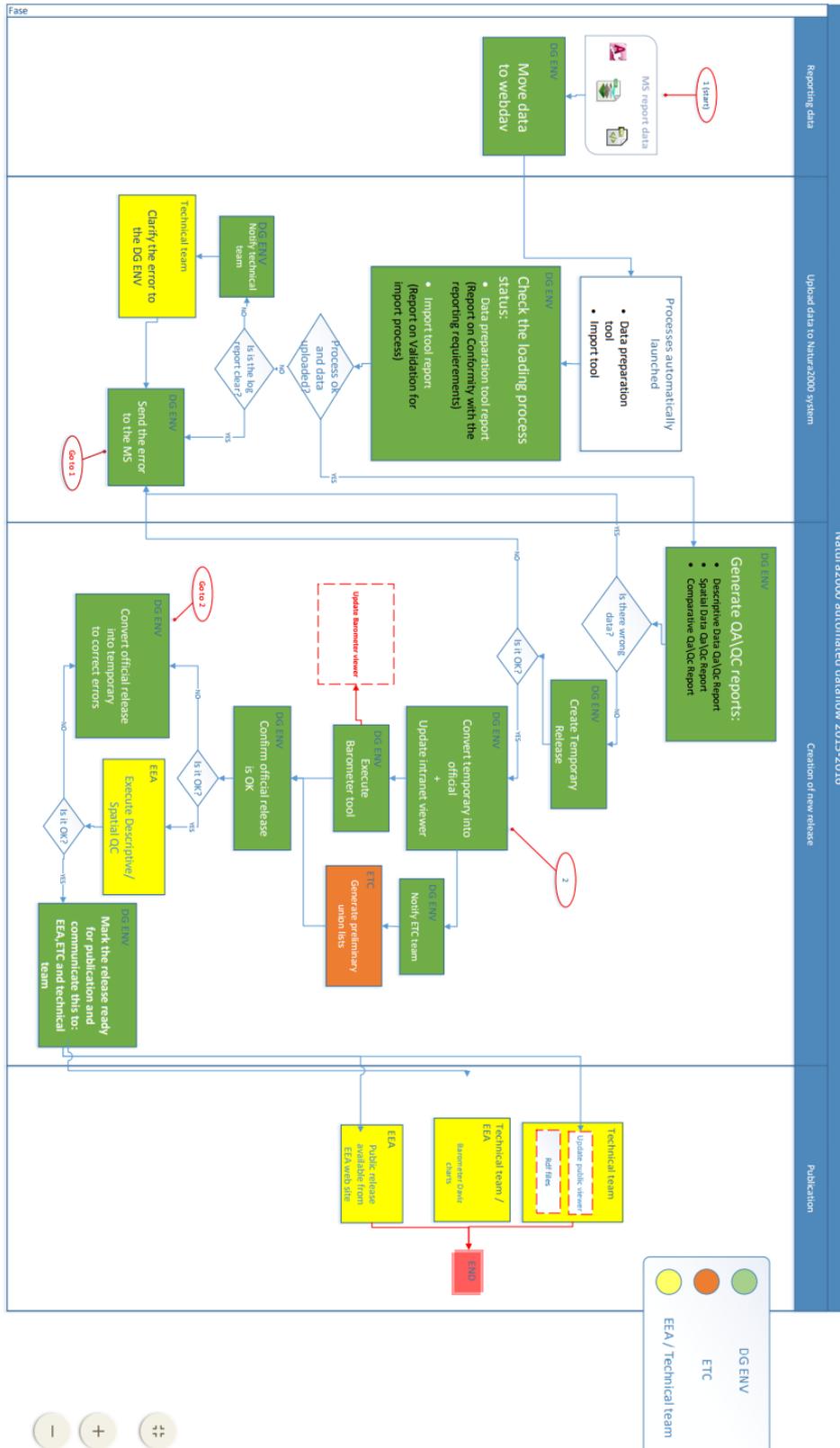
A number of these code lists are subject to change over time due to technical developments. The reference portal enables Member States to easily access these code lists. The code lists are maintained by various entities, including the ETC/BD, EEA, and DG Environment, and are stored in the Biodiversity Data Centre (BDC). Several user front-ends, such as the Natura 2000 reference portal, the Article 17 reference portal, and the Article 12 reference portal, link to these code lists.

²⁸ http://biodiversity.eionet.europa.eu/activities/Natura_2000/reference_portal

Annex 4: Natura 2000 database production work flow

The workflow is available from

https://svn.eionet.europa.eu/repositories/Natura2000/Documentation/Natura2000%20WorkFlow_final.pdf



Annex 5: Natura 2000 web application

The Natura 2000 data processing system has a user interface called the Natura 2000 web application, <http://nature.eea.europa.eu/>. It is meant for data operations and report generation by staff in DG ENV, ETC/BD and to a limited extent EEA staff. The DG ENV and the EEA has an intranet access, while ETC/BD colleagues have access via the internet and a specific role assigned to their Eionet login.

Austria	Natura 2000 in Austria
	Lebensministerium - Natura 2000
	Burgenland
	Kärnten
	Niederösterreich
	Oberösterreich
	Salzburg
	Steiermark
	Tirol
	Vorarlberg
Wien	
Belgium	Natura 2000 in Belgium
	Brussel/Bruxelles
	Vlaanderen
	Vlaanderen, Natura 2000 GIS Portal
Wallonie	Wallonie - Biodiversity Information System
Bulgaria	Natura 2000 in Bulgaria
Croatia	Natura 2000 in Croatia
Cyprus	Ministry of Agriculture, Natural Resources and Environment
Czech Republic	Natura 2000 in Czech Republic
Denmark	Skov-og Naturstyrelsen
Estonia	Natura 2000 in Estonia
Finland	Natura 2000 in Finland
France	Natura 2000 in France
Germany	Natura 2000 Links in Germany
	BfN: Natura 2000
Greece	Natura 2000 in Greece (Intro)
	Natura 2000 in Greece
Hungary	Natura 2000 Information System in Hungary
Ireland	Natura 2000 in Ireland (PDF)
Italy	Natura 2000 in Italy (Not Official Site)
Latvia	Natura 2000 in Latvia
Lithuania	Natura 2000 in Lithuania
Luxembourg	Natura 2000 in Luxembourg
Malta	Malta Environment & Planning Authority
Netherlands	Natura 2000 in Netherlands
Poland	Natura 2000 in Poland
Portugal	Natura 2000 in Portugal

Screenshot of the Natura 2000 web app (March 2017)

The sections of the web application are listed below. Where reports are generated, the rationale behind the reports is explained in the report introductions.

Search on sites

Search on species

Search on habitats

Map viewer (the internal version including sensitive species)

REPORTS

1. **Descriptive Data Delivery Change Report**

This report provides a quick check to identify differences between various database versions submitted by Member States. Its purpose is to help verify, at an early stage, whether changes affecting a database have been duly justified. For an in-depth examination of the data highlighted in this report, please consult the original databases. To verify if these changes have been correctly justified by Member States, refer to the accompanying explanatory notes in the Member States' Reportnet folder. For any anomalies in the current report, please contact DG Environment: Frank Vassen at frank.vassen@ec.europa.eu or René Deprez at rene.deprez@ec.europa.eu.

2. **Spatial Data Delivery Change Report**

This report functions similarly to the Descriptive Data Delivery Change Report, providing a quick check to identify differences between database versions submitted by Member States. Its purpose is the same: to help verify whether changes affecting a database have been duly justified. For an in-depth look at the data highlighted in this report, please consult the original databases. To verify if these changes have been correctly justified by Member States, refer to the accompanying explanatory notes in the Member States' Reportnet folder. For any anomalies in the current report, please contact DG Environment: Frank Vassen at frank.vassen@ec.europa.eu or René Deprez at rene.deprez@ec.europa.eu.

3. **Change Report between Version X and Version Y (Union Lists Changes Report)**

The change report allows for the comparison of the Natura 2000 Union Lists of two selected releases. For any questions, please contact reportnatura2000@mnhn.fr.

4. **Sensitive Species Report**

(Introduction missing)

5. **Barometer Report**

(Introduction missing)

RELEASE MAINTENANCE

1. **Report on Conformity with Reporting Requirements**

The purpose of this document is to check whether the information in the national data delivery reported by Member States is well-formed and adheres to the reporting guidelines outlined in the Commission Implementing Decision 2011/484/EU. Based on the information included in this document, national authorities are invited to correct and, if necessary, resubmit their national databases. For any questions, please contact reportnatura2000@mnhn.fr.

2. **Report on Validation for Import Process**

This document checks whether the information in the national data delivery reported by Member States is well-formed and follows the guidelines outlined in the Commission Implementing Decision 2011/484/EU. Based on the information included in this document, national authorities are invited to correct and, if necessary, resubmit their national databases. For any questions, please contact reportnatura2000@mnhn.fr.

3. **Descriptive Data QA/QC Report - Conformity with Natura 2000 Standard Data Form**

This document checks whether the information in the national data delivery conforms to the technical requirements outlined in the Commission Implementing Decision 2011/484/EU. The list of QA/QC checks performed covers only the most important aspects of data quality, completeness, and consistency and should not be considered exhaustive. Based on the information included in this document, national authorities are invited to correct and, if necessary, resubmit their national databases. For any questions, please contact reportnatura2000@mnhn.fr.

4. **Spatial QA/QC Report - Conformity with Natura 2000 Standard Data Form**

Similar to the Descriptive Data QA/QC Report, this document checks whether the information in the national data delivery conforms to the technical requirements outlined in the Commission Implementing Decision 2011/484/EU. The list of QA/QC checks performed covers only the most important aspects of data quality, completeness, and consistency and should not be considered exhaustive. Based on the information included in this document, national authorities are invited to correct and, if necessary, resubmit their national databases. For any questions, please contact refportnatura2000@mnhn.fr.

5. **Comparative QA/QC Report - Conformity with Natura 2000 Standard Data Form**

This report includes a list of QA/QC checks performed, which covers only the most important aspects of data quality, completeness, and consistency; thus, it should not be considered exhaustive. Based on the information included in this document, national authorities are invited to correct and, if necessary, resubmit their national databases. For any questions, please contact refportnatura2000@mnhn.fr.

6. **Report on Manage Release Process** (Introduction missing)

7. **Report on Union List Process**

The purpose of this document is to ensure that the information in the national data delivery reported by Member States is well-formed and follows the reporting guidelines outlined in the Commission Implementing Decision 2011/484/EU. For any questions, please contact refportnatura2000@mnhn.fr.

Annex 6: Statistics produced by the EEA and ETCs for Natura 2000

Background

The EEA and ETC/BD and ETC/ICM produce statistics regularly on Natura 2000 data. The statistics are used as a basis for different indicators, the biodiversity baseline and for the preparation of discussions and meetings with the Member States. They are an important tool for decision making and for supporting environmental policy.

1) The Barometer

Introduction from the DGENV web site:

http://ec.europa.eu/environment/nature/natura2000/barometer/index_en.htm

Data visualisations from the EEA:

[Daviz visualisation](#)

[Tableau visualisation](#)

[The Barometer viewer](#)

The Barometer calculations from the Natura 2000 web application:

<http://nature.eea.europa.eu/BarometerOptions.aspx>

The [Barometer methodology document](#)

2) SEBI indicators

[Complementarity between European designations \(Natura 2000 and Emerald networks\) and national designations by share of terrestrial area \(figure 3 of SEBI007\)](#)

[Sites designated under the EU Habitats and Birds Directives \(SEBI008\)](#)

3) Coverage of Corine land cover classes in Natura 2000 aggregated by NUTS 3 regions

The data is available the EEA web site:

<https://www.eea.europa.eu/data-and-maps/data/natura2000-clc-by-nuts>

The methodology document

3) Marine Natura 2000 sites by marine sub-region

[EEA marine indicator: Marine protected areas in Europe's seas](#)

The annual update on coverage of marine Natura 2000 sites by MFSD sub-region is not yet available online, but it will be linked e.g. from this page:

<https://www.eea.europa.eu/themes/biodiversity/europe-protected-areas>

Annex 7: Cross-walk previous -> current Natura 2000 database template

Previous Access Data Base	Current Access Data Base	Comments from ETC/BD
Biotop.SITECODE	Site.SITE_CODE	
Biotop.TYPE	Site.SITE_TYPE	
Biotop.DATE	Site.SITE_COMP_DATE	
Biotop.UPDATE	Site.SITE_UPDATE_DATE	
Biotop.DATE_PROP	Site.SITE_SCI_PROP_DATE	
Biotop.DATE_CON	Site.SITE_SCI_CONF_DATE	
Biotop.SPA_DATE	Site.SITE_SPA_DATE	
Biotop.SAC_DATE	Site.SITE_SAC_DATE	
Biotop.RESPONDENT	Site.RESP_ID, Resp.RESP_NAME, Resp.RESP_ADDRESS, Resp.RESP_EMAIL Resp.RESP_ADMINUNIT* Resp.RESP_LOCATORDESIGNATOR* Resp.RESP_LOCATORNAME* Resp.RESP_ADDRESSAREA* Resp.RESP_POSTNAME* Resp.RESP_POSTCODE* Resp.RESP_THOROUGHFARE*	The link has to be established using the ID. *These fields are for entering addresses, structured according to Inspire data specification.
Biotop.MANAGER	Site.MGMT_ID, mgmt_body.MGMT_BODY_ID, mgmt_body.MGMT_BODY_ORG, mgmt_body.MGMT_BODY_ADDRESS, mgmt_body.MGMT_BODY_EMAIL Mgmt_body.MGMT_ADMINUNIT* Mgmt_body.MGMT LOCATORDESIGNATOR* Mgmt_body.MGMT LOCATORNAME* Mgmt_body.MGMT ADDRESSAREA* Mgmt_body.MGMT POSTNAME* Mgmt_body.MGMT POSTCODE* Mgmt_body.MGMT THOROUGHFARE*	The link has to be established using the ID. *These fields are for entering addresses, structured according to Inspire data specification. The link must be established using the ID.
Biotop.SITE_NAME	Site.SITE_NAME	
Biotop.AREA	Site.SITE_AREA	
Biotop.LENGTH	Site.SITE_LENGTH	
Biotop.LON_EW	Site.SITE_LONGITUDE	Replaced by one field in the new version. The format for coordinates has changed to decimal degrees.
Biotop.LON_DEG		
Biotop.LON_MIN		
Biotop.LON_SEC		
Biotop.LAT_DEG	Site.SITE_LATITUDE	Replaced by one field in the new version. Format for coordinates changed to decimal degrees
Biotop.LAT_MIN		
Biotop.LAT_SEC		
Biotop.LAT_NZ		
Biotop.ALT_MEAN		Field deleted in the revised SDF

Biotop.ALT_MAX		Field deleted in the revised SDF
Biotop.ALT_MIN		Field deleted in the revised SDF
Biotop.QUALITY	Site.SITE_QUALITY	
Biotop.VULNAR		This field has been replaced by the section "Threats, Pressures, and Activities with Impact on the Site."
Biotop.DESIGN	Site.SITE_DESIGNATION	
Biotop.DOCUM	Site.DOC_ID, doc.DOC_DESCRIPTION, doc_link.DOC_LINK_ID, doc_link.DOC_LINK_URL	Link with two tables. The link has to be established using the ID.
Biotop.CHARACT	Site.SITE_CHARACTERISTICS	
Biotop.MANAGPL	Site.MGMT_ID, mgmt.MGMT_STATUS, mgmt.MGMT_CONSERVATION_MEASURES, mgmt_plan.MGMT_PLAN_ID, mgmt_plan.MGMT_PLAN_NAME, mgmt_plan.MGMT_PLAN_URL	Link with two tables. The link has to be established using the ID.
Biotop.PHOTOS		Field deleted in the revised SDF
Biotop.MAPSINCL	Site.MAP_ID, map.MAP_INSPIRE, map.MAP_PDF, map.MAP_REFERENCE	The link has to be established using the ID.
Biotop.ALPINE	Site_biogeo. BIOGEO_ID	Codes from reference table. REF_BIOGEO
Biotop.ATLANTIC	Site_biogeo. BIOGEO_ID	
Biotop.CONTINENT	Site_biogeo. BIOGEO_ID	
Biotop.MACARONES	Site_biogeo. BIOGEO_ID	
Biotop.MEDITERR	Site_biogeo. BIOGEO_ID	
Biotop.BOREAL	Site_biogeo. BIOGEO_ID	
Biotop.OWNER	Siteownership.OWNERSHIP_PERCENT, ownership.OWNERSHIP_ID, ownership.OWNERSHIP_TYPE	Link with two tables. The link has to be established using the ID.
Amprep.SITECODE	Species.SITE_CODE	
Amprep.SPECNUM	Species.SPECIES_CODE	
Amprep.TAX_CODE		Field deleted in the revised SDF
Amprep.SPECNAME	Species.SPECIES_NAME	
Amprep.RESIDENT	Species.SPECIES_TYPE	
Amprep.BREEDING		
Amprep.WINTER		
Amprep.STAGING		
Amprep.POPULATION	Species.SPECIES_POPULATION	
Amprep.CONSERVE	Species.SPECIES_CONSERVATION	
Amprep.ISOLATION	Species.SPECIES_ISOLATION	
Amprep.GLOBAL	Species.SPECIES_GLOBAL	
Amprep.ANNEX_II		Information concerning annexes will be available in the

		reference table called REF_SPECIES.
Bird.SITECODE	Species.SITE_CODE	
Bird.SPECNUM	Species.SPECIES_CODE	
Bird.TAX_CODE		Field deleted in the revised SDF
Bird.SPECNAME	Species.SPECIES_NAME	
Bird.RESIDENT	Species.SPECIES_TYPE	
Bird.BREEDING		
Bird.WINTER		
Bird.STAGING		
Bird.POPULATION	Species.SPECIES_POPULATION	
Bird.CONSERVE	Species.SPECIES_CONSERVATION	
Bird.ISOLATION	Species.SPECIES_ISOLATION	
Bird.GLOBAL	Species.SPECIES_GLOBAL	
Bird.ANNEX_II		Information already available in the table called REF_BIRDS
Fishes.SITECODE	Species.SITE_CODE	
Fishes.SPECNUM	Species.SPECIES_CODE	
Fishes.TAX_CODE		Field deleted in the revised SDF
Fishes.SPECNAME	Species.SPECIES_NAME	
Fishes.RESIDENT	Species.SPECIES_TYPE	
Fishes.BREEDING		
Fishes.WINTER		
Fishes.STAGING		
Fishes.POPULATION	Species.SPECIES_POPULATION	
Fishes.CONSERVE	Species.SPECIES_CONSERVATION	
Fishes.ISOLATION	Species.SPECIES_ISOLATION	
Fishes.GLOBAL	Species.SPECIES_GLOBAL	
Fishes.ANNEX_II		Information concerning annexes will be available in the reference table called REF_SPECIES.
Invert.SITECODE	Species.SITE_CODE	
Invert.SPECNUM	Species.SPECIES_CODE	
Invert.TAX_CODE		Field deleted in the revised SDF
Invert.SPECNAME	Species.SPECIES_NAME	
Invert.RESIDENT	Species.SPECIES_TYPE	
Invert.BREEDING		
Invert.WINTER		

Invert.STAGING		
Invert.POPULATION	Species.SPECIES_POPULATION	
Invert.CONSERVE	Species.SPECIES_CONSERVATION	
Invert.ISOLATION	Species.SPECIES_ISOLATION	
Invert.GLOBAL	Species.SPECIES_GLOBAL	
Invert.ANEX_II		Information concerning annexes will be available in the reference table called REF_SPECIES.
Mammal.SITECODE	Species.SITE_CODE	
Mammal.SPECNUM	Species.SPECIES_CODE	
Mammal.TAX_CODE		Field deleted in the revised SDF
Mammal.SPECNAME	Species.SPECIES_NAME	
Mammal.RESIDENT	Species.SPECIES_TYPE	
Mammal.BREEDING		
Mammal.WINTER		
Mammal.STAGING		
Mammal.POPULATION	Species.SPECIES_POPULATION	
Mammal.CONSERVE	Species.SPECIES_CONSERVATION	
Mammal.ISOLATION	Species.SPECIES_ISOLATION	
Mammal.GLOBAL	Species.SPECIES_GLOBAL	
Mammal.ANEX_II		Information concerning annexes will be available in the reference table called REF_SPECIES.
Plant.SITECODE	Species.SITE_CODE	
Plant.SPECNUM	Species.SPECIES_CODE	
Plant.TAX_CODE		Field deleted in the revised SDF
Plant.SPECNAME	Species.SPECIES_NAME	
Plant.POPULATION	Species.SPECIES_POPULATION	
Plant.CONSERVE	Species.SPECIES_CONSERVATION	
Plant.ISOLATION	Species.SPECIES_ISOLATION	
Plant.GLOBAL	Species.SPECIES_GLOBAL	
Plant.ANEX_II		Information concerning annexes will be available in the reference table called REF_SPECIES.
Spec.SITECODE	Other_species.SITE_CODE	
Spec.TAXGROUP	Other_species.OTHER_SPECIES_GROUP	
Spec.TAX_CODE		Field deleted in the revised SDF.

Spec.SPECNUM	Other_species.OTHER_SPECIES_CODE	
Spec.SPECNAME	Other_species.OTHER_SPECIES_NAME	
Spec.POPULATION	Other_species.OTHER_SPECIES_SIZE_MIN, Other_species.OTHER_SPECIES_SIZE_MAX, Other_species.OTHER_SPECIES_UNIT, Other_species.OTHER_SPECIES_CATEGORY	Split into four fields in the new SDF.
Spec.MOTIVATION	Other_species.OTHER_SPECIES_MOTIVATION	
area.LANDAREA	Site.SITE_AREA	
area.MARINEAREA	Site.SITE_MARINE_AREA	
Activity.SITECODE	Impact.SITE_CODE	
Activity.ACT_CODE	Impact.IMPACT_CODE	
Activity.IN_OUT	Impact.IMPACT_OCCURENCE	Table link modified.
Activity.INTENSITY	Impact.IMPACT_RANK	
Activity.COVER		Field deleted in the revised SDF.
Activity.INFLUENCE	Impact.IMPACT_TYPE	
desigc.SITECODE	national_dtype.SITE_CODE	
desigc.DESICODE	national_dtype.NATIONAL_DTYPE_CODE	
desigc.COVER	national_dtype.NATIONAL_DTYPE_COVER	
desigr.SITECODE	Site_relation.SITE_CODE	Table link modified.
desigr.DESICODE	Site_relation.SITE_RELATION_CODE	
desigr.DES_SITE	Site_relation.SITE_RELATION_SITENAME	
desigr.OVERLAP	Site_relation.SITE_RELATION_TYPE	
desigr.OVERLAP_P	Site_relation.SITE_RELATION_COVER	
Habit1.SITECODE	Habitat.SITE_CODE	
Habit1.HBCDAX	Habitat.HABITAT_CODE	
Habit1.COVER	Habitat.HABITAT_COVER	
Habit1.REPRESENT	Habitat.HABITAT_REPRESENTATIVITY	
Habit1.REL_SURF	Habitat.HABITAT_RELATIVE_SURFACE	
Habit1.CONSERVE	Habitat.HABITAT_CONSERVATION	
Habit1.GLOBAL	Habitat.HABITAT_GLOBAL	
Habit2.SITECODE	habitat_class.SITE_CODE	
Habit2.HABCODE	habitat_class.HABITAT_CLASS_CODE	
Habit2.COVER	habitat_class.HABITAT_CLASS_COVER	

Annex 5: National checklist field

[Allegato 5 National Checklist Fields.xlsx](#)

Annex 6: Species IUCN Bosnia and Herzegovina

<https://drive.google.com/drive/folders/1SGldLTn5LpjHoH62jvySDDwSvGe2Lk31?usp=sharing>

Annex 7: Format for taxa sample

FORMAT FOR TAXA SAMPLE²⁹

ScientificName Article 17 reporting	Specific or subspecific epithet of the taxa being surveyed.	
HD_name	Synonymous in old version of annex Dir. 92/43/CE.	
Country	In our case Bosnia Herzegovina	
Administrative Region	Administrative region in which the station falls.	
Date or period of monitoring	gg/mm/aa	
Author(s) of monitoring		
DESCRIPTION OF THE STATION		
Locality and municipality	Locality or municipality where the monitoring is being conducted.	
Geographical Coordinates	Coordinates of the locality: for a station/point, report the central coordinates; for stations/populations that extend over large areas, report an adequate number of perimeter coordinates. For uniformity, it is recommended to use UTMWGS84 coordinates.	
Locality characteristics	Altitude	Average altitude or altitude range (mt).
	Exposure	Average exposure or range of prevailing exposures.
	Inclination	average inclination or range of inclinations (°).
	Geological substrate	Local or national maps
	Real Vegetation (Alliance)	Vegetation type at the phytosociological alliance level
	Bioclimate	Local or national maps
	Bioregions	According to: https://www.eea.europa.eu/data-and-maps/data/biogeographical-regions-europe-3
Ecoregion	According to: https://www.eea.europa.eu/data-and-maps/data/digital-map-of-european-ecological-regions	

²⁹ Source: Ercole S., Giacanelli V., Bacchetta G., Fenu G., Genovesi P. (ed.), 2016. Manuali per il monitoraggio di specie e habitat di interesse comunitario (Direttiva 92/43/CEE) in Italia: specie vegetali. ISPRA, Serie Manuali e linee guida, 140/2016.

Notes	Report all additional information that you consider useful to characterize the site.	
CHARACTERISTIC OF MONITORED POPULATION		
Surface of the population	<p>Indicate the exact area occupied by the station/population and the corresponding unit of measure (m², ha, km²).</p> <p>If it is not possible to determine the exact occupied surface for stations/populations, provide an estimate, specifying that it is an estimated figure and detailing the observations on which the estimate is based.</p> <p>This data is essential for determining the minimum thresholds of representativeness for sampling, analyzing or comparing data, and planning future monitoring activities.</p>	
Coordinates perimeter of the population	UTM coordinates (Lat Long) WGS 84	
Texture of population For the modes operational adhere to field protocol specified in the tabs descriptions of the singles species and fill in i following fields with i required data.	Number of individuals (genet or ramet)	<p>Indicate the number of breeding individuals present in the station/population, specifying whether they are genets or ramets.</p> <p>For small stations/populations, conduct a direct count. For large stations/populations, count on random plots to sample a significant portion of the station/population (at least 10%) and then extrapolate the general data. Always report the average density value.</p>
	Coverage (%)	This field is designated for taxa with high vegetative reproduction, where it is impossible to count or estimate the number of ramets present in the station/population.
	Number (or percentage) of flowery/fruity individuals	Follow the same procedure used for calculating the number of breeding individuals. Specify whether the figure is an exact number or a percentage estimate.
	Fruit/seed production and "quality" of the same	Check in the field or later in the laboratory to ensure that the fruits contain seeds and are not empty, and that the seeds are of good quality (i.e., well-developed embryos that are not parasitized).
	Presence/absence of vegetative reproduction	Based on direct observation or prior knowledge, indicate whether the species reproduces vegetatively (totally or partially).
	Number of seedlings	Indicate presence/absence and, if possible, provide an estimate. Follow the same procedure used for calculating the number of breeding individuals. If counting is not feasible, indicate presence/absence and specify any detectable causes in the notes. Report the mean density value.
	Number of individuals not reproducers	Indicate presence/absence and, if possible, provide an estimate. Follow the same procedure used for calculating the number of breeding individuals. If counting is not feasible, indicate at least the

		presence/absence and specify any detectable causes in the notes. Report the mean density value.
	Number of dead individuals	Indicate presence/absence and possibly make estimation. Report density value. If present and detectable, follow the same procedure used to calculate the number of individuals reproducers. Specify in the notes causes if detectable in the field.
	Note	Indicate the phytosanitary status of the station/population (e.g.: presence of parasites on fruits or seeds) and the possible presence of damage from predators (e.g. herbivores, phytophagous insects, etc.) and/or trampling. For each observation, report the cause of the damage and the portion of the affected station/population.
Method used for the estimate of texture of population	Field to fill in if the monitoring protocol adopted is different from the one indicated for the species in question or if changes have been made operational due to the specific situation of the station/population. Specify how many plots were analysed, what size and provide all others useful information to clearly define the method used to obtain the estimates of consistency.	
Evidence of ongoing dynamics in the population	Highlight, where possible, the evolutionary trends taking place in the station/population.	
Distance from station/population closer	Specify the distance in km from the nearest station/population in a straight line.	
Note		
HABITAT FOR SPECIES		
Synthetic description of the growing environment	Provide a brief textual description of the environment in which it is found station/population.	
Habitat under the Directive 92/43/EEC (Annex I)	If the station/population is found within an Annex I habitat of the Directive, specify its name and code.	
Habitat fragmentation	Indicate if the habitat is continuous, little fragmented, fragmented, very much fragmented	
Area extension	Indicate the area occupied by the habitat and the relative unit of measurement (m ² , ha, kmq).	
Habitat quality assessment	Report a quick assessment of habitat quality using the scale: (1) good, (2) moderate, (3) bad, or (4) unknown.	
Quality – remarks	Indicate any observations useful for defining the quality of the habitat.	
Evidence of dynamics in act in the quality of the habitat	Highlight, where possible, the ongoing evolutionary trends in the quality of the habitat.	
Note	Any additional information useful for characterizing the habitat and its quality.	

PRESSURES and THREATS (to be identified according to the criteria of the European guidelines³⁰)			
Code/Name PRESSURE	Indicate if: L = low importance H = high importance M = medium importance		
Code/name THREAT	Indicate if: L = low importance H = high importance M = medium importance		
CONSERVATION MEASURES relating to the site (to be identified according to the criteria of the European guidelines)			
	NO	YES	Name
Inclusion of the station in SIC or SPA (Indicate whether the station/population falls within a Natura 2000 site e include the relevant name accompanied by code)			
Inclusion of the station in other protected areas (Indicate if the station/population falls within a protected site according to regional and/or national regulations).			
Code/name Conservation measure Indicate any conservation measures (active and/or identified but not yet active) necessary for the species using the official CE coding (List of conservation measures) and further, if any, other related observations the effectiveness of these measures.	Notes on the objectives/effectiveness of the measure For each measure, briefly indicate the objective specific conservation (e.g. maintaining/expanding the population, restore suitable habitat, etc.), the times of expected response and any effects already recorded.		
ANY ADDITIONAL INFORMATION			
Report any additional information not included in the previous fields and deemed useful in order to provide further elements on the species, station/population, habitat, conservation status and/or related technical aspects the methodology used and the procedure adopted in the field.			

³⁰https://cdr.eionet.europa.eu/help/habitats_art17/Reporting2025/List%20of%20pressures%20and%20threats%20for%20reporting%202019-2024%20v1.1.xlsx

Annex 8: Species reporting

SPECIES REPORTING - General information

Member State or Region	
Species code	
Species name	
Alternative species name	

1. Distribution at National or regional Level

1.1 Maps	1.1.1 Distribution Map	Yes or not
	1.1.1a Sensitive species	Yes or not
	1.1.2 Method used - map	3 = Complete survey 2 = Estimate based on partial data with some extrapolation and/or modelling 1 = Estimate based on expert opinion with no or minimal sampling 0 = Absent data
	1.1.3 Year or period	Year or period when distribution data was collected
	1.1.4 Additional map	This is for cases where a country wishes to submit an additional map deviating from standard submission map
	1.1.5 Range map	Map that was used for range evaluation have to be linked to description of standard

2. Biogeographical

2.1 Biogeographical Region	The EEA biogeographical regions dataset (https://www.eea.europa.eu/data-and-maps/data/biogeographical-regions-europe-3) contains the official delineations used in the Habitats Directive (92/43/EEC) and for the EMERALD Network set up under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention).	
2.2 Published sources	If data given below is from published sources give bibliographic references or link to Internet site(s). Give author, year, title of publication, source, volume, number of pages, web address	
2.3 Range	2.3.1 Surface area - Range	(km ²) Total surface area of the range within biogeographical region concerned in km ² .
	2.3.2 Method - Range surface area	3 = Complete survey or a statistically robust estimate 2 = Estimate based on partial data with some extrapolation and/or modelling 1 = Estimate based on expert opinion with no or minimal sampling 0 = Absent data
	2.3.3 Short-term trend period	YYYY-YYYY (interval of observations) Indicate the period used here.

		Rolling 12-year time window or period as close as possible to it. The short-term trend should be used for the assessment.
	2.3.4 Short-term trend direction	stable (0) decrease (-) increased (+)
	2.3.5 Short-term trend magnitude	Min max Percentage change over the period indicated in the field 2.3.3. - if a precise figure, to give same value under 'minimum' and 'maximum'
	2.3.6 Long-term trend period	YYYY-YYYY (interval of observations) Indicate the period used here.
	2.3.7 Long-term trend direction	0 = stable + = increase - = decrease x = unknown
	2.3.8 Long-term trend magnitude	min max Percentage change over the period indicated in the field 2.3.6. If a precise figure, to give same value under 'minimum' and 'maximum'
	2.3.9 Favourable reference range	a) area (km ²) Submit a map as a GIS file if available. b) Indicate if operators were used (use these symbols ≈, >, >> c) If favourable reference range is unknown indicate by using "x" d) Method: indicate method used to set reference value, for example: Expert judgment or other methods
	2.3.10 Reason for change	a) genuine change? YES/NO b) improved knowledge/more accurate data? YES/NO c) use of different method (e.g. "Range tool")? YES/NO
2.4 Population	2.4.1 Population size (individuals or agreed exception)	Min max a) Unit individual or agreed exception (see reference portal) b) Minimum c) Maximum where a precise value is known report the same figure for both minimum and maximum
	2.4.2 Population size (other than individuals)	Unit Min max
	2.4.3 Additional information (optional)	a) Definition of "locality" If "locality" is used as a population unit, this term must be defined b) Method to convert data, explain how data was converted to number of individuals

		c) Problems encountered to provide population size estimation This information will aid the future development of the use of population units
	2.4.4 Year or period	Year or period when data for population size was recorded. YYYY-YYYY
	2.4.5 Method – population size	3 = Complete survey or a statistically robust estimate 2 = Estimate based on partial data with some extrapolation and/or modelling 1 = Estimate based on expert opinion with no or minimal sampling 0 = Absent data
	2.4.6 Short-term trend period	YYYY-YYYY (interval of observations) Indicate the period used here. The short-term trend is to be used for the assessment.
	2.4.7 Short term trend direction	0 = stable + = increase □ = decrease x = unknown
	2.4.8 Short-term trend magnitude	a) Minimum Percentage change over the period indicated in the field 2.4.6. b) Maximum As for a) - if a precise figure, to give same value under 'minimum' and 'maximum' c) Confidence interval Indicate confidence interval if a statistically reliable sampling scheme is used (field 2.4.5).
	2.4.9 Short-term trend method	3 = Complete survey or a statistically robust estimate 2 = Estimate based on partial data with some extrapolation and/or Modelling 1 = Estimate based on expert opinion with no or minimal sampling 0 = Absent data
	2.4.10 Long-term trend period (optional)	Indicate the period used here.
	2.4.11 Long term trend direction (optional)	0 = stable + = increase □ = decrease x = unknown
	2.4.12 Long-term trend magnitude	a) Minimum Percentage change over the period indicated in the field 2.4.10. b) Maximum As for a)

		- if a precise figure, to give same value under 'minimum' and 'maximum' c) Confidence interval Indicate confidence interval when the method used is number 3 (field 2.4.9)
	2.4.13 Long-term trend method	
	2.4.14 Favourable reference population	a) Number of individuals/agreed exceptions/other units b) Indicate if operators were used (using symbols ≈, >, >>, <) c) If favourable reference population is unknown indicate by using "x" d) Indicate method used to set reference value if other than operators
	2.4.15 Reason for change	Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to: a) genuine change? YES/NO b) improved knowledge/more accurate data? YES/NO c) use of different method (e.g. "Range tool")? YES/NO
2.5 Habitat for the Species	2.5.1 Surface area - Habitat	Estimate of area in km ²
	2.5.2 Year or period	Year or period when data for habitat area surface was recorded YYYY-YYYY (interval of observations)
	2.5.3 Method used - habitat	3 = Complete survey or a statistically robust estimate 2 = Estimate based on partial data with some extrapolation and/or modelling 1 = Estimate based on expert opinion with no or minimal sampling 0 = Absent data
	2.5.4 Quality of habitat	a) To be indicated as good / moderate / bad / unknown b) Explain how the quality was assessed (free text)
	2.5.5 Short term trend period	rolling 12-year time window) or period as close as possible to it. Indicate the period used here. The short-term trend is to be used for the assessment.
	2.5.6 Short term trend direction	0 = stable + = increase - = decrease x = unknown
	2.5.7 Long-term trend period (optional)	A trend calculated over 24 years.
	2.5.8 Long term trend direction	0 = stable + = increase

		<p>□ = decrease x = unknown</p>
	2.5.9 Area of suitable habitat	<p>a) Give area of suitable habitat in km² if appropriate. Area thought to be suitable but from which species may be absent. b) Absence of data can be indicated as '0'</p>
	2.5.10 Reason for change	<p>a) genuine change? YES/NO b) improved knowledge/more accurate data? YES/NO c) use of different method (e.g. "Range tool")? YES/NO</p>
2.6 Main Pressures	Pressure	Code and description Use codes from the list of threats and pressures ³¹
	Ranking	<ul style="list-style-type: none"> - H = high importance (max 5 entries) - M = medium importance - L = low importance
	Pollution qualifier(s)	Optional for all vegetation type influenced by water or water table
	2.6.1 Method used – pressures	<p>3 = based exclusively or to a larger extent on real data from sites/occurrences or other data sources 2 = mainly based on expert judgement and other data 1 = based only on expert judgements</p>
2.7 Main Threats	Pressure	Code and description Use codes from the list of threats and pressures ³²
	Ranking	<ul style="list-style-type: none"> - H = high importance (max 5 entries) - M = medium importance - L = low importance
	Pollution qualifier(s)	Optional for all vegetation type influenced by water or water table
	Method used – threats	<p>2 = modelling 1 = expert opinion</p>
2.8 Complementary Information	2.8.1 Justification of % thresholds for trends	In case a country is not using the value of 1% per year as indicated in the assessment matrix when assessing trends, this should be duly justified in this free text field.
	2.8.2 Other relevant Information	Free text, for example IUCN Status, EU Red List Status
	2.8.3 Trans-boundary assessment	Where 2 or more countries have made a joint conservation status assessment for a trans-boundary population of a (usually wide-ranging) species, this should be explained here. Note clearly the country involved, how the

³¹https://cdr.eionet.europa.eu/help/natura2000/Documents/Ref_threats_pressures_FINAL_20110330.xls

³²https://cdr.eionet.europa.eu/help/natura2000/Documents/Ref_threats_pressures_FINAL_20110330.xls

		assessment was carried out and any joint initiatives taken to ensure a common management of the species (e.g. population management plan).
2.9 Conclusions Assessment of conservation status at end of reporting period)	2.9.1 Range	a) Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX) b) If Conservation status is U1 or U2, use of qualifiers is recommended
	2.9.2. Population	a) Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX) b) If Conservation status is U1 or U2, use of qualifiers is recommended
	2.9.3. Habitat for specie	a) Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX) b) If Conservation status is U1 or U2, use of qualifiers is recommended
	2.9.4. Future prospects	a) Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX) b) If Conservation status is U1 or U2, use of qualifiers is recommended
	2.9.5. Overall assessment of Conservation Status	Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)
	2.9.6. Overall trend in Conservation Status	'+' (improving), '-' (declining), '=' (stable) 'x' (unknown)

3. Natura 2000 coverage and conservation measures - Annex II species

3.1 Population	3.1.1 Population Size	a) Unit individual or agreed exception b) Minimum c) Maximum Where a precise value is known report the same figure for both minimum and maximum
	3.1.2 Method used	3 = Complete survey or a statistically robust estimate 2 = Estimate based on partial data with some extrapolation and/or modelling 1 = Estimate based on expert opinion with no or minimal sampling 0 = Absent data
	3.1.3 Trend of population size within	0 = stable + = increase - = decrease x = unknown
3.2 Conservation Measures and provided information about their importance, location and evaluation.	3.2.1 Measure	List conservation measures taken within the reporting period. Use codes from the checklist on conservation measures

	3.2.2 Type Tick the relevant case(s)	a) Legal/statutory b) Administrative c) Contractual d) Recurrent e) One-off
	3.2.3 Ranking	Highlight –using a capital 'H'– up to 5 of the most important measures
	3.2.4 Location	Tick the relevant case concerning where the measure is applied: a) Inside b) Outside c) Both inside & outside
	3.2.5 Broad evaluation of the measure	Tick the relevant case: a) Maintain b) Enhance c) Long term d) No effect e) Unknown f) Not evaluated

GENERAL EVALUATION MATRIX FOR SPECIES

Parameter	Conservation Status			
	Favourable ('green')	Unfavourable – Inadequate ('amber')	Unfavourable -Bad ('red')	
Range	Stable (loss and expansion in balance) or increasing AND not smaller than the 'favourable' reference range	Any other combination	Large decline Equivalent to a loss of more than 1% per year within period specified by the country OR more than 10% below favourable reference range	Unknown (insufficient information to make an assessment)
Population	Population(s) not lower than 'favourable' reference population' AND reproduction, mortality and age structure not deviating from normal (if data available)	Any other combination	Large decline: Equivalent to a loss of more than 1% per year (indicative value the country may deviate from if duly justified) within period specified by the country AND below 'favourable' reference population' OR More than 25% below favourable Reference population OR Reproduction, mortality and age structure strongly deviating from normal (if data available)	
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) AND habitat quality is suitable for the long term survival of the species	Any other combination	Area of habitat is clearly not sufficiently large to ensure the long term survival of the species OR Habitat quality is bad, clearly not allowing long term survival of the species	
Future prospects (as regards to population, range and habitat availability)	Main pressures and threats to the species not significant; species will remain viable on the long-term	Any other combination	Severe influence of pressures and threats to the species; very bad prospects for its future, long-term viability at risk.	
Overall assessment of CS	All 'green' OR three 'green' and one 'unknown'	One or more 'amber' but no 'red'	One or more 'red'	

Annex 9: Natura 2000 habitat list

<https://drive.google.com/drive/folders/1SGldLTn5LpjHoH62jvySDDwSvGe2Lk31?usp=sharing>

Annex 10: Format for habitat sample

FORMAT FOR HABITAT SAMPLE³³

A format has been prepared for the collection of field data relating to monitoring activities. The prototype responds to the specific needs of data collection for reporting under the Directive, including the verification of the effectiveness of the conservation measures implemented in the SACs.

For the purpose of monitoring in each area sample it is advisable to detect the stationary data and the possible presence of springs or aquifers suspended. It may be useful to have photographic documentation of the site to represent the aspects of the environmental heterogeneity of the biotope. The detection area must be identified with a stratified random criterion.

Monitoring protocol prepared by CESBIN includes data requested for the purposes of applying Directive 94/43/EC.

Habitat code and denomination			
SITE FEATURES			
Date or period of monitoring	gg/mm/aa		
Author(s)			
Administrative Region			
Locality (Province) - Municipality			
Geographic coordinates	For surveys along transects indicate: Start of the transect (Latitude/Longitude), End of the transect (Latitude/Longitude)(in decimal degrees, WGS84)		
Characteristics of monitored area	Height (mt)		
	Exposure		
	Slope (°)		
	geological substrate		
	Type of management (and reference period)		
Vegetation analysis	Data to be submitted as an attachment as an electronic table	Monitored area surface	
		total coverage of the phytocoenosis	%
		Vegetation survey	Taxa (Braun Blanquet or %) cover
	Vertical structure	N°, average height and coverage of the single layers	
	Presence of mosaic with other types of vegetation	Yes/no specify which referring to EUNIS and Annex I of Directive 92/43/CE units	

³³Source: Angelini P., Casella L., Grignetti A., Genovesi P., (ed.). Manuali per il monitoraggio di specie e habitat di interesse comunitario (Direttiva 92/43/CEE) in Italia: habitat. ISPRA, Serie Manuali e Linee Guida, 142/2016.

	Typical species (if indicated)	List, N° and total coverage (%)
	Dominant species	List, N° and total coverage
	Species of conservation interest	List, normative reference (Habitats Directive, IUCN) or specify reasons for biogeographical relevance
	Indicator species of dynamic phenomena in progress	List, N° and total coverage
	Indicator species of disturbance	List, N° and total coverage
	Alien species	List, N° and total coverage
Other characteristics and variables habitat-specific reported in monitoring manual (see Addendum*)	Variable 1 (e.g. hydro-geomorphological parameters, Landscape Metrics, Features pedological, etc.)*Variable 2...etc	Refer to techniques and units for the specific habitat monitoring sheet
Presence of relevant animal species for the connotation of the habitat	Species list	Giustify importance for the site and/or for the habitat for each species
Note		

PRESSURES and THREATS (to be identified according to the criteria of the European guidelines)			
Code/Name PRESSURE	L = low importance H = high importance M = medium importance		
Code/name THREAT	L = low importance H = high importance M = medium importance		
CONSERVATION MEASURES relating to the site (to be identified according to the criteria of the European guidelines)			
	NO	YES	Name
Inclusion of the station in SIC or SPA			
Inclusion of the station in other protected areas			

Annex 11: Reporting format on habitat

REPORTING FORMAT ON HABITAT

Descriptive section

Code indicated in the European Manual EUR 28	Natura 2000 and Palaearctic
Code corresponding to the EUNIS 2012 classification	http://eunis.eea.europa.eu/habitats.jsp
Code corresponding to the EUNIS 2021 classification	https://www.eea.europa.eu/data-and-maps/data/eunis-habitat-classification-1/ (Excluded anthropic and water habitats)
Habitat photo	For every significant station preferably to show structure.
State of conservation and trend 	Favorevole, FV (green pattern)-; Inadequate, U1 (yellow pattern) ; Bad, U2 (red pattern) unknown XX (grey pattern). The conservation status is considered "favourable" when the data relating to the trend of the populations of key species indicate that the habitat continues and can continue in the long term to be a "vital" element of the natural habitats to which it belongs, its natural range is not declining or likely to decline for the foreseeable future, and sufficient habitat exists and is likely to continue to exist for its populations to be sustained over the long term.
Description	General description of habitat
Criticalities and impacts.	Described the critical issues and problems of conservation notes related to the habitat on the regional of national territory.

Operating section

<p>Area occupied by the habitat.</p>	<p>To have a natural habitat in a favorable conservation status its total area must be stable or increasing. It is therefore necessary to have one available cartography on an adequate scale to characterize a habitat and be able to study its variations over time.</p> <p>Although the Habitats Directive makes no reference to the scale of cartographic representation ideal for the habitat at a biogeographic level it was decided to establish which cartographic detail of reference the scale 1:10.000.</p>	
<p>Habitat structure and functions</p>	<p>Vegetation analysis</p>	<p>Monitoring projects and actions must be aimed at gathering information on any transformation phenomena in progress of the composition and structure of plant communities.</p>
	<p>Quali-quantitative analysis of water.</p>	<p>In the case of aquatic habitats follow active monitoring under the Water Framework Directive..</p>
	<p>Anthropic activities</p>	<p>The variable must be entered for the habitats for which it is found to be necessary relating to the detection of human activities, in some cases associated with other disturbing activities.</p>
	<p>Other biological quality parameters.</p>	<p>Presence of animal species can represent indicators of habitat quality, reinforcing information on vegetation. Species or groups of species can be used for monitoring when there is adequate literature to support their use as indicators of habitat quality.</p>
	<p>Other variables</p>	<p>Other variables responding in more detail to the need for description and analysis of the various habitats (Analysis of sediments, hydro-geomorphological parameters, substrate dynamism, etc.)</p>
<p>Typical species</p>	<p>Structure and functions of habitat types should be monitored via typical species.</p> <p>The presence and maintenance of population of typical species identified the efficacy of management.</p>	
<p>Monitoring techniques.</p>	<p>Occupied area</p>	<p>Generally, the area is surveyed through photo interpretation. If cartography is provided, it will be in the form of a vector file composed of area elements, and the occupied surface will be obtained directly from GIS systems.</p> <p>When the habitat covers limited surfaces that cannot be mapped as areal elements in a 1:10,000 scale cartography (the limit established in this work is 400 m²), the habitat should be noted as a point. This point will be associated in the table of attributes with the extent of the surface.</p>

1. General information

1.1. Member State or Region	
1.2. Habitat code and definition	Natura 2000, Palaearctic, Eunis 2012, Eunis 2021
1.3. Phytosociology	Following Mucina et al.2016 ³⁴ for superior range (Class, order, alliance) and local or national reference for associations

2. Maps

2.1. Year or period	Year or period when distribution data was collected
2.2 Distribution Map	Submit a map as a GIS file – together with relevant metadata.
2.3. Distribution Map Method used	3 = Complete survey 2 = Estimate based on partial data with some extrapolation and/or modelling 1 = Estimate based on expert opinion with no or minimal sampling 0 = Absent data
2.4. Additional map (Optional)	This is for cases if the country wishes to submit an additional map deviating from standard
2.5. Range map (Optional)	Submit a map that was used for range evaluation following the same standard as under 1.1.1. or 1.1.4.

3. Biogeographical region

3.1. Biogeographical or marine region where the habitat occurs	The EEA biogeographical regions dataset (https://www.eea.europa.eu/data-and-maps/data/biogeographical-regions-europe-3) contains the official delineations used in the Habitats Directive (92/43/EEC) and for the EMERALD Network set up under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention).
3.2. Sources of information	If data given below is from published sources give bibliographical references or link to Internet site(s). Give author, year, title of publication, source, volume, number of pages, web address.

4. Range

4.1 Surface area	The area occupied by the habitat must be defined by video delimitation from orthophotos and/or images satellites at a good scale of detail and subsequent verification in the field. The surface corresponding to the point or line elements must be indicated as an attribute to the point (or to the element linear) in the table associated with the vector file.
4.2. Short-term trend Period	Indicate the period used here. YYYY-YYYY The short-term trend is to be used for the assessment.
4.3. Short-term trend Direction	0 = stable + = increase

³⁴Mucina, L., Bültmann, H., Dierßen, K., Theurillat, J.-P., Raus, T., Čarni, A., ... Tichý, L. (2016). Vegetation of Europe: hierarchical floristic classification system of vascular plant, bryophyte, lichen, and algal communities. *Applied Vegetation Science*, 19, 3264.

https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=0CAMQw7AJahcKEwiYyY6814X9AhUAAAAAHQAAAAAQBg&url=https%3A%2F%2Ffinpn.mnhn.fr%2Fdocs%2Fref_habitats%2FMucina_et_al-2016-Applied_Vegetation_Science.pdf&psig=AOvVaw1Q3gO5cvGEpVV8-5l4XRTy&ust=1675937240803295

	- = decrease x = unknown
4.4. Short-term trend Magnitude	a) Minimum b) Maximum Percentage change over the period If a precise figure, to give same value under 'minimum' and 'maximum'
4.5. Short-term Method used	3 = Complete survey 2 = Estimate based on partial data with some extrapolation and/or modelling 1 = Estimate based on expert opinion with no or minimal sampling 0 = Absent data
4.6. Long-term trend Period	Indicate the period used here. YYYY-YYYY
4.7 Long-term trend Direction	0 = stable + = increase - = decrease x = unknown
4.8 Long-term trend Magnitude	a) Minimum Percentage change over the period indicated in the field 2.3.6. b) Maximum As for b If a precise figure, to give same value under 'minimum' and 'maximum'
4.9. Long-term trend Method used	3 = Complete survey 2 = Estimate based on partial data with some extrapolation and/or modelling 1 = Estimate based on expert opinion with no or minimal sampling 0 = Absent data
4.10. Favourable reference range	a) In km ² . Submit a map as a GIS file if available. b) Indicate if operators were used (using symbols ≈, >, >>) c) If Favourable Reference Range is unknown, indicate with "x" d) Indicate method used to set reference value (if other than operators) (freetext)
4.11. Reason for change	Is the difference between the reported value and the previous reporting ground mainly due to: a) genuine change? YES/NO b) improved knowledge/more accurate data? YES/NO c) use of different method (e.g. "Range tool") YES/NO
4.12 Additional information	

5. Area covered by habitat

5.1 Year or period	YYYY-YYYY
5.2 Surface area (in km ²)	a) Minimum b) Maximum c) Best single value
5.3 Type of estimate	Best estimate
5.4 Surface area Method used	Based on "extrapolation from a limited amount of data" or "from detailed cartography"
5.5 Short-term trend Period	YYYY-YYYY
5.6 Short-term trend Direction	Decreasing (-) or increasing (+)
5.7 Short-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval
5.8 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data
5.9 Long-term trend Period	YYYY-YYYY

5.10 Long-term trend Direction	Decreasing (-) or increasing (+)
5.11 Long-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval
5.12 Long-term trend Method used	
5.13 Favourable reference area	a) Area (km ²) b) Operator Approximately equal to (≈) c) Unknown Yes d) Method
5.14 Change and reason for change in surface area of range	The change is mainly due to:
5.15 Additional information	

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition(km ²) (Min Max) b) Area in not-good condition (km ²) (Min Max) c) Area where condition is not known (km ²) (Min Max)
6.2 Condition of habitat Method used	For example: based mainly on extrapolation from a limited amount of data
6.3 Short-term trend of habitat area in good condition	Period: YYYY-YYYY
6.4 Short-term trend of habitat area in good condition Direction	Stable (=), Decrease (-), Increase (+)
6.5 Short-term trend of habitat area in good condition Method used	For example: Based mainly on expert opinion with very limited data
6.6 Typical species	Has the list of typical species changed in comparison to the previous reporting period? Yes or Not
6.7 Typical species Method used	Bibliography

7. Main pressures and threats

7.1 Characterisation of pressures/threats	Pressure or threats	Code and description Use codes from the list of threats and pressures ³⁵
	Ranking	- H = high importance (max 5 entries) - M = medium importance - L = low importance
	Pollution qualifier(s)	Optional for all vegetation type influenced by water or water table
	Method used – threats	2 = modelling 1 = expert opinion
7.2 Sources of information		
7.3 Additional information		

³⁵https://cdr.eionet.europa.eu/help/natura2000/Documents/Ref_threats_pressures_FINAL_20110330.xls

8. Conservation measures

8.1. Status of measures	a) Are measures needed? b) Indicate the status of measures Measures identified and taken
8.2. Main purpose of the measures taken	For example: Restore the habitat of the species
8.3. Location	Mark the relevant case concerning where the measure is applied: a) Inside Protected areas b) Outside Protected areas c) Both inside & outside
8.4 Response to the measures	For example: Medium-term results
8.5. Type	Tick the relevant case(s) a) Legal/statutory b) Administrative c) Contractual d) Recurrent e) One-off
8.6. Broad evaluation of the measure	Mark the relevant case: a) Maintain b) Enhance c) Long term d) No effect e) Unknown f) Not evaluated

9. Future prospects

9.1 Future prospects of parameters	a) Range b) Area c) Structure and functions
9.2 Additional information	

10. Conclusions

10.1. Range	a) Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX) b) If CS is U1 or U2 it is recommended to use qualifiers8
10.2. Area	a) Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX) b) If CS is U1 or U2 it is recommended to use qualifiers
10.3. Specific structure and functions (incl. typical species)	a) Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX) b) If CS is U1 or U2 it is recommended to use qualifiers
10.4. Future prospects	a) Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX) b) If CS is U1 or U2 it is recommended to use qualifiers

10.5 Overall assessment of Conservation Status	Favourable (FV) / Inadequate (U1) / Bad (U2) / Unknown (XX)
10.6 Overall trend in Conservation Status	If CS is inadequate or bad, use of qualifier '+' (improving) or '-' (declining), '=' (stable) or 'x' (unknown) is obligatory

GENERAL EVALUATION MATRIX FOR HABITAT

Parameter	Conservation Status			
	Favourable ('green')	Unfavourable – Inadequate ('amber')	Unfavourable -Bad ('red')	
Range	Stable (loss and expansion in balance) or increasing AND not smaller than the 'favourable reference range'.	Any other combination	Large decrease:Equivalent to a loss of more than 1%per year within period specified by the country OR More than 10%below 'favourable reference range'	Unknown (insufficient information to make an assessment)
Area covered by habitat type within range	Stable (loss and expansion in balance) or increasing AND not smaller than the 'favourable reference area' AND without significant changes in distribution pattern within range (if data available).	Any other combination	Large decrease insurface area: Equivalent to a loss of more than 1%per year (indicative value country may deviate from if duly justified) within period specified by the country OR With major losses in distribution pattern within range OR More than 10% below 'favourable reference area'	
Specific structuresand functions(including typicalspecies)	Structures and functions (including typical species) in good condition and no significant deteriorations/pressures.	Any other combination	More than 25% of the area is unfavourable as regards its specific structures and functions (including typical species)	
Future prospects (as regards range, area covered and specific structures and functions)	Main pressures and threats to the species are not significant; the species will remain viable in the long term.	Any other combination	Severe influence of pressures and threats to the species; very bad prospects for its future, long-term viability at risk.	
Overall assessment of CS	All 'green' OR three 'green' and one 'unknown'	One or more 'amber' but no 'red'	One or more 'red'	

Annex 12: Bird species checklist

<https://drive.google.com/drive/folders/1SGldLTn5LpjHoH62jvySDDwSvGe2Lk31?usp=sharing>