



NATURA 2000 ITALIA

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2 The compilation process of the 3rd National Report of the Habitats Directive

3 **Box** On-line National database for the Management of the Natura 2000 Network

4 Scientific validation of the data concerning the 3rd report of Habitats Directive

7 The Environmental system project and the National network on biodiversity

9 **Box** Regions and autonomous Provinces Guidelines for the monitoring of Species and Habitats of community interest, assessment and reporting under art. 17 of the Habitats Directive

10 Flora and Vertebrate Red List

13 **Box** National Report 2008-2012 on the conservation state of birds, in accordance with art. 12 of the Birds Directive 2009/147/CE.

14 **Box** Biogeographic process seminars

Natura 2000 Network regional experiences

15 Sardegna



Natura 2000 Network: collecting, managing, storing data.

The monitoring of the conservation status of habitats and species of Community interest is essential to verify the effectiveness of actions taken to achieve the objectives of conservation of biodiversity, both in compliance with EU legislation, and under the provisions of the National Strategy for Biodiversity.

In 2013, is required the drafting of National Reports detailing to the European Commission, every six years, the assessment of the status and trends of species and habitats protected by the Habitats and Birds Directives. This performance is the most deep and standardized testing opportunity at the national scale of the conservation status of biodiversity, which fully meets the need not to duplicate efforts, using uniform data under different reporting processes, to make more efficient conservation actions.

The results from National Reports will also have great strategic importance as a reference for the European Commission and Member States themselves to identify priority and criticality of the next financial programming period 2014-2020, as well as to measure the achievement of the targets set in the National Strategy and the European Strategy for Biodiversity. This issue of the newsletter describes the activities carried out during the last two years to complete this enormous work of

collecting, exchanging and processing of data available, a job that required a strong commitment by the Ministry of Environment to set up and consolidate a complex coordination network of many different stakeholders from both the institutional and administrative point of view and from the science and technology one.

In the process were involved in primis the Provincial and Regional Administrations and in parallel the technical and scientific world, starting from ISPRA, but also including a broad view of institutions and competences, with particular reference to

scientific societies, able to provide the necessary support for the revision, integration and validation of data and evaluations. From this overview is clear that what up to now

achieved is the basis for a progressive improvement of biodiversity data arrangement in the near future, starting from the setting of monitoring systems that can provide data as more possible uniform, reliable and complying to what is required by the European Commission, as well as from the implementation of instruments provided by the National Strategy for Biodiversity to support the process of collecting, organizing and sharing of data, that are the Observatory Network and / or regional and provincial Offices for biodiversity and the National Network for Biodiversity. ■



The compilation process of the **3rd National Report of the Habitats Directive**

Article 17 of the Habitats Directive requires Member States, every six years, a report on the implementation of the regulations adopted in the context of the Directive itself, including information concerning the conservation measures referred to in Article 6, the evaluation of impact of those measures, and the assessment of the conservation status of all habitats and species of the Directive, according to the main results of the surveillance referred to in Article 11 and extended to the whole national territory.

In order to assist Member States in the reporting process and to receive data as homogeneous as possible, the European Commission has developed specific "format", accompanied by guidelines for the compilation and for the preparation of national reports.

The "Reporting format" for the 3rd Report are as follows:

- **Format A** (Annex A): general format on the state of implementation of the Habitats Directive and the measures taken
- **Format B** (Annex B): format for the assessment of the monitoring results former article 11 for each of the species in Annex II, IV of the Directive



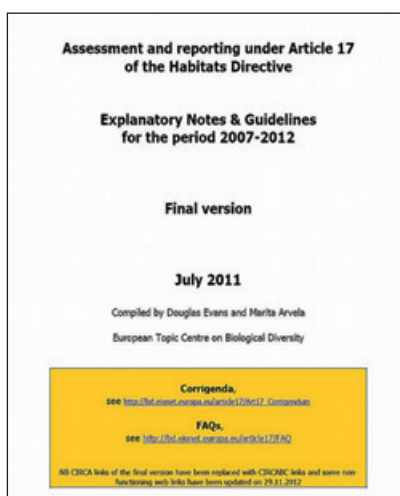
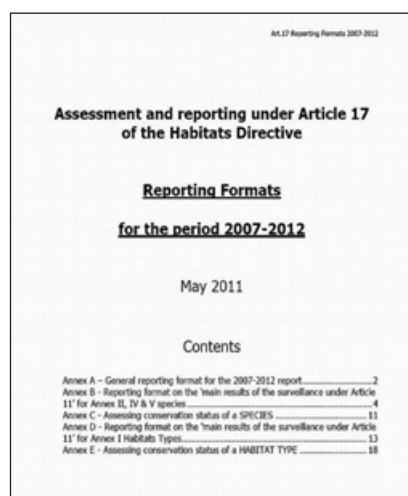
- **Format C** (Annex C): general master of assessment of the conservation status of each species
- **Format D** (Annex D): format for the assessment of the monitoring results ex art. 11 for each habitat in Annex I of the Directive
- **Format E** (Annex E): general master of assessment of the conservation status of each habitat.

The "Reporting format" and the related guidelines drawn up by the European Commission for the period 2007-2012 considered the experience and the difficulties encountered by Member States during the

preparation of the 2nd National Report and are therefore the result of the comparison occurred within the working groups (Expert Group on Reporting and Habitats Committee), which had as its primary objective the harmonization of parameters to ensure a better compilation and a significant analysis of the data received at Community level.

The European Commission has also prepared a reference Portal for Art. 17 (http://bd.eionet.europa.eu/article17/reference_portal) where can be find information on the compilation of the format by the Member States, such as code tables of species and habitats, checklists of species and habitats to be reported by each Member State.

The process set up by the Ministry for the realization of the Report has involved primarily the Regions and Autonomous Provinces, responsible for monitoring and holders of data: for that purpose was signed in 2012 a Memorandum of Understanding between the Ministry and Regional and Provincial Administrations finalized to ensure proper coordination for the collection, exchange and sharing of best and most updated information available in our country on the habitats and species of Community interest.



On-line National database for the Management of the Natura 2000 network

In autumn, will be available the on-line version of the National database for the management of the Natura 2000 network (BD-management). This tool proceeds from the development, as a result of contributions received by administrations (Regions, Autonomous Provinces and national Parks), of the first version made by the General Directorate for the Protection of Nature and Sea in 2011.

The BD-management, created as a tool to support the Special Protection Areas (SPAs) designation, constitutes a useful framework for organizing in a standardized way the conservation measures and it is an essential element for the designation. This database contains the fundamental fields on which to articulate the site specific measures for habitats and species of Community interest, according to the guidelines and technical directions expressed by the Commission.

The use of a uniform standard allows data sharing at different levels (regional, national and Community), and, if properly completed and used, the BD-management enables to monitor the consistency of the conservation measures in Natura 2000 sites, to quantify and monitoring costs for the conservation of habitats and species of Directive (Priority Action Framework - PAF), monitoring pressures and threats on habitats and species, to create a two-way dynamic update with the monitoring data (art.17) and finally to provide for a tool to support the preparation of the Impact Study.

The new version will allow to enter and to search the data in the BD-management through web access and then to have available at any time data updated in real time. The database, with access through different qualifications permitted by a password, will be accessible or modifiable by different users: Ministries, Regions/Autonomous Provinces, Local Authorities, professionals and citizens.

The Regions and Autonomous Provinces can implement data relating to Natura 2000 sites under its jurisdiction, while the other types of users can only view the data contained in the BD-management. The new database will also allow a more simple and easy data entry. For example, among other features, it is possible, when a conservation measure is inserted to copy that information on all or a number of regional sites, with a significant reduction in the time required to populate the database itself.

In order to facilitate the forwarding of monitoring data from the Regions and Autonomous Provinces, Ministry of the Environment and ISPRA on the basis of the above “reporting formats” Community A, B and D, have prepared three boards for the transmission of data referred to as:

- **Species Card:** card for the transmission of data on plant and animal species,
- **Habitat Card:** card for the transmission of data on habitats,
- **General Card:** card for the transmission of general information on the implementation of the Habitats Directive and the measures adopted.

Detailed instructions on the compilation were provided in a separate chapter of the draft guidance document “Guidelines for monitoring” (see box on pag. 9), prepared by the Ministry, always with the technical support of ISPRA.

Once the data are collected, the Ministry is involved in the compilation of the general part of the report on the state of implementation of the regulations of the Habitats Directive, while the ISPRA is involved in the processing of data on a biogeographic and national scale, in the compilation of formats and maps and in the coordination of scientific experts of the major national scientific societies able to guarantee the necessary revision, integration, and scientific validation of the data, as detailed in the next article.

The final step in the process of drafting the report has gone through a number of revisions both by the Ministry to ensure the data consistency with the Natura 2000 data Bank, both by the Regions and Autonomous Provinces for final approval of the contents elaborated, and the Report has also been loaded on IT tools Community, that is the official transmission to the European Commission.

The species accounted for in the 3rd National Report for the period 2007-2012 are 339, while habitats are 135, for a total of 903 cards per biogeographic region (607 for species, 296 for habitats).

The 3rd Report was officially transmitted to the European Commission on the 20th of last July, cards and maps related are available on the “Central Data Repository” of the European Agency for the Environment at the address: <http://cdr.eionet.europa.eu/it/eu/art17/envuzilvw>.

Screenshot of the National Data Bank for the management of Natura 2000 Network .

Scientific Validation of the data concerning the 3rd Report of Habitats Directive

The data required for the compilation of the 3rd National Report pursuant to art. 17 of the Habitats Directive collected by the Regions and Autonomous Provinces have been processed by ISPRA and integrated and validated by the major scientific societies that deal with species and habitats in our country. In particular, with regard to flora species and habitats has been concluded a Convention between the Italian Botanical Society and the Ministry for the Environment, Land and Sea (MATTM) on the "Monitoring the conservation status of habitats and national evaluation of extinction risk category for about 300 plant species of conservation interest and environments / habitats of special concern."

The compilation, analysis and validation of data related to animal and plant species required a particularly complex task for ISPRA, who coordinated this part of the work. It should first be noted that the commitments for Italy resulting from the former art. 17 reporting of the Habitats Directive are particularly relevant with respect to the majority of EU countries, because the number of species to be accounted for our country is very high and includes 216 animal species, 113 plant species and 123 habitats, a number four times higher than



Bottlenose dolphin *Tursiops truncatus* one of the species of marine mammals protected under Annex II of the Habitats Directive and presents in Italy. Photo: E. Calvario

in countries such as the United Kingdom, where the investment in biodiversity monitoring activities are much higher than in Italy.

The species

Overall ISPRA collected from the Regions and Autonomous Provinces 1940 assessment formats for the animal species and 358 for plant species. Were also produced 1617 maps on the distribution of animal species (more than 186 additional) and 327

for the plant species (more than 28 additional). Overall, the compilation of data on the species has therefore concerned 2298 evaluation forms and 2158 distribution maps.

To evaluate, integrate and harmonize this amount of information ISPRA was able to base on the valuable work realized by the Italian Botanical Society within the Red Lists project, (coordinated by Prof. Graziano Rossi), and - with regard to the animal species - has promoted, with the



The Mediterranean rocky environments are home to many species of endemic flora and provide breeding habitat for species of Falconiformes of Community interest. Photo: E. Calvario



support of the Ministry of Environment, the creation of a coordination board with the most distinguished and representative scientific societies in the fauna field, which was joined by the Italian Zoological Union, Fauna of Italy Scientific Committee, Italian Teriologica Association, Italian Chiroptera Research Group, Italian Association Freshwater Ichthyologists, Societas Herpetologica Italica and Odonata. The experts of these societies have carefully evaluated the data collected by the regions, integrating them with the latest information gathered from the research world, and have therefore produced, coordinated by ISPRA, assessments of national scale required by the reporting.

The data thus amended and combined were subjected to a necessary consistency check with those contained in the Natura 2000 database, and then sent to the Regions and Autonomous Provinces for further monitoring and any new suggestion for change and integration. Only at the end of this process of progressive tests was produced the final version of the database and maps provided for the reporting.

The habitats

The working group of the Italian Botanical Society coordinated by Professor Biondi and formed by Prof. Giovanni Spampinato, dr. Cesare Lasen and dr. Liliana Zivkovic,

was in charge of assessing the presence, distribution and conservation status of habitats of Community interest (excluding marine) on the Italian territory. In total the habitats examined were 123, of which 117 located in the Alpine biogeographic region, 111 in the continental and 115 in the Mediterranean. Unfortunately, in the absence of monitoring targeted to the knowl-

edge of vegetation and then of the habitats all over the country and, in particular, outside of Natura 2000 sites, there are no consistent and reliable information on the habitats. The main knowledge gaps concern the geographical distribution of habitats across the Italian territory: in some regions the only available data are related to Natura 2000 sites, deductible from the standard forms.

The source data are accessed as follows:

- Official data of the Natura 2000 network (available from the website of the Ministry <ftp://ftp.dpn.minambiente.it/Natura>



Several species of amphibians use the springs for watering livestock such as reproductive sites; it is important that, in the recovery actions of these artefacts, precautions are used for the protection of these species, eg. the realization of small "ramps lift", such as that in the picture, to allow the leakage even in case of lowering of the water level. Photo: E. Calvario

Above, an adult male of Italian Crested Newt *Triturus cristatus*. Photo: A. Venchi.



2000/TrasmissioneCE_2012);

- Nature Map (ISPRA) only available for the following regions: Valle d'Aosta, Veneto, Friuli Venezia Giulia, Umbria, Lazio, Abruzzo, Molise, Puglia, Sardinia, Sicily;
- Vegetation series Map at 1:500,000 scale, combined with the Map on the Land use Corine Land Cover 2006 to 4th level of detail (downloadable from the website www.sinanet.isprambiente.it/Members/mais/Corine/);
- Other bibliographic data are published in scientific journals;
- Data supplied by regional governments and experts to the representatives of bio-



Above: mountain lakes and pastures are present in different Italian SCI belonging to the Alpine biogeographical region , it appears essential to maintain the balance between the activities of grazing and conservation of the habitats and the species that are present. *Photo: G. Cammerini*
Below: the habitat of the "Natural eutrophic lakes with Magnopotamion or Hydrocharition vegetation is reported in all the Italian Regions" ; in the picture a large population of yellow water Lily Nuphar lutea and in the background a grove of reeds of Common Marsh Reeds Phragmites australis which is an important breeding habitat for several ornithic species of Community interest . *Photo: G. Cammerini*

geographic area;

The data received by the Regions showed a highly heterogeneous situation in quality and quantity. The problem concerning a different interpretation of the habitats by the Regions has been resolved with the publication of the Italian handbook of Habitats Interpretation (Biondi & Blasi, 2009; Biondi and others, 2012), but unfortunately not always the changes have been introduced in the forms of Natura 2000 sites. Depending on deadlines and amount of data to analyze, where possible, has been reported the need to update the database Natura 2000.

In the absence of reliable data consistently throughout the Italian territory mainly experts have obtained the required information. For that purpose was started a network of continuous communication between the various scientific representatives and coordinators of each biogeographic region: dr. Cesare Lasen for Alpine, Prof. Edoardo Biondi for the continental and Prof. Giovanni Spampinato for the Mediterranean. For the realization of the distribution maps of each habitat in Italy to experts, when considered necessary, they added or deleted cells (10 x 10 km) from the distribution form provided by the European Community and obtained starting



from the initial data available.

The experts contributions are often crucial especially in the absence of official data of the Natura 2000 database and to assess the overall state of conservation of each species and habitat, based on the individual parameters set in the report (range, area of coverage, structures and functions and future prospects).

The preparation of this National Report has been a positive and advanced example of biodiversity monitoring of our country, creating a synergy between the various

stakeholders responsible for the collection and management of information on species and habitats, and producing an accurate state of Italian biological resources. Once completed this complex task, efforts should focus on the need to continue the successful collaboration between the different actors that was activated during the reporting process, so take this opportunity to create a more effective and coordinated national system for biodiversity monitoring, which is essential to adequately respond to the directives of the EU. ■

The **Environmental System Project** and the National network on **Biodiversity**

The Ministry for the Environment, Land and Sea has promoted the project “Sistema Ambiente” with the aim of promoting the sharing and spread of knowledge on the different components of biodiversity, as a support of the National Strategy for Biodiversity. These activities are an integral part of the “NaturaItalia” portal Project and the “National Network of Biodiversity” (NNB).

The NaturaItalia portal (<http://www.naturaitalia.it>) is directed to an audience specialized as well as non-experts, for the promotion and online spread of contents and information regarding the Italian Nature, and is composed of 2 sections:

- The section “Discover Biodiversity - CHM” provides for information on biodiversity in Italy and illustrates the state of implementation of the legal instruments and initiatives aiming at the conservation of natural resources at the national, European and international level. This section represents the national tie of the Clearing House Mechanism (CHM), the mechanism for the exchange of environmental information provided for by the Convention on Biological Diversity (CBD) in order to promote and facilitate scientific and technical cooperation, the sharing and exchange of information on biodiversity;
- the section “Vivi le aree naturali” has the purpose of providing for information on over 870 protected areas extended on our territory for over 3 million hectares of protected land and 2.8 million hectares

of sea. Data are provided for both the natural characteristics of these areas but also information on the promotion and tourist use.

The NaturaItalia Portal gives access to the information provided by the “National Network of Biodiversity” (NNB) (<http://www.naturaitalia.it/nnb/>), a technology infrastructure that allows the use of online databases on biodiversity provided by a network of Centres of Excellence, national focal points and by other contributors, national and international, that shared the information they collected. The system allows to put the data into interoperability with similar international infrastructure (LifeWatch, GBIF, etc..) and with the National Geoportal, consistent with the provisions of the INSPIRE Directive (Legislative Decree 32/2010), which does not allow in any case the transfer of data, but only their accessibility through internet.

The NNB, through the aggregation of the current state of knowledge on biodiversity in Italy, aims both to make available the data for pure and applied research, for education and training, and to promote the use of Community standards for the production, certification, meta-dating, sharing and publication of scientific databases, and to represent a national strategic tool for informed policy decisions that ensure a sustainable use of natural resources of our country.

The Network aims to:

- **survey** the existing databases in Italy on biodiversity, methods and standards followed by the existing databases;
- **involvement** of the holders of the data and agencies in order to share the existence of databases and information;
- **improve** the spread of information on biodiversity, making it useful for pure research, applied research and for the educational training;
- **develop** open standards and protocols for the production, certification, meta-dating,



Several species of seabirds of Community interest nesting along the cliffs, present in our Peninsula and the islands. Photo: E. Calvario



"Lamineto in *Polygonum amphibium* fo. aquatic ": this type of aquatic vegetation is an integral part of the habitat of Community interest called "3150- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* vegetation". In these fields, the navigation (by all means) should be precluded as damages the habitat. Photo: E. Calvario

sharing and publication of scientific databases;

- **facilitate** the process of processing - exchange - data validation between scientific bodies - Regions - MATTM aimed to monitor, assessment of conservation status and reporting on Biodiversity required by European directives and international Conventions;
- **stimulate** collaborative models of research, integrate and promote the exchange of data between research centers, the Natural Protected Areas, the Regional Observatories for Biodiversity that the Regions have established or are about to start;
- **represent** an operational tool for the authorities responsible for environmental policies and for those who work in the field of authorizations and environmental assessments (eg. SEA, EIA, Vinca).

The query interface of the "I dati" section allows to search both on primary data, or information relating to the detection of an organism at a given point, expressed in geographic coordinates, or with a very precise location, and other data related to species, or informa-

tion, related to a taxon, taxonomy, morphology, anatomy, ecology of the species, stock digital images, movies, sounds, interactive identification keys, etc..

The Network also has a WebGIS section "Le Mapped", taken in the graphics and functionality from the National Geoportal, that allows the access, display and use of thematic maps on a national basis; also in this section is possible to visualize the georeferenced reports found in "I dati".

To date, the Network contains databases made available by the first organizations that have joined and is currently continuing to implement the necessary process commissioning interoperability of the data files of other organizations that have expressed interest in joining. It goes without saying that the importance of the Network as a national strategic tool for the knowledge of the state of conservation of biodiversity in our country, and for the identification of informed policy decisions, is directly proportional to the number of subjects who will join the network in the coming months. ■

Regions and autonomous Provinces Guidelines for the monitoring of Species and Habitats of community interest, assessment and reporting under art. 17 of the Habitats Directive

The monitoring of the conservation status of all Habitats in Annex I and of the species in Annex II, IV and V of the Habitats Directive is an obligation stemming from art.11 of the Directive, it represents an indispensable tool to measure the effectiveness and efficiency of conservation measures implemented and to obtain audit evidence about the opportunity to maintain or correct management strategies adopted for the species / habitats of Community interest, as well as for sites in the Natura 2000 network.

In this way it is possible the fulfillment of the provisions of art. 9 of the Habitats Directive, which requires the periodic assessment by the Commission of the contribution of Natura 2000 to the achievement of the objectives of this Directive, namely contributing to protect biodiversity through measures aimed to "maintain or restore at a favorable conservation status the natural habitats and the populations of species of wild fauna and flora. "

Monitoring is not limited to the territorial identified by the sites of the Natura 2000 network, but must be performed on the entire territory, in order to be really functional to the full definition of the state of conservation.

The DPR 357/97, which implements the Directive, designates the Regions and Autonomous Provinces to ensure the monitoring of the conservation status of species and habitats of Community interest, and the Ministry of Environment to prepare guidelines for monitoring, after the Ministry of Agriculture and the ISPRA hearings.

In 2012 was established a joint working group ISPRA - Ministry of the Environment that developed, through a process of sharing and comparing with the Regions and the Autonomous Provinces, these Guidelines, aimed to provide for guidance on monitoring of species and habitats of Community interest, to collect the data needed to assess the state of conservation, to be reported every 6 years at the European Commission, pursuant to art. 17 of the Habitats Directive.

The guidance document draft has been made available to the

Regions and Autonomous Provinces in May 2013, along with cards and maps of the 3rd National Report art. 17, in order to acknowledge the past contributions / comments / integrations, to get the final approval of the guidelines by 2013.

The direct involvement of the Regions and Autonomous Provinces is essential in both phases of monitoring, both during the collection and submission of data: as the main objective of the guidelines is to provide addresses so that these processes can be planned and implemented according to common settings, methods and data collection procedures as much as possible complete, consistent and standardized, as required by art. 11 of the Directive, in order to ensure national processing realistic and reliable.

The document produced has also played an important role in providing useful information to facilitate the collection and transmission of data by the regions needed to compile the 3rd National Report pursuant to art. 17.

The Guidelines document is structured as follows:

- a first introductory chapter that describes the general concepts, definitions, format the Community and the methods that are the basis of assessments of the conservation status of species and habitats;
- The second chapter contains specific instructions for the compiling by the Regions and Autonomous Provinces of the sections of the format that

absolutely need data and regional information;

- The third and final chapter reports principles and guidelines provided at national level to facilitate the setting of regional monitoring systems and programs in anticipation of future reporting cycles, presenting some examples of drawings of monitoring plans. Are considered in this chapter the main aspects to be taken into account in the planning of monitoring systems, such as the frequency and prioritization of activities, general problems, the definition of objectives, outlines of statistical and cartographic standards. ■



Dune environments are extremely fragile and highly susceptible to disruptive actions, in the picture effects due to the transit with off-road vehicles. Photo: E. Calvario

Flora and Vertebrates

The geographical, climatic and historical characteristic of our country allowed the establishment and retention of a diverse and rich biodiversity, including a wide variety of endemic species. This wealth and peculiarity, contribute to make the area of the Mediterranean Basin a "hot spot" of biodiversity recognized at world level. In this sense, our country has the responsibility to monitor and protect this "natural capital" as defined in the National Strategy for Biodiversity adopted in 2010, which spells out the commitments undertaken by Italy signing the International Convention for Biodiversity and the implementation of the European Strategy for Biodiversity 2020.

To achieve the objectives identified by the National Strategy for the decade 2011-2020 is of main importance to be able to express at national level which and how many plant and animal species are in danger of disappearing, and especially what are the causes that can determine the risk factors.

The instrument of the Red List was introduced by the International Union for the Conservation of Nature (IUCN), the oldest and most widely recognized international organization that deals with biodiversity conservation, in its broadest sense. The methodology and criteria developed by IUCN for the preparation of the Red List allows to evaluate, at different territorial scales, the state of extinction risk at the species level. The use of this instrument, adopted as a reference and indicator at international level, provides for concise and comparable information on the conservation status of the species and on the effectiveness of the actions taken and to be taken to counteract



the threat factors identified and stop the loss of biodiversity. Within the Three-year Framework Agreement, signed on the 10th November 2011 by the pro tempore Minister and the President of the Federparchi, for a more fruitful collaboration on the objectives of common interest in terms of enforcement of the measures for the conservation of biodiversity and for the implementation of actions for sustainable development in the territories of protected areas, the Directorate for the Protection of Nature and Sea as IUCN National Authority in Italy, has signed the first implementing Convention through which,

among other things, was carried out the assessment of certain groups of animals and developed National Red List defined through the application of the IUCN methodology, with the involvement of researchers in specific disciplines and experts in the application of the methodology (IUCN Italian Committee, ISPRA, scientific societies, Lipu and several national experts).

The results of this work are the volumes, published in May 2013, dedicated to the national Red List of Italian Flora (http://www.minambiente.it/export/sites/default/archivio/biblioteca/protezione_natura/lista_rossa_flora_italiana_policy_species.pdf) and the National Red List of Italian Vertebrates (<http://www.mi>



In addition to being a priority habitats of Community interest (6210* semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco - Brometalia) (* important orchids with), several species of orchids are within the categories under threat in the Italian Flora Red List. Photo: E. Calvario

Celebrate Red List

ambiente.it/export/sites/default/archivio/biblioteca/protezione_natura/lista_rossa_vertebrati_italiani.pdf).

All complete cards bearing the assessment of extinction risk and the data used for the evaluation, including subspecies and populations evaluated, are available on the site IUCN Italy <http://www.iucn.it>

Flora Red List

The Red List has been launched as part of an agreement signed in 2012 between the Ministry of the Environment and the Italian Botanical Society. The project, which involved numerous botanists coordinated by Groups for Conservation of Nature and for Floristry of SBI, has provided for the evaluation according to the methodology IUCN, of the conservation status of about 400 taxa of the Italian flora, in particular the so-called policy species (species listed in the Annexes to Directive 92 / 43 EEC "Habitats" and the Berne Convention) and other taxa considered particularly at risk because they present a sharp regression in habitat (wetlands, coastal environments). Assignment to a category of threat, based on the most recent methods developed by the IUCN, was carried out by evaluating for each species: the real threats, the distribution on the national territory and the eventual decline in recent years of the known populations. In addition to assigning one of the categories set out in IUCN Protocol, was set up a geo-referenced database, using as map reference a regular form, not projected and fixed, with square mesh of 2x2 Km. For each species were produced shapefiles containing all points of

presence known on the national territory, as well as information about the data such as population trends, the reference year, and detail of the data provider.

The results show that about 45% of the policy species falls within one of the threatened categories (Critically endangered [CR], Endangered [EN] Vulnerable [VU]), denoting that the only in situ conservation (establishment of protected areas) appears insufficient to ensure, at least in many cases, a satisfactory level of protection. Within the protected areas in fact, very often is not present or it is insufficient a careful local and continuous management, for conservation purposes, of the land, as well as often the check of the correct behaviour of the visitors by the authorities. It is therefore necessary to increase conservation actions active in the field, such as the careful management of paths in tourist areas (eg preferential pathways, organized tours), the local management of vegetation dynamics, sometimes eg containing the forest or pre-forest vegetation or the helophyte one in wet areas, to encourage the species of conservation interest, in addition, as measures to promote, needs to be mentioned the collection and storage of germplasm in seed banks and the cultivation and breeding of the most endangered species in specialized centres (eg Botanical gardens), targeted interventions aimed at strengthening or re-entry into nature. To this purpose, in May 2013, the Ministry of the Environment (MATTM) made available also a new publication of Notebooks on Nature Conservation, the number 28, which is precisely dedicated to the topic of translocations of species of wild flora. Furthermore, it is important for species at risk to provide for multi-year monitoring, necessary to locate and correct if necessary during construction any management actions, to ensure the conservation (eg need for mowing of vegetation competitor, compatibility of trampling or grazing, etc.). In this sense, the geo-referenced database produced by the project of the Ministry of the Environment Red List is certainly a fundamental starting point that can be used for future monitoring. The database represents a "zero point" that gives a picture of the current distribution, to the best knowledge of the species protected by the Directive, and is upgradeable, simply through the addition of new records in the cells 2x2 Km.

To do this it is necessary an adequate knowledge of the area that can only be obtained with a number of presences in the field, the search for new stations and regular monitoring of existing ones. ■

Authors:

Graziano Rossi and **Simone Orsenigo** (University of Pavia and Nature Conservation Group of the Italian Botanical Society).



Bivonea Savi *Jonopsidium savianum* a mountain species of Community interest, included in the category LC (at lower risk) in the Italian Flora Red List. Foto: E. Calvario

Vertebrates Red List



The Red List of Italian vertebrates has been prepared by a large group of experts in collaboration with the IUCN Italian Committee, the Italian Zoological Union, ISPRA, Lipu Bird Life. In Italy there are 590 species of land and freshwater Vertebrates (97 freshwater fish, 44 amphibians, 56 reptiles,

267 nesting birds and 126 mammals). In addition to these species, this Red List regards the 76 species of cartilaginous fishes or Chondrichthyes (sharks, rays and chimaeras) in our waters.

Were included in the assessment all species of freshwater fish, amphibians, reptiles, nesting birds, mammals and cartilaginous fish, native or possibly native to Italy, as well as those naturalized in Italy in prehistoric times. The species of birds present but not breeding in Italy (wintering and/or migration) have not been evaluated and therefore they are included in the category Not Evaluated (NE). Even domestic species have not been evaluated according to the Categories and Criteria of the IUCN Red List. The introduction of a certain species in historic times have been classified as NA (Not Applicable), as well as occasional species, those that occur only marginally in the national territory, and those



of recent colonization.

The taxonomic basis for all species considered is the Checklist of Italian Fauna of the Ministry of Environment, Land and Sea. Changes have been made where necessary to conform to the classification used by the global IUCN Red List and to follow the most current taxonomy. For land species and freshwater has been evaluated the entire population in its Italian area (peninsular Italy, islands and, where relevant, the smaller islands). For marine species has been considered a wider area than the territorial waters, the limited extent of which is not considered significant for the populations of highly mobile animals such as marine mammals and cartilaginous fish.



Of the 672 vertebrate species evaluated (576 terrestrial and 96 marine), 6 have become extinct in recent times. The endangered species are a total of 161 (138 terrestrial and 23 marine), accounting for 28% of the species evaluated. Considering that for the 12% of the species available data are not sufficient to assess the risk of extinction, and assuming that the 28% of these are threatened, it is estimated that a total



Of 672 Italian vertebrate species evaluated 161 were at risk of extinction. Among these, the Wolf *Canis lupus* (bottom) and the Rock Partridge *Alectoris graeca* (p. 13 below) were classified (Vulnerable), the Swallow *Hirundo rustica* (top) (near threatened), the spotted Salamander *Salamandra salamandra* (center) and the black Woodpecker *Dryocopus martius* (p. 13 above) (a minor concern).

Photo.
Salamander: E. Calvario;
Swallow: E. Calvario;
Rock Partridge: E. Huttenmoser. Panda Photo;
Black Woodpecker: E. Huttenmoser. Panda Photo;
Wolf: G. Prola



of 31% of Italian vertebrates is threatened. Approximately 50% of the species of Italian vertebrates is not at risk of imminent extinction. The risk of extinction of different classes of vertebrates is highly variable, from 19% in reptiles up to 48% (54% with the correction described above) in freshwater fish. In cartilaginous fish species stands out the high percentage of lacking data (over 50%). Generally the classes related to water (cartilaginous and freshwater fish and amphibians) appear to be more threatened than terrestrial (reptiles, birds and mammals).

Overall, the populations of Italian Vertebrates are in decline, more pronounced in the marine environment than on land. Knowledge about the risk of extinction and demographic trends are more deficient in the marine environment.



In the terrestrial environment the main threats to the Italian vertebrates are habitat loss and pollution. The number of species threatened by taking and by direct persecution is quite minimal. The main threat detected in the marine environment is the incidental mortality, but this depends on the fact that the species evaluated (sharks, rays and chimaeras) have little commercial interest. ■

National Report 2008-2012 on the conservation state of birds, in accordance with art. 12 of the Birds Directive 2009/147/EC

Article 12 of the Birds Directive requires that Member States regularly submit a report on the application of national provisions adopted pursuant to the rules it contained.

On the basis of this provision, the European Commission prepared a special form that each country will have to fill by inserting a set of detailed information regarding, among other, the conservation status of nesting birds species and some migratory or wintering exclusively in its territory populations.

By Ministerial Decree of 6 November 2012, Ministry of the Environment and MIPAAF defined the "transmission mode and type of information that the regions are required to forward to the European Commission for reporting on research and work relating to the protection, management and utilization of the species of birds referred to in Article 1 of Directive 2009/147/EC"

In reference to the abovementioned Ministerial Decree has been activated a technical working group coordinated by the Ministry of the Environment, with the representatives of MIPAAF, Regions, Autonomous Provinces and ISPRA.

The Ministry of the Environment, to ensure uniformity in the reporting process, signed a specific agreement with ISPRA for the acquisition and integration of data for consistency, trends and distribution areas of the species.

ISPRA started working in full consistency with the methodological guidance provided for at Community level in the course of 2012-2013, using the data in its possession, those of the Natura 2000 database, those produced under previous agreements with the Lipu, those provided by the Regions and Autonomous Provinces, in order to prepare the cards on the conservation status and distribution maps for all birds populations indicated for Italy by the European Commission (http://bd.eionet.europa.eu/activities/Reporting/Article_12/Reports_2013).

The Ministry of the Environment, based on the input provided by the Regions will be responsible for compiling the community form relating to the implementation status of the Directive provisions.

The above activities are conducted in close collaboration with the Ministry of the Environment, the MIPAAF and competent administrations (Regions and Autonomous Provinces), on the basis of a methodological document previously discussed and approved and are carried out through a proper process of consultation with stakeholders interested, such as hunting associations and environmental groups, as requested by the European Commission.

Starting from 15 September 2013, the material produced (specific cards and maps) will gradually be uploaded to an FTP site. The upload will be completed by 31 October 2013. All relevant government departments, experts and stakeholders will be able to see the documents and possibly provide all evaluations and comments by 30 November 2013.

The delivery time for reporting was set at 31 December 2013.

NEWS

Seminar on PAF promoted by the Region of Umbria

On the initiative of the Agricultural Department of Umbria Region, in full agreement with the Region of Valle d'Aosta and the Province of Bolzano was held at the head-quarters of the Umbrian representation in Brussels, on June 19th, 2013, a workshop on *"The framework of PAF Priority Actions as a tool of integrated planning to achieve the Europe 2020 goals. Role and prospects."* It was attended by representatives of other European regions (Provence-Alpes-Côte d'Azur, Warmia and Masuria Region) and the General Directorate for Environment of the European Commission, Pia Bucella (Nature, biodiversity and land use Directorate); Marco Cipriani (Unit "Nature") and Esther Pozo Vera (Unit "Life-Nature").

This meeting arose from the need of the regions for a comparison of the multi-year regional documents with which the European Commission wants to identify priority actions for the protection of habitats and species in the Natura 2000 network and to plan the necessary funding to achieve these priorities through an integrated approach with the involvement of all parties responsible for the European funds: EAFRD, ERDF, ESF, LIFE + . As part of the workshop were discussed some issues, highlighted by the regions, which represent the quintessence of the critical issues related to the programming of structural funds for the period 2014-2020 and their use for the protection and conservation of biodiversity. The seminar was divided in two sessions: the first on the regulatory framework and objectives, the second on regional good practices. As obvious, the central theme of the meeting was the preparation of the PAF as an indispensable tool for accessing funds and especially what actions to foresee for their optimal implementation.

Even in the absence of a reliable and defined framework of the measures contained in the new Community programs, were widely discussed strategic priorities in relation to the Natura 2000 network investments related to tourism and the creation of green jobs, to the mitigation of climate change and adaptation, ecosystem benefits, research, training, advocacy and promotion of cooperation in the management in the Natura 2000 Network sites.



The edelweiss of the snow Apennine *Leontopodium*, is one of floristic species of stony ridges afferent to the priority habitat 8240* Limestone pavements of the Alpine biogeographical region. Photo: E. Calvario

Biogeographic process seminars

The Environment DG of the European Commission started, since last year, a new "Biogeographic process" that, based on voluntary participation, provides for the organization of 9 workshops, one for each biogeographic region.

The goal of the initiative is strongly focused on the management of Natura 2000 Network and is aimed at the exchange of experiences and good practices, the identification of objectives and common priorities, the strengthening of cooperation and synergies in the management of sites to achieve a favourable conservation status, it is therefore a significant opportunity for dialogue and discussion between experts, policy makers, NGOs, responsible for site management and to stimulate a more coordinated and synergistic action between Member States in managing the Network.

The initiative is supported by the on-line communication platform <http://www.natura2000communicationplatform.eu/> prepared by the European Agency for the Environment in order to facilitate the exchange of information, materials, documents, tasks carried out within the same process.

To organize concretely the process requires the identification of a "Country guide" for each seminar and a "Country guide" for each working group that will be organized, one for each habitat types identified to allow a "focus" more in-depth on the criticalities related to similar habitats and possible solutions to mitigate / eliminate them.

As the process is focused on the management of the Natura 2000 network sites and the creation of networks of experts, the Regions and the Autonomous Provinces are the most important stakeholders in the initiative, both for the opportunity to exchange experiences and for the forms of cooperation that can be developed between countries and / or neighbouring Regions.

For this reason, the Ministry of the Environment (MATTM) has proposed and promoted the direct participation of the Regions and Autonomous Provinces, starting with the first biogeographic seminar of interest for Italy on the Alpine biogeographic region, which will be held in Austria on 25 and 26 November 2013. The seminar on the Mediterranean biogeographic region / Macaronesian is scheduled for spring 2014, that on the Continental / Pannonian / Steppic / Black Sea for spring 2015.

The Database Management (see box on p. 3) is one of the instruments provided by the Ministry of the Environment to facilitate this participatory process.

Each cycle consists of the following biogeographic "Key Points":

- The meetings of the "Steering Committee", composed by the European Commission, the Member States concerned by the Biogeographic Region, the European Agency for the Environment, the European Topic Centre for Biodiversity (ETC/ BD) and representatives of the European Habitats Forum and Natura 2000 Forum. The "Steering Committee" shall decide on the habitats, species, the habitat groups which will focus on each cycle of seminars and discuss of all the issues related to the preparation of documents and the organization of the Workshop and Seminar;
- A preparatory Workshop for the Natura 2000 seminar: an informal working meeting during which, depending on the material collected by each Member State (main criticality, experiences and best management practices and put together by the ETC / BD in a "Background document", the Seminar is concretely organized, through the identification of the issues on which will be focused the discussion;
- The Natura 2000 Seminar: gathers the major stakeholders (including the competent authorities, NGOs and all stakeholders), coming from different countries. The objective is to create networks of experts on the various habitat types within the different biogeographic regions. The Seminar should then lead to the drafting of a "Final Report" in which to collect the recommendations and proposals for concrete actions regarding the management of habitats along with "road-map" for their implementation.

MONITORING ACTIVITIES implemented by the Region of



SARDEGNA



In the programming period 2006-2012 the Autonomous Region of Sardinia has contributed to achieve the **“Contributing to protect biodiversity through the conservation of natural habitats and wild fauna and flora”**, provided for by art. 2 of the Habitats Directive, by monitoring the state of conservation of the habitats of Annex I and the species in Annex II, IV and V provided for by article 11 of the same Directive.

The monitoring was implemented with the following projects:

a) **“Implementation of the monitoring system of the conservation status of habitats and species of Community interest of the Autonomous Region of Sardinia”**, Department of Environmental Defence - Environmental sustainability Service, impact assessment and environmental information systems (S.A.V.I) in collaboration with the Nature Protection Service (2009). (POR Sardegna 2000-2006 - Axis 1 Measure 1.7 C.

The project allowed the creation of a biodiversity monitoring system of the regional Natura 2000 network, consisting in a Plan and the monitoring network. The definition of the Plan included the collection of

field data, the definition of the sampling protocols and the identification of areas to be investigated. The collected data were stored in a Territorial Information System (TIS Habitat) integrated into the regional SIRA, which facilitates the use and processing. The Monitoring Network (areas, habitats and species to be investigated) integrates the plan and regulates the methods of implementation.

The project also produced map of habitats and plant species of Sardinia Natura 2000 network.

b) **“Starting the monitoring of the conservation status of habitats of Community importance within the territory of Sardinia”**, Department of Defence Environment - Nature Protection Service, 2011. With the project were carried out data collection and mapping of habitats in 21 Natura 2000 sites, the map updating of habitats arranged with the previous project, the updating of the standard forms for habitats, with a more precise definition of their “degree of conservation.”

c) **“Scientific study preparatory to the proposal of expansion and remeasurement onshore and offshore of SCI ITB032228 Is Arenas”**, Department of En-

vironment Defence - Nature Protection Service, 2012.

The project concerned the study and the monitoring of habitats and species of Community interest in the terrestrial and marine parts suggested for the expansion, in line with the contents of the excerpt management plan of the SCI. This expansion allowed to meet the requirements of the EC and therefore to close the infraction procedure.

d) **“Nature Map 1:50,000 scale”** - ISPRA-RAS, Nature Protection Service -University of Sassari, 2011.

The map of habitats has been designed for the entire regional territory in 1:50,000 scale, according to the methodology used by ISPRA at the national level, which allowed to identify the habitats according to the Corine Biotopes legend and to indicate the correspondence with the EUNIS and Natura 2000 systems. The unit area for a cartographic use is one hectare. The drafting of the map allowed to know the state of the environment through the following parameters: ecological value, environmental awareness, anthropic pressure and environmental fragility.

e) **“Monitoring the conservation status of habitats and species of Community importance present in the sites of the Natura 2000 network in Sardinia”** Department of Environment Defence - Nature Protection Service, 2012-2013.

The general objective of the project, still in progress, is the assessment of the conservation status of habitats and species of Natura 2000 sites, in continuation of the activities carried out with the previous projects; this assessment is also directed to the com-

The Mediterranean monk seal *Monachus monachus* (on the side), the loggerhead turtle *Caretta caretta* (p. 16 above) and the Shag *Phalacrocorax aristotelis desmarestii* (p. 16 below) are some of the species of Community interest and of high conservation value present along the of Sardinia coasts.

Photo.

Monk seal: F. Di Domenico, Panda Photo;

Photo;

Loggerhead turtle: M. Melodia, Panda Photo

Shag: E. Calvario



pilation of the 3rd national report 2007/2012 and of the next ones about the trend of the state of conservation of biodiversity, in accordance with art. 17 of the Habitat Directive and art. 13 of Presidential Decree 357/97 and subsequent amendments

The specific objectives of the project are:

- Update the map of habitats and plant species of all sites in the Natura 2000 network;
- Update the standard forms of the sites on the base of the project results;
- Set up new sites to fill the insufficient presence of habitats and species in the Natura 2000 network;
- Structuring the permanent regional observatory for biodiversity, rural landscape and sustainable development through the identification of a technical and scientific staff to support the Nature Protection Service;
- Disseminate the results achieved to a greater knowledge and awareness of local authorities, stakeholders and public opinion on the importance of protecting biodiversity.

f) **“Environmental Action Plan” (PAAR)**

Through the Action 9) “Protection and



management of the sites of the Regional Ecological Network”, C Major campaign “Sustainable management of the PAAR territory” was funded, for an amount of Euro 670.000,00, the monitoring of the conservation state of the habitats and species of “Habitats” and “Birds” Directive of the following marine SCIs: “Isola dei Cavoli, Serpentara, Punta Molentis and Campolungu”, “Isola di Tavolara, Molara and Molarotto”, “Isola dell’Asinara”, “Isola di Mal di Ventre and Catalano”, “Capo Caccia - Isola Piana” and “Arcipelago de La Maddalena”.

g) **“Conservation of endemic species most at risk of extinction of Sardinia”**

Department of Environmental Defence–Nature Protection Service and University of Cagliari, 2009-2011.

The study is aimed at the planning and implementation of appropriate and effective strategies for conservation of 10 species (Ribes sardoum, Polygala sinisica, Lamyropsis microcephala, Anchusa litorea, Centranthus amazonum, Aquilegia nuragica, Dianthus morisianus Vals., Aquilegia barbaricina, Astragalus maritimus Moris, Astragalus verrucosus Moris), selected according to the criteria of rarity, vulnerability, degree of threat.

h) **“Regional fauna Card”**

Adopted by resolution of the regional government no. 42/15, 4.10.2006 and recently updated, is the tool for the preparation and periodic adjustment of the wildlife and hunting planning.

http://www.regione.sardegna.it/documenti/1_73_20061018102249.pdf

i) **“Regional Network for the conservation of the marine fauna of Sardinia”**

The Regional Network for the conservation of marine fauna was established by the Memorandum of Understanding n. 5119 of 09.03.2009, signed by a group of institutional actors that operate on the entire coastal strip to ensure monitoring, rescue, care, rehabilitation and management of emergency and extraordinary events of turtles and marine mammals, as well as activities aimed at the protection of species. The data related to specimens recovered (alive, dead or distressed) along the coasts of Sardinia are reported in a database.

l) **“Establishment of the Regional permanent observatory for biodiversity, rural landscape and sustainable development”**

The Observatory was established in implementation of the Memorandum of Understanding with the Ministry of Environment, with a resolution of the Regional Government n. 45/27 of 12.11.2012, as multidisciplinary body organization specialized for the conservation of biodiversity with functions of coordination of all regional initiatives for conservation and monitoring of biodiversity and ecosystem services.

http://www.regione.sardegna.it/documenti/1_274_20121120090744.pdf. ■

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