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FOREWORD

The Mediterranean Action Plan - Phase II and the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, adopted by the Contracting Parties to the Barcelona Convention in 1995, contain provisions for the preparation of inventories of the elements of biological diversity in the Mediterranean region, at the national and regional levels. The UNEP/MAP Regional Activity Centre for Specially Protected Areas (SPA/RAC) was invited by the Extraordinary Meeting of the Contracting Parties held in Montpellier, 1-4 July 1996, to elaborate common criteria for the preparation of such inventories.

As a first stage in the drawing up of the criteria, SPA/RAC established a working group with the purpose of preparing a first draft. The group met in Tunis on 6 and 7 March 1997; with regard to the preparation of inventories of sites at the national level, the group proposed an approach based on the elaboration of reference lists of habitats and species for the selection of sites to be included in the inventories, and the elaboration of a standard data form for the compilation of information on the selected sites; it also recommended, in the eventual implementation of this approach, to look for compatibility with already existing initiatives, notably the establishment of the Natura 2000 and Emerald networks.

On the basis of the approach outlined above, the Secretariat draw up a set of draft criteria for the preparation of national inventories of natural sites of conservation interest, which are submitted to the Meeting of Experts on Criteria for the preparation of Inventories of the Elements of Biological Diversity in the Mediterranean Region (Athens, 8-10 Sept. 1997) as basis for its works. The criteria constitute section III of the working document UNEP(OCA)/MED WG.131/3.

The present report endeavours to outline the technical aspects of the preparation of national inventories of natural sites, following the approach already mentioned. It is proposed as information document to the present meeting, with the main purpose of providing the participants with elements to evaluate the implications of the proposed approach for the preparation of national inventories of sites, notably the further steps to be taken in order to have an operational instrument for the actual preparation of the inventories.

INTRODUCTION

The Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean and the Action plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP Phase II), adopted by the Contracting Parties to the Barcelona Convention in 1995, contain provisions for the preparation of inventories of the elements of biological diversity in the Mediterranean region (mainly art. 3 and 15 of the Protocol and paragraph 2.1 of the MAP). They refer to inventories at national as well as regional level.

This report summarises the technical aspects of the creation of such natural sites inventories at national level but performed in an international context. Therefore, integration of data from different sources and an efficient evaluation of the results depend largely on the degree of harmonisation and standardisation of the different parts. The use of standards and guidelines is very important when fostering collaboration in general and developing site networks more specifically.

The report takes into account the principles laid down in the Mediterranean Action Plan - Phase II and the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean. It also elaborates further on the discussions and approaches defined by the SPA/RAC working group on criteria for the preparation of inventories of the elements of biological diversity in the Mediterranean, which met in Tunis (March 1997). The group also highlighted the importance of streamlining and co-ordination with ongoing initiatives to avoid duplication of efforts. They especially referred to the NATURA 2000 (EU-Birds and Habitats Directives) and the Emerald (Bern Convention Recommendation No 16) site networks.

As this report elaborates on sites inventories at National level and performed in a scientific context, it should be stressed that by no means these inventories can be compared at political, juridical nor administrative level with the NATURA 2000 and Emerald sites networks. Nevertheless, it is important to note that most of the technical aspects behind such site inventories are independent from those political, juridical and administrative backgrounds. When referring in the text below to the NATURA 2000 and Emerald site networks, the reader should bear in mind that they are given as examples at technical level, rather than imposing roles.

The technical aspects are also independent from the geographical extent of the project, and therefore do not need to wait for a decision on the alternative proposals of the working group for the definition of the geographical scope of the inventories. Only the extent of the species and habitat list may be affected by the final decision.

If an inventory of natural sites at national level already exists or such an initiative is ongoing in a particular country, attempts should be made to check the links and degree of harmonisation with the proposed standards and technical aspects, once agreed by the Contracting Parties. In this way, good results may be obtained with minimum effort without disturbing existing initiatives at national level!

Another important element, which may be mentioned, is the fact that in many ways these technical aspects have links with the work programme of the European Environment Agency (E.E.A.) and notably with its Topic Centre on Nature Conservation in Paris (ETC/NC). Once again, if reference is made to this work programme it should be noted that they are given as examples on how co-operation in an international context may be obtained. However, streamlining with those ongoing initiatives can be of major interest to the present process.

This report takes into account as much as possible all these considerations, and elaborates and evaluates the technical aspects for the creation of site inventories at National level but performed in an international context.

1. THE NECESSARY BACKGROUND ISSUES: SPECIES LIST AND HABITAT LIST

Article 15 of the Protocol and paragraph 2.1 of MAP Phase II, both indicate the presence of rare or fragile ecosystems, that are reservoirs of biological diversity, and the presence of endangered or threatened species of flora and fauna as the main criteria for the selection of sites to be listed in the inventories. The working group on the criteria for the preparation of inventories of the elements of biological diversity in the Mediterranean suggested the elaboration of reference lists for threatened habitats and endangered and threatened species. The elements below refer to some of the technical aspects for the elaboration of such lists and do not attempt to discuss the actual criteria to include species or habitats on the list.

1.1 Species list

For a proper management of the data and evaluation of the results a standard species name list and coding system is necessary. The same species may have different scientific names. Especially differences may exist between countries. Even at international level such synonyms may exist and cause misunderstandings. Some of the species of the annexes of the Habitats Directive for example are mentioned also in the annexes of the Bern Convention but under a different scientific name. When using such list in an information system, especially in an international context, this synonymy problem should be taken into account.

In this context, a reference to the work programme of the European Topic Centre on Nature Conservation of the European Environment Agency can be made. The creation of such a standard taxonomy and nomenclature on European level is one of the responsibilities of the Topic Centre.

For example, many of the species already mentioned on annex II and III of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean are also listed on the annexes of the Habitats and Birds Directives on the one hand and/or the Bern Convention on the other hand. These species are taken into account by the work programme of the ETC/NC and build in the synonymy data base of the Topic Centre. They also receive a unique species code which is subsequently used in the software to manage the data (see later).

Task summary:

- *When developing the species reference list, consider the problem of synonymy and coding system of the species scientific names, taking into account the results of the ongoing work of the European Environment Agency.*

1.2 Habitat list

Equivalent to the species, there is a need for defining habitats for which areas should be indicated. Both, annex I of the Habitats Directive and Resolution No 4 (1996) of the Bern Convention are based on the CORINE Habitat Classification, which later developed into the Palaeartic Habitat Classification. As such it is an important initiative to be taken into account. This was also recognised by and stated in the report of the working group.

It is generally noted that until recently, the marine part of this classification was underdeveloped, because amongst others in the beginning it was not meant to include such marine elements. Meanwhile efforts have improved the marine part but it is still under development. The North Sea and parts of the Atlantic Sea close to the British Isles have been covered by the BioMar project which was financed by the European Community. Each of the marine habitats of the BioMar classification was also given a place in the CORINE habitat classification. Unfortunately, in the Mediterranean Sea such an international initiative has never taken place. Nevertheless, basic works can already be found (e.g. Council of Europe, 1982; Bellan-Santini, D., Lacaze, J.-C. & Poizat C., 1994).

If the Contracting Parties decide to create a reference list based on the Palaeartic classification, more emphasis will have to be given to the marine elements of the Mediterranean Sea in this classification. On the other hand, it would be difficult to defend to create a whole new classification for the Mediterranean Sea whereas the main principles are already taken into account by the Palaeartic classification.

Task summary:

- *When developing the habitat reference list, consider the use of the Palaeartic classification system, knowing that some additional work might be necessary to reach a complete coverage of the Mediterranean.*

1.3 Background information on Species and Habitats

Any efficient evaluation of a sites network has a need for good, high quality background data. Article 3.3 and Article 15 of the Protocol make reference to such data on the components of biological diversity and species of fauna and flora that are endangered and threatened.

Some of these background data are also related to the selection criteria for sites which will be described in the inventories. Examples such as distribution maps, population density, main threats and impacts can be named.

Under the responsibility of the European Environment Agency, the Topic Centre on Nature Conservation is developing a framework for such an information system on Nature in Europe (EUNIS). It is clear that a close link with this initiative may be necessary to avoid duplication of efforts.

The development of a parameter frame for the description of Habitats and the creation of an information system on species may be mentioned as concrete examples.

It is highly desirable that Contracting Parties and the RAC/SPA should have access to and benefit from such an information system.

Task summary:

- *Consider a close link with the development of the European Information System on Nature under development of the European Environment Agency.*

2. THE NEED FOR COMMON SITE SELECTION CRITERIA

Paragraph 2.1 of the Mediterranean Action Plan - Phase II clearly stipulates the need for common selection criteria jointly established by the Contracting Parties. Also in the NATURA 2000 process the EU-Member States must list first the sites eligible to become Sites of Community Interest using criteria applied at national level (annex III, stage 1 of the Habitats Directive). In a second step the Community importance of the sites included on the national list is assessed according to international criteria used in a Biogeographical context (annex III, stage 2 of the Habitats Directive). Again, for comparability and compatibility reasons, as evoked by the working group, the use of similar criteria for selection at national level as for NATURA 2000 might be envisaged.

Moreover, if site selection criteria, presently in use within different initiatives are compared (e.g. Habitats directive, the criteria laid down in the protocol for SPAMIs and the draft criteria at regional level proposed by the working group in annex V of the meeting report, ...), similar wordings are often used in relation to the species and habitats present on the sites. Terms like "representativity", "uniqueness", "degree of conservation", "degree of isolation", "naturalness", ...

are usually used in the development of site selection criteria.

Once those criteria need to be implemented in practise, they need to be clarified and identified in a more comprehensive way. This was done in the process of developing the NATURA 2000 Standard Data Form, where the operational principles were clearly stipulated for each of the criteria of annex III stage 1.

Task summary:

- *investigate the use of similar site selection criteria as defined by the Habitats Directive (annex III, stage 1) to be implemented in a Mediterranean context for site selection at national level !*
- *identify the need for defining the operational principles for the implementation of the criteria as part of the development of the Standard Data Form*

3. THE NEED FOR STANDARD DATA FORM, LOOKUP TABLES AND USER MANUAL

Any network initiative has a need for a proper data management tool. In Europe, a number of such sites data forms are presently in use. The most advanced from a scientific and technical point of view, is the CORINE Biotopes standard site record. Others can be named, such as the form in use for Biogenetic Reserves of the Council of Europe, the Ramsar Convention, , each with their own specificities. Both, the IUCN Parks for Life report and the Sofia Ministerial Conference report on Co-ordination of information on Protected Areas call for a better harmonisation of these sites records. The NATURA 2000 standard data form is mentioned as an important example of standardisation. This was also recognised by the working group on criteria for the preparation of inventories of the elements of biological diversity in the Mediterranean.

As indicated in the introduction, although the NATURA 2000 Standard Data Form was developed under the Habitats Directive, the technical aspects behind it are independent from the political, juridical and administrative background. In fact, the Standard Data Form was build on the experiences from the CORINE Biotopes project, which is a typical example of a sites inventory based on scientific grounds.

Annex IV of the report of the meeting of the working group on criteria for the preparation of inventories of elements of biological diversity in the Mediterranean summarises the items which could form such a standard data form.

The development of a user manual together with the standard data form is equally important to guide the user through the sometimes difficult task to fill the forms for each of the selected sites.

The following sections elaborate on this by looking to what should be done on a technical level to develop a similar data form as for NATURA 2000 but applied in a Mediterranean context.

Different groups of data fields can be distinguished. On the one hand a number of data fields do not cause any problem in whatever context they are used. Name, Surface Area, Co-ordinates of the central point, descriptive fields, can be named as examples. For those fields no separate section is made below for obvious reasons. On the other hand for a number of data fields an evaluation is necessary when used in the Mediterranean context. This counts mainly for those data fields for which the data are recorded according to a pre-defined set of fixed values or codes (Lookup tables). These fields are briefly explained in the sections below, highlighting the main tasks to be performed when using them in a Mediterranean context.

3.1. Reference to a standard list of Administrative Regions: e.g. NUTS-Regions

Many site inventories make reference to an administrative regions map and reference list to indicate to which region(s) the site belongs (provinces, counties,). In Europe, Eurostat is managing such a standard administrative regions map, the so called "NUTS regions" (Nomenclature of Statistical Territorial Units) (Eurostat, 1995). Although, originally only designed for EU-Member States, the principles of the coding list have been developed in a Pan-European context within the framework of the "Dobris assessment" (Stanners D. & Bourdeau P. (Eds.), 1995). It is a simple and straightforward coding system for administrative regions which can easily be expanded to other Mediterranean countries, presently not covered by the system. It is based on the actual official "regionalisation" of each of the countries.

Task summary:

- *consider the use of the Eurostat NUTS regions for referencing of administrative regions*
- *consider the expansion of the coding system to countries not yet covered by the system.*

3.2 National Designation types and coding system

As indicated by the working group in its report, the selected sites may or may not yet be protected. Nevertheless, it is important that the protection status is recorded to be able to evaluate the efficiency of the network to reach the goals. This should be done in a systematic way by using the official existing titles of protection types

for each country concerned in local language. In addition to this national list, reference to other international regulations and programmes can be made in a similar way.

Such a coding system is now also in use by the "Common Data base on Protected Areas, a common initiative between the European Environment, the Council of Europe and the World Conservation Monitoring Centre to create one unique data base for Europe on Protected Areas. This simple coding system of national protection types is also used for the purpose of the NATURA 2000 Standard Data Form. Similar results in Pan-European context, were obtained from the preparation of the Council of Europe document on co-ordination of information on protected areas for the Sofia Ministerial Conference.

Task summary:

- *Develop or evaluate and update existing information on national designation types for each country concerned in the Mediterranean context.*

3.3 Activities and Impacts

To be able to have a good idea of the impacts and threats on a site, an indication of these activities is necessary. Annex IV of the working group also makes reference to this kind of information.

Again, for harmonisation and consistency reasons, it is better to indicate the activities in a systematic way. The CORINE Biotopes project had a rather limited human activities code list. By developing the NATURA 2000 standard data form the list was replaced by a more systematic and hierarchical list of activities and impacts in and around the site, together with an indication of the positive, negative or neutral influences.

Task summary:

- *evaluate the NATURA 2000 activities and impacts code list in a Mediterranean context. Extend if necessary.*

4. SITE BOUNDARY INFORMATION

For an efficient management and evaluation of any sites network, the mapping of sites boundaries is extremely important. This can be done on paper maps or even

better in digital format. When digitised, data can be explored in the context of the wider environment, by means of digital overlay with other data layers in the context of a geographical information system. This enables the data to be used in a variety of applications which require exact information about spatial relationships.

To this end, it is very important that site boundaries are drawn on official published topographic maps with a scale which is sufficiently detailed (preferable 1/100.000 or even more detailed). In an international context, it is important that this mapping procedure is co-ordinated to be able to integrate the results in digital form in a later stage.

Task summary:

- *the collection and digitisation of site boundary information should be an integral part of the process of the site inventory. The technical principles should be clearly defined through guidelines for collection of boundary information (e.g. map series to be used, scale, projection, etc. ...).*

5. DATA MANAGEMENT ISSUES

To be able to manage and evaluate the results of any site network an appropriate information tool and data base is necessary. The CORINE Biotopes sites data base had already an input and query module to its disposal to be used by the national experts to create the sites data base. This experience was used in developing a modern software tool for the management of the NATURA 2000 sites information.

The development of a similar tool, based on the agreed technical principles by the Contracting Parties, should be considered.

Task summary:

- *consider the development of a software tool to manage the site data in the contextual framework of the Mediterranean Countries.*

6. TOWARDS REGIONAL INVENTORIES, THE BIOGEOGRAPHICAL ISSUE

Ecological processes are usually not linked to country or administrative boundaries. The incorporation of the Biogeographical Regions aspects within the "Habitats" Directive was the first time that this principle was taken into account by a legislative document. It means that the process of site and network evaluation will

be performed on a Biogeographical bases. The first map, developed under the "Habitats" Directive covered 5 Biogeographical regions in 12 Member States. When 3 other countries joined the Union the map was expanded to 6 Biogeographical regions in 15 Member States. (Boreal, Atlantic, Continental, Alpine, Mediterranean and Macaronesian).

Paragraph 2.1 of the Mediterranean Action Plan - Phase II refers to site inventories at regional level. As mentioned above this also needs selection criteria and evaluation of the results at regional level. If compatibility with the NATURA 2000 and Emerald sites network is desirable one could consider the criteria and evaluation of the regional site inventories to be performed in a Biogeographical context adapted for the Mediterranean Area. A similar map of Biogeographical Regions could be developed taking into account typical aspects of the Mediterranean.

Task summary:

- *consider the creation of a Biogeographical Regions Map in a Mediterranean context.*
- *consider a procedure for the evaluation of the Regional sites network within this Biogeographical context.*

7. MONITORING

Article 3.5 of the Protocol stipulate that the Parties shall monitor the components of biological diversity. This is also in line with the monitoring obligations under the Habitats and Birds Directives. From a technical point of view such a monitoring program would also ask a number of data gathering and storage principles. Unfortunately, the principles for such a site monitoring programme still needs to be fixed. The work programme of the European Environment Agency also foresees the development of such a site monitoring methodology.

Until such monitoring process has been decided, the evaluation of data needs from a technical point of view can not be assessed.

Task summary:

- *start discussions on how to develop such sites monitoring programme, taking into account developments under the European Environment Agency Work programme.*

8. CONCLUSIONS

The Mediterranean Action Plan - Phase II and the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean provide for the setting up of site inventories based on common criteria at national level as well as at regional level. Although those inventories have not the same political, juridical and administrative background as the NATURA 2000 and the Emerald site networks, they have quite a few commonalities especially from a technical point of view.

For this reason and for the principles of co-ordination, harmonisation and to avoid duplication of efforts laid down in numerous political, administrative and scientific documents, the technical aspects of the creation of such site inventories were investigated in the light of the co-ordination with the most important ongoing data gathering activities in an important part of the Mediterranean area. Nevertheless, the typical situation of the Mediterranean Sea as a whole may not be omitted and for some aspects special attention is necessary.

Also, the related issues of the work programme of the European Topic Centre on Nature Conservation of the European Environment Agency are highlighted where necessary.

Some indication of what needs to be done for each section is given in a summary action box. Some of them are straightforward and needs only time to perform the job and let it happen. Others remain to be investigated and the actual procedure for co-ordination and harmonisation still needs to be set and decided by the Contracting Parties to the Convention and the Protocol. Finally, for some aspects, no similar initiative yet exists and the whole principle needs to be developed, such as for site monitoring aspects. In this case, the co-ordination with other starting initiatives is important.

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