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MEDITERRANEAN ACTION PLAN

Meeting of Experts on Criteria
for the preparation of Inventories of
the Elements of Biological Diversity
in the Mediterranean Region

● Athens, 8-10 September 1997

**DRAFT COMMON CRITERIA
FOR THE PREPARATION OF INVENTORIES
OF THE ELEMENTS OF BIOLOGICAL DIVERSITY
IN THE MEDITERRANEAN REGION**

INTRODUCTION

Section 2.1 of the Mediterranean Action Plan - Phase II and Articles 3.3 and 15 of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean contain provisions for the preparation of inventories of the elements of biological diversity important for its conservation and sustainable use. MAP Phase II also provides for such inventories to be prepared according to common criteria jointly established by the Contracting Parties.

In this framework, the 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 prepare common criteria and guidelines for the preparation of inventories of sites, species and other elements of biological diversity.

Within the fulfilment of this mandate, SPA/RAC established an *ad hoc* group of experts composed of representatives of international organizations competent in this domain, with a view to preparing a first draft of the criteria. The group met in Tunis on 6 and 7 March 1997, prepared a first draft of the criteria and issued recommendations on their further elaboration and the adoption of already existing criteria and standards.

The Meeting of the MAP National Focal Points held in Athens, 7-9 July 1997 invited SPA/RAC to finalize the criteria for submission and approval by the Tenth Ordinary Meeting of the Contracting Parties. To this purpose, SPA/RAC has convened in Athens from 8 to 10 September 1997 a Meeting of experts representatives of the Contracting Parties with the main tasks of further elaborating and finalizing the common criteria.

The present working document was prepared by the secretariat to be used as a basis for the works of the meeting. In its preparation, continuous reference was made to the outcomes of the above-mentioned meeting of the *ad hoc* group of experts, as they are reflected in the report of the meeting. The document proposes draft criteria for the preparation of separate inventories of sites and species, at the national and regional levels. It also includes a section of general principles concerning the preparation of the inventories (Section I) and a section aimed at defining the geographical coverage of the inventories (Section II). Within the latter, three alternative options are proposed with a view to defining the geographic coverage of the inventories with respect to terrestrial coastal areas.

In conformity with the recommendations of the *ad hoc* group, section V. *Criteria for the preparation of inventories of threatened or endangered species* proposes for consideration by the experts the criteria (and related definitions) for the threatened species categories of the new IUCN Red List Categories prepared by the IUCN Species Survival Commission, as approved by the 40th Meeting of the IUCN Council (30 November 1994).

DRAFT COMMON CRITERIA FOR THE PREPARATION OF INVENTORIES OF THE ELEMENTS OF BIOLOGICAL DIVERSITY IN THE MEDITERRANEAN REGION

The present criteria are established for the purposes of the preparation of inventories of the elements of biological diversity pursuant to section 2.1 of the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP Phase II) and articles 3 and 15 of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean.

I. GENERAL PRINCIPLES

1. The main objective of the preparation of the inventories shall be the conservation of Mediterranean biological diversity.
2. To conveniently meet conservation purposes, the inventories shall
 - be regularly updated;
 - contain for each listed element the information useful at its conservation and monitoring.
3. With a view to fostering the exchange of information concerning biological diversity in the Mediterranean, and in order to ensure comparability and regional integration, national inventories shall
 - be accessible for comparative evaluation and regional integration to be carried out;
 - be compiled according to commonly agreed standard formats;
 - be available in at least one official language of the Barcelona Convention (Arab, English, French and Spanish):

II. GEOGRAPHICAL COVERAGE OF THE INVENTORIES

1. The geographical coverage of the inventories shall include the marine and terrestrial coastal areas of the Mediterranean region.
2. Concerning marine areas, the definition of the Mediterranean Sea Area delimited in Article 2 of the Protocol shall apply, it being understood that, for the purposes of the preparation of national inventories, it shall be limited to the areas under the sovereignty or jurisdiction of the Party concerned.
3. Concerning terrestrial coastal areas, including wetlands, the following definitions¹ shall apply:
 - (a) Coastal sites: sites within 10km of the sea-shore or tidal water;
 - (b) Coastal species: species regularly occurring in sites within 10km of the sea-shore or tidal water, in at least one stage of its life cycle.

[Variant 1:

- (a) Coastal sites: sites including a stretch of coastline or being directly affected by marine salinity (e.g. coastal lagoons, estuaries, etc. up to the limit of freshwater, tidal flats, dunes, cliffs, ...);
- (b) Coastal species: species directly linked to the marine environment in at least one stage of its life cycle and/or regularly occurring in coastal sites.]

[Variant 2:

- (a) Coastal sites: sites including one or more coastal habitat types and/or supporting permanent or regularly occurring populations of coastal species;
- (b) Coastal species: species characteristic of coastal habitats.

In applying such definitions, reference shall be made to the lists of habitats and species elaborated pursuant to paragraph III.2 of these criteria.

¹ Three alternative options are proposed, as they have been drawn up by the Meeting of the *ad hoc* group of experts (Tunis, 6-7 March 1997)

III. CRITERIA FOR THE PREPARATION OF NATIONAL INVENTORIES OF NATURAL SITES OF CONSERVATION INTEREST

1. The following definitions shall apply for the purpose of the use of this section of the criteria:

(a) *Natural habitat* means terrestrial or aquatic areas distinguished by geographic, abiotic and biotic features, whether entirely natural or semi-natural;

(b) *Habitat of a species* means an environment defined by specific abiotic and biotic factors, in which the species lives at any stage of its biological cycle;

(c) *Site* means a geographically defined area whose extent is clearly delineated;

(d) *Centre* means the Regional Activity Centre for Specially Protected Areas.

2. Each Party shall compile a comprehensive inventory of marine and terrestrial coastal sites under its sovereignty or jurisdiction important for the conservation of biological diversity.

3. The presence within the site of a significant sample of sensitive elements of Mediterranean biological diversity is the basic criterion for its inclusion in the inventory. Such elements shall include:

(a) threatened marine and coastal natural habitat types;

(b) the habitat of endangered or threatened species of the region.

To guide the identification of sites to be inventoried the Parties shall jointly establish reference lists of those elements, which shall be annexed to these criteria. The lists may be revised by the Parties.

4. The significance of a site for a given natural habitat type shall be assessed against the following criteria:

(a) Degree of representativity of the natural habitat type on the site;

(b) Area of the site covered by the natural habitat type in relation to the total area covered by that natural habitat type within national territory;

(c) Degree of conservation of the structure and functions of the natural habitat type concerned and restoration possibilities;

(d) Global assessment of the value of the site for conservation of the natural habitat type concerned.

5. The significance of a site for a given species shall be assessed against the following criteria:

(a) Size and density of the population of the species present on the site in relation to the population present within national territory;

(b) Degree of conservation of the features of the habitat which are important for the species concerned and restoration possibilities;

(c) Degree of isolation of the population present on the site in relation to the natural range of the species;

(d) Global assessment of the value of the site for conservation of the species concerned.

6. Information concerning each inventoried site will be compiled according to a standard format, which will have to be agreed by the Parties upon a proposal from the Centre. Such information will include, but will not necessarily be limited to, the fields detailed in Appendix I to these criteria.

7. The inventories so established shall be reviewed and updated at intervals not exceeding 5 years.

IV. CRITERIA FOR THE PREPARATION OF INVENTORIES OF NATURAL SITES OF REGIONAL CONSERVATION INTEREST

1. To be included in the regional inventories, a site shall fit one or several of the following criteria:

- (a) it contribute substantially to the survival of species that are:
 - globally threatened, or
 - endangered in the Mediterranean region, or
 - threatened and endemic to the Mediterranean region, or
 - included in annex 2 and/or 3 of the Protocol;

(b) it supports important populations of one or more species (e.g. it supports at least 1 % of the population of a species);

(c) it has a high diversity of species, communities, habitats or ecosystems;

(d) it contains an important sample of one or more endangered habitat types;

(e) it contains highly representative habitat types or ecological processes;

(f) it contains outstanding natural features, landscapes or seascapes;

(g) the site is internationally recognised (e.g. Ramsar, World Heritage, Council of Europe Diploma site, SPAMI, ...);

(h) it otherwise contributes substantially to the conservation of biological diversity in the Mediterranean

2. The inventories so established shall be reviewed and updated at intervals not exceeding 5 years.

V. CRITERIA FOR THE PREPARATION OF INVENTORIES OF THREATENED OR ENDANGERED SPECIES²

Article 1

Definitions

The following definitions shall apply for the purpose of the use of this section of the criteria:

(a) *Taxon*

The term 'taxon' is used to indicate species or lower taxonomic levels.

(b) *Population*

Population is defined as the total number of individuals of the taxon [in the area of coverage of the inventory]. For functional reasons, primarily owing to differences between life-forms, population numbers are expressed as numbers of mature individuals only. In the case of taxa obligately dependent on other taxa for all or part of their life cycles, biologically appropriate values for the host taxon should be used.

(c) *Subpopulations*

Subpopulations are defined as geographically or otherwise distinct groups in the population between which there is little exchange (typically one successful migrant individual or gamete per year or less).

(d) *Mature individuals*

The number of mature individuals is defined as the number of individuals known, estimated or inferred to be capable of reproduction. When estimating this quantity the following points should be borne in mind:

Where the population is characterised by natural fluctuations the minimum number should be used.

This measure is intended to count individuals capable of reproduction and should therefore exclude individuals that are environmentally, behaviourally or otherwise reproductively suppressed in the wild.

In the case of populations with biased adult or breeding sex ratios it is appropriate to use lower estimates for the number of mature individuals which take this into account (e.g. the estimated effective population size).

² The definitions, the categories of risk of extinction and the criteria defining the categories presented in this section are extracted from the official *IUCN Red List Categories* document (© IUCN, 1994, ISBN 2-8317-0277-1). Reproduction is made with permission from the copyright holder, which disclaims all errors or omission in the publication.

- Reproducing units within a clone should be counted as individuals, except where such units are unable to survive alone (e.g. corals).
- In the case of taxa that naturally lose all or a subset of mature individuals at some point in their life cycle, the estimate should be made at the appropriate time, when mature individuals are available for breeding.

(e) *Generation*

Generation may be measured as the average age of parents in the population. This is greater than the age at first breeding, except in taxa where individuals breed only once.

(f) *Continuing decline*

A continuing decline is a recent, current or projected future decline whose causes are not known or not adequately controlled and so is liable to continue unless remedial measures are taken. Natural fluctuations will not normally count as a continuing decline, but an observed decline should not be considered to be part of a natural fluctuation unless there is evidence for this.

(g) *Reduction*

A reduction (criterion A) is a decline in the number of mature individuals of at least the amount (%) stated over the time period (years) specified, although the decline need not still be continuing. A reduction should not be interpreted as part of a natural fluctuation unless there is good evidence for this. Downward trends that are part of natural fluctuations will not normally count as a reduction.

(h) *Extreme fluctuations*

Extreme fluctuations occur in a number of taxa where population size or distribution area varies widely, rapidly and frequently, typically with a variation greater than one order of magnitude (i.e., a tenfold increase or decrease).

(i) *Severely fragmented*

Severely fragmented refers to the situation where increased extinction risks to the taxon result from the fact that most individuals within a taxon are found in small and relatively isolated subpopulations. These small subpopulations may go extinct, with a reduced probability of recolonisation.

(j) *Extent of occurrence*

Extent of occurrence is defined as the area contained within the shortest continuous imaginary boundary which can be drawn to encompass all the known, inferred or projected sites of present occurrence of a taxon, excluding cases of vagrancy. This measure may exclude discontinuities or disjunctions within the overall distributions of taxa (e.g., large areas of obviously unsuitable habitat) (but see 'area of occupancy'). Extent of occurrence can often be measured by a minimum convex polygon (the smallest polygon in which no internal angle exceeds 180 degrees and which contains all the sites of occurrence).

(k) *Area of occupancy*

Area of occupancy is defined as the area within its 'extent of occurrence' (see definition) which is occupied by a taxon, excluding cases of vagrancy. The measure reflects the fact that a taxon will not usually occur throughout the area of its extent of occurrence, which may, for example, contain unsuitable habitats. The area of occupancy is the smallest area essential at any stage to the survival of existing populations of a taxon (e.g. colonial nesting sites, feeding sites for migratory taxa). The size of the area of occupancy will be a function of the scale at which it is measured, and should be at a scale appropriate to relevant biological aspects of the taxon. The criteria include values in km², and thus to avoid errors in classification, the area of occupancy should be measured on grid squares (or equivalents) which are sufficiently small (see Figure 2).

(l) *Location*

Location defines a geographically or ecologically distinct area in which a single event (e.g. pollution) will soon affect all individuals of the taxon present. A location usually, but not always, contains all or part of a subpopulation of the taxon, and is typically a small proportion of the taxon's total distribution.

(m) *Quantitative analysis*

A quantitative analysis is defined here as the technique of population viability analysis (PVA), or any other quantitative form of analysis, which estimates the extinction probability of a taxon or population based on the known life history and specified management or non-management options. In presenting the results of quantitative analyses the structural equations and the data should be explicit.

Article 2

The risk of extinction in the wild of a species in the area of coverage of an inventory (national or regional) is the basic criterion for its inclusion in that inventory. To be included in the inventory, a species will have to qualify for one of the following categories of risk:

CRITICALLY ENDANGERED (CR)

A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the following criteria (A to E):

A. Population reduction in the form of either of the following:

1. An observed, estimated, inferred or suspected reduction of at least 80% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:
 - (a) direct observation
 - (b) an index of abundance appropriate for the taxon
 - (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

- (d) actual or potential levels of exploitation
 - (e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.
 - 2. A reduction of at least 80%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b),(c),(d) or (e) above.
- B. Extent of occurrence estimated to be less than 100 km² or area of occupancy estimated to be less than 10 km², and estimates indicating any two of the following:
- 1. Severely fragmented or known to exist at only a single location.
 - 2. Continuing decline, observed, inferred or projected, in any of the following:
 - (a) extent of occurrence
 - (b) area of occupancy
 - (c) area, extent and/or quality of habitat
 - (d) number of locations or subpopulations
 - (e) number of mature individuals
 - 3. Extreme fluctuations in any of the following:
 - (a) extent of occurrence
 - (b) area of occupancy
 - (c) number of locations or subpopulations
 - (d) number of mature individuals
- C. Population estimated to number less than 250 mature individuals and either:
- 1. An estimated continuing decline of at least 25% within 3 years or one generation, whichever is longer or
 - 2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:
 - (a) severely fragmented (i.e. no subpopulation estimated to contain more than 50 mature individuals)
 - (b) all individuals are in a single subpopulation.
- D. Population estimated to number less than 50 mature individuals.
- E. Quantitative analysis showing the probability of extinction in the wild is at least 50 % within 10 years or 3 generations, whichever is the longer.

ENDANGERED (EN)

A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined by any of the following criteria (A to E):

A. Population reduction in the form of either of the following:

1. An observed, estimated, inferred or suspected reduction of at least 50% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:

- (a) direct observation
- (b) an index of abundance appropriate for the taxon
- (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
- (d) actual or potential levels of exploitation
- (e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.

2. A reduction of at least 50 %, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d) or (e) above.

B. Extent of occurrence estimated to be less than 5000 km² or area of occupancy estimated to be less than 500 km², and estimates indicating any two of the following:

1. Severely fragmented or known to exist at no more than five locations.

2. Continuing decline, inferred, observed or projected, in any of the following:

- (a) extent of occurrence
- (b) area of occupancy
- (c) area, extent and/or quality of habitat
- (d) number of locations or subpopulations
- (e) number of mature individuals.

3. Extreme fluctuations in any of the following:

- (a) extent of occurrence
- (b) area of occupancy
- (c) number of locations or subpopulations
- (d) number of mature individuals.

Population estimated to number less than 2500 mature individuals and either:

1. An estimated continuing decline of at least 20 % within 5 years or 2

generations, whichever is longer, or

2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:

- (a) severely fragmented (i.e. no subpopulation estimated to contain more than 250 mature individuals)
- (b) all individuals are in a single subpopulation.

D. Population estimated to number less than 250 mature individuals.

E. Quantitative analysis showing the probability of extinction in the wild is at least 20 % within 20 years or 5 generations, whichever is the longer.

VULNERABLE (VU)

A taxon is Vulnerable when it is not critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future, as defined by any of the following criteria (A to E):

A. Population reduction in the form of either of the following:

1. An observed, estimated, inferred or suspected reduction of at least 20% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:

- (a) direct observation
- (b) an index of abundance appropriate for the taxon
- (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
- (d) actual or potential levels of exploitation
- (e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.

2. A reduction of at least 20%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d) or (e) above.

B. Extent of occurrence estimated to be less than 20,000 km² or area of occupancy estimated to be less than 2000 km², and estimates indicating any two of the following:

1. Severely fragmented or known to exist at no more than ten locations.
2. Continuing decline, inferred, observed or projected, in any of the following:

- (a) extent of occurrence

- (b) area of occupancy
 - (c) area, extent and/or quality of habitat
 - (d) number of locations or subpopulations
 - (e) number of mature individuals.
- 3. Extreme fluctuations in any of the following:
 - (a) extent of occurrence
 - (b) area of occupancy
 - (c) number of locations or subpopulations
 - (d) number of mature individuals.
- C. Population estimated to number less than 10,000 mature individuals and either:
 - 1. An estimated continuing decline of at least 10 % within 10 years or 3 generations, whichever is longer, or
 - 2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either.
 - (a) severely fragmented (i.e. no subpopulation estimated to contain more than 1000 mature individuals)
 - (b) all individuals are in a single subpopulation.
- D. Population very small or restricted in the form of either of the following:
 - 1. Population estimated to number less than 1000 mature individuals.
 - 2. Population is characterised by an acute restriction in its area of occupancy (typically less than 100 km²) or in the number of locations (typically less than 5). Such a taxon would thus be prone to the effects of human activities (or stochastic events whose impact is increased by human activities) within a very short period of time in an unforeseeable future, and is thus capable of becoming Critically Endangered or even Extinct in a very short period.
- E. Quantitative analysis showing the probability of extinction in the wild is at least 10 % within 100 years.

Article 3

Information concerning each inventoried species will be compiled according to the format detailed in Appendix II to these criteria.

Article 4

The inventories so established shall be reviewed and updated at intervals not exceeding 10 years.

APPENDIX I

Format of information concerning the sites included in the national inventories

- site name
- site location
- area
- site length (if possible)
- description of the site:
 - threatened marine and coastal habitats (as per agreed reference list) present on the site and site assessment for them;
 - threatened marine and coastal species (as per agreed reference list) present in the site and site assessment for them;
 - other habitats and species of conservation interest;
 - invasive species;
 - other prominent natural features;
- reasons for choice
- conservation status
- threats
- human activities in and around the site and their impact
- land tenure
- protection status
- main conservation regulations
- international designation
- conservation projects being implemented
- management plans and practices

- authority responsible for the management of the site
- other institutions/organizations involved in site management (universities , NGOs, ...)
- date of first compilation
- update
- Documentation on the site:
 - site map
 - scientific publications and reports
 - aerial photographs
 - other pertinent material

APPENDIX II

Format of information concerning the species listed in the inventories of threatened or endangered species

1. Scientific and common name.
2. Distribution within the area of coverage of the inventory.
3. Interaction with populations outside the area of coverage of the inventory.
4. Assessed category of risk of extinction, including the criteria qualifying the species for listing at that level of risk. If inference and projection are used, the rationale should be stated.
5. Factors threatening the survival of the species in the area of coverage of the inventory.
6. References to any papers, studies or projects supporting the assessment.
7. Taxonomy used.
8. Participants involved in the evaluation process.