

## AEWA Conservation Guidelines No. 3

Guidelines on the preparation of site inventories for migratory waterbirds



## Introduction

In Article II of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds, Parties agree, as a fundamental principle, to take co-ordinated measures to maintain migratory waterbird species in a favourable conservation status or to restore them to such a status. To this end, the Parties agree to apply within the limits of their national jurisdiction a number of general conservation measures prescribed in Article III of the Agreement, as well as a number of more specific actions determined in the Action Plan appended to the Agreement. In paragraph 7.3 of the Action Plan, the Agreement Secretariat is required to co-ordinate the development of a series of Conservation Guidelines to assist the Parties in the implementation of their obligations under the Agreement. These Conservation Guidelines, which should be prepared in co-ordination with the Technical Committee and with the assistance of experts from Range States, were submitted to the First and Second Meetings of the Parties, which recommended publication after minor amendment, and further recommended regular review (Article IV, paragraph 4 of the Agreement). The Technical Committee keeps the guidelines under review, and formulates draft recommendations and resolutions relating to their development, content and implementation for consideration at sessions of the Meeting of the Parties (paragraph 7.6 of the Action Plan).

Paragraph 7.3 of the Action Plan gives a list of some of the topics that should be covered by the Conservation Guidelines. These are as follows:

- (a) single species action plans;
- (b) emergency measures;
- (c) preparation of site inventories and habitat management methods;
- (d) hunting practices;
- (e) trade in waterbirds;
- (f) tourism;
- (g) reducing crop damage;
- (h) a waterbird monitoring protocol.

Preparation of the Conservation Guidelines was identified as a major activity in the *International Implementation Plan for the Agreement on the Conservation of African-Eurasian Migratory Waterbirds 1997-1999*, prepared by Wetlands International in April 1997 with financial support from the Ministry of Agriculture, Nature Management and Fisheries in The Netherlands. Activity 3 of the *Implementation Plan* involved the preparation of nine sets of conservation guidelines, following the list in paragraph 7.3 of the Action Plan, but treating site inventories and habitat management methods as two separate topics. These Guidelines were accepted by the first Meeting of the Parties in Cape Town, South Africa, in November 1999, subject to minor amendment. The necessary amendments were made after discussion by the Technical Committee, and the amended version of the Conservation Guidelines was accepted by the second Meeting of the Parties to the Agreement in Bonn, Germany, in September 2002.

The nine sets of guidelines, as set out in the *Implementation Plan* and presented here, are as follows:

### **1. Guidelines on the preparation of Single Species Action Plans for migratory waterbirds**

In paragraph 2.2.1 of the Action Plan, Parties are required to co-operate with a view to developing and implementing international single species action plans for populations listed in Category 1 in Column A of Table 1 as a priority and also for those populations listed with an asterisk in Column A of Table 1. Furthermore, in paragraph 2.2.2, Parties are required to prepare and implement national single species action plans for all those populations listed in Column A of Table 1 with a view to improving their overall conservation status. The Agreement Secretariat is required to co-ordinate the development, harmonisation and implementation of these plans. The present guidelines focus on national single species action plans. They outline a standard procedure for the preparation of such action plans, and identify the priority species and populations occurring in the Agreement Area.

## **2. Guidelines on identifying and tackling emergency situations for migratory waterbirds**

In some situations, populations of waterbirds can suddenly be subjected to much higher levels of mortality than normal. These emergency situations can arise as a result of natural phenomena, such as periods of exceptionally cold weather or prolonged droughts, or as a result of man-made disasters, such as major pollution incidents. International co-operation is required to address these situations without delay. In Article III, paragraph 2 (f) of the Agreement, Parties agree to co-operate in emergency situations requiring international concerted action and in identifying the species of migratory waterbirds, which are the most vulnerable to these situations. Furthermore, Parties agree to co-operate in developing appropriate emergency procedures to provide increased protection to these species in such situations. In paragraph 2.3 of the Action Plan, Parties are required, in close co-operation with each other whenever possible and relevant, to develop and implement emergency measures for populations listed in Table 1, when exceptionally unfavourable or endangering conditions occur anywhere in the Agreement Area. At its third session, the AEWA Technical Committee adopted criteria to define emergency situations, which require urgent conservation measures, and determined the modalities for assigning responsibility for action to be taken (Article VI, paragraph 7 (e) of the Agreement). The present guidelines identify many of the possible emergency situations that may arise, and outline procedures for establishing early warning systems and tackling these situations at national level.

## **3. Guidelines on the preparation of site inventories for migratory waterbirds**

In Article III, paragraph 2 (c) of the Agreement, Parties are required to identify sites and habitats for migratory waterbirds occurring within their territory. More specifically, in Paragraph 3.1.1 of the Action Plan, Parties are required, in liaison where appropriate with competent international organisations, to undertake and publish national inventories of the habitats within their territory, which are important to populations listed in Table 1. Parties should endeavour, as a matter of priority, to identify all sites of international or national importance for populations listed in Table 1 (Paragraph 3.1.2). These guidelines develop a step-wise approach to the inventory process, which takes full advantage of existing regional and national wetland inventories and lists of sites important for migratory waterbirds.

## **4. Guidelines on the management of key sites for migratory waterbirds**

In Article III, paragraph 2 (c) of the Agreement, Parties are required to encourage the protection, management, rehabilitation and restoration of sites and habitats for migratory waterbirds occurring within their territory. More specifically, in Paragraph 3.2.1 of the Action Plan, Parties are required to endeavour to continue establishing protected areas to conserve habitats important for the populations listed in Table 1 of the Action Plan, and to develop and implement management plans for these areas. These guidelines set forth the basic procedures for the design and implementation of management plans, with special reference to sites of importance for migratory waterbirds.

## **5. Guidelines on sustainable harvest of migratory waterbirds**

If populations of migratory waterbirds are to be maintained in a favourable conservation status, it is essential that any exploitation of these populations be carried out on a sustainable basis. Article III, paragraph 2 (b) of the Agreement requires that Parties ensure that any use of migratory waterbirds is based on an assessment of the best available knowledge of their ecology, and is sustainable for the species as well as for the ecological systems that support them. In paragraph 4.1.1 of the Action Plan, Parties are required to co-operate to ensure that their hunting legislation implements the principle of sustainable use as envisaged in the Action Plan, taking into account the full geographical range of the waterbird populations concerned and their life history characteristics. The present guidelines promote the establishment of 'harvest frameworks' at both international and national levels, and identify a series of steps to assist Range States in adopting a sustainable approach to the harvesting of waterbirds.

## **6. Guidelines on regulating trade in migratory waterbirds**

Paragraph 7.3 of the Action Plan requires that guidelines be provided on the regulation of trade in waterbirds. Although it seems that there is relatively little international trade in migratory waterbirds in the Agreement Area, national (or domestic) trade can be very high, involving annual harvests of many thousands of birds for sale as food in local markets. In some areas, such trade may be of considerable

importance to the local economies. These guidelines concern both international and domestic trade, and offer practical advice on how trade in waterbirds can be regulated within the framework of sustainable harvests.

#### **7. Guidelines on the development of ecotourism at wetlands**

The development of ecotourism based on spectacular concentrations of migratory waterbirds can not only increase support amongst the general public for waterbird conservation, but can also, if properly managed, provide a valuable source of income for local people with negligible harm to the environment. In Paragraph 4.2.1 of the Action Plan, Parties are required to encourage, where appropriate, the elaboration of co-operative programmes to develop sensitive and appropriate ecotourism at wetlands. Furthermore, in Paragraph 4.2.2, Parties are required, in co-operation with competent international organisations, to endeavour to evaluate the costs, benefits and other consequences that can result from ecotourism at wetlands with concentrations of waterbirds. The present guidelines examine a wide range of issues relating to nature-oriented tourism in general, and offer practical advice for the sensitive development of ecotourism at wetlands important for migratory birds.

#### **8. Guidelines on reducing crop damage, damage to fisheries and other forms of conflict between waterbirds and human activities**

Changes in population levels and distribution of waterbirds, combined with an intensification of agriculture and aquaculture, have led to increased conflicts between some waterbird species and human activities, notably agriculture, aquaculture, and commercial and recreational fisheries. With the great increase in air traffic in recent decades, many large waterbirds now pose a serious hazard to aircraft. In Paragraph 4.3.2 of the Action Plan, Parties are required to endeavour to gather information on the damage, in particular to crops, caused by populations listed in Table 1, and report the results to the Agreement Secretariat. In paragraph 4.3.3, Parties are required to co-operate with a view to identifying appropriate techniques to minimise the damage, or to mitigate the effects of damage, in particular to crops, caused by populations of waterbirds listed in Table 1. The present guidelines examine the major causes of conflict between migratory waterbirds and agriculture, fisheries and aviation, outline procedures for investigating the problems, and suggest a number of measures that can be taken to reduce the damage.

#### **9. Guidelines for a waterbird monitoring protocol**

Populations of all migratory waterbirds in the Agreement Area should be monitored on a continuous basis to determine population trends and to provide an early-warning system for species in difficulty. This will enable appropriate measures to be implemented before the populations fall to dangerously low levels. Paragraph 5.2 of the Action Plan requires that Parties endeavour to monitor the populations of waterbirds listed in Table 1, and make the results of such monitoring available to appropriate international organisations, to enable reviews of population status and trends. Paragraph 5.3 requires that they co-operate to improve the measurement of bird population trends as a criterion for describing the status of such populations. In Paragraph 5.8, Parties agree to co-operate with relevant international organisations to support research and monitoring projects. The present guidelines examine the value of monitoring in the conservation of migratory waterbirds, review existing monitoring practices, and provide guidance on the development of national waterbird monitoring schemes that are most appropriate for international conservation efforts.

## Acknowledgements

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Guidelines 1 to 9 were drafted by Albert Beintema, the late Dineke Beintema, Allix Brenninkmeijer, Simon Delany and Jeff Kirby and edited by Simon Delany and Derek Scott.

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The following people, in alphabetical order, provided information used for these guidelines, or commented on various drafts: Rachel Adams, Mindy Baha El Din, Sherif Baha El Din, Carlos Bento, Olivier Biber, Gerard Boere, Joost Brouwer, Luit Buurma, John Caldwell, John Clorley, Luis Costa, Earle Cummings, Elijah Danso, Nick Davidson, Bernard Deceuninck, Tim Dodman, Bob Douthwaite, Paul Eagles, Bart Ebbinge, Augustine Ezealor, Lincoln Fishpool, Vincent Fleming, Scott Frazier, Umberto Gallo-Orsi, Mariano Gimenez-Dixon, Andy Green, Patrick Green, Ward Hagemeijer, Elizabeth Halpenny, Jens Haugaard, René Henkens, John Harradine, David Hill, Baz Hughes, Alan Johnson, Tim Jones, Heribert Kalchreuter, Elena Kreuzberg-Mukhina, Namory Keita, Alexander Kozulin, Tony Laws, Yves Lecocq, Vicky Lee, Aivar Leito, Bert Lenten, Peter Leonard, Alison Littlewood, Heidi Luquer, Sonja Macys, Jesper Madsen, Gernant Magnin, Jamshid Mansoori, David Melville, Charles Mlingwa, Jérôme Mokoko Ikonga, Jean-Yves Mondain-Monval, Johan Mooij, Mike Moser, Wim Mullié, Dan Munteanu, Paul Murphy, Stephen Nash, Kike Olsder, John O'Sullivan, Michael Oneka, Dwight Peck, Stephan Pihl, Jim Porter, Crawford Prentice, David Pritchard, Rivo Rabarisoa, Marc van Roomen, Paul Rose, Rui Rufino, Luc Schifferli, Valentin Serebryakov, Marcel Silvius, Jan Willem Sneep, David Stroud, Barry Taylor, Wolf Teunissen, Graham Tucker, Janine van Vessem, Zoltan Waliczky, George Wallace, Rob van Westrienen, Johanna Winkelman, Marja Wren, Henk Zingstra.

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and

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## **Step chart**

In the preparation of an inventory of key sites for migratory waterbirds, each country should take the following steps:

**Step 1: Identify lead agencies in the inventory process; define objectives and phasing.**

**Step 2: Using published sources, draft a list of key sites and habitats.**

**Step 3: Circulate the draft list amongst as many specialists and agencies as possible.**

**Step 4: Identify new sites using maps, aerial photographs and satellite images; organise inspection visits to potential new sites.**

**Step 5: For each site, fill in basic information, using standard forms.**

**Step 6: Map each site to define its boundaries.**

**Step 7: Refine the site descriptions using the Ramsar habitat coding system.**

**Step 8: Monitor the sites and update the inventory at regular intervals.**

Steps 1-5 may form one well-defined, fundable project. Steps 6-8 (Phase 3, as defined in Step 1) require more skills, and could form a separate project, perhaps separately funded.

## Introduction

An inventory of important sites is one of the basic tools for the conservation and management of migratory waterbirds.

In order to protect or manage populations of migratory waterbirds, it is first necessary to locate and prioritise the sites, which they use throughout their flyway (breeding, moulting, staging and wintering areas). The importance of the site inventory is recognised in Paragraph 3.1.1 of the AEWA Action Plan, which requires Parties to undertake and publish national inventories of the habitats within their territory, which are important to the populations of waterbirds listed in Table 1 of the Action Plan.

Although there will be considerable overlap between AEWA site inventories and national inventories of sites designated as wetlands of international importance under the Ramsar Convention (Ramsar Sites), the AEWA inventories differ from the Ramsar inventories in that they:

- are specific to migratory waterbirds;
- may contain habitats other than wetlands;
- may contain sites that are not of international importance according to the Ramsar criteria.

In the context of the AEWA, a site should be considered to be a key site for migratory waterbirds if:

- it harbours one or more of the globally threatened species listed in Annex 2 to the Agreement (see also Guidelines No.1: *Guidelines on the preparation of Single Species Action Plans for migratory waterbirds*);
- it meets the numerical Ramsar criteria (see below), in particular the 1% threshold (criterion 6), for one or more of the species listed in Annex 2 to the Agreement.

The Ramsar criteria specifically applicable to migratory waterbirds are as follows:

A wetland should be considered internationally important if:

- it regularly supports 20,000 or more waterfowl (criterion 5);
- where data on populations are available, it regularly supports 1% of the individuals in a population of one species or subspecies of waterfowl (criterion 6).

Ramsar Criteria 2, 3 and 4 apply to wetland biodiversity and are applicable to waterbirds in certain circumstances.

In the application of the '1% criterion', there has been much discussion on the interpretation of the word 'regularly'. In regions where good data are available, two interpretations are now widely used. A site is considered to support the requisite number of birds on a regular basis if the mean of the maximum counts in the last five years for which data are available (five-year mean) exceeds the 1% threshold, or if the 1% threshold has been exceeded in at least three-quarters of the years for which data are available. For many areas outside Europe, where fewer count data are available and the coverage of sites is often much poorer, it has become customary to regard sites that hold the requisite number of birds in three years out of five as fulfilling the criterion.

The 1% criterion applies throughout the year, *i.e.* also in the breeding season, although in practice this will only be relevant to colonial nesting species. At staging areas on the migration routes, it is customary to claim that the 1% criterion has been fulfilled when 75% of the requisite numbers of birds have been recorded at one time, because of the turnover of birds at these sites. Where evidence from ringing studies shows higher turnover rates, a site might still qualify even though the number of birds present at any one time is much lower than 75% of the 1% criterion (in some cases as low as 10-15%).



## **Step 1: Identify lead agencies in the inventory process; define objectives and phasing**

The primary responsibility for fulfilling obligations under the AEWA lies with national governments. In many cases, the actual inventory process will be carried out by a government agency. Alternatively, it could be contracted out to an institute, non-governmental organisation (NGO) or private individual, given adequate government support (financial, logistical and legal). Funding can be governmental or regional (e.g. EU), or can be sought from national or international nature conservation organisations.

Data obtained in the AEWA site inventory should be maintained in a central database, which for the sake of continuity should be housed within a government institution.

The general objectives of any site inventory are:

- to locate all relevant sites, and identify those that are priority sites for conservation;
- to identify the functions and values (ecological, social, cultural) of each site;
- to establish a baseline for measuring future change;
- to provide a tool for planning and management;
- to permit local, national, and international comparisons.

Furthermore, the inventory process should:

- facilitate the creation of a network of experts;
- stimulate co-operation in conservation and management;
- promote awareness amongst the general public and decision makers.

In order to achieve the desired objectives, any inventory should:

- use standardised methods;
- incorporate data as a baseline for monitoring changes;
- be regularly updated;
- be easily disseminated to managers, decision makers and the general public.

An inventory process will usually be divided into three phases:

### **Phase 1: Compilation of existing knowledge**

Three major sources of information are:

- existing inventories;
- bibliographic research;
- networks of experts.

### **Phase 2: Preparation of a preliminary site list**

This is the most important part of the inventory. The objective should be to complete a national list of key sites as soon as possible, without wasting too much time gathering detailed information for individual site descriptions.

### **Phase 3: Preparation of the detailed inventory (not always implemented).**

Each site and its surroundings should be described in more detail. Important features in this phase include:

- precise delineation and good maps of the site;
- delineation and detailed description in synergy with other inventories, where appropriate;
- for wetland habitats: identification, delineation and description of the catchment area;

## AEWA Conservation Guidelines

- a detailed, standardised habitat description of the site;
- detailed information on sustainable and non-sustainable forms of land use (including hunting and ecotourism) and threats;
- a database with data on the occurrence of waterbirds at the site. See Guidelines No.9: *Guidelines for a waterbird monitoring protocol*.

## **Step 2: Using published sources, draft a list of key sites and habitats**

There are many different listings of protected areas and designated sites that may contain sites that qualify as key habitats for migratory waterbirds. A site may already be listed as one or more of the following:

- Ramsar Site,
- World Heritage Site,
- UNESCO Man and the Biosphere Reserve,
- Important Bird Area - IBA (BirdLife International),
- CORINE Biotope (EU only),
- Natura 2000 site (SPA or SAC, EU only),
- site in the European Network of Biogenetic Reserves (Europe only),
- Mediterranean Special Protected Area (Mediterranean countries only),
- site in a published directory of wetlands (Wetlands International, IUCN, WWF and others),
- wetland of national importance (national initiative),
- site in a MedWet Database (Mediterranean countries only),
- site in the *Atlas of Anatidae Populations in Africa and Western Eurasia*,
- site included in the International Waterbird Census (including the African Waterbird Census) (Wetlands International).

Not all listings are readily available in published form, although in each case there will be a national representative or co-ordinator who can be consulted. Some of the most useful sources to begin with are listed in Box 1. Some useful international contact addresses are given in The "Useful Contacts" section (page 154).

### **Box 1: Useful lists of key sites for migratory waterbirds**

#### **Ramsar Sites**

- *A Directory of Wetlands of International Importance*. CD-RoM. (Frazier, S. (ed) 2002). Online version at: <http://www.wetlands.org/RDB/Directory.html>
- *Ramsar Sites Overview: A Synopsis of the World's Wetlands of International Importance* (Frazier, 1999).

#### **Wetland inventories**

- *Project Aqua: a source book of inland waters proposed for conservation* (Luther & Rzóška, 1971).
- *African Wetlands and Shallow Water Bodies* (Burgis & Symoens, 1987).
- *A Directory of African Wetlands* (Hughes & Hughes, 1992).
- *Zones Humides d'Afrique septentrionale, centrale et occidentale. II: Inventaire préliminaire et méthodologie* (De Beaufort & Czajkowski, 1986).
- *A Directory of Western Palearctic Wetlands* (Carp, 1980).
- *Project MAR. List of European and North African Wetlands of International Importance* (Olney, 1965).
- *A Preliminary Inventory of Wetlands of International Importance for Waterfowl in West Europe and Northwest Africa* (Scott, 1980).
- *The Status of Wetland Inventories in the Mediterranean Region* (Hecker & Tomàs Vives, 1995).
- *A Directory of Wetlands in the Middle East* (Scott, 1995).

#### **Important Bird Areas**

- *Important Bird Areas in Europe* (Heath & Evans, 2000).
- *Important Bird Areas in the Middle East* (Evans, 1994).
- *Important Bird Areas in Africa* (Fishpool & Evans, 2001).
- National lists of Important Bird Areas

#### **Other lists of sites including key sites for waterbirds**

- *Natura 2000. Special Protection Areas* (European Commission, 1994).
- *CORINE Biotopes: the design, compilation and use of an inventory of sites of major importance for nature conservation in the European Community. Report and Manual (3 volumes)*. (European Communities, 1991).
- The list of World Heritage Sites on the Internet: <http://whc.unesco.org/heritage.htm>

#### **Other useful sources**

- The list of key sites in the *Atlas of Anatidae Populations in Africa and Western Eurasia* (Scott & Rose, 1996).
- Recent annual reports of the International Waterbird Census (including African Waterbird Census) published by Wetlands International. (e.g. Delany *et al.* 1999, Dodman *et al.* 1999, Gilissen *et al.* 2002, Dodman & Diagana 2003).

**Step 3: Circulate the draft list amongst as many specialists and agencies as possible**

This needs no further explanation. Special care should be taken to include people living or working in the more remote parts of the country, to maximise coverage.

New sites identified in this way should always be visited by experts at the appropriate time of year, to verify their significance for migratory waterbirds.

#### **Step 4: Identify new sites using maps, aerial photographs and satellite images; organise inspection visits to potential new sites**

Satellite images, if available, can be very useful in the identification of wetlands not covered by the methods listed in Steps 2 and 3, especially if areas are very large and not easily accessible (*e.g.* in the case of the Sahelian floodplains in Africa). Ideally, different sets of images should be examined, taken in different years and in different seasons, to allow for annual or seasonal changes in size or even existence.

It is important to find out which images already exist and have been used by others for different purposes. In many countries, this can be very complicated. Images have most often been used for land-use projects or agricultural development programmes.

The interpretation of aerial photographs and satellite images is not an easy task, and is best left to professional research institutes or universities.

Possible identification of new sites on maps or photographs should always be verified through field visits and/or by consulting people living near the site.

Countries with no access to sources of remote sensing will have to rely on field investigations (by car, boat, plane, or on foot), combined with local knowledge.

## **Step 5: For each site, fill in basic information, using standard forms**

It is strongly recommended that the site descriptions be modelled on the format adopted in the Ramsar Information Sheet (RIS). This will ensure compatibility with many other inventory schemes.

The Ramsar Information Sheet has been expanded over the years, and the order in which the items appear has changed more than once. As a result, different sources may give different formats. The most recent version of the RIS is given in Appendix III to these guidelines, and is available at: [http://www.ramsar.org/key\\_ris\\_index.htm](http://www.ramsar.org/key_ris_index.htm). Further explanation on how to complete the RIS can be obtained from the Ramsar Convention Bureau, or copied from the Ramsar web site.

To save time and effort in the preparation of a preliminary site inventory (as defined in Step 1, Phase 2), the types of information to be gathered can be limited to the following headings:

1. Date the sheet was completed/updated
2. Country
3. Name of wetland
4. Geographical co-ordinates
5. Altitude
6. Area (in hectares)
7. Overview (brief description)
10. Availability of map
11. Name and address of compiler
13. General location (nearest town and administrative region)
18. Fauna (with specific reference to the occurrence of AEWA species)
19. Social and cultural values
20. Land tenure/ownership of the site and surrounding area
21. Current land use at the site and in surrounding areas
22. Threats at the site and in surrounding areas
23. Conservation measures taken
28. Jurisdiction
29. Management authority
30. Bibliography (scientific/technical)

Special emphasis should be given to the significance of the site for migratory waterbirds. For each of the species listed in Annex 2 to the Agreement, information should be given on the number of birds using the site, the season or seasons at which the species occurs, and whether the site serves as a breeding area, staging area, and/or wintering area.

Sites that are already well covered in other inventories do not need full treatment. It is then sufficient to list only:

- the name of the site;
- a reference to the source which contains full information on the site;
- the key values of the site for migratory waterbirds.

An assessment of the threats to the site (Item 22) is particularly important in deciding whether or not a site is in urgent need of management. This is treated in more detail in Guidelines No.4: *Guidelines on the management of key sites for migratory waterbirds*.

## **Step 6: Map each site to define its boundaries**

From the start, it is extremely important to determine fixed boundaries for each site to be covered by the inventory. Many monitoring projects suffer from changes to site boundaries during the course of the projects, rendering comparisons between years (and trend analyses) invalid.

Very often, one is confronted with site boundaries that have already been defined by others, for very different purposes. Boundaries can correspond to the habitat itself and its topography, or they may be boundaries of a protected area or an administrative unit. This leads to three different situations:

- the site includes waterbird habitat and other biotopes;
- the site covers part of a larger area of waterbird habitat;
- the site coincides with a more or less discrete area of waterbird habitat.

The third case is the ideal situation. The site then probably also forms a hydrological unit, which greatly facilitates site description, monitoring and management issues.

Each wetland should be viewed in the context of the catchment area to which it belongs. What happens upstream of a site is often of critical importance to the site. For example, the construction of a dam a considerable distance upstream, and possibly even in another country, may effectively annihilate a site. Thus, a map showing the location of the site in its wider surroundings should also be provided.

In the preparation of site descriptions, characteristics of a site that are also characteristics of the whole catchment area can be copied for other sites in the same catchment area.

Good maps of sites and their catchment areas are indispensable for monitoring and management purposes.



## **Step 7: Refine the site descriptions using the Ramsar habitat coding system**

Different inventory programmes have used different habitat classification systems. For instance, MedWet promotes a sophisticated habitat classification system, based on a system developed for the classification of wetlands and deepwater habitats in the USA. For many countries in the AEWA area, this system will be too complicated to be readily used by everybody.

One of the simplest and most widely used systems is the Ramsar habitat coding system (Item 8 on the Ramsar Information Sheet). The codes are based upon the Ramsar Classification System for Wetland Type as approved by the Contracting Parties to the Ramsar Convention. The categories listed in the classification system are intended to provide only a very broad framework to aid rapid identification of the main wetland habitats represented at each site.

The Ramsar habitat codes and brief descriptions are listed in Appendix IV to these guidelines.

More detailed descriptions are to be found in Annex 1 to the *Explanatory Note and Guidelines* for the Ramsar Information Sheet. This document is available from the Ramsar Convention Bureau, and can be found on the Ramsar web site: [http://www.ramsar.org/key\\_ris.htm#note](http://www.ramsar.org/key_ris.htm#note)

## **Step 8: Monitor the sites and update the inventory at regular intervals**

A site inventory is not a static end product. Ecological changes, changes in status and changes in threats should be monitored, and the management of sites should be steered accordingly.

The national site inventory is a basic requirement for a national waterbird monitoring scheme (see Guidelines No.9: *Guidelines for a waterbird monitoring protocol*). In turn, the results of monitoring may lead to amendments in the site inventory.

The national site inventory is also a basic requirement for site management planning (see Guidelines No.4: *Guidelines on the management of key sites for migratory waterbirds*). In turn, site management planning (also a continuing process) may lead to amendments in the site inventory.

Thus, site inventory, monitoring and site management planning are linked in a continuous, iterative process of change and improvement.

A national site inventory should be updated at least every ten years, but preferably every five years, the choice of interval depending on the quality of the initial inventory, and the amount of change that is taking place.

## References and useful web sites

### 1. ACTION PLANS

#### References and further reading

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AEWA Action Plans can be found at:

[http://www.unep-aewa.org/publications/technical\\_series.htm](http://www.unep-aewa.org/publications/technical_series.htm)

Action Plans for EC Birds Directive Annex 1 species can be found at:

<http://europa.eu.int/comm/environment/nature/directive/birdspriority.htm>

IUCN Species Survival Commission Specialist Groups

<http://www.iucn.org/themes/ssc/sqs/sqs.htm>

IUCN Species Survival Commission Specialist Groups Action Plans

<http://www.iucn.org/themes/ssc/pubs/sscaps.htm>

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### Useful web sites

Botulism

<http://www.pnr-rpn.ec.gc.ca/nature/migratorybirds/avianb/ce00s02.en.html>

Diseases

<http://www.avianbiotech.com/diseases/newcastle.htm>

Algal blooms

<http://www.epa.gov/OWOW/estuaries/pfiesteria/>

<http://www.whoi.edu/redtide/>

Lead poisoning

<http://www.unep->

[aewa.org/publications/other\\_publications.htm](http://www.unep-aewa.org/publications/other_publications.htm)<http://www.britishcolumbia.com/Wildlife/wildlife/information/Lead%20Poisoning%20of%20Water%20Birds.htm>

Oil spill in Wales

<http://www.swan.ac.uk/biosci/empress/news.htm>

Oil spill in the Russian Federation

<http://www.american.edu/projects/mandala/TED/KOMI.HTM>

Oils spill in South Africa

<http://web.uct.ac.za/depts/stats/adu/oilspill/>

Cyanide pollution of river Tisza

<http://nfp-hu.eionet.eu.int/cyanide.html>

Heavy metal pollution of Coto Doñana

<http://www.yale.edu/ynhti/curriculum/units/1999/6/99.06.01.x.html>

National Response Center

<http://www.nrc.uscg.mil/nrchp.html>

Emergency Response Notification System

<http://www.nrc.uscg.mil/nrchp.html>

National Response Team

<http://www.nrt.org>

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#### Useful web sites

- Ramsar sites directory  
<http://www.wetlands.org/RDB/Directory.html>
- Ramsar Information Sheet  
[http://www.ramsar.org/key\\_ris\\_index.htm](http://www.ramsar.org/key_ris_index.htm)
- Ramsar Information Sheet explanatory notes and guidelines  
[http://ramsar.org/key\\_ris.htm#note](http://ramsar.org/key_ris.htm#note)
- Ramsar criteria  
[http://ramsar.org/key\\_criteria.htm](http://ramsar.org/key_criteria.htm)
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### Useful web sites

New guidelines for management planning for Ramsar sites and other wetlands

[http://ramsar.org/key\\_guide\\_mgt\\_new\\_e.htm](http://ramsar.org/key_guide_mgt_new_e.htm)

Ramsar wise use guidelines

[http://ramsar.org/key\\_wiseuse.htm](http://ramsar.org/key_wiseuse.htm)

Additional guidance for the implementation of the Wise Use concept

[http://ramsar.org/key\\_add\\_guide.htm](http://ramsar.org/key_add_guide.htm)

Eurosite Management Planning Toolkit

<http://www.seit.ee/projects/toolkit.pdf>

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### Useful web sites

Federation of Field Sports Associations of the EU (FACE)

<http://www.face-europe.org/>

The Game Conservancy Trust (UK)

<http://www.gct.org.uk/>

International Council for Game and Wildlife Conservation (C. I. C)

<http://www.cic-wildlife.org/>

Lead poisoning

<http://www.npwrc.usgs.gov/resource/othrdata/pbpoison/pbpoison.htm>

International Wildlife Rehabilitation Council

<http://www.iwrc-online.org/>

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### References and further reading

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<http://www.iucn.org/themes/ssc/pubs/sscaps.htm>

CITES

<http://www.cites.org>

<http://international.fws.gov/cites/cites.html>

EU wildlife trade regulations

[http://europa.eu.int/comm/environment/cites/legislation\\_en.htm](http://europa.eu.int/comm/environment/cites/legislation_en.htm)

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<http://www.ecotourism.org>
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Bird strikes

<http://www.birdstrike.org/birds.htm>

[www.airsafe.com](http://www.airsafe.com)

Conflict between fisheries and waterbirds

<http://www.cormorants.info/pdfs/WM14.pdf>

[http://banchory.ceh.ac.uk/conflict/case\\_studies/case%20studies.htm](http://banchory.ceh.ac.uk/conflict/case_studies/case%20studies.htm)

Costs and benefits of managing wild geese in Scotland

<http://www.scotland.gov.uk/cru/kd01/purple/cbmwgs-05.asp>

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### Useful Web Sites

Wetlands International - International Waterbird Census

IWC brochure (global): <http://www.wetlands.org/IWC/about.htm>

Manuals for IWC coordinators and counters: <http://www.wetlands.org/IWC/Manuals.htm>

African Waterbird Census, reports, news, recording forms:

<http://www.wetlands.org/IWC/africa/africa.html>

Western Palearctic and Southwest Asia Waterbird Census, Background information and reports: <http://www.wetlands.org/IWC/wpal&swa/wpal.htm>

IWC publications: <http://www.wetlands.org/IWC/wpal&swa/output/about.htm>

Census procedures and recording forms for Africa, Western Palearctic and Southwest Asia:

[http://www.wetlands.org/IWC/docs/census\\_proc.htm](http://www.wetlands.org/IWC/docs/census_proc.htm)

Western Palearctic and Southwest Asia, national site lists (clickable map):

<http://www.wetlands.org/IWC/wpal&swa/output/sites.htm>

Western Palearctic and Southwest Asia, national coverage history, 1967-1996 (clickable map):

<http://www.wetlands.org/IWC/wpal&swa/output/coverage.html>

Western Palearctic and Southwest Asia: National Coordinators of waterbird monitoring:

<http://www.wetlands.org/IWC/wpal&swa/partner/WPaINC.htm>

Asian waterbird Census, information, Coordinators, reports, news:

<http://www.wetlands.org/IWC/awc/awcmain.html>

Avian Demography Unit, University of Cape Town

<http://www.uct.ac.za/depts/stats/adu/>

Patuxent Wildlife Research Center: Colonial Waterbird Inventory and Monitoring

<http://www.pwrc.usgs.gov/>

US Fish & Wildlife Service, Division of Migratory Bird Management, Bird Monitoring

<http://migratorybirds.fws.gov/statsurv/mntrtbl.html>

## Useful contacts

### General

African-Eurasian Waterbird Agreement  
UNEP/AEWA Secretariat  
UN-Premises, Martin-Luther-King-Str. 8  
53175 Bonn, Germany  
Tel: (+49) 228 815 2413  
Fax: (+49) 228 815 2450  
E-mail: [aewa@unep.de](mailto:aewa@unep.de)  
WWW: <http://www.unep-aewa.org>

Bern Convention Secretariat (Secretariat of the Convention on the Conservation of European  
Wildlife and Natural habitats)  
Environment Conservation and Management Division  
67075 Strasbourg Cedex  
France  
Tel.: +33-3-88413559/2256  
Fax: +33-3-88413751  
E-mail: [gill.steimer@coe.int](mailto:gill.steimer@coe.int)  
WWW: <http://www.nature.coe.int/english/cadres/bern.htm>

BirdLife International  
Wellbrook Court  
Girton  
Cambridge CB4 3QX  
United Kingdom  
Tel.: +44-1223-277318  
Fax: +44-1223-277200  
E-mail: [birdlife@birdlife.org](mailto:birdlife@birdlife.org)  
WWW: <http://www.birdlife.org/>

CBD Secretariat - Secretariat for the Convention on Biological Diversity  
World Trade Centre  
393 St. Jacques Street  
Office 300  
Montréal, Québec H2Y 1N9  
Canada  
Tel.: +1-514-2882220  
Fax: +1-514-2886588  
E-mail addresses: <http://www.biodiv.org/secretariat/contact.asp>  
WWW: [www.biodiv.org](http://www.biodiv.org)

Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)  
UNEP/CMS Secretariat  
United Nations Premises in Bonn  
Martin-Luther-King Straße 8  
53175 Bonn  
Germany  
Tel.: +49-228-815-2401 and +49-228-815-2402  
Fax: +49-228-815-2449  
E-mail: [secretariat@cms.int](mailto:secretariat@cms.int)  
WWW: <http://www.cms.int>

Council of Europe  
Environment Conservation and Management Division  
Palais de l'Europe  
Avenue de l'Europe

67075 Strasbourg Cedex  
France  
Tel.: +33-3-88412253  
Fax: +33-3-88413751  
E-mail: [infopoint@coe.int](mailto:infopoint@coe.int)  
WWW: <http://www.coe.int>

EC - European Commission  
Wetstraat 200  
1049 Brussels  
Belgium  
Tel.: +32-2-2351111  
E-mail: [europawebmaster@cec.eu.int](mailto:europawebmaster@cec.eu.int)  
WWW: [www.europa.eu.int/comm/index.htm](http://www.europa.eu.int/comm/index.htm)

ECNC - European Centre for Nature Conservation  
PO Box 1352  
5004 BJ Tilburg  
The Netherlands  
Tel.: +31-13-4663240  
Fax: +31-13-4663250  
E-mail: [ecnc@ecnc.org](mailto:ecnc@ecnc.org)  
WWW: [www.ecnc.nl](http://www.ecnc.nl)

International Council for Game and Wildlife Conservation (C. I. C)  
PO Box 74  
H - 2092 Budakeszi  
Hungary  
Tel: 0036 60 444 647  
Fax: 0036 60 444 648  
E-mail: [budapestoffice@cic-wildlife.org](mailto:budapestoffice@cic-wildlife.org)  
WWW: <http://www.cic-wildlife.org/>

IUCN - the World Conservation Union  
28, rue Mauverney  
1196 Gland  
Switzerland  
Tel.: +41-22-9990001  
Fax: +41-22-9990002  
WWW: [www.iucn.org](http://www.iucn.org)  
E-mail addresses at: <http://www.iucn.org/wl/db/sitefeedback.cfm>

IUCN/ELC - Environmental Law Centre  
Adenauerallee 214  
53113 Bonn  
Germany  
Tel.: +49-228-2692231  
Fax: +49-228-2692250  
E-mail: <http://www.iucn.org/themes/law/elc01.html>

Ramsar Convention Bureau  
28, rue Mauverney  
1196 Gland  
Switzerland  
Tel.: +41-22-999-0170  
Fax: +41-22-999-0169  
E-mail: [ramsar@ramsar.org](mailto:ramsar@ramsar.org)  
WWW: [www.ramsar.org](http://www.ramsar.org)

UNEP - United Nations Environment Programme  
PO Box 30552  
Nairobi  
Kenya  
Tel.: +254-2-621234  
Fax: +254-2-226890 and +254-2-215787  
E-mail addresses: <http://www.unep.org/Contacts/>  
WWW: [www.unep.org](http://www.unep.org)

UNESCO/MAB - Man and Biosphere Programme  
Ecological Sciences Division  
1, rue Miollis  
75732 Paris Cedex 15  
France  
Tel.: +33-1-45684151  
Fax: +33-1-40659897  
E-mail: [mab@unesco.org](mailto:mab@unesco.org)  
WWW: <http://www.unesco.org/mab/>

UNESCO/WHC - World Heritage Centre  
Place de Fontenoy 7  
75352 Paris Cedex 07  
France  
Tel.: +33-1-45681443  
Fax: +33-1-40569570  
E-mail: [wh-info@unesco.org](mailto:wh-info@unesco.org)  
WWW: [www.unesco.org/whc](http://www.unesco.org/whc)

UNEP - WCMC - World Conservation Monitoring Centre  
219, Huntingdon Road  
Cambridge CB3 0DL  
United Kingdom  
Tel.: +44-1223-277314  
Fax: +44-1223-277136  
E-mail: [info@unep-wcmc.org](mailto:info@unep-wcmc.org)  
WWW: <http://www.unep-wcmc.org/>

Wetlands International  
PO Box 471  
6700 AL Wageningen  
The Netherlands  
Tel.: +31-317-478854  
Fax: +31-317-478850  
E-mail: [post@wetlands.org](mailto:post@wetlands.org)  
WWW: [www.wetlands.org](http://www.wetlands.org)

WWF-International - World Wide Fund for Nature  
Avenue du Mont-Blanc  
1196 Gland  
Switzerland  
Tel.: +41-22-3649111  
Fax: +41-22-3642926  
E-mail addresses: [http://www.panda.org/about\\_wwf/who\\_we\\_are/offices/offices.cfm](http://www.panda.org/about_wwf/who_we_are/offices/offices.cfm)  
WWW: [www.panda.org](http://www.panda.org)

### **Species Action Plans**

IUCN Species Survival Commission  
c/o IUCN (see under **General**)

Wetlands International Specialist Group Co-ordinators  
c/o Wetlands International (see under **General**)  
<http://www.wetlands.org/networks/SGroups.htm>

BirdLife International (see under **General**)

### **Emergency situations**

No specific addresses. See under **General**, according to circumstances.

### **Site inventories**

MedWet Coordination Unit  
Villa Kazouli, Kifissias & Gr. Lambraki 1  
14561 Kifissia  
Greece  
Tel.: +30-210-8089270  
Fax: +30-210-8089274  
E-mail: [info@medwet.org](mailto:info@medwet.org)  
WWW: [www.medwet.org](http://www.medwet.org)

Ramsar Convention Bureau (see under **General**)

### **Site management**

EUROSITE - European Network of Site Management Organizations  
PO Box 1366  
5004 BJ Tilburg  
The Netherlands  
Tel.: +31-13-4678638  
Fax: +31-13-4634129  
E-mail: [eurosite@kub.nl](mailto:eurosite@kub.nl)  
WWW: [www.eurosite-nature.org](http://www.eurosite-nature.org)

Ramsar Convention Bureau (see under **General**)

### **Sustainable harvest**

International Council for Game and Wildlife Conservation (C. I. C) (see under **General**)

FACE - Fédération des Associations de chasseurs de l'EU  
82 Rue F. Pelletier  
B-1030 Brussels  
Belgium  
Tel: +32-2-732.69.00  
Fax: +32-2-7327072  
E-mail: [face.europe@infoboard.be](mailto:face.europe@infoboard.be)  
WWW: <http://www.face-europe.org/>

## **Trade**

TRAFFIC International  
219c Huntingdon Road  
Cambridge CB3 0DL  
UK  
Tel: (44) 1223 277427  
Fax: (44) 1223 277237  
E-mail: [traffic@WCMC.org.uk](mailto:traffic@WCMC.org.uk)

TRAFFIC Europe  
Waterloosteenweg 608  
1060 Brussels  
Belgium  
Tel.: +32-2-3470111  
Fax: +32-2-3440511  
WWW: [www.traffic.org](http://www.traffic.org)

UNEP/CITES Secretariat (Convention on International Trade of Endangered Species,  
Washington Convention)  
PO Box 456  
Geneva Executive Centre  
1219 Châtelaine (Geneva)  
Switzerland  
Tel.: +41-22-9799139 and 9799140  
Fax: +41-22-7973417  
E-mail addresses: <http://www.cites.org/eng/disc/sec/index.shtml>  
WWW: <http://www.cites.org/>

## **Ecotourism**

The Ecotourism Society TES  
PO Box 755  
North Bennington  
VT 05257  
USA  
Tel: +1-802-447-2121  
Fax: +1-802-447-2122  
E-mail: [ecomail@ecotourism.org](mailto:ecomail@ecotourism.org)  
WWW: <http://www.ecotourism.org>

## **Bird damage**

FAO - Food and Agriculture Organization  
Forest Resources Division  
Viale delle Terme di Caracalla  
00100 Rome  
Italy  
Tel.: +39-06-57053589  
Fax: +39-06-57055137  
WWW: [www.fao.org/fo](http://www.fao.org/fo)

IBSC - International Bird Strike Committee  
C/o National Bird Strike Committee  
Royal Netherlands Airforce Airstaff  
P.O.Box 20703  
2500 EB The Hague  
The Netherlands



Tel: +31-70-3396911

### **Waterbird Monitoring**

International Waterbird Census (IWC) & African Waterbird Census (AfWC)  
Waterbird Conservation Officer  
c/o Wetlands International (see under **General**)

SOVON  
Rijksstraatweg 178  
6573 Beek-Ubbergen  
The Netherlands  
Tel: 024 684 81 11  
Fax: 024 684 81 88  
WWW: <http://www.sovon.nl/>

The Wildfowl & Wetlands Trust  
Slimbridge  
Gloucester  
GL2 7BT  
UK  
Tel: +44 1453 890333  
Fax: +44 1453 890827  
E-mail addresses: <http://www.wwt.org.uk/contact/>  
WWW: <http://www.wwt.org.uk/>

British Trust for Ornithology  
The Nunnery  
Nunnery Place  
Thetford  
Norfolk  
IP24 2PU  
UK  
Tel: +44-1842-750050  
Fax: +44-1842-750030  
E-mail: [info@bto.org](mailto:info@bto.org)  
WWW: <http://www.bto.org/>

The Avian Demography Unit  
Department of Statistical Sciences  
University of Cape Town  
Rondebosch 7701  
South Africa  
Tel: +27 (021) 650 3219  
Fax: +27 (021) 650 7578  
E-mail addresses: [http://web.uct.ac.za/depts/stats/adu/staff/p\\_staff.htm](http://web.uct.ac.za/depts/stats/adu/staff/p_staff.htm)  
WWW: <http://www.uct.ac.za/depts/stats/adu/>

The European Bird Census Council  
WWW: <http://zeus.nyf.hu/~szept/ebcc.htm>

## Training facilities

Within the AEWA region, there are many facilities for training at different levels, ranging from three-day courses on various environmental topics for people with no prior knowledge, to Ph.D. level at universities. Many universities and institutes offer courses of varying lengths on wildlife management, site management, wetland ecology, sustainable development, ecotourism development, and many other related topics. UNEP maintains a database listing hundreds of courses. The Ramsar Convention Bureau maintains a list of environmental courses specifically aimed at wetland management. For information contact:

UNEP Directory on Environmental Education and Training Opportunities worldwide:  
<http://www.unep.org/unep/products/publicat/education/index.htm>

The Ramsar Convention Bureau  
Rue Mauverney 28, CH-1196 Gland, Switzerland  
Tel: +41-22-999-0170; fax: +41-22-999-0169  
E-mail: [ramsar@ramsar.org](mailto:ramsar@ramsar.org)  
WWW: <http://www.ramsar.org>

There are several schools in Africa that specifically offer education in wildlife management and site management. These are attended by wardens and reserve managers from all over the continent. The most important are:

Ecole de Faune de Garoua  
B.P. 271, Garoua, Cameroun  
Tel/fax: +237-273135

College of African Wildlife Management  
Mweka, P.O. Box 3031, Moshi, Tanzania  
Tel/fax: +255-55-51113  
E-mail: [ulgtan@eoltz.com](mailto:ulgtan@eoltz.com)  
WWW: <http://www.mwekawildlife.org/>

Kenya Wildlife Training Institute  
P.O. Box 842, Naivasha, Kenya  
Tel: +254-0311-20267/21329  
Fax: +254-0311-20577  
E-mail: [kwsti@users.africaonline.co.ke](mailto:kwsti@users.africaonline.co.ke)

Southern African Wildlife College  
Private Bag X3015, Hoedspruit, 1380, South Africa  
Tel/fax: +27-15-7932621  
E-mail: [sawc@iafrica.com](mailto:sawc@iafrica.com)  
WWW: <http://www.wildlifecollege.org.za/>

Special wetland courses for managers from developing countries and countries with economies in transition are given by the Wetland Advisory and Training Centre (WATC) of the Institute for Inland Water Management and Waste Water Treatment (RIZA) of the Netherlands Ministry of Transport, Public Works and Water Management. For information contact:

WATC  
P.O. Box 17, 8200 AA Lelystad, The Netherlands  
Tel: +31-320-298346; fax: +31-320-298339  
E-mail: [watc@riza.rws.minvenw.nl](mailto:watc@riza.rws.minvenw.nl)

IUCN also regularly organises short courses on wetland management at different levels, both for managers with little prior education and for decision makers at higher levels. These courses are given in the region (e.g. in West Africa). For information contact:

IUCN  
Rue Mauverney 28, CH-1196 Gland, Switzerland  
Tel: +41-22-999-0001; fax: +41-22-999-0002

## Appendix I

### POPULATIONS OF WATERBIRDS REQUIRING NATIONAL SINGLE SPECIES ACTION PLANS

National Single Species Action Plans are required for all populations listed in Column A of Table 1 in the AEWA Action Plan (Paragraph 2.2.2 of the Action Plan). Populations are listed in Column A in one of three Categories:

- Category 1:**
- (a) Species that are included in Appendix I to the Bonn Convention.
  - (b) Species that are listed as threatened in the IUCN Red List of Threatened Animals.
  - (c) Populations that number less than around 10,000 individuals.
- Category 2:** Populations numbering between around 10,000 and around 25,000 individuals.
- Category 3:** Populations numbering between around 25,000 and around 100,000 individuals and considered to be at risk as a result of:
- (a) concentration onto a small number of sites at any stage of their annual cycle;
  - (b) dependence on a habitat type which is under severe threat;
  - (c) showing significant long-term decline; or
  - (d) showing extreme fluctuations in population size or trend.

Species listed include those included in the Action Plan by MoP 1 in Cape Town (November 1999) and MoP 2 in Bonn (September 2002). Categories are assigned on the basis of recent information on population sizes and trends, as summarised in the *AEWA Report on the Conservation Status of Migratory Waterbirds in the Agreement Area* (2002).

Species/subspecies	Population	Category
<b>SPHENISCIDAE</b>		
<i>Spheniscus demersus</i>	- Southern Africa	1b
<b>GAVIIDAE</b>		
<i>Gavia immer</i>	- Europe (win)	1c
<i>Gavia adamsii</i>	- Northern Europe (win)	1c
<b>PODICIPEDIDAE</b>		
<i>Podiceps cristatus cristatus</i>	- Caspian & South-west Asia (win)	2
<i>Podiceps grisegena grisegena</i>	- Caspian (win)	2
<i>Podiceps cristatus infuscatus</i>	- Eastern Africa (Ethiopia to N Zambia)	1c
	- Southern Africa	1c
<i>Podiceps auritus auritus</i>	- North-west Europe (large-billed)	1c
	- Caspian & South Asia (win)	2
<i>Podiceps nigricollis gurneyi</i>	- Southern Africa	2

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<b>PELECANIDAE</b>		
<i>Pelecanus onocrotalus</i>	- Southern Africa	2
	- Europe & Western Asia (bre)	1a, 3c
<i>Pelecanus crispus</i>	- Black Sea & Mediterranean (win)	1a, 1c
	- South-west Asia & South Asia (win)	1a, 2
<b>SULIDAE</b>		
<i>Sula (Morus) capensis</i>	- Southern Africa	1b
<b>PHALACROCORACIDAE</b>		
<i>Phalacrocorax coronatus</i>	- Coastal South-west Africa	1c
<i>Phalacrocorax neglectus</i>	- Coastal South-west Africa	1b, 1c
<i>Phalacrocorax carbo lucidus</i>	- Coastal Southern Africa	2
<i>Phalacrocorax nigrogularis</i>	- Gulf & Arabian Sea	1b
<b>ARDEIDAE</b>		
<i>Egretta ardesiaca</i>	- Sub-Saharan Africa	3c
<i>Egretta vinaceigula</i>	- South-central Africa	1b, 1c
<i>Egretta gularis schistacea</i>	- South-west Asia & South Asia	2
<i>Egretta dimorpha</i>	- Coastal Eastern Africa	2
<i>Ardea purpurea purpurea</i>	- West Europe & West Mediterranean/West Africa	2
<i>Casmerodius albus albus</i>	- W, C & SE Europe/Black Sea & Mediterranean	2
<i>Bubulcus ibis ibis</i>	- East Mediterranean & South-west Asia	2
<i>Ardeola ralloides ralloides</i>	- Medit., Black Sea & N Africa/Sub-Saharan Africa	3c
<i>Ardeola idae</i>	- Madagascar & Aldabra/Central & Eastern Africa	1b, 1c
<i>Botaurus stellaris stellaris</i>	- Europe (bre)	3c
	- South-west Asia (win)	2
<i>Botaurus stellaris capensis</i>	- Southern Africa	1c
<b>CICONIIDAE</b>		
<i>Ciconia nigra</i>	- Southern Africa	1c
	- South-west Europe/West Africa	1c
	- Central & Eastern Europe/Sub-Saharan Africa	2
<i>Ciconia ciconia ciconia</i>	- Southern Africa	1c
	- Iberia & North-west Africa/Sub-Saharan Africa	3b
	- Western Asia/South-west Asia	2
<b>BALAENICIPITIDAE</b>		
<i>Balaeniceps rex</i>	- Central Tropical Africa	1c
<b>THRESKIORNITHIDAE</b>		
<i>Plegadis falcinellus falcinellus</i>	- Black Sea & Mediterranean/West Africa	3c
<i>Geronticus eremita</i>	- Morocco	1a, 1b, 1c
	- South-west Asia	1a, 1b, 1c
<i>Threskiornis aethiopicus aethiopicus</i>	- Iraq & Iran	1c

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<i>Platalea leucorodia leucorodia</i>	- West Europe/West Mediterranean & West Africa	1c
	- Cent. & SE Europe/Mediterranean & Tropical Africa	2
<i>Platalea leucorodia archeri</i>	- Red Sea & Somalia	1c
<i>Platalea leucorodia balsaci</i>	- Coastal West Africa (Mauritania)	1c
<i>Platalea leucorodia major</i>	- Western Asia/South-west & South Asia	2
<i>Platalea alba</i>	- Sub-Saharan Africa	2*
PHOENICOPTERIDAE		
<i>Phoenicopterus ruber roseus</i>	- West Africa	3a
	- Eastern Africa	3a
	- Southern Africa (to Madagascar)	3a
<i>Phoenicopterus minor</i>	- West Africa	2
	- Southern Africa (to Madagascar)	3a
ANATIDAE		
<i>Thalassornis leuconotus leuconotus</i>	- West Africa	1c
	- Eastern & Southern Africa	2*
<i>Oxyura leucocephala</i>	- West Mediterranean (Spain & Morocco)	1a, 1b, 1c
	- Algeria & Tunisia	1a, 1b, 1c
	- East Mediterranean, Turkey & South-west Asia	1a, 1b, 1c
<i>Oxyura maccoa</i>	- Eastern Africa	1c
	- Southern Africa	1c
<i>Cygnus cygnus</i>	- Iceland/UK & Ireland	2
	- N Europe & W Siberia/Black Sea & E Mediterranean	2
	- West & Central Siberia/Caspian	2
<i>Cygnus columbianus bewickii</i>	- Western Siberia & NE Europe/North-west Europe	3c
	- Northern Siberia/Caspian	1c
<i>Anser albifrons albifrons</i>	- Western Siberia/Central Europe	3c*
	- Northern Siberia/Caspian & Iraq	2
<i>Anser albifrons flavirostris</i>	- Greenland/Ireland & UK	3a
<i>Anser erythropus</i>	- N Europe & W Siberia/Black Sea & Caspian	1a, 1b, 2
<i>Branta leucopsis</i>	- Svalbard/South-west Scotland	2
<i>Branta bernicla hrota</i>	- Svalbard/Denmark & UK	1c
	- Canada & Greenland/Ireland	2
<i>Branta ruficollis</i>	- Northern Siberia/Black Sea & Caspian	1a, 1b, 3a
<i>Alopochen aegyptiacus</i>	- West Africa	2
<i>Tadorna ferruginea</i>	- North-west Africa	1c
	- East Mediterranean & Black Sea/North-east Africa	2
<i>Tadorna tadorna</i>	- Black Sea & Mediterranean	3c
<i>Nettapus auritus</i>	- West Africa	1c
<i>Anas capensis</i>	- Eastern Africa (Rift Valley)	1c
	- Lake Chad basin	1c
<i>Anas erythrorhyncha</i>	- Madagascar	2
<i>Anas hottentota</i>	- Lake Chad Basin	1c
<i>Marmaronetta angustirostris</i>	- West Mediterranean/West Medit. & West Africa	1a, 1b, 1c
	- East Mediterranean	1a, 1b, 1c
	- South-west Asia	1a, 1b, 2
<i>Netta rufina</i>	- Black Sea & East Mediterranean	3c

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<i>Aythya nyroca</i>	- West Mediterranean/North & West Africa	1a, 1c
	- Eastern Europe/E Mediterranean & Sahelian Africa	1a, 3c
	- Western Asia/SW Asia & NE Africa	1a, 3c
<i>Polysticta stelleri</i>	- Western Siberia/North-east Europe	1a
<i>Melanitta fusca fusca</i>	- Black Sea & Caspian	1c
<i>Bucephala clangula clangula</i>	- Western Siberia & North-east Europe/Black Sea	2
	- Western Siberia/Caspian	2
<i>Mergellus albellus</i>	- North-west & Central Europe (win)	3a
	- Western Siberia/South-west Asia	3c
<i>Mergus serrator serrator</i>	- Western Siberia/South-west & Central Asia	1c
<i>Mergus merganser merganser</i>	- North-east Europe/Black Sea	1c
	- Western Siberia/Caspian	2
<b>GRUIDAE</b>		
<i>Balearica pavonina pavonina</i>	- West Africa (Senegal to Chad)	2
<i>Balearica pavonina ceciliae</i>	- Eastern Africa (Sudan to Uganda)	3c
<i>Balearica regulorum regulorum</i>	- Southern Africa (N to Angola & S Zimbabwe)	1c
<i>Balearica regulorum gibbericeps</i>	- Eastern Africa (Kenya to Mozambique)	3c
<i>Grus leucogeranus</i>	- Iran (win)	1a, 1b, 1c
<i>Grus virgo</i>	- Black Sea (Ukraine)/North-east Africa	1c
	- Turkey (bre)	1c
<i>Grus paradisea</i>	- Extreme Southern Africa	1b, 2
<i>Grus carunculatus</i>	- Central & Southern Africa	1b, 1c
<i>Grus grus</i>	- Eastern Europe/Turkey, Middle East & NE Africa	3c
	- Turkey & Georgia (bre)	1c
<b>RALLIDAE</b>		
<i>Sarothrura boehmi</i>	- Central Africa	1c
<i>Sarothrura ayresi</i>	- Ethiopia and Southern Africa	1a, 1b, 1c
<i>Crex crex</i>	- Europe & Western Asia/Sub-Saharan Africa	1b
<i>Porzana pusilla intermedia</i>	- Europe (bre)	2
<i>Aenigmatolimnas marginalis</i>	- Sub-Saharan Africa	(2)
<i>Fulica cristata</i>	- Spain & Morocco	1c
<b>DROMADIDAE</b>		
<i>Dromas ardeola</i>	- North-west Indian Ocean, Red Sea & Gulf	3a
<b>HAEMATOPODIDAE</b>		
<i>Haematopus moquini</i>	- Coastal Southern Africa	1c
<b>RECURVIROSTRIDAE</b>		
<i>Himantopus himantopus himantopus</i>	- Southern Africa (' <i>meridionalis</i> ')	2
<i>Recurvirostra avosetta</i>	- Southern Africa	2
	- South-east Europe, Black Sea & Turkey (bre)	(3c)

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	- West & South-west Asia/Eastern Africa	2
BURHINIDAE		
<i>Burhinus senegalensis senegalensis</i>	- West Africa	(2)
<i>Burhinus senegalensis inornatus</i>	- North-east & Eastern Africa	(2)
GLAREOLIDAE		
<i>Pluvianus aegyptius aegyptius</i>	- Eastern Africa	(2)
<i>Glareola pratincola pratincola</i>	- Western Europe & NW Africa/West Africa	2
	- Black Sea & E Mediterranean/Eastern Sahel zone	2
<i>Glareola nordmanni</i>	- SE Europe & Western Asia/Southern Africa	3b, 3c
<i>Glareola ocularis</i>	- Madagascar/East Africa	(2)
<i>Glareola nuchalis liberiae</i>	- West Africa	(2)
<i>Glareola cinerea cinerea</i>	- SE West Africa & Central Africa	(2)
CHARADRIIDAE		
<i>Pluvialis apricaria apricaria</i>	- Britain, Ireland, Denmark, Germany & Baltic (bre)	3c*
<i>Charadrius pallidus pallidus</i>	- Southern Africa	2
<i>Charadrius pallidus venustus</i>	- Eastern Africa	1c
<i>Charadrius alexandrinus alexandrinus</i>	- West Europe & West Mediterranean/West Africa	3c
	- Black Sea & East Mediterranean/Eastern Sahel	3c
<i>Charadrius marginatus mechowii</i>	- Southern & Eastern Africa	2
	- West to West-central Africa	2
<i>Charadrius leschenaultii columbinus</i>	- Turkey & SW Asia/E. Mediterranean & Red Sea	1c
<i>Charadrius asiaticus</i>	- SE Europe & West Asia/E & South-central Africa	3c
<i>Eudromias morinellus</i>	- Europe/North-west Africa	(3c)
<i>Vanellus lugubris</i>	- Southern West Africa	2
	- Central & Eastern Africa	3c
<i>Vanellus melanopterus minor</i>	- Southern Africa	1c
<i>Vanellus coronatus coronatus</i>	- Central Africa	(2)
<i>Vanellus superciliosus</i>	- West & Central Africa	(2)
<i>Vanellus gregarius</i>	- SE Europe & Western Asia/North-east Africa	1a, 1b, 1c
	- Central Asian Republics/NW India	1a, 1b, 1c
<i>Vanellus leucurus</i>	- SW Asia/SW Asia & North-east Africa	2
SCOLOPACIDAE		
<i>Limosa limosa islandica</i>	- Iceland/Western Europe	3a*
<i>Numenius phaeopus alboaxillaris</i>	- South-west Asia/Eastern Africa	1c
<i>Numenius tenuirostris</i>	- Central Siberia/Mediterranean & SW Asia	1a, 1b, 1c
<i>Numenius arquata orientalis</i>	- Western Siberia/SW Asia, E & S Africa	3c
<i>Numenius arquata suschkini</i>	- South-east Europe & South-west Asia (br e)	2
<i>Calidris tenuirostris</i>	- Eastern Siberia/SW Asia & W Southern Asia	1c
<i>Calidris alpina schinzii</i>	- Britain & Ireland/SW Europe & NW Africa	2



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	- Baltic/SW Europe & NW Africa	1c
<i>Calidris alpina arctica</i>	- NE Greenland/West Africa	3a
<i>Limicola falcinellus falcinellus</i>	- Northern Europe/SW Asia & Africa	3c
<b>LARIDAE</b>		
<i>Larus leucophthalmus</i>	- Red Sea & nearby coasts	1a, 2
<i>Larus audouinii</i>	- Mediterranean/N & W coasts of Africa	1a, 3a
<i>Larus armenicus</i>	- Armenia, Eastern Turkey & NW Iran	3a
<i>Larus ichthyaetus</i>	- Black Sea & Caspian/South-west Asia	3a
<i>Larus genei</i>	- West Africa (bre)	2
<i>Sterna nilotica nilotica</i>	- Western Europe/West Africa	2
	- Black Sea & East Mediterranean/Eastern Africa	3c
	- West & Central Asia/South-west Asia	2
<i>Sterna caspia caspia</i>	- Southern Africa (bre)	1c
	- Europe (bre)	1c
	- Caspian (bre)	2
<i>Sterna bengalensis par</i>	- Red Sea/Eastern Africa	3a
<i>Sterna bengalensis emigrata</i>	- S Mediterranean/NW & West Africa coasts	1c
<i>Sterna bergii bergii</i>	- Southern Africa (Angola – Mozambique)	2
<i>Sterna bergii enigma</i>	- Madagascar & Mozambique/Southern Africa	1c
<i>Sterna bergii thalassina</i>	- Eastern Africa & Seychelles	1c
<i>Sterna bergii velox</i>	- Red Sea & North-east Africa	3a
<i>Sterna sandvicensis sandvicensis</i>	- Black Sea & Mediterranean (bre)	3a, 3c
<i>Sterna dougallii dougallii</i>	- Southern Africa	1c
	- East Africa	3a
	- Europe (bre)	1c
<i>Sterna dougallii arideensis</i>	- Madagascar, Seychelles & Mascarenes	2
<i>Sterna dougallii bangsi</i>	- North Arabian Sea (Oman)	1c
<i>Sterna vittata vittata</i>	- P. Edward, Marion, Crozet & Kerguelen/South Africa	1c
<i>Sterna vittata tristanensis</i>	- Tristan da Cunha & Gough/South Africa	1c
<i>Sterna albifrons albifrons</i>	- Eastern Atlantic (bre)	3b
	- Black Sea & East Mediterranean (bre)	3c
	- Caspian (bre)	2
<i>Sterna albifrons guineae</i>	- West Africa (bre)	1c
<i>Sterna balaenarum</i>	- Namibia & South Africa/Atlantic coast to Ghana	2
<i>Chlidonias hybridus hybridus</i>	- Western Europe & North-west Africa (bre)	3c
<i>Chlidonias hybridus sclateri</i>	- Eastern Africa (Kenya & Tanzania)	1c
	- Southern Africa (Malawi & Zambia to South Africa)	(2)
<b>RYNCHOPIDAE</b>		
<i>Rynchops flavirostris</i>	- Coastal West Africa & Central Africa	2
	- Eastern & Southern Africa	2

Footnotes:

1. Suffixes (breeding) or (wintering) in population listings are solely aides to population identification. They do not indicate seasonal restrictions to actions in respect of these populations under the Agreement and Action Plan.
2. *Vanellus gregarius* is listed under the name *Chettusia gregaria* in Appendix I to the Bonn Convention.

## Appendix II

### GLOBALLY THREATENED MIGRATORY WATERBIRD SPECIES IN AEWA RANGE STATES

The occurrence of globally threatened species of migratory waterbirds in AEWA Range States, based on BirdLife International 2000 *Threatened Birds of the World*, the official source for birds in the 2000 *IUCN Red List of Threatened Species*. Breeding species are indicated with a 'B'; species occurring only as passage migrants and winter visitors are indicated with a 'W'. No attempt has been made to indicate relative numbers, and in some instances, the numbers of birds involved may be very small. Codes followed by an asterisk \* mark species not included in *Threatened Birds of the World* but known nevertheless to occur in the country.

	Slaty Egret	Waldrapp	White-headed Duck	Lesser White-fronted Goose	Red-breasted Goose	Marbled Teal	Siberian Crane	Blue Crane	Wattled Crane	Sociable Lapwing	Slender-billed Curlew	Total Number of species
Algeria			B			B					W	3
Armenia						B						1
Azerbaijan			W	W	W	B						4
Botswana	B								B			2
Bulgaria			W	W	W						W	4
Chad						W						1
Democratic Republic of Congo	B								B			
Eritrea										W		1
Estonia				W								1
Ethiopia									B			1
Finland				B								1
Greece			W	W	W						W	4
Hungary				W	W						W	3
Iran			B			B	W			W		4
Iraq			W			B				W		3
Israel			W			W				W		3
Italy											W	1
Jordan						W						1
Kazakhstan			B	W	W	B				B	W	6
Lithuania				W								1
Malawi									B			1
Mali						W						1
Morocco		B				B					W	3
Mozambique	B								B			2
Namibia	B							B	B			1
Netherlands					W							1
Nigeria						W						1
Norway				B								1
Oman										W		1
Poland				W								1
Romania			W	W	W						W	4
Russia			B	B	B	B	B			B	B	7
Saudi Arabia										W		1
Senegal						W						1

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	Slaty Egret	Waldrapp	White-headed Duck	Lesser White-fronted Goose	Red-breasted Goose	Marbled Teal	Siberian Crane	Blue Crane	Wattled Crane	Sociable Lapwing	Slender-billed Curlew	Total Number of species
South Africa	B							B	B			3
Spain			B			B						2
Swaziland								B				1
Sweden				B								1
Syria		B	W			W				W		4
Tunisia			B			B					W	3
Turkey			B	W		B				W	W	5
Turkmenistan			B	W*		B				W		4
Ukraine				W*	W						W	3
Uzbekistan			B	W*		B				W	W*	4
Serbia & Montenegro											W	1
Zambia	B								B			2
Zimbabwe	B								B			2

## Appendix III

### INFORMATION SHEET ON RAMSAR WETLANDS (RIS)

*Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties*

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

**1. Name and address of the compiler of this form:**

**2. Date this sheet was completed/updated:**

**3. Country:**

**4. Name of the Ramsar site:**

**5. Map of site included:**

Refer to Annex III of the Explanatory Note and Guidelines, for detailed guidance on provision of suitable maps.

**a) hard copy** (required for inclusion of site in the Ramsar List): yes -or- no

**b) digital (electronic) format** (optional): yes -or- no

**6. Geographical coordinates** (latitude/longitude):

**7. General location:**

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

**8. Elevation:** (average and/or max. & min.)

**9. Area:** (in hectares)

**10. Overview:**

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

**11. Ramsar Criteria:**

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1	2	3	4	5	6	7	8
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**12. Justification for the application of each Criterion listed in 11. above:**

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

**13. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

**a) biogeographic region:**

**b) biogeographic regionalisation scheme** (include reference citation):

**14. Physical features of the site:**

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology;

soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

**15. Physical features of the catchment area:**

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

**16. Hydrological values:**

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

**17. Wetland Types**

**a) presence:**

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

**Marine/coastal:**

A	B	C	D	E	F	G	H	I	J	K	Zk(a)
---	---	---	---	---	---	---	---	---	---	---	-------

**Inland:**

L	M	N	O	P	Q	R	Sp	Ss	Tp	Ts	U	Va	Vt	W	Xf	Xp	Y	Zg	Zk(b)
---	---	---	---	---	---	---	----	----	----	----	---	----	----	---	----	----	---	----	-------

**Human-made:**

1	2	3	4	5	6	7	8	9	Zk(c)
---	---	---	---	---	---	---	---	---	-------

**b) dominance:**

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

**18. General ecological features:**

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

**19. Noteworthy flora:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. **Do not include here taxonomic lists of species present - these may be supplied as supplementary information to the RIS.**

**20. Noteworthy fauna:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. **Do not include here taxonomic lists of species present - these may be supplied as supplementary information to the RIS.**

**21. Social and cultural values:**

e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

**22. Land tenure/ownership:**

(a) within the Ramsar site:

(b) in the surrounding area:

**23. Current land (including water) use:**

(a) within the Ramsar site:

(b) in the surroundings/catchment:

**24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:**

(a) within the Ramsar site:

(b) in the surrounding area:

**25. Conservation measures taken:**

List national category and legal status of protected areas, including boundary relationships with

the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

**26. Conservation measures proposed but not yet implemented:**

e.g. management plan in preparation; official proposal as a legally protected area, etc.

**27. Current scientific research and facilities:**

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

**28. Current conservation education:**

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

**29. Current recreation and tourism:**

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

**30. Jurisdiction:**

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

**31. Management authority:**

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

**32. Bibliographical references:**

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

(Source: The Ramsar Convention Bureau - [http://www.ramsar.org/key\\_ris.htm](http://www.ramsar.org/key_ris.htm))

## Appendix IV

### RAMSAR CLASSIFICATION SYSTEM FOR WETLAND TYPE

*The codes are based upon the Ramsar Classification System for Wetland Type as approved by Recommendation 4.7 and amended by Resolutions VI.5 and VII.11 of the Conference of the Contracting Parties. The categories listed herein are intended to provide only a very broad framework to aid rapid identification of the main wetland habitats represented at each site.*

#### Marine/Coastal Wetlands

- A -- Permanent shallow marine waters** in most cases less than six metres deep at low tide; includes sea bays and straits.
- B -- Marine subtidal aquatic beds**; includes kelp beds, sea-grass beds, tropical marine meadows.
- C -- Coral reefs.**
- D -- Rocky marine shores**; includes rocky offshore islands, sea cliffs.
- E -- Sand, shingle or pebble shores**; includes sand bars, spits and sandy islets; includes dune systems and humid dune slacks.
- F -- Estuarine waters**; permanent water of estuaries and estuarine systems of deltas.
- G -- Intertidal mud, sand or salt flats.**
- H -- Intertidal marshes**; includes salt marshes, salt meadows, saltings, raised salt marshes; includes tidal brackish and freshwater marshes.
- I -- Intertidal forested wetlands**; includes mangrove swamps, nipah swamps and tidal freshwater swamp forests.
- J -- Coastal brackish/saline lagoons**; brackish to saline lagoons with at least one relatively narrow connection to the sea.
- K -- Coastal freshwater lagoons**; includes freshwater delta lagoons.
- Zk(a) -- Karst and other subterranean hydrological systems**, marine/coastal

#### Inland Wetlands

- L -- Permanent inland deltas.**
- M -- Permanent rivers/streams/creeks**; includes waterfalls.
- N -- Seasonal/intermittent/irregular rivers/streams/creeks.**
- O -- Permanent freshwater lakes** (over 8 ha); includes large oxbow lakes.
- P -- Seasonal/intermittent freshwater lakes** (over 8 ha); includes floodplain lakes.
- Q -- Permanent saline/brackish/alkaline lakes.**
- R -- Seasonal/intermittent saline/brackish/alkaline lakes and flats.**
- Sp -- Permanent saline/brackish/alkaline marshes/pools.**
- Ss -- Seasonal/intermittent saline/brackish/alkaline marshes/pools.**
- Tp -- Permanent freshwater marshes/pools**; ponds (below 8 ha), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season.
- Ts -- Seasonal/intermittent freshwater marshes/pools on inorganic soils**; includes sloughs, potholes, seasonally flooded meadows, sedge marshes.
- U -- Non-forested peatlands**; includes shrub or open bogs, swamps, fens.
- Va -- Alpine wetlands**; includes alpine meadows, temporary waters from snowmelt.
- Vt -- Tundra wetlands**; includes tundra pools, temporary waters from snowmelt.
- W -- Shrub-dominated wetlands**; shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils.
- Xf -- Freshwater, tree-dominated wetlands**; includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils.
- Xp -- Forested peatlands**; peat swamp forests.
- Y -- Freshwater springs**; oases.

**Zg -- Geothermal wetlands**

**Zk(b) -- Karst and other subterranean hydrological systems, inland**

Note: "**floodplain**" is a broad term used to refer to one or more wetland types, which may include examples from the R, Ss, Ts, W, Xf, Xp, or other wetland types. Some examples of floodplain wetlands are seasonally inundated grassland (including natural wet meadows), shrublands, woodlands and forests. Floodplain wetlands are not listed as a specific wetland type herein.

**Human-made wetlands**

**1 -- Aquaculture** (e.g., fish/shrimp) **ponds**

**2 -- Ponds**; includes farm ponds, stock ponds, small tanks; (generally below 8 ha).

**3 -- Irrigated land**; includes irrigation channels and rice fields.

**4 -- Seasonally flooded agricultural land** (including intensively managed or grazed wet meadow or pasture).

**5 -- Salt exploitation sites**; salt pans, salines, etc.

**6 -- Water storage areas**; reservoirs/barrages/dams/impoundments (generally over 8 ha).

**7 -- Excavations**; gravel/brick/clay pits; borrow pits, mining pools.

**8 -- Wastewater treatment areas**; sewage farms, settling ponds, oxidation basins, etc.

**9 -- Canals and drainage channels, ditches.**

**Zk(c) -- Karst and other subterranean hydrological systems, human-made**

(Source: The Ramsar Convention Bureau - [http://www.ramsar.org/key\\_ris.htm](http://www.ramsar.org/key_ris.htm))



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