

Agenda item 6.1 iv)

**Background materials concerning further development of
guidance related to Ramsar site designation**

1. Attached to this note are the COP8 Resolutions and Information papers on issues related to the application of the Strategic Framework and Vision for the List of Wetlands of International Importance adopted by Resolution VII.11:
 - i) COP8 Resolution VIII.10 “Improving implementation of the Strategic Framework and Vision for the List of Wetlands of International Importance”;
 - ii) COP8 Resolution VIII.11 “Additional guidance for identifying and designating under-represented wetland types as Wetlands of International Importance”;
 - iii) COP8 Resolution VIII.13 “Enhancing the information on Wetlands of International Importance (Ramsar sites)”;
 - iv) COP8 DOC. 31 Information paper “Issues and options concerning further elaboration of the Ramsar criteria and guidelines for the future development of the List of Wetlands of International Importance”.
2. These materials provide the background to a number of the high priority tasks requested of the Panel for 2003-2005 concerning the preparation of further guidance on the implementation of the Strategic Framework. Resolution VIII.7 (available in DOC. STRP11-9) also provides background to certain tasks in this high priority area of work.
3. The STRP is requested to familiarize itself with the contents of these materials, as the basis for preparing its Work Plan activities on these matters.

“Wetlands: water, life and culture”
8th Meeting of the Conference of the Contracting Parties
to the Convention on Wetlands (Ramsar, Iran, 1971)
Valencia, Spain, 18-26 November 2002

Resolution VIII.10

Improving implementation of the Strategic Framework and Vision for the List of Wetlands of International Importance

1. RECALLING Article 2.1 of the Convention, which states that “each Contracting Party shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance” and that “the boundaries of each wetland shall be precisely . . . delimited on a map”;
2. AWARE of Article 3.1 which specifies that “Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List”;
3. ALSO AWARE of Article 3.2 which provides that “each Contracting Party shall arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change” and that “information on such changes shall be passed without delay” to the Ramsar Bureau;
4. NOTING Recommendation 4.7 which adopted the ‘Information Sheet on Ramsar Wetlands’ (referred to as ‘Ramsar Information Sheet’, RIS) as the means for presenting site descriptions for the Ramsar Sites Database;
5. FURTHER NOTING Resolutions 5.3 and VI.13, as well as Operational Objective 5.3 of the Convention Strategic Plan 1997-2002, which requested Contracting Parties to ensure that RISs and maps have been submitted for all sites, and to update the RIS and map for each designated site at not more than six-year intervals;
6. RECALLING Resolution VII.11 through which Contracting Parties adopted a *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance*, whose Vision is “To develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the ecological and hydrological functions they perform”, and which indicates that such an international network is to be built from coherent and comprehensive networks of Wetlands of International Importance established within the territory of each Contracting Party;
7. ALSO RECALLING that Resolution VII.11 established that the objectives for the Ramsar List are:

- a) to establish national networks of Ramsar sites in each Contracting Party which fully represent the diversity of wetlands and their key ecological and hydrological functions;
 - b) to contribute to maintaining global biological diversity through the designation and management of appropriate wetland sites;
 - c) to foster cooperation among Contracting Parties, the Convention's International Organization Partners, and local stakeholders in the selection, designation and management of Ramsar sites; and
 - d) to use the Ramsar site network as a tool to promote national, supranational/regional, and international cooperation in relation to complementary international treaties.
8. FURTHER RECALLING that Objective 4.1 of the *Strategic Framework* is to “use Ramsar sites as baseline and reference areas for national, supranational/regional, and international environmental monitoring to detect trends in the loss of biological diversity, climate change and the processes of desertification”, and that to achieve this Contracting Parties need to put in place mechanisms for monitoring the ecological character of their Ramsar sites, and to report change in ecological character in line with Article 3.2 of the Convention, as recognized by Resolution VIII.8 adopted by this meeting of the Conference of the Parties;
 9. AWARE that Contracting Parties are urged in the “Guidelines for adopting a systematic approach to identifying priority wetlands for designation under the Ramsar Convention” (Section IV of the Annex to Resolution VII.11) to consider the opportunities that Ramsar site designations may provide for contributing to other initiatives under related international and regional environmental conventions and programmes, and that this includes attention to site networks for migratory waterbirds and other migratory species through, *inter alia*, the Convention on Migratory Species and its Agreements such as the African-Eurasian Waterbirds Agreement (AEWA), the North American Waterfowl Management Plan, the Western Hemisphere Shorebird Reserve Network, and the Asia-Pacific Migratory Waterbird Conservation Strategy;
 10. ALSO AWARE that the *Guidelines for international cooperation under the Ramsar Convention* (Resolution VII.19) call upon Contracting Parties to give special attention to identifying shared wetlands and wetland-dependent species, harmonizing implementation of the Ramsar Convention with other conventions and programmes, and working cooperatively with these programmes and organizations to pursue the actions recommended by the guidelines on international cooperation, which include identification and designation of all sites which satisfy the waterbird criteria for Ramsar site designation and the establishment of site networks for shared species;
 11. RECOGNIZING that a coherent national and international network of Ramsar sites and their sustainable management can provide a powerful demonstration and important contribution to countries achieving their sustainable development goals, through the recognition and maintenance of wetland values and functions and the goods and services they provide in water and food security and poverty eradication, especially for local communities and indigenous people;

12. ALSO RECOGNIZING that the policy paper presented at the World Summit on Sustainable Development (Johannesburg, August 2002) jointly by the government of Switzerland, the World Wide Fund for Nature (WWF), and the Ramsar Bureau (COP8 DOC. 32) encourages an ecosystem approach to the conservation and management of Ramsar sites and other wetlands in the context of basin-scale management as a contribution to sustainable development;
13. FURTHER RECOGNIZING that the designation of a Ramsar site is only the starting point, and that implementation of appropriate management planning for all sites is essential to securing their sustainable use, and that this meeting has adopted *New Guidelines for management planning for Ramsar sites and other wetlands* (Resolution VIII.14);
14. AWARE of the target established in the Convention's Work Plan 2000-2002 of the designation of 2000 Ramsar sites by the time of COP9;
15. NOTING that (as of 15 September 2002) 208 new Ramsar sites covering 31,928,333 ha had been designated since COP7 by 56 Contracting Parties, which represents only an 8% increase in the number of sites, but a 45 % increase in the total area designated; but CONCERNED that this is only just over half the number of the new sites pledged at COP7 for designation (Resolution VII.12);
16. APPLAUDING the support of International Organization Partners and others to Contracting Parties which are developing countries and countries with economies in transition, and to non-Parties preparing for accession to the Convention, for making significant new designations of Ramsar sites;
17. AWARE that the Ramsar subregional meeting for North and Central Africa (Algiers, 20-22 March 2002) proposed that a Resolution be adopted by the Conference of the Parties encouraging all Contracting Parties to communicate, at each meeting of the Conference of the Parties, their minimum plans for the designation during the succeeding triennium of new Ramsar sites, including the number of sites and the total area to be designated; and ALSO AWARE that this proposal was endorsed by the subregional meeting of the Ramsar Convention for West Africa, Madagascar and the Comores (Cotonou, 5-7 June 2002);
18. CONCERNED that 77 Contracting Parties (including 58 Parties which acceded to the Convention prior to COP7) have not made any new Ramsar site designations since COP7, although RECOGNIZING that certain countries with small territories may have no further wetlands which qualify for designation;
19. ALSO CONCERNED that 32 Parties have not made any new Ramsar site designations since their accession to the Convention, in some cases over 20 years ago;
20. FURTHER CONCERNED that for 503 Ramsar sites in 73 countries, RISs have not been provided or updated RISs and maps have not been supplied to the Ramsar Bureau for more than six years; and that adequate maps have yet to be supplied for 411 sites in 52 countries;
21. NOTING that, in their National Reports to COP8, only 29 Parties have indicated that they have a comprehensive national wetland inventory, so that most Parties lack the essential basis for identification and designation of their coherent and comprehensive

national network of Ramsar sites, as indicated by Resolution VII.20, and also that a similarly small number of Parties report having national wetland databases;

22. PARTICULARLY CONCERNED that although in their National Reports to COP8, 73 Parties indicated that they have applied a systematic approach to Ramsar site designation, and 74 Parties reported having a directory of potential Ramsar sites, few countries have the comprehensive inventory information that forms the necessary precursor to establishing such a systematic approach, and that in very few countries is there clear evidence of the establishment of the coherent national network of Ramsar sites which fully represent the diversity of wetlands and their key ecological and hydrological functions, or a strategy for achieving this network, as is called for in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance*;
23. NOTING that, from their National Reports to COP8, only 24 Parties have management plans in place for all their Ramsar sites, that overall only 513 (45%) Ramsar sites have management plans in place, that this falls significantly short of the targets established by the Convention's Work Plan 2000-2002, and that levels of implementation of existing management plans are still low;
24. AWARE that, despite information provided in their National Reports to COP8 concerning monitoring of the ecological character of Ramsar sites, few Parties have reported to the Ramsar Bureau issues of change, or likely change, in the ecological character of their designated Ramsar sites in line with Article 3.2 of the Convention;
25. HAVING CONSIDERED the Resolutions adopted by this meeting of the Conference which provide further guidance to Contracting Parties on the identification and designation of Wetlands of International Importance, namely Resolution VIII.11, which provides additional guidance for identifying and designating under-represented wetland types (mangroves, coral reefs, peatlands and wet grasslands) as Ramsar sites; Resolution VIII.33, which provides similar guidance for temporary pools; Resolution VIII.38 concerning waterbird population estimates and the application of Criterion 6 of the Strategic Framework; Resolution VIII.13 concerning enhancing the information on Ramsar sites; Resolution VIII.21 on defining Ramsar site boundaries more accurately in Ramsar Information Sheets; and Resolution VIII.22 about issues concerning Ramsar sites that cease to fulfil or never fulfilled the Criteria for designation as Ramsar sites; and
26. ALSO HAVING CONSIDERED the Discussion Paper COP8 DOC. 31 concerning the further elaboration of the Ramsar Criteria and guidelines for the future development of the List, in relation to harmonization with the indicative features of biological diversity established by the Convention on Biological Diversity, including the issue of socio-economic and cultural importance of wetlands;

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27. CALLS UPON all Contracting Parties to renew their efforts to apply the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution VII.11), including, as a matter of priority, the establishment of a strategy and priorities for the further designation of Ramsar sites so as to achieve, as soon as possible, the coherent national networks called for in the Vision for the List;

28. ALSO CALLS UPON all Contracting Parties to identify all wetlands which potentially qualify for designation as Ramsar sites, as a concrete output of their strategy and priorities called for in the preceding paragraph, and to establish targets for future designation in terms of number of sites to be designated, and to communicate these targets to each meeting of the Conference of the Parties and the Ramsar Bureau as part of their triennial implementation plan for the Convention;
29. URGES all Contracting Parties, as part of their identification of wetlands which potentially qualify for designation as Ramsar sites, and in line with Resolution VII.19 on *Guidelines for international cooperation under the Ramsar Convention*, to collaborate in the identification and designation as Ramsar sites of national and international site networks for migratory species, including migratory waterbirds, as a contribution to other initiatives under related international and regional environmental conventions and programmes, including, *inter alia*, the Convention on Migratory Species and its Agreements such as the African-Eurasian Waterbirds Agreement (AEWA) and other existing arrangements such as the North American Waterfowl Management Plan, the Western Hemisphere Shorebird Reserve Network, and the Asia-Pacific Migratory Waterbird Conservation Strategy;
30. INSTRUCES the Scientific and Technical Review Panel (STRP), with the assistance of the Ramsar Bureau, interested Contracting Parties, and other relevant organizations to develop, for consideration at COP9, additional criteria and guidelines for the identification and designation of Ramsar sites concerning socio-economic and cultural values and functions that are relevant to biological diversity, as listed in Annex 1 of the Convention on Biological Diversity, which would be applied on each occasion in conjunction with one or more existing criteria for the identification and designation of Ramsar sites; and to include in this work a full analysis of the implications for Contracting Parties of the implementation of such criteria for the management of Ramsar sites, including Contracting Party obligations and responsibilities for maintaining the ecological character of any such sites so selected;
31. REQUESTS all Contracting Parties to use the revised format of the Ramsar Information Sheet (RIS) as adopted by Resolution VIII.13 in their designation of new sites, extensions to existing sites, and updates of existing sites;
32. URGES Contracting Parties when completing or updating an RIS to document fully the ecological, hydrological, socio-economic and cultural importance of the site, using the appropriate sections of the RIS for this purpose, as the basis for identifying processes and features that should be addressed in the management planning process for the site, as outlined in the *New Guidelines for management planning for Ramsar sites and other wetlands* adopted by this meeting (Resolution VIII.14);
33. EXPRESSES DEEP CONCERN that there remain a large number of Ramsar sites for which an official description has not been provided or updated, or has not been provided in one of the three official working languages of the Convention, and/or for which a suitable map has not been submitted;
34. INSTRUCES the Ramsar Bureau to contact the Contracting Parties listed in the Annex to this Resolution and request them to provide or update, as a matter of high priority, Ramsar site descriptions (Ramsar Information Sheets and/or maps), using the Ramsar Information

Sheet as revised by Resolution VIII.13, in one of the Convention's official working languages;

35. URGES Contracting Parties to continue to establish full management planning processes for their Ramsar sites, applying the guidance provided in Resolution VIII.14, and to seek to have these plans being implemented in full, and to establish and report targets for the preparation and implementation of management plans for their Ramsar sites;
36. WELCOMES the statements made in the National Reports to COP8 or during this meeting concerning the number of impending, or planned, extensions to existing Ramsar sites, and future designations of new or extended Ramsar sites, from the following 76 Contracting Parties: Albania (6 sites), Algeria (30 sites), Argentina (3 sites), Armenia (3 sites), Australia (1 site), Austria (3 sites), Belgium (6 sites and 1 extension), Benin (3 sites), Bolivia (2 sites), Botswana (4 sites), Brazil (2 sites), Cambodia (1 site), Chad (3 sites), Chile (2 sites), China (80 sites), Colombia (6 sites), Comoros (1 site) Costa Rica (2 sites and 1 extension), Côte d'Ivoire (4 sites including 1 transboundary with Ghana), Cuba (3 sites), Czech Republic (2 sites), Djibouti (3 sites), Ecuador (1 site), El Salvador (2 sites), Estonia (14 sites), Finland (50 sites), Gambia (2 sites), Georgia (1 site), Ghana (2 sites including 1 transboundary with Côte d'Ivoire), Greece (2 extensions), Guatemala (4 sites), Guinea (5 sites), Hungary (1 site), India (6 sites), Indonesia (3 sites), Italy (4 sites), Jamaica (1 site), Japan (11 sites), Jordan (2 sites), Kenya (3 sites), Latvia (3 sites), Lithuania (5 sites), Madagascar (7 sites), Mali (4 sites), Malawi (1 site), Malaysia (5 sites), Mauritania (3 sites), Mongolia (3 sites), Nepal (7 sites), Nicaragua (2 sites), Niger (8 sites), Nigeria (14 sites), Pakistan (10 sites), Panama (1 site), Papua New Guinea (1 site), Paraguay (1 site), Peru (3 sites), Poland (5 sites), Portugal (5 sites), Slovak Republic (1 site), Spain (14 sites and 2 extensions), Sri Lanka (4 sites), Suriname (3 sites), Syrian Arab Republic (2 sites), Thailand (20 sites), The FYR of Macedonia (3 sites), Togo (3 sites), Trinidad and Tobago (2 sites), Tunisia (4 sites), Turkey (5 sites), Uganda (5 sites), United Republic of Tanzania (3 sites), Uruguay (2 sites), Venezuela (2 sites), and Zambia (5 sites, and 2 extensions); ENCOURAGES these Contracting Parties to forward completed Ramsar Information Sheets and boundary maps for these 8 site extensions and 451 new sites to the Bureau, if they have not already done so; and ALSO WELCOMES the statements made in the National Reports to COP8 concerning an unspecified number of future designations of new Ramsar sites by the following additional countries: Bulgaria, Canada, Congo, Egypt, Iran, Islamic Republic of, Ireland, Israel, Lebanon, Morocco, Netherlands, Norway, Philippines, Republic of Korea, Romania, Slovenia, Ukraine, United Kingdom, United States of America, and Yugoslavia;
37. WELCOMES the statements made by the Independent State of Samoa and by Sudan concerning their imminent accession to the Convention and their plans to designate three sites and one site, respectively, for the Ramsar List;
38. CONGRATULATES International Organization Partners and others, and in particular the Living Waters Programme of the World Wide Fund for Nature (WWF) for their support to Contracting Parties and non-Parties in preparing the designation of Ramsar sites, and URGES the WWF to continue to provide and to enhance this support as a contribution towards their objective of achieving a total area of Ramsar sites of at least 250 million ha by 2010;

39. CONTINUES TO ENCOURAGE Contracting Parties to adopt and apply, as part of their management planning for Ramsar sites and other wetlands, a suitable monitoring regime, such as that provided by Resolution VI.1, and to incorporate within these monitoring regimes the Convention's *Wetland Risk Assessment Framework* (Resolution VII.10), so as to report change, or likely change, in the ecological character of Ramsar sites in line with Article 3.2 of the Convention;
40. EXPRESSES ITS APPRECIATION to those 50 Contracting Parties which in their National Reports to this Conference provided information, in accordance with Article 3.2 of the Convention, on 153 Ramsar sites where human-induced changes in ecological character that have occurred, are occurring, or may occur, namely: Algeria, Argentina, Armenia, Australia, Austria, Belarus, Belgium, Benin, Botswana, Bulgaria, China, Costa Rica, Croatia, Czech Republic, Denmark, Egypt, Estonia, Finland, Germany, Guatemala, Hungary, India, Islamic Republic of Iran, Israel, Japan, Kenya, Liechtenstein, Mali, Mauritania, Mauritius, Morocco, Namibia, Netherlands, New Zealand, Nicaragua, Norway, Panama, Peru, Senegal, Spain, Sri Lanka, Togo, Turkey, Uganda, Ukraine, United Kingdom, United States of America, Uruguay, Viet Nam and Yugoslavia; and URGES all of these Contracting Parties to consider, at the earliest opportunity, the possible inclusion of these sites onto the Montreux Record, if they are not already included, in line with the further guidance provided in Resolution VIII.8 on the purpose and role of the Record;
41. URGES Contracting Parties and donor organizations to give priority for support to the development of coherent national and international networks of Ramsar sites and their effective management, in recognition of their essential values and functions in combating poverty through the sustainable use of their ecosystems and their role in maintaining the quality and quantity of water, including at the basin scale; and REQUESTS the Standing Committee to give priority to projects addressing these issues in the future operation of the Small Grants Fund; and
42. CONGRATULATES Contracting Parties for their statements made concerning addressing site-specific management and boundary issues, notably:
- a) The Government of Greece for its stated intention to take appropriate action in line with Resolution VIII.16 on *Principles and guidelines for wetland restoration* for the restoration of Lake Koronia, part of Lakes Volvi and Koronia Ramsar Site, taking into consideration environmental constraints, based on the availability of natural resources, socio-economic characteristics and other peculiarities of the catchment;
 - b) The Government of Iceland for its stated intention to inform the Ramsar Bureau in the near future of the results of the Environmental Impact Assessment carried out on the effects of a planned dam at Thjorsarver Ramsar Site;
 - c) The Government of Trinidad & Tobago for the successful application of the Montreux Record procedure to the Nariva Swamp Ramsar Site and its subsequent removal from the Record, following Ramsar Advisory Missions and implementation of key recommendations; and
 - d) The Government of Spain for the recent designation of 11 new Ramsar sites; and ASKS this Government to ensure the full implementation of the Convention in its national water policies and programmes.

Annex

List of Contracting Parties from which one or more Ramsar Information Sheets or updated Sheets are needed as a matter of priority

Albania
Argentina
Austria
Azerbaijan
Bangladesh
Belgium
Bulgaria
Burkina Faso
Burundi
Canada
Chad
Chile
Comoros
Costa Rica
Côte d'Ivoire
Croatia
Czech Republic
Denmark
Estonia
Finland
France
Gabon
Georgia
Germany
Ghana
Guatemala
Guinea
Guinea Bissau
Honduras
Hungary
Iceland
India
Indonesia
Ireland
Japan
Latvia
Lebanon
Libya
Lithuania
Malawi
Mali
Malta
Mauritania
Morocco
Nepal
Netherlands
Norway
Pakistan
Panama
Papua New Guinea
Paraguay

Peru
Philippines
Poland
Portugal
Romania
Senegal
Slovakia
Slovenia
South Africa
Sweden
Switzerland
Tajikistan
Togo
Turkey
Uganda
USA
Venezuela
Viet Nam
Yugoslavia

"Wetlands: water, life, and culture"
8th Meeting of the Conference of the Contracting Parties
to the Convention on Wetlands (Ramsar, Iran, 1971)
Valencia, Spain, 18-26 November 2002

Resolution VIII.11

Additional guidance for identifying and designating under-represented wetland types as Wetlands of International Importance

1. RECALLING Resolution VII.11, which adopted the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance*;
2. FURTHER RECALLING Action 6.2.3 of the Convention's Strategic Plan 1997-2002, which indicated that Contracting Parties should give priority to the designation of new Ramsar sites which include wetland types currently under-represented on the Ramsar List, and in particular, when appropriate, coral reefs, mangroves, seagrass beds, and peatlands; and Action 6.3.1 of the Convention's Work Plan 2000-2002, which requested the Scientific and Technical Review Panel (STRP) to prepare additional guidance for the identification and designation of coral reefs, mangroves, wet grasslands, and peatlands;
3. AWARE that peatlands, mangroves, and coral reefs were recognized by the *Global Review of Wetland Resources and Priorities for Wetland Inventory* report to COP7 as being amongst the wetland ecosystems that are most vulnerable and threatened by habitat loss and degradation, and thus in need of urgent priority action to ensure their conservation and wise use; and
4. EXPRESSING APPRECIATION to the STRP for having developed the guidelines for peatlands, mangroves and coral reefs, and TAKING NOTE that the STRP has not been able during the past triennium to develop guidance related to seagrass beds but has drafted guidance on wet grasslands;

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5. ADOPTS for application by Contracting Parties the attached additional guidance for identifying and designating peatlands, wet grasslands, mangroves, and coral reefs as Wetlands of International Importance;
6. CALLS UPON Contracting Parties to renew their efforts, as a high priority, to designate examples of peatlands, wet grasslands, mangroves, and coral reefs, where appropriate, for the List of Wetlands of International Importance, taking into consideration the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution VII.11, Ramsar Handbook 7) and this additional guidance;

7. REQUESTS Contracting Parties to report to the 9th Meeting of the Conference of the Contracting Parties on their progress with the designation for the List of sites including these wetland types;
8. INSTRUCTS the Ramsar Bureau to incorporate, as appropriate, the Annex to this Resolution into the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution VII.11); and
9. REQUESTS the STRP to provide interpretation of the term ‘under-represented type’ in the context of available information on the global extent of different wetland types and representation of these in the Ramsar List, to investigate methods for defining targets for representation of wetland types in the Ramsar List in the context of the Strategic Framework for the future development of the List (Resolution VII.11), and to report the results of this to COP9.

Annex

Guidance for identifying and designating peatlands, wet grasslands, mangroves and coral reefs as Wetlands of International Importance

Introduction

1. Action 6.3.1 of the Convention's Work Plan 2000-2002 requested the Scientific and Technical Review Panel (STRP) to prepare additional guidance for the identification and designation of peatland, wet grassland, mangrove, and coral reef wetland types as Wetlands of International Importance (Ramsar sites).
2. Peatlands, mangroves, and coral reefs were recognised by the *Global Review of Wetland Resources and Priorities for Wetland Inventory* report to COP7 as being amongst the wetland ecosystems that are most vulnerable and threatened by habitat loss and degradation, and thus in need of urgent priority action to ensure their conservation and wise use.
3. This additional guidance provides clarification of aspects of the application of the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution VII.11) as they apply to peatlands, wet grasslands, mangroves, and coral reefs. In particular, it provides guidance to Contracting Parties on the identification and designation of representative wetlands of these habitat types in accordance with Ramsar Criterion 1 for the designation of Wetlands of International Importance.
4. The reasons for which such wetland types are as yet under-represented in the Ramsar List are various. They may include lack of recognition of the existence of particular wetland types within a particular territory; lack of recognition that coastal and marine wetland types such as mangroves and coral reefs fall within the Ramsar definition of wetlands and so are eligible for designation as Ramsar sites; difficulty in applying the guidance in completing the Ramsar Information Sheet (RIS) for Ramsar site designation, particularly in relation to the delimitation of appropriate boundaries, especially for coral reefs; uncertainty as to which particular features of these habitat types indicate the best representative examples of such wetlands under Ramsar Criterion 1; uncertainty, in the case of peatlands and wet grasslands, as to which wetland types in the Ramsar Classification System for Wetland Type apply, since these habitat types can occur in a number of different categories; and, for peatlands, a lack of recognition that a wetland is a peat-based system if wetlands are assessed only for their vegetational characteristics.
5. All Ramsar Criteria for the designation of Wetlands of International Importance can be applied to the identification and designation of peatland, wet grassland, mangrove and coral reef wetland types.
6. Since each of these wetland types has been identified as being particularly vulnerable and threatened by habitat loss and degradation, the identification and designation of threatened ecological communities, as well as threatened species, under Ramsar Criterion 2 will often be of particular importance.

Identification and designation of peatlands

7. Peatlands are ecosystems with a peat deposit that may currently support a vegetation that is peat-forming, may not, or may lack vegetation entirely. Peat is dead and partially decomposed plant remains that have accumulated *in situ* under waterlogged conditions. It is understood in this guidance that the term “peatland” is inclusive of active peatland (“mire”). An active peatland (“mire”) is a peatland on which peat is currently forming and accumulating. All active peatlands (“mires”) are peatlands, but peatlands that are no longer accumulating peat would not be considered as active peatlands (“mires”). The presence of peat or vegetation capable of forming peat is the key characteristic of peatlands.
8. Since peatlands are defined by the presence of a peat substrate, whilst the Ramsar Classification System is based on vegetation, peatlands occur in a number of categories in the Ramsar Classification System for Wetland Type:
 - a) They may occur as a *Marine/coastal* wetland under categories I (intertidal forested wetlands) and E (sand, shingle or pebble shores, including dune systems), and perhaps marginal areas of K (coastal freshwater lagoons).
 - b) They may occur as an *Inland wetland*, primarily under U (Non-forested peatlands) and Xp (Forested peatlands).
 - c) Peat soils also may be present in all other *Inland wetland* categories except: M (Permanent rivers/streams/creeks), Tp (Permanent freshwater marshes/pools – inorganic soils), Ts (Seasonal/intermittent freshwater marshes/pools – inorganic soils), W (Shrub-dominated wetlands – inorganic soils), Zg (Geothermal wetlands), and Zk(b) (subterranean karst systems).
9. Peatlands contribute to biological diversity, global water issues, global carbon retention relevant to climate change, and wetland functions valuable to human communities.
10. Significant features of peatlands include:
 - a) uniqueness of the peat-forming phenomenon and its ecological and natural resource functions;
 - b) dependence of peatlands on their hydrology and hydrochemistry;
 - c) interdependence between peatlands and their catchments and adjacent watersheds;
 - d) uniqueness of their vegetation;
 - e) provision of habitat for particular taxa of fauna and flora;
 - f) water regulation and buffering functions;
 - g) capacity to regulate local and regional climates;
 - h) capacity to sequester carbon from the atmosphere and store it for long periods of time; and
 - i) ability to serve as geochemical and palaeo archives.
11. In addition to their many natural values, peatlands have important socio-economic values which include, but are not limited to, the absorption and release of drinking water, natural resource provision to local communities and indigenous people, landscape stabilization, flood mitigation, removal of pollutants, tourism, and recreation.

12. Threats to peatlands can arise from both within and outside their area and include:
 - a) direct threats, including drainage and land conversion, excavation, burning, over-grazing, agricultural abandonment, visitor pressure, non-sustainable commercial exploitation; and
 - b) indirect threats, including pollution, excessive water abstraction, reduction in extent and quality of buffer zones, and climate change.
13. Some peatlands that have been modified but remain ecologically valuable are subject to similar threats. Opportunities exist for the restoration of such areas.

Applying the Ramsar Criteria to peatlands

14. Peatlands considered for designation under Criterion 1 should include pristine active peatlands, mature peatlands and peatlands that may be no longer forming peat, naturally degrading peatlands, human-modified and impacted peatlands, and restored or rehabilitated peatlands.
15. Special attention should be given to the designation of peatlands which have at least some of the following attributes:
 - a) an intact hydrology;
 - b) the presence of a peat-forming vegetation;
 - c) the capacity to act as a reservoir of regional/global biodiversity;
 - d) the capacity to act as a carbon store;
 - e) the presence of a carbon sequestration function;
 - f) the ability to maintain a geochemical and/or palaeo archive;
 - g) hydrochemical diversity; and
 - h) macro- and/or micro-morphological features.
16. Special attention should also be given to the designation of peatlands that have high vulnerability, such that minor impacts can lead to major degradation, and to those with potential for restoration after degradation.
17. Large areas of peatland are normally of higher importance than small areas for their hydrological, carbon storage and palaeoarchive values and because they incorporate macro-landscapes: these should be afforded high priority for designation. Consideration should also be given to the capacity of the peatland system to influence regional climate.
18. Where appropriate and desirable, peatlands designated as Ramsar sites should include entire catchments, so as to maintain the hydrological integrity of the peatland system.
19. Designation of both single peatlands and of complex systems that incorporate more than one type of peatland system is appropriate.

Identification and designation of wet grasslands

20. Wet grasslands are natural and near-natural ecosystems with a vegetation characterized and dominated by lower growing perennial grasses, sedges, reeds, rushes and/or herbs. They appear under periodically flooded or waterlogged conditions and are maintained through mowing, burning, natural or human-induced grazing, or a combination of these.
21. Wet grasslands include: floodplain grasslands, washlands, polders, water meadows, wet grasslands with (intensive) water level management, lakeside grasslands, vegetation dominated by relatively large, perennial, competitive herbs, and ground-water dependent dune slacks. These grasslands occur on different soils: heavy clay, loam, sand, gravel, peat, etc., and occur in freshwater, brackish and saline water systems.
22. Vegetation types that fall under this definition can appear in mosaic with one another or with other wetland types, such as peatlands, reedbeds, water-dependent shrubs, forests and others.
23. Wet grasslands are covered by the following wetland types of the Ramsar Classification System:
 - a) They can occur as a *floodplain component*, under T's (seasonal/intermittent freshwater marshes on inorganic soils, including seasonally flooded meadows and sedge marshes), and U (non-forested peatlands, including swamps and fens).
 - b) They can occur as a *human-made* wetland type, under 3 (irrigated land, including irrigation channels and rice fields), and 4 (seasonally flooded agricultural land, including intensively managed or grazed wet meadow or pasture). Irrigation channels with natural vegetation cutting through wet meadows fulfil substantial ecological functions; they are therefore considered part of wet grasslands.
 - c) *Wet grassland habitats* can also occur in other wetland types: E (sand, shingle or pebble shores including dune systems and humid dune slacks) and H (intertidal marshes, including salt meadows, raised salt marshes, tidal brackish and freshwater marshes). They can also occur on the edges of other wetland types, such as J (coastal brackish/saline lagoons), N (seasonal/intermittent/irregular rivers/streams/creeks), P (seasonal/intermittent floodplain lakes), R (seasonal/intermittent saline/brackish/alkaline lakes and flats), and Ss (seasonal/intermittent saline/brackish/alkaline marshes).
24. Wet grasslands support specific biodiversity, comprising rare and threatened plant and animal species and communities, including internationally important bird populations, a range of mammals, invertebrates, reptiles and amphibians.
25. In recent years there has been increasing awareness about the value of wet grasslands in performing hydrological and chemical functions, notably:
 - a) flood alleviation - since wet grasslands can retain floodwater;

- b) groundwater recharge - wet grasslands retain water within a watershed enabling groundwater to be replenished; and
 - c) water quality improvement - riparian wet grasslands retain nutrients, toxic substances and sediment, preventing them from entering watercourses.
26. Economic benefits accrue from these functions. When wet grasslands are destroyed, these functions are lost and have to be replaced at often enormous financial cost. These benefits include:
- a) water supply – wet grasslands can influence both water quantity and quality;
 - b) health of freshwater fisheries – backwaters, ditches and other open water habitats within wet grassland areas are important for river fisheries;
 - c) agriculture – floodplains provide some of the most fertile agricultural land; and
 - d) recreation and sustainable tourism opportunities.
27. From an early stage in human history, floodplains have been subject to modifications. Since the industrial revolution, pressures on rivers and floodplains have increased significantly in many areas. As part of this process, wet grasslands have declined significantly in industrialized areas, but are also exposed to specific threats in other regions. This is being brought about by:
- a) changes in agricultural practices – increased drainage and use of fertilizer, change from hay-making to silage, re-seeding, herbicide use, conversion to arable land, higher stocking densities, neglect or abandonment, use of aquatic herbicides;
 - b) land drainage – modification of natural hydrological regimes, isolation of floodplains from river flows, rapid evacuation of winter floods and early fall of spring water tables, maintenance of low water levels in drainage channels;
 - c) abstraction for drinking water and crop irrigation – leading to lowered river flows and in-channel water levels, lowered water tables, exacerbation of drought-related problems;
 - d) eutrophication – leading to changes in grassland plant communities and increased sward vigour;
 - e) threats to coastal wet grasslands from sea-level rise and construction of flood defences;
 - f) development and mineral extraction – leading to a decline of routinely flooded area and increased frequency of flooding of the remaining washland; and
 - g) site fragmentation – leading to isolation of sites, threatening species restricted to wet grassland and vulnerable to extinction, and to problems with water level control and agricultural management.

Applying the Ramsar Criteria to wet grasslands

28. A wet grassland should be considered for designation under Criterion 1 particularly if it performs specific hydrological functions.
29. Since wet grasslands are particularly dynamic ecosystems, special attention should be paid to the designation of those systems that, as part of river or coastal floodplains, are maintained by periodic floods or waterlogged conditions, either natural or human-induced, and demonstrate hydrological integrity.
30. Where wet grasslands are associated with agricultural or other management practices, special attention should be paid to the designation of systems whose ecological character is maintained through specific management measures or traditional forms of land and wetland resource uses (typically including induced grazing, mowing, or burning, or a combination of these), and whose continuation is critical to preventing gradual vegetation succession that may transform wet grasslands to tall reedbeds, peat bogs, or forested wetlands.
31. Many managed wet grasslands support important assemblages of breeding waterbirds and provide habitat for large populations of non-breeding waterbirds, and attention should be given to the designation under Criteria 4, 5 and 6 for these features.

Identification and designation of mangroves

32. Mangroves swamps are forested intertidal ecosystems that occupy sediment-rich sheltered tropical coastal environments, occurring from about 32° N (Bermuda Island) to almost 39° S (Victoria, Australia). Around two-thirds to three-quarters of tropical coastlines are mangrove-lined.
33. Mangrove swamps can form extensive and highly productive systems where there is adequate low-gradient topography, shelter, muddy substrates, and saline water with a large tidal amplitude.
34. Mangrove swamps are characterized by salt-tolerant woody plants with morphological, physiological, and reproductive adaptations that enable them to colonize littoral habitats. The term mangrove is used in at least two different ways:
 - a) to refer to the ecosystem composed of these plants, associated flora, fauna and their physico-chemical environment; and
 - b) to describe those plant species (of different families and genera) that have common adaptations which allow them to cope with salty and oxygen-depleted (anaerobic) substrates.
35. Mangroves occur under *Marine/Coastal Wetlands: I* (Intertidal forested wetlands) in the Ramsar Classification System for Wetland Type.
36. Mangroves carry out critical landscape-level functions related to the regulation of fresh water, nutrients, and sediment inputs into marine areas. By trapping and stabilizing fine sediments they control the quality of marine coastal waters. They are also exceptionally

important in maintaining coastal food webs and populations of animals that live as adults elsewhere and live within the mangrove at different stages of their life cycle, such as birds, fish, and crustaceans. Mangroves have an important role in pollution control through their absorptive capacity for organic pollutants and nutrients.

37. Mangroves are key ecosystems whose persistence is critical for the maintenance of landscape and seascape functions well beyond the boundaries of individual forests. Mangroves, coral reefs, and seagrass beds are among the best examples of integrated landscape-level ecosystems. When they occur together, they act as a unit, forming a complex mosaic of interrelated and integrated subsystems linked by physical and biological interactions. They play an important role in storm protection and coastal stabilization.
38. Worldwide, mangrove ecosystems support at least 50 species of mammals, over 600 species of birds, and close to 2,000 species of fish and shellfish, which include shrimps, crabs and oysters. Mangroves are also important for migratory birds and endangered species. A wide variety of species from other taxa make this a highly diverse community with a complex food web that is closely interlinked with adjacent ecosystems.
39. Mangroves are indispensable to the vitality and productivity of marine and estuarine finfish as well as shellfish fisheries. Globally, nearly two thirds of all fish harvested in the marine environment ultimately depend on the health of tropical coastal ecosystems, such as mangroves, seagrass beds, salt marshes and coral reefs, for maintenance of their stocks. The health and integrity of mangroves are critical to maintaining coastal zones and their cultural and heritage assets, and in buffering impacts due to climate change effects, including sea-level rise.
40. Mangroves have played an important role in the economies of tropical countries for thousands of years, and constitute an important reservoir and refuge for many plants and animals. In tropical countries, mangrove ecosystems support extremely valuable subsistence, commercial and recreational fisheries, while also providing numerous other direct and indirect goods and services to society.
41. Mangroves differ from other forested systems in that they receive large inputs of matter and energy from both land and sea, and more organic carbon is produced than is stored and degraded. They display a high degree of structural and functional diversity, placing mangroves among the most complex ecosystems. Because of the diversity of goods and services provided by mangroves, they should not be managed as a simple forest resource.
42. A large proportion of the world's mangrove resource has been degraded by:
 - a) unsustainable exploitation practices, such as over-fishing, bark (tannin) extraction, charcoal and fuel wood production, and exploitation for timber and other products;
 - b) habitat destruction: worldwide, mangroves are threatened by clearing for agriculture, urban, tourism, and industrial development, and particularly to make aquaculture ponds;
 - c) changes in hydrology due to stream diversions for irrigation and dam construction, causing nutrient deprivation and hypersalinization; and

- d) pollution, including industrial and sewage effluents and chronic or catastrophic oil spills.
43. Mangroves are particularly vulnerable to oil pollution and increased coastal erosion, sea-level rise, and natural events such as hurricanes, frosts, tsunamis, and human-induced climate change.

Applying the Ramsar Criteria to mangroves

44. In applying Ramsar Criterion 1 it should be recognized that mangroves occur in two broad biogeographic groups: an Indo-Pacific (Old World) group and a western African and American (New World) group, each with a characteristic but different species diversity.
45. Particular priority should be given to the designation of mangroves that form part of an intact and naturally functioning ecosystem which includes other wetland types, such as coral reefs, seagrass beds, tidal flats, coastal lagoons, salt flats, and/or estuarine complexes, since these are essential for maintaining the mangrove parts of the ecosystem. Under most circumstances, the mangrove, i.e. forested part of the site, should not be designated without inclusion of the other linked parts of the coastal ecosystem.
46. Networks of sites have more value than individual small areas of mangroves, since they contribute to the integrity of whole landscapes and seascapes. Designations that encompass whole landscapes and seascapes are valuable tools to safeguard critical coastal processes, and consideration should be given, where possible, to Ramsar site designations as part of a nested management framework for the coastal zone.
47. In determining the appropriate boundaries for site designation, consideration should be given to the following aspects:
- a) inclusion of critical habitat patches, particular communities, or landforms to focus conservation and management actions;
 - b) provision for conservation actions within the human-dominated portion of the landscape, since a more benign human-dominated landscape can help alleviate negative edge effects;
 - c) provision for the conservation and wise use of large areas with relatively limited human access;
 - d) inclusion of whole landscape units (lagoon-estuarine complexes, salt flats, delta or mudflat/tidal flat systems);
 - e) the maintenance of hydrographical integrity and water quality, including in the context of catchment (river basin) management;
 - f) provision for the effects of sea-level rise and human-induced climate changes that may otherwise lead to loss of habitat and genetic processes; and
 - g) consideration of the possible landward migration of mangroves in response to sea-level rise.
48. In applying Criterion 1 to mangrove swamps, special attention should be given to the listing of areas which are in pristine condition or have biogeographic or scientific importance and protection needs.

49. Mangrove conservation should categorize units on the basis of the most appropriate use such as for protection; restoration; understanding and enjoyment of natural heritage, and conservation with emphasis on sustainable use. The minimum size of a site is that which contains the greatest diversity of habitat types, including habitats for endangered, threatened, rare, or sensitive species or biological assemblages. The “naturalness” should be considered when selecting candidate sites, i.e., the extent to which an area has been protected from or has not been subjected to human-induced change. The ecological, demographic and genetic processes should also be considered because these maintain the structural and functional integrity and self-sustaining capacity of the designated site.
50. When defining the site boundaries, it must be considered that the more complex a system, the larger the site must be in order to be effective for conservation purposes. However, boundary definition becomes more critical the smaller the unit. If in doubt, the site should be made larger rather than smaller.
51. For mangroves, particular attention should be paid to the application of Criteria 7 and 8 since mangrove systems are of critical importance as breeding and nursery areas for fish and shellfish, and Criterion 4 in recognition of the fact that because of their complex ecological, geomorphological and physical structure they can act as refuges, and are important for the persistence of populations of many migratory and non-migratory species. Designation of such areas should take into account that different habitats of coastal complexes of mangroves, seagrass beds, and coral reefs may be essential for different stages of a species’ life-cycle.

Identification and designation of coral reefs

52. Coral reefs are massive carbonate structures built by the biological activity of the stony corals (true corals) and the associated complex assemblage of marine organisms that make up the coral reef ecosystem. They are found throughout the world’s oceans on mud-free coastlines between latitudes 30°N and 30°S. Their estimated total area is 617,000 km², forming about 15% of the marine shallow shelves.
53. There are three general types of coral reefs: fringing reefs, barrier reefs, and atolls. Fringing reefs are found close against the coast; barrier reefs are separated from land by a lagoon; and atolls are ring-shaped coral reefs that enclose a lagoon and have been formed where an island (often volcanic in origin) has progressively sunk below the sea surface. However, coral reefs that develop on continental coastlines are often complex and contain features that are difficult to categorize.
54. Coral reef ecosystems may also occur as a veneer over non-reef substrata. Although geologically these are not “true” coral reefs, they have the same ecological attributes as other coral reefs, and are used by people in the same ways.
55. Coral reefs falls under Marine/Coastal Wetlands: C (Coral reefs) in the Ramsar Classification System for Wetland Type.
56. In many places coral reefs form part of an ecosystem that is functionally and intricately linked to other adjacent marine habitats in the Ramsar Classification System, notably A (Permanent shallow marine waters), B (Marine subtidal aquatic beds – especially seagrass

beds), E (Sand, shingle and pebble shores), H (Intertidal marshes), and J (Coastal brackish/saline lagoons).

57. In terms of sheer beauty of form, colours, and diversity of life, perhaps no other natural area of the world can compare with coral reefs. Coral reefs have the highest species diversity of all marine ecosystems and represent a significant contribution to global biodiversity. There are 4,000 known species of reef fish, and about 10% of these are restricted to island groups or a few hundred kilometres of shoreline. Despite forming a small fraction of marine systems of the world, nearly two thirds of all fish species harvested in the marine environment depend upon coral reefs and associated ecosystems, such as mangroves and seagrass beds.
58. Corals also provide a vital source of life-saving medicines, including anticoagulants and anticancer agents such as prostaglandins.
59. Coral reefs have been valuable to people for as long as communities have lived in coastal areas adjacent to warm seas. They have been exploited for food, building materials, medicines, and decorative objects, and continue to provide many of the basic needs of millions of people living in tropical coastal regions.
60. In tropical regions, coastal ecosystems and marine biodiversity contribute significantly to the economies of many countries. Coral reefs support tourism and recreation and subsistence, commercial and recreational fisheries. Some countries, including Barbados, the Maldives, and the Seychelles, rely on reef tourism for much of their foreign income. The Caribbean region alone receives over 100 million visitors per year, most of whom are destined for the beaches and reefs.
61. Coral reefs function as natural, self-repairing, and self-sustaining breakwaters, protecting the often low-lying land behind them from the effects of storms and rising sea levels. The health and integrity of coral reefs are critical to maintaining tropical coastal zones and their cultural and heritage assets.
62. Despite their ecological and economic importance, coral reefs are in serious decline worldwide. They are threatened by numerous human actions that contribute to coral reef degradation, such as sediment, sewage, agriculture run-off and other pollution sources, mining, dredging of coastal areas, and coastal development. A strong correlation has been found between risk of degradation and coastal population density. The severe anthropogenic stresses from growing populations and their activities on the coastal zone are now coupled with die-offs due to coral diseases and epidemics affecting reef species. Over-fishing, blast fishing, fishing with poisons, and souvenir collecting for national and international trade are major agents of reef destruction. Rising carbon dioxide may reduce the rate of calcification and reef formation.
63. A further and increasing impact on coral reefs is the effect of rising sea surface temperatures linked to global climate change. This causes the phenomenon of coral bleaching – expulsion of symbiotic algae, leading often to the death of the corals themselves with consequent loss of the diverse communities dependent upon them. Coral reefs that are already under stress from other human-induced pressures such as pollution and sediment deposition appear to be most vulnerable to bleaching. Predictions of future sea surface temperatures indicate that bleaching will become increasingly widespread and

frequent. Recent results suggest that bleaching of corals by increased UV-B radiation may be adding to the effects of temperature.

64. Once corals have died, reefs are more vulnerable to physical break-up during storms, thus threatening their function in protecting coastal lands and their people from impacts of rising sea levels and storms. The massive worldwide coral bleaching in 1997-98 suggests that coral reefs may be signaling the first ecosystem-scale damage from human-induced global change. Recovery will depend upon reducing human pressures through sound management and upon whether bleaching events will recur with increased severity and frequency, reversing any coral reef regeneration.
65. As a result of these interacting problems, coral reefs have suffered a dramatic decline in recent years. About 11% of the world's reefs sites have been lost, 27% are under immediate threat, and another 31% are likely to decline in the next 10 - 30 years. At greatest risk are the reefs in the wider Indian Ocean; Southeast and East Asia; the Middle East, mainly in the Arabian-Persian Gulf; and the Caribbean-Atlantic region.
66. Coral reefs support multi-species fisheries. Protected areas are now often used as a tool in fisheries management. Some economically important species may spend part of their life cycle outside the boundaries of the designated area, which should be taken into account in management. On the other hand, fisheries management measures support not only sustainable fisheries but also biodiversity and other valuable characteristics of the site. Many reef fish species need regulatory frameworks beyond the Ramsar Convention to complement Ramsar site designation. These species need protection under complementary conservation frameworks and authorities.
67. In managing coral reefs, conservation needs must be considered along with the needs of local people who may depend on certain reefs for their livelihoods. Some areas are best managed using multiple-use and zoning approaches that can accommodate the needs of different stakeholders. Nested protection frameworks at coastal zone level are required, as opposed to using schemes based on the strict protection of just a few areas. Coastal coral reef areas are best managed within the context of Integrated Coastal Zone Management (ICZM) programmes.

Applying the Ramsar Criteria to coral reefs

68. Contracting Parties should consider, where appropriate, the listing of composite sites under Criterion 1 that include coral reefs and associated systems, in particular adjacent shallow reef flats, seagrass beds, and mangroves, which normally function as intricately linked ecosystems. The designated coral reef area should contain the greatest diversity of habitat types and successional stages possible, and also include the habitat types and successional stages of the associated systems.
69. Special attention should be given also to the listing of networks of sites rather than to individual reefs. Networks have more value than individual sites, contributing to the preservation of the integrity of whole seascapes.
70. Contracting Parties should pay special attention to the listing of coral reef areas that, because of their geographic location ("upstream-reefs"), are sources of pelagic larvae and ensure the seeding of large areas of reefs "downstream".

71. Reefs that buffer coastlines against storm damage, and so protect coastal populations and infrastructure, should also be considered for designation.
72. Consideration should be given to the listing of sites where there is a threat of degradation, and where listing can lead to comprehensive management actions that enhance maintenance of the ecological character of the coral reef.
73. An important consideration in the identification of coral reef sites for designation is the extent to which an area is unaffected by, and can be protected from, human-induced change that alters the quality of coastal waters, since the ecological character of the reefs will be maintained only if the water quality is preserved and coastal zones are appropriately managed.
74. In determining the boundaries of a coral reef site to be designated, Contracting Parties should take into account Article 2.1 of the Convention. Since the outer parts of many coral reef systems as defined in paragraph 53 and the middle of some lagoon systems extend to below six metres water depth, boundaries of coral reefs sites should include all such parts of the reef. Moreover, since coral reef ecosystems as defined in paragraph 53 extend beyond the boundaries of the reef structure, and activities in adjacent areas can harm them, adjacent waters should, as appropriate, be included in the site designation.
75. The size of a designated coral reef site should be appropriate to the geographic scale of the reef and the management approaches necessary to maintain its ecological character. Wherever possible, the area should be large enough to protect an integral, self-sustaining ecological entity. In the sea, habitats are rarely precisely restricted, and it should be noted that many marine species have large ranges and that ocean currents can carry genetic materials of sedentary species over great distances.
76. In addition, consideration should be given also to the listing of sites that:
 - a) support unusual geologic/biologic formations, and/or species of fauna and flora of particular aesthetic, historic or scientific interest;
 - b) have a history of documented long-term research and management by local and international institutions; and
 - c) can be used for the establishment of long-term monitoring programmes for the assessment of environmental change.
77. The importance of coral reefs for fish species should be recognized through the application of Criteria 7 and 8. In applying Criterion 7 it should be noted that the fish species richness of reefs varies regionally, for example from more than 2,000 species in the Philippines to about 200 - 300 species in the Caribbean. Simple species counts (species inventories) are not sufficient to assess the importance of a particular area, and assessments must take into account the characteristics of the fish fauna in each region. Although endemism in coral reef fish is not common, some islands and shoals may be effectively isolated, with fish populations becoming genetically distinct. Such reef systems should be afforded a priority for listing.

78. Sites that support species of special conservation concern, unique biological assemblages, and flagship or keystone species (such as elkhorn coral forests, sponge and sea fan assemblages), and which are in pristine condition, should be a high priority for designation.

"Wetlands: water, life, and culture"
8th Meeting of the Conference of the Contracting Parties
to the Convention on Wetlands (Ramsar, Iran, 1971)
Valencia, Spain, 18-26 November 2002

Resolution VIII.13

Enhancing the information on Wetlands of International Importance (Ramsar sites)

1. RECALLING that in Recommendation 4.7 the Contracting Parties established that the “data sheet developed for the description of Ramsar sites be used by Contracting Parties and the Bureau in presenting information for the Ramsar database, and as appropriate in other contexts”, and approved the Ramsar “Classification system for wetland type” to be used in describing sites being designated as Wetlands of International Importance;
2. ALSO RECALLING that the Contracting Parties, in Resolution 5.3, confirmed that a completed “Ramsar datasheet” and site map should be provided upon designation of a Wetland of International Importance (Ramsar site) for the Ramsar List, and that this was reaffirmed in Resolutions VI.13, VI.16, and VII.12;
3. FURTHER RECALLING that the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution VII.11) includes a long-term target to have included in the Ramsar List at least one suitable representative of each wetland type according to the Ramsar Classification System in each biogeographic region;
4. AWARE that in Resolution VI.13 the Contracting Parties resolved to give priority to providing updated maps and completed “Information Sheets on Ramsar Wetlands” (RISs) and to revise the data at least every six years;
5. RECALLING that the Contracting Parties adopted Criteria for Identifying Wetlands of International Importance through Recommendation 4.2 and supplied additional criteria based on fish through Resolution VI.2, and that substantially revised Criteria, together with detailed guidance for their application, were adopted by Resolution VII.11 in the *Strategic framework and guidelines for the future development of the List of Wetlands of International Importance*;
6. CONCERNED that the Contracting Parties are continuing to submit to the Ramsar Bureau RISs which do not adequately apply the Criteria for Identifying Wetlands of International Importance as adopted by Resolution VII.11, and CONCERNED AS WELL that information compiled by those submitting a Ramsar site for inclusion in the Ramsar List is often provided inconsistently in the different sections of the RIS;
7. AWARE that in Action 6.3.1 of Ramsar’s Strategic Plan 1997-2002 the Scientific and Technical Review Panel (STRP) of the Convention is requested to keep under review the criteria and guidelines for the identification and designation of Ramsar sites; and FURTHER AWARE that the STRP has recommended that a section be added to the RIS concerning biogeographic regionalisation in the application of Criteria 1, 2 and 3 for the

identification and designation of Wetlands of International Importance, and that the *Explanatory Note and Guidelines for completing the Information Sheet on Ramsar Wetlands* be revised and clarified, including the addition of guidance on the provision of suitable maps including in digital formats; and ALSO AWARE that this meeting has adopted Resolution VIII.21 concerning defining Ramsar site boundaries more accurately in Ramsar Information Sheets; and

8. CONSIDERING that the Wetlands of International Importance designated under the Ramsar Convention are being considered more and more by the international community as a significant component of the collective efforts to safeguard the environment and to make wise use of its resources, and that, consequently, there is an increasing interest in, and need for, ensuring access to more complete and accurate data about these sites;

THE CONFERENCE OF THE CONTRACTING PARTIES

9. APPROVES the revised Information Sheet on Ramsar Wetlands (RIS) and *Explanatory Note and Guidelines for completing the Information Sheet on Ramsar Wetlands (RIS)* annexed to this Resolution;
10. URGES all Contracting Parties preparing a RIS for the designation of a new site for the Ramsar List and for updating of the RIS for designated sites, in line with Resolution VI.13, to submit this information to the Ramsar Bureau in this revised format;
11. REQUESTS the Ramsar Bureau and Wetlands International, working with interested Contracting Parties, to develop protocols for the electronic submission of RISs, where this is possible and desirable, so as to facilitate the supply of data from the information systems of Contracting Parties to the Ramsar Sites Database;
12. REQUESTS the Bureau and Wetlands International to maintain the Ramsar Sites Database with the RIS data supplied by Contracting Parties; and to manage other relevant data on Ramsar sites, including that supplied by Contracting Parties in addition to the RIS, so that this data can be made publicly available, subject to consultation with the Contracting Party concerned;
13. FURTHER REQUESTS the Bureau and Wetlands International to continue the development of the Ramsar Sites Database so as to reflect the information provided in the RIS as revised by this Resolution, and linked to relevant supplementary data in line with paragraph 12 above, and to make arrangements for the Ramsar Sites Database to be accessible through the World Wide Web, including the inclusion of a regularly updated version of the Ramsar Sites Database for incorporation into the Ramsar Wetland Data Gateway developed by the Centre for International Earth Science Information Network (CIESIN);
14. INSTRUMENTS the STRP to provide further guidance on: (i) where the additional information called for in paragraphs 14-16 of Annex III to the RIS *Explanatory Notes and Guidelines* would be incorporated into the RIS; (ii) the value and feasibility of supplying digital mapping (called for in paragraphs 17-22 of Annex III); (iii) the compatibility of such data at a global scale; (iv) the use of such data by third parties; and (v) issues of data licensing, copyright, access and fees;

15. ALSO REQUESTS Wetlands International to continue to prepare site entries for the Ramsar Sites Directory, derived from information provided by Contracting Parties and relevant supplementary data in line with paragraph 12 above, to make these available through the World Wide Web, and to make available, resources permitting, an updated Ramsar Sites Directory to each meeting of the Conference of the Parties;
16. ENCOURAGES all those responsible for compiling an RIS to apply fully the guidance offered in the *Explanatory Note and Guidelines for completing the Information Sheet on Ramsar Wetlands (RIS)*, in order to ensure that the information is submitted correctly in each section of the RIS, and CALLS UPON Contracting Parties to verify that this has been done before submitting RISs to the Ramsar Bureau;
17. URGES Contracting Parties to prepare and supply suitable maps, following the additional guidance in the *Explanatory Note and Guidelines for completing the Information Sheet on Ramsar Wetlands (RIS)*, and taking note of Resolution VIII.21 concerning defining Ramsar site boundaries more accurately in Ramsar Information Sheets, and wherever possible to submit maps in an appropriate digital format;
18. REQUESTS the Ramsar Bureau and Wetlands International to make arrangements to hold digital maps as part of the Ramsar Sites Database, and to make available, as appropriate and taking account of copyright issues and national regulations, such maps for inclusion, *inter alia*, in the further development of the Web presentation of the Ramsar Sites Database by Wetlands International, the Ramsar Wetland Data Gateway maintained by CIESIN, and the Global Database of Protected Areas maintained by the World Conservation Monitoring Centre (UNEP-WCMC);
19. REQUESTS the STRP to examine the Ramsar Classification System of Wetland Type with a view to including additional types and, to facilitate this process, to consider allocating an open field in the Ramsar Information Sheet; and
20. FURTHER REQUESTS the STRP to review the multiple sources of information available on Ramsar sites including RISs, the Directory of Wetlands of International Importance, site management plans, and data that might be collected under other international instruments; and to review the needs for such information, their uses and users, and make recommendations to COP9 as to how the supply and international reporting of information on Ramsar Sites might be better harmonized to give possible efficiency and cost savings.

Annex

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:

FOR OFFICE USE ONLY.

2. Date this sheet was completed/updated:

DD MM YY

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Designation date

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Site Reference Number

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

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.

Please return to: **Ramsar Convention Bureau, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone: +41 22 999 0170 • Fax: +41 22 999 0169 • e-mail: ramsar@ramsar.org

Annex II

Explanatory Note and Guidelines for completing the *Information Sheet on Ramsar Wetlands (RIS)*

BACKGROUND AND CONTEXT

Recommendation 4.7 of the Conference of Contracting Parties established that the “data sheet developed for the description of Ramsar sites be used by Contracting Parties and the Bureau in presenting information for the Ramsar database, and as appropriate in other contexts”. The Recommendation listed the information categories covered by the “data sheet”, including the “reasons for inclusion” (the Ramsar Criteria) and the Ramsar “*Classification system for wetland type*”.

Resolution 5.3 reaffirmed that a completed “Ramsar datasheet” and site map should be provided upon designation of a Wetland of International Importance (hereafter referred to as a “Ramsar site”) for the List of Wetlands of International Importance (the Ramsar List). This was subsequently reiterated in Resolutions VI.13, VI.16, and VII.12. This datasheet, formally entitled the *Information Sheet on Ramsar Wetlands* and abbreviated “RIS”, provides a standardized format for recording information and data about the Ramsar site.

Resolution 5.3 also stressed that information concerning criteria for inclusion (on the Ramsar List), the functions and values (hydrological, biophysical, floral, faunal, social and cultural) of the site, and conservation measures taken or planned were particularly important categories of information; and it emphasized the importance of applying the Ramsar *Classification system for wetland type* when describing the wetland in the RIS.

Criteria for Identifying Wetlands of International Importance were first adopted in 1974 and refined by subsequent meetings of the Conference of the Parties. The form of the present Criteria was established by Recommendation 4.2 (1990), with additional criteria based upon fish adopted by Resolution VI.2. The Criteria were again substantively revised and, together with detailed guidance for their application, adopted by Resolution VII.11 as part of the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance*. These Criteria and guidelines are included as Annex II of this Explanatory Note.

The *Information Sheet on Ramsar Wetlands (RIS)* is completed and supplied to the Ramsar Bureau when a Ramsar site is designated by a Contracting Party. In recognition that the status of designated Ramsar sites can and does change, both in terms of their ecological character, the threats to this character, and the conservation management process and actions underway, Resolution VI.13 has urged Contracting Parties to revise the data provided in the RIS at least every six years.

The RISs and their accompanying maps are held by the Ramsar Bureau. The information provided by Contracting Parties in the RIS is used as the basis for entering data and information into the Ramsar Sites Database, managed on behalf of the Convention by Wetlands International under contract from the Ramsar Bureau. The Database is managed so as to provide an information service on Ramsar sites, including undertaking analysis and reporting to meetings of the Conference of the Parties on progress in implementing the Strategic Framework and Vision

for the List of Wetlands of International Importance (Resolution VII.11) and other Resolutions of the Conferences of the Parties.

The information provided by Contracting Parties in the RIS, including any supplementary information provided, and held in the Ramsar Sites Database is also used by Wetlands International to compile the Ramsar Sites Directory for each meeting of the Conference of the Parties. This Directory provides a publicly-accessible standardised summary of the features and conservation status of each designated Ramsar site, and is now also available on Wetlands International's Web site (<http://www.wetlands.org>).

GENERAL GUIDANCE

The RIS must be completed in one of the Convention's three working languages, namely English, French, or Spanish. The RIS and this accompanying *Explanatory Note and Guidelines* are available in each of the three working languages.

The information provided in the RIS should be clear and succinct, and the total length of a completed RIS should not normally exceed 12 pages.

In the case of a wetland which has been well-studied and well-documented, or which is the subject of special field investigations, far more information may be available than can be accommodated in the RIS. Additional information, such as taxonomic lists of species' status, management plans, copies of published papers or photocopied reports on the site, should be appended to the RIS and are treated as part of the official record of the site. Photographs (prints, transparencies or electronic images) of the wetland are also especially welcome. It is essential that the source providing any such additional information be noted.

Where the Ramsar site being designated is a very large and complex wetland system, or consists of a suite of separate sub-sites, two levels of approach may be advisable: a broad approach for the system as a whole, and a more detailed approach for each key locality or sub-site within the system. Thus for a particularly large wetland complex it may be appropriate to complete an overall RIS for the whole site and a series of separate RIS datasheets for each key area or sub-site within the complex.

Resolution VI.1 highlights the importance of clearly defining the ecological character of Ramsar sites as the basis for monitoring these wetlands in order to maintain their ecological character. Key features of the ecological character of the site which should be maintained should include those identified as the justification for designation under each Ramsar Criterion applied to the designation. Further guidance on defining and describing ecological character features is provided in the *New Guidelines for management planning for Ramsar sites and other wetlands* (Resolution VIII.14).

Where a management plan has been prepared for the site being designated, the information provided in the RIS should be consistent with the plan's description of ecological character features, the values and functions of the wetland, the factors affecting or likely to affect its character, values and functions, and the management planning process, including monitoring.

When a management plan is prepared as part of the management planning process for the site after it has been designated as a Ramsar site, the information in the RIS should be checked and, if necessary, a revised RIS should be completed and sent to the Ramsar Bureau.

The annex to Resolution VI.1 notes that there is a need to increase the value of the information collected for describing and assessing the ecological character of listed sites, and that emphasis should be given to:

- establishing a baseline by describing the functions, products and attributes of the site that give it benefits and values of international importance (necessary because the existing Ramsar Criteria do not cover the full range of wetland benefits and values which should be considered when assessing the possible impact of changes at a site) -sections 12, 14, 16, 17, 18, 19, 20 and 21 of the RIS apply;
- providing information on human-induced factors that have affected or could significantly affect the benefits and values of international importance - section 24 of the RIS applies;
- providing information on monitoring and survey methods in place (or planned) at the site - sections 25 and 26 of the RIS apply; and
- providing information on the natural variability and amplitude of seasonal and/or long-term “natural” changes (e.g., vegetation succession, episodic/catastrophic ecological events such as hurricanes) that have affected or could affect the ecological character of the site - sections 16 and 24 of the RIS apply.

Guidance on information to provide in each numbered section of the Information Sheet on Ramsar Wetlands (RIS)

1. **Name and address of the RIS compiler:** The full name, institution/agency, and address of the person who compiled the RIS, together with any telephone and fax numbers and e-mail address.
2. **Date:** The date on which the RIS was completed (or updated). Please use the *name* of the month, not its numerical equivalent. For example use 6 March [year] or March 6 [year] rather than 6/3/year or 3/6/year so as to avoid confusion arising from commonly used but differing formats for expressing dates.
3. **Country:** The official (short) version of the Contracting Party/country name.
4. **Name of the Ramsar site:** The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in brackets after the precise name. Ensure that the site name used is the same in this section and on the maps provided. This name will be used precisely as given when the site is added to the Ramsar List.
5. **Map of the Ramsar Site:** The most up-to-date available and suitable map of the wetland should be appended to the RIS (in hardcopy and, if possible, also in digital format). At least a hardcopy map is required for the inclusion of the site in the List of Wetlands of International Importance. Indicate whether or not a map accompanies the RIS by ticking the appropriate *yes* or *no* boxes. The map must clearly show the boundary of the designated Ramsar site. Annex III provides detailed guidance on the provision of suitable Ramsar site maps and other spatial data. A list of the maps supplied and any other relevant maps of the Ramsar site that are available should be included in a note annexed to the RIS.

6. **Geographical coordinates:** The geographical coordinates of the *approximate* centre of the site expressed in *degrees, minutes and seconds of latitude and longitude* (e.g. in the format: 01°24'15"S 104°16'01"E or 010°30'00"N 084°51'45"W). If relevant, specify the number of discrete units forming the site. If any disjunct units are situated at least 1.6 km* apart, the coordinates of the approximate centres of each of these units should be given separately (along with individual names or differentiating labels, e.g. "A, B, C" ..., etc.). Any discrete units so identified in an RIS should also be clearly labelled on the site map(s). A single site occupying less than 1,000 hectares needs only one central set of coordinates. Location information on larger areas should be supplemented by providing the coordinates of the southwest and northeast corners of the Ramsar site. (See also sections 5. Map and 9. Area).

*This is approximately equivalent to one (1) minute of latitude or longitude (at the equator, in the case of longitude).

If the site is shaped in such a way that the approximate centre point cannot be easily specified, or if such a point falls outside the site or within a very narrow portion of the site, please explain this with a note, and provide the coordinates for the approximate centre point of the largest part of the site.

7. **General Location:** A description of the general location of the wetland. This should include the name of the large administrative region(s) (i.e., state, province, territory, canton, etc.) within which the site lies (e.g., Alberta, Canada; Punjab, Pakistan; Andalucía, Spain) and the site's distance (as either a straight line distance or distance by road) and compass bearing from the nearest "provincial", "district" or other significant administrative centre, town, or city. The human population of the listed centre and its administrative regions (if possible, including at least two levels of administration/ jurisdiction) should also be stated.
8. **Elevation:** The average and/or minimum and maximum elevation of the wetland in metres above mean sea level. Clearly label each elevation provided, with e.g. "average", "maximum" or "minimum".
9. **Area:** The total area of the designated site, in hectares. If the areas of discrete site units are known, please also list each of these together with the names (or labels) used to identify and differentiate these units (see also section 5. Map).
10. **Overview:** A brief paragraph about the wetland, providing a 'word picture' of the type of wetland and its importance, its main physical and ecological character features, its most important values and functions, and any particularly interesting features. Note also the most significant wetland types, especially if they are the most dominant as identified in 17 b).
11. **Ramsar Criteria:** Circle or underline the code for each *Ramsar Criterion for identifying wetlands of international importance* that is being applied to the designation of the site. Refer to Annex II of these guidelines for the Criteria and the detailed guidance provided for their application established by Resolution VII.11.

Note that many sites qualify for designation under more than one Criterion: be thorough and precise in selecting all of the Criteria that apply. The specific reasons justifying the application of each Criterion selected should be provided in section 12. Justification of Criteria selected under section 11.

- 12. Justification for the application of each Criterion listed in 11. above:** For each Criterion selected under section 11. Ramsar criteria above, a specific individual explanation of how that Criterion applies to the site. This section of the RIS is central to the concept of “**international importance**”. The Criteria codes alone do not convey information on the specific way in which each Criterion applies to a particular site – therefore it is essential to provide sufficient precise description to explain and support each of the Ramsar Criteria codes selected. This text must not just restate the Criterion, but should provide the necessary details to describe the way in which a particular Criterion applies specifically at the site being designated. Refer to Annex II for the detailed guidance for the application of the Criteria (adopted by Resolution VII.11)

A number of points concerning the correct use of specific Criteria and the Guidelines for their application should be particularly taken into account when preparing the justification for the application of the Criteria selected for designation:

- i) The guidelines for the application of **Criteria 1 and 3** stress that these Criteria should be applied to a wetland in the context of the biogeographic region within which it occurs, but recognises that biogeographic regions can differ between wetland types. The biogeographical region context can also apply to certain reasons for the designation of threatened ecological communities under **Criterion 2**. The biogeographic region encompassing the Ramsar site and the biogeographic regionalisation scheme applied should be provided in section 13. Biogeography;
- ii) Concerning **Criterion 5** the guidelines indicate that the actual total number of waterbirds should be stated, and preferably, when available, the average total number from several recent years. It is not sufficient simply to restate the Criterion, i.e., that the site supports >20,000 waterbirds;
- iii) For justification of designation under **Criterion 6** it is particularly important to recognise that this Criterion must be applied to the regular occurrence of >1% of a biogeographic population of a species or subspecies of waterbird, and to recognise that in most cases the biogeographic range of waterbird populations is larger than the territory of one Contracting Party. For each population listed under Criterion 6 the name of the biogeographic population, as well as the number of birds of this population regularly occurring in the site, should be listed. Recommended 1% thresholds for the application of Criterion 6 are provided by Wetlands International’s publication *Waterbird Population Estimates 3rd Edition* (2002), which also provides a description of the biogeographic range of each population. Note that this Criterion should be applied only to those waterbird populations for which a 1% threshold is available. However, for populations of waterbird species in taxa not presently covered by *Waterbird Population Estimates 3rd Edition*, the guidelines indicate that this Criterion may be applied if a reliable population estimate and 1% threshold is available from another source, and that in such cases the information source must be clearly specified. It is not sufficient simply to restate the Criterion, that the site supports >1% of a population, nor is it a correct justification to list populations with

numbers in the site >1% of their *national* population, except when the population is endemic to that country.

- iv) For all or some applications of **Criteria 2, 3, 4, 5, 6, 7 and 8**, the name(s) of the species concerned (scientific name and vernacular name in English, French or Spanish) should be provided in the justification.
- v) The Guidelines for the application of **Criterion 7** concerning fish and shellfish diversity indicate that a species list alone is not sufficient justification for the use of this Criterion, and that other features of high diversity, including life-history stages, species interactions, and level of endemism are required for the application of this Criterion.

- 13. Biogeography:** The *biogeographic region* encompassing the Ramsar site and the *biogeographic regionalisation scheme* applied (with full reference citation) should be provided. Biogeographical specification is essential for the correct application of Criteria 1 and 3 and certain applications of Criterion 2 (see also sections 11. Ramsar Criteria and 12. Justification of Criteria). In this context the guidelines for the application of the Ramsar Criteria (see Annex II) define “bio(geographic) region” as “a scientifically rigorous determination of regions as established using biological and physical parameters such as climate, soil type, vegetation cover, etc.” Note that for non-island Contracting Parties, in many cases biogeographic regions will be transboundary in nature and will require collaboration between countries to establish the locations of representative, rare or unique examples of different wetland types. It is also recognised that the nature of biogeographic regionalization may differ between wetland types according to the nature of the parameters determining natural variation (see Annex II of this *Explanatory Note and Guidelines*).

There are a variety of different global and supranational/regional biogeographic schemes in use. No single scheme may be universally appropriate or acceptable and Contracting Parties are urged (in the annex to Resolution VII.11) to apply a regionalization scheme which they determine to be the most appropriate and scientifically rigorous approach available.

- 14. Physical features of the site:** A succinct description of the principal physical characteristics of the site covering the following features (where relevant):
- Geology and geomorphology (general features);
 - Soil type and chemistry range (Soil family name(s); indication of mineral vs. organic content; typical pH range of soil);
 - Sediment characteristics;
 - Origins (natural or artificial);
 - Hydrology (including seasonal water balance, inflow, infiltration and outflow, salt-water intrusion). Further detail, notably the hydrological values and functions of the site should be included in section 15. Hydrological values;
 - Water quality (typical physico-chemical characteristics);
 - Depth, fluctuations and permanence of water;
 - Tidal range and variations;
 - Downstream area (especially in the case of wetlands that are important in flood control);

- Climate – include here only the most significant regular climatic features, e.g., annual rainfall and average temperature range, distinct seasons, typical flooding and drought periods, and any other normal climatic factors affecting the wetland. Recent major or extreme climate events, e.g. flood, drought, hurricane, cyclone or other storm, atypical period of extreme temperatures, etc, that have had an adverse impact on the site should be detailed under section 24. Factors adversely affecting the site’s ecological character).
15. **Physical features of the catchment area:** A succinct characterisation of the catchment area, covering:
- surface area;
 - general geology and geomorphological features;
 - general soil types
 - general land use
 - climate (including characterisation of climate type);
16. **Hydrological values:** A description of the principal hydrological *values* of the wetland, for example, the ecosystem services that they provide to people. This may include, but not necessarily be limited to, its role in flood control, groundwater replenishment, shoreline stabilization, sediment & nutrient retention and export, climate change modification, and water purification and maintenance of water quality. Hydrology of the site (as opposed to its hydrological values and functions) should be covered under section 14. Physical features.
17. **Wetland Type:** In this section first list, by circling or underlining, the full range of wetland types occurring within the site, and then list the wetland types selected in order of their dominance (by area) starting with the wetland type with the largest area. The Ramsar Classification System for Wetland Type (see Annex I of this *Explanatory Note and Guidelines*) provides the description of what types of wetland are covered by each of the wetland type codes. Note that the wetland types are grouped in three major categories: marine-coastal, inland, and human-made wetlands, and that wetland types under two or more of these categories may be present within a Ramsar site, particularly if it is large.

Since some Marine/Coastal wetland types (e.g. Estuarine waters (type *F*) or Intertidal Forested Wetlands (type *I*)) can occur far inland from the coastline, and conversely Inland Wetlands types can occur close to the coastline, please also indicate with additional text in this section the general geographical location of the site relative to the coastline, as either inland or marine/coastal.

When listing the areal dominance of the wetland types, if possible provide the area or percentage of the total area of the designated site composed of each wetland type, although it is recognised that this may be difficult for large sites with a wide variety of wetland types. If the site is composed of more than one discrete unit and different wetland types or different dominance of types occur in different site units, also list the wetland type dominance for each unit (see also the guidance on sections 5. Map, 6. Geographical coordinates, and 9. Area).

If the designated site includes areas of non-wetland habitat, for example where such parts of a catchment are included, it is helpful here to also list the area, or percentage of the total area, of the site formed of these habitats.

18. **General ecological features:** A description of the main habitats and vegetation types, listing the dominant plant communities and species, and describing any zonation, seasonal variations, and long-term changes. Include a brief note on the native natural plant communities in adjacent areas, as well as the present plant communities (including cultivation) if different from the native vegetation. Information on specific food chains should be included in this section.
19. **Noteworthy flora:** Additional/supplemental information on plant species or communities for which the wetland is particularly important or significant should be provided here. **Do not duplicate** information that has already been provided in support of the site's international importance (in section 12. Justification of Criteria) or in section 18. General ecological features. Specify *why* each species or community listed is considered noteworthy (e.g., if it is an economically important species).

Endemic plant species, if they have not been considered towards the application of Criterion 3 at the site (e.g., if the *number* of endemic species was not considered "significant", following the guidance for that Criterion) can be listed here.

Also list here plant species that have been introduced (accidentally or intentionally) and/or those that are invasive. (Description of the impacts by invasive and/or alien species on the site should be provided in section 24. Factors adversely affecting the site's ecological character).

General species (occurrence) lists should not be included here or under other RIS sections, but such lists (properly labelled with site details) should be appended to the RIS when they are available.

20. **Noteworthy fauna:** Additional/supplemental information on animal species or communities for which the wetland is particularly important or significant should be provided here. **Do not duplicate** information that has already been provided in support of the site's international importance (in section 12. Justification of Criteria) or in section 18. General ecological features. Specify *why* each species or community listed is considered noteworthy (e.g., if it is an economically important species, or a "keystone" species, or a species associated with high wetland biodiversity values, e.g., turtles, crocodiles, otters, dolphins).

Endemic animal species that have not been considered towards the application of relevant Criteria at the site (e.g., because either the number of endemic species was not considered "significant" (Criterion 3) or the percentage of endemic fish did not reach the threshold *percentage* for the application of Criterion 7) should be listed in this section. Noteworthy zoogeographical features (relict populations, unusual range extensions, etc.) should be noted here.

Also list here animal species that have been introduced (accidentally or intentionally) and/or those that are invasive. (Description of the impacts by invasive and/or alien species on the site should be provided in section 24. Factors adversely affecting the site's

ecological character).

General species (occurrence) lists should not be included here or under other RIS sections, but such lists (properly labelled with site details) should be appended to the RIS when they are available.

21. **Social and cultural values:** An account of the site's principal social and economic values and functions and "wise use" features presented in Ramsar Handbooks 1 to 6 (e.g., tourism, outdoor recreation, education and scientific research, agricultural production, grazing, water supply, fisheries production) and cultural values and functions (e.g., archaeological sites, historical associations and/or religious significance including its significance to indigenous peoples). For more information see the Guiding principles for taking into account the cultural values of wetlands for the effective management of sites, annexed to Resolution VIII.19. Whenever possible, indicate which of these values are consistent with the maintenance of natural wetland processes and ecological character. Details about values derived from non-sustainable exploitation or which result in detrimental ecological changes should be described in section 24. Factors adversely affecting the site's ecological character.
22. **Land tenure/ownership:** Details of ownership/tenure both of the Ramsar site and of the areas surrounding the site. If possible, express different tenure/ownership categories as the percentage of the site to which each applies (e.g., "50% state-owned"). Explain any complex tenure arrangements or formulas. Also explain terms which have a special meaning in the country or region concerned. In the next section (23. Current land use), describe the linkages between the different land tenures described in this section and specific land uses.
23. **Current land (including water) use:** All of the principal human activities in (a) the Ramsar site itself and (b) in the surroundings and catchment. Give information on the human population in the area, with a description of the principal human activities and main forms of land and water use at the wetland, e.g., water supply for domestic and industrial use, irrigation, agriculture, livestock grazing, forestry, fishing, aquaculture and hunting. Also mention here activities and uses related to research, education and recreation/tourism at the site, but provide the details about each of these in sections 27, 28 and 29, respectively). Some indication of the relative importance, scale and trend of each land and water use should be given whenever possible. Make note if activities or uses are restricted to certain distinct parts of the site (e.g., in only part of a large site or in distinct zones or within particular wetland types). In (b), summarize land and water use in the areas surrounding the site and in its greater catchment that may directly or indirectly affect the status of the designated wetland, and any land uses in downstream areas likely to be affected by the wetland. For further reference on water use, see the *Guidelines for the allocation and management of water for maintaining the ecological functions of wetlands* adopted by Resolution VIII.1.
24. **Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:** The human and natural factors affecting the ecological character of the site, from both within and around the site (including the greater catchment, if relevant). These may include new or changing activities/uses, major development projects, etc., which have had, are having, or may have a detrimental effect on the natural ecological character of the

wetland. For all adverse and change factors reported, supply measurable/quantifiable information (when such data exist), as well as information on the scale, extent and trend of the change factor and its impact: this information should provide a basis for monitoring of ecological character of the site.

It is important to specify both the agent for the change (e.g., diversion of water, drainage, reclamation, pollution, over-grazing, excessive human disturbance, or excessive hunting and fishing, etc.) and the resulting change and its impact (e.g., siltation, erosion, fish mortality, change in vegetation structure, habitat fragmentation, disturbed reproduction of species, physical or ecological change due to climate change, etc.). It is also important to differentiate between factors coming from within the site itself and those factors emanating from outside the site, but which are having or may have an impact on the site. One should also distinguish between potential and existing adverse factors.

When reporting on pollution, special notice should be taken of toxic chemical pollutants and their sources. These should include industrial and agricultural-based chemical effluents and other emissions.

Natural events, including episodic catastrophes (e.g., an earthquake or volcanic eruption) or natural vegetative succession which have had, are having, or are likely to have an impact on the ecological character of the site should be detailed, in order to facilitate monitoring.

Provide information on the history of introductions (accidental or deliberate) of invasive and/or alien species identified in sections 19. Noteworthy flora and 20. Noteworthy fauna and the impacts of any invasions.

- 25. Conservation measures taken:** Details of any nationally relevant protected area status, international conservation designations (in addition to Ramsar site status), and, in the case of transboundary wetlands, bilateral or multilateral conservation measures which pertain to all or part of the site. If a reserve has been established, give the date of establishment and size of the protected area. If only a part of the wetland is included within a protected area, the area of wetland habitat that is protected should be noted. Also describe any other conservation measures taken at the site, such as restrictions on development, management practices beneficial to wildlife, closures of hunting, etc.

Describe here the management planning process, including any management plan, for the site, if this has been developed and is being implemented, including whether it has been officially approved. Cite the management plan document(s) in section 32. Bibliographic references, and whenever possible provide a copy of the management plan as supplementary information to the RIS.

Include information here on any monitoring schemes and survey methods in place at the site. Describe any application at the site of the Ramsar *Guidelines for the implementation of the wise use concept* (Recommendation 4.10), *Additional guidance for the implementation of the wise use concept* (Resolution 5.6), or any other instance of the application of other more recently advanced wise use guidelines (“wise use” is a central concept of the Ramsar Convention).

When updating the RIS for an existing Ramsar site, mention if the site is included on, or has been removed from, the Montreux Record and provide details of any Ramsar Advisory Missions that have been undertaken to the site.

Any application of integrated basin-scale/catchment management planning, or integrated coastal/marine zone management planning, involving or affecting the site should be noted. Provide a brief assessment of the effectiveness of protected area legislation or status of any protected areas whenever possible. Involvement of local communities and indigenous people in the participatory management of the site should also be described, in the context of the Ramsar guidelines on this process (Resolution VII.8).

- 26. Conservation measures proposed but not yet implemented:** Details of any conservation measures that have been proposed, or are in preparation, for the site, including any proposals for legislation, protection and management
- Summarize the history of any long-standing proposals which have not yet been implemented, and differentiate between those proposals which have already been officially submitted to the appropriate government authorities and those which have not as yet received formal endorsement, e.g., recommendations in published reports and resolutions from specialist meetings. Also mention any management plan which is in preparation but has not yet been completed, approved or implemented.
- 27. Current scientific research and facilities:** Describe here any current scientific research programmes, including monitoring, and projects taking place in the site, and provide information on any special facilities for research that were mentioned in section 23. Current land (including water) use.
- 28. Current conservation education activities related to communications, education and public awareness (CEPA) related to or benefiting the site:** Describe here any existing programmes, activities and facilities for communications, education and public awareness (CEPA), including training, that were mentioned in section 23. Current land (including water) use. Also provide comment on the educational potential of the wetland. For further information on CEPA issues and the Convention on Wetlands, see the Ramsar Web site at http://ramsar.org/outreach_index.htm.
- 29. Current recreation and tourism:** Provide details of any present use of the wetland for recreation and tourism that was mentioned in section 23. Current land (including water) use. Provide details of existing or planned visitor facilities or centres for recreation and tourism, and indicate the annual number of tourists visiting the site, if known. Also indicate the type of tourism and whether the tourism is seasonal.
- 30. Jurisdiction:** Provide the full name and address of the government authority with a) *territorial jurisdiction* over the wetland, e.g., the state, region or municipality; and b) the name of the authority with *functional jurisdiction* for conservation purposes, e.g., the Department of Environment or Department of Fisheries, etc.
- 31. Management authority:** Provide the name and address of the local office(s) of the agency(ies) or organization(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. Also provide details of any special or unique arrangements that pertain to the site's management.

32. **Bibliographical References:** A list of key technical references relevant to the wetland, including management plans, major scientific reports, and bibliographies. Please list any functional/active Web site addresses dedicated to the Ramsar site or which prominently feature the site (e.g., a Web site detailing all of a country's Ramsar sites), and include the date that the Web site was most recently updated. When a large body of published material is available about the site, only the most important references need be cited, with priority being given to recent literature containing extensive bibliographies. Reprints or copies of the most important literature, including a copy of any management plan, should be appended whenever possible.

Annex I

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**

Annex II

Criteria for Identifying Wetlands of International Importance

Adopted by the 7th Meeting of the Conference of the Contracting Parties (1999), superseding earlier Criteria adopted by the 4th and 6th Meetings of the COP (1990 and 1996), to guide implementation of Article 2.1 on designation of Ramsar sites.

Group A of the Criteria. Sites containing representative, rare or unique wetland types

Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

Group B of the Criteria. Sites of international importance for conserving biological diversity

Criteria based on species and ecological communities

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

Specific criteria based on waterbirds

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

Specific criteria based on fish

Criterion 7: A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

Annex III

Additional guidelines for the provision of maps and other spatial data for Ramsar Sites

The following guidance has drawn from the experience of Wetlands International and the Ramsar Bureau, the World Heritage Convention, and the UNEP-World Conservation Monitoring Centre, and also from the guidance provided in: World Heritage Convention. 1999. *Meeting to recommend digital and cartographic guidelines for World Heritage site nominations and state of conservation reports*. In: WHC-99/CONF.209/INF.19. Paris, 15 November 1999. WWW document: <http://www.unesco.org/whc/archive/99-209-inf19.pdf>

1. The provision of a suitable map or maps is a requirement under Article 2.1 of the Convention – it is fundamental to the process of designating a Wetland of International Importance (Ramsar site), and is an essential part of the information supplied in the *Information Sheet on Ramsar Wetlands (RIS)*. Clear mapped information about the site is also vital for its management.
2. This additional guidance recognises that Contracting Parties have increasing capacity to prepare and supply Ramsar site maps in digital formats (for example, through the use of electronic Geographical Information System (GIS) software) and to delineate site boundaries through the establishment of precise Global Positioning System (GPS) way-points.
3. Maps provided by a Contracting Party on designation of a Ramsar site should, as far as possible, and as high priority attributes:
 - i) be prepared to professional cartographic standards: maps not prepared to professional cartographic standards are problematic, since even moderately-opaque hand-drawn site boundaries or cross-hatching (e.g., to indicate zonation) often obscure other important map features. Although coloured annotations may appear distinguishable from the underlying map features on the map original, it is important to remember that most colours cannot be differentiated in any black and white photocopies. Such additional information should be provided on additional outline maps;
 - ii) show the Ramsar Site in its natural or modified environment and should be within the scale ranges specified below, depending upon the size of the site;
 - iii) clearly show the boundary of the Ramsar site, and distinguish this from any existing or proposed buffer zones;
 - iv) if the site is adjacent to, or now includes, a previously designated Ramsar site, the (former or active) boundaries of all of such sites should be shown, making clear the current status of all such previously designated areas;
 - v) include a key or legend that clearly identifies the boundary and each other category of feature shown on the map and relevant to the designation of the site; and

- vi) show the map's scale, an indication of geographical coordinates (latitude and longitude), an indication of compass bearing (north arrow) and, if possible, information on the map's projection. The map (or a companion map) should also show the position of several other features if feasible.
4. The most suitable map or set of maps for the designation of a Ramsar site will also clearly show the following, although provision of such information is of lower priority than the attributes listed in paragraph 3 above:
 - i) basic topographical information;
 - ii) the boundaries of relevant protected area designations and administrative boundaries (e.g., province, district, etc.);
 - iii) clearly delineated wetland and non-wetland parts of the site, and depiction of the wetland boundary with respect to the site's boundary, especially where the wetland extends beyond the site being designated. Where available, information on the distribution of the main wetland habitat types and key hydrological features is also useful. Where there is substantial seasonal variation in the extent of the wetland, separate maps showing the wetland extent in the wet and in the dry seasons are helpful;
 - iv) major landmarks (towns, roads, etc.); and
 - v) distribution of land uses in the same catchment.
 5. A general location map, showing the location of the Ramsar site within the territory of the Contracting Party, is also extremely useful.
 6. Maps should not be trimmed, so that data managers and Ramsar Bureau staff can consult any printed marginal notes or coordinate tick marks.
 7. A map having all the above attributes, including being at the appropriate scale (see guidance below), will facilitate digitization of maps for inclusion in a Geographic Information System (GIS) if the map (or maps) are supplied only in printed form (i.e., when no digital coordinates are available).
 8. To allow for subsequent digitization to be undertaken accurately and without distortion, the map should be an original print (two copies of which should be supplied) and not a photocopy,
 9. Additionally, to facilitate copying and presentation, it is extremely helpful to include two other versions of the principal map(s):
 - i) a colour photocopy of the map reduced to A4 size; and
 - ii) a TIFF file or other digital image file (e.g., JPEG, PDF).

Scale of maps

10. The optimum scale for a map depends on the size of the site depicted. The optimal scales of maps for different sizes of Ramsar sites are:

Size of site (ha)	Preferred (minimum) scale of map
> 1,000,000	1:1,000,000
100,000 to 1,000,000	1:500,000
50,000 to 100,000	1:250,000
25,000 to 50,000	1:100,000
10,000 to 25,000	1:50,000
1,000 to 10,000	1:25,000
< 1,000	1:5,000

11. In summary, the map should be of suitable scale to depict the detail necessary to clearly indicate the features of the site described in the RIS and, particularly, to show a precise boundary.
12. For moderate to large sites, it is often difficult to show sufficient detail on standard A4 (210mm x 297mm) or Letter-format (8.5" x 11") sheets at the desired scale, so generally a sheet larger than this format is more appropriate. However, whenever possible, each map should be no larger than A3 (420mm x 297 mm) as larger formats present difficulties for subsequent copying.
13. When the site is large or complex and/or when it is composed of several sub-sites with discrete boundaries, a larger-scale map of each section or sub-site should be provided, accompanied by a smaller scale location map of the whole site which indicates the location of each sector or sub-site relative to the others. All such maps should follow the scale guidance above.

Boundary description (text)

14. When detailed topographical maps are not available, a description of the boundaries of the site should be provided to accompany the map(s), indicating topographic and other legally defined national, regional, or international boundaries followed by the site boundaries, together with the relationship of the Ramsar site boundary with the boundaries of any other existing protected area designations which cover part or all of the Ramsar site.
15. If the precise position of the site boundary has been determined using a Global Positioning System (GPS), Contracting Parties are encouraged to include an electronic or paper file listing each GPS latitude/longitude way-point determined and identifying these on a printed copy of the site map.
16. Where a revision to the boundary of a designated Ramsar site is being made in accordance with Resolution VIII.21, *Defining Ramsar site boundaries more accurately in Ramsar Information Sheets*, under the following circumstances:
- the site boundary has been drawn incorrectly and there has been a genuine error; and/or
 - the site boundary does not accurately match the description of the boundary as defined in the RIS; and/or

- c) technology allows for a higher resolution and more accurate definition of the site boundary than was available at the time of Listing;

any change should be made clear in the revised RIS and/or on the site map, and the reasons for such refinement should be documented in the RIS.

Boundary description (digital)

17. Contracting Parties are encouraged, where possible, to submit geographic information about the Ramsar site in digital form, suitable for incorporation into a Geographic Information System (GIS).
18. For boundary and buffer zone delineation, data should be presented in vector form, prepared at the largest scale.
19. Other information, for example on wetland types and land uses, whether vector- or raster-based, should be submitted on one or more separate layers at the largest scale possible.
20. Metadata concerning the digitised formats should accompany the digital map(s) and should include digitising scale, projection system, attribute tables for each map layer, file format(s), and layering conventions used to prepare the data layers.
21. The primary native format files generated by the “Arc-Info” family of GIS (ESRI Corporation) or by “MapInfo” (Corporation) GIS enjoy increasingly wide use and can be imported and used by many GIS applications.
22. The Open GIS Consortium (OGC), a large group of GIS organizations including industry leaders, is addressing the issue of incompatible standards in geographic information technology. Progress on GIS standards, compatibility, and interoperability achieved under the OGC initiative should be noted and will be considered in the preparation of any updated advice on GIS file specifications for provision of digital maps for Ramsar sites.

Wetlands: water, life, and culture"
8th Meeting of the Conference of the Contracting Parties
to the Convention on Wetlands (Ramsar, Iran, 1971)
Valencia, Spain, 18-26 November 2002

Ramsar COP8 DOC. 31
Discussion Paper for
Technical Session 4 and COP8 – DR 10

Issues and options concerning the further elaboration of the
Ramsar criteria and guidelines for the future development of the
List of Wetlands of International Importance

Note: This discussion paper relates to the presentation and discussions in COP8 Technical Session 4 (Friday, 22 November 2002) concerning the implementation and future development of the Strategic Framework and Vision for the List of Wetlands of International Importance (Resolution VII.11). It also provides background information relevant to Technical Session 5 concerning cultural issues and wetlands.

Background

1. This COP8 discussion paper has been prepared in fulfilment of Decision SC26-14 of the 26th meeting of the Standing Committee (December 2001): “The Standing Committee determined to have a broad-ranging discussion on the role of cultural and socio-economic issues in the Convention, and on how to enhance that role, and requested the preparation of a discussion document to facilitate talks at COP8. Uganda was invited to work with the Bureau, the Chair of STRP and any other Party and IOP interested to contribute in the preparation of the discussion paper.”
2. This Decision was made in response to two related issues raised to the 26th meeting of the Standing Committee concerning the absence of Ramsar criteria based on socio-economic and cultural values for the identification and designation of Wetlands of International Importance in Resolution VII.11, *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance*:
 - a) a paper tabled by Uganda at the 26th meeting of the Standing Committee at the request of Contracting Parties at two of the Convention’s Subregional COP8 Meetings (South America, 10-12 September 2001, and Eastern and Southern Africa, 12-14 November 2001) concerning the lack of such criteria; and
 - b) a draft paper tabled by the Bureau at the request of the Secretariat of the Convention on Biological Diversity (CBD) concerning gaps and harmonization of the CBD and Ramsar Convention approaches to criteria and classification of inland water ecosystems. It is anticipated that a revised text of this paper will be considered by the 8th meeting of CBD’s Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) in March 2003 as part of its work in reviewing and elaborating the CBD’s programme of work on inland waters biodiversity (for which, under CBD Decision III/21, the Ramsar Convention acts as a lead implementation partner).

3. This paper reviews the issues and proposes options for three categories of potential additional Criteria for identification and designation of Ramsar sites and/or elaboration of the guidelines for their application:
 - i) socio-economic importance
 - ii) cultural importance
 - iii) certain other indicative features of the biological diversity of wetlands, as identified by the CBD's draft paper referred to in paragraph 2.b above.
4. The issue of the lack of a Criterion or Criteria based on the socio-economic and cultural importance of wetlands has been a matter of past debate by the Scientific and Technical Review Panel (STRP) and Standing Committee, notably during the 1996-1999 triennium. At that time those bodies concluded that socio-economic and cultural issues should be incorporated in the guidelines on the application of the existing Criteria and in the guidelines on management planning, but not as a Criterion for designation. The basis for this view was two-fold:
 - a) that Article 2.1 of the Convention text states that wetlands should be designated for the List "on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology", which was considered to exclude the possibility of designation on the basis of socio-economic and cultural values; and
 - b) that such a Criterion could allow room for abuse of the intent of designating a wetland as internationally important, for instance through claiming that a development causing damage to the ecological character of a wetland made the wetland internationally important because of the income and employment of people which it would generate.
5. This previous debate also recognised the importance of socio-economic and cultural issues as an element of the Convention's Wise Use concept (Article 3.1) and that their full incorporation into the management and sustainable use of wetlands, including Ramsar sites, should be mandatory.
6. In view of the increasing recognition under the Convention of the vital role that wetlands, and their values and functions, play in securing and maintaining the livelihoods of local communities and indigenous peoples and others (for example, the flood protection of other communities living downstream in a river basin), the importance of ensuring recognition of the full range of values and functions, including socio-economic and cultural values and functions, through the processes of the Convention has risen significantly. This recognition, that Ramsar sites and other wetlands fulfil a vitally important role for people, is for example incorporated more thoroughly into the *New Guidelines for management planning for Ramsar sites and other wetlands* being considered for adoption by COP8 (COP8 – DR 14).
7. The Convention text, written over 30 years ago, and negotiated by mostly developed countries, has nevertheless proved admirably flexible in allowing for its interpretation and application to evolve as the world's approach to environmental issues has itself evolved. This has permitted the Convention's approach to its implementation also to evolve in response. The issue of fully addressing such matters as socio-economic and cultural issues

has been identified by many countries in the developing world as critical to their priorities and the approach to securing the conservation and sustainable use of their wetlands.

8. Such a review is in line with Resolutions VI.2 and VI.3 and Operational Objective 6.3 of the Strategic Plan 1997-2002:

to keep general criteria under review to ensure that they reflect global wetland conservation priorities and values [Strategic Plan];

to take into account cultural values and or benefits derived from wetlands [and] to consider designating sites on the basis of important natural hydrological functions [Resolution VI.3].

9. It is also in accord with Objective 2.1 of the Strategic Framework for the Ramsar List:

To review the development of the Ramsar List and further refine the Criteria for identification and selection of Ramsar sites, as appropriate, to best promote conservation of biological diversity and wise use of wetlands at the local, subnational, national, supra-national/regional and international levels.

10. This paper reviews the current extent to which socio-economic and cultural issues are included in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution VII.11), and proposes for discussion a number of options for how recognition of such features could be strengthened in the identification and designation of Ramsar sites and their sustainable management.

Recognition of socio-economic and cultural issues in the current approach to Ramsar site designation (Resolution VII.11)

11. The Vision for the List recognises the importance of designating Ramsar sites which are important for their values and functions for people: “To develop and maintain an international network of wetlands which are important for the conservation of global biodiversity and for sustaining human life through the ecological and hydrological functions they perform.”

12. The Strategic Framework emphasises the link between Ramsar sites and the Wise Use principle, the values and functions of wetlands for people and Ramsar sites:

Contracting Parties also recognise that wetlands, through their ecological and hydrological functions, provide invaluable services, products and benefits enjoyed by, and sustaining human populations. Therefore, the Convention promotes practices that will ensure that all wetlands, and especially those designated for the Ramsar List, will continue to provide these functions and values for future generations as well as for the conservation of biological diversity.

13. Three of the existing eight Criteria in the Strategic Framework already include attention to elements of socio-economic importance. These are as follows:

Criterion 1. The guidelines for the application of this Criterion include giving priority to the designation of sites which play a substantial hydrological role in the natural functioning of a major river basin or coastal system. Specifically, in the guidelines this hydrological importance implies the major role of wetlands as including, *inter alia*:

- i) the natural control, amelioration or prevention of flooding;
- ii) seasonal retention for wetlands or other areas of conservation importance downstream;
- iii) the recharge of aquifers;
- iv) part of karst or underground hydrological or spring systems that supply major surface wetlands;
- v) a major natural floodplain system;
- vi) a major hydrological influence in the context of at least regional climate regulation; and
- vii) maintenance of high water quality standards.

Criterion 7. The Criterion itself states that “a wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.” However, the guidelines for the application of this Criterion currently provide no guidance on its application in relation to the wetland benefits and/or values of fish.

Criterion 8. In recognition of the importance of the role of inland and coastal wetlands in the life-cycles of fishes, the guidelines for the application of this Criterion make reference to their not interfering with the regulation of fisheries, in implicit recognition of the socio-economic and cultural importance of such wetlands.

14. Hence the principle of designating Ramsar sites for socio-economic importance has already been established through Contracting Parties’ adoption of Resolution VII.11 and its annexed Strategic Framework. However, the Criteria and their guidelines currently only address certain types of socio-economic importance, chiefly in relation to hydrological values and functions.
15. The eight Criteria and the guidelines for their application adopted through Resolution VII.11 do not currently include reference to the cultural importance of wetlands.

CBD’s indicative list of the components of biological diversity, and their coverage by Ramsar’s *Criteria for Identifying Wetlands of International Importance*

16. Article 7 of the text of the Convention on Biological Diversity, concerning identification and monitoring, states that each Contracting Party shall, as far as possible and as appropriate, identify components of biological diversity important for its conservation and sustainable use having regard to the indicative list of biodiversity components presented in Annex 1 of the Convention text. This is for a number of purposes including, *inter alia*, in-situ conservation and the sustainable use of components of biological diversity.

17. Annex 1 of the CBD Convention text lists the following components of biological diversity. The Ramsar Criteria which relate to each component are indicated.

<i>CBD components of biological diversity</i>	<i>Ramsar Criteria</i>
Ecosystems and habitats:	
Containing high diversity	Criteria 1, 2, 3, and 7
Containing large number of endemic or threatened species, or wilderness	Criteria 2, 5, 6, and 7
Required by migratory species	Criteria 2, 3, 4, 6, and 8
Of social, economic, cultural or scientific importance	Included, partially, in the Guidelines for the application of criteria 1, 7, and 8
Which are representative, unique or associated with key evolutionary or other biological processes	Criteria 1, 3, 4, 6, and 8
Species or communities which are:	
Threatened	Criterion 2
Wild relatives of domesticated or cultivated species of medicinal, agricultural or other economic value	Criterion 7, partially
Of social, scientific or cultural importance	Included, partially, in the Guidelines for the application of criteria 3 and 7
Of importance for research into the conservation and sustainable use of biological diversity, such as indicator species	Criterion 4, partially
Described genomes and genes of social, scientific or economic importance	Criteria 6 and 7, partially

18. Thus the CBD Secretariat's draft paper, to be considered by SBSTTA8 and to which the Ramsar Bureau is contributing, indicates that one or more of the current eight Ramsar Criteria cover most of the CBD's indicative list of components of biological diversity.
19. However, the CBD's analysis indicates that, to achieve a more comprehensive coverage of components of biological diversity through the designation of Ramsar sites, there is a need to consider the development of additional Criteria, including quantitative criteria, and/or to elaborate the guidelines for existing Criteria, for the following features:
- i) wetlands supporting wild relatives of domesticated or cultivated species;
 - ii) wetlands that support species or communities and genomes or genes of economic, social, scientific or cultural importance;
 - iii) wetlands supporting species or communities that are important for research into the conservation and sustainable use of biological diversity including indicators of ecosystem health and integrity; and
 - iv) wetlands that support important populations of taxonomic groups with wetland-dependent species, including *inter alia*, amphibians.

20. The CBD's paper also notes that socio-economic factors are in general the main drivers of wetland loss and degradation and therefore must be of central concern to wise use, and it recognises that the Ramsar Wise Use concept provides a basis for developing criteria and/or guidance for the identification and designation of wetlands which are of socio-economic importance.
21. It is anticipated that CBD's SBSTTA8 (March 2003) may recommend to the CBD's 7th meeting of the Conference of the Parties (2004) that it consider requesting the Ramsar Convention to review ways and means of developing the Ramsar Criteria and/or their accompanying guidelines so as to fully cover the indicative list of components of biological diversity, with a view to further harmonising the mechanisms for implementation of the Ramsar Convention and CBD by Contracting Parties.

Article 2.2 of the Ramsar Convention and socio-economic and cultural Criteria

22. Article 2.2 of the Convention states that "wetlands should be selected for the List on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology".
23. Previous discussion has focused on whether term "ecology" can and should be interpreted as capable of accommodating a Criterion or Criteria based on the socio-economic and cultural functions and values of wetlands.
24. There would appear to be two justifications for such an interpretation:
 - a) that selection for the List is based on their contribution to global biological diversity and for sustaining human life, in line with the Vision for the List, recognising that their contribution to such sustenance of human life is necessarily derived from, *inter alia*, their socio-economic and cultural functions and values; and/or
 - b) that the term "ecology" be interpreted to include human ecology, in line with current and increasing recognition of the essential and close relationship between people and biodiversity. Support for this interpretation comes from the description of human ecology (*New Encyclopaedia Britannica*, 15th edition) as:

[people's] collective interaction with [their] environment.

Influenced by the work of biologists on the interaction of organisms within their environments, social scientists undertook to study human groups in a similar way. Thus, ecology in the social sciences is the study of the ways in which the social structure adapts to the quality of natural resources and to the existence of other human groups. When this study is limited to the development and variation of cultural properties, it is called cultural ecology. Human ecology views the biological, environmental, demographic, and technical conditions of the life of any people as an interrelated series of determinants of form and function in human culture and social systems. It recognizes that group behaviour is dependent upon resources and associated skills and upon a body of

emotionally charged beliefs; these together give rise to a system of social structures.

25. Thus, inclusion of human ecology in the definition of ecology recognises both socio-economic and cultural features of ecosystems.

<p>Opportunities and options for incorporating socio-economic, cultural and other features into Ramsar site designation</p>
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Interpretation of “ecology” in Article 2.2 of the Convention

26. There are two options, each with consequences for how such matters could be addressed through the Strategic Framework. These are:
- A) *Consider that “ecology” under the Convention excludes consideration of “human ecology” and the recognition of the values and functions, and goods and services, that wetlands provide for people.***
27. This approach would imply that a change to the Convention text would be needed before any identification and designation of Ramsar sites would be possible for their values and functions. Previous experience indicates that any such change to the Convention text could take many years to come into force, and this would ignore the urgent need identified by many Contracting Parties, particularly in the developing world, to have available a full range of tools and mechanisms for the wise use of wetlands, including Ramsar sites, that would recognise the vital importance of wetlands for people, including their food and water security, as well as the wetlands’ biodiversity importance.
28. Adopting this approach would also disregard the fact that certain socio-economic features, notably in relation to hydrological values and functions of socio-economic importance, are already recognised in the Criteria and guidelines for Ramsar site designation, and that the Vision for the List, adopted by Contracting Parties through Resolution VII.11, is explicit in recognising the importance of designating a Ramsar sites network “for sustaining human life through the ecological and hydrological functions they perform”.
29. Such an approach would also disregard the recognition by the Convention on Biological Diversity that the indicative components of biological diversity include socio-economic and cultural features of ecosystems (see above).
30. Under this approach, inclusion of cultural, socio-economic and other important features of Ramsar sites would need to be through their recognition in the Information Sheet on Ramsar Wetlands (RIS) as the basis for management planning for designated sites, in line with the *New guidelines for management planning for Ramsar sites and other wetlands* being considered by COP8 (COP8 – DR 14).
- B) *Consider that Article 2.2 of the Convention includes human ecology and the values and functions which wetland ecosystems provide for people.***
31. This approach would allow for a more coherent and consistent development of the Criteria and guidelines for the designation of Ramsar sites, and would reflect the increasing

understanding in many parts of the world of the vital links between people and biodiversity as the fundamental basis for securing the sustainable use of wetlands, including Ramsar sites.

32. This interpretation would also permit a response to the recognition of such features as key components of biological diversity (*sensu* CBD) and so allow for the preparation of clearer guidance to Contracting Parties on recognising and incorporating such features into Ramsar site designation, in line with the ecosystem approach embodied in the Wise Use concept.
33. This would also permit the Ramsar Convention to respond to the need for harmonisation of guidance on identification of internationally important wetlands between Ramsar and the CBD, in accordance with the role of the Ramsar Convention as a lead implementing partner of CBD on wetlands (CBD Decision III/21).
34. Using this approach, several possibilities exist for incorporating these additional elements into Ramsar site selection and designation. These are further outlined below.

Socio-economic importance

35. Concerns have been expressed in past Convention debate about the consequences of developing a separate Criterion or Criteria for Ramsar site designation on socio-economic importance. This reflects concern that such a Criterion could lead to designation of sites in the network which would not have any biodiversity features of international importance; and that such sites designated only for certain features of socio-economic importance could be highly degraded wetlands used solely, for example, for industrial purposes or where unsustainable exploitation of the wetland resources are occurring (for example, excessive water abstraction leading to degradation of the ecological character of the wetland).
36. These concerns are legitimate but should not prevent the Convention from further developing its Criteria in line with current requirements, particularly in developing countries, and also in line with the provisions of CBD and the outcomes of the World Summit on Sustainable Development. These concerns should be addressed by establishing the necessary safeguards, so that any Criteria based on socio-economic values are not abused and/or used in a way that violates the basic principles and the spirit of the Ramsar Convention. A key test for the inclusion of sites in the List for such socio-economic values and functions could be that any exploitation of such values and functions is sustainable or perhaps that designation of the Ramsar site will lead to such sustainable use.
37. These developments would address a number of the indicative components of biological diversity identified by the CBD as being not yet fully covered by the current Ramsar Criteria and guidelines.
38. Concerning the socio-economic features of wetland values and functions which should be taken into consideration, it would be appropriate to use as a basis the indicative list of wetland values and functions derived from Annex III of CBD's impact assessment guidelines, which are being considered by COP8 for adoption (COP8 – DR 9), and which have been incorporated into Ramsar's *New guidelines for management planning for Ramsar sites*

and other wetlands (COP8 – DR 14). These are included for reference in Annex I of this Discussion Paper.

39. In addition, since the principle of identifying features of socio-economic importance in the identification and designation of Ramsar sites has already been established in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution VII.11), it would be necessary to further review and revise the guidelines for the application of the existing Criteria, so as to recognise such features of socio-economic importance of the wetland's values and functions more thoroughly.
40. Expanded guidelines covering socio-economic importance, provided that the proposed sites also respond to at least one of the other criteria, will be particularly important and relevant to the full application of Criterion 1 of the current Strategic Framework concerning representative, rare or unique wetland types.

Cultural importance

41. The World Heritage Convention recognizes sites for their cultural values for inscription in the World Heritage List when these are of exceptional importance, representing an asset of the common patrimony of humanity. Thus, a wetland could be included in the World Heritage List if it has exceptional cultural values, but there are many wetlands which have a great cultural significant for local communities, without necessarily qualifying for World Heritage listing.
42. The importance of cultural aspects of wetlands is recognised in the draft Resolution and guiding principles on this topic being considered by COP8 (COP8 – DR 19), which requests the Scientific and Technical Review Panel to prepare criteria and methods for the development of appropriate policies and management actions in relation to cultural aspects of wetlands.
43. This discussion paper has mentioned that cultural aspects of wetlands are not addressed in the current Criteria, though they are increasingly being understood to be an emerging and important element of the conservation and wise use of Ramsar sites and other wetlands.
44. Therefore it is appropriate to consider development of a Criterion or Criteria to cover identification of internationally important cultural features of wetlands. Such work could be undertaken by the STRP as part of that called for in COP8 – DR 19.
45. This addition of a cultural Criterion would also lead to improved coverage of the CBD's indicative components of biological diversity in relation to wetlands *sensu* Ramsar.
46. Such a Criterion or Criteria could use as its basis the indicative list of cultural features of wetlands included in COP8 – DR 14 concerning cultural features and management planning.
47. The criterion should reflect the international importance of particular wetlands due to their cultural features. To this end, it may be appropriate to review the guidance of the World Heritage Convention on this matter. As a starting point it may be appropriate to recognise that any such cultural feature should be specifically linked to, and derived from, the wetland concerned. The feature should to be of critical importance to the maintenance of

the national or local cultural diversity, which in turn would constitute a powerful tool for the conservation and wise use of biodiversity and ecosystems.

CBD's components of biological diversity

48. Whilst the above approaches would address a number of the components of biological diversity identified as not being adequately covered by the current Ramsar Criteria, certain other components would additionally need to be addressed, as stated in paragraph 19 above.
49. It may be possible to address at least some of those features through use of the existing Criteria but with elaboration of the guidelines for their application, but some features might require the development of an additional Criterion.

Conclusions

50. There is a case for recognizing the importance of Wetlands of International Importance for their socio-economic, cultural and certain other biodiversity features in the designation of Ramsar sites. This would reflect appropriately both the intent of the Vision for the List adopted by COP7 and the approach to the wise use of wetlands now considered necessary in the delivery of sustainable use of biological diversity, especially in the developing world.
51. This development would more clearly align the Ramsar Criteria with CBD provisions and would respond to the spirit and results of the World Summit on Sustainable Development, the paramount concern of which was the eradication of poverty based upon the three pillars of sustainable development: economic, social, and environmental.
52. Since the principle of using certain socio-economic features in Ramsar site designation has already been employed by the Convention, it seems likely that the current interpretation of the Convention implicitly interprets the term "ecology" in Article 2.2 to embrace the concept of human ecology as well. It is recommended that the STRP be requested to review and elaborate the existing Criteria and guidelines so as to reflect the full range of values and functions of socio-economic importance provided by wetlands.
53. As cultural features of wetlands are being increasingly recognised by Contracting Parties as of significant importance, but current Criteria and guidelines do not incorporate such cultural issues, it would be appropriate, in line with COP8 – DR 19, to request the STRP, working with other relevant experts and organizations, to develop an additional Criterion or Criteria covering the cultural importance of wetlands.
54. So as to improve the harmonised delivery by Contracting Parties to Ramsar and the CBD, in the spirit of the CBD/Ramsar Joint Work Plan, it would also be appropriate to request the STRP to review ways and means of developing further Criteria and/or the elaboration of existing Criteria and guidelines in order to cover the entire range of CBD's indicative components of biological diversity with the network of designated Ramsar sites, taking into account the work being done on this matter by CBD's SBSTTA8 and the outcomes of CBD's COP7.
55. As part of its work envisaged in COP8 – DR 7 concerning gaps and harmonization of Ramsar guidance on ecological character, inventory, assessment and monitoring, the STRP

should recommend revisions to the Information Sheet on Ramsar Wetlands (RIS) so as to incorporate these additional ecological, socio-economic, and cultural features, including their values and functions. This would then form a sound basis for addressing such matters through the management planning process recommended in COP8 – DR 14.

56. Reviewing and updating the Wise Use principle (to reflect more fully current attitudes and the role of the Ramsar site network as a powerful demonstration of wise use, the ecosystem approach, and sustainability) will be important for ensuring that the full range of wetland values and functions are reflected throughout the process of site identification, designation, management, and monitoring.

Annex I

Indicative list of wetland values and functions for the evaluation of socio-economic features of wetlands for management planning

(included in COP8 – DR 14, derived from Annex III of CBD's *Guidelines for incorporating biodiversity related issues into environmental impact assessment legislation and/or processes in strategic environmental assessment* (COP8 DR 9))

Production functions

Timber production
 Firewood production
 Production of harvestable grasses (construction & artisanal use)
 Naturally produced fodder & manure
 Harvestable peat
 Secondary (minor) products
 Harvestable bush meat (food)
 Fish & shellfish productivity
 Drinking water supply
 Supply of water for irrigation and industry
 Water supply for hydroelectricity
 Supply of surface water for other landscapes
 Supply of ground water for other landscapes
 Crop productivity
 Tree plantations productivity
 Managed forest productivity
 Rangeland /livestock productivity
 Aquaculture productivity (freshwater)
 Mariculture productivity (brackish/saltwater)

Carrying functions – suitability for:

Constructions
 Indigenous settlement
 Rural settlement
 urban settlement
 industry
 infrastructure
 transport infrastructure
 shipping / navigation
 road transport
 rail transport
 air transport
 power distribution
 use of pipelines
 leisure and tourism activities

Processing and regulation functions

Decomposition of organic material (land based)
 Natural desalinisation of soils
 Development / prevention of acid sulphate soils
 Biological control mechanisms
 Seasonal cleansing of soils
 Soil water storage capacity
 Coastal protection against floods
 Coastal stabilisation (against accretion / erosion)
 Soil protection
 Water filtering
 Dilution of pollutants
 Discharge of pollutants
 Bio-chemical/physical purification of water
 Storage for pollutants
 Flow regulation for flood control
 River base flow regulation
 Water storage capacity
 Ground water recharge capacity
 Regulation of water balance
 Sedimentation / retention capacity
 Protection against water erosion
 Protection against wave action
 Prevention of saline groundwater intrusion
 Prevention of saline surface-water intrusion
 Transmission of diseases
 Carbon sequestration
 Maintenance of pollinator services