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“Healthy wetlands, healthy people”

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**The Ramsar Sites Information Service (RSIS): progress, developments and
tools for Contracting Parties supporting Ramsar site designation**

This Information Paper has been prepared by Wetlands International for the Ramsar Secretariat

1) Background

1. The identification, designation and maintenance of the ecological character of Wetlands of International Importance (Ramsar sites) is one of the three main ‘pillars’ of Ramsar Convention implementation. Through the efforts of the Convention’s Contracting Parties, as at 22 October 2008 the Ramsar List of Wetlands of International Importance includes 1812 wetland sites, totalling 165 million hectares, making Ramsar sites by far the largest network of globally recognised sites of international biodiversity importance.
2. Maintaining accessible and up-to-date information on the Ramsar site network is important for a number of Ramsar Convention purposes and processes, outlined below. Through a long-standing contractual arrangement with the Ramsar Secretariat the Ramsar Sites Information Service (RSIS, on <http://ramsar.wetlands.org>) is maintained and developed by Wetlands International, working closely with the Ramsar Secretariat. This work forms part of the long-term commitment of Wetlands International to supporting implementation of the Ramsar Convention through its technical capacity, acting as one of the Convention’s International Organisation Partners (IOPs).
3. The RSIS includes the online searchable Ramsar Sites Database on all Ramsar sites, and in the last few years has been further significantly expanded and developed to provide a range of additional tools and services for accessing information about designated Ramsar sites, and to assist Contracting Parties with their identification of further wetlands qualifying for such designation.
4. This information paper draws attention to several major RSIS developments which have been implemented during the 2005-2008 triennium and which have been designed to increase the utility and ease of access to data and information in the RSIS, notably:
 - i) a major redevelopment of the RSIS Web site;
 - ii) increasing access to downloadable Ramsar site boundaries;
 - iii) providing access to Ramsar site information through the Google Earth platform;and

- iv) providing access to an increasing number of tools and analyses designed to directly assist and support Contracting Parties in identifying gaps in Ramsar site coverage and in identifying and prioritise wetlands for future designation as Ramsar sites, in their implementation of the *Strategic Framework for the development of the List on Wetlands of International Importance*.
5. Contracting Parties and others who have not recently done so are strongly encouraged to visit the new RSIS Web site to see at first hand the services and tools it now provided in support of site designations.
- 2) Purposes of the Ramsar Sites Information Service (RSIS)**
6. The Ramsar Sites Information Service delivers on six general purposes and functions of the Convention's handling of data and information provided by Contracting Parties in their designation of Wetlands of International Importance, and the accessibility of this data and information through the Web. These are as follows:
- i) **Supporting reporting obligations in the Convention text.** The Ramsar Secretariat has reporting obligations to Contracting Parties at each COP under Article 8 of the Convention and under COP decisions, notably on the designation status and Ramsar Information Sheet updates, reporting on Articles 3.2 and 2.5/4.2 matters, and in providing global and regional implementation report analyses to Contracting Parties at COP.
 - ii) **Supporting priority setting and decision taking in the context of the Convention.** The Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance and COP decisions expect Parties to develop a strategic approach to designating a coherent and comprehensive national and international network of Ramsar sites. The RSIS and its database permits assessment and gap analyses of current coverage of wetland types and other wetland-related biodiversity features, summary and indicator analyses, and assessments in relation to other conservation actions and features.
 - iii) **Increasing access to information on Wetlands of International Importance.** The Ramsar Sites Database and the RSIS Web presentation provides the structure for the filing and location information, an information source and library function, and links to other Ramsar site-relevant information, including publications, maps and images.
 - iv) **Promoting scientific and technical cooperation.** The database and its linked information provides a valuable data source for those reviewing and researching wetland issues, particularly those related to protected areas and important sites. The RSIS is being sought after and used by an increasing number of other organisations and processes.
 - v) **Helping to ensure that Ramsar sites are well recognised in other international fora.** The RSIS provides the tools to provide key information on, and full recognition of, Ramsar sites into other protected areas processes and for a, notably those with which the Convention has memoranda of cooperation and joint work plans or other collaborative work, such as the World Heritage Convention,

UNESCO Man and the Biosphere Programme (and its Biosphere Reserves), IUCN-WCPA, GTOS and UNEP-WCMC – including the provision of Ramsar site information to the World Database on Protected Areas (WDPA).

- vi) **Supporting communications, education and public awareness.** The publicly-accessible Web-based RSIS forms an important component of the Convention's CEPA delivery, in ensuring that full and up-to-date information on each designated Ramsar site is widely available so as to secure wide public and institutional recognition of this key pillar of the implementation of the Convention by its Parties.

3) Recent developments

3.1 The RSIS Web site

7. During 2008 a major redesign and redevelopment of the RSIS Web site was completed. The redesign is intended to provide clearer information and help to anyone seeking information on Ramsar sites, through a restructuring and the provision of additional explanatory texts and guidance as to how to use the different components of the RSIS site. These are accessible through a redeveloped Web site front page on <http://ramsar.wetlands.org> (see Figure 1).
8. The new Web site is now organised through three main sections: the Ramsar Sites Database, GIS & Maps, and Tools for Parties, each with a number of menu options for accessing different parts of the data and information.

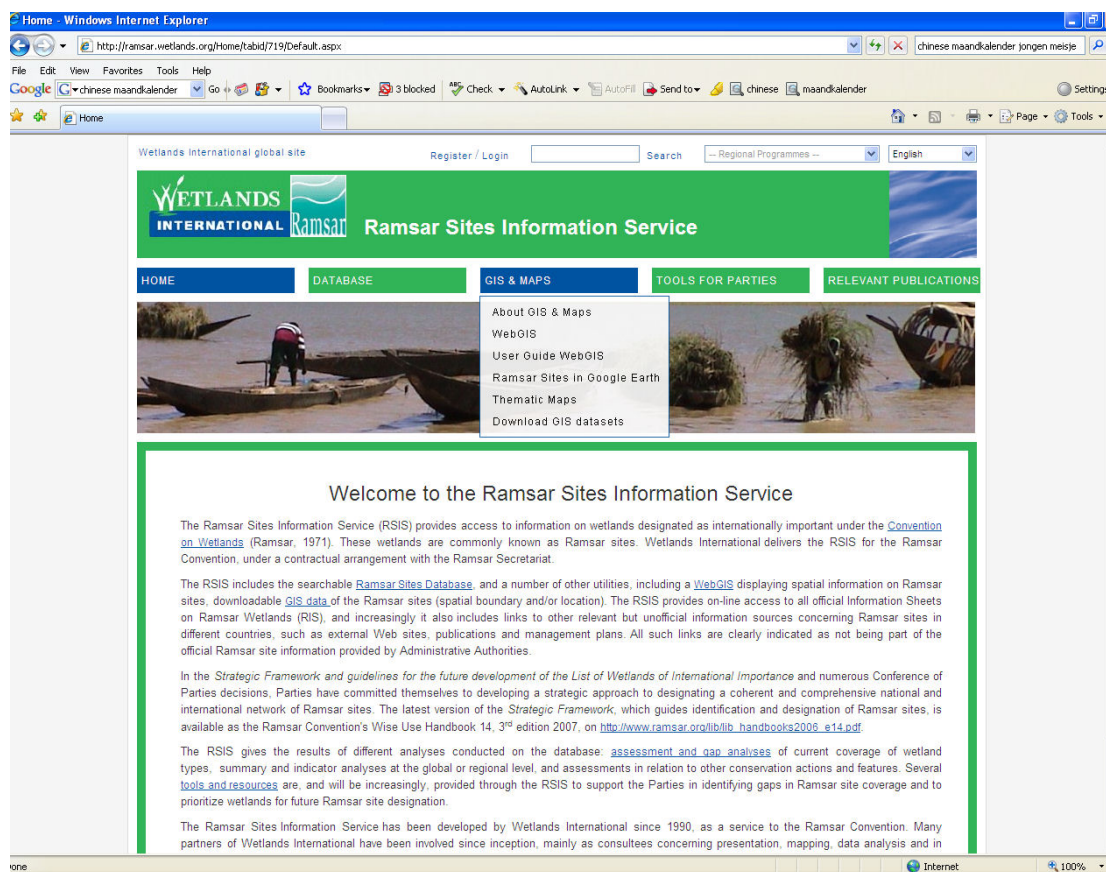


Figure 1 New frontpage of the Ramsar Sites Information Service on <http://ramsar.wetlands.org>

3.2 The Ramsar Sites Database

9. The Ramsar Sites Database is a searchable database, fully accessible through the Internet. It supports a password-protected data entry system and a reporting system for public use. The data included in the database is derived (in standard coded form) from the largely textual information provided by Contracting Parties in their Information Sheets on Ramsar Wetlands (RIS), their National Reports to COP, and/or from Administrative Authority correspondence provided by Contracting Parties.
10. The reporting system of the Ramsar Sites Database includes two search facility options:
 - i) a *quick search facility* to select Ramsar sites by country, site name or site number; and
 - ii) an *advanced search facility* which allows a user to search for Ramsar sites by any combination of data fields in the database, such as wetland type, land use, and/or threats.
10. Once called up, the available information on the subset of Ramsar sites selected can now be viewed and reported in several different ways:
 - i) *Site Overview* provides an overview of all information included in the database on the selected Ramsar sites. All official Ramsar site Information Sheets (RIS) supplied by Contracting Parties are accessible from here, as now also are the short summary “Annotated List” site descriptions prepared and maintained by the Ramsar Secretariat.
 - ii) For each site included in the database a link to the WebGIS mapping system is provided which will zoom to site level, showing the centre coordinate and the boundary of the site (where this has been made available - see also the section on GIS & Maps). The WebGIS gives access to other available products for the site, including the official Ramsar site map supplied by Contracting Parties as part of the RIS (if available in digital format), and also links to other relevant but unofficial information sources concerning Ramsar sites, such as external Web sites, publications and management plans. All such links are clearly indicated as not being part of the official Ramsar site information provided by the Administrative Authorities.
 - iii) All database information for the Ramsar sites selected can also be exported as a Microsoft Excel spreadsheet, for further analysis and use.

The GIS data, as well as the site information included in the database, can be downloaded for further use.

3.3 GIS & Maps

11. The “GIS & Maps” section of the RSIS Web site provides thematic maps and an interactive WebGIS system displaying spatial information on Ramsar sites.

12. The WebGIS is an Internet-based map server that hosts a world base map and additional map layers including the point locations of all Ramsar sites. Official boundaries of Ramsar sites are also displayed, if available. The map can be zoomed to regional, country and site level and links are provided to additional products such as the official Ramsar site map and/or management plan if any such material is available in digital format. At site level there is also a link back to the Ramsar Sites Database.
13. Through joint work between the Ramsar Secretariat, the European Environment Agency, and Wetlands International, an increasing number of digital site boundaries for European Ramsar sites have now been made available by Contracting Parties and are now viewable through the RSIS's WebGIS. Efforts will continue with Contracting Parties globally to provide such access to Ramsar site boundaries for all countries – since lately the great majority of new Ramsar site maps have been prepared using GIS technology.
14. Contracting Parties are urged to help by providing to the Ramsar Secretariat and WI these digital boundary datasets for all sites for which they exist. The boundary data should be presented in vector form, preferably in ESRI format files (ArcView, ArcGIS) or any other format easy convertible into ArcGIS. The GIS dataset should be accompanied with the metadata including the projection/coordinate system used.
15. A recently added facility for Ramsar site boundaries is that the digital boundary 'shape-files' are now available for download, following completion of a simple user registration process. This service is designed to assist and support those undertaking spatial analyses of Ramsar sites in relation to other spatial datasets and responds to an increasing number of requests from users for access to this data.
16. Ramsar site locations are also now viewable in Google Earth (see Figure 2). It is envisaged that the RSIS will soon use the Google Earth platform as its main tool for the spatial display of Ramsar site information, replacing the lower resolution WebGIS tool. Trials are underway to provide an overlay of the Ramsar site boundaries and maps in addition to central point locations for sites (see Figures 3 and 4) to have the current WebGIS replaced by Google Earth.

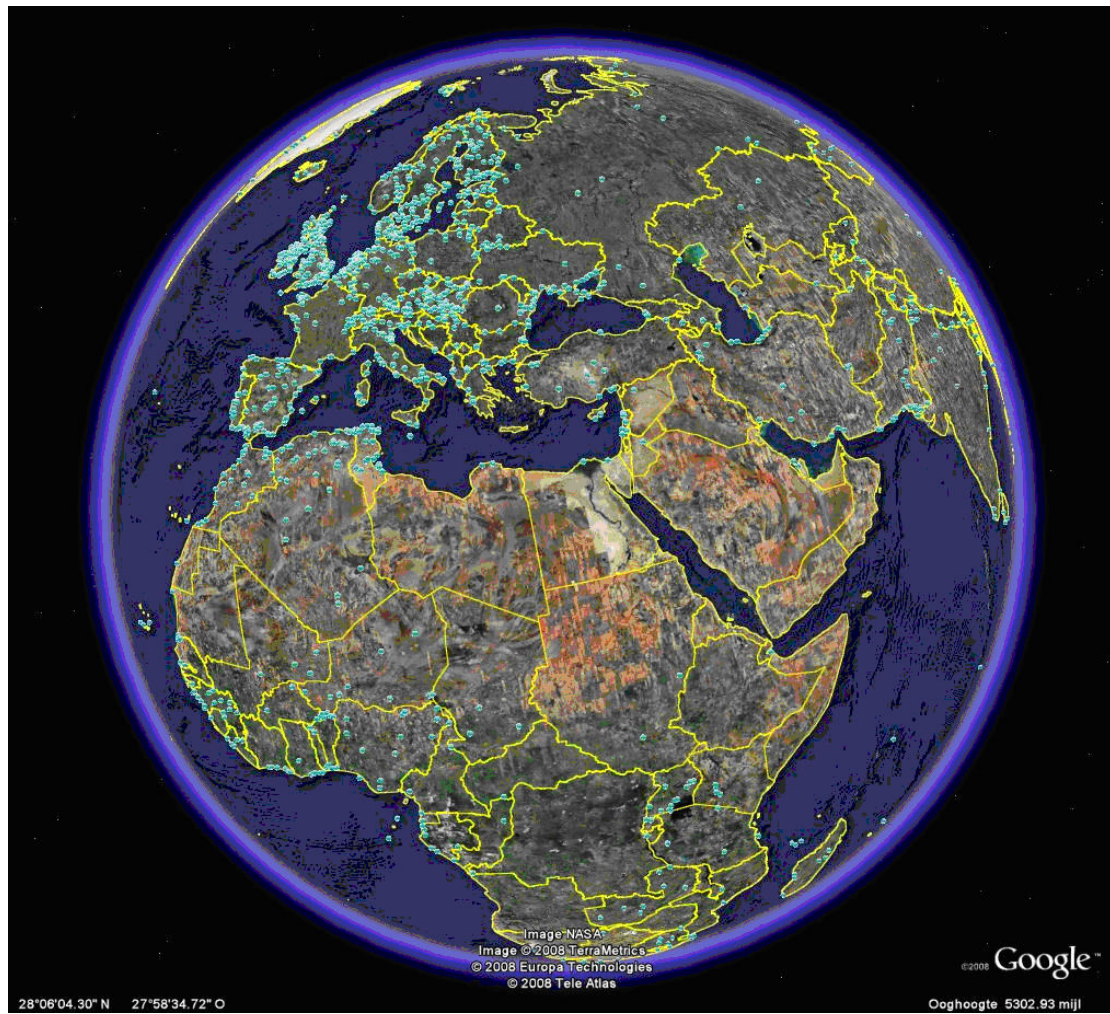


Figure 2. Ramsar sites displayed in Google Earth. Site centre locations show as pale blue dots.

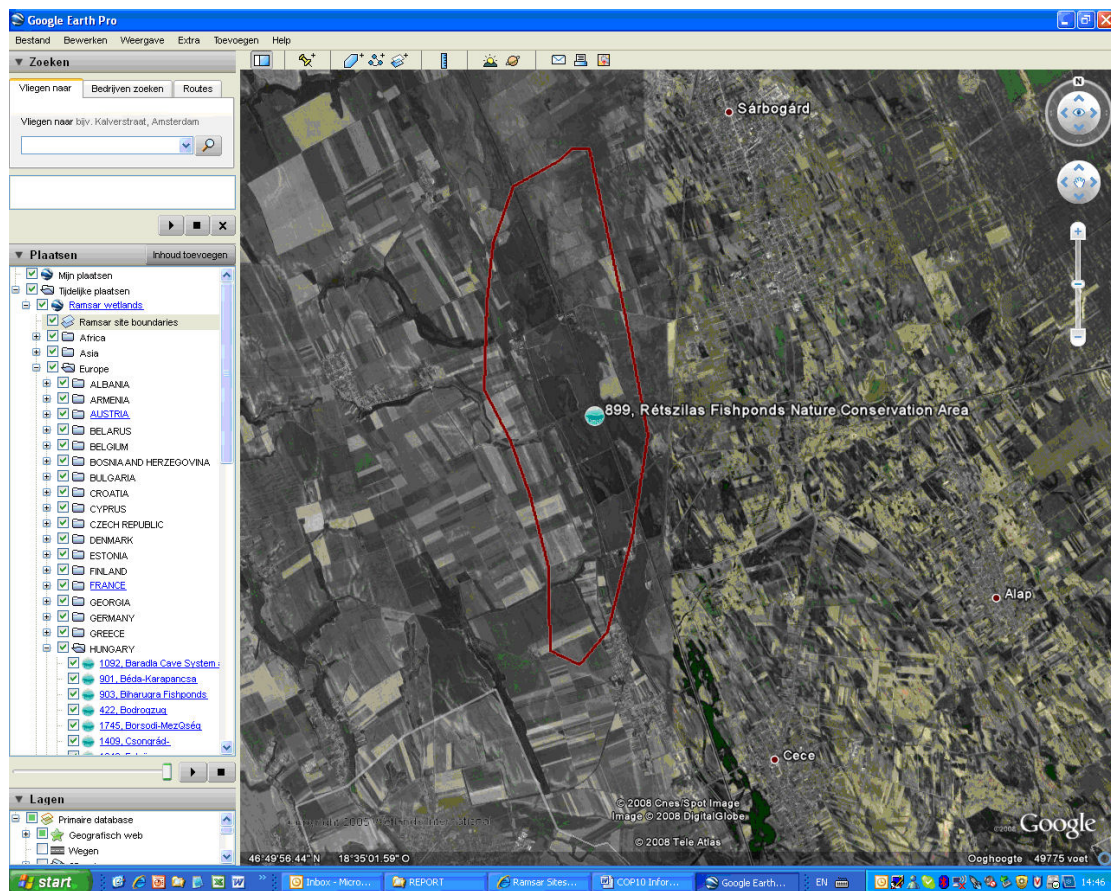


Figure 3. A Ramsar site boundary displayed in Google Earth. The boundary is shown as a red line, and the centre grid reference provided in the official RIS as a pale blue dot.

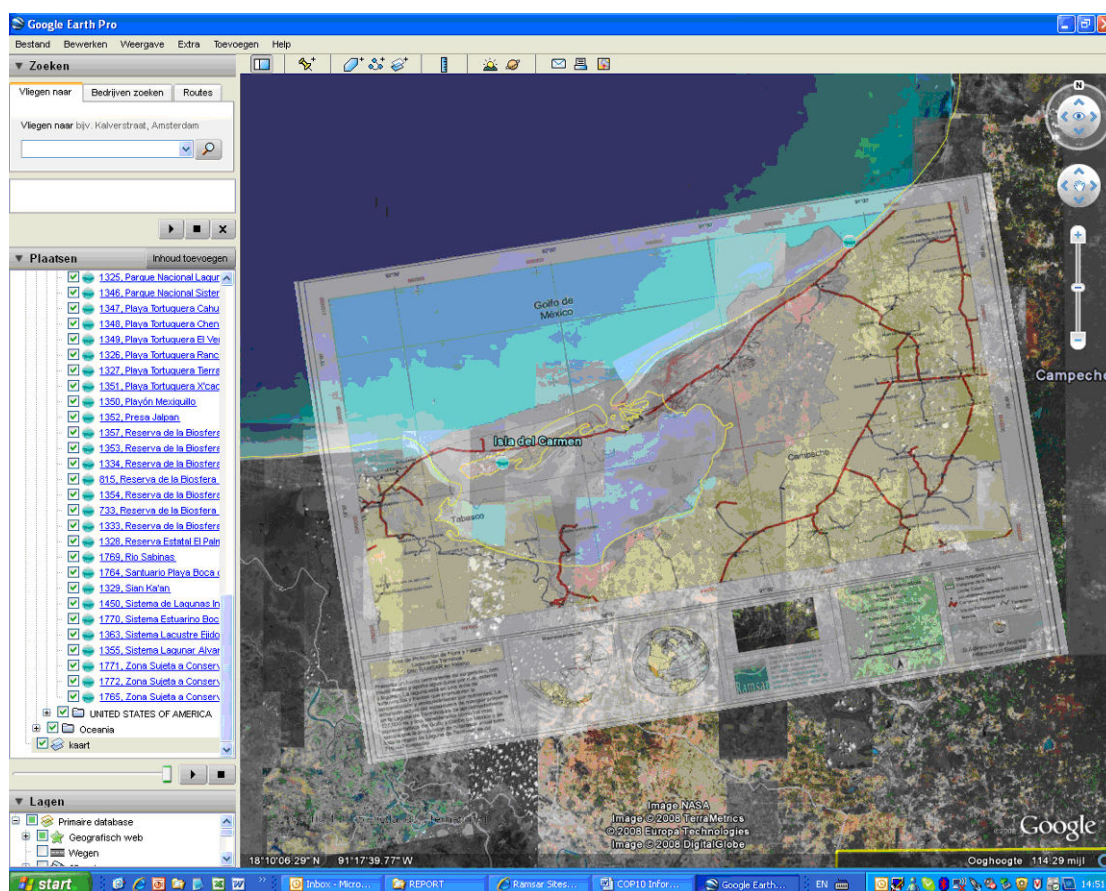


Figure 4. A Ramsar site map (as supplied in the official RIS) displayed in Google Earth.

17. This section of the RSIS Web site also provides access to a number of regularly updated thematic maps and graphs for different features of Ramsar sites, such as the distribution of Ramsar sites with different wetland types, derived from the information held in the Ramsar Sites Database.

3.4 Tools and assessments for Parties for Ramsar site designations

18. A rearrangement during 2007 of the procedures for handling Ramsar site Information Sheets (RISs) and site information database entry, and the respective roles in this work of the Ramsar Secretariat and WI, has since made it possible to free up more of Wetlands International's capacity to focus on a long-recognised need for the RSIS to provide tools and assessments to more directly support Contracting Parties' identification of gaps in Ramsar site coverage and priorities for future designations.
19. This work has now been initiated within the new RSIS Web site (as the "Tools for Parties" part of the site), and it will be developed progressively as further tools and assessments become available. This part of the site already provides a 'one-stop shop' with links to a range of already published or accessible material, not only from Wetlands International but also from the work of other Ramsar International Organisation Partners, the work of the STRP, and that of other collaborators.

20. The “Tools for Parties” part of the RSIS already provides access to a range of wetland inventory tools and materials, including the 1999 WI/Ramsar Global Review of Wetland Inventory (GRoWI), the Pan-European Wetland Inventory (PEWI), and the Asian wetland Inventory (AWI), as well as to newly downloadable versions of the series of “Wetland Directories” published for Asia, Middle East, Africa, Oceania and the Neotropics in the 1990s, which still provide some of the most comprehensive sources of information on the important wetlands in each region.
21. Links are also provided to other assessments which support the identification of potential Ramsar sites under different Ramsar site designation Criteria, such as BirdLife International’s *Important Bird Areas (IBAs) and potential Ramsar sites* assessments, currently available for Africa, Asia and Europe, and Wetlands International’s *Waterbird Populations Estimates*, which provides the key source for Contracting Parties in their application of Ramsar site designation Criterion 6 concerning 1% of biogeographic populations of waterbirds. Links are also provided to other relevant external data sources, such as the Globwetland Information System, the World Bird Database, the World Database on Protected Areas, and the IUCN Red List of Threatened Species.
22. A number of other gap analyses for Ramsar site coverage are currently underway by Wetlands International and through work commissioned by the Ramsar STRP, looking particularly at coverage of Ramsar sites designated under Ramsar site designation Criterion 1 for different wetland types in relation to global biogeographic regionalisation schemes and the global distribution of different types of wetland, since the guidance in the *Strategic Framework* for Ramsar sites designation for such sites expects that sites will be selected in relation to biogeographic regions.
23. Three examples are briefly provided here to demonstrate the approach and its use of the datasets available in the Ramsar Sites Database, and to show its potential to provide gap analyses and assistance to Parties in future designations. Further information on these and other similar assessments will be made accessible through this section of the Web site.
24. First, initial work assessing the coverage and distribution of coastal designated Ramsar sites has been undertaken by the International Water Management Institute (IWMI) for the STRP as part of the development of the Marine Ecosystems of the World (MEOW) biogeographic regionalisation scheme, specifically as a test to establish the utility of such a scheme to the future application of the Ramsar Convention in Ramsar site designations (see also COP10 DR20). This initial assessment was published in the scientific literature in 2007, and a more detailed analysis is in preparation for publication as a *Ramsar Technical Report*. This initial assessment concluded that “The Ramsar network is extensive, but it is dominated by sites in the temperate North Atlantic and shows a striking paucity of sites in, for example, the eastern Indo-Pacific and the Southern Ocean. At finer hierarchical resolution, further gaps can be identified: [...] 52% of MEOW’s defined ecoregions [have a Ramsar site within them], leaving some 112 ecoregions with no Ramsar representation. These gaps are widespread, including four ecoregions in the temperate North Atlantic.”
25. Second, Wetlands International have undertaken an initial assessment of the extent to which peatlands as a wetland type are geographically covered in Ramsar site designations under Criterion 1 in relation to the global distribution of peatlands (see Figure 5), again revealing some apparently major gaps in geographically consistent coverage.

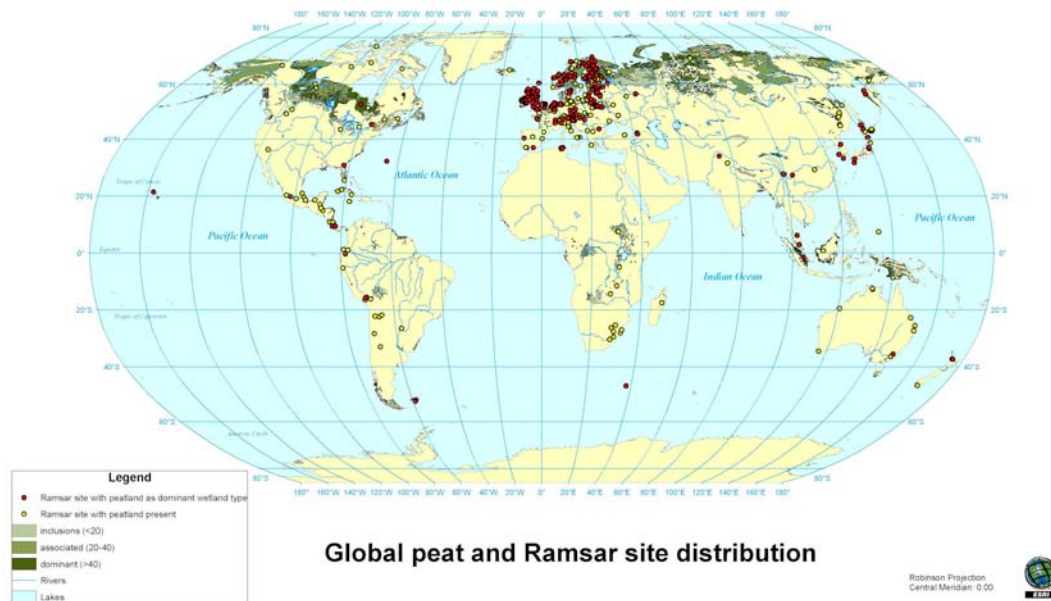


Figure 5. Global distribution of peatlands and Ramsar sites with peatlands as the dominant wetland type.
(Sources: Ramsar sites Database, 2008; Global Peatland Initiative, 2002)

26. Third, and looking more closely at peatlands in Asia, a second Wetlands International analysis has considered the distribution of peatlands (inland wetlands classified under non-forested peatlands (U) and forested peatlands (Xp) in the Ramsar Classification System for Wetland Type), overall and the distribution of Ramsar sites designated for peatlands in relation to another recently published biogeographic regionalisation scheme for inland wetlands, the Freshwater Ecoregions of the World (FEOW) (Figure 6). This assessment again illustrates gaps in Ramsar site coverage in this region: 56 of the freshwater ecoregions in Asia contain peatland areas, but as yet Ramsar 16 Ramsar sites containing peatlands have been designated in 16 (29%) of these ecoregions.

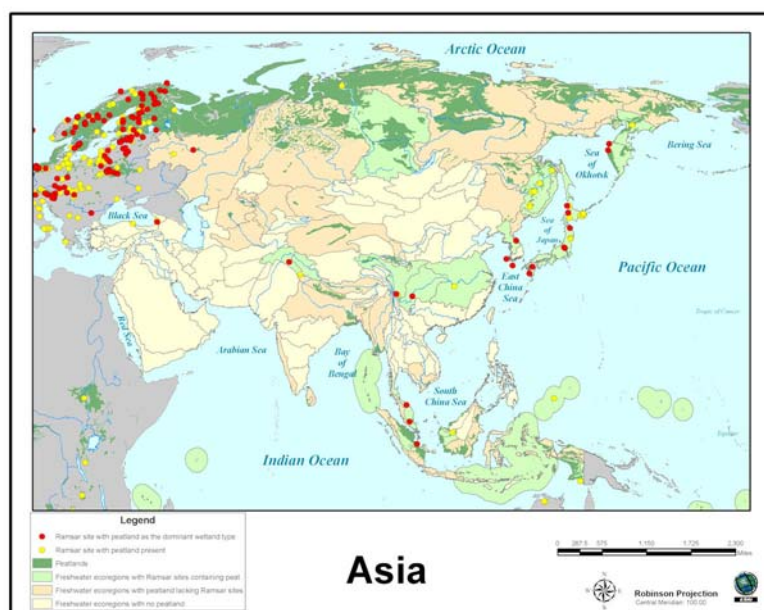


Figure 6. Representation of Ramsar sites with peatland within the Asian freshwater (FEOW) ecoregions

4. Future developments and opportunities

27. The Ramsar Sites Information Service has had the potential for some time to increase the provision of advice in support of the implementation of the *Strategic Framework and Guidelines for the future development of the List of Wetlands of International Importance*. Therefore the RSIS will increasingly develop towards an important support service for Contracting Parties in the implementation of the *Strategic Framework*, specifically in identifying and prioritising future Ramsar site designations. At present the assessments and gap analyses focus primarily on wetland types (Criterion 1) in relation to biogeographic representation. In future, the assessments should also focus on other Criteria, especially criteria which are somehow underrepresented such as the fish Criteria (7 & 8) and the more recent Criterion 9 on wetland-dependent non-avian animal species.
28. As outlined above, it is anticipated that future development priorities will include focusing on acquiring digital Ramsar site boundaries for all possible sites, and the serving up of such information, including the official Ramsar site maps supplied with RISs, as overlays on Google Earth. Tests have also been undertaken in collaboration with the STRP about developing a 'photo gallery' for Ramsar sites as part of the RSIS.
29. A long-standing task related to Ramsar site data and information has been the establishment and maintenance of a standard record of changes to the ecological character of Ramsar sites reported under Article 3.2 of the Convention. As is reflected in the STRP's proposals in COP10 DR15 concerning describing the ecological character of wetlands, the proposed ecological character description tool includes a mechanism for using this to report under Article 3.2. Following COP10 adoption of Resolutions, work will be undertaken to establish how best to incorporate such ecological character descriptions prepared by Parties and Article 3.2 reports into the RSIS.

30. During the 2005-2008 triennium the STRP initiated a major task for an overall data and information needs review of the Convention. The outputs of the Panel's initial work on this task is reflected in COP10 DR14 *A Framework for Ramsar data and information needs*. A further major component of this task concerns Ramsar site data and information needs and the handling of such data and information, including through the RSIS. This is proposed in COP10 DR10 *Future implementation of the scientific and technical aspects of the Convention* as a High Priority task for the 2009-2012 cycle, and its findings will help guide the future directions and development of the RSIS.