

In summary, global wetland inventory is incomplete and inadequate for most management purposes and is often not available in an electronic format. By acting upon these recommendations, the global community can implement an effective inventory program as the basis for wise use of the global wetland resource. We believe this is an exciting opportunity to address the problems and inadequacies of the current global inventory resource, and take up the challenge of improving wetland inventory and management into the 21st century.

The complete report of this review will be presented in both hardcopy and electronic format at the 7th Conference of Contracting Parties to the Ramsar Wetlands Convention in Costa Rica, May 1999.

Abbie Spiers

Despite inventory efforts to date, global wetland inventory is incomplete and inadequate for most management purposes. With land use and water resource challenges ahead of us in the 21st century, wetlands will come under increasing pressure. The recommendations of this review must be implemented now to help safeguard their future (AG Spiers).



Global wetland inventory is often not available in an electronic format, even though this would greatly enhance our capacity to regularly update inventory information.

We recommend that future inventory efforts include publication in electronic form, and that the meta-data, at least, are published on the World Wide Web to improve accessibility (AG Spiers).



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notes

THE STATUS OF GLOBAL WETLAND INVENTORY

Wetlands International and **eriss** recently undertook a project to review the global extent of wetland resources and identify priorities for wetland inventory. This was done under contract to the Bureau of the Ramsar Convention on Wetlands, with financial support from the government of the United Kingdom. Our project team consisted of people based in Australia, Canada, Malaysia and the Netherlands, supported by an international steering committee and colleagues worldwide.

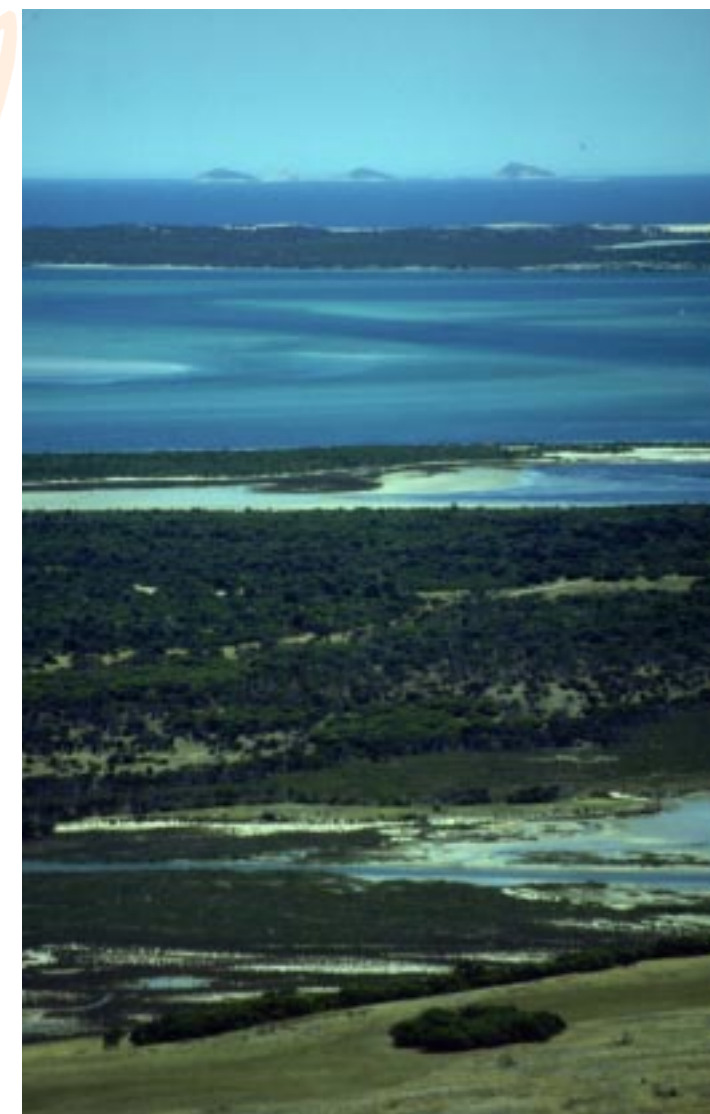
Aims

The aims of the review were to:

- provide an overview of international, regional and national wetland inventories as well as other general information on global wetland resources
- outline steps to quantify the extent of global wetland resources and to provide a baseline for measuring trends in wetland conservation or loss
- identify priorities for establishing, updating or extending wetland inventories so as to improve the accuracy with which the global wetland resource can be quantified and described in future.

Methodology

For this review we adopted the broad definition of wetlands recognised by the Ramsar Convention. This includes coastal and marine wetlands such as mangroves, coastal flats, seagrass beds and coral reefs, as well as swamps, marshes, floodplains, rivers, lakes and peatlands. Artificial wetlands such as aquaculture ponds, salt pans, reservoirs and rice paddies are also included.



The Ramsar Convention recognises the great diversity of wetland types across the globe. Our review adopted the Ramsar definition of wetlands, which includes marine and coastal wetlands, inland wetlands, and 'man-made' or artificial wetlands (AG Spiers).



National wetland inventories can contain much information including the benefits and values of wetlands, allowing improved management and wise use of wetlands. This fish cage in Cambodia demonstrates the vital role of wetlands in providing food, water and a livelihood for people worldwide (CM Finlayson).

and Western Europe. Regional reviews were based primarily on national inventories, although sub-national reviews were used where these covered a large area or a major administrative zone. We also conducted a review of continental and global scale inventory sources to supplement the regional reviews.

We undertook the review in three distinct steps:

- identification of existing inventory sources
- compilation of all material in standardised databases
- assessment of the adequacy of this material, using consistent analyses.

To do this, we developed three information handling tools:

- *Wetland inventory assessment sheet* – to permit rapid compilation and assessment of information on each wetland inventory.
- *Wetland inventory assessment database* – to store the information compiled from the wetland inventory assessment sheet.
- *Bibliographic database* – to compile details of inventory information, and to allow later searching.

Using these tools, we reviewed the extent of inventory information available for each of the seven Ramsar regions – Africa, Asia, Eastern Europe, Neotropics, North America, Oceania

Wetland degradation and loss is occurring throughout the world, largely due to agriculture, urban and industrial development. These development pressures are intensifying in tropical and sub-tropical regions, where quantitative studies of wetland loss and degradation are urgently needed. Marina developments such as this one in northern Australia can degrade or destroy coastal wetlands (C Turley).



We compiled the reports, databases and bibliographies from each of the reviews in a final report which is available in both hardcopy and electronic (CD-ROM) format.

Results

Our review provides information on wetland inventory at global, regional and national scales. This includes the following:

- gaps in inventory coverage and the capability of the existing inventory resource to provide a basis for monitoring the status of wetlands
- extent and distribution of wetlands

- rate and extent of wetland loss and degradation
- land tenure and management
- wetland benefits and values
- extent and adequacy of updating programs
- standardising of inventory approaches
- priorities for future wetland inventory

At a national scale, much of the above information could be contained within a national wetland inventory. Such inventories underpin national planning, policy development and all efforts directed at wetland conservation and wise use.

Recommendations

Our review contains many comments on the state of global wetland inventory. The eight listed below are recommended for priority action. (Not all, however, are relevant to all geographic situations or inventory programs.)

- All countries lacking a national wetland inventory should undertake one, using an approach that is comparable with other wetland inventories and for which the Ramsar Convention should provide guidance.
- Quantitative studies of wetland loss and degradation are urgently required for much of Asia, Africa, Eastern Europe, South America, the Pacific Islands and Australia.
- Further inventory should initially focus on a basic data set describing the location and size of each wetland, and its major biophysical features, including variations in area and the water regime.
- Information oriented to management (eg wetland threats and uses, land tenure and management regimes, benefits and values) should be collected after the basic data have been acquired. Source(s) of information should be clearly recorded along with comments on its accuracy and availability.
- Each inventory should include a clear statement of its purpose and the range of information that has been collated or collected. This extends to defining the habitats covered and the date the information was obtained or updated.

- The Ramsar Convention should support the development and dissemination of models for improved globally-applicable wetland inventory. These should be derived from existing models, for example the Mediterranean wetland program, that are capable of using both remote sensing and ground techniques, as appropriate. Models should cover appropriate habitat classifications (eg those based on landform categories), information collation and storage, in particular Geographic Information Systems for spatial and temporal data that can be used for monitoring purposes.
- The Ramsar Convention should support development of a central repository for both hard-copy and electronic inventories. The meta-data that describe the inventories should be published on the World Wide Web for greater accessibility.
- Further support is required for completion of the global review of wetland resources and priorities for wetland inventory, and to develop procedures for regular updating and publishing of inventory information on the World Wide Web.



Saltwater intrusion has severely degraded vast areas of the Mary River floodplain in tropical northern Australia. Natural barriers along the coast that once protected the floodplain from saline intrusion have been degraded, leaving this area extremely vulnerable to sea level rise due to climate change (CM Finlayson).