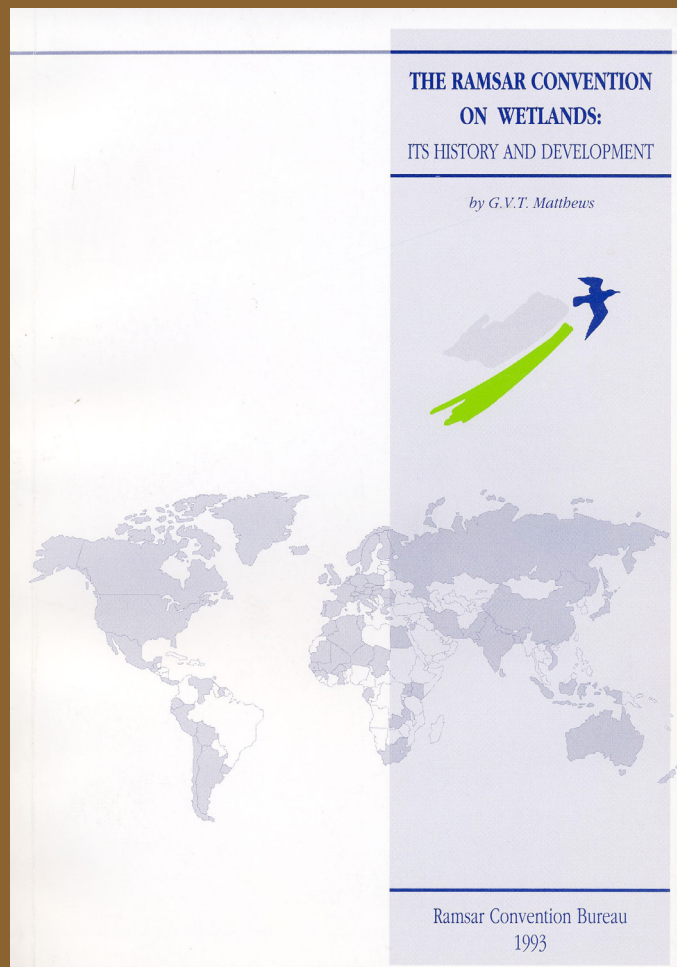


# The Ramsar Convention on Wetlands: its History and Development

by G. V. T. Matthews



Re-issued Ramsar Convention Secretariat, 2013



**The Ramsar Convention on Wetlands: its History and Development  
by G. V. T. Matthews (Ramsar, 1993)**

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**For this 2013 re-issue of the 1993 edition, no alterations have been made to the original text. Prof Matthews' figures and descriptions concerning the state of the Convention in 1993 may be updated by reference to the Ramsar website, <http://www.ramsar.org>.**

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## **Introduction**

The Ramsar Convention on Wetlands was adopted over twenty years ago as the first of the modern global nature conservation conventions. The period when the treaty was being developed was a time of greatly increased environmental awareness. Looking back, we can see that the Convention was able to break important new ground in global efforts for nature conservation and sustainable development. Indeed, much of the philosophy behind the Ramsar Convention, including the need for a network of protected areas and the wise use principle for the management of wetlands, has since been adopted in other international arrangements and in national law.

Over the years following its adoption, there have been tremendous changes in the Convention. A protocol was adopted in 1982, followed by amendments in 1987. Presently there are some 75 member States to the Convention throughout the world which have designated almost 600 wetland sites onto the Ramsar List of Wetlands of International Importance. The Convention has a vibrant programme, a well-endowed budget and a sizeable permanent secretariat, the Ramsar Bureau, which serves to assist in the day-to-day operation of the treaty.

In light of these many developments, the Ramsar Convention Bureau has considered that it is now timely to provide a concise history of the Ramsar Convention, both for students and for professionals responsible for the present day application of the Convention. We have been delighted that Professor G. V. T. Matthews has agreed to undertake this task. As will be immediately evident in the following pages, there is no one better placed than Professor Matthews to recount this history. While the views expressed in this publication are those of the author alone, the study is based upon official documentation and records available to the author and to the Ramsar Bureau.

We are most grateful to Professor Matthews for his continued contribution to the Ramsar Convention.

**Daniel Navid**  
**Secretary General**  
**Ramsar Convention Bureau**

## **Foreword**

Since prehistoric times the relations between Man and Wetlands have been marked by conflict. Wetlands were considered disastrous realms, sources of disease, obstacles to any form of positive development. People who lived in them were held in contempt as pariahs. The fact that many of the most advanced human civilizations developed within or in immediate proximity to wetlands is thus quite astonishing. Mesopotamia, the Nile delta in Egypt, Alexander's Macedonia in the Axios marshes, Rome by the Pontine marshes, the Netherlands, London, and the German Hanseatic towns situated in the flood plains of vast deltas are but a few examples. In distant continents the Mekong delta, the marshes in Central Mexico, and the inner Niger delta in Mali should be mentioned.

It would be an interesting task for ecology-oriented cultural heritage historians to study the possible cause and effect connections between advanced civilizations and wetlands. One can guess that the latter's extraordinary biodiversity and natural productivity played an important role. Nonetheless, throughout the whole of human history, wetlands have remained in disrepute. Drainage and reclamation have always been considered civilized actions. Thus over thousands of years, and especially over the past few centuries and far into the twentieth century, most and the vastest wetlands have disappeared. Psilovikos proved that between 1930 and 1985, in Macedonia alone, 94.3 per cent of the peat and marshlands and over one third of all lakes were drained.

The great importance of wetlands for the conservation of the natural environment has gradually become known only over the past decades. Ornithologists were the first to support wetland conservation, because they wished to maintain the diversity of migratory waterfowl. Thus the proposal for an international treaty to conserve wetlands first emanated from ornithological circles. The name of the Ramsar Convention to this day bears the appendage “especially as waterfowl habitats,” although, even in those days, twenty years ago, ornithologists looked much further ahead.

In the meantime, it became more and more recognized that wetlands have a far greater importance for ground water protection, regulation of the water cycle, water storage, water purification, and as an ecological basis for many forms of life, especially for fish. In the Third World entire populations depend essentially upon wetlands. Thousands of millions, probably hundreds of thousands of millions of dollars, are spent each year in the industrialized world in order to restore the hydrological and biological functions - functions which would be free of charge if wet-lands had been conserved. Ground water protection and water purification measures, in particular, swallow enormous sums. The re-establishment of formerly drained wetlands is therefore becoming more and more discussed. This is often considered an “expensive joke”, but actually it is a very wise step towards a better economy in the future.

Ramsar has already achieved a great deal in its first twenty years. This book bears witness to that. Yet the treaty will have to adapt itself continually in order to do justice to the wetlands’ vital importance in today’s world. To this end this book will also provide an important stimulus.

**Dr Luc Hoffmann**  
**Director Emeritus, IWRB**  
**Vice-President Emeritus, WWF**

## **Acknowledgements**

The author is very grateful to the Ramsar Convention Bureau for its encouragement and support for the production of this book. He is also appreciative to Dr Gerald Dick, Dr Luc Hoffmann, Mr Cyrille de Klemm, Professor M.F. Mörzer Bruyns and Dr Jan Rooth, who have read and made helpful suggestions on the preliminary text of the book. Finally a note of gratitude is due to Ms Françoise Dagon, Ms Erika Luthi and Ms Mireille Katz of the Bureau for their considerable editorial assistance.

## Chapter 1

### The Ramsar Convention

#### The need for a Convention on Wetlands

On February 3rd 1971, in the little Iranian town of Ramsar, nestling between the Alborz mountains and the Caspian coast, the representatives of 18 nations put their signatures to the text of a remarkable treaty. The Ramsar Convention was the first of the modern instruments seeking to conserve natural resources on a global scale. It is still the only world-wide treaty which restrains the countries joining it from the unthinking, selfish exploitation of their sovereign natural patrimony. It is concerned with that most threatened group of habitats, the wetlands. These are shallow open waters - lakes, ponds, rivers and coastal fringes - and any land which is regularly or intermittently covered or saturated by water - marshes, bogs, swamps, flood plains and the like.

For centuries mankind had viewed wetlands as places to drain and convert to more obvious uses, such as agriculture. But the process had gone so far in the developed countries that the disappearance of wetlands was leading to undesirable consequences - to the loss of groundwater reserves and the consequent need for irrigation, to flash floods, to shoreline destruction, to the accumulation of pollutants and to other subtle disturbances. Many useful plants and animals dependent on wetlands were disappearing with them. People interested in the conservation of waterfowl and fish were taking the lead in calling for a halt to wetland destruction in the developed countries. Losses were accelerating as extremely efficient machinery and techniques for draining wetlands were invented. The developing countries needed help to avoid making the same mistakes, to treat their resources wisely.

International action was necessary for several reasons. Many wetlands lay athwart national boundaries or derived their water supplies from neighbouring countries. The circulation of water in the atmosphere was truly international. Fish hatched in the wetlands of one country might be caught as adults in those of another, or on the high seas. Water birds, migrating over thousands of kilometres twice a year, also ignored boundaries and needed the wetlands of many countries in which to rest, feed and breed. Finally, if the developing countries were to be helped to use their wetlands wisely, there must be international arrangements for the provision of technical and financial aid.

#### The Convention as it is now

The Ramsar Convention is a fully-fledged and very active organization with a well-staffed secretariat, the Convention Bureau. This is based in Gland, Switzerland, and funded by the subscriptions of the Convention's Parties. By the beginning of 1993 there were 75 of these, and if the States which have recently become independent in eastern Europe all confirm their acceptance of the Convention, joined on their behalf by disintegrated federations, there will be 95. While this is still only about half the United Nations, far more important, where a treaty to conserve habitat is concerned, is the area that the territories of its Parties cover. The Ramsar writ now runs in 108 million square kilometres. Leaving aside Antarctica (protected by another treaty), this is 75% of the world's lands.

From the map in the centre of this book [see page 81 below], it will readily be seen that this coverage is not uniform. North America and Europe are virtually completely Ramsar-orientated. Oceania (93% coverage) and Central and South America (89%) are approaching that condition. It is in Asia (61%) and, especially, Africa (42%) where the gaps remain and the greatest effort is needed to recruit more countries into the Ramsar family.

Besides the general undertakings made by Parties to the Convention - wise use of wetlands, undertaking environmental impact assessments, making wetland inventories, establishing nature reserves, training wetland managers, consulting with other Parties, assisting in the operations of the Convention - there is a specific requirement. This is to designate at least one, and preferably many more, wetlands of international importance for the Convention List. Wetlands so designated are, in effect, set aside from destruction in perpetuity. Their well-being is assured by the monitoring activity of the Bureau and the peer review of the other Parties. By the beginning of 1993 the Parties had so designated 590 wetlands covering over 36.7 million hectares - an area greater than the whole of Germany. This is again a magnificent achievement, but not one on which the Parties can yet rest content.

At their triennial meetings, the Parties not only review their conservation achievements, monitor the well-being of wetlands on the List, and exchange research and management information, they also agree on interpretations of the Convention text and decide upon budgetary matters, including the disbursement of the Wetland Conservation Fund which has been set up to assist developing countries.

### **A history of the Convention**

Now that the Convention is so well established and active and has extended its operations over such a huge area, it was thought a good time to provide a short history of the events that led to the formulation of the Convention and to its subsequent development. This should be helpful to those already involved in the work of the Convention and, especially, to those working to encourage their country to become a new Party.

Treaties are essentially made between governments, and it is governments who, in various ways, control land use within their borders. It is therefore surprising how much of the movement towards a convention, and its subsequent improvement and expansion, was due, as will become clear, to the activities of a few non-governmental international organizations. In the lead position was the International Union for the Conservation of Nature and Natural Resources (IUCN), now called the World Conservation Union, but keeping the same acronym. This is based in Switzerland, initially at Morges and now at Gland. It also has an Environmental Law Centre in Bonn, Germany, and it has launched a World Conservation Monitoring Centre in Cambridge, United Kingdom. IUCN's smaller, but remarkably active, partner was the International Wildfowl Research Bureau (IWRB). This was based successively in London, United Kingdom, at La Tour du Valat, Le Sambuc, France and, since 1969, at Slimbridge, United Kingdom. It too has modified its name, to International Waterfowl and Wetlands Research Bureau, but it has likewise kept the original acronym. Both organizations benefited from financial support provided by the World Wildlife Fund (WWF), with its international headquarters in Gland and national organizations in many countries. It is now called the World Wide Fund for Nature but has also conserved its acronym.

These non-governmental bodies still provide services to the Ramsar Bureau and assist the operation of the Convention. However, the Bureau, although hosted by IUCN, is an entirely independent body directly responsible to, and at the service of, the Parties. It is to the Bureau that any question regarding the Convention should now be addressed, and it is the Bureau that should, in the first instance, be approached by any country interested in joining the Convention.

### **Proclaiming the values of wetlands**

There would have been little hope of setting up the mechanism of a Convention until a substantial body of politicians, administrators, engineers, scientists and members of the public had been convinced of the value of wetlands and the need to conserve the remaining ones. This history therefore starts in Chapter 2 with an account of the efforts that have been made since the 1930's to dispel the hitherto popular image of wetlands as inimical places to be got rid of, as wastelands to

be converted to more productive use. The early lead established in North America is made clear. In the Old World there was little movement until, at the start of the 1960's, IUCN established the MAR Project for the conservation and management of wetlands. This began with a seminal international conference organized by IWRB near its headquarters in France. From then on a series of initiatives, national as well as international, have led to the production of a plethora of books, pamphlets, audio-visual presentations and films. All these, in their different ways, boost the image of wetlands and enlarge upon the many benefits they afford mankind if only they are maintained and used with discretion. Certainly there is now no excuse for ignorance regarding the value of wetlands.

### **The evolution of a text**

It took just over eight years of conferences, technical meetings and behind-the-scenes discussions to develop a convention text that had any hope of being accepted widely in the political climate of the time. This is followed in detail in the next chapter because an understanding of the changes and compromises forced upon the drafters is essential for a proper understanding of why the Convention has the form that it does. The Government of the Netherlands played a central role, and, later, the Soviet Government became helpful. In a period of history dominated by the Iron Curtain and the Cold War, the Convention was almost lost when Czechoslovakia was invaded in 1968. However, there was recognition that the long-term future of the environment should not be set aside because of passing ideological struggles, however unpleasant their effects at the time. Helped by the determination of the IWRB, the countries of both sides of the divide finally came together and agreed the text of the Convention at the historic Conference hosted by Iran.

### **Listing, classifying and evaluating wetlands**

Although it had become widely accepted that at least the most important wetlands should be conserved, it was only in North America that systematic information on the whereabouts and characteristics of the wetlands had been accumulated. The MAR Conference stimulated the drawing together of wetland inventories, first for Europe and the Mediterranean region, then for the whole of the Western Palearctic. Later came inventories for Central and South America, for Asia and for Oceania. Again it was IUCN and IWRB that made the running. Although thousands of informants were involved, the drawing together of the tangled mass of data devolved on a few dedicated individuals. Waterfowl played a critical role in that IWRB used many years of international counts to pinpoint the most important wetlands. With these inventories, whose compilation is summarized in Chapter 4, governments now know what they have to conserve, though more detailed, national, inventories are needed to underpin a country's wetland conservation programme.

Classification is a dull subject for the layman, but it is essential if we are to know which animals and which type of wetlands are being conserved. Chapter 5 reviews the development of agreed systems of classification and also sets out the basis on which wetlands of international importance, suitable for designation for the Ramsar List, are separated from those of lesser importance. Again, although the present criteria appear straightforward, they can only be fully appreciated in the light of the arguments that have preceded their acceptance.

### **Wise use, management and monitoring of wetlands**

In allowing the wise use of wetlands, even those on the Ramsar List, instead of their complete protection, the Convention was well ahead of its time. Chapter 6 describes how the concept of wise use became a central point of the Convention, particularly for the developing countries. The management of wetlands and, in particular, of waterfowl stocks, was also discussed at the conferences before and after the completion of the Convention's text. The many sources of information now available are set out, though it is emphasized that wetland management is not



yet an exact science, but a pragmatic application of experience. Finally, this chapter describes how the monitoring of wetlands and their waterfowl stocks has been developed to give warning of any departures from the norm. The Bureau, with expert assistance if needed, has a detailed procedure for monitoring the well-being of wetlands on the List.

### **How the Convention is funded and operated**

The economic climate at the time of the Ramsar Conference was such that very few countries were prepared to accept a Convention to which they would have to make a financial contribution. No provision for financing the operation of the Convention was therefore included, and it was left to IUCN and IWRB to keep the Convention active, using their limited sources. Chapter 7 records their struggles and the eventual move to proper financing by the Parties. This necessitated amendments to the Convention. The securing of approval by the legislatures of a majority of Parties has proved a lengthy and tedious business. However, the legal procedures are almost complete [the amendments came into force on 1 May 1994], and in a heartening display of unity, most Parties are contributing the necessary sums on a voluntary basis.

Chapter 8 sets out the duties of the Convention's governing body, the Conference of the Contracting Parties, which meets every three years. The activities it has undertaken at four ordinary and two extraordinary meetings are recalled. These have included the setting up of a Standing Committee to provide continuity of the Conference's authority between meetings. Finally, the responsibilities of the Convention Bureau are detailed, along with the current activities it is undertaking, and those it would like to undertake if sufficient funds were available.

### **Joining the Convention, the commitments and the benefits**

The final chapter briefly reviews the legal basis of the Convention, recalls matters of interpretation and the making of amendments described in previous chapters, and sets out remaining points that may require legal consideration. It is emphasized, however, that the undertaking of moral obligations and the acceptance of peer review are really the essential basis for making the Convention an active, effective and forward-looking entity. The steps needed for joining the Convention are described, along with a summary of the commitments undertaken, and the benefits that accrue.

In addenda are (a) the text of the amended Convention, (b) the Parties and the number and area of wetlands each has designated for the List of Wetlands of International Importance, and (c) models of the documents needed for accession to the Convention and for designation of a site for the Ramsar List.



Upon signing the Convention text, delegates of the 1971 Conference visit an *ab-bandan* (water impoundment) near Ramsar. (Photo: P. F. Harrison)

## Chapter 2

### Arousing public interest in wetlands

#### The primordial fear of wetlands

Since time immemorial people had viewed wetlands with apprehension. They were seen as trackless wastes in which the traveller could easily be lost and sucked into bottomless mires. To the superstitious they were the haunts of demons, imagined or made real as strange dancing lights. Dwellers on their margins lived in fear of devastating floods. They were considered to be disease-ridden places, their "bad air" blamed for malaria.

Only the relatively few people that had become adapted to living in wetlands had an appreciation of the varied and abundant harvests that they could provide. Not many had any conception of the vital roles of wetlands in hydrological regulation or as essential habitat to a wide range of species. To most people wetlands were something to be confined by embankments or got rid of by drainage - especially where fertile plains were created for agriculture. Such transformations were irresistible to ambitious politicians. Draining the Pontine Marshes had been an objective of dictators, from the Caesars to Mussolini. Even in democracies the "reclamation" of wetlands could be a vote-winner.

#### Pioneer efforts to inform the public

To persuade people that wetlands were not wastelands needed informed and sustained propaganda drives. These were first undertaken in North America. The 1930s' "dust bowls" of the Midwest made the perils of ill-considered drainage easier to appreciate. President Franklin D. Roosevelt not only laid out vast amounts of public money in his New Deal programmes, but picked a journalist to run the re-vamped Biological Survey. J.N. Darling was not only competent in the corridors of power, but also a gifted cartoonist. As "Ding" he had for years been lampooning despoilers of wetlands. The combination of money and publicity was very powerful. The brilliant idea of a "Duck Stamp", which hunters bought with their license and so contributed to the purchase of wetlands, caught the public fancy.

Within three decades so much progress had been made that the Fish and Wildlife Service decided to tell "all thinking people" what had been achieved in the USA and Canada. In 1964 they published "Waterfowl Tomorrow", a 770-page, multi-authored, illustrated book. Much of the information in it was available to the general public for the first time. The waterfowl (ducks, geese and swans) provided a primary focus because their decline and the consequent loss of quarry for hunters had had a particularly wide public impact. But the conservation and management of the wetlands that provide the essential habitats for waterfowl occupied fully half the book. Natural controlling factors were examined, but Man was shown to be overwhelmingly powerful and often extremely destructive through drainage, pollution and excessive hunting. However, agricultural crops could provide a rich living for adaptable birds. Man could also make positive contributions by setting aside reserves and by manipulating habitat in many and varied ways.

A companion publication which should have preceded "Waterfowl Tomorrow" did not, for various reasons, appear until 1984. This was "Flyways: pioneering waterfowl management in North America", another substantial, well-illustrated book. Its purpose was to tell the individual stories of field workers and administrators that together had brought about the evolution of waterfowl and wetland conservation in North America. These two books together provided readily available documentation, which, like the projects they described, were the envy of the rest of the world.

## **Project MAR**

In 1960, IUCN received and approved a proposal from L. Hoffmann which called for an international programme on the conservation and management of marshes, bogs and other wetlands. It was designated Project MAR since these are the first three letters of the word for wetlands in several languages - MARshes, MARecages, MARismas. IUCN asked that the International Council for Bird Protection (ICBP) as well as IWRB should be asked to participate, and appointed L. Hoffmann as Coordinator. At the beginning of 1962 he became the honorary Director of IWRB, which from then onwards played a central role.

L. Hoffmann organized a MAR Conference in the French Camargue, at Stes-Maries-de-la-Mer, from 12 to 16 November 1962. This was attended by some 80 experts from 12 European countries and from Australia, Canada, Morocco and the United States. Nearly 60 papers were presented on the economic, scientific and moral considerations; the criteria for defining wetland areas and reserves; the legal and administrative devices; the management, utilization and restoration of wetlands; the role of man-made aquatic habitats; the international efforts needed for the conservation of wetlands and their fauna. The impressive Conference Proceedings appeared in 1964, in English and French.

The participants of the conference, well aware that conference proceedings, however seminal, tend to gather dust on library shelves, made 13 recommendations for action. Very appropriately the first was "that IUCN publish an educational leaflet in which the educational, scientific, economic, recreational and other values of wetlands are clearly set forth and further recommends that UNESCO (the United Nations Educational, Scientific and Cultural Organization) or other appropriate international agency be requested to help finance this leaflet for mass circulation in order to present, in unequivocal terms, the values of wetlands to mankind".

## **Liquid Assets**

The preparation of such a document was assigned to the Wildfowl Trust at Slimbridge, United Kingdom. The elegantly designed booklet was given a singularly apt title - "Liquid Assets". It had only 18 pages of text, but in these were distilled the current knowledge about wetlands and the arguments for their conservation. The language was straightforward, the message direct, for the aim was to influence those whose work affected policy towards drainage -- politicians, administrators, engineers and agriculturists. After a careful definition of wetlands (the basis for that used in the Ramsar Convention), their value for recreation, science and education were explained; the economics and dangers of drainage discussed; the constructive use, conservation and management of wetlands outlined.

The whole thrust of the message was summarized in the words of Count Leon Lippens of Belgium in the preface: "it is as stupid to drain the last of our great marshes, with their wealth of wildlife, as it would be to demolish the Cathedral of Chartres to plant potatoes". Also very pertinent was the end quotation, from Shakespeare: "You take my life when you do take the means whereby I live

'Liquid Assets' was published in 1964, in a large, horizontal format, 30.5 cm wide by 22.5 cm deep, chosen as one unlikely to be overlooked in an administrator's filing tray. It was illustrated with photographs and line drawings. With the help of a grant from UNESCO and private donations, 14,000 copies were distributed through national conservation agencies, mainly in northwestern Europe. Later a French version, "Ressources meconnues", was distributed throughout the Mediterranean region and to other francophone countries.

There was a demand for copies long after the print runs were exhausted. As there had been many changes in the wetland conservation scene, advances such as the enactment of the Ramsar Convention, as well as new threats such as increased pollution by pesticides, it was decided that a

revised edition was needed. This was published by IWRB in 1979, in A4-format, again with a grant from UNESCO.

### **Further international efforts to arouse interest in wetlands**

In 1976 the Council of Europe launched a European Wetlands Campaign. Many articles drawing attention to the value of wetlands in the European context were published, mainly through its Information Centre for Nature Conservation and its publication "Naturopa". The campaign was renewed in 1983 under the title "The Water's Edge", with material produced by the Council's member States. Thus the British Nature Conservancy Council produced a set of six 10-page pamphlets, each concerned with a particular type of wetland - rivers, farm ponds and ditches, lakes, fens and marshes, coastal shingle and estuaries.

IUCN, together with the World Wildlife Fund (WWF), began a major campaign in 1985 called "Life at the Water's Edge". A 16-page booklet of that name, explaining the need for wetland conservation, was distributed widely. So too was a 28-page booklet setting out the Wetlands Conservation Programme 1985-87. The first element of that programme was the subject of this present chapter, "Spreading the Message". Six informational Wetland Packs were published, designed to provide IUCN and WWF national organizations with a comprehensive source of wetlands publicity material. Together they provided a mass of highly relevant data. Three audio-visual packages were also published, each consisting of 60 or 80 carefully selected 35mm slides, a booklet explaining them and an audio-cassette with a timed lecture. The first was a general presentation, bearing the programme's name. The second and third, at a more scientific level, were entitled "Understanding Wetland Ecosystems" and "Understanding Mangrove Ecosystems". The recognition that visual images can be even more important than the written word led also to the production of specialist films on wetlands, but these were, because of cost, generally made by national organizations.

In 1987 the European Economic Community (EEC) entered the scene and a booklet was published by the European Environmental Bureau (EEB), with the aid of Dutch organizations. This was entitled "Wetlands: the Community's Wealth". In 24 pages, the by now well-known arguments in favour of wetlands were rehearsed and their characteristics explained. The responsibilities of the developed countries towards those of the Third World were especially stressed. Cases of destructive "development" there with the aid of European funds and expertise were cited. There was a need for impact assessment studies to be made before funding and for the sustained use of the resource to be ensured. The needs of developed countries could also have indirect impacts on the Third World, such as the conversion of wetlands to pasture for the production of exportable beef.

The EEB booklet was presented at the Third Conference of the Contracting Parties to the Ramsar Convention held in Regina, Canada, in 1987. It therefore also summarized the structure and functioning of the Convention. The Ramsar Bureau itself has since produced two editions of a 16-page pamphlet summarizing the nature and aims of the Convention and explaining how countries can join and take advantage of it. A new 24-page booklet was published in 1992 and is available in English, French, German and Spanish.

Following on its Wetlands Campaign, IUCN published in 1990 a booklet "Wetland Conservation: a Review of Current Issues and Required Action". This was very readable for laymen as well as experts. Part II - "Wetlands: what they are and why they are important" - provided a succinct review, in 20 pages, serving well the purpose of public information. Part III - "Wetland loss" - added, in 14 pages, a neat presentation of the threats facing these habitats.

The peak of presentation was reached in 1991 when IWRB published its multi-authored book "Wetlands". This was in a large format (coincidentally that of "Liquid Assets", but in the orthodox,

vertical orientation), ran to 224 pages, and was illustrated with a like number of stunningly beautiful photographs of the world's wetlands. First it described the various types - marshes, swamps, peatlands, flood plains, mangroves, freshwater swamp forests, lakes, estuaries, lagoons, and artificial wetlands. Animal and plant adaptations were enumerated as were the many harvests that they provide. Then came other values of wetlands to mankind - flood control, shore stabilization and accretion, ground water recharge and discharge, deposition of nutrient-rich silt, filtration of pollutants, storage of organic matter. The vulnerability of wetlands and the many threats that they face were set out. It was stressed that modern thinking required "the valuable resources of wetlands to be used in order to realize their fullest economic return, whilst at the same time retaining their ecological and environmental integrity".

There follows a review of the world's wetlands, continent by continent. In Europe and the Mediterranean Basin, 200 major wetlands were selected and described in general and, for seven examples, in detail. Conservation needs and problems relevant to the region were then discussed. A similar treatment was accorded to North America (137 selected wetlands); Latin America and the Caribbean (117); Africa (44); Asia and the Middle East (154); Australasia and Oceania (84). The 527 wetlands, covering 31,933,543 hectares, listed under the Ramsar Convention by its 62 Parties as of mid-1991, were set out. A guide to further reading was provided.

Surely no publication could better inform, interest and intrigue people who know little about wetlands (and astonish the specialists by its completeness). Such a beautiful book cannot, of course, be distributed freely, but the price is modest. It should be kept in print indefinitely.

### **National activities**

We have been concerned so far with the international efforts that have been made to bring wetlands and their conservation before the people, who, one way or another, will decide their fate. Sight must not be lost of the efforts which have been made with the same aim but within countries or locally. Space forbids a complete review of what is available, so only a selection of recent texts, which have received wide distribution and are still available, will be given.

In the United States, the Environmental Law Institute published "Our National Wetland Heritage" in 1983 (168 pp) and the Office of Technology Assessment "Wetlands: their Use and Regulation" in 1984 (208 pp, with a separate 30-page summary). "Freshwater Marshes" by M.W. Weller (1981, 150 pp) provided a useful introduction, while W.J. Mitsch & J.G. Gosslink in 1987 have given us a massive (539 pp) tome simply entitled "Wetlands". Other American publications have concentrated on particular wetland types or areas, and there have been many published proceedings of specialist conferences.

In the United Kingdom, E. Maltby's book "Waterlogged Wealth - Why Waste the World's Wet Places?" (1986, 200 pp) set out the whole case for wetland conservation. So did J. Purseglove with his "Taming the Flood" (1989, 307 pp), but against a fascinating historical background, with beautiful illustrations.

From France came "Marais, Vasières, Estuaires", a booklet of 62 pages issued by the Ministère de l'Environnement in 1983. A wide-ranging but brief review of "Water in the Netherlands" was the product of the National Organization for Applied Scientific Research in 1989. At the other end of the world, A.J. McComb & P.S. Lake published a 258-page book "Australian Wetlands" in 1990.

Films about wetlands have a strong impact on the public both through the beauty they reveal and the message contained in the commentary. Production is generally at national level, though they often deal with wetlands outside their country of origin. The IUCN Wetlands Pack 5 gave details of no less than 25 films, with a total running time of 18 hours. Many are general expositions such as the National Geographic's "Wetlands", the Royal Society for the Protection of Birds' (RSPB) "Silver Meadows", the National Film Board of Canada's "Freshwater World" and the New Zealand

National Film Unit's "Water Cycle". Others are built around a particular wetland such as the Pantanal, Brazil (Partridge), Ichkeul, Tunisia (BBC), and Bharatpur, India (Survival Anglia).

Many pamphlets, booklets and posters have also been produced by national and local organizations with the aim of eliciting public support for the conservation of specific wetlands. For example, such material, mostly with beautiful illustrations, is available for the Everglades, Florida; for Mai Po, Hong Kong; for the Volga Delta, Russia; for the Sultan Marshes, Anatolia; for Molentargius, Sardinia; for the Schleswig-Holstein Wadden Sea, Germany; for La Brenne, France; for the Thames, Dee and Severn Estuaries, United Kingdom; and this is but a short, random selection of such literature.

### **An abundance of information**

There is now no need for those whose work affects the future of wetlands to be ignorant of their values or of the vital part they play in the environment. If there are any difficulties in obtaining access to such information, the Ramsar Bureau, and the headquarters of IUCN and of IWRB, are ready to help an enquirer to reach appropriate material.

## Chapter 3

### The evolution of the text up to signature at Ramsar

#### **Project MAR, 1962**

The Proceedings of the MAR Conference organized by L. Hoffmann in 1962 (see Chapter 2) include notes of the discussions that took place, but do not record that Baron Le Roy, representing the Association Nationale des Chasseurs de Gibier d'Eau (ANCGE), remarked that an international convention was needed to conserve wetlands. However, Recommendation IX, mainly concerned with the compilation of a list of wetlands of international importance (see Chapter 4), ended "and further recommends that this list may be considered as a foundation for an international convention on wetlands". Thus was the Ramsar Convention conceived. A lengthy gestation was to follow.

#### **St Andrews, 1963**

E.M. Nicholson (Director General of the Nature Conservancy of Great Britain, a governmental body), who with Professor F. Bourlière of France had helped L. Hoffmann to elaborate the concept of the MAR programme, addressed the IWRB at its Annual Meeting in Knokke, Belgium in September 1962. He was convinced that effective international cooperation would only come about if governments were directly involved in the conferences, along with experts and the representatives of international organizations. IWRB accepted his proposals and set about organizing the First European Meeting on Wildfowl Conservation, held at St Andrews, United Kingdom, from 16 to 18 October 1963, at the invitation of the Nature Conservancy. Ten of the countries attending had governmental delegates, seven had less formal representation. Seven international organizations, two of them intergovernmental, were also represented.

The St Andrews Meeting provided data on movements and ecology; information on the use of the wildfowl resource for food, sport, amenity, scientific and other purposes; and a review of the legal and administrative status of wildfowl. The meeting also marked the first real cooperation, on a Europe-wide scale, between the three main interests in wildfowl - scientific, sporting and governmental. It thus set the scene for later conferences.

The subject of general wetland conservation received rather little attention. The first Recommendation, however, requested "the Council of Europe and IUCN to seek the agreement of all governments and other authorities concerned for the establishment so far as practicable by 1966 of a European network of wildfowl refuges generally in accordance with MAR recommendations, and the conclusion in due course of a convention to ensure the effective and coordinated operation and maintenance of this network". Thus at this stage the envisaged convention was directed at the conservation of wildfowl, rather than of wetlands as such.

#### **IWRB Proposals, 1965**

The balance was redressed in favour of wetland habitat (rather than species) conservation by IWRB, in October 1965, in a document setting out:

"Proposed subjects for an international Agreement or Convention on Wetlands

1. An agreed statement on the designation and utilization of wetlands in modern countries and upon the need for their safeguarding and management in order to allow their rational use in a fair balance between the interests of nature conservation, hunting and other recreational, educational, scientific and economic needs.

2. Acknowledgement of the primary international importance of the wetlands listed in the MAR List of the International Union for the Conservation of Nature and Natural Resources.
3. Acknowledgement of the necessity of maintaining these areas as far as possible and of establishing inviolate reserves in them, in order to safeguard the future of their fauna and flora.
4. An undertaking by governments to refrain from paying subsidies for drainage, or for the in-filling of these wetlands, except in cases of imperative necessity at the national and international level.
5. An agreement, in cases of such imperative necessity, to try to limit the losses as far as practical and to seek compensations for the losses which are unavoidable.
6. An undertaking to give neither consent nor subsidies for drainage, in-filling, or modifications of wetland areas, including those not classified in the MAR List, before a detailed inquiry on the recreational, educational, scientific and economic value of the wetlands in question has been made by consultation with competent ecologists and other appropriately qualified experts.
7. Consultation with ecologists at the earliest stages in planning of artificial wetlands created by dams, barrages, or other civil engineering works carried out by governments or with governmental subsidies, in order to make the best multiple use of these new wetlands, including their maximum productivity for wildfowl.
8. Management of a part of these artificial wetlands as reserves where wildfowl can remain undisturbed by hunting or by other recreational or economic activities”.

The document was sent to the appropriate authorities in 35 countries and comments were received from 20 of them. IWRB also circulated a first draft text for the Convention, in August 1965. Following a preamble, this consisted of six articles. Article 1 defined the types of wetlands to be covered. Article 2 emphasized the priority of wetlands on the MAR List and required that they be not modified. Article 3 provided for exceptions in the higher national or international interest and for compensatory measures. Article 4 called for the establishment of wildfowl reserves in the MAR List areas. Article 5 required environmental assessments to be made before approval of any plans to drain areas not on the MAR List. Article 6 required that artificial wetlands constructed with government aid should be made productive for wildfowl and a third of their area managed as undisturbed wildfowl reserves. Finally, there were provisions for joining and denouncing the Convention. Thus for the first time an international convention for the conservation of habitats had been proposed.

### **Noordwijk, 1966**

The Second European Meeting on Wildfowl Conservation was convened at Noordwijk aan Zee in the Netherlands, from 9 to 14 May 1966. It was organized by IWRB and the relevant Dutch bodies, namely the State Institute for Nature Conservation Research (RIVON) and the Department of the Ministry of Cultural Affairs, Recreation and Social Welfare. Twenty-three countries were represented, 17 of them by government delegates. A major enlargement of the scope of these meetings was provided by the attendance of a delegate and an expert from the Soviet Union. It is difficult to realize, in the 1990s, how politically remarkable this was. In bio-geographical terms, it meant that the major breeding grounds of the wildfowl wintering in Europe could now be included in the scope of the Convention. Since many other Soviet breeders migrated to South and East Asia, the whole Palearctic could now logically be considered covered. The Nearctic, in the shape of Canada and the United States, had been represented from the start.



The meeting reviewed the wetland situation in each country, following the framework of the MAR List. All too often deterioration was reported, emphasizing the need to press forward with the Convention and other measures. A new development was a review by IWRB of the populations, movements and hunting of waders (shorebirds) in Europe, North Africa and Asia Minor. This again enlarged the scope of the proposed Convention which had hitherto been concerned only with ducks, geese and swans (wildfowl).

The proposals put forward by the IWRB on the form and structure of the proposed Convention were examined. There was a general acceptance, the Soviet Union being especially supportive. There was insistence on the laying down of general positive principles, rather than detailed negative restrictions, such as had rendered ineffective the 1950 Paris Convention on Bird Protection. The need to modify national legislations to implement the provisions of a convention was emphasized. This might be more difficult in countries with a federal structure. The more widely the objectives of a convention had been achieved before it was submitted to governments, the more readily it would be acceptable by them. The convention would need a permanent body to supervise its implementation and to convene regular meetings of the Parties. The form of the convention should be settled at diplomatic level, one government elaborating a text for consideration by the other countries.

The MAR List was recognizably incomplete and should be extended. Wetlands on the List should be precisely described, using maps. A general embargo on drainage would be unacceptable as would be international restrictions on the land-use policies of sovereign States; the development of national plans for wetland conservation should, however, be encouraged. The proposals for the conservation of artificial wetlands were thought to be impractical. Some countries wanted international regulation of hunting to be included in the Convention. The need for chains of adequate wildfowl reserves in the wetlands conserved by the Convention was more widely accepted.

It was concluded that the drafting of the Convention would be a difficult undertaking. It should, however, be worked out quickly and efficiently. Recommendation IC of the meeting therefore requested "the Government of the Netherlands to explore the possibilities of drafting such a convention and inviting other governments to discuss the terms thereof". The Dutch Government accepted to undertake the task.

In July 1966, it was reported to the Annual Meeting of the IWRB in Slimbridge, United Kingdom, that final decisions as to drafting responsibilities had yet to be made by the Dutch Government. While urging that Government to accept the task, the countries represented at the meeting felt that, should the Netherlands decline, the matter should be placed in the hands of another government, rather than in those of one of the intergovernmental organizations.

A Technical Meeting on Wetland Conservation, jointly organized by the Commission on Ecology of the IUCN and by the IWRB, took place in Turkey (Ankara-Bursa-Istanbul), from 9 to 16 October 1967, with representatives from 13 countries. Its main remit was to extend Project MAR to the Middle East. However, no discussion took place on the Convention, the meeting merely being informed that work on it was in hand.

### **First Dutch Draft**

Indeed, while that meeting was in progress, the Dutch Ministry of Culture, Education and Social Welfare circulated, on 12 October, a first draft of a "Wetlands Convention". This had 21 articles. It nominated the Commission on Ecology of IUCN to operate the Convention. Parties would undertake to protect the wetlands listed in an Annex (which would in effect be the MAR List) and to consult with the Commission before making any fundamental changes (eight categories and a general one being given) in the ecological character of these wetlands. The Commission was to

draw up recommendations and if these required the complete or partial preservation of flora or fauna, with or without construction work, or the creation of new wetlands, the government of the State concerned could apply for a contribution from a Convention Fund to offset the additional costs.

The Fund would be formed from voluntary contributions and from annual contributions of the States Party to the Convention at the rate of one US cent per head of population (a rate which could be varied with the agreement of the Parties). Various conditions were laid down under which the Commission could make distributions from the Fund, if two-thirds of the Parties were in agreement. A Governing Council, comprising one representative from each Party, would approve the budget for the Fund.

Any State could join the Convention unless three-quarters of the existing Parties objected. If a new Party had no wetlands in the Annex, it must list the wetlands in its territory, for addition to the Annex. The Government of the Netherlands would act as Depositary for signatures, ratifications or accessions. At least ten instruments of ratification had to be deposited before the Convention entered into force. Provision was made for Parties to withdraw.

Within the month a document entitled "Comments on the first draft of a Wetlands Convention" had been prepared for IUCN. The draft was criticized for not taking into account the relatively low appreciation of wetlands then current. Instead far-reaching obligations were imposed and wetland protection was made paramount. An international authority was to have final judgement on national affairs. It was felt that few States would become Parties to such a Convention, and considered that a much more modest approach might be more fruitful

There were a number of legal problems with the wording of the draft which need not be detailed here. Of more general interest was the point that the definition of "ecological change" was too sketchy and did not, for instance, even mention alteration of water levels. There would be difficulties in an organ of the IUCN becoming the Convention's Commission. The curtailment of national sovereignty would be unacceptable, as would the prevention of any planned changes considered undesirable by nature conservancy experts. The proposed administration of the Fund was unsatisfactory, and the annual contributions were very large compared with what countries were now spending on wetland conservation. A more finely graded system of contributions would be desirable. Also provision must be made for the disposal of the Fund if the Convention should cease to be operative.

Mr Cyril de Klemm, a legal consultant of IUCN, prepared a paper entitled "Wetlands Conservation or Wildfowl Preservation as the subject of an international convention". This argued that a wetland convention, being essentially a commitment to protect one's own wetlands, would work satisfactorily with a small number of Parties. On the other hand, a convention to protect migratory wildfowl would need to cover all the countries through which the various species ranged. He therefore suggested that two, complementary, conventions should be considered, the wetlands being dealt with first. The wildfowl convention, it can now be seen, fitted better with the concepts of the Convention on the Conservation of Migratory Species of Wild Animals drawn up in Bonn, Germany, in 1979. However, the first Agreement under that Convention was not made until 1991 (see Chapter 6).

As to the Wetland Convention, C. de Klemm set out some very cogent points for the drafters. In the preamble, the values of wetlands should be clearly set out and the types of wetlands defined. National wetland policies should be developed. Artificial wetlands should be considered and measures taken to increase their biological productivity. Nature reserves should be established within wetlands. Wetlands of international importance (decided upon stated criteria) should be listed in an annex, considered primarily from the nature conservation point of view, and appropriate measures taken to ensure their integrity. Animals and plants dependent on wetlands

and threatened with extinction should be listed in a separate annex and measures taken to ensure their survival. The international commission for the Convention should collect and disseminate information, initiate and coordinate research, make recommendations, and amend the annexes.

### **Morges, 1967**

The first draft, together with the two commentaries, was considered at a meeting in Morges, Switzerland, then headquarters of IUCN, on 3 November 1967. It preceded the annual meeting of the IWRB's Executive Board, whose Director was in the chair, together with a representative of the Netherlands Ministry of Culture, Recreation and Social Welfare, the President and Secretary of the IUCN Commission on Legislation, the Secretary General of ICBP and C. de Klemm. No minutes were taken, but draft conclusions were presented to the IWRB Board, which was attended by the Chief of Hunting and Nature Conservation in the USSR Ministry of Agriculture and the Secretary of the IUCN Commission on Ecology. The Board slightly amended the draft conclusions and then approved them for circulation as follows:

1. The main aim of the Convention should be conservation of wetlands in the widest sense but using the preservation of wildfowl as one of the strong arguments to achieve this aim.
2. The preamble should state that wetlands are very important from cultural, scientific, economic and social points of view.
3. The definition of wetlands should be given and that used in Liquid Assets (see Chapter 2) should be considered as a basis.
4. The main provisions of the Convention should include:
  - (i) a) The contracting governments should have a general policy for the conservation and management of their wetlands;  
b) this policy should form an integral part of regional or land-use planning, taking into particular account the needs for conservation of wildfowl habitats.
  - (ii) a) The contracting governments should undertake to preserve and manage the areas listed in the Annex to the Convention (MAR List), which may be revised;  
b) the habitat of any animal or plant species threatened with extinction should be included.
  - (iii) An intergovernmental commission should be set up to promote the implementation of the Convention and its functions should be to:
    - a) make recommendations to contracting governments on all matters pertaining to the implementation of the Convention;
    - b) amend the lists annexed to the Convention according to an agreed procedure.
  - (iv) The IUCN should be consulted in an advisory capacity by the Intergovernmental Commission on all technical matters and in particular on the initiation and coordination of research activities. IUCN may refer all specific matters to competent organizations (such as IWRB).
  - (v) The necessary finance for the work of the intergovernmental commission should be contributed by the contracting States.

It was agreed that these conclusions should be forwarded to the Netherlands Ministry with the request that they should be taken into account when elaborating a new draft, which should be ready in time for discussion at the next European Meeting on Wildfowl Conservation. This was being organized, at the invitation of the Soviet authorities, to take place in Leningrad from 25 September to 1 October 1968.

### **Leningrad, 1968**

In June 1968, IWRB was able to send out to the proposed participants in the Leningrad Meeting the second draft of a Convention on Wildfowl and Wetlands and an Introduction, elaborated by the experts of the Dutch Government. IWRB indicated that, after discussion at Leningrad, it was hoped to sign the Convention at a diplomatic conference in 1969. It was emphasized that the draft only committed Parties to a general acceptance of responsibility for the conservation of wetlands and wildfowl. Even such a "weak" text would give administrators, parliaments and conservationists legal support for their actions, at present lacking in many countries. A parallel was drawn with the extraordinarily successful Migratory Birds Convention between Canada and the USA (and later Mexico) which was likewise based on a general aim, outlining measures that might be taken without committing the Parties to them.

The Introduction stressed that the wetlands of the MAR List were the ones the Convention sought to protect, though the Parties themselves would decide which wetlands should actually be inscribed on the Convention List. There was no intention to insist on general wetland conservation, other than through the encouragement of national plans. There was to be as little interference as possible with national sovereignty. No provision was made for any kind of sanctions, which would be unrealistic and unenforceable. For similar reasons no kind of compensation for wetlands sacrificed in the national interest were laid down. The periodical Conferences of the Parties would be the main instrument for encouraging international wetland conservation as well as eliciting research and other activity from their specialist committees and from organizations such as IUCN and IWRB already active in the field.

A curious statement came near the end of the Introduction - "The area covered by the Convention, which by its very nature cannot be world-wide, will have to be decided by specialists from the European, North and Central African and South-West and Central Asian regions". Such a myopic viewpoint is now difficult to comprehend.

The Convention text itself had 15 articles, following a short preamble. The first paragraph (despite the title) referred to waterfowl rather than wildfowl, a welcome progression to a more widely understandable term. Article 1 sought to define wetlands but did not adopt the admirably concise and inclusive "Liquid Assets" definition. Articles 2 to 4 indicated ways and means to national wetland conservation policies. Article 5 encouraged consultation between Parties. Article 6 was concerned with the designation by the Parties themselves of wetlands for the Convention List, and their possible removal therefrom. Articles 7 and 8 indicated how the Parties would care jointly for wetlands inscribed on the List through the medium of the Conferences. Articles 9 and 10 indicated how the Conferences would be run. Article 11 gave a formula for the Parties to pay for Conferences and other expenses incurred, by annual contributions in four categories, to be paid in guilders. Article 12 allowed any State in an area to be specified to join the Convention, by various procedures. Articles 13 to 15 described how the Convention would come into force (after 10 States had become Parties), how any Party could leave the Convention, and how the Kingdom of the Netherlands would act as Depositary. The text was to be done in the English and French languages.

On 21 August the invasion of Czechoslovakia took place. On 23 August L. Hoffmann had to inform all ministries and government services which had received the draft Convention that: "As a consequence of the penetration of the army of five Warsaw pact countries into Czechoslovakia, the Dutch Government has cancelled its official participation at the Third International Regional

Meeting on the Conservation of Wildfowl Resources, Leningrad, 25th September to 1st October 1968. The Ministry concerned has asked the IWRB to inform you of this position. Under these circumstances, the discussion of the draft will have to be postponed to a later date, of which you will be informed in due course”.

Whether the Conference itself should go ahead was the next problem. L. Hoffmann consulted the Executive Board of the IWRB and received 32 votes for postponement, two for proceeding and three abstentions. He informed the Soviet authorities accordingly and, on 9 September met B.N. Bogdanov of the USSR Ministry of Agriculture (and prime mover of the Conference) in Paris. After discussion both agreed that the meeting should be postponed and that IWRB should so inform the registered participants. This was done and a letter from B.N. Bogdanov confirmed the agreement. However, on 14 September, participants received a telegram from the Soviet Steering Committee saying that the meeting would take place as planned. Despite a further meeting between Hoffmann and Bogdanov, at which postponement was again confirmed, a further telegram from the Steering Committee indicated that they believed that the IWRB had, for political reasons, taken a unilateral decision to postpone the meeting. This was not the case. However, where governments were concerned, politics were, of course, paramount. Some countries, such as the Netherlands, positively forbade their nationals to attend. Others, like the United Kingdom, did not encourage attendance but left the final decision to the individual citizen.

In the event a meeting was held in Leningrad but only a dozen countries were represented. No discussion of the Wetlands Convention was recorded, although several papers considered the international control of waterfowl hunting. V.A. Chichvarin presented a paper on “Certain theoretical aspects of the international legal conservation of avifauna resources” which, while mainly concerned with hunting control, contained some general considerations of relevance to any ecological convention. Thus, “agreements admitting the so-called compulsory jurisdiction of the International Court of Justice or arbitration in settling disputes relating to their interpretation or application are not acceptable to a number of States including the USSR”. Again, “the international treaty in the broad meaning of this term as a legal source of rules in distinction from international usage, is of paramount importance for the establishment and improvement of international bird preservation. The international treaty would be a great success if it is based on the correct combination of formulae ‘what should be done’ and ‘what should not be done’. Otherwise there is a risk of drafting one more mere ‘declaration of good intent’ or an abortive convention containing provisions which simply cannot be and will not be observed even by the signatory powers”.

The single, portmanteau, Resolution stated that the participants of the meeting “consider it expedient to hasten adoption of a convention concerning wetlands conservation, and to provide for a strict protection of those wetlands that have an international importance”.

### **Morges, 1968**

In view of increased executive responsibilities that were being proposed for him in IUCN, and later WWF, L. Hoffmann had decided, in the spring of 1968, that he would have to resign from the directorship of IWRB at the end of that year. After consultations he proposed that G.V.T. Matthews, Director of Research and Conservation at the Wildfowl Trust, Slimbridge, United Kingdom, should succeed him. G.V.T. Matthews, who had played an increasingly important role in the development of IWRB since 1956, went to IWRB’s headquarters in the Camargue, France, for discussions from 12 to 15 August. He accepted the task, subject to the Executive Board’s approval. The election was to be held at the next annual meeting, on 24 September in Leningrad.

Only a week after these discussions, the invasion of Czechoslovakia took place. L. Hoffmann’s resignation was, at the time, widely but wrongly interpreted as being due to that event. In fact, the decision had already been taken and the election procedure initiated. A substitute venue for the annual Board meeting was found, in Morges, Switzerland. There, on 29 September, G.V.T.

Matthews was elected unanimously by those present or voting by postal ballot. He was to take up office as honorary (unpaid) Director of IWRB from 1 January 1969.

The Board requested that steps should be taken to restore cooperative work with colleagues in the Soviet Union and countries allied to it; that the 61 papers already processed by IWRB for the Leningrad Meeting should be brought to publication; that every effort should be made to expedite the Convention.

### **Vienna, 1969**

Rather unexpectedly, on 11 February 1969, IWRB received from the USSR Ministry of Agriculture another text for "An International Convention on Wildfowl and Wetlands". Of its 13 articles, a number were rather similar to those of the Dutch text, but others differed quite substantially. In general the emphasis on wildfowl rather than wetlands was stronger. Although a conference was to meet when necessary, there were no details as to how or if its secretariat would function between conferences and no provision made for that secretariat's funding. Any State could become a Party to the Convention.

At the IWRB's annual Board meeting, from 17 to 21 May 1969, in Vienna, with G.V.T. Matthews now in the chair, there was a point by point discussion of the two rival convention texts. Twelve countries were represented as well as IUCN, ICBP, the International Union for Game Biologists (IUGB) and the Netherlands Ministry of Culture, Recreation and Social Services (W. A. Panis, responsible for the Dutch texts). The following recommendations were made:

1. The Convention should be concerned primarily with wetlands. Wildfowl should be omitted from the title and mentioned later in the preamble. The definition of wetlands should be that given in "Liquid Assets".
2. The list of wetland types should be more complete and set out in an addendum. Tidal flats to be included.
3. Each country should be left free to organize conservation according to their own laws and principles.
4. Conservation is a preferable term to Protection.
5. Wildfowl is preferable to Waterfowl as this linked the Convention to IWRB. However, for the purposes of the Convention, wildfowl could be defined to cover all wetland bird groups.
6. The requirement for positive management must be written in.
7. The frequency of meetings need not be defined precisely.
8. The Dutch proposals for the financial support of the secretariat were unlikely to be acceptable. IUCN or IWRB could fulfil the secretariat functions, but would still need financial assistance. It was to be hoped that the Netherlands would act as the bureau power, at least initially.
9. The ability of IUCN and/or IWRB to act in an advisory capacity should receive mention in the text. The Council of Europe was not suitable since the Convention had to be completely free of political affiliations.

The national delegates of IWRB were asked to send any further comments they might have, or could elicit from their governments, to IWRB as quickly as possible. W.A. Panis undertook to

proceed immediately to draw up a compromise text, to be circulated by IWRB to governments in July 1969, if not before.

In June 1969, Eskander Firouz, Under Secretary of the Ministry of Natural Resources and Director of the Game and Fish Department of Iran (and that country's national delegate to IWRB) visited IWRB headquarters at Slimbridge. Mr Firouz was informed that, though the Wetland Convention text was nearing finality, no country had yet offered to host the major international conference needed to bring the Convention into being. He said that he could arrange for Iran to issue such an invitation, and thought that a conference could be organized by early 1971 in Babolsar, on the south Caspian coast.

The Netherlands Ministry had not produced the promised text by mid-August. As an opportunity for discussions with the Soviets was being presented by a Moscow Conference of IUGB in September, IWRB headquarters therefore had to produce a compromise text by itself. This was entitled "Convention on Wetlands" and dispatched to the Netherlands Ministry of Culture, Recreation and Social Welfare on 28 August.

IWRB also edited and corrected the English version of the Proceedings of the Leningrad Meeting. The papers, sent out by IWRB before the meeting, had now been put into print by the Soviet authorities. These printed texts arrived at Slimbridge only ten days before the start of IUGB's Moscow Conference. Nevertheless G.V.T. Matthews was able to take the completed text (423 printed pages) with him.

### **Moscow, 1969**

The IUGB was holding its 9th biennial Conference in Moscow from 12 to 19 September 1969. This gathering of some two hundred scientists and technicians provided an excellent opportunity for restoring cooperation between IWRB and the Soviets. The latter went out of their way to demonstrate their respect for the IWRB Director, placing him in positions of honour at the opening and closing sessions. He was also asked to chair a plenary session and report to the final session.

The rapid turnaround of the Leningrad Proceedings was very well received and served to get discussions off to a positive start. V.A. Borisoff, who had been the Secretary General of the Leningrad Meeting and responsible for the preparation for publication of the Proceedings (Professor Yu. A. Isakov being the editor), was especially helpful to G.V.T. Matthews in arranging informal discussions and generally smoothing his path.

Professor Isakov arranged a special meeting, outside the general programme, for the morning of 18 October. Besides four representatives from Western Europe, there were researchers from the German Democratic Republic, Poland, Mongolia and 16 from various regions of the Soviet Union, mostly of the younger generation. G.V.T. Matthews was asked to take the chair. The functions and structure of IWRB were explained and arrangements made for increased Soviet participation.

The bringing into being of the Wetland Convention was agreed to be a priority matter and the compromise text put together by IWRB was generally accepted, subject to consideration by a technical and legal conference to be called together in Finland early the following year. The Soviet position, as presented by Professor Isakov, was that the title was too broad and it was suggested that it should be the Convention on the Conservation of Wetlands as Wildfowl Habitat.

The whole tone of this meeting was friendly and forward-looking, and it set the scene for a small but highly significant working dinner given for G.V.T. Matthews that evening. Despite a fall, that very morning, which had broken his arm, Mr Bogdanov was host. Also present were the Soviet Chief of Protocol Didyk, Professor Isakov, and Professor P.A. Grenquist from Finland.

Mr Bogdanov (who revealed he had suffered a heart attack at the time of Leningrad) made it clear that he felt that he had been badly let down by the international organizations over that meeting. He had considered that the invasion of Czechoslovakia was a matter for the politicians, not for scientists. G.V.T. Matthews endeavoured to explain the views of the western democracies. Acknowledging the major differences in outlook, Mr Bogdanov said there was an old Russian proverb that time heals all wounds, and he did not intend to rub salt into them.

The discussions then became very positive and pragmatic. All agreed on the necessity for pushing ahead with the Wetland Convention; the Soviets would attend the technical meeting in Finland and looked forward to the Conference in Iran at which the text would be finally agreed. The idea of a technical secretariat for IWRB in the Soviet Union or elsewhere in Eastern Europe was favourably received (it took twenty years for this to come about!). Soviet cooperation was promised in the future research work of IWRB, Professor Isakov being particularly supportive. He was surprised by the ambitious nature of the programme, but Chief of Protocol Didyk remarked that enthusiasm was the most important thing.

At the closing plenary session the next day, G.V.T. Matthews reported on the outcome of the large wildfowl meeting in some detail and mentioned that he had had other more intimate conversations with Soviet colleagues. He felt that the Game Biologists' Conference in Moscow would long be remembered with gratitude by those working towards a truly international system of research and conservation.

### **Espoo, 1970**

On 1 December 1969, the Netherlands Ministry of Culture, Recreation and Social Welfare circulated an official draft proposal for a Convention on Wetlands as Wildfowl Habitat. This was very nearly identical with the compromise draft drawn up by IWRB and sent to that Ministry in August.

There was a preamble, setting out the need for conserving wetlands, their use by migratory wildfowl being mentioned in the third paragraph. There followed 14 articles. The first defined wetlands (supported by an addendum setting out eight main types) and wildfowl. Article 2 set up the List of Wetlands of International Importance and explained how the Parties themselves would insert wetlands into the List. Article 3 required Parties to undertake the conservation of wetlands within their territory, using their own legislation. Article 4 required the conservation of wetlands whether or not they were included in the List. Article 5 provided for consultation and coordination between Parties. Article 6 set out the need for periodical Conferences on wildfowl and wetlands convened with the assistance of IUCN, IWRB or other competent international bodies. The Conferences would review progress with the Convention, make recommendations and proposals regarding individual wetlands or conservation measures and request the drawing up of reports and statistics. The Parties would give serious consideration to the results of the Conference. Article 7 specified how Parties should be represented at the Conferences (including experts) and specified voting and other procedures. Article 8 specified that Parties would be responsible for the expenses of their delegation and that expenses of the Conference would be borne by the host Party. The need for a Secretariat was set out in Article 9. "The Conference shall, in consultation with the competent international bodies, make recommendations concerning the composition, location and financial support of a Secretariat to provide continuity between Conferences". The Secretariat would reconvene the Conference and provide draft agenda. It would maintain the List and be informed of and notify any changes in it or in the ecological character of wetlands included therein. It would ensure that Parties were informed of opinions, recommendations and proposals of a Conference.

Article 10 specified how countries could become Parties to the Convention Here the IWRB text had been: "Any State having wetlands within its territory and wishing to share in the conservation of the migratory stocks of wildfowl may become a Party to the Convention". The Dutch version used the so-called Vienna Formula (conceived at an earlier conference in that city - not IWRB's),



“Any Member of the United Nations or of one of the Specialized Agencies or of the International Atomic Energy Agency or Party to the Statute of the International Court of Justice having wetlands within its territory and wishing to share in the conservation of the stock of wildfowl may become a Party to this Convention”. This was to cause major problems. The Dutch version also indicated that the Convention would only be open for signature until a certain date. Article 11 specified that the Convention would come into force after 10 States had become Parties and specified when the adherence of subsequent Parties would become effective. Article 12 provided for Parties withdrawing from the Convention. Article 13 was an addition from the Dutch side, making provision for the Convention to apply to a territory for whose international relations a Party was responsible. This “colonial” provision was also to cause problems. Article 14 specified a Government which would act as Depository for signatures, ratifications and accessions to the Convention, and the actions it should take. It also specified that the Convention should be done in the English, French, German and Russian languages.

This then was the draft which was to be considered by a small technical meeting. Before that it was circulated widely and 79 comments were received by IWRB and compiled into a consultation document. The technical meeting was organized by IWRB and took place under the patronage of the Finnish Ministry of Agriculture at Espoo, near Helsinki, from 17 to 19 March 1970. The invited participants comprised four ministerial representatives from Finland, Iran, the Netherlands and the USSR; five legal experts from Czechoslovakia, Finland, Iran, the Netherlands and Sweden; five ecological experts from Finland (2), France, the Netherlands and Sweden; a representative of the Food and Agriculture Organization; one from IUCN and the International Biological Programme; and the President of the Conseil International de la Chasse. IWRB was represented by G.V.T. Matthews (who was asked to chair the meetings), by two of its research group Coordinators and by its Administrator.

After general discussion, the title, preamble and articles were examined paragraph by paragraph in the light of the suggestions contained in the consultation document and others raised by the participants. Many were of a semantic nature, concerned with tightening up of the language or necessary to avoid obscurity. However, there were instances where a change of emphasis was agreed or where particular difficulties arose. These were:

- Title** This should read “Convention on Wetlands of International Importance, especially as Waterfowl Habitat”. The last four words were insisted upon by the Soviet delegate. They did not, as has sometimes been alleged, derive from IWRB parochialism.
- Preamble** A more general introduction was needed which would stress the ecological function of wetlands.
- Article 1** Definitions should be included in the body of the Convention itself; inclusion in the Final Act would have no legal consequences, but definitions could be expanded in a covering note. The term “waterfowl” was preferable to “wildfowl” as being more widely understood, and comprehensive.
- Article 2** Waters and peatlands not primarily of significance for waterfowl should not be excluded.
- Article 3** The word “pollution” should be included.
- Article 6** Initially the tasks of the Secretariat could be carried out by the Depository countries, the Netherlands and the USSR (being particularly concerned with the evolution of the Convention) and Iran (host of the forthcoming Conference and representing Asian nations). The regular meetings convened by IWRB could be the basis for the proposed Conferences and thus avoid additional expense. Eventually the IWRB,

either by itself or acting in association with IUCN, FAO or UNESCO could be charged with continuing bureau duties.

**Article 10** The meeting did not find itself competent to decide whether and in what manner States able to sign the Convention should be defined. In general, no State having wetlands and waterfowl within its borders should be unable to sign.

**Article 11** The Convention should enter into force when seven countries had signed, instead of 10.

**Article 14** The official languages of the Convention should be English, French, German and Russian.

The meeting requested that IWRB should produce a final draft, incorporating the above matters of substance and also the various drafting points discussed and agreed. This task was completed by 29 April, when the draft was sent out to all countries likely to attend the conference in Iran. With it was sent a 7-page covering note summarizing the history and intention of the Convention.

### **Knokke, 1970**

The annual Executive Board meeting of IWRB was held at Knokke, Belgium, from 13 to 15 September 1970. On his way, on 12 September, G.V.T. Matthews had a meeting at Amsterdam airport with F.G. Nicholls, newly-appointed Deputy Director of IUCN. Their meeting lasted several hours and enabled Mr Nicholls to explain IUCN's present thinking on the Wetland Convention. Previously, under the influence of its former Legislation Commission, IUCN had been unenthusiastic about the Convention, on the grounds that it was not precise enough as regards undertakings nor strong enough in castigating transgressions.

Mr Nicholls indicated that this attitude was now modified and that IUCN was keen to see the Convention finalized. He said that there were four ways in which the Convention could be strengthened

1. it should be tied to the published MAR List;
2. precise criteria for the degree of protection of species should be set out;
3. the minimum requirements for the conservation and management of the habitat should be specified; and
4. a period of delay before the withdrawal of a wetland from the List should be insisted upon.

G.V.T. Matthews, after reporting on the Espoo Meeting and the circulation of the final draft, drew the meeting's attention to Mr Nicholls' points. Professor M.F. Mörzer Bruyns said that each of these points had been carefully considered in the original drafting by the Dutch Ministry of Culture and in subsequent discussions. No way had been found of incorporating them into a convention which stood any chance of being accepted by sovereign governments. It appeared that the final draft form of the Convention was acceptable to and would be signed by 16 countries. The only negative response was from Cyprus. Thus more than twice the number of countries were prepared to sign as were required to trigger the Convention into action.

The representatives of the Belgian and the Danish Ministries of Agriculture, present at the meeting, both indicated that any last-minute revision of the Convention text, necessitating as it would a reconvening of the Espoo Meeting, would be disastrous. The Board therefore decided that there could not be any revision before the Conference in Iran. They did however appreciate the spirit in which Mr Nicholls' advice had been offered and hoped that any disagreements could be resolved.

Professor Mörzner Bruyns undertook to bring this desire before the IUCN Board, of which he was a member, and to arrange appropriate meetings with IUCN officials.

### **Ramsar, 1971**

On 2 March 1970, an official invitation was extended, on behalf of the Imperial Iranian Government, to the Ministries of Foreign Affairs of the countries of Europe, North Africa and Asia, to participate in the International Conference on the Conservation of Wildfowl and Wetlands to be held at Babolsar, Iran, in January 1971. A preliminary notice, prepared by IWRB, set out the major functions of the Conference. One was the presentation of a final draft of the Wetland Convention and its signature by many of the countries represented. The List of Wetlands of International Importance would also be considered, along with the criteria to be applied in the selection of wetlands for inclusion. Papers would also be presented on developments in wetland management and on reconciling technological advances with wetland conservation. The other main activity would be directed towards developing international agreement on the rationalization of waterfowl hunting.

At the end of April, IWRB was informed that Iran had decided to move the venue of the Conference from Babolsar. In view of its better accessibility and accommodation, a town some 175 kilometres west had been selected. Its name was Ramsar.

In preparation for the Conference, IWRB drew up and circulated a set of Rules of Procedure. It also distributed such proposed amendments to the final draft as it received. These came from the Federal Republic of Germany (1), Sweden (4), France (15), USSR (15). Rather surprisingly, the Netherlands, having been intimately concerned with the evolution to the final draft, had the most proposals for amendments. Twelve actual proposals were put forward. Further amendments were consequential on the remarks made in their commentary and it was proposed to offer further suggestions of a purely drafting nature to the Conference itself. They also had four proposals for modifying the Rules of Procedure.

The participants foregathered in Teheran and were then conveyed by road to Ramsar on 29 January 1971. The Conference was opened on 30 January by Prince Abdorreza reading a message from his brother, R.I.M. Mohammad Reza Pahlavi Shanshah Aryamehr, then Head of State. This ended with a remarkable statement that Iran was prepared to place one of its wetland ecosystems of special global significance in joint trust with a suitable international agency, such as the United Nations Organization, to conserve and administer for all mankind. Speeches of welcome were also made by the Minister of Natural Resources, by the Under Secretary of the Ministry of Natural Resources (Mr Eskander Firouz) and by G.V.T. Matthews.

Eighteen countries were represented by governmental delegates. These were Belgium, Denmark, Finland, France, the Federal Republic of Germany, India, Iran, Ireland, Jordan, the Netherlands, Pakistan, South Africa, Spain, Sweden, Switzerland, Turkey, the Union of Soviet Socialist Republics and the United Kingdom. Five other countries sent observers, namely Bulgaria, Greece, Hungary, Italy and Romania. There were also delegates from the intergovernmental agencies, FAO and UNESCO; and from the non-governmental organizations CIC, IBP, ICBP, IUCN, IWRB and WWF.

The Conference elected E. Firouz as President, with V. D. Denisov (USSR) and Professor Mörzner Bruyns (Netherlands) as Vice-Presidents. G.V.T. Matthews was appointed Rapporteur-General. L E Esping (Sweden) was rapporteur of the Credentials Committee - which also had delegates from India, Jordan and Switzerland. Sir Hugh Elliott (IBP) and F.G. Nicholls (IUCN) were rapporteurs for the Drafting Committee - which also had delegates from Belgium, the Federal Republic of Germany, Iran, the Netherlands and the USSR.

The Rules of Procedure were slightly modified in accordance with the proposals of the Dutch delegation. The official language of the Conference being English, and documents and summary

records being available in that language alone, it was agreed that the English text would be the working one. Then two papers on waterfowl and refuges in western Asia were presented. They drew attention to the catastrophic decline in waterfowl in the Caspian area, discussed migratory "green routes", and debated the appropriate distances between refuges.

On the second day, after the Credentials Committee had reported, the Conference began to consider the Convention text that had resulted from the Espoo Meeting. The pre-circulated suggestions from several countries were formally tabled. The Preamble and first three articles were dealt with in the morning session. A French amendment, to move one paragraph of an article to the preamble was, at the request of the Belgian delegation, put to the vote. It was rejected by 14 votes to two, with two abstentions. This weighty matter proved, remarkably enough, to be the only one in the whole Conference which needed a formal vote for its resolution. To give more time for the discussion of amendments of substance, it was agreed to extract further textual amendments and leave these to be dealt with by the Drafting Committee.

In the afternoon the Conference discussed amendments of substance. Under Article 9, it was decided that it would be better for an international organization concerned with conservation to be charged with the continuing bureau duties, rather than one country. Although IWRB had played such a central role in bringing the Convention into being, it was not until 1973 that it finally achieved the full "legal personality" which would have enabled it to be officially charged with such duties. It was therefore proposed by the Netherlands, supported by the United Kingdom and Sweden, that IUCN should carry out the continuing bureau duties until such time as another organization or government was appointed by a majority of Contracting Parties. Mr Nicholls declared that IUCN was willing to assume these duties. Close cooperation would be maintained with IWRB.

Under Article 10, it was agreed that the Convention should remain open for signature indefinitely. Under Article 11, it was agreed that the Convention should come into force four months after seven States had become Parties. Similarly, any denunciation would take effect four months from the serving of notice. Under Article 14, it was agreed that Convention texts in English, French, German and Russian would be prepared. It was also agreed that in the event of differences in interpretation arising later, the English text approved by the Conference would prevail. Interestingly, the French delegation was in full accord with this provision.

Two major points of dissention arose. One concerned Article 10 and the requirement for a definition of the States which could sign the Convention. The USSR were strongly in favour of the Espoo proposal that any State with wetlands within its borders should be able to sign. They were wholly opposed to the so-called Vienna formula which would exclude, for instance, the German Democratic Republic and the Democratic Peoples' Republic of Vietnam. The Dutch and some other delegations were as strongly in favour of the Vienna formula, because they needed to know with whom they would become co-Parties. The other problem was provided by Article 13. This enabled Contracting Parties to take appropriate measures in respect of any territories for whose external relations they were responsible. This provision required, for instance, by the Netherlands in respect of the Dutch Antilles, was strongly opposed by the USSR and some other countries. It was agreed that consideration of both articles should be postponed for the time being.

On the third day the Convention text, as revised by the Drafting Committee, working through the night, was tabled. Further formal discussion was postponed until the following day, to give delegates time to study the textual changes which had been made. Papers were then read on the criteria needed to establish the international importance of specific wetlands. Eleven of the national reports on the status of wetlands in their countries were then presented.

In the afternoon, delegates were taken on a field study tour. Social events followed, establishing an amicable atmosphere for very serious discussions that continued until the early hours. Telephonic communication was recorded between delegations and their capitals.

On the fourth day, 2 February, Sir Hugh Elliott explained the textual changes that the Drafting Committee had made to the Espoo text. With little discussion, the Conference adopted the complete revised text and then turned to the remaining two points of substance. The Dutch delegation then stated that, although it had opposed a Soviet proposal to delete Article 13, concerned with territorial application, it now, in the spirit of collaboration, withdrew its opposition, on condition that the Final Act should contain a suitable covering statement. The motion of the Netherlands was approved and the clause deleted. It was agreed that the Final Act would incorporate the statement that "whilst the final text of the Convention does not include an article concerning territorial application, this will not preclude Parties to the Convention indicating at any time to which territories constitutionally associated with them the Convention shall apply".

The delegation of the Federal Republic of Germany then proposed that the "Vienna formula" should be used in Article 10 concerning the definition of States able to sign the Convention. The motion was seconded by the delegation of the Netherlands. The Soviet delegation then stated that, if the proposal was approved, it, like the Dutch delegation, would require that its attitude be expressed in the Final Act. The proposal was then passed, with the Soviet delegation abstaining. In the Final Act this abstention was recorded, with the statement that the Head of the delegation of the USSR "believed that all countries should have the right to become Parties to the Convention, since this would contribute to the cause of conservation of wetlands and waterfowl, and he noted that birds recognized no boundaries He expressed the hope that these views would be taken into consideration by governments at the time the Convention was opened for signature".

There remained only the matter of the Depositary for the Convention. The three States suggested by the Espoo Meeting did not agree to a troika arrangement, nor did any one of them wish to become sole Depositary. The Conference was therefore happy to be informed by K. Curry Lindahl, delegate for UNESCO, that his organization had agreed in principle to be the Depositary for the Convention.

The President then asked the Conference to confirm that the text of the Convention was finally approved. This having been done, he expressed his deep emotions of pleasure and satisfaction at this achievement of the Conference. He anticipated that the Ramsar Convention, as he hoped it would become known, was just the beginning of an expansion of activity in the field with which the Conference was concerned. Professor Mörzner Bruyns, on behalf of all the participants, expressed gratitude to the President for his great skill and energy in the difficult task of leading the Conference through its complicated discussions on the Convention text. There was prolonged applause.

In the afternoon, six more national reports were discussed and another five delegations undertook to send their reports for inclusion in the proceedings. The Conference then discussed the situation in certain endangered wetlands of international importance and general threats, such as oil and pesticide pollution. It was also agreed that lists of wetlands of international importance in Asia and Africa should be drawn up as a matter of urgency. A paper on the management of wetlands in semi-arid zones was read.

On the morning of the 5th day, 3 February, papers on hunting rationalization were read. Then F.G. Nicholls, on behalf of the Drafting Committee, read and explained the draft of the Final Act. With minor changes this was approved. In the afternoon, he read the 11 Recommendations drawn up by the Drafting Committee and, after discussion and amendment, they were approved.

The Head of each delegation was then asked formally to sign the text of the Convention as an indication of approval without committing his country to acceptance. However, all indicated that they would strongly recommend its acceptance to their governments, and most were hopeful that it would be signed without delay. Each delegation expressed its pleasure at the success of the Conference. L. Hoffmann spoke on behalf of the international organizations and Salim Ali on behalf of the unofficial observers present. A formal Vote of Thanks to the host country and to those who had organized the Conference was then agreed. The President then declared the Conference closed.

The Vote of Thanks included this statement from the delegates and observers. "They express their particular appreciation of the International Wildfowl Research Bureau, especially its Director, Professor G.V.T. Matthews, and staff for the original conception, for the vast preparatory work and for the outstanding organization and execution of all phases of the Conference programme. They recall with appreciation the preceding activity of the former Director of the IWRB, Dr L. Hoffmann, in working for the establishment of the Convention and record their thanks to all those who have contributed so much to earlier drafts of this vital document".

## Chapter 4

### Listing of Wetlands

#### **The need for wetland inventories**

Even when the message that wetlands are not wastelands has been put over to the public, and those professionals who can destroy wetlands have been made to see that there is sense in retaining them, an essential question remains - where are the remaining wetlands located? The further question - what are the relative values and importance of the individual wetlands - is dealt with in Chapter 5. Both must be considered by a country which has joined the Ramsar Convention or is considering joining it.

Article 2.1 of the Convention requires that "Each Contracting Party shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance. . . . The boundaries of each wetland shall be precisely described and also delimited on a map". Article 2.4 requires that "Each Contracting Party shall designate at least one wetland to be included in the List when signing the Convention". Article 3.1 requires that "The Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included on the List, and as far as possible the wise use of wetlands on their territory". It is quite clear therefore that, to meet its obligations under the Convention or indeed to have a coherent wetland conservation programme, a country must be provided with an inventory of at least its major wetlands.

#### **Pioneer wetland inventories**

Long before the Ramsar Convention was conceived, attempts had begun in North America to assess the continental waterfowl populations and to map their habitats. Aerial survey became accepted as a useful tool in the 1930s and as an essential one after World War II. The activities of these pioneers and their achievements are fully retold in the two Fish & Wildlife Survey (FWS) books described in Chapter 2.

As early as 1956 the FWS was able to publish their Circular 39, a booklet of 69 pages, entitled "Wetlands of the United States". This was particularly concerned with wetlands as essential habitat for all waterfowl, most fur-bearing animals, and many species of farm game, forest game and warm-water fish. It was calculated that of some 51 million hectares thought to have been in existence in the 48 States a century earlier, 35 per cent had already been drained.

The wetlands inventory which had been carried out in 1954 had revealed the location, classification, and evaluation of some 30 million hectares of wetlands as waterfowl habitat. It was considered that the inventory was 90% complete. Certainly it was a remarkable achievement and laid the basis for the formulation of overall habitat management. Thus 3.9 million hectares were to be of high value (to waterfowl) and 5.5 million to be of moderate value. The FWS estimated that public agencies should eventually administer 5 million hectares as permanent wildlife habitat, and that this objective was already 40% realized. The locations of the wetlands were indicated as dots on maps of the four main north/south flyways used by migratory waterfowl. More detail and precision were provided in the supporting booklets published for the individual States.

#### **Project MAR**

The 1962 MAR Conference (see Chapter 2), fired by the example of North America reported to it, and made aware of the lamentable lack of information in the Old World, made a recommendation (No. IX): "that IUCN compile a list, in accordance with an internationally agreed classification, of European and North African wetlands of international importance, together with detailed

information on these areas; recommends that the list be placed at the disposal of conservationists and those responsible for development schemes; and further recommends that this list may be considered as a foundation for an international convention on wetlands”.

The task was assigned to the IWRB Headquarters in the Camargue, the team being led by P.J.S. Olney, seconded from the Wildfowl Trust, Slimbridge. It was decided that this list should be based primarily on ornithological data, a rich and varied bird population being an indication of high ecological value. More controversial was the decision to restrict the number of wetlands listed to about 200. This was on the grounds that “to include all wetlands in need of protection would have increased the list to a level which no longer allowed efficient action by the international bodies”. This was manifestly incorrect in that the action needed would largely be at national level. Mistaken, too, was the decision to divide the wetlands into Categories A and B in line with their supposed importance. This simply opened the way for developers to ignore the conservation of Category B.

The list was compiled mainly by consultation with some 500 experts throughout Europe. Four field expeditions were organized for IUCN and IWRB in the winters of 1962/63 and 1963/64 to collect information on the largely unknown wetlands of Greece, Yugoslavia, Morocco and Portugal.

The MAR List was published in 1965, a booklet of 89 pages. It covered 27 countries - Europe except Albania and Iceland; the European part of the USSR; and the three countries of the North African Magreb. Category A wetlands numbered 123, Category B 105. The unbalanced nature of the rather arbitrary selection was recognized at the time. For instance, Sweden was allocated 17 wetlands, Finland only 3. European USSR was allocated only 9, although the Soviets indicated 44 which would rate Category B, in their report to the Second European Meeting on Wildfowl Conservation at Noordwijk, Netherlands, in 1966. Indeed, they could well have had about 200 sites if covered at the same level as the other countries. Nevertheless, the MAR List was a start, with some seven million hectares of wetlands being located and described in outline. The MAR List was recognized to be the basis for a wetland convention, even if it was as yet inadequate.

### **Project AQUA**

In 1959 the Societas Internationalis Limnologiae (SIL) had decided to prepare a list of lakes and rivers whose protection was particularly desirable from the limnological point of view (that is, their structure, physical and chemical properties, as well as the animal and plant life they support). In 1961, IUCN agreed to collaborate in this initiative, and it was given the title Project AQUA. In 1964 was launched the International Biological Programme, a ten-year research effort on “the biological basis of productivity and human welfare”. Its Production, Freshwaters (PF) section, with P.Rzoska as Coordinator, agreed to take over Project AQUA. The latter’s aim was confirmed as being the listing of “freshwater and brackish water areas which are of agreed international importance for research, education and training”.

Partly because of its mixed parentage, it was not until 1969 that a provisional Project AQUA list became available for comment, correction and amplification. The following year UNESCO launched its intergovernmental and interdisciplinary Programme on Man and the Biosphere (MAB). Its Project 5 was concerned with the study and conservation of aquatic ecosystems, so the completion of the Project AQUA list was in fact carried out jointly by IBP and MAB. Anyway, a definitive version of the list was finally published in 1971, as IBP Handbook No.21, with financial assistance from UNESCO, covering some 600 water bodies around the globe.

### **Project TELMA**

When the IBP was launched in 1964, its collaboration with IUCN extended beyond Project AQUA to what was termed Project TELMA (Greek for “mire”). The objective was to prepare a world list



of peatland sites of international importance and to promote their conservation and study. Some results were presented at the International Peat Congress in 1972 and at the International Botanical Congress in 1974. Sadly the Project became, so to speak, bogged down. The international list has yet to appear. Responsibility has now passed to the International Peat Society (IPS).

One of the objectives of TELMA has, however, been achieved, that of encouraging communication among peat scientists. Individual countries produced national assessments of the extent of their peatlands, and the Council of Europe was, in 1980, able to publish, as No.19 in its Nature and Environment Series, a booklet on "European Peatlands". This in fact relates only to countries of Western Europe. A provisional list of 114 areas considered to be internationally important was compiled, covering about a third of a million hectares. Importantly, however, this did not include Iceland. It was estimated that the area of undrained peatlands in Western Europe amounted to about 18 million hectares, more than 97 per cent being in just six countries. These were, in descending order of importance, Finland, Sweden, Norway, United Kingdom, Ireland and Iceland.

### **Directory of Western Palearctic Wetlands**

In 1973 IUCN began the task of extending, updating and improving the MAR List and combining with it the information gathered by Project AQUA. E. Carp was commissioned to undertake the production of the new volume. From 1975 the recently formed United Nations Environment Programme (UNEP) was involved in financing the work. Questionnaires were circulated to IUCN and IWRB contacts. Much new information had become available from papers contributed to a series of international conferences on the conservation of wetlands and waterfowl in the interval - the European meeting in the Netherlands in 1966, an IUCN technical meeting in Turkey, 1967, the regional meeting in Leningrad, USSR, in 1968, the Ramsar Conference itself in 1971, and the international conference in Heiligenhafen, Federal Republic of Germany, in 1974. Several expeditions to little-known areas had also been mounted on behalf of IUCN and IWRB, mainly through the Tour du Valat Biological Station in the Camargue, directed by L. Hoffmann.

It was decided to limit the volume to the Western Palearctic, but with the eastern boundary of that biogeographical region extended for the present purpose as far as Pakistan. Publication was finally achieved in 1980. Besides the 27 countries covered in the MAR List, the Directory included another 17. There were no artificial limits on the number of wetlands described (though the Soviets advised that only the 12 already designated by them for the Ramsar List should be included) The artificial division into A and B wetlands was also dropped. In the event 891 wetlands were listed, more than four times those in the MAR List. The area covered by these wetlands was also much greater, about 17 million hectares instead of seven million.

Not surprisingly, the extent and detail of the coverage for the different countries varied widely according to the amount of interest that had been taken in the wetlands and the national research programmes which had been established; the geography of the country was also reflected. Thus Jordan really did have only one important wetland (Azraq, 10,000 ha); those on Malta were inevitably small, just over 100 hectares. While the United Kingdom listed 87 wetlands, covering 493,000 hectares, a similar area in Romania was occupied by only 12. Again, the 12 wetlands named for the USSR covered 2,185,000 hectares, the largest contribution, only approached by Iran (1,423,000 ha) and Turkey (1,393,000 ha), both with 34 wetlands, and by France (1,327,000 ha) with 28.

The section for each country was prefaced by a general review of its wetland situation, followed by the list of wetlands. For each site were given its coordinates, size, criteria on which it was selected, and its conservation status. A sketch map of the country had the wetlands marked as dots or (those of mainly limnological interest) as triangles. In most cases more detailed information was given about the individual wetlands. This included the location relative to the nearest large town, altitude, depth of water, wetland type, general ecology, legal status, ownership,

management practices, threats, past or present research and principle references in the literature. This publication of 506 pages thus formed a remarkably comprehensive and accessible guide to the wetlands of the area it covered.

### **The international waterfowl counts**

In 1967 the IWRB launched its international waterfowl mid-winter counts, coordinated for them by G.L. Atkinson-Willes of the Wildfowl Trust, Slimbridge. The aim was to extend the regular waterfowl counts that had been running for two decades in a few West European countries to as wide an area of the Old World as possible. The aims were to obtain estimates of the biogeographical populations of waterfowl, species by species, and to determine whether these were stable or changing their conservation status. Other aims were to locate the wetlands used by waterfowl in their annual migratory cycle and to determine which were the most important. The final aim we return to in Chapter 5. Here we concentrate on the value of these counts in extending our knowledge of the whereabouts of valuable wetlands.

A preliminary report to the Ramsar Conference in 1971 revealed that data had been collected from 17 countries on some 5000 wetlands in northern and western Europe. Three years later, at the international conference at Heiligenhafen, it was reported that 55 countries, as far east as Pakistan, were involved and the total of wetlands covered had increased to 12,750. Data for waterfowl and wetlands had also been collected for the West Sahel region of Africa, while parallel data for coastal waders (=shorebirds) had been obtained in Europe and West Africa. Although some use was made of aerial surveys, particularly in Africa and along some coasts in Europe, most of the data were collected by many thousand local ground observers, both professionals and amateur experts, or in the course of expeditions organized for IWRB.

IWRB Special Publication No.8, published in 1989, revealed that, from 1967 to 1986 inclusive, data had been obtained from 19,530 different wetlands in Northwest and Central Europe and the Mediterranean Regions. Areas of major importance to wintering waterfowl numbered 180. The data for Tropical Africa were published in IWRB Special Publication No.15, in 1991. Over 120 sites were similarly identified as being of major importance. Coordinated waterfowl counts only began in Asia in 1987, but three years later 28 countries were involved and data had been collected on 1550 wetlands. In 1990, a Neotropical Waterfowl Census was launched.

### **An inventory based on waterfowl counts**

The Council of the European Communities (EC) had, in 1979, issued a Directive to its member States "On the Conservation of Wild Birds". Article 3 required them "to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds". Member States were also (Article 4) to "classify in particular the most suitable territories in number and size as special protection areas" required for the conservation of 74 vulnerable species. The Commission of the EC requested IWRB to prepare an inventory of wetlands important to waterfowl within the (then) nine member States. D.A. Scott, a consultant of the IWRB, undertook the task, using the waterfowl census and other data available at IWRB headquarters or obtained from IWRB contacts.

After the report had been handed to the EC, it was agreed that it could be expanded to cover 22 countries as "A Preliminary Inventory of Wetlands of International Importance for Waterfowl in West Europe and Northwest Africa". This appeared in 1980 as IWRB Special Publication No. 2, a booklet of 127 pages. A total of 544 sites were indicated as being important to waterfowl, taking into account the requirements of 86 species, not only for wintering but also for passage and breeding.

### **Directory of Neotropical Wetlands**

The IWRB annual meeting for 1982 was in Edmonton, Canada. There it was agreed that a report on the current status of wetlands in the Neotropics should be produced. After funding from a number of governmental and nongovernmental bodies had been promised, the project was launched in the spring of 1983. The IWRB's next annual meeting, in La Rabida, Spain provided a suitable launchpad, as 13 countries from the Neotropical Realm joined in those proceedings. The final, massive, text was presented for review only two years later, at IWRB's 1985 meeting which was held in the Realm itself, at Paracas, Peru. The 784-page volume was published in 1986.

Such a remarkable rate of progress was only possible because of the energy and dedication of the coordinator. D.A. Scott fortunately had again been available to undertake this new task. He had had field experience in the Realm already and many contacts there. He was assisted by M. Carbonell, an Argentinian/Spanish national who had already worked for several years at Slimbridge. They built a network of nearly 300 collaborators and imbued them with their energy and enthusiasm.

The major part of the directory consisted of country reports. These began with a general introduction to the country's geography; the national institutes involved in wetland conservation and research were then named and the progress made in these fields outlined; finally the major threats currently faced by wetlands and waterfowl in the country were described. An outline map of the country showed the location of those wetlands of greatest importance from the point of view of nature conservation. The site description of each wetland then followed, giving location, area altitude, biogeographical province and wetland type, general description, principal vegetation, land tenure, protection, land use, importance to waterfowl and to other fauna, threats, research and conservation, literature and unpublished reports, sources of site information, criteria for inclusion in the Directory. Also provided was a general bibliography, with emphasis on recent works with direct relevance to conservation issues. Even so, the list of titles still exceeded 1800. The many contributors were then listed. Finally an annotated checklist of Neotropical waterfowl, in the broad sense covering 25 families, was provided.

In general, the smaller the country the more complete the inventory. This certainly applied to the 22 Caribbean countries for which were recorded 312 wetlands with a total area of 1.9 million hectares. The lion's share here was taken by Cuba (1.3 million ha). The eight Central American States provided 153 wetlands covering 7.2 million hectares. Most important was Mexico with 40 wetlands (3.2 million ha) plus 25 more not included as they lay in the Nearctic Realm. In South America, 398 wetlands were described in the 15 countries, covering more than 105.7 million hectares. Of course, Brazil was by far the most important (60.8 million ha), the next being Venezuela (14.5 million ha). Many of the wetlands here were vast complexes. Thus the Amazon basin was estimated to contain at least 30 million hectares of wetlands, divided into nine main areas.

### **Directory of Asian Wetlands**

In 1984 an ICBP meeting in Sri Lanka concluded that the identification of important wetland sites in South and East Asia was a priority. Reports from that meeting were published as a preliminary inventory the following year. IUCN and IWRB then joined ICBP in a project to produce a full-blown directory on the lines of the Neotropical one. The latter's coordinator, D.A. Scott, was able to move on to this new task with his customary energy and efficiency. At an IWRB meeting in Malacca, Malaysia, early in 1987, he was able to report that the project was well under way, over 500 individuals and organizations having been contacted and national organizers appointed.

The directory was laid out on similar lines to that for the Neotropics, with country by country treatment. Emphasis was laid on the socio-economic values of wetlands, this being of particular importance in these densely populated areas, which contain more than half of the global human population. The final publication, in 1989, was even more bulky than its predecessor, running to

1181 pages. Recognizing that such a large volume cannot be given the wide circulation that would be desirable, arrangements were made to have national sections distributed separately. Also very useful was the publication, in the same year, of a booklet of 140 pages, "A Status Overview of Asian Wetlands". This was not only a summary of the main directory, which was basically a reference document, but highlighted the priorities for conservation action and for the gathering of further information to fill the known gaps in knowledge.

The Asian directory covered 24 countries and listed 947 of the most important wetlands. This included a number of very large sites which are themselves made up of many smaller units. Thus the single site of Chang Tang in Tibet extends over 3.5 million hectares and contains well over 1000 lakes. The wetlands listed as important in the directory cover over 60 per cent of the total wetlands estimated to exist in the region, some 120 million hectares, excluding rice paddies. About 15 per cent of listed wetlands are afforded some degree of legal protection; a similar proportion, not necessarily the same wetlands, is all that can be considered free of immediate threats to their integrity.



Fish poacher's boat in Sumatra, Indonesia (Photo: WWF/P. Sochaczewski)

The region richest in wetlands was Southeast Asia, with 373 listed, covering 41.2 million hectares. The dominant countries were Papua New Guinea (10.1 million ha) and Indonesia (8.8 million ha). Then came East Asia, with 358 listed wetlands covering 18.8 million hectares, of which no less than 16.3 million were in China. Lastly, South Asia had 216 listed of 13.4 million hectares. Here the much smaller Bangladesh had more (6.8 million ha in only 12 sites) than the whole of India (5.5 million ha in 93 sites).

### **Directory of Wetlands in Africa**

In the 1970s researchers had begun compiling information about wetlands of limnological interest in Africa. In 1987 the "Office de la Recherche Scientifique et Technique d'Outre-Mer (ORSTOM)" published a 650-page book on "African wetlands and shallow water bodies". This was in three parts - a bibliography, a directory, and a section on structure, functioning and management. It was concerned particularly, but not only, with limnology and excluded estuarine and mangrove areas, artificial systems and deep lakes. It therefore was not complete enough for a programme of wetland conservation such as envisaged under the Ramsar Convention.

IUCN, supported financially by UNEP, therefore commissioned the preparation of a wide-ranging African directory. This work was started by E. Carp, completed by R.H. & J.S. Hughes (formerly Mephram) around 1987, and finally published in 1992. The 854-page volume included Northern Africa (already in the Western Palearctic volume) and covered 47 countries. The details provided differed from the other directories and, in particular, individual wetlands were not allocated to the category of international importance on the generally agreed criteria. The wetlands within each country were described in groupings and complexes which themselves can be made to total around 500. The number of individual wetlands is much greater. Elsewhere (Finlayson & Moser) it has been estimated that Africa, despite being known for its hot deserts, has about 34.5 million hectares of wetlands. A large proportion would surely rate as being internationally important.

### **Directory of Wetlands in Oceania**

Hardly was the Asian Directory in print when a survey of the remaining accessible sector of the globe, Oceania, was launched by D.A. Scott on behalf of IWRB, the Asian Wetland Bureau (AWB), the South Pacific Regional Environment Programme, and the Ramsar Bureau. This gathered

together information on the principal wetland ecosystems in 24 island territories in the Pacific, some 200 of which were of international importance. Papua New Guinea's 33 had already been listed in the Asian Directory. In addition, New Zealand has so many sites that these may be listed in a separate volume. It, and that for the rest of Oceania, should be published in 1993.

### **National directories**

Australia, rather than being included in either the Asia or the Oceania directories, is preparing its own very substantial list of important wetlands. It is hoped to publish this to coincide with the Oceania and New Zealand volumes.

The former Soviet Union had not published a list of wetlands throughout its territories before it split into its constituent republics. This is particularly sad as a lead had been established in the 1970s, under the guidance of the respected biogeographer, Professor Yu. A. Isakov. At the international conference in Heiligenhafen in 1974 he had offered his "Thoughts on an atlas of distribution of waterfowl and wetlands". For the IWRB annual meeting in 1976, held in Alushta, Crimea, he had organized a symposium on "The mapping of waterfowl distributions, migrations and habitats" and discussed the atlas proposal in detail.

Some of the papers at the Alushta Symposium gave details of some parts of the Soviet Union, as had those presented at the regional meeting in Leningrad in 1968. More information can be gleaned from contributions to a symposium on "Managing Waterfowl Populations" held in Astrakhan in 1989 (IWRB Special Publication No.12). However, the only detailed information generally available concerns the 12 wetlands designated for the Ramsar List in 1976. While these do cover almost 3 million hectares, it has been estimated that there were 90 million hectares of marshy ground subject to seasonal flooding and 83 million hectares of peat bogs and swamps in the USSR, as well as the inland seas, the great lakes and thousands of smaller ones. The need for a directory of internationally important wetlands in the Commonwealth of Independent States has been recognized and a project proposal is currently being drawn up in collaboration with IWRB.

The USA, having led the way with its inventories in the 1950s, launched its National Wetlands Inventory Programme in 1977. This set out to produce detailed wetland maps to enable impact assessments to be made for site-specific projects. The information was derived from aerial and satellite photographs, and plotted on to 1:24,000 maps with overlays. By 1991, over 30,000 maps had been prepared and, in part, computerized, covering 70 per cent of the lower 48 States, 22 per cent of Alaska and all of Hawaii, Puerto Rico and four other island groups. Mapping is to be completed in 1998. This immensely valuable, but expensive exercise is unlikely to be matched by any other large country.

By taking a stratified random sample of over 3,600 photograph plots, each covering slightly over 1000 hectares, wetland losses in the lower 48 States could be estimated. A 1983 report showed that between the mid-1950s and the mid-1970s the net wetland loss had been about 3.5 million hectares, at an average annual rate of 185,000 ha. A 1991 report showed that by the mid-1980s a further net loss of nearly a million hectares had occurred, the average annual rate being 117,000 hectares. The rate has slowed further since, because of conservation measures and agricultural conversion becoming less important. Some 41.8 million hectares of wetlands remained in the mid-1980s.

Canada is estimated to contain about 127 million hectares of wetlands, something like a quarter of the world's total. Since they occupy 14 per cent of the country's territories, the detailed mapping which has also been embarked upon here will certainly take much time. However, Canada has designated and described for the Ramsar List almost 13 million hectares of wetlands, while the rest of the world has designated only another 19 million.

Although Greenland is a dependency of Denmark, it lies outside the Palearctic limits and no inventory of its wetlands has been published. However, in 1988 eleven of them, covering over a million hectares, were designated for the Ramsar List.

### **“Shadow” Lists**

At the First Conference of the Contracting Parties, in 1980 at Cagliari, Sardinia, Recommendation (1.4) was “that to monitor progress in completing the network of wetlands of international importance, a ‘shadow’ list’ . . . of wetlands qualifying under the criteria be maintained by appropriate international organizations”.

The various directories have served this purpose well. An international shadow list was specifically compiled for Europe in 1990, published jointly by ICBP and IWRB, in preparation for the Fourth Conference of the Contracting Parties at Montreux, Switzerland. This “Wetlands for the Shadow List of Ramsar Sites” detailed, and displayed on outline maps, 1276 wetland areas in the 24 European States which were Parties to the Convention and a further 108 in the eight States which were not then Parties. Altogether the wetlands covered at least 18.5 million hectares, whereas the total area then designated under Ramsar amounted to only 5.1 million hectares. The same two organizations, together with the Ornithological Society of the Middle East, are compiling a similar list for the Middle East region for publication in 1993. This will expand on data for those parts of the region included in the Western Palearctic directory and in a regional list of national and international sites, 245 in all, compiled by D.A. Scott.

Many countries have also drawn up their own wetland inventories, a vital necessity if a country is to meet its obligations under the Ramsar Convention “to formulate their planning so as to promote the conservation . . . and wise use of wetlands in their territory”. Moreover, such inventories also serve as national “shadow” lists of important wetlands, increasing pressure for them to be given international recognition by being inscribed on the Ramsar List. For example, at the Second Conference of the Contracting Parties in 1984, the United Kingdom delegate announced that 132 sites qualifying for inclusion on the Ramsar List had been identified in his country. Of these, 19 had already been so designated, 10 more would be shortly, and nearly all would be by 1986. The total designated in fact only reached 45 by 1991, but at least the ultimate target had been made clear.

If we set the 36.7 million hectares designated for the Ramsar List by 31 December 1992 against the estimate that the global total of wetlands exceeds 600 million hectares, the Convention only protects around 6 per cent. However the Convention List is only for wetlands of international importance, and the various directories and inventories which have been described would suggest that it is, in that respect, considerably more complete, perhaps as much as 15 per cent. However, creditable though this is, there is still a long way to go.

### **A Directory of Ramsar Wetlands**

For the Second Meeting of the Contracting Parties, it was considered useful to gather together in a standard format information on each site on the Ramsar List. A “Draft Directory of Wetlands of International Importance” was prepared by IUCN’s World Conservation Monitoring Centre (WCMC). This was presented at Groningen in 1984. WCMC was then asked to prepare a more complete directory for the Third Meeting in 1987. The resultant “Directory of Wetlands of International Importance” was a book of 445 closely-packed pages.

Further revision resulted in an edition running to 782 pages. This was published in 1990 for the Fourth Meeting of the Contracting Parties in Switzerland. In its preparation the Ramsar Bureau had worked closely with WCMC and IWRB. The Ramsar Bureau has decided that in future it needs to have more detailed site descriptions, with a wider range of information grouped under more headings. A new directory, in four volumes, is being prepared for the Fifth Meeting of the Conference of the Contracting Parties.

## Chapter 5

### Classification and Evaluation

#### The need for classification

Classification may seem a somewhat dreary subject, but it is a very necessary one. Having given something a name, and obtained its wide acceptance, it is clearly useful if similar items can be associated together as a group, which can then be referred to by a single widely recognized name. A hierarchical classification can then be built up whereby groups are linked into major groups, major groups into super-groups.

#### Classification of birds

Birds are classified in a “natural” arrangement which gives an indication of their evolutionary relationships. They belong to the Class Aves which is divided into Orders, the names of which are rendered into Latin with the ending -iformes; the Orders are split into Families each having the ending -idae; the Families may themselves be grouped into Sub-orders, with various endings such as -ae, -es, -i, or into Super-families, with the ending -ea. A Family (which can be split into Sub-families, with the ending -mae) contains Genera and these in turn are made up of Species. Each Species is given two Latin names, the first generic, common to the Genus in which it is placed, the second specific. There are over 8,600 living species of birds. Some have been further divided into geographical Races, which may be dignified as Sub-species, and given a third name.

#### The definition of “waterfowl”

The title of the Convention includes the words “especially as Waterfowl Habitat”, so it is clearly important to know what waterfowl are. The Convention text (Article 1.2) provided an elegant formulation -- “waterfowl are birds ecologically dependent on wetlands” -- but this rather sidesteps the issue. We really need to know which are these “ecologically dependent” birds. The Ramsar Conference recognized this need and in its Final Act stated that “the waterfowl referred to in the Convention include the following groups of birds: Gaviiformes (divers), Podicipediformes (grebes), Pelicaniformes (pelicans, cormorants, darters), Ciconiiformes (herons, bitterns, storks, ibises, flamingos), Anseriformes (screamers, swans, geese, ducks), Gruiformes (cranes), Ralliformes (coots, rails), Charadriiformes (waders, gulls, terns).

In these bird Orders most species are dependent on wetlands. The list was not comprehensive (witness the word “include”), other Orders having a minority of species which are just as wetland-dependent. To have listed all these, however, would have hopelessly complicated the issue. The drafters were wise to use one scientific grouping, the Order. Politicians and administrators are not impressed by taxonomic convolutions. The only criticism is that the Order Ralliformes is archaic, coots and rails now being considered to be a Family (Rallidae) within the Gruiformes.

The list of bird Orders to be included in the term “waterfowl” remained undisturbed for nearly two decades. However, the Fourth Meeting of the Conference of the Contracting Parties (Montreux, 1990) in Annex 1 to its Recommendation C.4.2 put forward a guideline that “particular groups of waterfowl, indicative of wetland values, productivity or diversity . . . include any of the following:”. The subsequent list obviously sought to refine that set out at Ramsar. However, the result is a confusing mixture of ornithological taxa, and the attempt at precision has resulted in important wetland groups being omitted.

The Order Ciconiiformes (herons, bitterns, storks, ibises and spoonbills) was retained but there is no mention of flamingos, which taxonomists do not unanimously place in that Order. Two new Orders were added, Accipitriformes and Falconiformes (wetland-related raptors), despite the fact

that the majority of their species are not so related. However, the vast Order Passeriformes, which does contain quite as many wetland birds, was not added. The Sub-order Charadrii (Families of shorebirds or waders) was inserted instead of the Order Charadriiformes, which includes the Family Sternidae (terns) and Laridae (gulls). Only the former was listed, although the latter contains many wetland-related species.

The rest of the list was at Family level. The Gaviidae (loons or divers) and Podicipedidae (grebes) are the only Families in their respective Orders. However, by listing only two of the constituent Families of the Pelicaniformes, the Phalacrocoracidae (cormorants) and Pelecanidae (pelicans), a distinctly wetland Family, the Anhingidae (darters), was omitted. Only one Family of the Anseriformes, the Anatidae (swans, geese and ducks), was given, while the Anhimidae (screamers), very much a wetland Family, was left out. Only one Family of the Gruiformes, the Gruidae (cranes), was listed, while four other wetland Families, Aramidae (limkin), Rallidae (rails and coots, the latter most important for evaluating wetlands), Heliornithidae (sun grebes), and Eurypgidae (sun bittern), were omitted. These omissions should be rectified. Simpler still would be a return to a list of Orders, using the vernacular names to indicate which Families are meant. As uniform, but longer, would be a list of some three dozen Families.



Salt exploitation. Saline beach near Karachi, Pakistan (Photo: WWF/Mauri Rautkari)

### **What is a wetland?**

As an all-embracing definition, that given in the Ramsar Convention (Article 1.1), although not scientifically precise, has not been bettered. It states that “wetlands are areas of marsh fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres”. Let us therefore not get involved in defining transitional zones between wet and dry or making banal statements that if you need rubber boots on a sunny day you are in a wetland. However, all wetlands have one feature in common. They are based on a substrate that is at least occasionally covered or saturated with water. That “liquid asset” derives from the sea, rain and rivers and is veritably an international resource which must be conserved and kept free from pollution, by international agreement.

### **The factors determining wetland diversity**

Wetlands are extremely diverse in nature, depending on their method of formation, geographical location, and altitude. The flow of water into and out of the system is influenced by the climate and the configuration of the catchment area; the system’s capacity for storage is determined by landscape and geology. This hydrological cycle itself influences the salinity of the water, the rates at which gases diffuse through it, the reduced or oxidized (redox) state of nutrients and their solubility. These factors determine which flora and fauna can live in the wetland. Species diversity and composition in turn influence the way in which nutrients and pollutants are recycled in the ecosystem. It is therefore not surprising that systems of wetland classification have been many and differing.

### **A pioneer wetland classification**

In the United States, a wetland classification was published in 1956, in the influential Circular 39. Twenty types of wetland were specified: 1) seasonally flooded basins or flats, 2) inland fresh meadows, 3) inland shallow or 4) deep fresh marshes, 5) inland open fresh water, 6) shrub swamps,



7) wooded swamps, 8) bogs, 9) inland saline flats or 10) marshes, 11) inland open saline water, 12) coastal shallow or 13) deep fresh marshes, 14) coastal open fresh water, 15) coastal salt flats or 16) meadows, 17) irregularly or 18) regularly flooded salt marshes, 19) sounds and bays, and 20) mangrove swamps. This was a pragmatic classification which served its purpose well but had its weaknesses. Designed for waterfowl habitat, it gave overmuch attention to vegetated areas. There was over-simplification, e.g. no distinction between fresh and brackish inland wetlands, and definitions of the wetland types lacked precision.

### **Classifications for Palearctic wetlands**

Wetlands in the 1965 MAR List were allocated to only eight categories: 1) coastal waters, 2) shallow coastal lagoons, 3) coastal marshes, 4) shallow inland, salt, brackish or alkali water, 5) shallow static inland fresh water, 6) shallow flowing inland fresh water, 7) inland freshwater mineral-marshes, and 8) peatland.

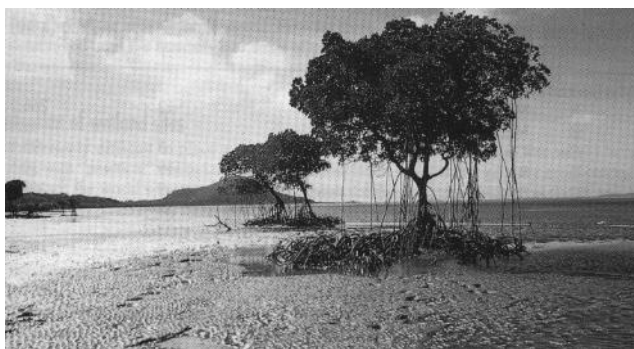
At an IWRB meeting in 1966 at Jablonna, Poland, the biogeographer, Professor Yu. A. Isakov, said the MAR classification lacked detail, over-emphasized certain indicators, and did not include types characteristic of continental areas. He put forward "A preliminary scheme for a typology and classification of waterfowl habitats". This was hierarchical in nature, the main divisions being coastal areas, river valleys and other areas. These were subdivided, respectively, into open shallow sea, sea bays, river mouths, coasts; rivers and flood plains, storage reservoirs; lakes, mires, temporary waters, artificial waters. These in turn were subdivided into two to four categories, and each of these into yet another two to four categories. This scheme was tested on German wetlands by G. Eber, who published a modified version in 1969. This was used as a basis for classification in the "Directory of Western Palearctic Wetlands", begun in 1973 and published in 1980. Twenty-five types were grouped as follows:

<b>Coastal areas</b>		13) mountain rivers
Open sea	1) inter-tidal zone	14) brooks
	2) permanent shallow waters	Storage reservoirs 15) with stable water levels
Sea bays and straits	3) shallow sea waters	16) with changing water level
	4) deep bays	<b>Other areas</b>
	5) shallow bays	Lakes
Mouths of rivers	6) fresh and brackish water bays	17) salt lakes
	7) lagoons, both salt and fresh, natural and artificial	18) fresh nutrient-rich lakes
	8) tidal estuaries	19) fresh nutrient-poor lakes
Coasts	9) deltas	Mires 20) fresh peaty lakes
	10) islets	21) fen and transitional mires
River valleys	11) continental or large island coasts	Temporary waters 22) peat bogs
	12) lowland rivers	Artificial ponds 23) from snowmelt or rainfall
Rivers and flood plains		24) ponds, small reservoirs
		25) irrigation, drainage systems

### **A revised North American classification of wetlands**

The shortcomings of Circular 39 having been recognized, a revised "Classification of wetlands and deepwater habitats of the United States" was published in 1979. This was strictly hierarchical, the primary systems being marine, estuarine, riverine, lacustrine (pertaining to lakes), and palustrine (pertaining to marshes). The marine and estuarine systems each had a subtidal and an intertidal

subsystem. The riverine system had four subsystems, tidal, lower (in gradient) perennial, upper perennial and intermittent (in flow). The lacustrine system had limnetic (water) and littoral (shore) subsystems. The palustrine system had no subsystem. There was then further subdivision into classes. Six were based on substrate and flooding regime. These were 1) rock bottom, 2) unconsolidated bottom, 3) rocky shore, 4) unconsolidated shore, 5) streambed, and 6) reef. The Classes 1), 2) and 6) were flooded most of the time, Classes 3) and 4) mostly exposed. Class 5) was restricted to intermittent streams and tidal channels. Five further classes are based on vegetative form: 7) aquatic bed, 8) moss-lichen wetland, 9) emergent wetland, 10) scrub-shrub wetland, and 11) forested wetland. There were also modifiers which could be applied to classes. The regularity of flooding was described by four modifiers in tidal areas and eight in non-tidal areas. There were seven salinity modifiers for both coastal and inland systems. There were three modifiers for acid/alkaline balance, two soil modifiers and six special modifiers concerned with artificial changes. The lowest level of the hierarchy was provided by the dominance type of plant or invertebrate animal.



Mangrove trees in Cape Hillsborough National Park, Australia.  
(Photo: WWF/W. Dolder)

### **Other classifications of wetlands**

The American classification can only be applied in detail where a mass of information is already available or there is manpower and time to gather it. For the "Directory of Neotropical Wetlands" neither requirement was met and a simpler classification was needed. First, a wetland was allocated to a biogeographical province following the 1975 IUCN system (Udvardy) "A Classification of the Biogeographical Provinces of the World". The wetland was then placed in one of 19 categories: (1) shallow sea bays and straits, (2) estuaries, deltas, (3) islets, (4) rocky sea coasts, (5) sea beaches, (6) intertidal mud or sand flats, (7) coastal brackish and saline lagoons, marshes, salt pans, (8) mangrove swamps and forest, (9) slow-flowing rivers and streams, (10) fast-flowing rivers and streams, (11) riverine lakes and marshes, (12) freshwater lakes and marshes, (13) freshwater ponds, marshes and swamps, (14) salt lakes, (15) reservoirs and dams, (16) seasonally flooded grassland and savanna, (17) rice paddies, flooded arable, irrigated land, (18) swamp forest and temporarily flooded forest, (19) peat bogs, wet mountain meadows, snowmelt bogs. A similar system was used in the Directories for Asia, though artificial salt pans were allocated their own category, as were rice paddies. A new category was shrimp and fish ponds. These additions brought the number of types to 22.

### **Classification of wetlands on the Ramsar List**

The "Directory of Wetlands of International Importance" (detailing wetlands on the Ramsar List), whose final book version was published in 1990, did not use a wetland classification. However, the Fourth Meeting of the Conference of the Contracting Parties (Montreux, 1990) in Recommendation C.4.7 required that a specific system of wetland types be used by Contracting Parties and the Bureau. This classification, not greatly differing from the foregoing ones, is set out below with, opposite each category, the number and areas of sites on the Ramsar List (as of early 1993) at which the major habitat is of that type:

*The Ramsar Convention on Wetlands (1993)*

<b>Habitat type</b>		<b>Number</b>	<b>Area (k ha)</b>
<b>Marine and coastal wetlands</b>			
A	Shallow marine waters	12	266.7
B	Marine beds	1	1.9
C	Coral reefs	3	95.1
D	Rocky shores	19	30.5
E	Sand/shingle shores (including dune systems)	9	160.2
F	Estuarine waters	34	1,409.0
G	Tidal mudflats (including salt flats)	37	2,880.1
H	Salt marshes	9	93.5
I	Mangroves/tidal forest	13	579.3
J	Coastal brackish/saline lagoons	85	1,849.9
K	Coastal freshwater lagoons	17	202.4
L	Deltas	22	2,343.6
<b>Inland wetlands</b>			
M	Rivers/streams/creeks: permanent	19	1,351.1
N	Rivers/streams/creeks: seasonal/intermittent	2	697.0
O	Freshwater lakes: permanent	104	3,969.5
P	Freshwater lakes: seasonal/intermittent	7	159.6
Q	Saline/brackish lakes/marshes: permanent	20	2,078.7
R	Saline/brackish lakes: seasonal/intermittent	10	83.2
S	Freshwater marshes/pools: permanent	38	1,966.7
T	Freshwater marshes/pools: seasonal/intermittent	7	938.5
U	Peatlands (including bogs/swamps/fens)	47	2,535.5
V	Tundra/alpine wetlands	15	8,509.5
W	Shrub-dominated wetlands	1	188.6
X	Tree-dominated wetlands (including swamp forest)	15	3,802.9
Y	Freshwater springs (including oases)	2	9.5
Z	Geothermal wetlands	1	5.2
<b>Man-made wetlands</b>			
1	Fish/shrimp ponds	8	19.0
2	Farm ponds/small tanks	0	0.0
3	Irrigated land (including rice fields)	0	0.0
4	Seasonally flooded agricultural land	5	5.5
5	Salt pans/salines	6	12.0
6	Reservoirs/barrages/dams	21	183.7
7	Gravel/brick/clay pits	0	0.0
8	Sewage farms	1	0.2
9	Canals	0	0.0
<b>Totals</b>		<b>590</b>	<b>36,702.5</b>

It will be seen that just five categories account for about half the Ramsar List sites. The spread is no wider when the areas are considered. How far there is an imbalance of representation cannot be determined until the numbers and areas of each wetland type occurring throughout the world are known.

### **Evaluation of wetland sites**

It is extremely difficult to place a monetary value on a wetland, useful as that would be when dealing with “practical” politicians and administrators. In terms of net primary productivity, salt marshes are the world’s most productive ecosystems, followed by freshwater wetlands and tropical rain forests. Intensively cultivated land will yield, at best, less than half that production, but, of course, more goes directly to humans. The harvestable yield from wetlands, in fish, shellfish, waterfowl, fur-bearing mammals, reeds and other vegetation products, has been calculated for individual sites.

To these must be added indirect values such as the benefits to the local economy derived from wetland-based recreation, such as fishing, shooting, sailing, and bird-watching, and also the direct, but intangible, value of such recreation to its practitioners. Then there is the value of environmental benefits, such as water quality improvement, protection from flooding and storm damage, erosion control, water supply and ground water recharge. Lastly, there are the aesthetic, educational and scientific values which are extremely difficult to cast in the monetary mould. Nature conservation concepts such as diversity, rarity, and complexity are also hard to quantify.

### **Wetlands of international importance**

Under the Ramsar Convention, all wetlands are recognized to be of value, but some are more important to conserve than others. The Convention Text (Article 2.1) requires each Contracting Party to “designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance.” Article 2.2 specifies that such “Wetlands should be selected . . . in terms of ecology, botany, zoology, limnology or hydrology. In the first instance wetlands of international importance to waterfowl at any season should be included”. No further guidance is offered, but it is clearly essential for an agreed set of criteria to be used in deciding whether a wetland is of international importance.

A start was made at Ramsar in the paper “Some suggested criteria for determining the international importance of wetlands in the Western Palearctic”, produced on behalf of IWRB (Sijj). This proposed that an internationally important wetland should meet at least one of the following criteria: 1) hold more than 0.2% of the total waterfowl population using a particular migration flyway, this being 10,000 or 20,000 birds in the Western Palearctic, 2) hold more than 1% of the flyway population of a waterfowl species, 3) be used regularly by an endangered species of waterfowl, 4) provide an important staging point on a main migration route, 5) be representative of a vanishing type of wetland, 6) be an essential complement to a wetland of international importance, and 7) have a general educational importance transcending national requirements. Wetlands which lie astride State borders should be conserved as an entity. The International Waterfowl Counts (see Chapter 4) already provided a lot of the data required for the first four criteria.

### **The Heiligenhafen Criteria**

The Conference organized by IWRB at Heiligenhafen, German Federal Republic, in 1974 was intended to be the First Meeting of the Conference of the Contracting Parties. Unfortunately, only four States had become Parties to the Convention by then, whereas seven were required to trigger it into action (achieved eight months later). Despite this shortfall, progress was made. In the present context, a criteria committee worked throughout the conference and took into account

a number of technical papers which were presented. The conference accepted the committee's recommendations and annexed them to the conference report. Four main groups of criteria for "International Importance" were proposed.

The first concerned the wetland's importance to populations and species, requiring it to support (i) 1% of the biogeographical population of one species of waterfowl or (ii) 10,000 ducks geese, swans or coots or 20,000 waders or (iii) an appreciable number of an endangered species. It could also (iv) be of special value in maintaining genetic and ecological diversity or (v) play a major role as habitat for species of scientific or economic importance.

The second group was concerned with the selection of representative or unique wetlands. Such a wetland should (i) be a representative sample of a characteristic wetland community or (ii) exemplify a critical or extreme stage in biological or hydromorphological processes or (iii) be an integral part of a peculiar physical feature.

The third group of criteria was concerned with research, education and recreation. The wetland should (i) be outstandingly important for scientific research and for education or (ii) be well studied and documented over many years, with a continuing programme of research of high value or (iii) offer especial opportunities for promoting public understanding and appreciation of wetlands, open to people of several countries.

The fourth group was concerned with the feasibility of conservation and management. The wetland should only be designated for the Ramsar List if it was (i) physically and administratively capable of being effectively conserved and managed and was (ii) free from the threat of major external pollution, hydrological interferences and land use or industrial practices. A wetland of national importance only could be considered to be of international importance if it formed a complex with an adjacent wetland of similar value on the other side of an international border.

The Heiligenhafen Criteria were discussed at the next international conference, organized by the IWRB at Alushta, Crimea, in 1976. It was felt that a special conference solely on this subject was needed. A "technical meeting on the evaluation of wetlands from a conservation point of view" took place at Bad Godesberg in the Federal Republic of Germany the following year, under the auspices of the IWRB and ICBP. The meeting stressed that criteria should be concerned with the scientific basis of selection between sites and not with the feasibility of conservation. The fourth group of the Heiligenhafen Criteria formed a virtual escape clause for unenthusiastic bureaucrats or obstructive developers. It should be deleted.

The Bad-Godesberg meeting also hoped that concepts such as diversity, rarity and naturalness could be given quantitative bases. The criteria should be expanded to allow a more comprehensive evaluation of wetlands. The size of individual sites was less important than their viability as hydrological units. The amended criteria should be formally associated with the Convention, and guidelines produced for applying the criteria. The forum for implementing these suggestions would be the First Meeting of the Conference of the Contracting Parties, whose convening was, for many reasons, a matter of urgency.

### **The Cagliari Criteria**

It was not until 1980, however, that the First Meeting of the Conference of the Contracting Parties assembled in Cagliari, Sardinia. The Bad Godesberg suggestions were discussed and note taken of a long, detailed report "Criteria for selecting wetlands of international importance: proposed amendments and guidelines on use" prepared by IWRB (Atkinson-Willes, Scott and Prater). A working group was established and reported back to the Conference, which accepted Recommendation 1.4, the revised set of criteria. These were recorded as an Annex (II) to the report of the Conference. There were three groups of criteria by which a wetland should be considered internationally important:

1. Quantitative criteria for importance to waterfowl. The wetland should regularly support 10,000 ducks, geese, swans; or 10,000 coots or 20,000 waders; or 1% of the individuals or 1% of the breeding pairs in a population of one species or subspecies of waterfowl.
2. General criteria for importance to plants or animals. The wetland should support an appreciable number of a rare, vulnerable or endangered species or sub-species; or be of special value for maintaining the genetic and ecological diversity of a region because of the quality or peculiarities of its fauna and flora or as the habitat for species at a critical stage of their biological cycles or for endemic species or communities.
3. Criteria for assessing representative or unique wetlands. The wetland should be a particularly good example of a specific type of wetland characteristic of its region.

The meaning of the various terms used was explained in the IWRB paper and, of course, should be included in a set of guidelines. However, the Conference, rather than issue these itself, called on the IUCN and IWRB to develop them.

The Conference had thus eliminated the Heiligenhafen Group 4 criteria on feasibility. These, it recognized, had blurred the distinction between the evaluation/identification process and the political decision needed to designate a site for the Ramsar List, which was the prerogative of the State. For this reason, too, the Conference did not favour an accredited body of experts to approve a site offered for designation (as for the World Heritage Convention). It did accept the argument that Group 3 of the Heiligenhafen Criteria, concerning education and research, should be omitted, since such matters were not mentioned in the Article (2.2) of the Convention setting out the aspects to be considered in selecting wetlands. The value of education and research should be explained in the proposed guidelines, and taken into consideration when a State is making its decision to designate.

### **Contributions from Groningen**

The Second Meeting of the Conference of the Parties (Groningen, Netherlands, 1984) asked (Recommendation 2.3) for the “expansion of the existing Cagliari Criteria to cover also ecological factors concerning life other than waterfowl”. In addition, there was general acceptance for an amendment to the Convention text, which would set up an “Annex to the Convention, which forms an integral part thereof, which shall list criteria for identifying wetlands of international importance and such other criteria, standards, and procedures as may be subsequently listed by the Conference of the Contracting Parties”. A Task Force was established which was, among other things, to elaborate proposed amendments to the text and report to the next Conference.

### **The Regina Criteria**

The Task Force, meeting in the Hague, Netherlands, in 1985, agreed upon a minimal package of crucial amendments, but not including the placing of an annex of criteria and guidelines in an Annex to the Convention. This was therefore not discussed at the Extraordinary Conference of the Contracting Parties (Regina, Canada, 1987) at which certain amendments were accepted.

However, the Third (Ordinary) Meeting of the Conference of the Contracting Parties; held concurrently at the same place, did have a workshop on “Criteria for identifying wetlands of international importance”. This considered a number of closely-argued papers concerning the situation in northern countries and peatlands, and criteria concerning plants, amphibians, reptiles, fish and insects. Only minor changes to the wording of the Cagliari Criteria finally emerged, while a proposal to introduce a group of socio-economical criteria was rejected. It was another workshop, on “Flyways and reserve networks”, which proposed that the order of the three groups of the Cagliari Criteria be reversed, so that representative or unique wetlands came first and the waterfowl came last. This deliberately shifted the emphasis on to the wetlands themselves, the

words in the Convention title “especially as Waterfowl Habitat”, inserted at Soviet insistence, now being recognized by all as unnecessarily limiting the Convention’s scope.

The Conference (Recommendation C.3.1) required that the revised and re-ordered criteria be included in an Annex to its Recommendations. They were:

1. Criteria for assessing representative or unique wetlands. The wording was precisely as for Cagliari.
2. General criteria using plants or animals. The wording was but little changed from Cagliari.
3. Specific criteria using waterfowl. A round figure of 20,000 waterfowl was substituted; the 1% level for breeding pairs was omitted; an added criterion was the regular support of substantial numbers of individuals from particular groups of waterfowl, indicative of wetland values, productivity or diversity.

The wording of the revised criteria thus departed little from the Cagliari formulation. Five guidelines were offered in connection with Criterion 1. The most novel suggested that developing countries could designate a wetland which “because of its outstanding hydrological, biological or ecological role, is of substantial socio-economic and cultural value within the framework of sustainable use and habitat conservation”. The Conference did not take a final position on criteria and guidelines; instead it established yet another working group to consider them.

### **The Montreux Criteria**

The working group met in Costa Rica in 1988, and their report was circulated to Contracting Parties in 1989 and revised according to comments received. This revision was adopted in 1990 by the Fourth Meeting of the Conference of the Contracting Parties (Montreux, Switzerland). The following “Criteria for Identifying Wetlands of International Importance” formed Annex I to Recommendation C.4.2.

The wetland identified must meet at least one of criteria below:

1. Criteria for representative or unique wetlands  
A wetland should be considered internationally important if:
  - (a) it is a particularly good representative example of a natural or near-natural wetland, characteristic of the appropriate biogeographical region; or
  - (b) it is a particularly good representative example of a natural or near-natural wetland, common to more than one biogeographical region; or
  - (c) it is a particularly good representative example of a wetland, which plays a substantial hydrological, biological or ecological role in the natural functioning of a major river basin or coastal system, especially when it is located in a transborder position; or
  - (d) it is an example of a specific type of wetland, rare or unusual in the appropriate biogeographical region.
2. General criteria based on plants or animals  
A wetland should be considered internationally important if:
  - (a) it supports an appreciable assemblage of rare, vulnerable or endangered species or sub-species of plant or animal, or an appreciable number of individuals of any one or more of these species; or

- (b) it is of special value for maintaining the genetic and ecological diversity of a region because of the quality and peculiarities of its flora and fauna; or
  - (c) it is of special value as the habitat of plants or animals at a critical stage of their biological cycle; or
  - (d) it is of special value for one or more endemic plant or animal species or communities.
3. Specific criteria based on waterfowl  
A wetland should be considered internationally important if:
- (a) it regularly supports 20,000 waterfowl; or
  - (b) it regularly supports substantial numbers of individuals from particular groups of waterfowl, indicative of wetland values, productivity or diversity; or
  - (c) where data on populations are available, it regularly supports 1% of the individuals in a population of one species or sub-species of waterfowl.

***Guidelines for application of the criteria***

Somewhat condensed, these were:

- (a) Under Criterion 1(c) the wetland could also be of substantial value in supporting human communities by the provision of food, fibre or fuel; maintaining cultural values; supporting food chains, water quality, flood control or climate stability. Such support should not undermine sustainable use and habitat conservation or change the ecological character.
- (b) For all criteria, conformation with special regional guidelines would be acceptable where particular groups of species other than waterfowl were a suitable basis or where animals do not occur in large concentrations (northern latitudes) or where collection of data is difficult (very large countries).
- (c) The attempt to define “particular groups of waterfowl” in Criterion 3 (b) has been criticized earlier in this chapter.
- (d) It was not possible to define the size of the area in which given numbers of waterfowl should occur to qualify under Criteria 3. The wetland should form an ecological unit, which may be one large area or a group of smaller ones. The turnover of waterfowl on a migration should also be considered so that a cumulative total of birds supported annually can be reached.

The Conference further recommended “that, as far as possible, further amendments to these criteria be avoided so as to facilitate a definite basis for uniform application of the Convention”. The reader of this chapter will, no doubt, agree.



## Chapter 6

### Wise use, management and monitoring

#### What is “wise use”?

Article 3.1 of the Convention requires that “The Contracting Parties shall formulate and implement their planning so as to promote . . . as far as possible the wise use of wetlands in their territory”. Now it is easy to instance what is not wise use. Drainage to produce marginal agricultural land is not wise use. Corruption of a wetland’s hydrological cycle and its capacity to store and supply water is not wise use. Tipping rubbish and pollutants into wetlands is not wise use. These are but a few of an infinity of examples of man’s unwisdom. It is rather more difficult to define wise use.

Although the Convention did not attempt a definition, it is clear that the term was being employed in the same sense as in the earlier Article (2.6), which calls for the “wise use of migratory stocks of waterfowl”. Here it meant, in modern terms, sustainable exploitation. In making this provision with regard to a habitat, the Convention was in advance of its time. Until the 1950s the negative protectionist view had prevailed - that to safeguard a natural area it was only necessary to exclude any human activity. Increasingly thereafter it became recognized that many “natural” areas were, in fact, already man-modified, and that man’s influence was becoming so pervasive that even the remotest area was not free of it. Instead of preservation, conservation, the maintenance of an area (or a species) in its current status by positive, well-informed intervention became the order of the day. It was not until 1980, however, that the World Conservation Strategy set out by IUCN, UNEP and WWF linked conservation with development. It defined conservation as “the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations”.

In its earlier years the Convention was being joined mainly by developed countries, most of whose wetlands were modified, dominated or created by man. They were thus more concerned with improving the management of such areas, a subject which is discussed later in this chapter. As more and more undeveloped countries became Parties, the need to expand on the theme of wise use became stronger. Their wetlands were often in a near-pristine state and intensive management was not appropriate. A sustainable yield of food and fibre was, moreover, a more cogent argument for not draining wetlands than was the saving of habitat for other animals - seen by Third World governments as an unaffordable if not an unnecessary luxury. The Conferences of the Parties therefore started to seek a better understanding of wise use, setting out guidelines for its application.

#### Development of national policies for wetlands

At the First Meeting of the Contracting Parties (Cagliari, Sardinia, 1980), a Recommendation (1.5) drew attention to the newly-published World Conservation Strategy and emphasized that the establishment of comprehensive national policies would benefit the wise use of wetlands. A nationwide inventory of wetlands and of their resources would be a basic requirement.

At the Second Conference (Groningen, Netherlands, 1984), the theme of national wetland policies was further developed in Recommendation 2.3. An annex set out the five approaches needed: scientific; policy and law; management; education and public awareness; special measures for Ramsar List sites. These matters are touched upon, mostly at international level, in other chapters of this book. Thus scientific matters are discussed in Chapters 4 and 5; legal ones in Chapter 9; public awareness in Chapter 2. Management and the monitoring of Ramsar sites will be considered later in the present chapter.

## **Proposals at Regina**

The Third Meeting of the Conference of the Contracting Parties, at Regina, Canada, in 1987, had a workshop on the wise use of wetlands. This considered, amongst others, papers from IUCN and UNESCO. There was also an extensive debate. After considering the workshop's report, the Conference made a Recommendation (3.3) that the workshop's definition of wise use should be accepted and that attention should be paid to the set of guidelines it had developed.

The adopted definition was:

“The wise use of wetlands is their sustainable utilization for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem”.

Sustainable utilization was defined as “human use of a wetland so that it may yield the greatest continuous benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations”.

Natural properties of the ecosystem were defined as “those physical, biological or chemical components such as soil, water, plants, animals and nutrients, and the interactions between them”.

The guidelines adopted were to be subsequently revised so they are given here in an abbreviated form. The promotion of wetland policies should contain the following elements: a national inventory of wetlands, identifying their benefits and values; establishment of priorities for each site in accordance with socio-economic needs; assessment of environmental impact before and during developments; use of development funds for conservation and sustainable utilization of wetland resources; regulated utilization of wild fauna and flora. Action should also be taken on the exchange of information with other countries; the training of appropriate staff; adapting legislation; reviewing traditional techniques of sustainable wetland use and elaborating pilot projects to demonstrate them.

Recognizing that more needed to be done in developing guidelines, the Conference requested that the working group it had set up to investigate the matter of criteria (Chapter 5) should also examine the wise use provisions of the Convention, in order to improve its worldwide application.

## **Contributions from Leiden**

In 1989, the Centre for Environmental Studies of Leiden University organized an international conference entitled “The People's Role in Wetland Management” and published the proceedings the following year, in a massive book of 872 pages. As its title indicates, most of the papers presented from all over the world were concerned with the active management of wetlands, and these will be referred to later. However, the concept of wise use was also considered and interesting examples and case histories were given in the workshop sections on mangroves, coastal wetlands and artificial wetlands. There was a full workshop (XII) on “Ramsar, Participation and Wise Use”.

This group emphasized the following points: 1) there is a need to coordinate wetland policies between the different authorities in a country, taking account of the views of local people; 2) traditional uses (not all of which are positive) must be related to the wise use concept; 3) the potentially damaging effect of high density human populations on wetlands, whether in developed countries (reclamation, recreation) or low resource countries (intensive productivity) must be recognized, and activities zoned; 4) small wetlands are important as representative or unique ecological types, as breeding sites for waterfowl, and as sites having a large throughput of migratory birds; and 5) exploitation of wetland productivity is at community level, notably in Asia.

### **The Montreux Guidelines**

The Fourth Meeting of the Conference of the Contracting Parties (Montreux, Switzerland, 1990) took note of the Regina Working Group's report and, in Recommendation 4.10 adopting it, sustained the definition of wise use agreed at Regina and approved expanded guidelines for the implementation of the wise use concept. These were particularly concerned with the establishment of comprehensive national wetland policies and comprised five groups of actions. These, somewhat condensed, were:

1. Actions to improve institutional and organizational arrangements including a) identifying how wetland conservation can be achieved and its priorities fully integrated into the planning process; and b) incorporating an integrated multidisciplinary approach to the planning and execution of projects concerning wetlands and their support systems.
2. Actions to address legislation and government policies including a) reviewing the existing situation; b) applying existing legalization and policies; c) adopting new ones; and d) using development funds only for projects which permit conservation and sustainable utilization of wetland resources.
3. Actions to increase knowledge and awareness of wetlands including a) exchanging experience and information with other countries; b) increasing the awareness of decision-makers and the public of the benefits and value of wetlands in such matters as sediment, erosion and flood control; water quality and supply; pollution abatement; climatic stability; fisheries, grazing and agriculture; habitat for wildlife, especially waterfowl; outdoor recreation and education; c) reviewing traditional techniques of wise use and demonstrating them through pilot projects; and d) training staff in appropriate disciplines.
4. Actions to review the priorities in a national context of every wetland site including a) executing a classified inventory; b) evaluating benefits; and c) defining conservation and management needs.

Actions to address problems at particular sites, including a) assessing fully the environmental impact of any project which could affect a wetland, before approval and during execution, implementing environmental protection measures where necessary; b) regulating use of wetland systems to prevent over-exploitation; c) establishing management plans which involve local people and their requirements; d) designating appropriate wetlands for the Ramsar List; e) establishing nature reserves; and f) restoring diminished or degraded wetlands.

Contracting Parties wishing to promote wise use of their wetlands need not wait until they had a fully developed national wetland policy. They could take action on urgent issues, identify sites most in need of attention and act there on the lines of 5) above. Planning, assessment and evaluation should cover any projects which may affect the wetland, as well as those in the wetland itself and upstream of it. Particular attention should be paid to maintaining the benefits and values listed in 3b) above.

The Ramsar Wise Use Project is a three-year study, financed by the Netherlands Department of Development Cooperation and due to report to the Fifth Meeting of the Conference of the Contracting Parties in Kushiro, Japan, in 1993. Case studies from developing countries over a wide geographical range were selected, and their evaluation planned, at a meeting of the working group in Perth, Australia, in 1990. The working group also met in Texel in the Netherlands in September 1992. Institutional aspects and the roles of different organizations will be stressed. A critical analysis should lead to positive conclusions and any limitations of the approach will be revealed.

Several developed countries have agreed to complement the project with the analysis of examples from their own territory.

### **Wise use and management**

Wise, traditional uses evolved easily when there were only a scattering of small tribes exploiting the riches of great wetlands. As human numbers increase in many parts of the world in a near-exponential fashion, the resources of any wetland, no matter how vast, will rapidly be exhausted, even though the same traditional use pattern is continued. Disaster will come even more quickly as, inevitably, the use intensifies. Husbanding natural resources will become impossible in the face of pullulations of poverty- stricken people. Man must not only restrict the use of resources, and devise positive steps to increase the carrying capacity of habitats without disrupting their ecology; most important of all, he must restrict his own numbers.



A family of the upper Amazon region, Brazil, preparing manioc, a root vegetable, harvested both for sale and as main food source. (Photo: WWF/E. Parker)

Sir Peter Scott, the great conservationist, said that there was one man who, by one edict, could do more for conservation

than any other. Even if religious dogma could be modified, there remain barriers imposed by ignorance, and by poverty itself. Yet here we face the ultimate *sine qua non*.

### **The management of waterfowl stocks**

In the preamble to the Convention, the Contracting Parties agree to its enactment, among other reasons, because they recognize "that waterfowl in their seasonal migrations may transcend frontiers and should be regarded as an international resource". Article 2.6 requires each Party to "consider its international responsibilities for the conservation, management and wise use of migratory stocks of waterfowl". Again, according to Article 4.1, "each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening". When deleting a wetland from the List, among other compensatory measures, the Party should "create additional reserves for waterfowl". Finally, Article 4.4 specifies that "The Contracting Parties shall endeavour through management to increase waterfowl populations on appropriate wetlands".

It is quite clear that it is necessary, under the Ramsar Convention, for a country to conserve its wetlands in such a way that the migratory waterfowl that use them at one season or another can find adequate resources available to them. The Ramsar Convention is not, however, geared to the management of the international stocks of the waterfowl themselves. This has to be done by agreement on the length of open (shooting) seasons, restrictions on the number of birds killed per hunter, prohibitions on the shooting of scarce species, abolition of market hunting, closure of hunting in periods of extremely adverse weather, outlawing methods of mass destruction, and so forth. Such matters were at first very much the concern of those developing the Ramsar Convention. Technical papers and discussions on these subjects can be found in the proceedings of the conferences at St Andrews (1963), Noordwijk (1966), Leningrad (1968), Ramsar (1971), and Heiligenhafen (1974). These conferences also passed recommendations pertaining to hunting control and, especially, to the gathering of kill statistics. It was still necessary to call for the latter in a recommendation (3.2) of the Regina (1987) Conference, following the deliberations of its

Workshop on Flyways and Reserve Networks. The papers given at that workshop were made available separately from the proceedings, as IWRB Special Publication No 9.

It had become obvious that a different framework was needed to underpin international agreements on migratory birds, especially where hunting harvests were involved. The early example of the 1916 Migratory Bird Treaty between Canada, USA, and (later) Mexico proved hard to follow. However, bilateral conventions were enacted between the USA and Japan (1972), the Soviet Union and Japan (1973), Japan and Australia (1974), the Soviet Union and the USA (1976), and the Soviet Union and India (1984). In 1979 the European Community issued a Directive on the Conservation of Wild Birds which harmonized the bird protection laws of its (now) 12 member States. The Commission of the EC is empowered to bring recalcitrant governments before the European Court of Justice, which can enforce compliance.

A comprehensive worldwide “umbrella” treaty arrangement was provided by the Bonn Convention on the Conservation of Migratory Species of Wild Animals, which also came into action in 1979. But only a couple of dozen scattered countries have so far become Parties; large countries such as Canada, the Soviet Union and the United States have fought shy of it because of conflicts with their commercial, particularly fishery, interests. Moreover, it was not until 1991 that the first formal agreement (on European bats) was concluded under the Bonn Convention. However, negotiations are well advanced on an agreement on Western Palearctic waterfowl.

In 1990 were published the proceedings of the IWRB Symposium on Managing Waterfowl Populations, held at Astrakhan in Russia the previous year. This included many papers on the distribution and status of waterfowl in the Eastern and Western Palearctic, Asia, Africa, North and South America; on hunting kill statistics; on hunting management; on controlling factors other than hunting kill; on the conservation of threatened species; on general management strategies. The latter contained an exposition of the proposed Bonn Convention Agreement on Western Palearctic Waterfowl.

There was also a description of the ambitious North American Waterfowl Management Plan. This was initiated in 1979 by the United States, Canada, and Mexico and was seven years in gestation. It set out principles for the cooperative conservation and use of North American waterfowl. It established population objectives (to restore 1970s levels by the year 2000) and harvest strategies for ducks, geese and swans. It identified and costed the habitat, research and management initiatives required to attain the population objectives. It identified new administrative arrangements to oversee the Plan’s implementation. The signing of the Plan by the two federal governments in 1986 did not constitute a financial commitment to its implementation. Nevertheless, there are good grounds for expecting that the 1.5 thousand million dollars needed will be forthcoming from government and private funds.

### **Management of wetlands for waterfowl**

The maintenance and improvement of wetlands for the benefit of waterfowl had long been a priority in North America. When “Waterfowl Tomorrow” (see Chapter 2) was published in 1954, it was able to summarize a whole panoply of field-tested measures to increase the waterfowl usage of wetlands. These included water control techniques, both to impound water and to flood and drain areas at different seasons; encouraging food plants and nesting cover; increasing the length of shorelines and the numbers of islands; creating small water bodies; controlling vegetation by burning, grazing and mowing; freeing large areas from human disturbance. Then there were measures needed because of successes in producing large concentrations of waterfowl; controlling disease and parasites; limiting lead-poisoning from spent lead shot; controlling excessive numbers of predators; avoiding undue influxes of hunters round sanctuary areas; and planting of “lure” crops to divert flocks from damaging valuable agricultural crops elsewhere.

The North Americans were happy to pass on to the Old World the lessons they had learned in the New. They presented papers on the management of wetlands for waterfowl to the various formative conferences leading up to and including that at Ramsar. However, although attending to the needs of waterfowl was important, it was becoming clearer that this was not the sole aim of wetland management. Indeed, measures to enhance waterfowl usage can be inimical to the requirements of other fauna and flora. A balanced approach was becoming the acceptable one.

### **General wetland management**

At the initial MAR Conference in 1962, Recommendation VII was “that those bodies responsible for wetland reserves establish management plans based on ecological studies and experience, and further, that IUCN encourage the publication of guides on the technical management of wetland reserves, and on the underlying principles thereof”. Little was done for a decade, but in 1972 the IWRB, through its Wetlands Management Group, coordinated by J. Fog, began the preparation of a Manual of Wetland Management. This had the aim of stimulating an interest in the active management of wetlands and of disseminating information on methods and results. The proceedings of the Heiligenhafen Conference (1974) contained a dozen papers on the management of wetlands.

For the manual itself a series of 16 case histories were published in looseleaf form by 1980, distributed by IWRB headquarters to subscribers all over the world. Using management recipes which had been tried and tested by practical men, it was hoped to build up a management “cook book”, a Mrs Beaton’s of the wetlands. The contributions were mostly from Western Europe, with two each from the Soviet Union and the USA. There was a need, not only to improve the geographical coverage, but to provide general chapters on, for instance, the philosophy of management. A summary of the manual was presented to the First Meeting of the Conference of the Contracting Parties (Cagliari, 1980) as a technical paper.

Meanwhile, IWRB, in conjunction with the Conseil International de la Chasse (CIC), organized a series of technical meetings on Western Palearctic Migratory Bird Management. The first of these, in Paris in 1977, was concerned with the management of the several populations of the Brent Goose *Branta bernicla*. It highlighted the importance of conserving critical habitat, found that the population sizes did not permit harvesting, and recommended scaring techniques to alleviate localised agricultural damage. The second meeting, also in Paris, in 1979, updated the situation on the Brent Goose, but was mainly concerned with the management of quarry waterfowl (those which could be legally harvested) and with the criteria for triggering the stopping of shooting in severe weather conditions.

It was the third technical meeting, held near Münster in the Federal Republic of Germany in 1982, that was mostly concerned with wetland management. The papers presented at that meeting, the discussions there, and reworkings of the already published manual chapters were brought together in a 368-page book entitled “Managing Wetlands and their Birds”, published in the same year. A thoughtful introduction discussed when management was needed. For large tracts of truly natural habitats, the best management may be the least management. However over much of the globe, wetlands are man-dominated or man-threatened. Endeavours must therefore be made to repair past damage by restoring, improving or even creating habitats. However, intensive management is not desirable in all man-modified environments. Some in Europe are centuries old and are similar to the natural ecosystems which they replaced. Detailed surveys must be undertaken and objectives clearly defined before any management is attempted. All nature conservation values present must be considered, not just the interests of waterfowl. Zoning and multi-use is acceptable as is the opening up of managed areas to the general public in careful, non-disturbing ways.

The manual itself was divided into eight sections. The first considered manipulation of water levels; management and, where necessary, control of vegetation; management by grazing;

management of roosts; management of waterfowl food fauna by providing hiding places for them and by fertilizing and liming the water; restoration of lakes and other wetlands; creation and management of artificial wetlands. The second section considered the creation of nest sites for waterfowl as diverse as ducks, flamingos and herons. The third dealt with farming for waterfowl and the prevention of crop damage. The fourth described interrelations of waterfowl with birds of prey and mammalian predators, with gulls and with fish. Next came consideration of wetland pollution, lead-poisoning from spent shot, and diseases of waterfowl. The problems and dangers of introductions and of re-stocking were examined. The regulation of shooting pressure on waterfowl populations was summarized. The final section dealt with the creation of waterfowl sanctuaries and the control of recreational disturbance. A bibliography of some 300 titles gave a good lead in to the multitude of papers and books that have relevance to wetland and waterfowl management.

### **Specialized aspects of wetland management**

Some of the subjects dealt with in the IWRB Manual were so wide-ranging and controversial that further international consideration was needed. Thus IWRB organized a workshop on the "Extent and control of goose damage to agricultural crops" at Slimbridge in 1984. The findings of the workshop were made available as IWRB Special Publication No. 5. The subject remained an area of friction in Europe (as it had for decades in North America) and in 1991 a workshop entitled "Farmers and waterfowl: conflict or co-existence" was held at Noordwijk in the Netherlands, convened by the Dutch Ministry of Agriculture, Nature Management and Fisheries in cooperation with IWRB. The results appear in IWRB Special Publication No. 21.

The importance of the pollution of the wetland environment by spent lead shot, discussed at the Münster Conference, remained a subject of controversy until IWRB convened a workshop on "Lead poisoning in waterfowl" in 1991 in Brussels, Belgium (IWRB Special Publication No. 16). European countries are now likely to follow the example set by the USA, where the problem has been intensively studied since the 1930s, and insist that lead shot be replaced by steel.

The IWRB Manual had also fully recognized that while the overall philosophy, the general principles, and the basic procedures of wetland management should be applicable worldwide, there was a need for specific coverage of the problems of subtropical and tropical wetlands. The management of wetlands in desert regions and of mangrove ecosystems were mentioned as being especially needful of consideration. It was therefore very timely that IUCN, UNESCO, and the Environment and Policy Institute East-West Centre, with UNEP support, published in 1984 a Handbook for Mangrove Area Management. The first section, on policy and planning, was designed to foster increased understanding of the ecosystems so that better decisions could be made by administrators and planners on land use. It was also to be of interest to both entrepreneurs and international aid organizations. The second section was aimed at resource managers responsible for the many products, services and benefits that mangroves provide. After an overview, chapters were devoted to preservation, recreation, wildlife conservation, fisheries, honey production, grazing and other stock-feeding techniques, wood production, human habitation, mariculture, salt production and agriculture.

The third section of the mangrove manual discussed some of the techniques for using intertidal land to expand, restore and establish new mangrove vegetation. The next section showed that positive advantages accrue from the sustained, multiple-use of mangrove resources and that methods are available to weigh the benefits and costs. The last section discussed the development of national management plans. It stressed that varying options are available to individual countries, dependent on the properties of the mangrove ecosystems that are found there, and upon historical, social and economic factors. All in all, this manual serves as a fine example of the specialized publication which it would be desirable to provide for each type of wetland ecosystem.

A rather different, and generalized, approach may be mentioned here because its first production concerned a tropical region. The Centre for Environmental Studies in Leiden, Netherlands, set up an international activity called EDWIN. This is the acronym of Environmental Database on Wetland Interventions. Its aim was to create a computer database containing information on all known aspects of case histories of wetland destruction, modification or exploitation. These could then be called up whenever a new intervention was planned so that the mistakes of the past would not be repeated and lessons learnt would not be forgotten. The first EDWIN Report, in 1987, was a review of West Africa, billed as a comprehensive listing of water management projects and an outline of their effects on wetlands in that region.

One of the guidelines for applying the Montreux criteria for identifying wetlands of international importance (Chapter 5) specified that “conformation with special regional guidelines would be acceptable where particular groups of species other than waterfowl were a suitable basis”. Relevant to such considerations was a seminar held at Vaduz, Liechtenstein, in 1991 on “Conserving and managing wetlands for invertebrates”. This was jointly sponsored by the Ramsar Convention and the Convention on the Conservation of European Wildlife and Natural Habitats (the Berne Convention, which came into force in 1982). The seminar emphasized that populations of invertebrates such as mollusks, butterflies and moths, dragonflies and many others, have a value in their own right as living organisms, as indicators of biological diversity and richness, and as links in food chains. Some invertebrates appear to be declining but there is a shortage of specialists to advise on management measures.

### **The people’s role in wetland management**

The conference of this name, convened in Leiden in 1989, has already been mentioned in connection with the wise use element of its contributions. No less than 15 workshops provided an impressive array of papers dealing with management and the way in which local people can be integrated into the process. Indeed it was stressed, again and again, that without such wholehearted involvement of those resident in and dependent on the wetlands, management and conservation plans could have no real and lasting effectiveness.

The workshops provided papers on mangroves; coastal wetlands and lagoons; flood plains; manmade wetlands; poaching, wildlife cropping and sport hunting; traditional uses: risks and potentials for wise use; people and national parks; perception, awareness, education and communication; participation in planning and development processes; people’s reactions towards regulations and incentives; conflict handling; integrated water and wetland management; Ramsar, participation and wise use; science and participation; regional development and the role of donor agencies in participatory wetland management. There were also poster papers. Together with an introduction and keynote papers, there were a round hundred communications. Wetland managers and administrators, especially those in developing countries, should pick from this rich accumulation those papers most appropriate to their own problems.

The editors helpfully outlined the conclusions of the conference, setting forth general matters and those bearing on legislation, planning, economics, organization, information, education and research. There was also a distillation of the Conference in the form of a selection of 37 carefully reworked papers which were considered to be of the greater importance. This was also published in 1990 as a 275-page special issue on wetlands in the Dutch Journal of Landscape and Urban Planning.

### **Wetland management in Northwest Europe**

In 1990, IWRB, together with the Swedish Environmental Protection Agency (SEPA), organized a workshop on Wetland Management and Restoration. Most of the papers were published as SEPA Report 3992 the following year. The geographical coverage was limited, 19 of 22 being



from Northwest Europe, with a summary paper by IWRB. The workshop was of a much wider interest than it might at first seem, because it went a step further than previous symposia on wetland management in providing the opportunity to combine theoretical papers with practical field demonstrations. These took place at three wetlands, all declared Ramsar sites by the Swedish Government, and were concerned with four main themes.

The first theme concerned vegetation and stressed the need for more information, on water-depth tolerances and the interactions between plant species, before water level manipulations can be widely and confidently used for restoration purposes. Simple and logical analyses, taking site-specific factors into account, are required. Wetland restoration, the next theme, has often been attempted, but the scientific basis needed and the documentation outlining objectives, design and success criteria is generally lacking.

The creation of artificial wetlands, the third theme, when attempted as a trade-off for the loss of natural wetlands, has often been opposed on political grounds. However, where opportunities and funds are available they should be grasped. In Europe, the trend to less intensive agriculture has resulted in the setting aside of land which can be used to create new wetlands. Some of these can have great ecological value and also serve as public education and recreation areas. Finally, brackish and saltwater wetlands, the subjects of the last theme, are the most threatened habitats in the region. Legislation is necessary to stop their degradation and destruction. In planning for their restoration adequate provision must be made for long-term and adequate monitoring of the resultant changes. Indeed this is necessary for any wetland management project and will be discussed in the last part of this chapter.

### **Wetland management in the United States**

In the United States there is an Association of Wetland Managers (AWM) which holds regular symposia whose proceedings run to many hundreds of pages. In 1986 the subject was Mitigation of Impacts and Losses (456 pp.). With more than a hundred papers grouped into 14 chapters, the publication may seem a daunting one to tackle. However there is an excellent executive summary and an appendix setting out guidelines for wetland restoration, creation and enhancement. The ten recommendations may be briefly listed, for they are widely applicable, though drawn up in the USA context. They are: 1) There should be an explicit "no net overall loss" policy, preferably in terms of wetland function, area and type. 2) Existing scientific knowledge should be better translated into policy guidance. 3) Additional training is needed for both those who undertake wetland activities and those who regulate them. 4) More detailed study of wetland losses should be undertaken. 5) Impact reduction and restoration/creation efforts should be systematically monitored in both the short and long term. 6) Avoidance of impacts and losses should continue as the preferred approach. 7) Regulation of damaging activities need reformulation with emphasis on controlling hydrological modifications and generalised pollution. 8) Watershed approaches which take into account hydrological and hydraulic regimes are needed. 9) Techniques for dealing with uncertainties and possible failures should be incorporated into the decision-making process. 10) Documentation should be provided of success stories in impact reduction and restoration/creation and in linking wetland protection with economic development.

### **Studies on river management**

In 1989 the AWA symposium had as its subject "Wetlands and River Corridor Management" (520 pp.). It took on a more international aspect, with papers concerning Australia, Bangladesh, Canada, India, Japan, Mexico, Nigeria, Trinidad, Switzerland and the United Kingdom, as well as more general papers on the World Wetlands Partnership, the Ramsar perspective, tropical wetlands, mangrove ecosystems and the Danube. The majority of the 78 papers, arranged into 14 chapters, were again from the USA. There was also an annotated bibliography of selected references on wetlands and river corridor management. Altogether this volume is a most valuable source book.

An international conference on the Conservation and Management of Rivers took place in 1990 in York, United Kingdom, with delegates from 29 countries. Among topics discussed were the characteristics of river catchments and ecosystems; river classification and evaluation; integrating conservation and management; recovery and rehabilitation; and legislation. A book containing a selection of papers and the main conclusions was published. Foremost amongst the latter was the recognition that for the integrated development of river resources, catchments rather than river channels are the fundamental units.

A symposium on Integrated Management of River Systems took place in Orleans, France in 1991. The themes addressed were: river management; restoration of rivers affected by pollution; the combining of knowledge from various disciplines and their application to integrated river management. Mention may also be made of a workshop on Ecosystems Approach to Water Management organized by the United Nations Economic Commission to Europe in Oslo, Norway, in the same year. This reviewed current experience with the aim of improving water management, approaching this at the level of the ecosystem as a whole, that is the catchment basin or sub-basin for rivers and also for underground resources. Ecological, institutional, legal, economic and financial aspects were considered and the conclusions of this meeting of government advisers and the Ramsar Bureau were presented at the United Nations Conference in Rio de Janeiro, Brazil, in 1992.

### **National wetland manuals**

On a rather different plane, there have been produced some highly practical and detailed manuals for the management of wetlands, at least on a smallish scale. Two examples from the United Kingdom must suffice, both from non-governmental organizations. The British Trust for Conservation Volunteers produced "Waterways and wetlands - a practical handbook" in 1976. It proved so useful and popular that a revised edition of 186 pages was issued in 1987. In 1984 the Royal Society for the Protection of Birds published their 295-page "Rivers and Wildlife Handbook: a guide to practices which further the conservation of wildlife on rivers". Both handbooks, besides outlining general conservation practices, gave detailed instructions on such matters as how to construct sluices, dams and other controlling structures. In America and elsewhere similar practical guidebooks have been published.

### **Management is not yet a science**

It will be apparent from the preceding pages that a wealth of information on the managing of wetlands and their flora and fauna has been built up over the years. Nevertheless, many of the measures advocated are essentially the pragmatic, state-of-the-art application of experience. Wetland management is still far from being an exact science. More research is urgently needed, but we cannot wait until we know all that is desirable. Wetlands are disappearing so rapidly that there would by then be none left to manage.

It may still be true that if a large wetland and its watershed can be set aside and protected from the intrusions and pollutions of mankind, little further management is required. Yet this involves a very big "if" and, unless mankind can control its own proliferation, its increasing consumption of resources and its production of pollutants, the future is bleak indeed.

### **What is monitoring?**

Monitoring essentially means the keeping of a continuing record of certain parameters, advising whether they are being maintained within prescribed limits and warning if undesirable changes occur. The necessity for the monitoring of the results of wetland management procedures has been mentioned several times in this chapter. The monitoring of waterfowl stocks is also clearly essential for their proper management. Monitoring the overall state of wetlands is needed to ensure

that no abnormal changes are occurring through human interference. These latter two aspects of monitoring may now be considered.

### **The monitoring of waterfowl stocks**

In Chapter 4 reference was made to the early development of waterfowl surveys in North America. They continue to the present day in a highly sophisticated form. The International Waterfowl Midwinter Counts organized by the IWRB were also introduced in 1967. In that case their role in bringing to light the wetlands to be considered under the Ramsar Convention was stressed. In Chapter 5 the vital part such count data play in the criteria for deciding which wetlands are of international importance was explained. In addition the recording of fluctuations, and of long-term trends, in the populations of waterfowl will show how the various species are faring, and whether steps must be taken for their better conservation.

The IWRB now maintains computerized databases for waterfowl counts in the Western Palearctic (involving 36 countries), Asia (30 countries), Tropical and Southern Africa (28 countries) and the Neotropics (7 countries). For technical reasons, special databases are maintained for geese, seabirds and waders, separately from other waterfowl. In view of the stress laid in the Convention text on waterfowl, it behooves any country which is a Party to the Convention to take part in these waterfowl counts. Most of them already do so, as well as many countries that have yet to join the Convention. Annual reports are published for each region, so that up-to-date information is readily available to those not part of the thousands-strong networks of observers. Analyses of trends in the waterfowl populations over five or 10-year periods are regularly undertaken and published.

It should be emphasized that regular waterfowl counts do not only provide information on the well-being of the stocks of the birds themselves. We have seen (Chapter 5) that the criteria for selecting wetlands of international importance include specific criteria based on waterfowl, requiring such a wetland to regularly support 20,000 waterfowl or 1% of a population or "substantial numbers of individuals from particular groups of waterfowl, indicative of wetland values, productivity or diversity". Any fall in these measures will quickly ring the alarm bells, for this may indicate that all is not well with the wetland. This is especially so with the third measure. The Regina (1987) Conference, where it was introduced, had in mind waterfowl which are eaters of fish, invertebrates or submerged vegetation. Of less concern in this connection are flocks of geese simply using the wetland as a roosting site. Indeed, shooting pressure around a wetland refuge may concentrate therein an overburden of birds that may actually modify the ecosystem.

### **The monitoring of wetlands**

Even when deciding whether a wetland is of international importance or not, an element of retrospective monitoring is involved. Its past record as well as its present state must be taken into consideration if a really sound decision is to be made. In Chapter 5 we saw that there are now agreed criteria for such evaluation, but that there is no provision for an obligatory, independent, international confirmation (or rejection) of a country's choice. Nevertheless, the Ramsar Bureau is ready to advise in this matter and, if requested, to arrange for experts to visit the site as part of its monitoring procedure.

The first such request was received during the Ramsar Conference itself. A group of the delegates was asked to visit the main wetlands in Iran, to advise which was the most fitting to become the wetland ecosystem Iran proposed should be held in joint trusteeship with the United Nations (see Chapter 3). A memorandum was submitted to the Iranian Government, drawing on waterfowl counts, information supplied by local experts and the necessarily brief personal observations. The choice fell on the Dasht-e-Arjan/Lake Perishan complex west of Shiraz. Within two years, a 160,000-hectare protected area had been established, but this had, for legal reasons, to be upgraded to a national park before being offered to the United Nations. This status, under Iranian

law, required the absence of human activity other than that concerned with running the park. The area in fact contained 10,000 people, and three streams of nomads passed through it twice a year. Alternative arrangements had not been made before there was a revolutionary change of government. Yet it was very appropriate that, 21 years after the Ramsar Conference, the new Iranian Government requested the Ramsar Bureau to send a monitoring mission to many of their wetlands on the Ramsar List. The mission was able to report very favourably on the way in which the tremendous wealth and diversity of Iran's wetlands are being maintained for future generations.

Article 3.2 of the Convention requires 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 as the result of technological developments, pollution or other human interference. Information on such changes shall be passed without delay to the organization or government responsible for the continuing bureau duties." This, of course, requires monitoring, preferably by the country itself, but if this is not possible, by international experts, organized through the Ramsar Bureau.

It will be noted that only changes in ecological character brought about by human interference need be reported, though these, of course, are by far the most numerous and important. Abrupt natural changes such as those brought about by volcanic action, earthquake, storm surge and the like would, it is to be hoped, also be reported. What is not required are details of the slow, natural changes in the evolution of wetlands, from open water to dry land, occurring in a time-span of centuries. Sometimes it may be deemed necessary to hold a wetland at a particular stage of its evolution. This can be done by certain management techniques, such as water-level manipulation, but this essentially constitutes human interference and should be reported. In general, such frozen-evolution techniques should, on purist grounds, be restricted to wetlands that are artificial in origin.

In the early years of the Convention those countries which provided the fullest national reports to the periodical Conferences of the Parties tended to lay themselves open to criticism for their admitted shortcomings. Thus the only Party to report potential changes in some of its Ramsar sites to the Second Meeting of the Conference of the Contracting Parties (Groningen, 1984) was the United Kingdom. Parties that produced brief reports or none at all could escape international disapproval. This clearly was an unsatisfactory situation and pressure was brought to remedy it. Some of the pressure came from non-governmental bodies within the recalcitrant countries themselves.

By the Third Conference (Regina, 1987), 29 Ramsar List wetlands were reported to be undergoing undesirable changes. The Conference made a recommendation (3.9) that, while commending Contracting Parties for bringing such information to its attention, urged "swift and effective action to prevent any further degradation of sites and to restore, as far as possible, the value of damaged sites . . . [and] to report to the Convention Bureau the actions undertaken to safeguard these sites". Nevertheless, the Fourth Meeting of the Conference of the Contracting Parties (Montreux, 1990) was faced with a list of 46 deteriorating Ramsar sites. Strong action was clearly necessary to ensure that the most important obligation accepted by the Parties, the maintenance of the ecological character of wetlands placed on the Ramsar List, was fulfilled.



Woodcutters in mangrove forest on the Camau Peninsula, Vietnam (Photo: WWF/Elizabeth Kemf)

### **Establishment of a Ramsar monitoring procedure**

The setting up of a thoroughgoing and effective monitoring procedure indeed exercised the Standing Committee and its advisors in the interval between the Third and the Fourth Meeting of the Conference of the Contracting Parties. The latter made a recommendation (C.4.7) which “endorses the measure taken by the Standing Committee to establish a Ramsar Monitoring Procedure and instructs the Bureau to continue to operate this procedure when it receives information on adverse, or likely adverse changes in ecological character at Ramsar sites”. It also determined “that Monitoring Procedure reports shall be public documents once the Contracting Party concerned has had an opportunity to study the reports and comment on them”. This last provision is very important in that it strengthens the valuable capacity of other Parties, and, indeed, non-governmental organizations, to comment on the shortcomings and to bring pressure to bear where helpful.

The Monitoring Procedure itself was set out in an annex to the recommendation:

1. It comes to the attention of the Bureau that the ecological character of a listed wetland is changing or is likely to change as a result of technological development, pollution or other human interference.
2. Where appropriate, the Bureau shall propose to the Contracting Party or Parties concerned to apply the Monitoring Procedure, requesting, at the same time, additional information on the status of the wetland concerned.
3. Where, as a result of this procedure and other information available to the Bureau, the Bureau is of the opinion that there is evidence of significant change or likely change in the ecological character of a listed wetland, the Bureau shall collaborate with the Contracting Party or Parties concerned to arrive at an acceptable solution and the Bureau may offer advice and assistance to that Party or those Parties, if required. The Bureau shall inform the Standing Committee of any action it has taken in this connection.
4. If it does not appear that an acceptable solution can be readily achieved, the Bureau shall immediately bring the matter to the attention of the Standing Committee. The Standing Committee, acting through the Chairman and Secretary, provided by the Bureau, may pursue the matter, in direct contact with the Party or Parties concerned and, where appropriate, with other responsible agencies or bodies, with a view to helping to find a solution.
5. In the event of alterations to the List or changes in ecological character in wetlands included therein, the Standing Committee shall arrange for the information to be circulated for discussion at the next Meeting of the Conference of the Contracting Parties in accordance with Article 8.2(d) of the Convention.
6. The Bureau shall periodically review and report progress on the conservation status of sites to which its attention has been drawn under this procedure. To facilitate follow-up, the Bureau shall maintain a register of activities undertaken in this connection.

The same recommendation required the use of the classification of wetland sites which had been agreed (see Chapter 5) and of an information sheet “developed for the description of Ramsar sites to be used by the Contracting Parties and the Bureau in presenting information for the Ramsar database, and as appropriate in other contexts”. There are 32 headings to the information sheet which may be summarized here since it gives a good indication of the data that should be made available to the Bureau by a Party designating a site for the Ramsar List.

Items 1-11 serve to locate the site and give its basic parameters. Then come (12) a thumbnail sketch; (13,14,15) physical and ecological features and ownership of the site and surrounding areas; (16,17) conservation measures taken and proposed; (18,19) land use and possible changes; (20) disturbances and threats; (21) hydrological and biophysical values; (22) social and cultural values; (23, 24) noteworthy flora and fauna; (25) scientific research and facilities; (26,27) conservation education, recreation and tourism; (28,29) management authority and jurisdiction; (30) scientific references; (31) reasons for inclusion on the List; (32) outline map of the site.

A separate recommendation (C.4.8) instructed the Bureau to maintain a record of Ramsar sites in which changes in ecological character have occurred, are occurring or are likely to occur and to distinguish between those where preventative or remedial action has been initiated and those where it has not. The Bureau is further instructed "to give priority to application of the Ramsar Monitoring Procedure, within the limits of budgetary constraints, at sites included on this record". The recognition of limitations imposed by finance is important. Some cases can, no doubt, be dealt with by correspondence, relying on the Parties themselves to recognize the problem and to take the appropriate measures. However, a visit to the site, by one of the Bureau staff or by a contracted expert, may often be needed. Missions under the Monitoring Procedure were mounted in 1991 to sites in Algeria, Austria, Pakistan, the Ukraine, and Venezuela. Mention has already been made of the 1992 mission to Iran, and others are planned for Egypt and Uruguay. There has also been input by the Bureau to arrangements being made to improve the situation of Ramsar wetlands in Greece, in Romania, in Russia and in Vietnam.

The monitoring of the internationally important wetlands designated for the Ramsar List must clearly be the first concern of the Bureau, and through it, of the Conference of the Parties. But sight must not be lost of those wetlands not on the List. Their monitoring should, properly, be undertaken as part of the respective national wetland conservation programmes. We have seen (Chapter 4) how the USA has been undertaking periodical inventories of all its wetlands, and this is an example much to be recommended, though a difficult one to follow. For many countries the various regional inventories compiled on their behalf by the international bodies (Chapter 4) should serve as the starting point. The information in these is necessarily sketchy and needs to be expanded and improved. In doing that, any undesirable changes will come to light. But even when adequate information on all wetlands in a country is on record, this must be checked from time to time. Wetlands are so extremely fragile and vulnerable to mankind's intrusions that eternal vigilance is the price for their security.

### **The Grado Declaration**

In 1991, IWRB organized a major symposium at Grado in northern Italy entitled "Managing Mediterranean wetlands and their birds for the year 2000 and beyond". Some 300 experts attended, from 28 countries. It seems fitting to conclude this chapter with the very pragmatic declaration that resulted, for it brings together the elements of wise use, management and monitoring we have been discussing. The Mediterranean wetlands are now so degraded and destroyed and pressure on those remaining so severe that they are amongst the most threatened ecosystems on earth. A simple goal was enunciated at the end of the symposium - "To stop and reverse the loss and degradation of Mediterranean wetlands". To achieve this a strategy was to be developed on the following lines:

1. That supranational and international organizations, governments and financial institutions recognize Mediterranean wetlands as a common natural heritage of the region and assume individual and joint efforts for their conservation; that they ensure coherence between all their policies and actions concerning wetlands; and further, that the European Community undertakes much greater financial commitment to the conservation, enhancement and restoration of wetlands of the whole Mediterranean region.

2. That policy-making bodies at all levels submit present and future policies, programmes and projects that may have an impact on wetlands to a strict economic and environmental appraisal in order to guarantee the sustainable use of natural resources and achieve the maximum long-term benefits from wetlands for the people of the Mediterranean.
3. That a free flow of information and an open consultation procedure be adopted in managing wetlands.
4. That the Contracting Parties to the Ramsar Convention and the States yet to join develop a regional approach to the conservation of wetlands through greater international cooperation and the effective implementation of wise use as relevant to Mediterranean wetlands and related river basins.
5. That non-governmental organizations develop a more substantial membership base and act in a more coordinated fashion to increase awareness of the value of Mediterranean wetlands, to ensure that any use of wetland resources is sustainable and to monitor the status of wetlands and activities affecting them; that, in addition, they strive to play a crucial role in retaining close collaboration between the peoples of the Mediterranean for the conservation of wetlands.
6. That research directly relevant to achieving the goal be undertaken, including the evaluation of existing and proposed policies; that institutional capacity to conserve and manage wetlands effectively be increased by vigorous education and training programmes.
7. That priority sites for wetland restoration be identified and techniques be developed and tested for their complete rehabilitation.
8. That integrated management of all activities concerning wetlands, their support systems and the wider area surrounding them be carried out by properly funded and well-staffed multidisciplinary bodies, with the active participation of representatives of the government, the local inhabitants and the scientific and non-governmental community.
9. That governments of all Mediterranean countries adopt and in particular enforce national and international legislation for a better management of the hunting activity”.

A Mediterranean Wetlands Forum (MedWet) has been set up between international bodies, governments and non-governmental organizations to develop the strategy and draft an action plan. The Italian Government is hosting a small secretariat in Rome. The European Community has been asked to provide six million Ecus in support of MedWet activities. A feeling of optimism now prevails instead of the environmental despair that had become characteristic of the region.

If regions elsewhere would take note of this courageous initiative and likewise create structures for wide-ranging, multidisciplinary cooperation in support of wetland conservation, use, management and monitoring, then the future outlook for the world's wetlands would indeed be brighter.

## Chapter 7

### Funding the operation of the Convention

#### Early financial proposals

The need for a permanent body to supervise the implementation of the Convention and to convene regular meetings of the Parties was stressed at Noordwijk (1966). That a financial underpinning would be needed was recognized by the Dutch Government in its first draft (1967) of the Convention text. Its proposal for an annual contribution at the rate of 1 US cent per head of population was criticized as being far too large. The second Dutch draft (1968) therefore proposed that annual contributions should be in four categories (their ranges to be specified by the Conference of the Parties). Rather surprisingly, it was proposed that each Party could indicate under which category it wished to contribute. The Soviet Union's counterdraft (1969), rather unsurprisingly, made no provision at all for funding the Convention.

The IWRB's compromise between the Dutch and Soviet drafts (1969) recognized that problems of finance could only be resolved by a conference and proposed the wording "The Conference shall, in consultation with the competent international bodies, make recommendations concerning the composition, location and financial support of a Secretariat to provide continuity between Conferences". This was used in the third Dutch draft (1969). However, at the technical meeting in Espoo (1970), it became clear that many countries were unenthusiastic about providing funds to set up and maintain a new international body to run the Convention. Indeed, the imposition of any financial obligations could, at that time, have prevented countries from joining the Convention. It was therefore proposed that, initially, the secretariat duties might be carried out by those countries prepared to act as depositaries for the legal instruments of Parties joining the Convention. Eventually an existing international body might be charged with these duties.

These proposals were therefore set out as Articles 9 and 10.3 of the revised text presented to the Ramsar Conference. The covering note specified that countries appropriate to receive the depositions, and to act in concert initially to carry out the continuing bureau duties, were the Netherlands, the USSR, and Iran. IWRB was named as a suitable body eventually to carry out bureau duties, when appropriately financed, either by itself or, if its legal status was insufficient, acting on behalf of IUCN. Alternatively, an intergovernmental agency such as UNESCO or FAO might be preferred.

At the Ramsar Conference, none of the three countries were prepared to undertake the duties on behalf of the Convention, either as a troika or singly. UNESCO agreed to accept the duties of Depositary. The IUCN undertook "to perform the continuing bureau duties under this Convention until such time as another organization or government is appointed by a majority of two thirds of all Contracting Parties".

There was no provision in the Convention text for the financing of any of these duties, nor any holding phrase which would have enabled a future Conference to re-examine the financial position. Worst of all, there was no clause setting out a procedure whereby the Convention itself could be amended, to correct any subsequently perceived inadequacy. To be fair to the Ramsar Conference in this last connection, no such clause had appeared in any of the several preceding drafts nor in the one laid before it. It is a mystery how the need for such a crucial clause had been overlooked by every one of the national and international lawyers who had mulled over the drafts. When signed only two years later, the text of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) included the vital "Amendment of the Convention" Article (XVII).



### **Interim arrangements**

Although the Convention text was agreed at Ramsar on 2 February 1971 and signed by representatives of 18 governments on the following day, it was not opened for formal ratification or accession until July 1972, at the headquarters of UNESCO. In March 1973, UNESCO sent the official and certified text of the Convention in English, French, German and Russian to the responsible authorities in 121 countries. Australia became the first Contracting Party in May 1974, while in December 1975, Greece became the seventh, at long last triggering the Convention into action.

With new Parties joining the Convention at a slow rate (and it has continued to average around three a year, except in 1990 when nine joined), the task of the Depositary was neither continuous nor very heavy. UNESCO has to receive the legal instruments from countries seeking to become Parties, scrutinize these for completeness, and inform existing Parties. This was an essential activity but one which could be absorbed by the administration of a great intergovernmental organization without extra funding.

Similarly, although each new Party could nominate several wetlands for the Ramsar List, and add others later, the recording of these, their descriptions, and subsequent changes, and the passing of all this information to the other Parties, was not very onerous, given the slow growth of the Convention. IUCN was therefore happy to carry out these “continuing bureau duties” without payment. However, IUCN had experienced several severe financial crises after taking on tasks beyond its resources of manpower and finance. They were therefore unwilling “to assist in convening and organizing Conferences”, as also specified in Article 8, let alone undertake to drum up support for the Convention, encourage the joining of new Parties, and monitor the well-being of listed wetlands, without secure funding from the Parties. Yet with the Parties few in number, even a substantial contribution from each would be inadequate. With such a chicken and egg situation, there was a strong possibility, to mix metaphors, of the Convention withering on the vine.

Having spent nine years in helping to bring the Convention into being, IWRB was not willing to see it founder. It therefore offered to undertake the activities IUCN was unwilling to shoulder. IWRB was already stretched to achieve its functions of inspiring and coordinating international research on and conservation of waterfowl and their wetland habitats. This it achieved through research groups (17 in 1972). A group might be composed of a score of specialists or of the thousands of professionals and amateurs undertaking the international waterfowl counts. Modest funds arose from membership dues of its 25 constituent countries, voluntary contributions, and an annual grant from WWF. The group coordinators, like the Director of IWRB, were senior scientists employed by national organizations which allowed them to spend some of their professional time and travel (as well as their own spare time) in working on behalf of the IWRB. The only staff actually employed by IWRB was an administrator and a secretary. Small wonder it had an enviable reputation for cost-effectiveness.

One way in which IWRB was able to recruit new Parties, and encourage vigorous implementation of the Convention, was by making the Convention a primary item for reporting and discussion at its annual meetings (which were accompanied by scientific symposia). From 1972 these took place in Czechoslovakia, Poland, the Federal Republic of Germany, Sweden, the Soviet Union, Switzerland, Tunisia, the United Kingdom, Japan, Hungary, Canada, Spain, the Netherlands, and Peru. Useful propaganda on behalf of the Convention was thus achieved in many parts of the globe and in the different socio-economic systems then dividing the nations. The meetings and symposia were able to elicit early warnings of threats to wetlands and waterfowl and to discuss ways of countering the problems.

IWRB also had, over the years, built up considerable experience in organizing international conferences on waterfowl and wetland conservation, involving the direct participation of governments. From St Andrews (1963), where there were 10 governmental delegates, this number

had increased through Noordwijk (1966) and Leningrad (1968) to Ramsar (1971) itself where there were 18, together with five governmental observers. At Espoo (1970) it became clear that many countries were looking to a continuation and expansion of this series as way of avoiding the expense of having completely new Conferences of the Parties. Of course, the cost of providing conference facilities and the local organization would continue to fall on the host country. Similarly, countries sending delegates, observers or experts to conferences would continue to be responsible for their expenses.

When the Government of the Federal Republic of Germany offered to host a conference at Heiligenhafen in December 1974, IWRB therefore undertook to organize the technical preparations, elicit papers and reports, and edit and publish the proceedings. It had been hoped that sufficient ratifications of the Convention would have been deposited by then to enable this to be the First Meeting of the Conference of the Contracting Parties, but that was not to be. Nevertheless, the conference was very successful and nearly twice as large as that at Ramsar. Delegates from 34 countries attended, together with observers from five others and representatives of eight international organizations. In all, 170 people took part. National reports were discussed, leading to a series of specific recommendations. Then followed a variety of technical papers whose influence has been discussed in earlier chapters. Of particular importance was the development of a set of criteria for defining wetlands of international importance.

After the Convention had been triggered into action a year later, a host country for the First Meeting of the Conference of the Contracting Parties was sought. However, this was a time of financial stringency and no offer was forthcoming. Efforts to boost the Convention had to be carried on in more informal, but nonetheless time-consuming, ways. By the time the First Conference was achieved at the end of 1980, the number of Contracting Parties had risen to 28 and between them they had set aside 218 Wetlands of International Importance by designating them for the Ramsar List. Their total area exceeded six million hectares. Many of the Parties were taking other steps to conserve their wetlands in general. So work on developing the Convention during this interim period, carried out at no direct cost to the Parties, had produced very tangible results.

In 1978, IUCN, by then under new management, decided that it should endeavour to fulfill all its continuing bureau duties and, in particular, to assist in convening a First Conference of the Parties. The Italian Government offered to host the Conference in Cagliari, Sardinia, in November 1980. It was rather smaller than that at Heiligenhafen, with delegations from 21 Contracting Parties and 10 other countries, and a hundred participants. Once again, as the senior IUCN representative acknowledged in his opening speech, the IWRB "carried most of the load of the Conference preparations". It also shouldered a quite undue financial loss when expected assistance from an international source did not materialise. The burdens of the "interim" secretariat arrangements were growing too fast and had been borne for too long.

### **The beginning of change**

Given its official status, the Conference was able to pass recommendations not only with regard to wetland conservation, but also one (1.7) urging that a protocol be added to the Convention which would establish an amendment procedure. Another (1.8) listed the amendments which would be helpful to the efficient running of the Convention, particularly with regard to a permanent secretariat. Finally (1.10) there was a call to the United Nations Environment Programme (UNEP) to provide funds to support the latter (UNEP subsequently refused). IUCN, in collaboration with IWRB, was asked to indicate their needed "minimum amount for the interim period (including scientific support to IWRB), pending the establishment of a permanent secretariat". Contracting Parties were also reminded in the recommendation that they "should give sympathetic consideration to making voluntary contributions towards the costs".

The IUCN and IWRB continued to battle on. They had estimated at Cagliari that US\$ 246,400 was needed to support a small unit at Gland, with contributions to the costs of IWRB at Slimbridge and of the IUCN Environmental Law Centre at Bonn. They now produced a bare bones budget of \$115,000. This provided simply for the salaries of an Executive Officer and a secretary at Gland, their support costs, and \$20,000 for scientific support, to IWRB. This miniscule requirement was submitted to all the Parties, with a request that they should consider interim funding on a voluntary basis. Only Chile, Denmark, the Netherlands, New Zealand, Norway, and the United Kingdom agreed to make voluntary payments, totalling around \$30,000. Although a welcome offset of the expenditure incurred by IUCN and IWRB, this in no way would support even the minimum unit at Gland.

Since salary and support costs were much lower in the United Kingdom than in Switzerland, IWRB, with the encouragement of the UK Government, offered in 1981 to host an independent Ramsar secretariat at Slimbridge. IWRB would act as a subcontractor of IUCN on an interim basis, with the clear understanding that, when sufficient funds were available to support the secretariat in Gland, to Gland it would go. An Executive Officer and secretary, both of the same calibre as required in Gland, could be maintained at Slimbridge for \$50,000. While this was still more than the likely voluntary contributions, the gap was one that could surely have been filled. However, “while greatly appreciating the offer” IUCN was convinced that it had a duty to establish a secretariat at its own headquarters and accepted that there would be a delay until lengthy legal procedures led to mandatory subscriptions sufficient to maintain a secretariat in Gland. In 1982, a Memorandum of Understanding between IUCN and IWRB was circulated to the Parties. This specified promotional, monitoring and development work that IWRB would carry out as scientific advisor to IUCN, the Convention Bureau. For this IUCN contracted to pass over up to \$20,000 of the voluntary contributions. If more money became available, its division would be renegotiated.

It took all of two years from Cagliari to convene an Extraordinary Conference of the Contracting Parties at UNESCO headquarters in Paris, in December 1982. Twenty Contracting Parties were represented, mainly by embassy staff, together with observers from five other countries. A Protocol, prepared with the assistance of the UK Government, was adopted by consensus. This covered two points. Vitally important was the insertion of a new article between Articles 10 and 11 of the original text. This set out a simple procedure whereby an amendment could be proposed, circulated for comment, and then considered at a Conference of the Contracting Parties. The amendment had to be passed by a two-thirds majority, and only entered into force four months after instruments of acceptance had been deposited by two thirds of the Contracting Parties.

The second point replaced the statement at the end of the original text reading “in any case of divergency the English text prevailing” (over other language versions) by “all texts being equally authentic”. This was to remove the difficulty which had prevented France from joining the Convention.

The Protocol was to come into effect four months after two-thirds of the countries which were Contracting Parties when it was opened for signature had deposited their instruments of acceptance. This, it was hoped, would be achieved without much delay, and in anticipation, the Dutch Government offered to host the Second Meeting of the Conference of the Contracting Parties in Groningen in May 1984. This should have been able to put into effect at least some of the amendments already recommended by the First Conference. Sadly, once again the speed with which bureaucratic and parliamentary mills grind had been overestimated. The Protocol did not enter into force until October 1986.

The Groningen Conference was attended by 32 Contracting Parties, and by the representatives of 20 others; in all, 161 persons were involved. The national reports were reviewed and specific recommendations were passed. General recommendations arose from consideration of the overview addresses and from the deliberations of three workshops. The last of these was on

amendments to the Convention and mulled over the possible amendments set out at Cagliari and the draft proposals prepared from them by the Dutch Government. While many useful points were made by the delegates, it was clear that there were divergences of opinion to be reconciled.

This was particularly the case over financial support for the Convention and the setting up of a permanent secretariat. Although the Conference could take no action on amendments itself, it passed two recommendations relating to them. The first (2.2) urged that adoption of amendments after the Paris Protocol entered into force should be by consensus of the Contracting Parties. The second (2.4) welcomed the offer made by the Dutch Government to convene a task force with the mandate to examine the options available for permanent arrangements for administrative, scientific and technical support for the effective promotion and implementation of the Convention “so as to ensure that they will be as cost-effective as possible”. The same recommendation also urged the Parties and international organizations to consider “the possibilities of finding financial or other means to support the interim secretariat”.

### **A successful outcome at Regina**

The Third Meeting of the Conference of the Contracting Parties was hosted by the Canadian Government at Regina, Saskatchewan, from 27 May to 5 June, 1987. Thirty-six of the 43 States then Party to the Convention participated, along with 20 non-Party States and 34 governmental and non-governmental international and national organizations. There were over 200 participants. At intervals during the same period, an Extraordinary Conference met with the sole purpose of considering amendments to the Convention, as proposed by the Groningen Task Force. By consensus of 36 Parties present, the proposals were adopted. Article 6.1 was changed so that the Conference of the Parties had to meet at intervals of no more than three years. There were some other minor modifications, concerning the running of the Conferences, involving changes to 6.2, a new 6.4 and a new Article 7. Of crucial importance was the insertion of a new 6.5: “The Conference of the Contracting Parties shall establish and keep under review the financial regulations of this Convention. At each of its ordinary meetings, it shall adopt the budget for the next financial period by a two-thirds majority of Contracting Parties present and voting”. This was followed by a new 6.6: “Each Contracting Party shall contribute to the budget according to a scale of contributions adopted by unanimity of the Contracting Parties present and voting at a meeting of the ordinary Conference of the Parties”.

The Ordinary Conference, having received the report of the Extraordinary Conference, approved several resolutions utilizing the amendments. A resolution on secretariat matters accepted the conclusion of the Groningen Task Force that a joint submission by IUCN and IWRB on the provision of a secretariat was the only practical option. It approved a Memorandum of Agreement between those two bodies, which was then formally signed. A Convention Bureau was to be provided by IUCN which comprised a section attached to IUCN, housing the Head of the Bureau and a secretary, and a section attached to IWRB, housing a professional officer and a secretary, and providing technical and scientific advisory services for the Bureau. Arrangements were made for regular transfer of funds to the section at IWRB. The Memorandum of Agreement applied for an initial period of three years, subject to amendment by mutual agreement.

A resolution on financial and budgetary matters approved a budget for 1988-1990 of around \$400,000. Contributions, based on the United Nations scale of assessments, were set out. These ranged from \$51,719 per annum for the USSR to \$41 p.a. for Mauritania. This would still leave over \$100,000 to be found from other contributions. Details of financial administration were set out. As previous experience had shown that many years were likely to pass before the necessary two-thirds of Parties had deposited instruments of acceptance of the amendments (only 15 of the 21 required had done so by November 1993), a third resolution on provisional implementation of the amendments to the Convention was approved. This urged “the Contracting Parties to implement

on a provisional basis the measures and procedures envisaged by the amendments adopted by the Extraordinary Conference . . . until such time as they come into force”.

At last, after many years of negotiations and legal wrangles, the formal basis for the establishment of the Convention’s permanent secretariat and its adequate funding had been laid. The relief felt on all sides was reflected by the closing statement to the Conference made by G.V.T. Matthews (who was retiring as Director of IWRB the following year): “Having helped the Convention from conception, through gestation, birth and development to lusty independence, I can retire from the scene in a happy frame of mind. It is said of an English Queen, Mary, who struggled incessantly to regain former possessions in France, that the word Calais was found engraved on her heart when she died. I wouldn’t be surprised if they found Ramsar on mine”.

Although the bifurcated Bureau arrangement worked surprisingly well, it was decided by a resolution of the Fourth Conference of the Parties (Montreux, 1990) to consolidate the Bureau staff into one office hosted by IUCN in Gland, Switzerland, which country offered generous financial support and tax concessions. The Memorandum of Agreement between IUCN and IWRB was revised to provide a continued formal role and financial support for IWRB in the provision of scientific and technical support services to the Bureau. The increased budget for the Bureau in 1991-1993, accepted by the Conference, enabled the staff to be doubled, to five professional and three support staff.

### **Provision of financial support to the Parties**

Besides setting its own financial house in order, the Regina Conference also had a workshop on “The Ramsar Convention as a vehicle for linking wetland conservation and development”. This concluded that countries benefit by becoming Contracting Parties. Benefits are varied and are not in monetary or financial terms only. Recommendation 3.5 prescribed tasks for the Bureau in respect to development agencies (banks, government institutions, and international governmental agencies). It was to assist developing countries with the identifying and design of projects for conservation and wise use of wetlands, to be funded by development agencies; promote such policies among the agencies themselves; request the agencies for information of measures taken to integrate environmental considerations at all stages of projects affecting wetlands; and report annually on its activities in this respect to the Contracting Parties. At Montreux, Recommendation 4.13, noting that, despite the Regina Recommendation, many projects financed by multilateral development banks still led to the loss of critical wetlands, called on Contracting Parties to pursue the Regina initiative in a more rigorous and systematic way.

The first Dutch draft of the Ramsar Convention text (1967) contained seven articles concerned with the setting up, financing, and management of a fund for the preservation of wetlands. The annual contribution of the Parties of 1 US cent per head of population was, as we have seen, considered at the time to be unacceptably large. Sight was therefore lost of the fund in the second Dutch draft, where financial provision was only sought in respect of the meetings of the Conference and any expenses incurred in carrying out its instructions or requests. The subsequent elimination of any financial provision gave rise to the long saga recounted in this chapter.

However, at the Montreux Conference, the concept of a Wetland Fund was revived. This was by far the largest Conference to date, with 56 Contracting Parties represented along with 23 observer States. There were also 60 intergovernmental, non-governmental and national organizations, and over 400 people attended. Over 100 signed a petition which was presented by Costa Rica. This contained the statement “A mechanism for financial assistance to developing countries is essential to help those that are now Contracting Parties, and to encourage those who are not . . . to join”. It called on the Conference to establish in the budget a fund for this purpose. After much discussion, it was apparent that most Parties were unwilling to support a substantial increase in the proposed budget for the triennium 1991-1993 of just over a million Swiss francs per annum. However, it

was agreed to write in a budget line of Swiss francs 10,000 per annum for a Wetland Conservation Fund, on the understanding that this would be augmented by substantial voluntary contributions. The supporting Resolution 4.3 stated that the Fund was only to provide assistance to developing countries and was to be used to support activities which enabled the designation of Listed sites, improved their management, or promoted wise use of wetlands.

In its first year of operation, over Swiss francs 400,000 were added to the initial budget line, through voluntary contributions from ten governments of developed Parties and from WWF. Requests for disbursements from the Fund are only considered if they are supported by the government of an actual or potential Party to the Convention. At present a ceiling of Swiss francs 30,000 per project is operated. In 1991, projects in Chile, Congo, Jordan, Kenya, Mauritania, and Viet Nam were funded from 17 applications for aid. It was hoped that the scope of the Fund would be greatly increased in the future. It might also serve to finance the first steps in preparing wetland projects calling for massive financial assistance from the development agencies. A whole new dimension has opened for the Ramsar Convention.

## Chapter 8

### **The roles of the Conference of the Contracting Parties, the Standing Committee, and the Bureau**

#### **The Conference of the Contracting Parties**

The Conference of the Contracting Parties is the policy-making organ of the Convention. Since the Paris Protocol entered into force in October 1986 (Chapter 7), a meeting of the Conference of the Contracting Parties in extraordinary session has had the power to amend the Convention. The amendments agreed at the Extraordinary Conference at Regina (1987) were particularly concerned with the functioning of the Conference. It was agreed at the Ordinary Conference at Regina that they should be implemented on a provisional basis until the necessary two-thirds of Contracting Parties had formally signified their acceptance. This goal was not achieved by the necessary margin when 1993 began, but it should be noted that by resolution of the Regina Conference, it was agreed to treat the amendments as if they were in force until such time as they entered into force. This is an appropriate place to note that, throughout this book, a Meeting of the Conference of the Contracting Parties in (say) Groningen in 1984 has been referred to as the Groningen Conference or as Groningen (1984), instead of spelling out the full title each time.

The nature of the Conference is set out in Article 6:

“6.1 There shall be established a Conference of the Contracting Parties to review and promote the implementation of this Convention. The Bureau referred to in Article 8, paragraph 1, shall convene ordinary meetings of the Conference of the Contracting Parties at intervals of not more than three years, unless the Conference decides otherwise, and extraordinary meetings at the written request of at least one third of the Contracting Parties. Each ordinary meeting shall determine the time and venue of the next ordinary meeting”.

#### **Duties of the Conference**

The succeeding paragraphs of Article 6 set these out:

“6.2 The Conference of the Contracting Parties shall be competent: (a) to discuss the implementation of this Convention; (b) to discuss additions to and changes in the List; (c) to consider information regarding changes in the ecological character of wetlands included in the List provided in accordance with Paragraph 2 of Article 3; (d) to make general or specific recommendations to the Contracting Parties regarding the conservation, management and wise use of wetlands and their flora and fauna; (e) to request relevant international bodies to prepare reports and statistics on matters which are essentially international in character affecting wetlands; (f) to adopt other recommendations, or resolutions, to promote the functioning of this Convention”.

“6.3 The Contracting Parties shall ensure that those responsible at all levels for wetlands management shall be informed of, and take into consideration, recommendations of such Conferences concerning the conservation, management and wise use of wetlands and their flora and fauna”.

“6.4 The Conference of the Contracting Parties shall adopt rules of procedure for each of its meetings”.

“6.5 The Conference of the Contracting Parties shall establish and keep under review the financial regulations of this Convention. At each of its ordinary meetings, it shall adopt the

budget for the next financial period by a two-third majority of Contracting Parties present and voting”.

“6.6 Each Contracting Party shall contribute to the budget according to a scale of contributions adopted by unanimity of the Contracting Parties present and voting at a meeting of the ordinary Conference of the Contracting Parties”.

Article 7 is concerned with the composition of the delegation representing a Contracting Party at a meeting and with general voting procedure. Its two paragraphs read:

“7.1 The representatives of the Contracting Parties at such Conferences should include persons who are experts on wetlands or waterfowl by reason of knowledge and experience gained in scientific, administrative or other appropriate capacities”.

“7.2 Each of the Contracting Parties represented at a Conference shall have one vote, recommendations, resolutions and decisions being adopted by a simple majority of the Contracting Parties present and voting, unless otherwise provided for in this Convention”.

### **Activities of the Conference**

The preceding chapters have shown how the first four ordinary meetings of the Conference of the Contracting Parties and the two extraordinary meetings have successfully resolved the problems of establishing a sound financial base (Chapter 7); reaching interim agreement on what constitutes wise use of wetlands and agreement on procedures for monitoring their well-being (Chapter 6); developing criteria for identifying wetlands of international importance (Chapter 5); and stimulating the preparation of “shadow” lists of wetlands, international and national, and of the Directory of Wetlands of International Importance (Chapter 4).

International authorities or bodies have been engaged to deliver technical papers on the specific problems that were to be discussed at the meetings. Thus Cagliari (1980) had presentations on legal aspects; on criteria of international importance; on wetland management; and on biogeographical populations of waterfowl. In later meetings, invited experts examined and discussed such presentations in sessions paralleling the main proceedings. Their conclusions were then reported to, and acted upon by, the Conference itself. Thus Groningen (1984) had working groups considering research and monitoring; land use and management; and amendments to the Convention. Regina (1987) had workshops on flyways and reserve networks; wise use; criteria of international importance; and the linking of wetland conservation and development. Montreux (1990) had workshops on national reports; international law requirements; establishment of nature reserves; conservation of listed sites; wise use; and international cooperation for wetland conservation. The supporting documentation is published in the proceedings of each Conference or, like the Regina workshop on flyways and reserve networks, as an independent volume.

From the start it was intended that an important function of the Conference should be the review of the current situation of wetlands, both listed and unlisted, in the territory of each Contracting Party. This would give the opportunity for the expression of international concern, if not opprobrium, where it was found that a Party was not fulfilling its obligations under the Convention. Although no material sanctions can be imposed, such highly public exposure can have a salutary effect on a backsliding country. Unfortunately, the Conference has depended on the submission of national reports for information on which to act. Most countries have eventually produced such reports, of varying detail and value, but generally only shortly before a meeting or, indeed, after it. This has been despite repeated requests and specific recommendations calling for compliance being passed by the preceding Conference. The very need to produce a national report ensures that the government concerned must pay attention to wetland matters and endeavour to see that its house is in order.



Clearly, delegates cannot be expected to read scores of national reports on arrival at a Conference. A summary of the reports, picking out their main features, good as well as bad, has therefore been prepared for each Conference. For this summary it was even more necessary for reports to arrive, say, six months before the Conference. A simplified questionnaire was prepared to make the preparation of reports easier and ensure that the necessary details were included. These comprise basic information on measures taken under the Convention; changes taking place in the status and ecological character of listed wetlands; action taken on specific recommendations from the previous Conference; the current overall national wetland situation and measures taken to ensure conservation; and measures taken for the better implementation of the Convention.

This assistance, the establishment of a workshop to examine the national reports, and, happily, a somewhat lesser need to spend the time of a Conference on administrative and legal matters, resulted in the Montreux Conference being able to devote more attention to wetland conservation. It passed recommendations for conservation action at specific wetlands in 10 countries, whereas the previous three meetings had passed only six altogether. Greater attention to the actualities of wetland conservation has also been encouraged by the increasing participation of non-voting observers representing international non-governmental bodies, together with national non-governmental bodies approved by the State in which they are located. Such independent bodies can be relied upon to ensure that the national reports give a full and accurate picture of the situation. They can also raise issues which a governmental delegation may find difficult to mention. At Montreux, 60 international and national bodies were represented, alongside the governmental delegations from 56 Contracting Parties and from 23 other countries. In all, more than 400 people were registered as participants, more than twice as many as at Regina and four times those attending Cagliari.

### **The Standing Committee**

The Regina (1987) Conference passed a resolution to establish a small Standing Committee to provide continuity of the Conference's authority between meetings. The Montreux (1990) Conference somewhat modified the terms of reference and representation. The interim activity of the Standing Committee is limited to matters on which the Conference has previously recorded its approval, but it can make recommendations for consideration at the next meeting. It supervises the implementation of policy by the Bureau, the execution of its budget, the conduct of its programmes, and matters concerning its personnel. It provides general guidance and advice to the Bureau, promotes regional cooperation, acts as the Conference Steering Committee at meetings, and performs any other functions entrusted to it by the Conference. The Standing Committee meets at least once a year.

The Standing Committee consists of no more than nine members. Two represent the host countries of the current and next meeting (Switzerland and Japan for 1991-1993). The other seven are drawn from one country in each of the following regions: Africa, Asia, Eastern Europe, Western Europe, North America, Neotropics and Oceania, with due regard to a proper representation of developing countries. The regions may be further modified, in particular to take into consideration the fact that the division of Europe reflects politics, not geography. Members of the committee may serve for no more than two consecutive terms, though, in the interests of continuity, a member may be appointed to no more than a third term. Continuity is also served through the appointment of alternative regional representatives. At the Montreux Conference elections of regional members of the committee (with alternatives in brackets) were made as follows: Tunisia (Kenya), Pakistan (Iran), Poland (Hungary), Netherlands (Spain), USA (Canada), Venezuela (Uruguay), Australia (New Zealand).

In the event of an extraordinary meeting being called, the host country concerned is also invited to send an observer. The host countries of IUCN and of IWRB participate in meetings of the Standing

Committee as observers, as may, at their request, other Contracting Parties. The Director General of IUCN and the Executive Director of IWRB participate in the meetings in an advisory capacity.

## **The Bureau**

The Convention itself specifies in Article 8:

“8.1 The International Union for the Conservation of Nature and Natural Resources shall perform the continuing bureau duties under this Convention until such time as another organization or government is appointed by a majority of two-thirds of all Contracting Parties”.

In Chapter 7 we have followed the evolution to an independent bureau, funded from the Convention budget, and co-located with the headquarters of IUCN in Gland, Switzerland. The Montreux Conference passed a resolution confirming this arrangement. The Director General of IUCN has formal responsibility to the Conference of the Contracting Parties on matters requiring the exercise of a legal personality, such as the establishment of a separate bank account, personnel and contract administration. Otherwise the Secretary General of the Bureau is directly responsible to the Conference (between meetings to the Standing Committee) in all matters concerning the Convention. A formal agreement between IUCN and IWRB sets out the conditions under which the latter provides scientific and technical support to the Bureau. This agreement was endorsed by the Conference. The tasks of the Bureau remain formally set out in Article 8 of the Convention:

“8.2 The continuing bureau duties shall be, *inter alia*: (a) to assist in the convening and organizing of Conferences specified in Article 6; (b) to maintain the List of Wetlands of International Importance and to be informed by the Contracting Parties of any additions, extensions, deletions or restrictions concerning wetlands included in List provided in accordance with Paragraph 5 of Article 2; (c) to be informed by the Contracting Parties of any changes in the ecological character of wetlands included in the List provided in accordance with Paragraph 2 of Article 3; (d) to forward notification of any alterations to the List, or changes in the character of the wetlands included therein, to all Contracting Parties and to arrange for these matters to be discussed at the next Conference; (e) to make known to the Contracting Party concerned, the recommendations of the Conference in respect of such alterations to the List or of changes in the character of wetlands included therein”.

We have seen in Chapter 7 how IUCN and IWRB between them endeavoured to fulfil these requirements, and the many more covered by the words “*inter alia*”, during the long interim when there were not sufficient funds to establish a permanent bureau. Now that the latter has been achieved, we will be concerned here only with its present structure and functioning following decisions reached at the Montreux (1990) Conference.

## **Manpower resources**

The Bureau is headed by a Secretary General, an Assistant Secretary General, and a Director of Conservation. There is a Communications Officer, an Administrator and two Technical Officers concerned with wise use, listed sites and reserves and with the Neotropical and Asian regions. There are also two full-time and two part-time secretaries, an administrative assistant (part-time) and a clerk (also part-time). The present establishment of seven officers and seven support staff is the full complement agreed for the triennium 1991-1993 at Montreux. The budget also finances the position of a Ramsar Liaison Officer at the IWRB headquarters in Slimbridge, where his duties include the maintenance of the Ramsar Database.

The Bureau continues to rely heavily on the IWRB for scientific support studies and for work on management guidelines for wetlands and for wetland species, under the formal agreement referred

to earlier. Legal advice on Convention interpretation and policy requirements is forthcoming from the IUCN Environment Law Centre in Bonn.

At Montreux the Conference reconstituted a Working Group on Wise Use, under the supervision of the Standing Committee, to oversee the work of the Bureau in implementing the Wise Use Project financed by the Netherlands Government (see Chapter 6). However, it was not felt that a Scientific Committee was necessary in view of the close involvement of IWRB and IUCN in providing advice to the Bureau.

The support of the Standing Committee, its working group and the Dutch project illustrate the concept of a partnership approach to the Convention advocated and agreed at Montreux. Under this concept, the operation of the Convention would not be left simply to the Bureau and therefore limited to what a still small number of officials could achieve. More Parties are being encouraged to take a leadership/proactive role in collective action with a variety of partners; providing on-the-ground wetland conservation demonstrations to non-Party States that it is to their benefit to join Ramsar; providing help from developed countries to developing countries; and in general promoting a sense of family within the Convention.

### **Essential activities of the Bureau**

The major task of the Bureau is the administration of the Convention. Formal communications are necessary with Parties, often involving visits. The work of the Standing Committee must be serviced. Contacts must be maintained with host governments, with UNESCO, the Depositary, and with the secretariats of other international conventions and organizations in any way involved in the conservation of wetlands and wetland species. Programmes of action can thus be coordinated and timing of and participation in meetings can be harmonized.

The funds of the Convention, including the Wetland Conservation Fund, have to be managed and disbursed and new sources of finance sought. In this connection, contact is maintained with the multilateral development agencies to bring them to take account of wetland conservation requirements in their lending policies. Other development agencies are encouraged to provide bilateral assistance for wetland conservation in developing countries.

Another important function is to serve Contracting Parties and non-Party States alike as a focal point for communication about wetland conservation. The Bureau continually receives requests for information on the status of listed wetlands, methodologies, publicity materials, and documentation. Considerable attention is paid to promoting the accession of additional States to the Convention, especially in the African, Asian, and Neotropical regions.

The Bureau invests a great deal of staff time in the preparation and servicing of the meetings, every three years, of the Conference of the Contracting Parties. This entails liaison with the host country, logistic arrangements, development of the programme, preparation of Conference documents, organizing the finances, providing secretariat services and producing the proceedings.

The formal List of Wetlands of International Importance has to be maintained. With the assistance of IWRB, detailed information sheets are prepared for every Ramsar site and entered into a computerized Ramsar Database, to underpin all the Bureau's conservation activities.

In the 1991-1993 triennium, at least, the Bureau is involved in three formulation exercises. First, in cooperation with IWRB and IUCN, it is developing general guidelines on the conservation and management of listed sites, and promoting the application of these concepts, particularly through monitoring procedures. Second, it is working with the Contracting Parties to refine the concepts of wise use, with the aim of promoting sustainable activities for wetland conservation. Third, with the assistance of IUCN's Commission on National Parks and Protected Areas, it is formulating the concept of reserves on wetlands and promoting their establishment by the Contracting Parties.

Such then are the activities of the Bureau that the Conference of the Contracting Parties has recognized to be essential and for which it has been provided the necessary funds. At the same time the Conference has accepted that there are a wide range of activities that it would be desirable for the Bureau and the "family" of the Ramsar Convention to undertake. However, to try and tackle all of them in equal measure at the same time would require almost unlimited resources of personnel and finance. The Conference has therefore divided desirable activities into high, medium and low priority categories for the duration of the 1991-1993 triennium. In later years the order of priority will almost certainly change in the face of the pressures then being experienced. For the present, funds will allow only the high priority activities to be tackled by the Bureau.

### **Desirable Bureau activities of high priority**

The Monitoring Procedure has proved to be an effective mechanism for assisting Contracting Parties to meet their obligations to conserve listed sites. The Bureau works with up to 10 countries each year, sending experts to visit the sites in question, and identifying specific requirements for external support and assistance. This work is in cooperation with non-governmental organizations such as WWF, IWRB and IUCN.

The implementation of the wise use concept is assisted by the organization of national workshops to prepare national strategies, by the support of pilot projects, and by studies on the requirements for inventories, management, legislation and institutional arrangements. This is done in cooperation with the same partner organizations, and others, as are the Bureau's efforts to promote the training of wetland managers.

Cooperation among Contracting Parties which share a transborder wetland or river is promoted. So also is the conservation of waterfowl and other species that depend on wetlands in several countries. One option is to encourage the establishment of international flyway networks.

As a specific application of its work with development agencies, the Bureau facilitates the elaboration of wetland conservation projects in developing countries, to be carried out with finance from such agencies. The implementation of such projects is normally left to partner organizations.

The production of Ramsar documentation occupies a good deal of the time of the Bureau. There is the Ramsar List itself. Then a quarterly Ramsar Newsletter is published in English, French, German and Spanish. Programme Profiles, providing succinct information about major sectors of the Bureau's activities, are also published. Convention brochures are produced as needed, along with other promotional material, such as this book. The Bureau also receives extensive documentation on developments in wetland conservation and new research findings. This is disseminated widely, through Notifications to the Parties, in the Newsletter or in the proceedings of meetings of the Conference or of regional meetings.

### **Desirable Bureau activities of lesser priority**

Although we have seen that a distinction has been drawn between activities of medium and low priority, it is rather academic at present because few, if any, can be undertaken owing to lack of funds. A designation of low priority may well understate the case for pursuing the activity in the future. Therefore the other activities which the Bureau would like to engage in are here placed together according to subject.

The Bureau would assist Contracting Parties in identifying wetlands for the List, in extending the network of listed sites, and in carrying out the formalities of designation.

Contracting Parties would be helped to ensure that their wetlands have adequate wardening and management measures. This would include advice on increasing waterfowl populations.

Bureau staff would participate in training courses, especially in developing countries, by delivering lectures, directing fieldwork and providing documentation. Training of expert personnel should be an integral element in any wetland project. Individuals would be identified who would benefit from further, long-term instruction in another country. Contacts with Contracting Parties would enable the Bureau to find suitable training opportunities for such individuals.

As opportunity arose, regional meetings would be organized where Contracting Parties could exchange experiences and non-Parties could learn about the benefits of membership. New countries could often be encouraged to become Contracting Parties by non-governmental wetland conservation organizations concentrating on specific countries or regions. The Bureau would provide background information and documentation to such organizations.

To help promote the Convention, Bureau staff would prepare and deliver lectures using audio-visual techniques. The actions of a specific Contracting Party in implementing the Convention would be set against an international background. Such lectures might be published. Similarly staff would prepare articles on the Ramsar Convention for the journals of other wetland conservation organizations, national as well as international. A full exchange of documentation with such organizations and with other convention secretariats would be undertaken.

### **A vision of the future**

The foregoing paragraphs will have demonstrated that there is more than enough work for the Bureau to undertake in the coming years, however much assistance it receives from the Contracting Parties, the Standing Committee, and other organs of the Convention. The importance of cooperation with partner organizations, particularly IUCN and IWRB, has been stressed repeatedly. All this and more will be needed if the vision for the year 2000 (in a document circulated at the Montreux Conference) is to be realized. This called for 75% of countries with wetlands of international importance to be Contracting Parties by that time; for 90% of all wetlands of international importance to be designated on the Ramsar List; and for the conservation and wise use of wetlands to be practiced extensively throughout the world.

## Chapter 9

### Legal and moral aspects of joining the Convention

#### General principles

Since the aim of any legislation should be to avoid ambiguity, it is a pity that the word convention has at least three meanings: common custom, a formal assembly, and a formal agreement or treaty. The Ramsar Convention is a treaty, and treaties provide the means whereby States wishing to cooperate in certain matters establish mutual legal obligations to achieve that end. International treaties are generally weaker than national laws because no country can be bound to the former without its consent. Conservation treaties must involve many countries and so have to reflect the compromises necessary to accommodate widely disparate political systems and priorities. They therefore tend to be the weakest. Moreover, there is no effective legal method of enforcing international treaties. Recourse to international arbitration or to the International Court of Justice at the Hague can only be had by agreement with the Party accused of a transgression - and any ruling is likewise difficult to enforce. The imposition of economic sanctions is not a realistic option. Therefore, those who complain that the Ramsar Convention “lacks teeth” are showing a certain naïveté.

Non-judicial, administrative mechanisms are more effective in securing compliance with the Convention’s provisions. As we have seen in Chapter 8, the regular meetings of the Conference of the Parties keep the Convention prominent and expose transgressors to public rebuke. The monitoring procedures of the Bureau, the requirement for national reports at meetings, and the involvement of non-governmental organizations all combine to ensure that failures to maintain wetlands in proper condition do not go unnoticed. In addition, the national legislation implemented when a treaty is accepted can be invoked more easily than international law.

Basically, however, respect for the principles of a treaty obligation freely undertaken is a moral one. States do, on the whole, attempt to meet their treaty obligations, if only as a matter of enlightened self-interest. Most States, like most individuals, prefer life to be ordered rather than chaotic, and chaos would soon result if treaties were repeatedly ignored.

#### “Hard” law and “soft” law

This is a useful, if inelegant, distinction. The content of the Convention is “hard” law, to which the Parties are bound as a matter of legal obligation. We have seen in Chapter 7 how difficult and time-consuming a procedure it is to modify the wording of the Convention, and this in itself emphasizes the near sacrosanct nature of the articles. It should be noted that the statements in the preamble are an integral part of the Convention and legally binding, not just pretty phrases. A Party to the Convention acknowledges, for instance, that it is “convinced that wetlands constitute a resource of great economic, cultural, scientific and recreational value, the loss of which would be irreparable”. That must now be the basis of its actions.

“Soft” law has been built up from the resolutions and recommendations of the Conference of the Contracting Parties. These are not so binding as the words of the Convention itself but establish rules by which the Parties consider themselves to be bound. They have, of course, to be passed by the requisite majority of the Parties present and voting (in practice there has always been a consensus), but they have immediate effect and do not need subsequent acceptance by two-thirds of all the Parties, as do amendments to the Convention itself.

This approach has been used to reach agreement on the meanings of certain phrases such as “waterfowl indicative of wetlands value, productivity or diversity”, “wetland categories” and

“wetlands of international importance” (Chapter 5); “wise use”, “management” and “monitoring” (Chapter 6). Similar procedures have enabled budgetary matters to be resolved, including the setting up of a Wetland Conservation Fund, and agreement that amendments should be provisionally implemented without delay (Chapter 7), also the establishment of the constitution and duties of the Standing Committee and the Bureau (Chapter 8).

Further “soft” law was enacted at the Montreux (1990) Conference. The Convention (Article 2.1) requires that wetlands designated for the List - at least one on joining the Convention - shall have their boundaries “precisely described and also delimited on a map”. Uncertainty had arisen concerning the status of a country that had designated a wetland but not indicated its boundaries. The Conference resolved that designation by itself fulfilled the requirement for joining the Convention, but that documentation on boundaries should be provided “to the Bureau as early as possible thereafter”.

Again, the amendment procedure set out in the Paris (1982) Protocol specified that “an amendment adopted shall enter into force for the Contracting Parties that have accepted it on the first day of the fourth month following the date on which two-thirds of the Contracting Parties have deposited an instrument of acceptance with the Depositary”. At Montreux it was deemed necessary to pass a Resolution (C.4.1) explaining that “two-thirds” meant “two-thirds of the Contracting Parties at the time of the adoption of that amendment”. Had Prospero been an international lawyer, he might have described this as “such stuff as dreams are made on”. In passing we may note, again, the principle that a Party is not bound to act on an amendment it has not accepted. By mid-1992, six Parties had not yet accepted the Paris Protocol of 10 years earlier, while only 17 of the 42 Parties at the time of Regina (1987) have as yet accepted the amendments passed there (so these are not yet officially in force even for the Parties that have accepted them, only provisionally on a voluntary basis). **[The Regina Amendments came into force on 1 May 1994.]** Clearly, it is desirable to keep amendments to a minimum, otherwise several versions of the Convention will be extant at the same time.

Another resolution at Montreux determined that Spanish should be a working language of future meetings, along with English and French. It will be recalled that at the Ramsar Conference itself the working language was English alone and the original text of the Convention was drawn up in that language. Although there were to be versions in French, German and Russian, the Conference inserted into the text the words “in any case of divergency the English text prevailing”. This was subsequently found to be unacceptable to France and the Paris Protocol replaced this provision with the statement “all texts being equally authentic”.

However, all texts have not, in practice, been found to be equally authentic. At the Extraordinary Meeting in Regina the Japanese delegation had pointed out “minor typographical errors in the French text” of the Convention. At Montreux attention was drawn to no less than five substantive differences between the authenticated French text and the original English version. For instance, Article 4.2 requires compensation measures when the boundaries of a listed wetland are restricted or deleted, in particular to “create additional nature reserves for waterfowl and, for the protection, either in the same area or elsewhere, of an adequate portion of the original habitat”. The French text renders the last phrase as “une partie convenable de leur habitat antérieur”. Now “their former habitat” makes the French version refer only to waterfowl habitat whereas the original English text refers to any type of wetland, a most significant difference. In the event, a group of francophone Contracting Parties agreed a number of corrections that would harmonize the French text with the English - which could be said to have prevailed. The Vienna Convention on the Law of Treaties (1969), Article 79.2, was invoked, enabling the Depositary to make the corrections.

There were further discussions at Montreux on Article 4.2 itself, it being felt that the guidance it offers on the nature of compensation measures and their implementation is not sufficiently precise. The phrase “in its urgent national interest” also needs further interpretation. The Conference

instructed the Standing Committee to prepare a resolution on these matters for the next meeting in Kushiro (1993). The Conference also resolved that the Bureau should carry out investigations on how Article 5, which calls for consultation and coordination regarding shared wetland resources, can best be implemented. Action on this will also be taken at Kushiro.

Other phrases and words in the Convention have given rise to discussion, for instance the actions envisaged when Parties are urged “to promote” the conservation of listed sites (Article 3.1) and the establishment and adequate wardening of nature reserves thereon (Article 4.1). However, unless clarification is deemed essential by the Conference, recourse may be had to the very sensible statement in Article 31.1 of the Vienna Convention: “A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose”. Thus when Article 3 requires Parties “to promote the conservation of the wetlands included in the List”, it means just that and not only of listed sites within the territory of the Party. For a developed country to use finance and expertise to destroy a listed site in a developing country is as reprehensible as selling abroad a biocide banned in its own territory.

Clearly the plethora of “soft” law which has grown up round the Convention may be confusing to a country seeking to join it, or indeed to the Parties themselves. An analysis is therefore being prepared of the collected decisions of the Conference of the Parties to be attached to the Convention text. The present chapter makes no attempt to be legally exhaustive, even if it is exhausting. At present the most useful legal commentaries (other than those contained in Conference Proceedings) are provided by two books - “*International Wildlife Law*” by S. Lyster (1985) and “*The Ramsar Convention*” by V. Koester (1989). The latter is particularly useful in connection with our next subject, how a country joins the Convention.

### **The steps needed to join the Convention**

The 18 countries whose representatives signed the Convention text at Ramsar in 1971 did not thereby have a legal obligation to join the treaty. However, the Vienna Convention (Article 18) makes it clear that signature “creates an obligation of good faith to refrain from acts calculated to frustrate the objects of the treaty until the signatory State makes it clear that it does not intend to become a Party”. Thus France took 15 years to become a Party, because of the language problem, while Belgium and Ireland were hardly more expeditious. Turkey has yet to become a Party after 21 years, though it has repeatedly signified its intention to do so.

Article 9 of the Convention does allow that signature is sufficient if it is specifically made “without reservation as to ratification”. This course was followed by Australia, the first Party, and by Norway, the third, neither of which had been represented at the Ramsar Conference. More usually signature is subject to ratification. This gives States time to consider the complex issues involved and to enact any necessary national implementing legislation. Often, too, a government may negotiate and accept a treaty but the constitution requires that the parliament or a similar body give its consent that the treaty should be binding. A formal written instrument of ratification can then be deposited with UNESCO, the Depository. Where parliamentary consent does not have to be obtained a State may become a Party simply by depositing an instrument of accession. The Convention enters into force for a State four months after it has become a Contracting Party by any of the above routes.

Any State which is a member of the United Nations may join the Convention. Where a country, for neutrality or other reasons, does not belong to the UN itself, it can still join if it is a member of one of the UN Specialized Agencies or of the International Atomic Agency or is Party to the Statute of the International Court of Justice. No State is too small to join as long as it can designate a wetland which can be considered to be of international importance by the criteria set out in Chapter 5. Thus Malta, on joining, designated a wetland of only 90 hectares.



Preferably before, but certainly soon after becoming a Party, national legislation must be examined to see that it is sufficient for the country to meet its commitments, and, if not, additional enabling legislation must be enacted. The text of the Convention has to be promulgated in the Official Gazette or similar governmental publication and information circulated to all authorities involved in planning and land use. The actual methods chosen to implement the Convention are left to each Contracting Party. The paths followed within Denmark are well set out (in English) in the book by Koester.

One aspect where practice has differed widely between countries concerns the degree of protection given to a wetland before designating it for the List. Denmark, and a number of other countries, have designated a large proportion of their wetlands of international importance irrespective of their degree of protection at the time. They have then worked to raise the level of protection to that deemed necessary to meet their commitment under the Convention. Other countries, such as the United Kingdom, have taken the view that a wetland should not be placed on the List until it was already sufficiently protected. The Danish method has the advantage that the Convention leads to a widening of the scope of the governmental conservation of wetlands. The British approach might at first sight reduce listing to a rubber-stamp endorsement of existing measures, were it not for the publication of an official "shadow" list of wetlands which meet the criteria and an undertaking to include all of these in the Ramsar List as soon as possible. Thus the administrators can then be pressured, both from within and without official circles, to keep moving towards that goal.

### **Commitments undertaken by becoming a Contracting Party**

These are set out under four main headings, as in the Framework for the Implementation of the Ramsar Convention presented at Montreux. In the summary below the sources of "hard" law (the preamble and the articles of the Convention itself) and of "soft" law (the Resolutions (RES) and Recommendations (REC) of the meetings of the Conference of the Contracting Parties) are indicated. The latter group is given the prefix 1 (Cagliari), 2 (Gronigen), 3 (Regina) or 4 (Montreux) as appropriate, followed by the reference number. The commitments fall into 12 groups:

#### Conservation of wetlands

- 1) To designate at least one wetland (and preferably more) for the List of Wetlands of International Importance (Article 2.1 and REC 1.3); to formulate and implement planning so as to promote conservation of all listed sites (Article 3.1) and to advise the Bureau of any change in their ecological character (Article 3.2 and REC 3.6, 3.9 and 4.8); to compensate for any loss of wetland resources if a listed site is restricted or deleted (Article 4.2); to use agreed criteria for identifying Wetlands of International Importance and to establish national scientific inventories of potential sites for designation to the List (REC 1.4, 2.3, 3.1, 4.2 and 4.6).
- 2) To formulate and implement planning so as to promote wise use of all wetlands (Article 3.1 and REC 3.3, 4.10); to make environmental impact assessments before any wetland is transformed or destroyed (REC 1.6, 2.3, 3.1, 4.10); to seek opportunities for wetland restoration (REC 4.1); to make national inventories of all wetlands (REC 1.5, 2.3, 3.1, 4.10).
- 3) To establish nature reserves on wetlands and provide adequately for their wardening (Article 4.1 and REC 4.4); to increase waterfowl populations on appropriate wetlands through management (Article 4.4).
- 4) To train personnel competent in wetland research, management and wardening (Article 4.5 and REC 4.5).

Promotion of international cooperation in wetland conservation

- 5) To promote conservation of wetlands by combining far-sighted national policies with coordinated international action (Preamble to Convention); to consult with other Contracting Parties about implementing obligations, especially where shared wetland resources are concerned (Article 5); to participate in internationally coordinated waterfowl surveys and identify wetlands of international importance to waterfowl at any time of the year (Article 5, REC 3.2, 4.12).
- 6) To promote concern for wetland conservation in the development agencies (REC 1.6, 2.3, 3.4, 3.5 and 4.13).

Fostering communications about wetland conservation

- (7) To encourage research on wetland resources and the exchange of data and publications (Article 4.3).
- (8) To produce national reports on their wetlands for consideration at Conferences of the Parties (REC 2.1,4.3).
- (9) To encourage an increase in the number of Contracting Parties, particularly among developing countries (REC 1.1, 2.3, 3.6, 3.7 and 3.10).

Supporting the work of the Convention

- (10) To convene and attend Conferences of the Parties (Article 6.1, 7.1).
- (11) To adopt the 1982 Paris Protocol (REC 1.7, 2.2) and the 1987 Regina Amendments (REC 1.8, RES 3.4).
- (12) To make financial contributions (Articles 6.5 & 6.6, REC 1.10, 2.4, RES 3.2).

### **How the Ramsar Convention benefits the Parties**

The Ramsar Convention is the principal instrument for intergovernmental cooperation on the global conservation and wise use of wetlands in general, and on shared wetland resources, including migratory waterfowl, in particular. By joining the Convention and thus accepting the commitments set out above, a country becomes part of a worldwide family and not only contributes to its activities but benefits from them.

The experience of existing members has drawn together criteria by which the wetlands of any country can be assessed, not only to enable them to be added to the List of Wetlands of International Importance if this is merited, but also to apply complementary guidelines which have been developed for the wise use of wetland resources in a sustainable way.

Accumulated experience can be drawn upon to solve the problems which arise from the multiple use of wetlands by humans as well as by birds, fish and other animals, and by plants. Where more than one country uses a wetland's resources, the Convention has mechanisms to resolve conflicts of interest that may arise.

Research findings and other expertise are made freely available to the Parties, and the Convention can find sources of funds for the essential training of personnel to manage wetlands. Parties are thus helped to maintain biodiversity in their wetlands. By setting international standards and providing an international forum for global issues such as climatic change, the Convention permits a continuous flow of information on wetland matters between Parties. The Bureau is at the disposal of the Parties and is always ready to assist in helping Parties to meet their obligations, to promote cooperation and to foster communication, as well as administering the Convention. Where Bureau

personnel cannot cope by themselves, they are well placed to put Parties in touch with other experts.

Finally, the Wetland Conservation Fund offers financial assistance to developing countries to help them to conserve and make wise use of their wetlands. This is on a small scale at present, but there is a probability of channelling more massive financial aid through the Fund in future.



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As so much of the information used is contained in the proceedings of conferences, meetings and workshops, these are set out separately from the other references. A proceedings volume may sometimes have a named editor, sometimes not, may have a title different from that of the gathering it reports, and may appear soon or long after the event. It has therefore been thought helpful to list these publications in order of the dates on which the gatherings took place rather than alphabetically by date of publication.

In the interests of readability, the text has not been strewn with named and dated references, such as (Bore & Stiff 1980). To facilitate the finding of a publication among the remaining references, they have been separated into three groups, reflecting the subjects of the chapters.

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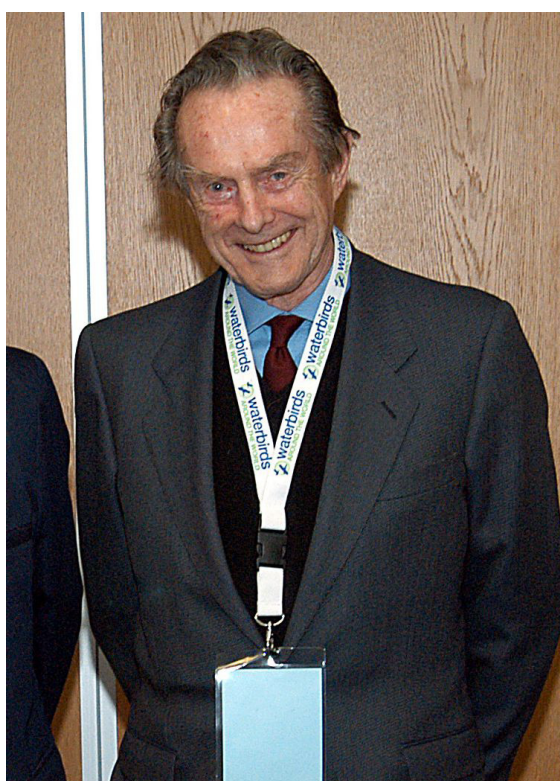
## Addenda

Prof. Matthews' book concluded with three appendices, which are not reproduced here. They are:

The amended text of the Ramsar Convention: see [http://www.ramsar.org/cda/en/ramsar-documents-texts-convention-on/main/ramsar/1-31-38%5E20671\\_4000\\_0\\_\\_](http://www.ramsar.org/cda/en/ramsar-documents-texts-convention-on/main/ramsar/1-31-38%5E20671_4000_0__)

List of Contracting Parties and number and area of wetlands designated: for the current list, see [http://www.ramsar.org/cda/en/ramsar-about-parties-parties/main/ramsar/1-36-123%5E23808\\_4000\\_0\\_\\_](http://www.ramsar.org/cda/en/ramsar-about-parties-parties/main/ramsar/1-36-123%5E23808_4000_0__)

Model instrument of accession: The Ramsar Manual, 6th edition, page 74, <http://www.ramsar.org/pdf/lib/manual6-2013-e.pdf>



Professor Geoffrey Matthews, a “Founding Father” and long-time friend of the Ramsar Convention, passed away at the age of 89 on 22 January 2013 (Photo: Dougie Barnett Photography)

# The Ramsar Convention on Wetlands: its History and Development



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