

Report on The Convention on Wetlands of International Importance (Ramsar Convention)



Commissioned by the Avon Heathcote Estuary Ihutai Trust
with support from the Canterbury Community Trust

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Abbreviations

AHEIT	Avon Heathcote Estuary Ihutai Trust
CCC	Christchurch City Council
CEA	Christchurch Estuary Association
CMS	Conservation Management Strategy
CRC	Canterbury Regional Council
DOC	Department of Conservation
ECan	Environment Canterbury, the Canterbury Regional Council
IUCN	International Union for the Conservation of Nature
MfE	Ministry for the Environment
OAG	Office of Auditor General
RMA 1991	Resource Management Act 1991
TRONT	Te Rūnanga o Ngāi Tahu
WERI	Wetland of Ecological and Representative Importance (in NZ)

Summary and Recommendations

This report, commissioned by the Avon Heathcote Estuary Ihutai Trust, has been prepared to provide guidance on the requirements if the Estuary was to be nominated for the Ramsar List on the Convention for Wetlands. It relates to the over-arching action and outcome in the Ihutai Management Plan 2004 which is to 'work towards the Estuary being recognised as a wetland of international importance and registered on the Ramsar list when sufficient improvements have been made to the health of the Estuary'.

The Convention on Wetlands (The Ramsar Convention) does not provide any legal protection for the Estuary. Nor does it impose any new regulations. As a contracting party to the Convention, with DoC as the administrative authority, New Zealand is obligated to include wetland conservation considerations in their national land-use planning and to formulate and implement this planning so as to promote the wise use of all its wetlands.

Ramsar sites are recognised as multiple use areas that provide vital goods and services to people and their livelihoods, and normally not solely as "protected areas". Relatively few Ramsar sites are nature reserves where the primary land use is for nature conservation, so the fact that the Estuary is not pristine would not exclude it from Ramsar listing. The Convention is not just about bird numbers – it now recognises wetlands for all of their functions, values and benefits. Waterfowl habitat is considered to be one of those functions, but only two of the eight criteria are specifically about birds.

The Estuary and surrounds are certainly eligible for the Ramsar list, and would meet seven, if not all, of the eight criteria. It is recommended that the Trust pursue a Ramsar nomination.

Recommendation

1. The Avon Heathcote Estuary Ihutai Trust support the nomination of the Estuary and surrounds for Ramsar listing as a wetland of international importance
2. The Trust consider taking on the role as sponsoring organisation for the nomination

The Convention on Wetlands of International Importance (The Ramsar Convention)

1 Introduction

This report has been prepared to work towards the overarching action and outcome in the Ihutai Management Plan 2004. This action and outcome is to 'work towards the Estuary being recognised as a wetland of international importance and registered on the Ramsar list when sufficient improvements have been made to the health of the Estuary'. The priority for this is given as the next five years from September 2004.

In the Management Plan the steps to achieve this are:

- Determine current status
- Determine what needs to be achieved
- Document and discuss with the community and interested parties

Progress indicators in the Management Plan are given as:

- Short Term: Discussions started on the requirements of Ramsar and the appropriateness of the Trust engaging in the promotion of the site for Ramsar status determination.
- Medium term: Dependent upon results of above, agreements reached on how, who, when should apply, etc.
- Long term: Dependent upon the above and given sufficient improvement to the health of the Estuary, application is made for the designation of Ramsar status

2 The Convention on Wetlands

New Zealand is a signatory to a range of international treaties. For these international treaties to have any legal and practical effect they must be ratified by the New Zealand Government and incorporated into domestic legislation such as the RMA 1991. See <http://www.ramsar.org/>



2.1 Background to the Convention

The Mission Statement for the Convention:

"The Convention's mission is the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world".

The Ramsar Convention is an intergovernmental treaty that provides the framework for national action and international cooperation for the *conservation* and *wise use* of wetlands and their resources. It was adopted in Ramsar, Iran in 1971 and came into force in 1975. New Zealand became a Party to the Ramsar Convention in 1976.

There are presently 147 Contracting Parties to the Convention, with 1524 wetland sites, totaling 129.2 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance. (as at 30 November 2005).

The Ramsar Convention defines wetlands as 'areas of marsh, fen, peat land 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'. The Ramsar Convention recognises the importance of the fundamental ecological functions of wetlands as regulators of water regimes and as habitats supporting a characteristic flora and fauna. It recognises that wetlands constitute a resource of great economic, cultural, scientific and recreational value, the loss of which would be irreparable.

The Convention aims to stem the progressive encroachment on and loss of wetlands now and in the future, and to conserve wetlands and their flora and fauna, by combining far-sighted national policies with coordinated international action.

More detail is available in the Ramsar Manual at:
http://www.ramsar.org/lib/lib_manual2004e.htm

There are also Ramsar Handbooks for the conservation and wise use of wetlands available on CD Rom.

Handbook 1: Wise use of wetlands

Handbook 2: National Wetland Policies

Handbook 3: Laws and institutions

Handbook 4: River basin management

Handbook 5: Participatory management

Handbook 6: Wetland CEPA (The Convention's Programme on communication, education and public awareness 2003-2008)

Handbook 7: Designating Ramsar Sites

Handbook 8: Managing wetlands

Handbook 9: International cooperation

Handbook 10: Wetland inventory

Handbook 11: Impact assessment

Handbook 12: Water allocation and management

Handbook 13: Coastal management

Handbook 14: Peat lands

2.2 Wise use

The Convention is not only about Ramsar sites, but also about conservation and wise use of all wetlands in Contracting Parties' territory.

The Ramsar definition of wise use: "The **wise use** of wetlands is their sustainable utilisation for the benefits of humankind in a way compatible with the maintenance of the natural properties of the ecosystem."

Sustainable utilisation is 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 are defined as "those physical, biological or chemical components, such as soil, water, plants, animals and nutrients, and the interactions between them".

These definitions do not obligate any Party to manage its wetlands for "naturalness".

The Wise Use guidelines suggest actions to address problems at particular wetland sites, including:

- integration from the outset of environmental considerations in planning of projects which might affect the wetland. The planning, assessment and evaluation should cover projects upstream of the wetland, those in the wetland itself, and other projects which may affect the wetland, and should pay particular attention to maintaining the following benefits and values:
 - sediment and erosion control,
 - flood control,
 - maintenance of water quality and abatement of pollution
 - maintenance of surface and underground water supply,
 - support for fisheries, grazing and agriculture,
 - outdoor recreation and education for human society,
 - provision of habitat for wildlife, especially waterfowl, and
 - contribution to climatic stability;
- regulated utilisation of the natural elements of wetland systems such that they are not over-exploited
- establishment, implementation and, as necessary, periodic revision of management plans which involve local people and take account of their requirements;
- designation for the Ramsar List of wetlands identified as being of international importance;
- establishment of nature reserves at wetlands, whether or not they are included in the List; and
- serious consideration of restoration of wetlands whose benefits and values have been diminished or degraded.

Additional guidance includes:

- *Ecological aspects*

Wetland management should be an integrated process, taking into account the criteria of time and space. It needs to incorporate long term, sustainable goals. It also needs to take into account the catchment approach. As an integrated process, it needs to incorporate different uses and activities that are compatible with sustainability.

This management also needs to incorporate an interdisciplinary approach that reflects the wide variety of human endeavours, drawing inter alia upon principles of biology, economics, policy and social sciences. In many cases, it also needs to respond to global concerns, especially as they relate to shared species, shared water systems, and to the issue of global change.

- *Human activities*

In order to achieve wise use of wetlands, it is necessary to attain a balance that ensures the maintenance of all wetland types through activities that can range from strict protection all the way to active intervention, including restoration.

Wise use activities therefore can be varied in nature, ranging from very little or no resource exploitation, to active resource exploitation as long as it is sustainable. It must be recognised, however, that there are very few wetlands not currently being utilised by local populations in some way.

Wetland management should be adapted to specific local circumstances, sensitive to local cultures and respectful of traditional uses. Management therefore is not a universal concept that can be broadly applied; rather, it needs to be adapted to suit local conditions.

- *Technical issues*

For many regions of the world, wise use is not a new concept. Humans have been building civilizations around wetlands for thousands of years, and have developed technologies of utilisation.

Many of these technologies are sustainable, and should therefore be identified, studied and promoted as a matter of urgency. In the cases where these technologies are not sustainable, they should be refined and adapted to optimize their sustainability.

2.3 Ramsar guidance on integrated management planning

Wetland management may be implemented by the development of management plans or strategies for a specific area or region. Management planning applies not just to wetland reserves but to all wetlands, and that it is a process subject to constant review and revision. Management plans should therefore be regarded as flexible, dynamic documents.

- In general, a management plan is organised as a four-part unit:
 - Description (this provides the factual basis on which management decisions can be taken, and may be revised in the light of improved knowledge of a site);
 - Recognition of the past modifications of the sites and of the possible threats;
 - Evaluation and objectives (from the description, the goals of management can be defined, in terms of both long-term objectives and of immediate operational objectives for the short term);
 - Action plan (definition of work to be done in order to achieve the objectives; activities to be considered include: habitat management; species management; usage; access; education, interpretation and communication; and research).
- Monitoring is an integral part of the planning process. Annual and longer term reviews of the plan need to be undertaken, and may lead to amendment of the description, objectives and action plan.
- A management authority charged with the implementation of the management process should be appointed; this may be particularly relevant in large wetlands where planning must take account of all interests, uses and pressures. Strong cooperation and participation from governmental and nongovernmental agencies, as well as from local people, needs to be achieved.
- When appropriate, management plans should incorporate both traditional and modern technologies. The plan must reflect the overall carrying capacity of the system. Implementation should optimize the sustainable use of existing resources.
(see Supplementary Information 10)

2.4 The Ramsar List

The vision of the Ramsar List is to develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the ecological and hydrological functions they perform.

Objectives for the Ramsar List

- To establish national networks of Ramsar sites in each Contracting Party which fully represent the diversity of wetlands and their key ecological and hydrological functions.

- To contribute to maintaining global biological diversity through the designation and management of appropriate wetland sites.
- To foster cooperation among Contracting Parties, the Convention's International Organisation Partners, and local stakeholders in the selection, designation, and management of Ramsar sites.
- To use the Ramsar site network as a tool to promote national, regional, and international cooperation in relation to complementary environment treaties.

3 New Zealand as a signatory

As a contracting party, New Zealand's obligations under the convention are to:

- Designate at least one wetland of international significance for inclusion in a List of Wetlands of International Importance (the List) maintained by the Ramsar Convention Bureau
- Include wetland conservation considerations within its national land-use planning, and formulate and implement this planning so as to promote the conservation of wetlands included in the List, and as far as possible the 'wise use' of wetlands in its territory. The 'wise use' concept is defined as 'the sustainable utilisation of wetlands for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem'
- Promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not.

3.1 NZ's administrative authority

The Department of Conservation (DoC) is the administrative authority in NZ, responsible for implementing the Ramsar Convention. However, development and implementation of wetlands policy is the joint responsibility of DoC and the Ministry for the Environment (MfE).

3.2 The Convention in NZ legislation

New Zealand has not enacted a specific piece of legislation for the implementation of the Ramsar Convention because existing legislation was considered adequate. Therefore, the management and protection of wetlands is principally controlled through the Conservation Act 1987, the Reserves Act 1977 and the RMA 1991. The RMA 1991 provides the mechanism by which New Zealand fulfils its second obligation under the Ramsar Convention, which is to include wetland conservation considerations within its national land-use planning.

3.3 National Policy

<http://www.DoC.govt.nz/Conservation/Wetlands/NZ-Wetlands-Management-Policy.asp>

As part of the implementation of Ramsar, central government released the New Zealand Wetland Management Policy in 1986, which set out broad objectives for wetland management (Commission for the Environment, 1986). Implementation of the policy is the joint responsibility of DoC and MfE.

The objectives of the policy include the preservation and protection of important wetlands (particularly those of international, national and representative importance);

the maintenance of an inventory of wetlands; and the promotion of public awareness of wetland values. It is intended that the provisions of the policy be reflected in local and regional plans.

In 1999 DoC advised the Ramsar Secretariat “that implementation of its National Wetland Policy has been slow due mainly to difficulties with limited resources and shared responsibilities between central and local government.”

In 2002 DoC reported that the “Policy will shortly be reviewed prior to its replacement and incorporation into a National Policy Statement on Biodiversity 2002.

In 1998, DoC undertook to the Ramsar Secretariat to produce a National Wetlands Action Plan by December 1998. The aim of the plan was to assist the coordination and planning of all agencies and owners involved with wetland management by identifying priority actions to protect and restore high value wetland ecosystems and freshwater habitat. The plan has not yet been produced.

DoC established the National Wetlands Coordination Committee in 1998 ‘to meet commitments under the Ramsar Convention and coordinate interagency wetland and conservation efforts’. The committee included representatives of non-governmental organisations, local authorities, landowners, local government associations, and other stakeholders. The Committee does not seem to still exist.

In terms of national policy under the RMA 1991, no national policy statement (NPS) has been prepared to provide guidance to local government on the sustainable management of wetlands.

DoC administers a national wetland resource inventory (WERI), which lists about 3000 ecologically and regionally significant wetlands in New Zealand. The WERI inventory does not provide a view of general trends in wetland loss, or restoration, at a national level because it focuses on ecologically and regionally significant wetlands and it is not systematically updated.

3.4 New Zealand’s six listed sites

Until recently NZ had only five listed Ramsar sites – Waituna Lagoon (Southland), Farewell Spit, Whangamarino (Waikato), Kopuatai Peat Dome (Waikato) and Firth of Thames. In July 2005 a sixth site – Manawatu River Mouth and Estuary – was designated. (see Supplementary Information 11)

3.5 Report of the Controller and Auditor-General 2001

In 2001, the Office of the Controller and Auditor-General (OAG) released a report entitled *Meeting International Environmental Obligations*, examining New Zealand’s approach to four multilateral environmental agreements, including the Ramsar Convention. The report stated two desired outcomes from the Ramsar Convention, for domestic implementation purposes, and using the recitals of the convention as a guide. These were:

- to stem the progressive encroachment on and loss of wetlands
- to ensure the conservation of wetlands by combining far-sighted, national policies with coordinated international action

The report stated that the New Zealand Wetland Management Policy focuses on general principles of preservation and protection of wetlands rather than pragmatic national

level directions on priorities, targets, standards and roles, and that it contains insufficient national direction for full implementation of the Ramsar Convention. The report also noted shortcomings with the RMA 1991 and the Conservation Act 1987 with regards to providing national policy direction, and found no national level policy direction on freshwater wetlands, other than the 1986 national policy.

With regards to the Ramsar Convention, the report concluded that:

- Although progress has been made in a number of areas of wetlands management and protection, the policies and legislative measures adopted to implement the Ramsar Convention do not appear to be successful in meeting the desired outcomes of the convention.
- Allocation of the policy responsibility for wetlands has been deficient, and that this has resulted in the lack of coherent national policy framework on wetlands.
- There is evidence that wetlands degradation in New Zealand has been worse than it ought, with the probable cause attributed in part to the lack of guidance (in legislative and policy terms) on where the balance should lie between development and wetland protection.
- The variability and differing values of wetlands lead to difficulties in application and implementation of the Ramsar Convention, reinforcing the need to develop a national wetlands planning framework to set priorities, targets, standards and so on within an agreed understanding of the Convention obligation of ‘as far as possible the wise use of wetlands’.

Out of these conclusions came a set of recommendations including:

- A lead agency should be formally designated as responsible for developing and implementing wetland policy and the development of protocols to enable the lead agency to work effectively with other interested agencies on wetlands issues.
- There should be a national framework for planning and monitoring for wetland conservation and protection that will:
 - Identify and define NZ’s response to its obligation under the Convention so as to promote “as far as possible the wise use of wetlands”
 - define national wetland priorities, targets, guidelines, standards, incentives, monitoring and agency roles
 - allow regional and local authorities around the country to implement different wetland conservation and protection priorities within a clearly defined framework
 - address specifically the need to improve the conservation of wetlands on privately owned land, including continual effective wetland advocacy within the RMA 1991 framework
 - provide for adequate monitoring.
- Existing legislative tools (for example, in the RMA 1991 and Conservation Act 1987) should be used to implement the framework
- Provision of more specific information to Parliament about the implementation of the Convention.

(see Supplementary Information 12 for the OAG report)

3.6 Conservation Management Strategy (CMS)

<http://www.DoC.govt.nz/Regional-Info/010~Canterbury/005~Publications/Canterbury-Conservation-Management-Strategy/index.asp>

Under the Conservation Act 1987 DoC has a responsibility to prepare a Conservation Management Strategy (CMS) for the Canterbury conservancy. The purpose of this strategy is to establish objectives for the integrated management of natural and historical resources managed by DoC, and to implement policies prepared under section 17B of the Conservation Act 1987. The CMS covers all land, marine areas, and historic resources administered by DOC, as well as all aspects of the Department's work. It also indicates desired outcomes for the protection of natural and historic values not directly managed by the Department, such as lands administered by other agencies or in private ownership.

The CMS may also require the preparation of conservation management plans. Any conservation management plan may relate to any area or areas managed by the Department under the Wildlife Act 1953, the Marine Reserves Act 1971, the Reserves Act 1977, the Marine Mammals Protection Act 1978 or the Conservation Act 1987 1987.

The most recent CMS for the Canterbury Conservancy prepared in 2001 included:

Issue: Coastal estuary and lagoon wetlands are of critical nature conservation importance. They provide a link between freshwater and marine environments that is essential for migrating fish, and they have national habitat value as a series of links along the coast for migrating birds. Much of their margins have been drained or altered by adjoining development. They were extensively used in the past by Ngäi Tahu as mahinga kai sources, and Ngäi Tahu wish to sustain and enhance this use into the future....The Estuary of the Heathcote and Avon Rivers/Ihutai and adjoining oxidation ponds support bird numbers sufficient to justify the IUCN Wetland of International Importance status, although this is partly due to the artificially high nutrient levels and their effects on the food-chain. These levels and bird numbers may decrease in the future as the health of the estuary improves.

Objectives

- To maintain or enhance the natural values of coastal lagoons and estuaries on land managed by the Department.
- To encourage the enhancement of natural values of coastal lagoons and estuaries.

Implementation:

The Conservancy will:

3. Survey and gather information on the wetlands and waterways to determine the extent and status of wetland values, shoreline vegetation and indigenous fish.
4. Monitor habitat indicators such as vegetation condition to ensure wetland values are not deteriorating.
5. Process any Heathcote/Avon/Ihutai Wetland of International Importance applications submitted and, if approved, keep the Wetland of International Importance status under review in light of habitat changes.
6. Protect and enhance the value of these areas for mahinga kai.

4 DOC Standard Operating Procedure (SOP)

(see Supplementary Information 13)

The DOC Standard Operating Procedure (SOP) contains the information needed by potential sponsors of a nomination of a wetland site for Ramsar listing.

The sponsoring organisation which can be an Area Office, NGO or local authority needs to compile enough information into a standard international Ramsar Information Sheet format to demonstrate that the site meets the criteria for international importance. They also need to set out in the proposal how the site management would be planned, monitored and reported triennially.

The local DoC conservancy needs to process the proposal and confirm the information and consultation outcomes, then compile the briefing to the Minister of Conservation.

5 Information Sheet on Ramsar Wetlands (RIS)

Attached as Appendix 1

The RIS is a standard form requiring details of the wetland site, type, criteria for and justification for the nominations, functions, values, and activities, management, research and monitoring

There is a detailed Explanatory Note and Guidelines attached to the RIS. Up to 10 pages can be annexed to the RIS to elaborate on the information. Additional reports can be attached separately.

Also with the RIS are annexes on the Classification system, the Criteria for Identifying Wetlands of International Importance, and guidelines for the provision of maps and other spatial data for Ramsar Sites. (These are included with the DoC SOP in Supplementary Information 13)

5.1 *Criteria for Identifying Wetlands of International Importance*

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

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

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

Criteria based on species and ecological communities

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

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

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

Specific criteria based on water birds

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

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

Specific criteria based on fish

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

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

5.2 RIS for Manawatu River Estuary nomination

(see Supplementary Information 14)

The Horowhenua Branch of the RFBPS prepared a nomination for the Manawatu River Estuary and submitted it to DOC in May 2004. With the title page and introduction this is a 24 page document. In addition seven appendices were attached with details on flora, birds, fish, invertebrates, iwi history, social and cultural uses and letters of approval from other agencies.

The Conservancy office then assessed and modified the RIS, sought approval from other Ministers and MPs (Ministers of Foreign Affairs and Trade, Justice, Fisheries, Maori Affairs, and Land Information, and from the MP for Otaki and MP of Te Tai Hauauru) and submitted the nomination to the Minister of Conservation in June 2005. On 24 August 2005 the Ramsar Secretariat announced that the Government of New Zealand had designated its sixth Wetland of International Importance, effective 25 July 2005, and the Minister of Conservation made the announcement in New Zealand in September.

5.3 Existing information for the AH Estuary/Ihutai for the RIS

In 1996 DOC produced “A Directory of Wetlands in New Zealand” compiled by Pam Cromarty and edited by Derek A. Scott for the New Zealand Department of Conservation.

The Directory describes 73 wetlands and wetland complexes that meet the criteria for international importance (it is not a comprehensive listing of all wetlands in New Zealand). The wetlands have been selected on the basis of criteria developed in relation to the Ramsar Convention. Although special attention is paid to the importance of the wetlands for wildlife, all wetland values including water storage, flood control, coastal protection and fisheries production have been taken into consideration.

The site descriptions include basic information on size and location, physical features, ecological features, ownership, degree of protection, land use, threats and conservation values. The term "wetland" is used in the sense defined in the text of the Convention on Wetlands. The information on the Avon Heathcote Estuary is supplied as Supplementary Information 15.

The Criteria at the time of writing of the Directory are listed below, along with the criteria that the Avon Heathcote Estuary met as assessed in the Directory.

(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

1a The Avon-Heathcote Estuary is the largest tidal wetland within the Canterbury Region, and is one of the most important coastal wetlands in New Zealand, particularly for migratory shorebirds

(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 where it is located in a trans-border 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 subspecies of plant or animal, or an appreciable number of individuals of any one or more of these species;

2a The estuary is used by significant numbers of three globally threatened species of birds, *Botaurus poiciloptilus*, *Anarhynchus frontalis* and *Chlidonias albostratus*.

(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

2b The estuary is of special value in maintaining the genetic and ecological diversity of the region because of its relatively large size and high species richness (e.g. 34 species of fish representative of both marine and freshwater habitats).

(c) it is of special value as the habitat of plants or animals at a critical stage of their biological cycle; or

2c The estuary is of special value as the habitat of fish and bird species at critical stages in their biological cycles; it supports the largest concentrations of international and internal migratory shorebirds on the east coast of South Island.

(d) it is of special value for one or more endemic plant or animal species or communities.

2d The estuary is of special value for its endemic species of birds, notably *Haematopus finschi*, *Anarhynchus frontalis* and *Chlidonias albostratus*.

(3) Specific criteria based on waterfowl. A wetland should be considered internationally important if:

(a) it regularly supports 20,000 waterfowl; or

3a The estuary and adjacent Bromley oxidation ponds regularly support over 20,000 waterfowl.

(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 subspecies of waterfowl.

3c The estuary and oxidation ponds regularly support over 1% of the regional populations of *Anas rhynchos variegata* (5-6%), *Aythya novaeseelandiae* (3%) and *Haematopus finschi* (5-6%), and well as over 1% of the New Zealand populations of at least 13 other species (Crossland, 1992).

5.4 Updating the Information for RIS

The information in the 1996 Directory is now 10 years old, so would need updating. But it would certainly provide a basis for completing the RIS.

The Avon Heathcote Estuary is likely to meet seven if not all eight criteria, but updated information would need to be collated.

Reports would be required on flora, fauna, and social and cultural issues of the Estuary.

A brief assessment on the current eight criteria with some available updated information follows as Table 1.

Table 1: Comments on the Eight Criteria

<p>Group A of the Criteria. Sites containing representative, rare or unique wetland types</p>	<p>Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.</p>	<p>The Avon-Heathcote Estuary is the largest tidal wetland within the Canterbury Region, and is one of the most important coastal wetlands in New Zealand, particularly for migratory shorebirds. It is in an urban setting being surrounded by the city of Christchurch.</p>
<p>Group B of the Criteria. Sites of international importance for conserving biological diversity</p> <p>Criteria based on species and ecological communities</p>	<p>Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.</p>	<p>Andrew Crossland is continually updating the information on the bird numbers. On his current listing of threatened birds (Crossland 2005b, Supplementary Information 17) are the following Estuary birds: <i>Threatened species listed by IUCN/Birdlife International</i> Endangered: Yellow-eyed penguin, Black Fronted Tern, Black-billed gull Vulnerable: Australasian Bittern, Wrybill Near threatened: Far-eastern Curlew <i>Threatened species listed by DoC</i> Nationally critical: White Heron Nationally endangered: Australasian Bittern Nationally Vulnerable: White-flipped penguin, Yellow-eyed penguin, Wrybill, Caspian Tern Serious Decline: Black-billed Gull, Grey Duck, Black-fronted Tern Gradual Decline: Banded Dotterel, White-fronted Tern Sparse: Black Cormorant, Pied Cormorant, Little Black Cormorant, Marsh Crake Similar identification would be required for flora, fish and invertebrates.</p>
	<p>Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.</p>	<p>The estuary is of special value in maintaining the genetic and ecological diversity of the region because of its relatively large size and high species richness (<i>e.g.</i> 34 species of fish representative of both marine and freshwater habitats). (<i>Cromarty and Scott 1996</i>)</p>
	<p>Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.</p>	<p>The estuary is of special value as the habitat of fish and bird species at critical stages in their biological cycles; it supports the largest concentrations of international and internal migratory shorebirds on the east coast of South Island. (<i>Cromarty and Scott 1996</i>) The mudflats in the estuary provide a haven for hairy-handed crabs, mud snails, wedge shells, whelks and microscopic creatures, which provide food for young fish and wading birds. Populations of small marine worms can exceed 20,000 per square metre. (<i>CCC Avon Heathcote Estuary Fact Sheet</i>)</p>

<p>Specific criteria based on water birds</p>	<p><i>Criterion 5:</i> A wetland should be considered internationally important if it regularly supports 20,000 or more water birds.</p>	<p>The estuary area (comprising the mudflats and shorelines, associated wetlands, the lower rivers, oxidation ponds, and surrounding farm paddocks) collectively supports upwards of 20,000 wetland birds, including up to 8000 waders, 15000 waterfowl, 10,000 gulls, 1800 terns, 600 shags and cormorants, 200 herons and spoonbills. <i>(Crossland 2005a, Supplementary Information 16)</i></p>
	<p><i>Criterion 6:</i> A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of water bird.</p>	<p>Species which meet Ramsar Criterion 6 in the Avon Heathcote Estuary/Ihutai area (comprising the mudflats and shorelines, associated wetlands, the lower rivers, oxidation ponds, and surrounding farm paddocks) <i>(Crossland 2005a, Supplementary Information 16)</i> Black Cormorant, Pied Cormorant, White Heron, Paradise Shelduck, Grey Teal, New Zealand Shoveler, New Zealand Scaup, South Island Pied Oystercatcher, Variable Oystercatcher, Eastern Bar-tailed Godwit, Black-billed Gull, Caspian Tern</p>
<p>Specific criteria based on fish</p>	<p><i>Criterion 7:</i> A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity</p>	<p>Information to be determined. The planned fish surveys and reports should provide information to assess whether the Estuary meets this criterion.</p>
	<p><i>Criterion 8:</i> A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.</p>	<p>Flounder (patiki) and other flatfish enter the estuary to breed, while eels, adult whitebait (inanga) and many small fish are daily or seasonal visitors, feeding on plankton and marine species. <i>(CCC Avon Heathcote Estuary Fact Sheet)</i></p>

6 Previous discussions on Ramsar status for the Estuary and surrounds

Ramsar listing for the Estuary has been discussed by CCC staff and CEA in the past. It was included as an objective for the community in the Estuary Forum held in August 2001 (*from Don Ross's notes*)

Reasons given for nominating the Estuary and surrounds as a Ramsar site are:

- endorses the principles that the Convention represents
- brings international and national prestige and recognition
- encourages national and international cooperation on wetland issues
- brings increased publicity and prestige for the wetland
- brings increased potential for eco-tourism and education
- brings increased possibility of support for conservation and wise use measures
- brings access to the latest information and advice such as guidelines on application of the wise use concept, and guidelines on management planning in wetlands
- provides an impetus to improve the water quality in the rivers and Estuary and to recognise all the values the Estuary has

Some reasons given **against** listing, and responses to those, are:

- Ramsar status achieves nothing in terms of NZ law
 - *Response:* This is true. The Convention on Wetlands is not written into any NZ law. DoC considers that the RMA 1991 is able to offer the necessary protection to wetlands.
 - Ramsar sites do not require previous designation as protected areas but as a listed site there is an expectation that legal mechanisms will be put in place to protect the wetland
- The Estuary water quality is too poor for Ramsar status. Ramsar could place restrictions on the ability of the controlling authorities (CCC and ECan) to achieve a high quality of water in the Estuary
 - *Response:* Ramsar designation does not preclude other uses of the sites, provided that their management is carried out according to the wise use guidelines. These guidelines state that planning should include maintenance of water quality and abatement of pollution. (see 2.2 above)
- The CCC would be locked into managing its effluent to maximize bird numbers, regardless of other ecological considerations
 - *Response:* The Convention is concerned with all aspects of wetland resources and not just water birds. In 1971 one of the driving forces for the Convention was to secure protection for the important habitats of waterfowl. The official title of the Convention still carries the "*especially as waterfowl habitat*" tag, although the Convention today is commonly referred to as simply the 'Convention on Wetlands'.
 - The Convention now recognizes wetlands for ALL of their functions, values and benefits. Waterfowl habitat is considered one of those functions, and only two of the eight criteria are about birds.
- Ramsar listing would mean that recreation would be limited on the Estuary
 - *Response:* Ramsar sites are recognised as multiple use areas that provide vital goods and services to people and their livelihoods, and normally not solely as

"protected areas". Relatively few Ramsar sites are nature reserves where the primary use is for nature conservation.

- The Ihutai Management Plan has a catchment focus. IEM is a fundamental objective of AHEIT. Ramsar status will limit that integrated approach as we would have to define boundaries around the site
 - Ramsar promotes a catchment/whole-systems management approach. *Guidelines for integrating wetland conservation and wise use into river basin management* (http://www.ramsar.org/key_guide_basin_e.htm) and *Principles and guidelines for incorporating wetland issues into Integrated Coastal Zone Management (ICZM)* (http://www.ramsar.org/key_guide_iczm_e.htm) (also see Section 2.2 and 2.3 above, and Supplementary Information 9)

7 Sponsoring Organisation for a nomination

DoC or any external organisation may be the sponsor of a nomination. The Avon Heathcote Estuary Ihutai Trust could certainly be the sponsor, preferably with support from ECan, CCC and Ngai Tahu, and in close liaison with the Regional DoC Office.

The alternative would be for a team approach with a Steering Group involving AHEIT, CCC, ECan, Ngai Tahu and DoC. There would still need to be a lead agency.

The requirements for the sponsor are to:

- Complete a Ramsar Convention - Information Sheet on Ramsar Wetlands (RIS), including map of boundaries and landholdings. This would require commissioning some reports to update and improve current information. (see Appendix 2 and Supplementary Information 13)
- Consult all landowners within the boundaries of the nominated site and with adjoining landowners, iwi, territorial local authority, regional council, regional Fish & Game Council, other relevant conservation NGO and local interest groups. *Note: letters of support from Iwi, City Council, ECan, F&G and participating landowners should be provided.*
- Identify current and known future land management issues.
- Identify indicators for future monitoring of the characteristics that justify the site's nomination.
- Identify the factors to be addressed in an operational management plan for the site, which includes provisions for future site monitoring and reporting on the condition of the site. Indicate recommended responsibilities for preparation, approval and implementation of plan

8 Site Boundaries

The boundaries would need to be agreed to in discussion between the various organisations. It is unlikely that the site would include privately owned land, but would encompass the public land surrounding and including the Estuary. For pragmatic reasons the site would not be based on the entire catchment, but catchment issues could certainly be addressed in the nomination.

9 Consultation

Those preparing the nomination would need to consult all landowners within the boundaries of the nominated site and with adjoining landowners, iwi, territorial local

authority, regional council, regional Fish & Game Council, other relevant conservation NGO and local interest groups.

Note: letters of support from Iwi, City Council, ECan, F&G, LINZ, relevant voluntary organisations/NGOs, and participating landowners should be provided.

An analysis of consultation would also be required including

- issues raised during consultation and how they were resolved/actioned;
- a description of the effects of Listing on permissions required by other parties, in terms of Crown Minerals Act, National Policy Statement on Biodiversity, regional and district plans under Resource Management Act 1991.

For the Manawatu Estuary nomination the RFBS undertook the following consultation:

- 2,500 leaflets to all residents of Foxton Beach, Foxton township, and all the surrounding rural farms. They received about 60 written replies, and a sheet with 20 signatures.
- three public meetings, which were well advertised, and attended by local Community Board members supporting the proposal. Between 30 and 70 members of the public attended these meetings when local residents aired their concerns.

89 supporting submissions said they appreciated the Estuary for biodiversity, wetland and heritage protection, bird watching, walking, fishing, boating, and general recreation, education, art/photography, eco-tourism and Iwi recognition.

Letters of support came from Foxton Community Board, Horowhenua District Council, Horizons Regional Council, Manawatu River Users' Advisory Group, Department of Conservation, Fish and Game, Wellington Region, Iwi, adjacent landowners and the neighbouring forestry company. One adjacent far owner supported the Ramsar designation, with the proviso that their cattle might occasionally graze the area in times of drought.

Concerns were expressed by people supporting the Ramsar recognition because they feared outside control, had upstream pollution concerns, wanted roaming dogs controlled, wanted rubbish or weeds controlled, did not like beach buggies or water skis, wanted beach buggies to stay, were concerned about sand hill erosion, did not want duck shooting or wanted areas restored

During the consultation period the most frequently asked question was about the control of the estuary. People were afraid that a Ramsar Site would mean that an overseas organisation would enforce controls on their use of the area. They were reassured that the Horowhenua District Council and Horizons Regional Council regulations would remain as they are, and that any alterations would be done through the normal local democratic process. One objection was from a farmer who used the estuary for boating, fishing and walking, but objected to the Ramsar designation because he thought it could restrict development, and be controlled by an organisation outside the country.

Supplementary Information documents

The Supplementary Information documents 1-8 refer to the other report 'Report on Protection Mechanisms for the Avon Heathcote Estuary/Ihutai'

Supplementary Information documents supplied on CD Rom and one hard copy

9. Ramsar Wise use of wetlands handbook
10. Ramsar Management Guidelines
11. New Zealand's six Ramsar sites
12. Report of the Auditor General – Meeting International Environmental Obligations
13. DoC Standard Operating procedures, RIS and guidelines
14. RIS for Manawatu Estuary Nomination
15. Directory of Wetlands – Avon Heathcote Estuary/Ihutai section
16. Crossland 2005a Summary of sites for which Ramsar Criterion 5 and 6 are technically applicable in Christchurch
17. Crossland 2005b Bird Species of Conservation Importance in Christchurch
18. CCC Estuary Fact Sheet

Supplementary Information documents supplied only as one hard copy

19. Report to CCC/CRC Joint Committee 14 March 1997 – Responsibilities and Opportunities associated with the Avon-Heathcote Estuary
20. Ramsar Information Papers 1-19 (http://ramsar.org/index_about_ramsar.htm#info)
 - 1 What are wetlands?
 - 2 What is the Ramsar Convention on Wetlands?
 - 3 The Ramsar Strategic Plan 2003-2008
 - 4 The List of Wetlands of International Importance
 - 5 Criteria for Identifying Wetlands of International Importance
 - 6 The Montreux Record and the Ramsar Advisory Missions
 - 7 The Ramsar concept of "wise use"
 - 8 The Ramsar Small Grants Fund for Wetland Conservation and Wise Use (SGF)
 - 9 Administrative Authorities and National Ramsar Committees
 - 10 Synergy, networking, and international cooperation
 - 11 Ramsar and water
 - 12 Economic valuation of wetlands and incentive measures
 - 13 Guidelines on international cooperation
 - 14 Other Ramsar guidelines
 - 15 The Convention's CEPA Programme
 - 16 The Wise Use Resource Centre and Ramsar publications
 - 17 How States may join the Convention
 - 18 The List of Contracting Parties to the Ramsar Convention on Wetlands
 - 19 How to Learn More about the Ramsar Convention

Appendices

- 1 Ramsar Information Sheet
- 2 References
- 3 Glossary of terms

Appendix 1 Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 of the Conference of the Contracting Parties.

1. Date this sheet was completed/updated:

FOR OFFICE USE ONLY.

DD MM YY

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Designation date

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Site Reference Number

2. Country:

3. Name of wetland:

4. Geographical coordinates:

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

6. Area: (in hectares)

7. Overview: (general summary, in two or three sentences, of the wetland's principal characteristics)

8. Wetland Type (please circle the applicable codes for wetland types; in the present document, the "Ramsar Classification System for Wetland Type" is found on page 9)

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

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

human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

Please now rank these wetland types by listing them from the most to the least dominant:

9. Ramsar Criteria: (please circle the applicable Criteria; the *Criteria for Identifying Wetlands of International Importance* are reprinted beginning on page 11 of this document.)

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

Please specify the most significant criterion applicable to the site: _____

10. Map of site included? Please tick *yes* π -or- *no* π

(Please refer to the *Explanatory Note and Guidelines* document for information regarding desirable map traits).

11. Name and address of the compiler of this form:

Please provide additional information on each of the following categories by attaching extra pages (please limit extra pages to no more than 10):

12. Justification of the criteria selected under point 9, on previous page. (Please refer to the *Criteria for Identifying Wetlands of International Importance* appended to this document)

13. General location: (include the nearest large town and its administrative region)

14. Physical features: (e.g., geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; catchment area; downstream area; climate)

15. Hydrological values: (groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.)

16. Ecological features: (main habitats and vegetation types)

17. Noteworthy flora: (indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc.)

18. Noteworthy fauna: (indicating, e.g., which species are unique, rare, endangered, abundant or biogeographically important; include count data, etc.)

19. Social and cultural values: (e.g., fisheries production, forestry, religious importance, archaeological site, etc.)

20. Land tenure/ownership of: (a) site (b) surrounding area

21. Current land use: (a) site (b) surroundings/catchment

22. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects: (a) at the site (b) around the site

23. Conservation measures taken: (national category and legal status of protected areas - including any boundary changes which have been made; management practices; whether an officially approved management plan exists and whether it has been implemented)

24. Conservation measures proposed but not yet implemented: (e.g., management plan in preparation; officially proposed as a protected area, etc.)

25. Current scientific research and facilities: (e.g., details of current projects; existence of field station, etc.)

26. Current conservation education: (e.g., visitors centre, hides, info booklet, facilities for school visits, etc.)

27. Current recreation and tourism: (state if wetland is used for recreation/tourism; indicate type and frequency/intensity)

28. Jurisdiction: (territorial, e.g. state/region, and functional, e.g. Dept of Agriculture/Dept. of Environment, etc.)

29. Management authority: (name and address of local body directly responsible for managing the wetland)

30. Bibliographical references: (scientific/technical only)

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

Appendix 2 References

Reference	Author	Date	Title	Reference number Publisher	Website Reference
	Avon Heathcote Estuary Ihutai Trust	2004	Ihutai Management Plan 2004 Version 1	Avon Heathcote Estuary Ihutai Trust	http://www.estuary.org.nz/ihutai-plan.html
	Batcheler, C.L	Apr 1997	Notice to CEA to oppose declaration of the Estuary and Bromley System as a Wetland of International Importance	Unpublished. Correspondence of CEA	
	CRC, CCC, DoC	1992	Avon and Heathcote Catchment, Rivers and Estuary: Issues and Options for Managing these Resources	Report R92/32 ISBN 1-86937-186-0	
	CCC	Nov 1998	Notes of Meeting re Estuary Management held 9 Nov 1998	Notes taken by Jenny Ridgen	
	CCC EPPU	Mar 1997	Responsibilities , Issues and Opportunities associated with the Avon-Heathcote Estuary	Report to the CCC/CRC Joint Committee	See Supplementary Information 19
Issues Report 2001	CCC EPPU (in consultation with ECan)	Mar 2001	Avon Heathcote Estuary Draft Issues Discussion Report	Environmental Policy and Planning Unit, CCC	
	CCC Planning Policy Unit	Nov 1991	The Estuary and it's Environment – Issues and Opportunities		

Reference	Author	Date	Title	Reference number Publisher	Website Reference
	Controller and Auditor General	Apr 2001	Meeting International Environmental Obligations	Audit Office Report	http://www.oag.govt.nz/2001/environment/environment.htm (see Supplementary Information 12)
	CEA	1999	A proposal for Management of the Avon Heathcote Estuary		
	CEA	1999	A Charter for the Avon Heathcote Estuary		
Cromarty and Scott 1996	Cromarty, P. & Scott, D.A. (eds).	1996	A Directory of Wetlands in New Zealand.	ISBN: 0-478-01776-6 DOC, Wellington	http://www.doc.govt.nz/Publications/004~Science-and-Research/Miscellaneous/077~1997.asp (see Supplementary Information 15 for AH Estuary section)
Crossland 2005a	Crossland, A	Apr 2005	Summary of sites for which Ramsar Criterion 5 and Criterion 6 are technically applicable	Unpublished report for CCC	(see Supplementary Information 16)
Crossland 2005b	Crossland, A	May 2005	Bird Species of Conservation Importance in Christchurch	Unpublished report for CCC	(see Supplementary Information 17)
CMS	DoC	2000	Canterbury Conservation Management Strategy	Canterbury Conservation Management Planning Series No. 10 ISSN: 1171-5391-10 ISBN: 0-478-01991-2	http://www.doc.govt.nz/Regional-Info/010~Canterbury/005~Publications/Canterbury-Conservation-Management-Strategy/001~Volume-One/index.asp

Reference	Author	Date	Title	Reference number Publisher	Website Reference
	Hansen, B	Nov 1998	Christchurch Estuary – a brief history	Unpublished	
	Parliamentary Commissioner for the Environment	Mar 2002	Boggy Patch or Ecological heritage? Valuing wetlands in Tasman	Office of PCE, Wellington ISBN 1-877274-01-1	
	Ramsar Convention Bureau	2002	Ramsar Handbooks	Ramsar Convention Bureau	On CD Rom
Williams 2005a	Williams, Chrissie	Nov 2005	Report on Protection Mechanisms for the Avon Heathcote Estuary/Ihutai	Report Commissioned by the Avon Heathcote Estuary Ihutai Trust	

Websites

www.legislation.govt.nz

www.doc.govt.nz

www.ecan.govt.nz

www.ccc.govt.nz

www.ramsar.org

Appendix 3 Glossary of Terms

Canterbury Regional Council: Environment Canterbury.

Catchment: The total area from which a single river collects surface runoff.

Conservation Management Strategy (CMS): A management strategy prepared for the management of land and biological resources under Department of Conservation control.

Councils: The regional and district councils.

Environment Canterbury: The Canterbury Regional Council.

Estuary: A broad tidal area associated with a river where there is a mixing of saline and fresh water.

Foreshore: Means any land covered and uncovered by the flow and ebb of the tide at mean spring tides and, in relation to any such land that forms part of the bed of a river, does not include any area that is not part of the Coastal Marine Area.

IUCN: International Union on the Conservation of Nature.

Local Government: Regional and district councils.

Regional Council: Refer to section 2 of the Resource Management Act 1991.

Regional Plan: Refer to section 2 of the Resource Management Act 1991.

Wetlands of Ecological and Representative Importance (WERI): A NZ register of ecologically important wetlands.

Wetland: (as defined in the RMA 1991)

The RMA 1991 defines wetlands as permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions. Wetlands are the natural boundary between land and water. Wetlands are often located in riparian areas such as the margins of lakes and rivers. Over time wetlands may naturally fill with sediment and eventually become land but new wetlands may also form in other areas.

A wetland may also be known as a bog, fen, swamp or marsh indicating the different characteristic of the area. Wetlands differ as a result of their bioclimatic zones, vegetation composition, water levels and salinity which also determine the habitat type and type of composition.

Wetland: (as defined in the Ramsar Convention)

The Convention uses a broad definition of the types of wetlands, including swamps and marshes, lakes and rivers, wet grasslands and peatlands, oases, estuaries, salt marshes, tidal flats, near-shore marine areas no deeper than six metres at low tide, mangroves and coral reefs, and human-made sites such as fish ponds, waste-water treatment ponds, reservoirs, and salt pans.