



1. Introduction

Alison Russell-French

Assistant Secretary

Marine, Coasts and Wetlands Branch

Environment Australia

Context

TO DEVELOP *A DIRECTORY OF IMPORTANT WETLANDS IN AUSTRALIA* (THE DIRECTORY) IS AN AMBITIOUS UNDERTAKING THAT ENCOMPASSES A NUMBER OF IMPORTANT ELEMENTS. The Directory not only identifies important wetlands, it provides a substantial knowledge base of what defines wetlands, their variety and the dependence on them of many flora and fauna species. Many of Australia's wetlands are unique and very distinct. Without the Directory we would not have the valuable catalogue of these unique ecosystems that now exists.

The first edition of *A Directory of Important Wetlands in Australia* (ANCA 1993) was a collaborative effort between the Commonwealth Government and each of the State and Territory nature conservation agencies. A total of 517 wetlands qualified as nationally important and were included in the Directory. The second edition of *A Directory of Important Wetlands in Australia* (ANCA 1996) built on the information of the first edition, with a review of existing entries and the addition of 181 new site entries, bringing the total to 698 nationally important wetlands.

The information used to populate the Directory data set is provided in the main by State and Territory agencies, some of which are receiving funds for inventory projects under the National Wetlands Program of the Natural Heritage Trust to update and expand their State and Territory Chapters.

Since publication of the second edition of the Directory in 1996, extensive survey work has been undertaken, particularly in the north-west and south coast regions of New South Wales and in Victoria, to assess important streams and rivers. An inventory of important wetlands on Commonwealth owned and managed areas has also been undertaken.

Table 1.1 charts the changes to Directory listings since the second edition by jurisdiction. The total number of sites in the third edition of the Directory is 851 sites (refer to Figure 1), the net increase is 153, mostly from New South Wales and Victoria, including a significant number of important rivers and streams. The inventory of wetlands on Commonwealth owned and managed areas resulted in the addition of 20 wetlands to the Directory, three in the External Territories and 17 in the Defence Estate on mainland Australia, including Beecroft Peninsula which is managed by the Department of Environment and Heritage for the Department of Defence.

Table 1.1 Changes to Directory listings in each jurisdiction

Jurisdiction	No. of Sites in 2nd Edition	No. of Sites added	No. of C^{wealth} Sites added	No. of Sites Deleted	No. of Sites in 3rd Edition
Australian Capital Territory	13	1	0	1	13
New South Wales	94	81	3	0	178
Northern Territory	30	0	3	0	33
Queensland	165	12	4	0	181
South Australia	68	0	1	0	69
Tasmania	91	1	0	3	89
Victoria	121	38	0	0	159
Western Australia	110	4	6	0	120
External Territories	6		3	0	9
Total	698	137	20	4	851

Brief Summary and Analysis of Directory Data

The Directory describes 851 wetlands that have qualified as nationally important against the Criteria for inclusion outlined in Chapter 2. Of these wetlands, 56 are designated to the List of Wetlands of International Importance of the Ramsar Convention. These sites are summarised in Chapter 4.

The distribution of Australia's nationally important wetlands is shown at Figure 1. A breakdown of nationally important wetlands by State and Territory and area coverage is provided at Table 1.2. Wetlands occurring on land owned or managed by the Commonwealth in continental Australia, such as Kakadu National Park in the Northern Territory, are listed geographically under the relevant State or Territory chapter. There are no Commonwealth listings in the Australian Capital Territory and Tasmania. Wetlands of the External Territories under Commonwealth jurisdiction are described in Chapter 13.

Table 1.2 Number of wetlands and approximate area in each jurisdiction

Jurisdiction	No. of Sites (C^{wealth})	Area (ha)
Australian Capital Territory	13 (0)	1,257
New South Wales	178 (6)	2,334,734
Northern Territory	33 (4)	4,033,230
Queensland	181 (8)	42,875,159
South Australia	69 (1)	4,223,988
Tasmania	89 (0)	51,514
Victoria	159 (4)	557,888
Western Australia	120 (8)	2,583,325
External Territories	9 (9)	1,168,427
Total	851 (40)	57,829,522

The Wetland Classification System used in the Directory and the Criteria for determining nationally important wetlands are described in Chapter 2. Tables showing the breakdown of sites in each wetland type by jurisdiction and the number of sites included in the Directory against each criterion by jurisdiction are included in Appendix 1.

Interim Biogeographic Regionalisation for Australia (IBRA) analysis

Wetlands listed in the Directory (with the exception of the External Territories) are described against IBRA version 4.0 (Thackway and Creswell 1995) which is used for this analysis. Some wetlands, particularly rivers, occur in more than one bioregion and in this situation the first named bioregion is used for analytical purposes, on the assumption that most of the wetland occurs within that bioregion. For the few sites where no bioregion is identified, an overlay of the IBRA coverage was used to determine bioregion. An overview of the IBRA regionalisation, a map of IBRA regions and a table showing the number of nationally important wetlands by bioregion, are at Appendix 2.

There are some significant biases in the distribution and representation of nationally important wetlands in relation to bioregions, reflecting climatic regime and other factors such as remoteness and gaps in primary information.

Five bioregions (Mulga Lands, Murray-Darling Depression, Riverina, Sydney Basin and South Eastern Highlands) in the east and south of the Continent, contain 30 or more listed wetlands accounting for 227 wetlands, or 26.5% of the total number of wetlands in the Directory.

Twenty-nine of the 80 IBRA regions contain 10 or more nationally important wetlands (refer Table 1.3). These bioregions contain 664 or 78% of the listed wetlands. The remaining 187 listed wetlands occur across 42 bioregions.

Nine bioregions have no recognised nationally important wetlands: Broken Hill Complex; Burt Plain; Central Arnhem; Cobar Peneplain; Gawler; Hampton; Nandewar; Nullarbor; and Sturt Plateau. The combined area of these bioregions is 633,794 square kilometres or 8.25% of the continental landmass. Not all of these bioregions are arid zone areas or remote from major population centres.

Table 1.3 IBRA regions containing ten or more nationally important wetlands

IBRA region	No. of sites	Area (ha)
Mulga Lands	57	897,860
Murray-Darling Depression	48	657,620
Riverina	46	204,031
Sydney Basin	43	93,745
South Eastern Highlands	31	34,874
South East Corner	29	82,364
Swan Coastal Plain	29	30,470
Wet Tropics	29	163,079
Victorian Volcanic Plain	26	47,107
Channel Country	25	3,057,435
Cape York Peninsula	23	2,429,936
NSW North Coast	23	232,209
South East Coastal Plain	23	154,284
Naracoorte Coastal Plain	20	301,193
Tasmanian Midlands	20	2,128
Lofty Block	18	50,750
Australian Alps	16	1,012
Eyre and Yorke Blocks	16	38,238
Ben Lomond	15	281
Gulf Plains	15	2,221,612
Central Mackay Coast	14	703,220
Furneaux	14	3,729
Brigalow Belt South	14	247,754
Einasleigh Uplands	13	132,170
South Eastern Queensland	13	667,130
Central Highlands	12	2,420
Top End Coastal	12	978,900
Brigalow Belt North	10	475,697
Woolnorth	10	35,179
Total	664	13,946,427

A new version of the national bioregionalisation, IBRA version 5.1, with revised boundaries and 5 additional regions, was agreed by all States and Territories during the production of this publication. It is anticipated that wetland site information will be updated using the revised IBRA boundaries, where relevant.

Drainage Basin analysis

Analysis of the distribution and representation of nationally important wetlands in drainage basins was undertaken using the Australian Water Resources Commission Drainage Division and Basins coverage. The coverage defines 245 drainage basins in continental Australia.

Twenty-two drainage basins contain 10 or more nationally important wetlands (refer to Table 1.4). These basins occur from the arid to humid zones. The Paroo River basin contains the largest number of nationally important wetlands with 33 wetlands covering an area of approximately 780,000 hectares. Of those drainage basins containing important wetlands, 89 (48%) contain 2 or less nationally important wetlands. Fifty-six drainage basins contain no recognised nationally important wetlands. Further analysis and a map of drainage basins is included at Appendix 3.

Table 1.4 Drainage Basins containing 10 or more nationally important wetlands

Drainage Basin	No. of Sites	Area (ha)
Paroo River	33	779,561
Murrumbidgee River	29	205,789
Condamine-Culgoa Rivers	20	288,002
Loddon River	18	28,282
Swan Coast	17	6,094
Wimmera-Avon Rivers	16	89,322
Mallee	16	41,320
Lake Corangamite	16	35,824
Millicent Coast	14	155,262
Snowy River	14	54,254
Flinders-Cape Barren Islands	14	3,729
Tamar River	14	164
Clyde River-Jervis Bay	13	53,789
Kangaroo Island	13	50,304
Derwent River	13	4,016
Burdekin River	12	171,582
East Coast	12	7,940
Piper-Ringarooma Rivers	12	256
Cooper Creek	11	2,418,502
Lower Murray River	10	175,147
Avoca River	10	25,752
Hawkesbury River	10	5,222
Total	337	4,600,113

Note: area figures are approximate only and are not available for all wetlands.

Applications of Directory data

The brief analyses above demonstrate the potential applications of the wetland site data held in the Directory. Specific projects that are being pursued using the Directory database include the identification of new Ramsar sites in Australia, implementing Resolution 15.11 “*Strategic framework and guidelines for the future development of the list of Wetlands of International Importance*” adopted at the 7th Conference of Parties in Costa Rica, 1999 which urges Contracting Parties to develop a systematic approach to identifying future Ramsar sites for designation to the List of Wetlands of International Importance (Ramsar Convention Bureau 2000a).

Identification of the new Ramsar sites in Western Australia (sites 54–56) was undertaken using a strategic and systematic approach, consistent with this resolution (Jaensch and Watkins 1998). The Western Australian chapter of the second edition of *A Directory of Important Wetlands in Australia* was used as the primary data source for identifying potential candidate Ramsar wetlands.

The Directory will also be used to identify sites of importance for particular species, including threatened or migratory species, assisting with the implementation of conservation initiatives to protect migratory waterbirds, through identification of important habitat and the addition of new Australian sites to the East Asian–Australasian Shorebird Site Network.

Future of the inventory project

Work is ongoing in most jurisdictions to assess under-represented regions, and future additions to the Directory are expected from survey projects underway in Western Australia, Queensland, South Australia and the arid zone of the Northern Territory. Environment Australia will continue to examine wetlands occurring on Commonwealth land to identify any further sites that meet the criteria for inclusion in the Directory. Regular updates of existing listings will also be sought to revise information on wetland sites.

There is a need however for ongoing survey work, particularly in regions where significant gaps in information exist so that comprehensive State/Territory wetland inventories can be developed and aggregated towards a national wetlands inventory. Some States have already embarked on a comprehensive assessment of wetland types and coverage and will be producing digital data sets that could form the basis of a national wetland inventory.

Environment Australia, through the ANZECC Wetlands and Migratory Shorebird Taskforce, will be working with the States and Territories to develop a protocol and methodology for the future development of a national wetland inventory.