



## 9. South Australia

### Introduction

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(abridged from the second edition)

THE STATE OF SOUTH AUSTRALIA (SA), ENCOMPASSING SOME 984,000 KM<sup>2</sup>, IS BY FAR THE DRIEST OF ALL AUSTRALIAN STATES WITH 75% RECEIVING LESS THAN 200 MM OF RAINFALL. In spite of this being the driest State in the driest continent, SA contains an array of significant wetlands. The arid interior is notable for its mound springs, salt lakes and pristine freshwater river-floodplain systems of the Lake Eyre Basin. The coastline is 4,000 km long containing two Gulf regions; notable features include sheer cliffs, sandy beaches for thousands of shorebirds, coastal embayments, and several mangrove/samphire and estuarine mud flat systems. Notable in the South East are the coastal salt lakes, freshwater ponds and shallow lagoons, peat fens and marshes. The Riverland region is noted for its freshwater swamps, channels, lakes and floodplains.

Since European settlement, many wetlands, particularly in the southern agricultural regions, have been significantly altered through stock grazing, vegetation clearance, pollution, urban development or hydrological changes. Even so, there are some magnificent areas of wetlands remaining, areas which are highly valued for wildlife, of cultural, scientific and historical interest, and possessing great aesthetic and recreational appeal.

In the first edition of *A Directory of Important Wetlands in Australia* (ANCA 1993), 43 wetlands were listed. Most of these wetlands have been retained and updated while others, such as Serpentine Lakes, Oldea Soak and Warbla Cave Lakes, have been omitted from the Directory mainly because they either lack site information or no longer meet the criteria for inclusion. The Directory now contains a total of 69 South Australian wetland sites (refer to Figure 7); four of which have been nominated as Ramsar sites. No new sites have been nominated by the State since the second edition of the Directory was published (ANCA 1996), however, one site on Commonwealth land has been added.

The selected sites are categorised according to the Wetland Classification System (see Chapter 2) and described by their physical, hydrological and biological attributes. At present, knowledge of the Riverland, South East, and coastal wetlands is relatively adequate. Work is currently underway to investigate wetlands on the Eyre and Yorke Peninsulas, North Adelaide Plains, and Kangaroo Island. The least known wetland areas remain within the southern Mt Lofty Ranges, Flinders Ranges, Great Victoria Desert and far north-eastern desert and gibber plains.

In the site descriptions, common and scientific names of waterbirds follow Christidis and Boles (1994). The taxonomy of other vertebrates is from Watts (1990). Current botanical names for dominant wetland plant species follow Jessop (1993). Wetlands that support native plant and animal species which are listed as rare, vulnerable or endangered at the State level were identified according to the species scheduled in the *South Australian National Parks and Wildlife Act, 1972* as amended at July 1988. Nationally threatened vertebrate fauna were determined using the ANZECC *List of Endangered Vertebrate Fauna April 1991*. The status of threatened flora species was determined from the *Threatened Australian Flora June 1993* listing prepared by ANZECC.

## Conservation and Management

Management of wetlands in South Australia has largely been through the establishment of reserves under the *National Parks and Wildlife Act, 1972*. In recent years there has been an increased recognition by private landholders of the values and roles of wetlands and this has resulted in the protection and management of a number of wetland sites outside the reserve system, particularly in the South East region. So far, there are approximately 120 wetlands in the State's reserve system. Management plans have been prepared for most of these areas. Much of the River Murray floodplain contained within the Riverland Ramsar site (Chowilla, Calperum) is included in the Bookmark Biosphere Reserve. It is noteworthy that the four Ramsar sites within the State are entirely or partially designated as formal nature reserves.

## Future Research

While the establishment of a reserve system provides a basis for wetland protection and management, the lack of data available for some wetlands highlights the need for systematic inventories, biological surveys and research programs in many areas of the State. In this Directory the lack of systematic broadscale surveys shows in the gaps of information presented and in the omission of some poorly known yet potentially important sites. This chapter of the Directory remains incomplete until these gaps are filled. It is recommended that a statewide survey be conducted to compare with the results of Lloyd and Balla (1986). Special attention should be given to the bioregions of the Great Victoria Desert, Flinders and Olary Ranges and Nullarbor since present survey information is severely inadequate. One of the obvious gaps in this Directory is the lack of nominations from the Flinders Ranges, therefore future work should be directed towards obtaining information on the wetlands that occur in this bioregion. Any future revisions of the Directory should also include the supplementary list of wetlands included in the second edition (ANCA 1996) that meet one or more of the criteria but remain too poorly known for inclusion at this stage.

## Acknowledgments

The South Australian entries in *A Directory of Important Wetlands in Australia* were compiled by Josephine Morelli and Mark C. de Jong, for the then South Australian Department of Environment and Natural Resources (DENR). Funds for this work were provided by the then Australian Nature Conservation Agency through the National Wetlands Program. Many people contributed information or expertise in compiling the South Australian entries in the Directory, and their contribution is acknowledged once again.

## Summary analysis

The Directory describes 69 nationally important wetlands in South Australia.

The distribution of nationally important wetlands in SA (including Ramsar wetlands) is shown in Figure 7. A list compiling data on bioregion, site area, wetland type and criteria for inclusion for each wetland is provided at the end of this chapter.

Of the 15 bioregions in South Australia, 11 are shared with adjacent jurisdictions and only eight contain nationally important wetlands (refer to Table 9.1). Of these eight, only four have more than three nationally important wetlands listed. The four bioregions with more extensive listings all occur in the more humid south and east of the State. Lofty Block bioregion, in which Adelaide is located, has 18 (26%) of the wetlands listed in the State. An overview of the IBRA regionalisation and a map of IBRA regions is included in Appendix 2.

**Table 9.1** Number and area of nationally important wetlands in SA by IBRA region

IBRA Region	IBRA code	No. of Sites	Area (ha)
Broken Hill Complex	BHC	0	0
Central Ranges	CR	0	0
Channel Country	CHC	3	1,980,000
Eyre and Yorke Blocks	EYB	16	38,238
Finke	FIN	0	0
Flinders and Olary Ranges	FOR	1	—
Gawler	GAW	0	0
Great Victoria Desert	GVD	0	0
Hampton	HAM	0	0
Lofty Block	LB	18	50,750
Murray-Darling Depression	MDD	14	44,927
Naracoorte Coastal Plain	NCP	13	293,073
Nullarbor	NUL	0	0
Simpson-Strzelecki Dunefields	SSD	2	1,798,000
Stony Plains	STP	2	19,000
<b>Total</b>	<b>15</b>	<b>69</b>	<b>2,205,750</b>

*Note: area figure for Flinders and Olary Ranges not available.*

A total of 30 of the 40 wetland types are represented in South Australia (refer to Table 9.2). Most commonly included is type A7—Intertidal mud, sand or salt flats (n=17), followed by A1—Marine waters (n=16), B4—Riverine floodplains (n=15) and B6—Seasonal/intermittent freshwater lakes (n=15). The Wetland classification system and Criteria for inclusion in the Directory are explained in Chapter 2.

**Table 9.2 Number of SA sites in each Wetland type**

**A—Marine and Coastal Zone wetlands**

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
<b>Total</b>	16	11	0	4	13	12	17	13	9	3	3	0

**B—Inland wetlands**

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19
<b>Total</b>	11	6	1	15	10	15	10	9	7	5	4	4	7	4	7	0	4	0	2

**C—Human-made wetlands**

	C1	C2	C3	C4	C5	C6	C7	C8	C9
<b>Total</b>	1	0	0	3	0	1	0	0	0

Unlike most other jurisdictions, the majority of South Australian wetlands are included in the Directory because they are important as habitat for animal taxa at a vulnerable stage in their life cycles, or as a refuge during adverse conditions (Criterion 3, n=61) (refer to Table 9.3).

**Table 9.3 Number of SA sites included under each Criterion**

	1	2	3	4	5	6
<b>Total</b>	54	25	61	5	33	24

## List of nationally important wetlands in South Australia

Wetland name	Old Reference No.	New Reference No.	IBRA Region	Area (ha)	Wetland type(s)	Criteria for inclusion
Coongie Lakes	CHC004SA	SA001	CHC	1980000	B2, B4, B6	1, 2, 3, 4, 5, 6
Diamantina River Wetland System	CHC010SA	SA002	CHC	—	B1, B2, B4, B13	1, 2, 3
Strzelecki Creek Wetland System	CHC024SA	SA003	CHC	—	B2, B4, B6	1, 2, 3
Baird Bay	EYB001SA	SA004	EYB	250	A1, A4, A5, A7, A8	3
Barker Inlet & St Kilda	EYB002SA	SA005	EYB	—	A1, A2, A6, A7, A8, A9, C4	1, 2, 3, 5, 6
Big Swamp	EYB003SA	SA006	EYB	200	B6	1, 3
Clinton	EYB004SA	SA007	EYB	1964	A1, A2, A6, A7, A8, A9	1, 3
Coffin Bay Coastal Wetland System	EYB005SA	SA008	EYB	—	A1, A4, A5, A7	3, 5, 6
Davenport Creek	EYB006SA	SA009	EYB	—	A1, A4, A5, A7, A8, A9	1, 3, 5, 6
Franklin Harbour	EYB007SA	SA010	EYB	1500	A1, A2, A6, A7, A8, A9	1, 3, 6
Lake Hamilton	EYB008SA	SA011	EYB	2000	B8	1
Lake Newland	EYB009SA	SA012	EYB	8448	B7	1, 3, 5
Point Davenport	EYB010SA	SA013	EYB	181	A10	1, 3, 5
Point Labatt	EYB011SA	SA014	EYB	147	A4, A5	3, 5
Port Gawler & Buckland Park Lake	EYB012SA	SA015	EYB	434	A1, A2, A6, A7, A8, A9, C4, B6	1, 3, 5, 6
Streaky Bay	EYB013SA	SA016	EYB	—	A1, A2, A5, A7, A8, A9	3, 5
Tod River Wetland System	EYB014SA	SA017	EYB	21240	A6, A7, B1, C1	1, 2, 3
Tumby Bay	EYB015SA	SA018	EYB	1000	A1, A2, A5, A6, A7, A8, A9	1, 3
Wills Creek	EYB016SA	SA019	EYB	874	A1, A2, A7, A8, A9, C4	1, 3
Upper Spencer Gulf	FOR001SA	SA020	FOR	—	A1, A2, A6, A7, A8, A9	1, 3, 5, 6
American River Wetland System	LB001SA	SA021	LB	2000	A1, A2, A5, A7, A8, A10	1, 3, 5, 6
Birchmore Lagoon	LB002SA	SA022	LB	150	B7	3
Busby and Beatrice Islets	LB003SA	SA023	LB	1525	A1, A5, A7	3
Cygnets Estuary	LB004SA	SA024	LB	1300	A1, A5, A6, A7, A8	1, 2, 3, 5
Cygnets River	LB005SA	SA025	LB	—	B1, B4	1, 2, 3
D'Estrees Bay	LB006SA	SA026	LB	140	A1, A2, A5, A7	3, 5
Flinders Chase River Systems	LB007SA	SA027	LB	40450	B1, B6, B13, B17	1, 2, 3, 5
Grassdale Lagoons	LB008SA	SA028	LB	135	A6, A11	1, 3, 5
Lake Ada	LB009SA	SA029	LB	994	B7	1, 3
Lanacoona Road Swamps	LB010SA	SA030	LB	30	B15	1, 5
Lashmar Lagoon	LB011SA	SA031	LB	130	A6, A11	3, 5
Murrays Lagoon	LB012SA	SA032	LB	2200	B7	3, 5
Onkaparinga Estuary	LB013SA	SA033	LB	60	A1, A2, A6, A7, A8	1, 3, 6
Tookayerta & Finniss Catchments	LB014SA	SA034	LB	300	B9, B15	1, 3, 5, 6
Upper Hindmarsh River Catchment	LB015SA	SA035	LB	6	B15	1, 2, 5

<b>Wetland name</b>	<b>Old Reference No.</b>	<b>New Reference No.</b>	<b>IBRA Region</b>	<b>Area (ha)</b>	<b>Wetland type(s)</b>	<b>Criteria for inclusion</b>
Upper Tunkalilla Creek Swamps	LB016SA	SA036	LB	50	B9, B15	1, 2, 5
Waidrowski Lagoon	LB017SA	SA037	LB	530	B7	1, 3, 5
White Lagoon Wetland System	LB018SA	SA038	LB	750	B6, B7	1, 3, 5
Banrock Swamp Wetland Complex	MDD001SA	SA039	MDD	1220	B1, B4, B5, B6	1, 2, 3
Gurra Lakes Wetland Complex	MDD006SA	SA040	MDD	660	B1, B4, B5	3
Irwin Flat	MDD010SA	SA041	MDD	50	B4, B5, B6	1, 3
Loch Luna Wetland Complex	MDD019SA	SA042	MDD	1905	B1, B4, B5	1, 2, 3, 6
Loveday Swamps	MDD020SA	SA043	MDD	479	B2, B4, B5, B6, B7, B8	1, 2, 3, 6
Lower Murray Swamps	MDD022SA	SA044	MDD	155	B4, B5, B9	1, 2, 3
Marne River Mouth	MDD024SA	SA045	MDD	40	B2, B3, B4	1, 2, 3
Noora Evaporation Lakes	MDD027SA	SA046	MDD	500	B7, B11	3
Pike–Mundic Wetland Complex	MDD028SA	SA047	MDD	6700	B1, B4, B5	1, 3, 6
Riverland Wetland Complex	MDD032SA	SA048	MDD	30600	B1, B4, B5, B6, B13, B14	1, 2, 3, 4, 6
Spectacle Lakes	MDD034SA	SA049	MDD	427	B2, B4, B6	1, 2, 3
Stockyard Plain	MDD035SA	SA050	MDD	1870	A5, B7, B11	3, 5
Swan Reach Wetland Complex	MDD036SA	SA051	MDD	250	B1, B4, B6, B9	1, 2, 3
Bool & Hacks Lagoons	NCP001SA	SA052	NCP	3221	B5, B10, B13	1, 2, 3, 4, 6
Butchers & Salt Lakes	NCP002SA	SA053	NCP	40	A5, B8, B12	1, 3, 5
Deadmans Swamp	NCP003SA	SA054	NCP	545	B9, B10	1, 3
Ewens Ponds	NCP004SA	SA055	NCP	5	B1, B9, B15, B19	1, 5, 6
Honans Scrub	NCP006SA	SA056	NCP	842	B10, B14	1, 5
Lake Frome & Mullins Swamp	NCP007SA	SA057	NCP	3216	B8, B11, B12	1, 2, 3
Marshes Swamp	NCP010SA	SA058	NCP	665	B10, B13, B15	1, 3, 5
Naen Naen Swamp & Gum Lagoon	NCP012SA	SA059	NCP	335	B6, B8, B10, B13	3, 5
Piccaninnie Ponds	NCP013SA	SA060	NCP	300	A5, B9, B15, B19	1, 5, 6
Poocher & Mundulla Swamps	NCP014SA	SA061	NCP	300	B5, B6, B14	2, 6
South East Coastal Salt Lakes	NCP015SA	SA062	NCP	137444	A6, B8, B17	1, 3, 6
The Coorong, Lake Alexandrina & Lake Albert	NCP016SA	SA063	NCP	140500	A10, A11, B8, B12	1, 2, 3, 4, 5, 6
Watervalley Wetlands	NCP017SA	SA064	NCP	5660	B6, B7, B11, B12, B13, B14	1, 3, 4
Inland Saline Lakes	SSD001SA	SA065	SSD	829000	B8	1, 2, 3, 6
Lake Eyre	SSD002SA	SA066	SSD	969000	B8	1, 2, 3, 6
Dalhousie Springs	STP001SA	SA067	STP	19000	B17	1, 3, 6
Lake Eyre Mound Springs	STP002SA	SA068	STP	—	B17	1, 2, 3, 5, 6
Murray Bridge Army Training Area Wetlands <sup>C</sup>		SA069	MDD	71	C6	3, 5

*C* wetlands occurring in part on land owned or managed by the Commonwealth (one site).

*Note:* area figures for the above tables are approximate only and are not available for all wetlands.