

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

This Ramsar Information Sheet has been converted to meet the 2009 – 2012 format, but the RIS content has not been updated in this conversion. The new format seeks some additional information which could not yet be included. This information will be added when future updates of this Ramsar Information Sheet are completed. Until then, notes on any changes in the ecological character of the Ramsar site may be obtained from the Ecological Character Description (if completed) and other relevant sources.

1. Name and address of the compiler of this form:
(not provided)

FOR OFFICE USE ONLY.

DD MM YY

--	--	--

Designation date

--	--	--	--	--	--

Site Reference Number

2. Date this sheet was completed/updated:
1998

3. Country:
Australia

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Bool and Hacks Lagoons, South Australia

5. Designation of new Ramsar site or update of existing site:

Bool and Hacks Lagoons, South Australia was designated on 1 November 1985

This RIS is for (tick one box only):

a) **Designation of a new Ramsar site** ☐; or

b) **Updated information on an existing Ramsar site** ☒

6. For RIS updates only, changes to the site since its designation or earlier update:

a) **Site boundary and area**

The Ramsar site boundary and site area are unchanged: ☒

or

If the site boundary has changed:

i) the boundary has been delineated more accurately ☐; or

ii) the boundary has been extended ☐; or

iii) the boundary has been restricted** ☐

and/or

If the site area has changed:

i) the area has been measured more accurately ☐; or

- ii) the area has been extended ☐; or
- iii) the area has been reduced** ☐

**** Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a hard copy (required for inclusion of site in the Ramsar List): ☒;
- ii) an electronic format (e.g. a JPEG or ArcView image) ☐;
- iii) a GIS file providing geo-referenced site boundary vectors and attribute tables ☐.

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

Latitude: 37°06'S to 37°10'S; Longitude: 140°39'E to 140°44'E.

9. General location:

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

Naracoorte, South Australia

10. Elevation: (in metres: average and/or maximum & minimum)

Approximately 50 metres.

11. Area: (in hectares)

Approximately 3,200 ha.

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Bool Lagoon Game Reserve and Hacks Lagoon Conservation Park reserves one of the most important wetland areas remaining in the South East of the State of South Australia. The wetlands provide major drought refuge and breeding habitat for waterbirds and act as a buffer storage basin in the regional drainage system. The area is also used for duck hunting and is becoming increasingly popular for recreational visitor use.

13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9
☒ ☒ ☒ ☒ ☒ ☒ ☐ ☐ ☐

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Information to support the following criteria will be provided in the next RIS update.

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.

[Listed against former **Criteria 1(a), 1(b) and 1(c)** under the Pre-1999 Criteria]

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

[Listed against former **Criterion 2(a)** under the Pre-1999 Criteria]

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.

[Listed against former **Criterion 2(b)** under the Pre-1999 Criteria]

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.

[Listed against former **Criterion 2(c)** under the Pre-1999 Criteria]

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

[Listed against former **Criterion 3(a)** under the Pre-1999 Criteria]

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 waterbird.

[Listed against former **Criterion 3(c)** under the Pre-1999 Criteria]

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

b) biogeographic regionalisation scheme (include reference citation):

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Bool and Hacks Lagoon Basins lie in an ancient interdune drainage system that gently slopes towards the coast in a northwest direction. Prior to flood mitigation developments, the lagoons were filled from the overflow of Mosquito Creek during the winter rainfall season. Following European

settlement, the interdune corridor was drained and the lagoons now receive water as part of this scheme.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The Lagoons serve as a holding basin as part of a regional water drainage scheme.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

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

Inland: L • M • N • Q • 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)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The wetland is artificially manipulated to act as an equalisation basin for the control of flood waters draining off surrounding farmland.

It is an outstanding area for a wide range of waterbirds. Seventy-nine species of waterbirds have been recorded, with 48 of these known to have bred there. It is particularly important for waterfowl and common species include Pacific Black Duck (*Anas superciliosa*) and Grey Teal (*A. gibberifrons*).

Other species include:

Pink-eared Duck	<i>Malacorhynchus membranaceus</i>
Hardhead	<i>Aythya australis</i>
Chestnut Teal	<i>Anas castanea</i>
Blue-billed Duck	<i>Oxyura australis</i>
Musk Duck	<i>Biziura lobata</i>
Freckled Duck	<i>Stictonetta naevosa</i>
Maned Duck	<i>Chenonetta jubata</i>
Magpie Goose	<i>Anseranas semipalmata</i>
Cape Barren Goose	<i>Cereopsis novaehollandiae</i>

Population counts have proved difficult because of vegetation cover, however, typical duck numbers are believed to commonly vary between 15,000 and 50,000 and Black Swan numbers between 1,000 and 5,000. Straw-necked Ibis (*Threskiornis spinicollis*) and Sacred Ibis (*T. aethiopicus*) are common in the nesting season and numbers often exceed 50,000.

Other species of interest include:

Great Egret	<i>Egretta alba</i>
Yellow Spoonbill	<i>Platalea flavipes</i>
Royal Spoonbill	<i>P. regia</i>
Eurasian Coot	<i>Fulica atra</i>
Purple Swampphen	<i>Porphyrio porphyrio</i>
Dusky Moorhen	<i>Gallinula tenebrosa</i>
White-faced Heron	<i>Ardea novaehollandiae</i>
Hoary-headed Grebe	<i>Poliiocephalus poliocephalus</i>
Great Cormorant	<i>Phalacrocorax carbo</i>
Pied Cormorant	<i>P. varius</i>
Little Black Cormorant	<i>P. sulcirostris</i>
Little Pied Cormorant	<i>P. melanoleucos</i>
Brolga	<i>Grus rubicundus</i>
Whiskered Tern	<i>Chlidonias hybrida</i>
Australasian Bittern	<i>Botaurus poiciloptilus</i>

A wide range of waders and nine rare species including the Intermediate Egret (*Egretta intermedia*) and Little Bittern (*Ixobrychus minutus*), also occur in the area.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

None

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

It is an outstanding area for a wide range of waterbirds. Seventy-nine species of waterbirds have been recorded, with 48 of these known to have bred there. It is particularly important for waterfowl and common species include Pacific Black Duck (*Anas superciliosa*) and Grey Teal (*A. gibberifrons*).

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

The area is recognised for its conservation values as it is a remnant wetland in an area that has been extensively drained and developed for agriculture use.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box ☐ and describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

a) within the Ramsar site:

Crown land: the area is reserved under the National Parks and Wildlife Act as the Bool Lagoon Game Reserve and Hacks Lagoon Conservation Park.

b) in the surrounding area:

Private land.

25. Current land (including water) use:

a) within the Ramsar site:

The land immediately surrounding the Lagoons is permanent reserve, and this in turn is bordered by sheep and cereal growing areas. The Bool Lagoon Game Reserve is usually opened for duck hunting on several mornings each year, but this is dependent upon suitable seasonal conditions. The presence of rare or nesting birds may also affect the decision to open the reserve to hunters.

b) in the surroundings/catchment:

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

a) within the Ramsar site:

The Lagoons act as sumps for a 1215 km² catchment. Consequently, a range of nutrients, salts and pesticides accumulate within the basins. In addition, herbicides are used to maintain a vegetation-free flow path across Bool Lagoon. Bool Lagoon also contains high levels of lead shot which accumulated from past hunting practices.

Increased salinization due to rising water tables as a result of extensive clearing.

b) in the surrounding area:

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

Crown land: the area is reserved under the National Parks and Wildlife Act as the Bool Lagoon Game Reserve and Hacks Lagoon Conservation Park.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ☐; Ib ☐; II ☐; III ☐; IV ☐; V ☐; VI ☐

c) Does an officially approved management plan exist; and is it being implemented?:

The area is managed in accordance with a management plan and the use of lead shot is prohibited on the Game Reserve. The plan provides for management of water regimes and other identified concerns related to the conservation of the wetland.

d) Describe any other current management practices:

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

None

29. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The South Australian National Parks and Wildlife Service supports ongoing monitoring and research programs on the Lagoons. Current programs include determining the effects and management requirements of accumulated lead shot within the Game Reserve, studies on the aquatic vegetation habitats and monitoring of waterbird use.

30. Current communications, education, participation and awareness (CEPA) activities related to or benefiting the site:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The South Australian National Parks and Wildlife Service provides visitor information and on site interpretation programs.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Bool Lagoon Game Reserve has traditionally been used for recreational duck hunting on a limited seasonal basis. The Lagoons are becoming increasingly popular with visitors, currently estimated at 16,000 per year, whose major activities involve wildlife observation.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Government of South Australia

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

South Australia National Parks and Wildlife Service
GPO Box 1782
ADELAIDE SOUTH AUSTRALIA, 5001

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

South Australia National Parks and Wildlife Service (1988). *Bool Lagoon Game Reserve and Hacks Lagoon Conservation Park Management Plan*. Department of Environment and Planning, Adelaide.

Note: An extensive bibliography is held by the South Australian National Parks and Wildlife Service on the wetlands and management considerations of the area.

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