

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

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

Department of Primary Industries, Water and
Environment (DPIWE)
GPO Box 44
HOBART, Tasmania 7001

FOR OFFICE USE ONLY.

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

June 2005

3. Country:

Australia

4. Name of the Ramsar site:

Logan Lagoon

5. Map of site included:

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

a) **hard copy** (required for inclusion of site in the Ramsar List): *yes* -or- *no*

b) **digital (electronic) format** (optional): *yes* X -or- *no*

6. Geographical coordinates (latitude/longitude):

Latitude: 40 degrees 11' 00"; Longitude: 148 degrees 17' 00"

7. General location:

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

Logan Lagoon is situated on the south-east corner of Flinders Island, Bass Strait, Tasmania, approximately 6 km north-east of the township of Lady Barron. The site extends from the southern shore of South Chain Lagoon in the north down to Wilsons Lagoon in the south. Flinders Island is within the Flinders municipality, which had a population of 940 in 2001 (Australian Bureau of Statistics 2004).

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

The entire site is less than 20 m ASL.

9. **Area:** (in hectares) 2,257 hectares (The boundary of the site follows low water mark but the digital coverage used in 1996 was high water mark as low water mark was not available. In 2001, the boundary of the Logan Lagoon Ramsar site was mapped more accurately using an updated coverage of the low water mark.)

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland. Logan Lagoon is one of three large estuarine lagoons, which make up a coastal lagoon system along the south-east coast of Flinders Island. The site includes Syndicate and Wilsons Lagoons, part of Planters Beach and Pot Boil Point. It is enclosed within the Logan Lagoon Conservation Area. The lagoon is a significant habitat for a number of threatened waterbirds. Access to the lagoon is by four-wheel drive only.

11. Ramsar Criteria:

Circle or underline 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).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

12. Justification for the application of each Criterion listed in 11. 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).

Criterion 1 – Logan Lagoon contains two sites listed on the Tasmanian Geoconservation Database; Logan Lagoon Holocene Shorelines and Planter Beach Coastal Barrier System. Logan Lagoon, with other lagoons and dunes in the area, provides a representative and outstanding example of the development of Holocene shorelines for the local region. Also partly within the site, Planter Beach Coastal Barrier System is an extensive and spectacular individual coastal feature of Tasmanian significance. This Coastal Barrier System is a representative and outstanding example of how offshore bars formed with Holocene sea level rise and barrier growth has enclosed the coast, forming large lagoons. Logan Lagoon has been assessed as a Tasmanian estuary of critical conservation significance (Edgar, Barrett and Gradden 1999). Logan Lagoon is also recognised as a wetland in near pristine condition for the Flinders Biogeographic Region of Tasmania (Dunn 2005).

Criterion 2 - *Prasophyllum secutum* (northern leek orchid), listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) occurs within the site. *Vombatus ursinus ursinus* (Common wombat), which is listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*, is restricted to Flinders Island and occurs on the site.

Criteria 3 – The site supports species and communities threatened in Tasmania. One vegetation community recognised as threatened in Tasmania occurs on the site; *Callitris rhomboidea* forest. *Stellaria multiflora* (rayless starwort), a rare species in Tasmania under the *Tasmanian Threatened Species Protection Act 1995*, occurs on the site.

The 1998-1999 Shorebird Survey for Tasmania found Logan Lagoon (combined with nearby Cameron Inlet) has high migratory and shorebird diversity and is a priority site for resident species. The site provides breeding habitat for two beach nesting shorebirds listed as threatened under the *Tasmanian Threatened Species Protection Act 1995*; *Sterna nereis* (fairy tern) (rare) and *Sterna albifrons* (little tern) (endangered) (Bryant 2002). During the survey the largest count for two migratory species was obtained at Logan Lagoon; *Calidris ferruginea* (curlew sandpiper), 1000 birds and *Calidris ruficollis* (red-necked stint), 4000 birds and one beach nesting species; *Sterna nereis* (fairy tern), 250 birds (Bryant 2002).

Criteria 4 –The site is an important area for birds migrating between south-eastern Australia and Tasmania. The lagoon supports five migratory bird species; *Calidris ruficollis* (red-necked stint), *Calidris ferruginea* (curlew sandpiper), *Calidris acuminata* (sharp-tailed sandpiper), *Tringa nebularia* (common greenshank), *Sterna albifrons* (little tern) (Bryant 2002) which are listed under both the China - Australia Migratory Bird Agreement (CAMBA) and the Japan - Australia Migratory Bird Agreement (JAMBA). Logan Lagoon is listed as an important site for the *Calidris ferruginea* (curlew sandpiper) under the East Asian - Australasian Shorebird Site Network which links wetlands that are internationally important for shorebirds. For these reasons, the lagoon is not only important on a local scale, but also nationally and internationally.

13. 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: Flinders

b) biogeographic regionalisation scheme (include reference citation): Interim Biogeographical Regionalisation for Australia (IBRA) version 5.

14. 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.

Logan Lagoon Ramsar site is part of an extensive eastern Flinders Island parallel dune – coastal barrier system, and associated coastal lagoons and inlets. Around Logan Lagoon a number of old, slightly higher than present, strand lines are evident. This suggests recent uplift, or higher mid-Holocene sea levels leading to this site being recognised as being of geoconservation significance on a local regional scale (Dixon 1996).

Soils within the site are primarily uniform sandy deposits. The beaches are composed of undifferentiated calcareous sand and are highly susceptible to wind and wave erosion. Inland soils consist of a surface layer of organic materials (Tasmanian Parks and Wildlife Service 2000). The recurved spits along the western shore of Logan Lagoon indicate that, at one stage, it was an active tidal lagoon, with significant inflow and outflow streams. The lagoon is now contained entirely within Holocene alluvial deposits which, when mobilised by longshore drift, blocked freshwater drainage to the sea. This would have been exacerbated by local uplift of the area, as indicated by raised strand lines (Houshold pers. comm.).

The water level in the lagoon fluctuates with rainfall and evaporation, with it usually filling during winter rains. Maximum water depth is 1-1.5 m. On occasions, an outlet channel breaches the seaward dunes and drains the lagoon. In extended dry periods the lagoon dries out and water is only contained in the southern most section of the lagoon. The catchment of Logan Lagoon is low lying with the water table very close to the soil surface. Pot Boil Creek is the only natural watercourse that flows into Logan Lagoon. Water drains into Logan Lagoon from adjacent land that is primarily used for agricultural purposes. Runoff and leaching into the catchment of fertilisers, herbicides and pesticides has the potential to have a significant impact on the water quality of the site (Tasmanian Parks and Wildlife Service 2000).

Annual rainfall in the area is on average 750-1000 mm.

15. Physical features of the catchment area:

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

The geology of Flinders Island is dominated by granite ridges with about half the Island coastal sand dunes and related deposits. The drainage pattern is dominated by many small streams that flow to the coast, with only a small number of these being permanent. Many coastal lagoons occur along the east coast of the Island. The catchment has been vastly altered by clearing and large scale drainage works for agriculture.

Flinders Island experiences a mild maritime climate with an annual average rainfall of 770mm which occurs predominantly in winter and spring.

16. Hydrological values:

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

As with many lagoon systems on the east coast of Flinders Island, water flows are controlled by inputs from overland flow and groundwater, outflow seepage through barrier dunes and, occasionally by tidal flows when the entrance is breached. Surface flows over the sandy soils occur following storm events, however, a large proportion of inflows is supplied by groundwater. Groundwater systems are recharged as runoff from surrounding impermeable granite catchments sinks into sand aquifers, flowing underground, generally eastwards. Whilst on rare occasions, water discharges from the lagoon through a breached opening to the sea, the majority of outflows are likely to be underground through the dunes, emerging as beach springs. As the lagoon is located at the downstream reaches of the catchment, its water quality is determined by upstream land uses. It's main hydrological value lies in maintenance of natural ecosystems in the lagoon itself (Houshold pers. comm.).

17. 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 • 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)

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.

J, E and N

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

The site is in relatively natural condition except for some cleared and drained agricultural land on the western shore. The dominant vegetation communities present within the site are Saline aquatic herbland, Saline sedgeland and rushland, Succulent saline herbland, Coastal grass and herbfield and *Acacia longifolia* coastal scrub. Other vegetation communities present are Coastal scrub, *Allocasuarina verticillata* forest, *Callitris rhomboidea* forest, *Eucalyptus nitida* Furneaux forest, *Eucalyptus viminalis* grassy forest and the introduced vegetation community Marram grassland (Harris pers. comm. 2005).

Geomorphologically, the site has an accretional coastline. The age of the parallel dunes is fairly young and displays a successional series of dune vegetation which has been complicated by an extensive fire history. The opportunity for research studies is extensive (Harris pers. comm 2005).

The lagoon is fringed with *Juncus* reed beds (Saline sedgeland and rushland) whilst the surrounding land supports a Coastal grass and herbfield with scattered *Eucalyptus*, *Allocasuarina* and *Banksia* trees. Swans and other waterfowl breed in the *Juncus* tussocks during periods of high water level. Being a shallow evaporative basin the lagoon is rich in nutrients and provides abundant food for water birds. When the lagoon has been dry, nearby Cameron Inlet has been recorded as supporting the bird populations normally occupying Logan Lagoon.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. 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.*

Within Tasmania, Saltmarsh vegetation communities, three of which occur on the site, qualify for two of the Biodiversity Criteria developed by Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee (JANIS). Criteria (1); as less than 3% of the pre-1750 distribution of Saltmarsh vegetation is protected in the Comprehensive Adequate and Representative (CAR) reserve system and Criteria (5); as they are a habitat for migratory species which are also often rare, vulnerable or endangered. Though Saltmarsh communities are not currently listed as threatened within Tasmania, these communities serve a critical ecological function and are at risk due to their low reservation status. In particular, *Selliera radicans* herbfield and *Lamprothamnium* aquatic community present at the site are poorly reserved in Tasmania. There are also representative examples of undisturbed coastal vegetation surrounding the lagoon.

A number of introduced plant species occur on the site; *Cortaderia selloana* (Pampas grass), *Carduus pycnocephalus* (spear thistle) and *Lycium ferocissimum* (African boxthorn) which are all invasive weeds declared under the *Tasmanian Weed Management Act 1999*. The invasive weed *Euphorbia paralias* (sea spurge) also occurs within the site.

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. 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.*

When full, the lagoon provides refuge for waterbirds during the shooting season and a resting and feeding area for migratory birds. A full species list can be obtained from the Logan Lagoon Conservation Area Management Plan 2000.

In 2002-2003, with severe drought conditions in mainland Australia, a flock of approximately 3000 banded stilts (*Cladorhynchus leucocephalus*) arrived at Logans Lagoon and stayed in the area for approximately 8 months. This was the largest number of stilts ever recorded in Tasmania (Blackhall pers. comm). See also www.focusonflinders.com.au/bandedstilts.html.

There is an historical record in the site for *Galaxiella pusilla* (dwarf galaxias) a nationally Vulnerable species (*Environment Protection and Biodiversity Conservation Act 1999*).

Litoria raniformis (Green and gold frog) has recently been recorded at Patriarchs to the north of the site. Natural and unnatural draining of the Lagoon creates conditions too saline for this species which was not located during recent surveys (Michaels pers. comm. 2005). Protecting the Lagoon from unnatural draining would increase the value of the site as potential habitat for this species. Subsidiary streams within the site are also potential habitat for *Litoria raniformis*.

Feral cats and pigs occur on the site.

21. Social and 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 reserve is valued as a site for conservation education, scientific research, recreation, and tourism.

22. Land tenure/ownership:

- a) within the Ramsar site: Logan Lagoon Conservation Area.
- b) in the surrounding area: The site is bounded by the sea to the east and south, Logan Lagoon Conservation Area to the north, with private property along approximately two-thirds of the western shore.

23. Current land (including water) use:

- a) within the Ramsar site: Conservation and low intensity recreation.
- b) in the surroundings/catchment: Residential, agricultural with growing aquaculture and tourism industries

24. 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: In the past, the lagoon has been drained by local landowners to improve soil drainage on nearby low-lying pasture. Draining of the lagoon is a threat to the integrity of the area. Invasive introduced plant species occur in the site and can outcompete the native species and change the structure of the vegetation communities. Feral cats and pigs have been observed on the site and pose a direct threat to native fauna. Illegal off-road recreational driving is resulting in damage to the vegetation, erosion, blowouts and disturbance of coastal breeding birds and destruction of their eggs.
- b) in the surrounding area: Increased clearing could result in excessive salinity or contamination from agricultural run-off entering the lagoon through existing drainage ditches.

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Logan Lagoon is listed on the Convention on Wetlands (Ramsar, Iran, 1971) and is also listed on the Register of the National Estate. The site is designated a Conservation Area. The lagoon has been listed on the East-Asian-Australasian Shorebird Site Network due to the presence of *Calidris ferruginea* (curlew sandpiper).

26. Conservation measures proposed but not yet implemented:

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

It is proposed to upgrade the status of the area from Conservation Area to Nature Reserve. A detailed botanical/ecological survey is required for the site.

27. Current scientific research and facilities:

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

Waterbird numbers at Logan Lagoon are counted annually and other bird numbers are counted periodically (Sharpe 1995). No facilities are currently provided on site.

28. Current conservation education:

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

The area is valuable to current conservation education in serving as a demonstration of a relatively undisturbed wetland.

29. Current recreation and tourism:

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

The area is visited by amateur bird watchers.

30. Jurisdiction:

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

Territorial: Flinders Council. Functional: Parks and Wildlife Service.

31. 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.

Director, Parks & Wildlife Service
GPO Box 1751
HOBART, 7001 Tasmania

32. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

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