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Information Sheet on Ramsar Wetlands (RIS)

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

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Pitt Water-Orielton Lagoon - 6

1. Form compiled by:	Stewart Blackhall, Anne McEntee and Elizabeth Rollins, Department of Primary Industries, Water and Environment, 134 Macquarie Street, Hobart 7006
2. Sheet last modified:	2003
3. Country:	Australia
4. Name of Ramsar site:	Pitt Water-Orielton Lagoon
5. Map of site included?	a) hard copy: b) digital (electronic) format:
6. Geographical coordinates:	42 degrees 48' 00", 147 degrees 30' 00"
7. General Location:	The wetland is located on the south-east coast of Tasmania, approximately 20 kilometres east of the city of Hobart, between the towns of Cambridge and Sorell.
8. Elevation:	The whole area is less than 20 m ASL.
9. Area:	3334 ha
10. Overview:	Pitt Water-Orielton Lagoon site comprises an estuarine system with a large area of saltmarsh. The lagoon system offers a diversity of habitats and is subsequently a species-rich environment. Access is possible by 2-wheel drive vehicle.
11. Ramsar Criteria:	2, 3, 4, 8
12. Justification of criteria under point 11:	This site is an extensive and diverse wetland which often contains large populations of waterbirds, and is considered to be a significant refuge in times of drought. It is the most southern major summer feeding ground for waterbirds in Australia. It is an important area for migratory waders that fly to the site from as far away as the arctic tundra. Twenty six bird species that occur in and around Pitt Water/Orielton Lagoon are listed on the Japan - Australia Migratory Bird Agreement (JAMBA). Similarly, 27 bird species are listed on the China - Australia Migratory Bird Agreement (CAMBA). The wetland flora contains an array of species which are considered to be rare and at risk in Tasmania. Orielton Lagoon is listed as an important site for the Double-banded Plover (<i>Charadrius bicinctus</i>) under the East Asian - Australasian Shorebird Reserve Network which links wetlands that are internationally important for shorebirds. The rocky shores of Pitt Water are also critical habitat for the endemic seastar, <i>Patriella vivipara</i> (Endangered- Se, TSPA 1995), which has a very restricted geographic range. The southern part of the site is a protected shark nursery area.
13a. Biogeographic region:	Tasmanian Midlands
13b. Biogeographic regionalisation scheme:	Environment Australia 2000. Revision of the Interim Biogeographic Regionalisation of Australia (IBRA) and the Development of Version 5.1. - Summary Report. Department of Environment and Heritage, Canberra.
14. Physical Features:	Pitt Water is an almost land-locked body of tidal salt water with a narrow entrance to Fredrick Henry Bay. The area includes estuaries of four watercourses: Coal River and Sorell Rivulet into Pitt Water, Orielton

whole area is protected from the open sea by a large sand bar (Seven Mile Beach). The site has large areas of tidal mud and sand flats and a restricted tide flow through the mouth leaves extensive areas exposed as suitable feeding areas for wading birds. The geology of the area is complex, being dominated by Holocene river alluvium, silt, fine sand, dune and windblown sand with pockets of Triassic sandstone and shale. Orielton Lagoon is separated from Pitt Water by a causeway originally constructed in 1868 and modified in 1906 and 1953. This structure constricted broad tidal flow and created a shallow (1.25 metres deep) lagoon about 265 hectares in area. Culverts have been built under the causeway, allowing freer water flow between Orielton Lagoon and Pitt Water.

15. Catchment Area:

16. Hydrological Values:

The catchment area of Pitt Water is approximately 890 sq km, the catchment is subject to flooding and flow rates vary considerably throughout the year. Frederick Henry Bay and the mouth of Pitt Water are subjected to a tidal range of approximately 1.4 m. The natural hydrological regime of Orielton Lagoon has been severely altered by the Sorell causeway. The wetland and saltmarsh areas play a significant role in reducing nutrient input from surrounding land. The average annual rainfall of the area is 500 - 625 mm.

17. Wetland Type:

F, G, R, M, Q, H

18. Ecological Features:

Most of the site is open water fringed by saltmarsh communities and rocky shores. Extensive mudflats and saltmarsh areas are important habitat for wading birds and waterfowl. There are a number of saltmarsh communities which are significant in their own right; particularly in the north-west (north of Lands End) and surrounding Barilla Bay. Rocky shores constitute important habitat for seastars.

19. Noteworthy Flora:

Six plant species are of particular significance in this area because of their threatened status. The daisy, lemon beauty-head (*Calocephalus citreus*; Endangered-Se; Threatened Species Protection Act (TSPA) 1995) is endangered and occurs within the nature reserve at the lagoon. Four other species, slender water-mat (*Lepilaena preissi*), silky wilsonia (*Wilsonia humilis*; Rare-Sr; TSPA 1995), fennel pondweed (*Potamogeton pectinatus*), and sea lavender (*Limonium australe*) are all listed under the Threatened Species Protection Act 1995 as rare. Salt lawrencia (*Lawrencia spicata*) is also present and is being considered for listing under the TSPA. Pitt Water Nature Reserve is the only reserve in which *Lepilaena preissi* and *Wilsonia humilis* are found. *Potamogeton pectinatus* and *Limonium australe* are found in only two reserves. The region contains one of the most significant areas of saltmarsh in Tasmania (Kirkpatrick and Glasby 1981). All but one of the poorly reserved saltmarsh species in Tasmania occur in abundance within the reserve. Six species of threatened bryophytes also occur within the reserve.

20. Noteworthy Fauna:

Significant migratory species that visit the area include the Eastern Curlew (*Numenius madagascariensis*), Bar-tailed Godwit (*Limosa lapponica*), Common Greenshank (*Tringa nebularia*), Curlew Sandpiper (*Calidris ferruginea*), Double-banded Plover (*Charadrius bicinctus*), and Red-necked Stint (*C. ruficollis*). The lagoon is one of the few spots where Great Crested Grebes (*Podiceps cristatus* - Rare; Sr; TSPA 1995) can be seen regularly. The Fairy Tern (*Sterna nereis*; Rare, Sr, TSPA, 1995) and Little Tern

(*Sterna albifrons sinensis*; Endangered- Ne, Se, TSPA 1995, Environment Protection and Biodiversity Conservation Act (EPBC) 1999) are both threatened in Tasmania and have been sited in the reserve. The rocky shores of Pitt Water and along the Sorell Causeway support the largest concentration of the small endemic sea-star, *Patiriella vivipara* (Endangered- Se, TSPA 1995), one of the few viviparous sea stars. The saltmarshes around Barilla Bay are one of the few recorded Tasmanian localities of the rare chequered blue butterfly (*Theclinessthes serpentata*). A full species list can be obtained from the Pitt Water/Orielton Lagoon Management Plan 2000.

21. Social and Cultural Values:	Community groups are actively involved in the rehabilitation of Orielton Lagoon. The area is valued by locals as a recreational fishing area. The site holds commercial value as it is an important area for shell fish aquaculture production. At the time of European arrival, Pitt Water was part of the territory occupied by the Oyster Bay Tribe. Twenty-one sites within close proximity to the Ramsar site have been registered on the Tasmanian Aboriginal site index. Although few surveys have specifically focused on Aboriginal sites in the area, one reasonably large midden has been located in the Ramsar site and it is highly likely that more exist.
22. Land tenure/ownership:	On site: Pitt Water Nature Reserve and unallocated Crown land. Surrounding area: Private freehold, Seven Mile Beach Protected Area, Hobart Airport.
23. Current land use:	On site: Fishing, aquaculture, boating, bird watching and conservation. Surrounding area: Residential, agricultural (mainly livestock grazing), conservation.
24. Factors adversely affecting ecological character (past, present, potential):	<p>Past/present: Decreased water exchange between Orielton Lagoon and Pitt Water due to the construction of a causeway, resulted in increased evaporation in the shallow lagoon and consequent large changes in salinity associated with this process. Altered salinity combined with nutrient input from adjacent landuses (residential, aquaculture and agriculture) led to eutrophication of areas of the lagoon which resulted in a toxic algal bloom of <i>Nodularia spumigena</i> in 1993. The creation of additional culverts to increase water exchange has helped to decrease the frequency of blooms in the area. Significant saltmarsh areas have been trampled by grazing stock. There has been a catastrophic decline (94% loss 1950-1990) in sea grass coverage throughout Pitt Water. The decline has been attributed to an increase in nutrient levels and sedimentation (Rees 1993). Introduced species concerns are primarily associated with terrestrial and aquatic plants; boneseed (<i>Chrysanthemoides monilifera</i>), gorse (<i>Ulex europaeus</i>), blackberries (<i>Rubus fruticosus</i>) and boxthorn (<i>Lycium ferocissimum</i>) have established along much of the shore of Orielton Lagoon. Other introduced species include the toxic dinoflagellate <i>Gymnodinium catanatum</i>, and the European shore crab (<i>Carcinus meanus</i>).</p> <p>Potential: Subdivision on the shore of Orielton Lagoon in the vicinity of Shark Point Road may result in increasing clearance, residential effluent, dumping of vegetative material and general disturbance from noise, pets, and human activity. Increasing aquaculture operations in Pitt Water. Proposal to increase abstraction of water from the main tributary of upper Pitt Water, the Coal River. Increased irrigation activities in the drainage basin.</p>

25. Conservation measures taken:

The site is listed under the Convention on Wetlands and also on the Register of the National Estate. Three major areas of the estuary have been declared Nature Reserves. The site has been listed on the East Asian-Australasian Shorebird Site Network due to the use of the area by Double-banded Plovers (*Charadius bicinctus*). Culverts recently built under the causeway have increased water circulation and thereby flush excess nutrients from the lagoon and stabilise salinities. This is associated with other measures planned to reduce eutrophication problems in the lagoon, the effectiveness of which is uncertain. Landcare groups have fenced off much of the foreshore along the western side of Pitt Water and undertaken weed eradication programs. Volunteers associated with a Parks and Wildlife program took part in a project which relocated a colony of the endangered seastar, *Patiriella vivipara*, which otherwise would have been destroyed by local roadworks. A draft Management Plan has been written for the area.

26. Conservation measures proposed:

A scheme to divert sewage effluent from the estuary to a land disposal system is underway.

27. Current scientific research and facilities:

The University of Tasmania, and several government departments are currently undertaking research into the water quality and ecology of the area.

28. Current conservation education:

With close proximity to the city of Hobart, there is great potential for use of the wetland for conservation education. There are plans to build bird hides on land NW of Orielton Lagoon as part of a community education program.

29. Current recreation and tourism:

Birdwatching is conducted in the area by the group, Birds Tasmania. Other recreational activities undertaken in the area include fishing, windsurfing, boating and cycling.

30. Jurisdiction & 31. Management authority:

Jurisdiction: Territorial: Sorell Municipal Council. Functional: Director, Parks & Wildlife Service, Tasmania. Management: Sorell Municipality; Director, Parks & Wildlife Service, Tasmania.

32. Bibliographical references:

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