

# Information Sheet on Ramsar Wetlands

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

## 1. Date this sheet was completed/updated:

1998

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Designation date

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Site Reference Number

## 2. Country:

Australia

## 3. Name of wetland:

Lake Warden System, Western Australia

## 4. Geographical coordinates:

Latitude: (approx.) 33° 47'5" to 33° 50'5"; Longitude: (approx.) 121° 51'E to 122° 01'E

## 5. Altitude:

## 6. Area:

Approximately 2 300 ha.

## 7. Overview:

A system of saline lakes and marsh areas behind beach-front dunes. The lakes support large numbers of waterbirds, including a significant proportion of the world's Hooded Plover population.

## 8. Wetland Type:

marine-coastal: A B C D E F G H I **J** K

inland: L M N O P **Q** **R** Sp Ss Tp Ts

U Va Vt W Xf Xp Y Zg Zk

man-made: 1 2 3 4 5 6 7 8 9

## 9. Ramsar Criteria:

**1a** 1b 1c 1d | 2a 2b 2c 2d | **3a** 3b **3c** | 4a 4b

Please specify the most significant criterion applicable to the site:

10. Map of site included? Please tick *yes*  -or- *no*.

## 11. Name and address of the compiler of this form:

Department of Conservation and Land Management

Locked Bag 104

Bentley Delivery Centre WA 6983

12. Justification of the criteria selected under point 9, on previous page.

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### 13. General location:

Esperance, south coast of Western Australia.

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### 14. Physical features:

Water in the lakes ranges from moderately to very saline; water regimes range from almost permanent (only drying out occasionally at the end of summer) to ephemeral. There are also some springs which give rise to small, shallow, brackish wetlands such as that at the eastern end of the wetland area. The lakes contain either completely open water or dead trees around the periphery: there is no emergent vegetation although trees and rushes grow on the shorelines around the lakes. The lakes are probably supplied by a mixture of groundwater and surface run-off. Coramup Creek drains into Wheatfield Lake and thus into lakes to the west of it, since they are interconnected in winter.

Mullet Lake and wetlands to the east of it are located in a large samphire marsh. Wheatfield Lake and wetlands westwards occur in stabilised sand-dunes which support low woodland on the higher ground between the lakes. Station and Mullet Lakes are occasionally connected to the sea via Bandy Creek and a species of mullet sometimes swims into them and other lakes in the system.

*Melaleuca cuticularis* trees grow down to the water in all the wetlands although in some places there are narrow zones of rushes, principally *Baumea iuncea*. Other rushes and sedges, including *Juncus kraussii*, *Isolepis nodosa* and *Gahnia trifida*, also grow around the shoreline in the tree zone. In some wetlands towards the eastern end of the system, *Melaleuca preissiana* grows in the fringing tree zone as well as *M. cuticularis*. At the western end *Acacia cyclops* frequently grows behind *Melaleuca cuticularis* as the land rises, before it is replaced by low woodland of *Banksia speciosa* or by mallee and scrub. At the eastern end of the system, which is predominantly samphire marsh, the fringing tree vegetation gives way to samphire species, especially *Halosarcia pterygosperma*, *H. pergranulata* and *Sarcocornia blackiana*, as the ground drops away from the embankment around the wetland. In higher parts of the marsh the grass *Stipa luncifolia* grows profusely and in areas fed by springs *Suaeda australis* occurs.

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### 15. Hydrological values:

The hydrological values are poorly understood (see PHYSICAL FEATURES).

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### 16. Ecological features:

The chain of lakes provides important habitat for waterbirds: 16 719 were counted in Lake Warden in November 1982, 6 775 in Windabout Lake in May 1985 and 2 680 in Station Lake in January 1983. The Lake Warden wetlands regularly support more than 10 000 ducks: 5 500 Australian Shelducks (*Tadorna tadornoides*) and 3 500 Black Swans (*Cygnus atratus*) were counted in Lake Warden in November 1982 and 5 500 Grey Teal (*Anas gibberifrons*) in Windabout Lake in May 1985. Up to 10 000 Banded Stilts (*Cladorhynchus leucocephalus*) have been recorded in Lake Warden.

In terms of numbers of birds occurring there, the Lake Warden wetlands are among the most important sites in south-western Australia for Chestnut Teal (*Anas castanea*). They are also an extremely important site for Hooded Plovers (*Charadrius rubicollis*) (240 birds in Lake Warden in February 1985), a rare species restricted to southern Australia. Hooded Plovers breed regularly at Station Lake and the Lake Warden wetlands support well over 1% of the population of this species in southwestern Australia; the entire Australian population is less than 2 000 birds.

The principal conservation value of the Lake Warden wetlands is as habitat for waterbirds although they are also typical examples of saline coastal lakes on the south coast of Western Australia.

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### 17. Noteworthy flora:

See ECOLOGICAL FEATURES.

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**18. Noteworthy fauna:**

See ECOLOGICAL FEATURES.

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**19. Social and cultural values:**

The major social value is the use of Windabout and Woody Lakes for water-skiing and sailing.

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**20. Land tenure/ownership:**

The Ramsar site is contained in Lake Warden Nature Reserve (32257), Woody Lake Game Reserve (15231) and part of Mullet Lake Game Reserve (23825), which are vested in the National Parks & Nature Conservation Authority of Western Australia and managed by the Department of Conservation and Land Management. No freehold land is included in the Ramsar site.

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**21. Current land use:**

Duck-shooting occurs in all the Lake Warden wetlands except Lake Warden itself. Windabout and Woody Lakes are used for water-skiing and sailing. The area around the lakes is used for horse-riding and there is an extensive network of vehicle tracks.

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

The extensive vehicular use around the wetlands and frequent fires are leading to degradation of the environment and an effort should be made to restrict access. Waterskiing and, to a lesser extent, sailing may have an adverse effect on the use of the lakes by birds. The Department of Conservation and Land Management should continue to monitor these activities, which should be restricted to Woody and Windabout Lakes.

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**23. Conservation measures taken:**

The wetland is in Nature Reserves 32257, 15231 and 23825.

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**24. Conservation measures proposed but not yet implemented:**

None.

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**25. Current scientific research and facilities:**

Numbers of ducks are monitored twice a year.

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**26. Current conservation education:**

None.

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**27. Current recreation and tourism:**

None.

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**28. Jurisdiction:**

Government of Western Australia

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**29. Management authority:**

Department of Conservation and Land Management, PO Box 104, Como WA 6152.

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**30. Bibliographical references:**

Jaensch, R.P., Vervest, R.M. and Hewish, M.J. (1988). Waterbirds in nature reserves of south-western Australia, 1981-1985: reserve accounts. Royal Australasian Ornithologists Union Report 30, 1-290.