

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:

1 June 1998

FOR OFFICE USE ONLY.

DD	MM	YY

Designation date

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Site Reference Number

2. Country:

Australia

3. Name of wetland:

Gunbower Forest, Victoria

4. Geographical coordinates:

Latitude: (approx) 35° 39' to 36° 00'S; Longitude: (approx) 144° 08' to 144° 30'E

5. Altitude:

Approx 80 metres

6. Area:

19,931 hectares

Note: This is a revised area figure based on GIS Mapping (1995) and does not represent any change to the Ramsar Site boundary.

7. Overview:

Gunbower Forest is the second largest Red Gum forest in Victoria, and is subject to periodic inundation from the Murray River when it supports large numbers of breeding waterfowl.

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:

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

2(b) Gunbower is of special value because it is the second largest River Red Gum forest in Victoria.

3(b) Gunbower forest supports the only breeding colony of the intermediate Egret (*Egretta intermedia*) in Victoria (Horricks *et al.* 1989). White Ibis (*Threskiornis molucca*), Sacred Ibis (*Threskiornis aethiopicus*), Grey Teal (*Anas gibberfrons*), Black Swans (*Cygnus atratus*) and other water birds also breed here (J. Bowen pers. Comm.).

13. General location:

North-central Victoria, Australia, approximately 30 kilometres north-west of Echuca.

14. Physical features:Physiography and Geology

Gunbower Forest is a long shallow depression lying between the banks of the Murray River and Gunbower Creek. Soils in the area are predominantly grey/brown clays.

Flood Regime

Gunbower Island is a depositional basin which contains a number of lentic channels and miscellaneous floodplain depressions. The lowest and therefore major entry point for water into the forest is Spur Creek which runs when the Murray River height at Echuca reaches four metres. All the channels and depressions from Spur Creek are more or less connected to the Little Gunbower Creek which, at its junction with Gunbower Creek, is the main exit point for floodwaters. As the Murray River rises other effluents begin to flow, until the forest is entirely inundated. This usually occurs when the Echuca river height is approximately eight metres. Water depth on the island can vary from a few centimetres on high ground to six metres in creeks and billabongs in the centre of the forest during flood.

River regulation has caused a change in the natural flood regime. Prior to the completion of the Torrumbarry Lock in 1923 there was little control exerted on water flow except for small scale damming by locals to prevent flooding. Since then Gunbower Creek has been maintained at flood level during the irrigation season (August to May) by three weirs at Gunbower, Cohuna and Koondrook resulting in a protracted flood period for the island. Regulators between Gunbower Creek and the forest prevent water entering the forest during these times.

15. Hydrological values:**16. Ecological features:**

The distribution of plant species and communities on Gunbower Island is largely a result of minor differences in elevation which determine the frequency and duration of flooding and grazing practices.

River Red Gum (*Eucalyptus camaldulensis*) forest is widely distributed across the north-western part of Gunbower Forest, in areas that are inundated the most frequently. In general, this part of the island is at a slightly lower elevation. Gunbower Forest is approximately 53km in length, with a fall in elevation of on average 0.2m per km.

Black Box (*E. largiflorens*) woodland occurs on low rises and sand ridges where flooding occurs infrequently. In the forest, this community is most abundant at the south-east end of the island, but it also occurs along the length of Gunbower Creek.

The other eucalypt present in numbers on the island, Grey Box (*E. microcarpa*) occurs on sandy ridges which are rarely flooded. This species often grows in association with Black Box and occasionally with River Red Gum. In addition, some small grassy plains and swamp vegetation occur within the forest.

During flood periods, the forest becomes a large waterbird breeding area. The only record of Intermediate Egret breeding in Victoria is in the Gunbower Forest (in 1974 there were an estimated 500 nests, and in 1982 there were over 100 nests). Sections of the forest also support breeding colonies of the Rufous Night Heron (*Nycticorax caledonicus*), the Little Egret (*Egretta garzetta*), and the Great Egret (*Egretta alba*).

17. Noteworthy flora:

Threatened Species

Acacia osswaldii (Umbrella Wattle) - depleted in Victoria
Allocasuarina leuhmannii (Buloke) - depleted in Victoria
Amphibromus nervosus (River Swamp Wallaby-grass) - vulnerable nationally
Amyema linophyllum (Buloke Mistletoe) - vulnerable in Victoria
Callitriche cyclopcarpa (Western Water Starwort) - Poorly known in Australia, rare in Victoria
Digitaria divaricatissima (Spreading Summer-grass) - vulnerable in Victoria
Diplachne fusca (Brown Beetle-grass) - rare in Victoria
Eryngium paludosum (Long Eryngium) - vulnerable in Victoria
Hakea tephrosperma (Hooked Needlewood) - depleted in Victoria
Lepidium monoplocoides (Winged Pepper-cress) - endangered in Australia, endangered in Victoria
Minuria integerrima (Smooth Minuria) - rare in Victoria
Myoporum deserti (Turkey Bush) - depleted in Victoria
Picris squarrosa (Squat Picris) - rare in Victoria
Santalum acuminatum (Sweet Quandong) - depleted in Victoria
Swainsona phacoides (Dwarf Swainson-pea) - endangered in Victoria

18. Noteworthy fauna:

Threatened Species

White-bellied Sea-Eagle (*Haliaeetus leucogaster*) - rare in Victoria
Darter (*Anhinga melanogaster*) - restricted colonial breeding in Victoria
Great Egret (*Ardea alba*) - restricted colonial breeding in Victoria
Intermediate Egret (*Ardea intermedia*) - restricted colonial breeding in Victoria
Bush Stone-curlew (*Burhinus grallarius*) - vulnerable in Victoria
Ground Cuckoo-shrike (*Coracina maxima*) - rare in Victoria
Little Egret (*Egretta garzetta*) - restricted colonial breeding in Victoria
Barking Owl (*Ninox connivens*) - rare in Victoria
Nankeen Night Heron (*Nycticorax caledonicus*) - restricted colonial breeding in Victoria
Grey-crowned Babbler (*Pomatostomus temporalis*) - endangered in Victoria

Barking Marsh Frog (*Limnodynastes fletcheri*) - insufficiently known in Victoria
Broad-shelled Tortoise (*Chelodina expansa*) - insufficiently known in Victoria
Tree Goanna (*Varanus varius*) - insufficiently known in Victoria
Carpet Python (*Morelia spilota variegata*) - vulnerable in Victoria
Tessellated Gecko (*Diplodactylus tessellatus*) - rare in Victoria

19. Social and cultural values:

20. Land tenure/ownership:

Most of Gunbower is managed by Department of Natural Resources and Environment as State Forest. The eastern half (9,712 ha) is also a proclaimed Wildlife Sanctuary and all land between the River and the "River Track" is part of the River Murray Reserve managed by Parks Victoria.

21. Current land use:

Timber production, grazing, nature conservation, recreation, apiculture, flood mitigation, sand and gravel supply

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

There has been no significant change in ecological character since the Ramsar information sheet was last undated in 1992.

In the longer term, the regulation of the Murray River since 1934 has reduced the frequency, intensity and duration of flooding in Gunbower Forest, which has implications for River Red Gum and other species whose survival is flood dependent. Timber harvesting and silvicultural practices have altered the age structure of Red Gum stands and may have reduced the number of nest hollows available to wildlife.

Grazing by introduced and domestic animals poses a threat to understorey communities at selected localities within the site.

23. Conservation measures taken:

An Interim Water Management Strategy for Gunbower Forest 1992 has reviewed options for hydrological management in the forest.

Gunbower State Forest has been proclaimed as a Wildlife Sanctuary, prohibiting the hunting or willful disturbance of wildlife.

The 1994 Torrumbarry East Loddon Environmental Report makes a number of recommendations relevant to the management of the site, in particular that "the discharge of any summer irrigation water not be permitted...when the forest floor is dry".

Action Statements under the Flora and Fauna Guarantee Act 1988 have been produced for the following fauna species that occur in the Ramsar site. The action statements outline conservation measures for these species.

- White-bellied Sea-eagle (1994)
 - Grey-crowned Babbler (1995)
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24. Conservation measures proposed but not yet implemented:

In an integrated approach to planning at Ramsar sites, management strategies are being prepared for all Ramsar sites in Victoria, including Gunbower Forest, to provide general strategic direction and site specific strategies. The strategies will be completed by June 1999.

The proposed Mid Murray Forest Management Plan will be finalised in 1998 and proposes strategies to maintain sustainable timber harvesting.

A water entitlement is currently being finalised for Gunbower. The entitlement will provide increased flexibility in managing the water regime of the forest.

25. Current scientific research and facilities:

Vertebrate survey work has been undertaken in Gunbower Forest in association with NRE study of the Northern Plains.

26. Current conservation education:

Spence Bridge, an area of 230 ha, has been set aside as an Education Area. The area is to be used to provide opportunities for students of all ages to:

- (a) Study the nature and functioning of reasonably natural ecosystems in a manner such that the integrity of these ecosystems is maintained as far as practicable;
- (b) compare the ecosystems within education areas with other nearby natural and modified systems;
- (c) observe and practise methods of environmental analysis, and the field techniques of the natural sciences; and
- (d) conduct simple long-term experiments aimed at giving an understanding of the changes occurring in an area with time.

27. Current recreation and tourism:

The Forest with its many wetlands, creeks and effluents provides excellent recreation opportunities, and is popular for fishing, camping, and hunting. The convoluted course of the Murray River provides many fishing spots. Wildlife, particularly waterfowl are plentiful.

The most popular spots for recreation are along the Murray and at Torrumberry Weir, where a formal caravan park is located. The Department of Conservation and Environment maintains an extensive system of fireplaces and picnic tables.

Cohuna Scout Group has a camp within the Forest. Access within the forest is good and includes the River Track, which provides a scenic drive from Koondrook to Torrumberry Weir.

28. Jurisdiction:

Government of Victoria.

29. Management authority:

Managed under the Department of Natural Resources and Environment Parks Program by Parks Victoria
- 2,184 Ha (11%)

Natural Resources and Environment - 17,747 Ha (89%)

30. Bibliographical references:

Atkins, B., L. Lloyd and Nikolaou, N. (1991). The Hydrological Characteristics of Gunbower Forest - A background paper for the Integrated Watering Strategy - Draft 7 Feb 1991.

Horricks, G.F.B., Brown, G.W., Earl, C.E., Griffiths, R.C. and Williams, L.M. (1989). Flora and Fauna of Gunbower Island - Northern Victoria, Ecological Survey Report No.28. Department of Conservation and Environment. Lands and Forests Division, Melbourne.

Land Conservation Council. (1983). Report on the Murray Valley Area. Government Printer, Melbourne.

Personal Communications

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