

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:

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

7 April 2005

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.

Hattah-Kulkyne Lakes, Victoria

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

Hattah-Kulkyne Lakes, Victoria was designated on 15 December 1982.

The previous RIS documents were dated 1992 and 1999.

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): ☒;

Figures 1 – 4 (Maps 1 – 4):

Map 1. General Location

Map 2. Wetlands and Wetland Categories

Map 3. Land Status

Map 4. Hattah Floodplain

- 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.

The boundaries of the Hattah-Kulkyne Lakes Ramsar Site are based on the delineation of the boundaries of the 12 lakes that make up the site. These are Lake Brockie, Lake Bulla, Lake Arawak, Lake Yerang, Lake Hattah, Lake Yelwell, Lake Konardin, Lake Cantala, Lake Bitterang, Lake Lockie, Lake Kramen and Lake Mournpall.

The boundaries of the Ramsar site are defined by the boundaries of the lakes. These are recorded on the Department of Sustainability and Environment Corporate Geospatial Data Library layer RAMSAR100. Data collection was made between 1 December 1995 and 30 September 1996. The source of the line work for the Hattah-Kulkyne Ramsar Site in the RAMSAR100 layer was the Department of Sustainability and Environment Corporate Geospatial Data Library HYDRO100 layer. This layer contains line and point features delineating streams and boundaries and point sources of water bodies such as lakes, reservoirs and farm dams. HYDRO100 has a source data scale of 1:100,000. Data was collected between 1 January 1989 and 1 January 1994. The metadata for both layers is documented and available from DSE on request.

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 (GDA94): (approx) 34° 39' to 34° 47'S;

Longitude (GDA94): (approx) 142° 20'E to 142° 30'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.

The Hattah-Kulkyne Lakes Ramsar Site is located in the north of the State of Victoria, approximately 480 kilometres north-west of the state capital Melbourne and between the towns of Ouyen and Mildura. The site is located in the management area of the Mallee Catchment Management Authority, which is based in Mildura (**Map 1**).

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

Approximately 40 metres above the Australian Height Datum

11. Area: (in hectares)

955 hectares (in 12 lakes)

12. General overview of the site:

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

The site is a group of 12 wetlands located on the floodplain of the Murray River (**Maps 2, 3 and 4**). The wetlands are filled via Chalka Creek by peaks in River Murray flow and retain water for up to 3 years. When flooded, the wetlands support large and diverse waterbird populations and support waterbird breeding. The lakes are located in a region with low annual rainfall (approx. 350 mm/year) and provide a contrasting aquatic environment to the surrounding semi-arid mallee vegetation. More than 100 species of indigenous flora and 120 of indigenous fauna have been recorded, including species of national conservation significance. The Ramsar site is located within an area of extensive remnant vegetation which includes the surrounding Hattah-Kulkyne National Park (48,000 hectares) and the adjacent Murray-Sunset National Park (633,000 hectares) (**Map 3**).

A description of the ecological character of the Ramsar Site is attached (**Appendix 2**)

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
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Note: The 1999 RIS stated that the site met the former criteria 3a and 3c (now criteria 5 and 6). This is considered to be in error as the available data does not support this conclusion. **Appendix 1**, Section 3 provides reasons of why criteria 5 and 6 are not met.

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).

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.

The site supports representative wetland and floodplain ecological vegetation classes that are depleted in the Robinvale Plains Bioregion.

The site supports three wetland or floodplain ecological vegetation classes (EVCs) (Arthur Rylah Institute 2003). An EVC is a type of native vegetation classification that is described through a combination of its floristics, life form and ecological characteristics, and through an inferred fidelity to particular environment attributes (DSE 2004c). Wetland or floodplain EVCs are those where some type of inundation regime influences vegetation composition. The site mainly comprises Lake Bed Herbland and Intermittent Swampy Woodland and includes a small area of Riverine Grassy Woodland. All three EVCs are reported as 'depleted' in the Robinvale Plains bioregion. A substantial proportion of the Lake Bed Herbland in the bioregion (51%) occurs in Hattah-Kulkyne Lakes. More than half the bioregion's Riverine Grassy Woodland (53%) and Intermittent Swampy Woodland (56%) occur in the floodplain immediately surrounding the Hattah-Kulkyne Lakes.

The site supports wetlands representative of two of Victoria's six natural wetland types and of the Robinvale Plains bioregion, including a depleted wetland type.

The 955 hectare site supports 899 hectares of freshwater wetlands. The Victorian wetland classification system is based on water depth, duration of inundation after filling and salinity. Four categories of natural freshwater wetlands are defined (Corrick and Norman 1980, Department of Conservation and Environment and Office of the Environment 1992). The Ramsar site includes two of the freshwater wetland types; deep freshwater marsh and permanent open freshwater (Map 2). Deep freshwater marshes are usually between one and two metres deep. They hold water most of the time but dry out approximately every four or five years. Permanent open freshwater wetlands retain water for longer than 12 months. However, they can have periods of drying.

While the Ramsar site supports only a small proportion of the remaining area of these wetland types in Victoria, they represent a significant proportion of these wetland types (19% and 34% respectively) in the Robinvale Plains bioregion.

Wetlands in Victoria were classified in 1980 (Corrick and Norman 1980) and mapped on a geospatial layer (WETLAND_1994) in the period 1980-1994. The extent of wetlands is less than that of wetland and floodplain EVCs on the Hattah floodplain. This is because the EVCs extend into areas that are subject to inundation but drain quickly after floods. These areas are not mapped as wetlands on WETLAND_1994.

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.

The site maintains the ecological diversity of the Robinvale Plains bioregion by supporting a large number and variety of waterbirds, including breeding habitat for many species.

A total of 53 waterbird species have been reported at the site since annual waterbird counts began in 1983. The frequently occurring waterbirds were Pacific Black Duck (*Anas superciliosa*) and Australian Wood Duck (*Chenetta jubata*) which were observed in 17 out of the 20 years following listing. The waterbirds which occurred in the highest abundances in any year were Grey Teal (*Anas gracilis*, 15,000 individuals), Silver Gull (*Larus novaehollandiae*, 10,000 individuals) and Hardhead (*Aythya australis*, 6,000 individuals).

High waterbird abundances are associated with flooding events. In the 20 years following listing of the site in 1983, waterbird abundances of over 5000 have been observed in five years, with 24,000 the

highest number of birds reported in any single year. All of these high counts were associated with floods.

Sixteen waterbirds have been recorded breeding at the site, with an additional six waterbirds reported breeding in the surrounding floodplain.

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:

Riverina Bioregion, Robinvale Plains Subregion.

b) biogeographic regionalisation scheme (include reference citation):

The bioregionalisation system for Australia is described in Environment Australia (2000). Since the time of publication, further work has been undertaken to identify subregions within bioregions. The Robinvale Plains has been identified as a subregion of the larger Riverina Bioregion and is treated as a bioregion for natural resource management purposes in Victoria. The current system of bioregions and subregions was used in an assessment of terrestrial biodiversity (National Land and Water Resources Audit 2002).

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.

The sediments of the Murray Trench underlie the Hattah-Kulkyne Lakes, with the clays of the Coonambidgal Formation forming the lake beds (SKM 2004).

The lakes are reported to have originated as deflation basins, but have been modified through fluvial processes associated with flooding from the River Murray (Cumming and Lloyd 1993). The beds of the lakes have low permeability and retain water for up to 3 years following flooding by River Murray flows. The maximum depth of the lakes varies from 0.4 m at Lake Lockie to 2.5 m at Lake Bitterang.

The site, which is underlain by the saline Parilla Sands aquifer, generally behaves as a recharge zone, particularly during flood events, albeit limited by the low permeability of the lake beds. Lake Kramen has a contrasting sandier bed. It potentially has a significant hydraulic connection to the aquifer and may receive groundwater discharge when the lake is dry and River Murray levels are low. The lakes are therefore fresh (generally less than 1,000 $\mu\text{S}/\text{cm}$ electrical conductivity), although they are subject to evaporative concentration over time (Souter 1996).

The lakes range in size from 29 hectares (Lake Brockie) to 181 hectares (Lake Mournpall) (**Table 1**).

Table 1. Area of the 12 lakes making up the Ramsar site. Source: DSE Corporate Geospatial Data Library Ramsar layer.

Lake	Area
Lake Brockie	29
Lake Bulla	32
Lake Arawak	37
Lake Yerang	43
Lake Hattah	52
Lake Yelwell	55
Lake Konardin	57
Lake Cantala	76

Lake Bitterang	109
Lake Lockie	123
Lake Kramen	161
Lake Mournpall	181
Total	955

The Hattah-Kulkyne Lakes Ramsar Site is located on part of the Murray River floodplain termed here as the Hattah floodplain (Map 4). The Hattah floodplain is defined for the purposes of the RIS as the part of the Robinvale Plains Bioregion in Hattah-Kulkyne National Park that is associated with the Chalka Creek system. The area subject to inundation (**Map 4**) is defined as the extent of ecological vegetation classes where some type of inundation regime influences vegetation composition. The habitat provided by the floodplain contributes to the ecosystem services at the Ramsar site and their significance.

The lake system receives water from the River Murray when river flows exceed the threshold of Chalka Creek, which initially fills Lakes Lockie, Hattah, Little Hattah, Yerang and Mournpall. Other lakes are filled as the channel thresholds within the system are eventually overcome at higher River Murray flows. In the absence of further inflows the lakes retain water for periods ranging from two months (Lake Lockie) to 24 months (Lake Bitterang) with most lakes retaining water for over 12 months (SKM 2004).

Annual average rainfall at the nearby city of Mildura is 268 mm and the mean daily maximum temperature is 24.5 degrees Celsius.

17. Physical features of the catchment area:

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

The River Murray drains over 420,000 km² of the south eastern highlands of Australia. The river originates in a wetland upland region of 1,430 m AHD and flows in a north-west direction through a predominantly semi-arid region before turning due south in South Australia to meet the sea. The upland region represents only 2% of the catchment area, but generates over 40% of the water yield. The lowland region has a relatively low rainfall and a low gradient. From the commencement of the lowland region at Albury, the river falls approximately 150 m over more than 2,000 km to the sea.

The River Murray is part of the Murray-Darling basin which drains 1,061,469 km². The basin has an estimated population of 1,956,765. It is extensively developed for agriculture with 1,472,241 ha under irrigated crop and pasture.

18. Hydrological values:

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

Lake Hattah serves as an emergency stock and domestic water supply for the township of Hattah. The Hattah-Kulkyne floodplain mitigates the flooding effects of high flows in the River Murray.

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 • 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)

Under the Victorian wetland classification system, Lakes Bitterang, Cantala, Konardin and Yelwell are classified as Deep Freshwater Marshes with sub-category 'open water'. The remaining lakes (Mournpall, Lockie, Hattah, Yerang, Bulla, Arawak, Brockie and Kramen) are Permanent Open Freshwater wetlands of the 'shallow' sub-category (less than two metres deep) (**Map 2**).

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.

P: 100% (955 ha)

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 lakes are localised depressions, connected by creeks or floodways. Some lakes spill into a surrounding swampy area before water spreads to the floodplain. The lake beds support lake bed herbland communities when dry and support submerged and aquatic plant communities when flooded.

The floodplain beyond the perimeter of the lakes is not included in the Ramsar site, but is integral to their ecological function. The lakes are fringed by Red Gum Grassy Woodland in areas that are potentially flooded, which comprises Red Gum (*Eucalyptus camaldulensis*), Black Box (*E. largiflorens*) and Tangled Lignum (*Muehlenbeckia florulenta*). Many aquatic and semi-aquatic plants grow at the fringes of the more permanent lakes. The fringing woodlands provide nesting sites for waterbirds and contribute woody debris and organic matter to the lakes, which is important for macro-invertebrate and fish habitat and production.

At the perimeter of the floodplain the vegetation grades into mallee communities. This provides an integrated mallee and floodplain habitat for the nationally Vulnerable Regent Parrot (*Polytelis anthopeptis*).

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.*

Red Gums growing at the perimeter of the lakes are important to the habitat values and productivity of the site. The trees provide sheltering and nesting habitat for a range of vertebrate species, particularly as hollows, for bats, parrots, possums, snakes and waterbirds. The trees also contribute organic matter to the lakes to support productivity and provide physical habitat as snags.

There are no nationally threatened flora species recorded in the Ramsar site, but five flora species threatened in Victoria have been recorded. Threatened species are listed in Appendix C of the Ecological Character Description (Appendix 1 of this Ramsar Information Sheet).

When flooded the lakes support beds of aquatic macrophytes which support aquatic productivity and diversity. Notable species include Bulrush (*Typha* spp.), Milfoil (*Myriophyllum* sp.), Cane Grass (*Eragrostis australasica*), Spiny Mudgrass (*Pseudoraphis spinescens*) and Water Couch (*Paspalum distichum*).

Invasive plants in the Ramsar site and surrounding floodplain include agricultural and environmental weeds. Horehound (*Marrubium vulgare*) and Thorn Apple (*Datura stramonium*) are the predominant weed species (DSE 2003).

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.*

Threatened fauna recorded in the Ramsar site include two species threatened at the national level (Regent Parrot *Polytelis anthopeplus monarchoides* and Mallee Emu-wren *Stipiturus mallee*) and a further 16 species threatened in Victoria. Threatened species are listed in Appendix C of the Ecological Character Description (Appendix 1 of this Ramsar Information Sheet).

Among the waterbirds reported breeding at the site are included the following species of conservation significance: Musk Duck *Biziura lobata* (vulnerable in Victoria) Little Egret *Egretta garzetta* (endangered in Victoria), White-bellied Sea Eagle *Haliaeetus leucogaster* (vulnerable in Victoria) and Freckled Duck *Stictonetta naevosa* (endangered in Victoria).

A total of six migratory bird species listed under the Japan-Australia Migratory Bird Agreement (JAMBA) and a further five species listed under the China-Australia Migratory Bird Agreement (CAMBA) have been recorded at the Ramsar site (DSE 2003). These include Great Egret *Ardea alba*, White-bellied Sea Eagle, Glossy Ibis *Plegadis falcinellus* and Caspian Tern *Sterna caspia*.

Pest species in the Ramsar site and surrounding floodplain include Carp *Cyprinus carpio*, Red Fox *Canis vulpes*, European Rabbit *Oryctolagus cuniculus*, feral Goat *Capra hircus* and feral Pig *Sus scrofa* (DSE 2003).

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 National Park in which the Ramsar site is located attracts over 70, 000 visitors annually, who take part in a wide range of activities including bushwalking, driving, fishing, canoeing, swimming and nature study.

These cultural values are consistent with the status of the Ramsar site as part of a protected area managed in accordance with a management plan that addresses the risks associated with visitation.

Hattah-Kulkyne Lakes is an important Aboriginal cultural heritage site. The lakes have provided Aboriginal communities with a reliable source of water as well as a rich and diverse supply of plant and animal resources for food, medicines, shelter, clothing and food. Approximately 50 Aboriginal archaeological sites have been recorded, including scarred trees, artefact scatters, hearths and other mixed sites.

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:

Publicly owned land proclaimed as Hattah-Kulkyne National Park and managed as a protected area under the Victorian **National Parks Act 1975** by Parks Victoria on behalf of the State Government of Victoria.

b) in the surrounding area:

Publicly owned land proclaimed as Hattah-Kulkyne National Park and managed as a protected area under the Victorian **National Parks Act 1975** by Parks Victoria on behalf of the State Government of Victoria.

25. Current land (including water) use:

a) within the Ramsar site:

The sole land use in the Ramsar site is nature conservation. The site is also used to research European Rabbit and Red Fox management methods (Parks Victoria and Department of Sustainability and Environment 2003). The site is part of the Hattah-Kulkyne National Park Biosphere Reserve.

b) in the surroundings/catchment:

The principal land use in the National Park surrounding the Ramsar site is nature conservation. Recreational and educational uses of the park are also permitted (DSE 2003).

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

The Hattah-Kulkyne Lakes Strategic Management Plan (DSE 2003) identifies the following higher priority risks to the ecological character of the Ramsar Site: altered water regimes, grazing, pest plants and pest animals. Salinity is identified as a medium priority risk and recreational activities, fire and nutrient enrichment of lake waters are identified as lower priority risks. Most risks originate in the catchment of the Ramsar site or the surrounding area and are discussed in **Section 26(b)**. Risks associated with recreational activities and fire are most likely to occur in the Ramsar site or its immediate vicinity.

a) within the Ramsar site:

Recreational activities have the potential to cause several problems such as those associated with firewood collection, trampling, disturbance to fauna and catching of undersized fish. These risks are addressed as part of the management of the Hattah-Kulkyne National Park (DSE 2003).

High fire danger conditions occur in summer. Changes to the natural fire regime can adversely affect the diversity of flora and its dependent fauna and influence the floristic composition of grassy

woodland communities and grassland communities surrounding the Hattah-Kulkyne Lakes Ramsar site (DSE 2003).

b) in the surrounding area:

The water regime of the lakes has been significantly altered by the regulation of the River Murray which commenced with the completion of Hume Dam in 1936 and the subsequent growth in diversions. The frequency with which River Murray flows reach the level required to inundate the wetlands is significantly lower under current conditions compared with the pre-regulation conditions (**Table 2**).

Table 2. The impact of current development on the frequency and occurrence of flood flows at Euston (Thoms et al., 2000).

Flow (ML/day)	Exceedence under natural conditions (% of years)	Exceedence under 1994 conditions (% of years)
65,000	50	13
115,000	20	5
142,000	10	3

As a result of the changes presented in **Table 1**, the lakes have become more temporary and are less likely to provide a reliable aquatic habitat between inflow events, as illustrated by the thresholds required to introduce water to the lakes (**Table 3**).

Table 3. River Murray flows required to introduce water to Hattah-Kulkyne lakes.

Threshold (ML/day)	Lakes
40,000	Lockie, Hattah, L. Hattah, Yerang, Mournpall
55,000	Bulla, Arawak, Brockie, Yelwell
70,000	Konardin, Bitterang
152,000	Kramen

Prior to the establishment of the Hattah-Kulkyne National Park in 1960 and its extension in 1980, the lakes and surrounding land were subject to grazing by livestock (DSE 2003). The Ramsar site and surrounding area has been subject to intense grazing pressure in the past by Red Kangaroos, Western Grey Kangaroos, European Rabbits and Goats, but these have been brought under control through the 1990s by fence exclosures, conventional control measures (e.g. trapping) and biological control measures. Grazing has suppressed the regeneration of indigenous woody plants and understorey plants (DSE 2003).

The pest plants mentioned in Section 19 are of concern because they reduce opportunities for regeneration of indigenous flora through competitive growth and by changing soil conditions required for successful germination and development (DSE 2003).

Pest animals are outlined in Section 20. Large numbers of the exotic pest fish Carp enter the lakes from the River Murray during flood events. Carp are believed to contribute to increased water turbidity and reduce aquatic vegetation extent (DSE 2003). Goats and rabbits contribute to grazing pressure (see above), foxes predate on native fauna and pigs cause localised soil disturbance, spread weeds and disturb understorey vegetation as well as foraging for tortoise and waterfowl eggs (DSE 2003).

The potential for salinisation of some of the lakes in the Ramsar site arises from large-scale regional clearing of native vegetation and the potential for rising salinity of the Murray River if not carefully

managed. Increases in salinity levels can threaten the survival of many of the species adapted to the present freshwater environment and increase the likelihood of algal blooms.

As outlined in the Strategic Management Plan (DSE 2003), the transport of nutrients into the Hattah-Kulkyne Lakes Ramsar site occurs during floods and other high streamflow events when the lakes are recharged with water from the Murray River via Chalka Creek. The increase in nutrient levels in the waters of the Murray River, primarily due to intensive land use within its catchment, has produced a nutrient enrichment in the Hattah Lakes system. As a result, the incidence and severity of algal blooms in the lakes have increased (DSE 2003).

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.

The Hattah-Kulkyne Lakes Ramsar site, the Hattah floodplain and parts of the surrounding mallee vegetation are managed as a protected area in the Hattah-Kulkyne National Park established under the Victorian *National Parks Act 1975*. The core area of the park was established in 1960, including the lakes. The park was significantly extended in 1980.

Ramsar sites, migratory species listed under international agreements and nationally threatened species are matters of national environmental significance under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. The Act provides for the assessment of proposed actions likely to have a significant impact on the ecological character of Ramsar sites, on species of national environmental significance or on listed migratory species.

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?:

A management plan has been prepared for the Ramsar site (DSE 2003) and is being implemented. The management plan includes measures to address deficiencies in the water regime of the wetlands, to control pest plants and animals, to investigate possible groundwater risks, to protect cultural heritage assets and to improve knowledge regarding the ecology and hydrology of the site.

See also Section 28.

d) Describe any other current management practices:

In mid-2002, the Murray-Darling Basin Ministerial Council established The Living Murray Initiative in response to substantial evidence that the health of the River Murray system is in decline. The Hattah Lakes are recognised as a significant environmental asset under this initiative. The first step of the Living Murray Initiative includes water recovery and environmental works and measures. The ecological objectives that have been set through this process for the Hattah Lakes are:

- restore a mosaic of hydrological regimes which represent pre-regulation conditions (to maximise biodiversity);
- maintain the Ecological Character of the Ramsar site;
- restore the lake macrophyte zone around at least 50% of the lakes (to increase fish and bird habitat);

- improve the quality and extent of freshwater meadows so species typical of this ecosystem are represented;
- increase successful breeding events of colonial water birds to at least 2 in ten years (including Spoonbills, Little, Intermediate and Great egrets, Night herons and Bitterns);
- provide suitable habitat for migratory bird species to shelter in;
- increase distribution, numbers and recruitment of local wetland fish (including endangered Murray hardyhead, smelt and gudgeons) by providing appropriately managed habitat; and
- maximise use of floodplain habitat for recruitment of all indigenous freshwater fish.

See also Section 28.

28. Conservation measures proposed but not yet implemented:

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

An environmental water management plan is currently being developed by the Mallee Catchment Management Authority in cooperation with the Murray-Darling Basin Commission under the Living Murray Initiative. The plan will include on-ground works to meet environmental water requirements and the environmental objectives outlined in **Section 27**.

29. Current scientific research and facilities:

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

Annual waterbird counts are made at the lakes as part of the Summer Waterfowl Counts and data are stored in the Victorian Wildlife Atlas.

The abundance of large grazing animals, their effects on vegetation and the effectiveness of control measures are monitored annually (DSE 2003).

A program to monitor the water levels in lakes in the system has commenced (Clare Mason, Mallee Catchment Management Authority, pers. comm. 7-4-05)

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.

A visitors' centre, managed by Parks Victoria, is located in the National Park and provides information on visitor use of the site and ecological values.

The Ramsar Management Plan (DSE 2003) provides information on values, threats and management measures. It is available on the DSE website at: <http://www.dse.vic.gov.au/dse/index.htm>.

31. Current recreation and tourism:

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

The Ramsar site is the focus for recreation and tourism in the Hattah-Kulkyne National Park. The park attracts over 70,000 visitors annually who participate in a wide range of activities centred around the lakes including bushwalking, camping, driving, fishing, canoeing, swimming and nature study.

32. Jurisdiction:

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

The State of Victoria has territorial jurisdiction over the Ramsar site, exercised through the Department of Sustainability and Environment, Biodiversity and Natural Resources Division, Level 2, 8 Nicholson Street, EAST MELBOURNE, VIC 3002. The department's North West Region is

responsible for strategic direction for biodiversity, forest, catchment and water management and statutory planning in the north-west of Victoria and is responsible for coordinating the implementation of the Ramsar site management plan. The contact is the Biodiversity Manager, Department of Sustainability and Environment, North West Region, Corner Midland Highway and Taylor Street, Epsom, VIC 3551.

The Mallee Catchment Management Authority (CMA) is responsible for development and implementation of the Mallee Regional Catchment Management Strategy and subsidiary plans which recognise the significance of the Hattah-Kulkyne Lakes Ramsar Site. The CMA also performs statutory functions under the Victorian *Water Act 1989* with respect to waterway and floodplain management, including management of environmental water. The CMA is leading projects to meet the environmental objectives outlined in Section 25, including development of a site ecological asset plan for Hattah Lakes under the Living Murray Initiative (see Section 25). The CMA address is Corner Eleventh Street and Koorlong Avenue, IRYMPLE VIC 3498.

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.

The Ramsar site is managed by Parks Victoria as part of the Hattah-Kulkyne National Park.

Phil Murdoch
Ranger in Charge, Hattah-Kulkyne National Park
Parks Victoria
RSD
HATTAH VIC 3501.
www.parksweb.vic.gov.au

34. Bibliographical references:

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

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Thomson, C. (1994). The impact of river regulation on the natural flows of the Murray-Darling Basin. Technical Report 92/5.3. Murray-Darling Basin Commission, Canberra.

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

Appendix 1. Location and site maps of Hattah- Kulkyne Lakes, Victoria, Australia.

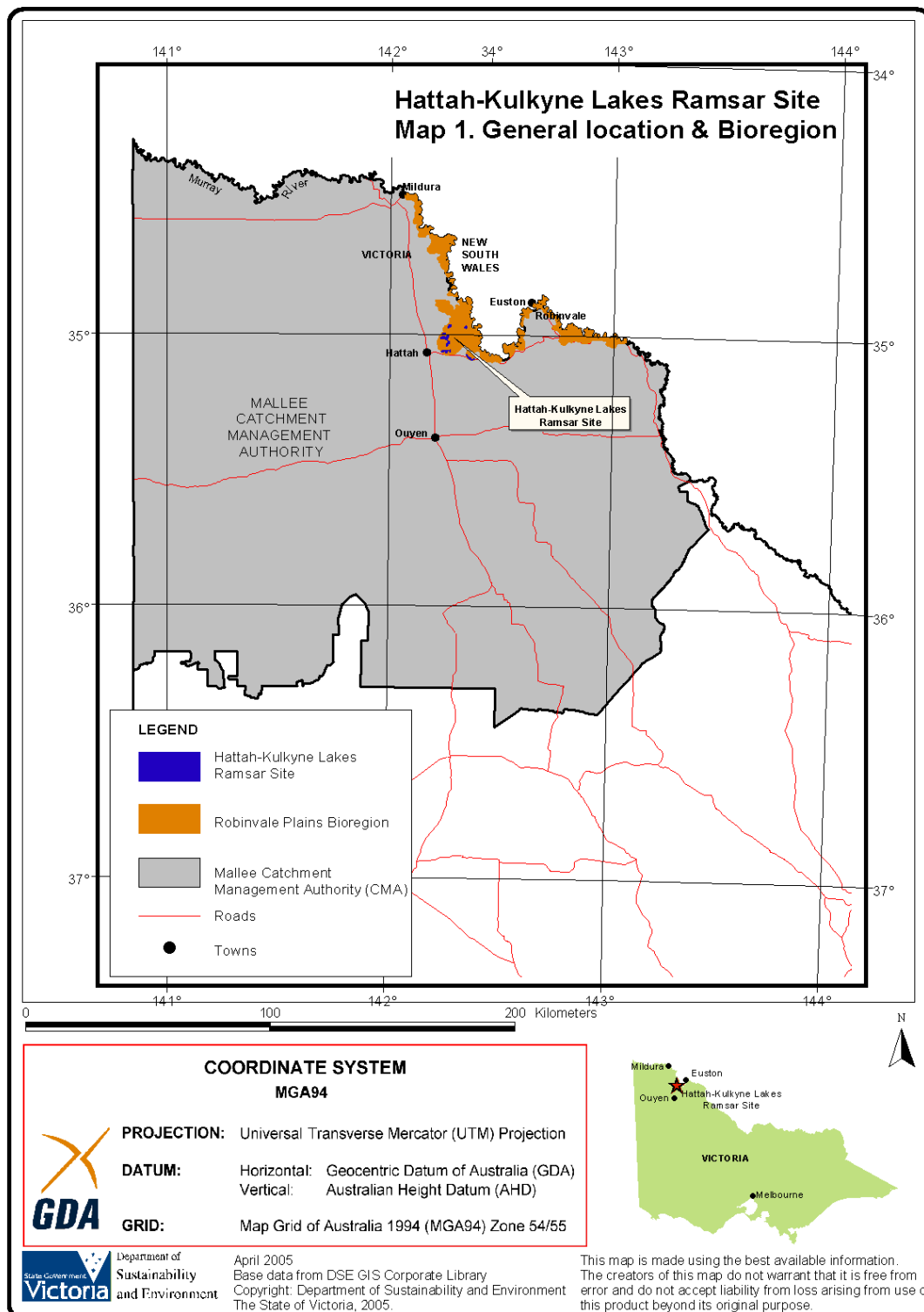


Figure 1: Map 1. General Location.

Source: (<http://www.>)

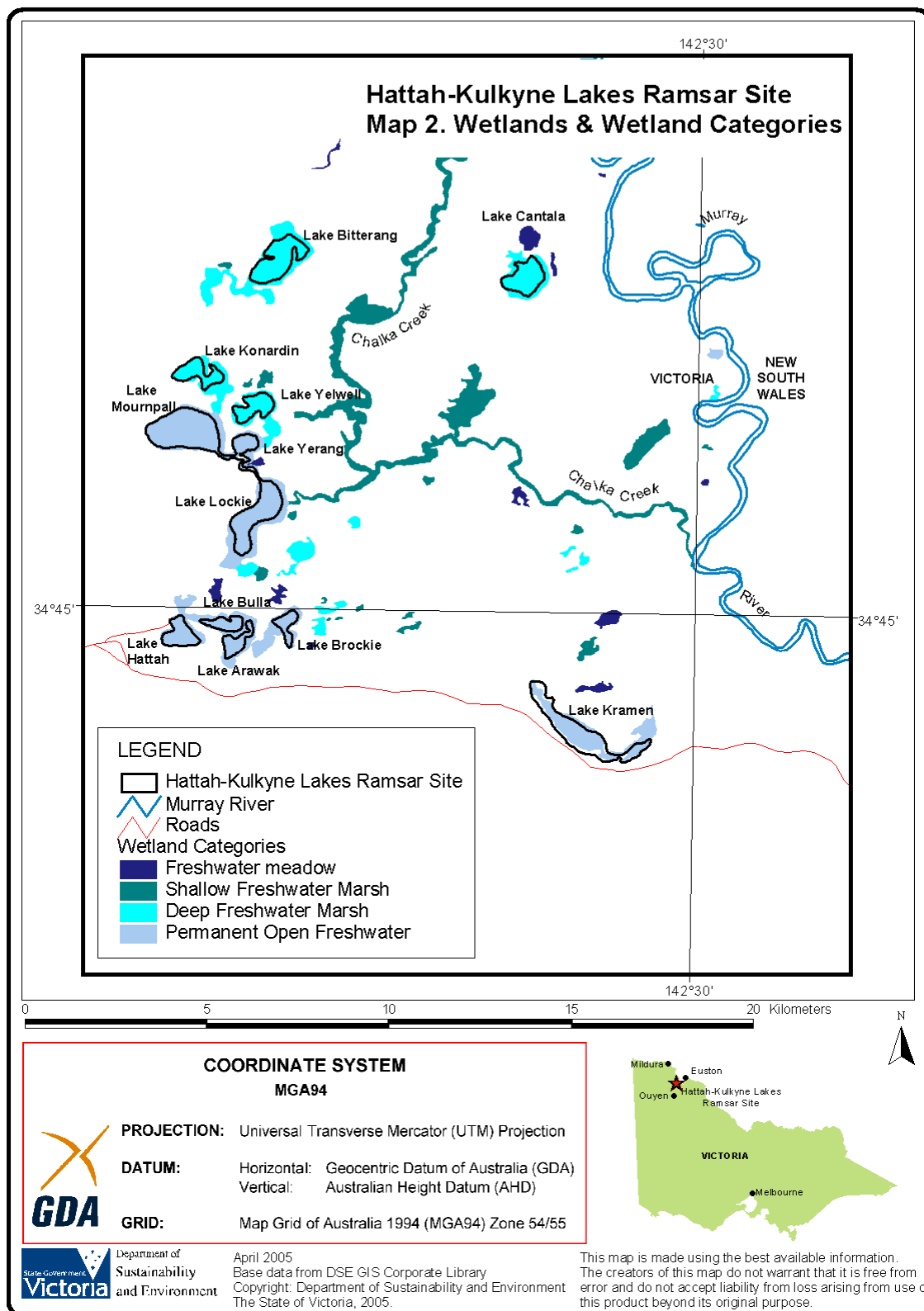


Figure 2: Map 2. Wetlands and Wetland Categories.

Source: (<http://www.>)

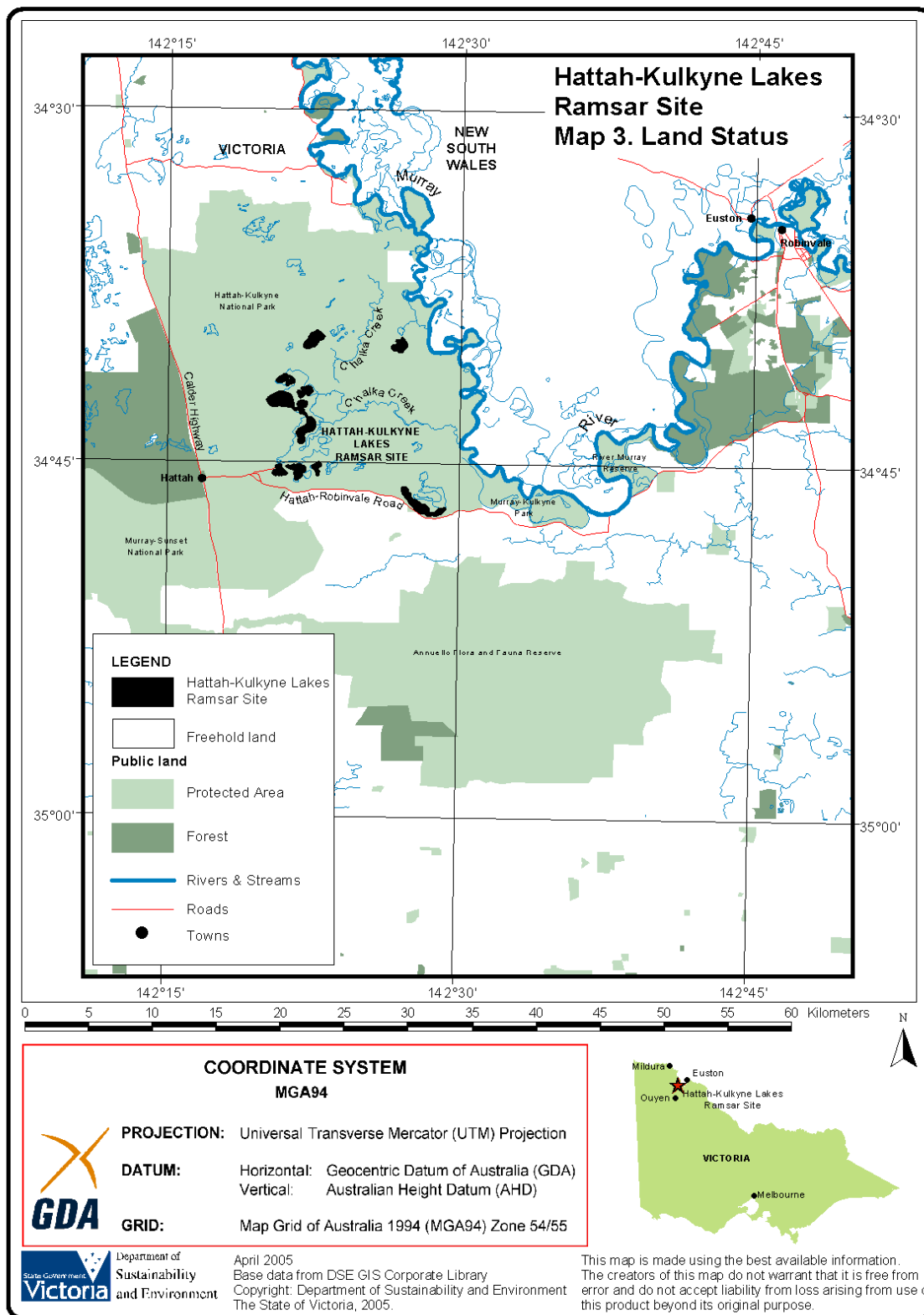


Figure 3: Map 3. Land Status.

Source:

(<http://www.>)

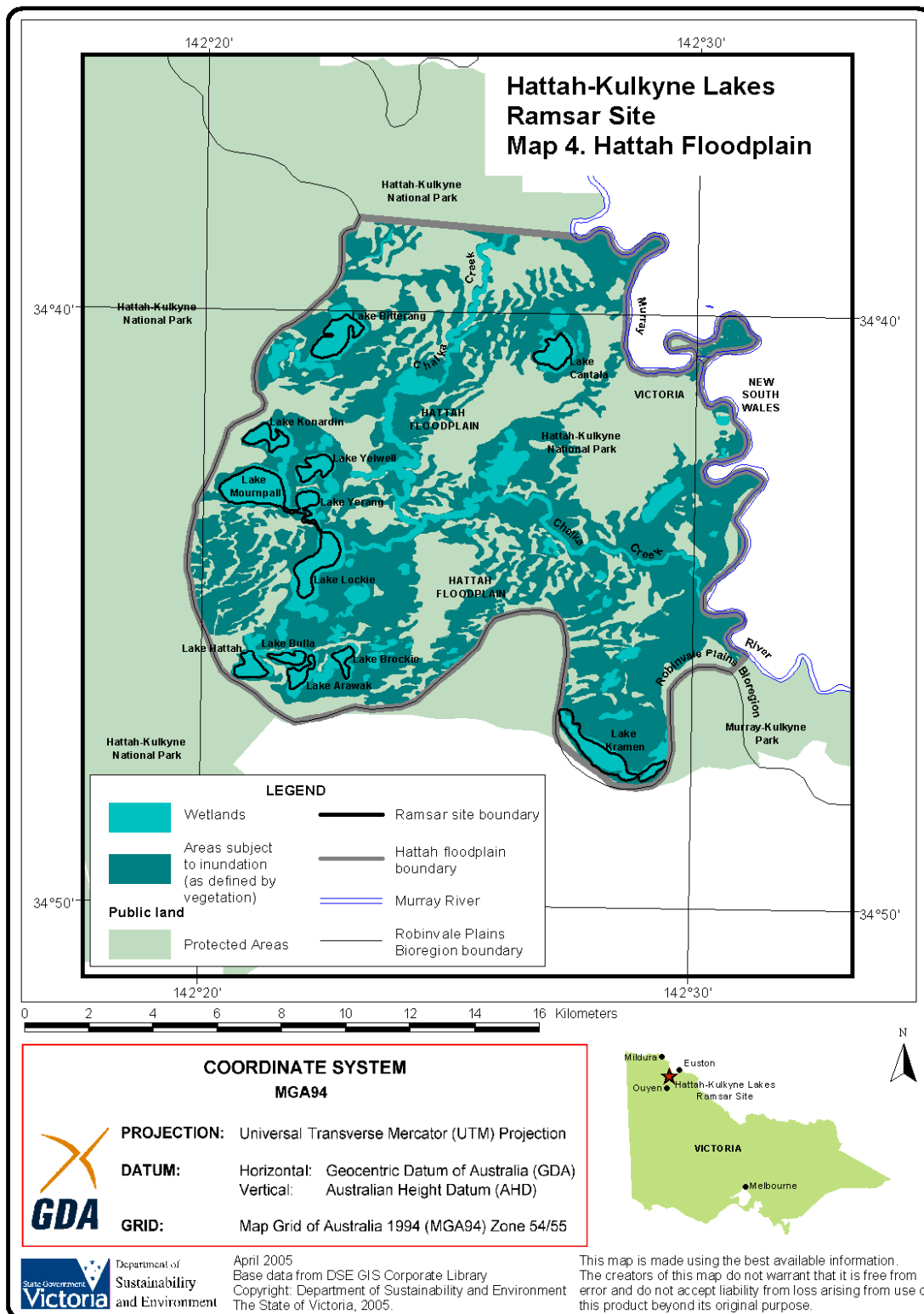


Figure 4: Map 4. Hattah Floodplain.

Source:

(<http://www.>)