

# Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

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

Department of Primary Industries, Parks, Water and  
Environment (DPIPWE)  
GPO Box 44  
HOBART Tasmania 7001  
Australia  
Ph: +61 3 6233 8011

FOR OFFICE USE ONLY.

DD MM YY		

Designation date

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Site Reference Number

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

July 2012

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## 3. Country:

Australia

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## 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.

Little Waterhouse Lake

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

This RIS is for (tick one box only):

a) Designation of a new Ramsar site ☐; or

b) Updated information on an existing Ramsar site ☒

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## 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:**

There have been no major changes since listing. The site experienced a drought and diminishing water levels over the period 1998-2009 but rains since November 2009 have replenished and maintained full levels. While the 2005 RIS identified two main wetland types (K, coastal freshwater lagoon; and N, seasonal/intermittent/irregular creeks), additional wetland types (M, permanent creeks; O, permanent freshwater lake; Tp, permanent freshwater marshes/pools; Ts, seasonal/intermittent freshwater marshes/pools; and U, non-forested peatlands) were identified during site visits in 2009/2010.

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**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): ☐;
- 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 boundary of Little Waterhouse Lake Ramsar site is shown as Lot 1 on Central Plan Register (CPR) 5657 from the Tasmanian Information and Land Services, Department of Primary Industries, Water and Environment (Appendix 1). CPR 5657 horizontal datum is Australian Geodetic Datum (AGD66) Universal Transverse Mercator Projection Australian Map Grid (UTM AMG66) and Australian Height Datum (Tasmania) for vertical datum (Appendix 2).

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**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.

40° 52'30"S, 147° 36' 40"E

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**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.

Little Waterhouse Lake is located seven kilometres south-west of Waterhouse Point which lies between the towns of Bridport and Tomahawk, on the north-east coast of Tasmania.

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

40 m ASL

**11. Area:** (in hectares)

56.35 ha

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**12. General overview of the site:**

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

Little Waterhouse Lake is a coastal freshwater lagoon situated in the Waterhouse Conservation Area (north-east coast of Tasmania), receiving its water from local catchment runoff and also from a small drain (formerly a creek) known as Tobacco Creek. The lake is an excellent example of a small freshwater lake impounded behind coastal dunes. The Ramsar site encompasses the Little Waterhouse Lake and its adjacent floodplain to the south, as well as the marshland which extends approximately 400 metres downstream (west) of the dam wall. Most of the southern floodplain has a cover of aquatic and semi-aquatic herbs with occasional clumps of rushes. The lake has clear, circum-neutral water, well developed macrophyte flora and a substantial area of open water, approximately 700 metres long and 100 metres

wide. To the east an open scrub covers most of the area with silver banksia (*Banksia marginata*) and grass trees (*Xanthorrhoea australis*) dominating. West of the site introduced marram grass (*Ammophila arenaria*) occurs on the foredunes with coastal wattle (*Acacia sophorae*), silver banksia and prickly moses (*Acacia verticillata*).

The site contains over 40 species of aquatic and semi-aquatic plants. The site supports the green and gold frog (*Litoria raniformis*) (Vulnerable, EPBC and vulnerable, TSPA), and also supports the dwarf galaxias (*Galaxiella pusilla*, Vulnerable, EPBC and vulnerable, TSPA).

The 2005 RIS identified two main wetland types (K coastal freshwater lagoons and N seasonal/intermittent/irregular rivers/stream/creek). Additional wetland types (M permanent rivers/stream/creek, O permanent freshwater lakes, Tp permanent freshwater marshes/pools, Ts seasonal/intermittent freshwater marshes/pools and U non-forested peatlands) were identified during site visits.

### 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
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 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.**

Little Waterhouse Lake is located in the Tasmanian Drainage Division (Commonwealth of Australia, Bureau of Meteorology, 2011), which consists of the whole of Tasmania and is situated near the Bass Strait Province, Integrated Marine and Coastal Regionalisation of Australia (IMCRA). The site is a high quality example of a wetland with Ramsar wetland types K, coastal freshwater lagoon; N, seasonal/irregular creek; M, permanent creeks; O, permanent freshwater lake; Tp, permanent freshwater marshes/pools; Ts, seasonal/intermittent freshwater marshes/pools (includes seasonally flooded meadows, sedge marshes); and U, non-forested peatlands, within the Tasmania Drainage Division. Its high floristic diversity, high biological productivity and near-natural condition contribute to it being considered a representative example of these types of wetland within the drainage division.

**Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.**

Common name	Scientific name	IUCN	CITES	CMS	National Status
<b>Amphibian</b>					
Green and gold frog	<i>Litoria raniformis</i>	EN	n.a.	n.a.	Vulnerable (EPBC Act, 1999)
<b>Fish</b>					
Dwarf galaxias	<i>Galaxiella pusilla</i>	VU	n.a.	n.a.	Vulnerable (EPBC Act, 1999)

**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.**

Support of this criterion includes the significant population of the dinoflagellate, *Prorocentrum foveolata*, which adds to the regional biodiversity. *Prorocentrum foveolata* is a recently described species classified in a taxonomic group that was previously considered entirely marine (Croome and Tyler 1987). Little Waterhouse Lake is one of two lakes in the region that were found to support *P. foveolata* (the other being Blackmans Lagoon).

The site has been observed to support a local pair of White-bellied sea eagles (*Haliaeetus leucogaster*, vulnerable, under the Tasmanian *Threatened Species Protection Act 1995* – TSP Act). The site is a key location for two plant species listed under Tasmania's TSP Act: river club sedge (*Schoenoplectus validus*), rare, Waterhouse Conservation Area is one of only two known reserves for the species in Tasmania (DPIPWE 2010); and, sea club-rush (*Bolboschoenus caldwellii*), rare, Waterhouse Conservation Area is one of seven known reserves for the species in Tasmania (DPIPWE 2010). The site has high floristic diversity containing over 40 species of aquatic and semi-aquatic plants, high productivity and high habitat diversity.

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**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:** Tasmanian Drainage Basin, Australian Drainage Divisions.

**b) biogeographic regionalisation scheme** (include reference citation):

Commonwealth of Australia (Bureau of Meteorology), 2011, Australian Hydrological Geospatial Fabric. For more info on the Geofabric see - <http://www.bom.gov.au/water/geofabric/>.

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**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.

Little Waterhouse Lake experiences a cool to mild maritime climate. The area receives an average annual rainfall of 718.9 millimetres, however it is variable with recorded annual extremes of 394.5 millimetres and 917.2 millimetres (Bureau of Meteorology, 2009). Little Waterhouse Lake is situated in an interdunal depression on a dunefield consisting of Quaternary calcareous sands that have formed belts of dunes. Quaternary sands and clays found in this area are strongly mottled with a layer of impermeable coffee rock at a depth of 1.5 metres. The topsoil is grey Quaternary calcareous, with low peat content.

Little Waterhouse Lake is a permanent freshwater resource in an otherwise sandy coastal environment (Parks and Wildlife Service, 2003). It is part of a wetland complex at Waterhouse Point and the lake level fluctuates with rainfall and dune and stream movement. Drainage patterns are dynamic due to the movement of sand dunes and/or use of water for agriculture.

The water level fluctuates with rainfall and dune/stream movement and the maximum lake depth measures between two and four metres. Very few water quality assessments have been conducted. The water of Little Waterhouse Lake is typically fresh but can become slightly brackish, very clear (low turbidity) although with some tannin colouring, neutral to high pH and high nutrient concentrations. The brackish nature of the water reflects the site's proximity to the sea (with salt spray expected to be blown into the lake's catchment) and also the evaporation of surface water, tending to concentrate dissolved material, particularly during drier periods.

Little Waterhouse Lake broke its banks during spring floods in 1952. Local fishermen, concerned about erosion of the retaining dunes and subsequent loss of fish to the ocean, attempted to dam the outflow. The original structure consisting of sand, soil and brush was inadequate, so donations were called for in 1954 to construct an enlarged wall and spillway. Sufficient funds to complete a dam were granted in 1955 and work finished in July that year. The stability of the dam wall is unknown, although it is known to leak water from Little Waterhouse Lake, either through or underneath the dam wall.

**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 area experiences a mild maritime climate with extensive winds, which vary from northwest to southwest (Parks and Wildlife Service, 2003). Average annual rainfall is generally less than 800

millimetres, occurring fairly evenly throughout the year, with a slight winter maximum (Parks and Wildlife Service, 2003). North-east Tasmania contains a diverse geology, with deposits and formations from the Quaternary back to the Ordovician. The north-east coast is largely formed of, or underlain by, extensive folded and metamorphosed quartzites and slates deposited during the Ordovician and Devonian periods, intruded by extensive Devonian granitoids.

### 18. Hydrological values:

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

There are no known studies on any aspect of the hydrology of the site, or even qualitative information other than its description as a permanent water resource in an otherwise sandy coastal environment (Parks and Wildlife Service, 2003). It is part of a wetland complex at Waterhouse Point that includes many temporary and permanent wetlands, the largest of which are Big Waterhouse Lake, Blackmans Lagoon and Little Waterhouse Lake. Little Waterhouse Lake receives its water from local catchment runoff and also from a small drain (formerly a creek) known as Tobacco Creek.

The natural damming of the site, which was washed away by heavy rains in 1952 and subsequently rebuilt in 1954, is also a vital aspect of the site's hydrology, providing a barrier (albeit permeable) to flow from the lake. Through the leaking of water, either through or under the reconstructed dam or from seepage of groundwater through the dunes, the site also contains a swampy marshland downstream of the dam wall, with green herbfields and wet soils with high organic matter content. This area also contains a small network of rivulets, fed by the throughflow from the dam, sometimes under the peaty soils, sometimes forming small springs and sometimes expressed as small channels within the marshland.

The hydrologic regime of the lake influences the floristic make-up of the site, through the coverage, depth, timing and rate of delivery of water to the system. Inputs of groundwater and surface water (through local catchment runoff and also through the inputs of Tobacco Creek), maintain the water volumes and variations that contribute to the ranges and variability in depths and habitat zones that characterise the site. The hydrology of the site helps maintain a number of supporting services such as: supports wetland types representative of the bioregion; supports a diverse macrophyte flora; supports species of national significance (green and gold frog and dwarf galaxias); and provides habitat for abundant fish and macroinvertebrate communities.

### 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)

#### 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.

Ts, K, O, M, Tp, U, N

### 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 lagoon has dense aquatic growth and high species richness. Tiny duckweed (*Wolffia australiana*) is common at the site as are the river/lake club rush (*Schoenoplectus validus*) and sea club-rush (*Bolboschoenus caldwellii*), both listed as rare under the Tasmanian TSP Act. To the east of the lake, open scrub covers most of the area, with silver banksia (*Banksia marginata*) and grass tree (*Xanthorrhoea australis*) being the

dominant species. West of the site marram grass (*Ammophila arenaria*) occurs on the foredunes with coastal wattle (*Acacia sophorae*) silver banksia and prickly moses (*Acacia verticillata*).

The vegetation north of Little Waterhouse Lake is dominated by heaths and coastal shrubberies. Graminoid heath, rich in the spectacular grass tree tends to occupy the dune tops, with tall dense coastal shrubbery in more sheltered areas. She-oaks (*Allocasuarina*) and eucalypt species are found within the shrub communities on well drained dolerite ridges and other sites where soil fertility is favourable. A wind-pruned woody shrubbery extends for several hundred metres inland on most of the western coast and small herbfields, often grazed to 'marsupial lawns', are found throughout.

No bird data was found specifically for the Ramsar site. A list for the whole of the Waterhouse Conservation Area (Parks and Wildlife Service 2003) presents a recorded total of 138 bird species, including six of Tasmania's 14 endemic species. Similar to the avifauna, there was no mammal data found specifically for the Ramsar site. The Waterhouse Conservation Area contains at least three, and possibly four, of Tasmania's six species of mammals considered to be potentially vulnerable and requiring monitoring. They are the spotted-tailed quoll, eastern quoll, Tasmanian bettong and possibly the eastern or little pygmy possum.

Reptile density and diversity within the Waterhouse Conservation Area was found to be low (Parks and Wildlife Service, 2003). Five species were recorded during a survey in 1993. Apart from the green and gold frog (*Litoria raniformis*), recorded within the Conservation Area (Brereton 1995, Brown 1995) and observed at the Little Waterhouse Lake Ramsar Site (D. Wilson, personal communication to Stewart Blackhall, DPIPWE), five other species of frog have been recorded in the Waterhouse Conservation Area (Brown, 1995). A Freshwater Wetland Rapid Biological Assessment of the macroinvertebrates of Little Waterhouse Lake was carried out in late autumn 2000, with 23 families identified.

Although Little Waterhouse Lake was originally managed as a rainbow trout fishery, it has been stocked with both brown and rainbow trout since 1935-36. Brook trout were also released in 1966 and again in 1968/69, but stocking of the species was short lived. Little Waterhouse Lake was stocked with either rainbow or brown trout on nine occasions between 2005 and 2009 (Inland Fisheries Service, 2010). A comprehensive fish survey is required to understand the fish fauna of the Little Waterhouse Lake Ramsar site.

Ecosystem services include: *Wetland products* (water regime and fish); *Cultural services* [aesthetic values, cultural heritage, scientific/educational values, tourism/recreational activities]; and *Supporting services* (maintaining bioregional biodiversity, being representative of a bioregion and supporting regionally threatened species, habitat provision).

## 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.*

The site is a key location for two plant species listed under Tasmania's TSP Act. River club sedge (*Schoenoplectus validus*), rare, is found onsite at Little Waterhouse Lake being one of only two known from within reserves for the species in Tasmania (DPIPWE 2010). Sea club-rush (*Bolboschoenus caldwellii*), also classified as rare, is found onsite at Little Waterhouse Lake which is one of seven known from within reserves for the species in Tasmania (DPIPWE 2010).

Cumbungi (*Typha latifolia*), poplar (*Populus* spp.), willows (*Salix* spp) and other weeds are present in parts of the site and could proliferate, altering the ecological character of the site. In particular, cumbungi have been seen forming thick bands in the lake and in the pond downstream of the dam, and appear to be close to causing serious impact. Marram grass (*Ammophila arenaria*) plantings in the vicinity have altered natural geomorphic process.

## 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.*

The site has been observed to support a local pair of White-bellied sea eagles (*Haliaeetus leucogaster*, vulnerable, TSP Act). It also supports the Green and gold frog (*Litoria raniformis*) (Vulnerable, EPBC and vulnerable, TSP Act), with the combined habitat requirements of permanent waters with still to slow-flowing areas and nearby forests and grasslands provided by the site. The Green and gold frog was recorded within the Waterhouse Conservation Area (Brereton 1995, Brown 1995) and has been observed at the Little Waterhouse Lake Ramsar Site (D. Wilson, personal communication to Stewart Blackhall, DPIPW). Although this species had not been recorded at the site at the time of listing, its current presence at the site makes it very likely that it was also present at the time of listing. This is particularly likely as the species was recorded from nearby Blackmans Lagoon around the time of listing. The species was noted as being present in large numbers and also as being heard at other locations within the Waterhouse Conservation Area (Brown 1995). The site provides some sanctuary from threats such as habitat loss through stock grazing and irrigation.

The Dwarf galaxias (*Galaxiella pusilla*), which is listed as vulnerable under the EPBC Act and vulnerable in Tasmania (TSP Act) also occurs at Little Waterhouse Lake (NVA 2011). The Dwarf galaxias was recorded at the site after listing (Chilcott and Humphries 1996 with 92 individuals were recorded (NVA 2011). Extensive suitable habitat exists on site, and the surveys conducted by Chilcott and Humphries (1996) recorded the species and 92 individuals are recorded on the Natural Values Atlas database (NVA 2011) both of which confirm its presence.

Exotic Trout species are stocked in the site – Brown trout (*Salmo trutta*) and Rainbow trout (*Oncorhynchus mykiss*). The original stocking of the lake took place prior to the site becoming a Ramsar site.

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### 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 values of the site include;

- Recreational values; activities undertaken onsite and in the area include nature observation, walking, fishing, boating, recreational vehicle use and hunting.
- Cultural heritage values; the surrounding area contains important Aboriginal sites including coastal shell middens (Parks and Wildlife Service, 2003), although no evidence was found for these within the Ramsar site. The lake is also the site of early European settlement in the district.

**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:

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### 24. Land tenure/ownership:

a) within the Ramsar site:

The site is on Crown Land as it falls within the Waterhouse Conservation Area.

b) in the surrounding area:

Waterhouse Conservation Area and private land

## **25. Current land (including water) use:**

a) within the Ramsar site:

The site is used for recreational purposes including nature observation, fishing, boating, recreational vehicle use and hunting. Research and monitoring (water quality data).

b) in the surroundings/catchment:

The surrounding area is used for recreational camping and livestock grazing, with water use for agricultural purposes unnaturally altering the water level of the wetland. Land use within Dorset Council includes agriculture, forestry, and tourism.

## **26. 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:

The factors affecting the site's ecological character include;

Changes to the site's hydrology through breaching of the dam wall; the dam built by the fishing club is unlikely to be structurally sound (it is already leaking). If the dam wall washes away or collapses, it may result in a significant loss of lake area.

Alien fish stocking: Regular stocking of trout species is a significant impact on the native fish populations of the lake. At least two species of galaxias are confirmed at the site, most of these fish are known to be negatively impacted by trout predation with the threatened Dwarf galaxias is particularly vulnerable. Since trout species have been stocked in the lake for over 70 years, the dwarf galaxias population may be reduced but the Chilcott and Humphries (1996) survey and NVA (2011) records confirm they are present. The extensive suitable habitat for dwarf galaxias would mean their populations would expand without trout presence. Trout are voracious feeders and are also likely to prey on tadpoles and adults of frog species (when in the water) and in particular on the green and gold frog. Given the presence of the Green and gold frog and the Dwarf galaxias at the site, stocking the lake with trout would appear to be in conflict with the site's Ramsar listing. Local fishermen have requested they be able to continue their long-standing use at the site. There are on-going discussions amongst relevant authorities in relation to this request.

Vegetation clearance on-site and in surrounding areas: Vegetation clearance for agricultural development has occurred around the site margins, resulting in severe erosion of dunes. The creation of blowouts in the dunes has led to dune movement and a highly mobile geomorphology.

Vehicle and recreational use: The Waterhouse Conservation Area has management issues in relation to the high numbers of people camping and four-wheel driving in the Conservation area. Although much of this activity is concentrated in areas away from Little Waterhouse Lake, there is largely uncontrolled access to the site and this has the potential to cause significant impact to the ecological character if not managed.

Weeds: Cumbungi (*Typha latifolia*), poplar (*Populus* spp.), willows (*Salix* spp) and other weeds are present in parts of the site and could proliferate, altering the ecological character of the site. In particular, cumbungi have been seen forming thick bands in the lake and in the pond downstream of the dam, and appear to be close to causing serious impact. Marram grass plantings in the vicinity have altered natural geomorphic process.

Diseases and pathogens: [*Phytophthora cinnamomi* (dieback fungus) and *Batrachochytrium dendrobatidis* (chytrid fungus)]; *Phytophthora cinnamomi* (Pc) is a destructive and widespread exotic species of water mould carried in soil and water that causes root-rot disease symptoms (dieback) and eventual death to a wide variety of native and introduced plant species (DEH 2009). Species impacted by *Pcinnamomi* include a large number



Tasmanian native plant species in moorland, sedgeland, heath, open forest and disturbed rainforest (DPIW 2009b). Pc has the potential to significantly alter the ecology of these vegetation types. Although no record of the disease was found specifically for the site, it has certainly been found in the area (DPIW 2009b) and must be considered a threat to the ecological character of the site, through its potential to impact the site's vegetation.

Chytrid fungus is a fungus that infects the skin of frogs, destroying its structure and function, and can ultimately cause death (DPIWE 2010). The site was tested and found to be positive for chytrid by DPIPWE (tested 26/11/2008) (DPIPWE unpublished information). Although Green and gold frogs are present at the site, the long term impacts of chytrid fungus on this species are currently unknown. Accordingly, this pathogen should also be considered a threat to the ecological character of the site, through its amphibian fauna.

Fire: Fire is potentially a very high risk to all components of the site. Potential loss of the site's vegetation cover through either very hot or frequent burning would impact landform stability, and therefore ultimately the site's geomorphology and hydrology.

Duck hunting; Duck hunting currently occurs within the Waterhouse Conservation area and in the past this has included Little Waterhouse Lake. Due to the Ramsar status of the lake, duck hunters have agreed not to continue shooting at Little Waterhouse Lake (Parks and Wildlife Service 2003). There remains a possibility that lead shot remains in the sediments of the lake, possibly contaminating waterfowl and other species that feed in the lakes benthic zone.

Climate change: Climate change could also change the ecological character of the site through changes to rainfall and temperatures, potentially altering the hydrology and the nature of the vegetation cover of the site.

**b)** in the surrounding area:

Changes to the catchment such as vegetation clearance, dam building and water abstraction, have changed the flow regime (and reduced the water quality) of waters inflowing into the site. Input flows are therefore more flashy and less reliable. Grazing in the area surrounding the site may result in the creation of blowouts in the dunes, leading to movement of the dunes and a highly mobile geomorphology (possibly covering the lake). Nutrient inputs are also likely to impact water flowing into the lake from grazed sections of the catchment.

## 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 site is reserved within the Waterhouse Conservation Area, which was proclaimed as a Conservation Area in December 1996 under the *National Parks and Reserves Management Act 2002* (Department of Primary Industries, Parks, Water and Environment, 2008). The term Conservation Area is applied to an area of land predominantly in a natural state but mining, and in some cases, hunting may be permitted (Department of Primary Industries, Parks, Water and Environment, 2008).

The Waterhouse Conservation Area was also listed on the Register of National Estate in May 1991 (Department of Environment, Water, Heritage and the Arts, 2009). It has high aesthetic value, a range of characteristic north east Tasmanian coastal ecosystems and good examples of a number of dry sclerophyll and heath communities. The wetlands, specifically Little Waterhouse Lake, are identified as being important waterbird habitat.

**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 for the Waterhouse Conservation Area exists: Parks and Wildlife Service, (2003). Waterhouse Conservation Area Management Plan. Department of Tourism, Parks, Heritage and the Arts, Hobart, Tasmania.

**d) Describe any other current management practices:**

A long term strategy is in place to contain erosion of the dune system in the surrounding area. Extensive weed control work has been carried out by Conservation Volunteers Australia and a Green Corps team under the Revive Program.

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

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

None known.

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

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

An intensive study of the Waterhouse Conservation Area was undertaken by a group of scientists from the Parks and Wildlife Service in 1993. The individual studies were published in 1995 (Holdsworth and Bryant, 1995). The resulting vegetation map was useful in redefining the boundary for the Waterhouse Conservation Area.

Water quality data are currently collected from the site as part of a regional monitoring program (Northern Water Monitoring Team, 2005 – 2008b).

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**30. Current communications, education and public 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.

Currently, the only CEPA activity occurring in Little Waterhouse Lake Ramsar Site is the display of an Australian Government sign stating the site is of international significance, providing information on aspects of the site's ecological character. There is also a sign at the entrance of the Waterhouse Conservation Area, providing details on the conservation zone and conditions of visitor use. Outside the site, there are information booklets on Ramsar sites of Tasmania.

The key communication and public education messages for the site are;

- Little Waterhouse Lake Ramsar Site is an internationally important wetland, meeting Ramsar Criteria one, two and three.
- The site is a zone of high biodiversity, as it is floristically diverse containing over 40 species of aquatic and semi-aquatic plants.
- The site provides many important services and benefits to the region including fish habitat, recreation, cultural heritage, educational and scientific values.
- Understanding the ecology of the site will enhance future management of the site.
- Past and present management practices provide some threats to the site's values such as vegetation clearance, alien fish stocking, structural water management, catchment dams and abstraction, vehicle and recreational access and weeds.
- Landholders, managers and users should promote the wise use of wetlands.

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**31. Current recreation and tourism:**

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

The area is subject to recreational use, especially in summer. Up to 80 anglers visit the area annually. Recreational activities undertaken onsite and in the area include nature observation, walking, fishing, boating, recreational vehicle use and hunting.

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**32. Jurisdiction:**

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

Territorial:

Dorset Municipal Council.

3 Ellenor Street  
Scottsdale 7260  
Tasmania  
Australia  
Tel: +61 3 6352 6500  
Fax: +61 3 6352 6509  
Email: [dorset@dorset.tas.gov.au](mailto:dorset@dorset.tas.gov.au)

Functional:  
Director  
Parks and Wildlife Service  
GPO Box 1751  
HOBART 7001  
Tasmania.  
Australia  
+61 1300 135 513  
<http://www.parks.tas.gov.au/>

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### 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.

Director  
Parks and Wildlife Service  
GPO Box 1751  
HOBART 7001  
Tasmania.  
Australia  
+61 1300 135 513  
<http://www.parks.tas.gov.au/>

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### 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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Northern Water Monitoring Team (2008b). State of the Region 2007: Water Quality and Stream Condition in Northern Tasmania. NRM North and Launceston Environment Centre, Tasmania.

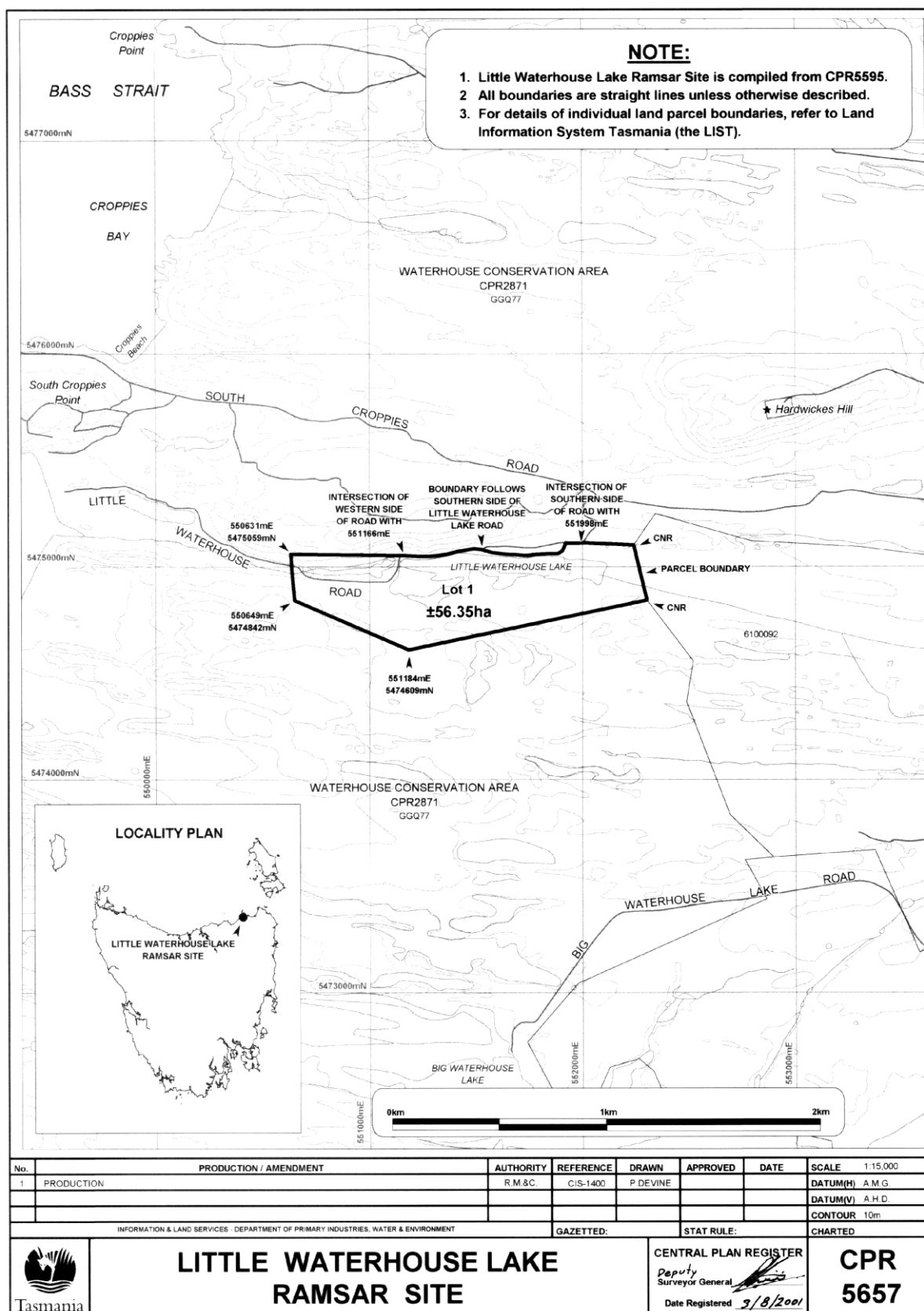
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Parks and Wildlife Service, Tasmania (2003). Waterhouse Conservation Area Management Plan. Department of Tourism, Parks, Heritage and the Arts, Hobart, Tasmania.

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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](mailto:ramsar@ramsar.org)

**Appendix 1:** Central Plan Register (CPR) map of the boundary of Little Waterhouse Lake Ramsar Site.



Appendix 2: Little Waterhouse Lake Ramsar site location map (DSEWPaC, 2010)

