

Waterhouse Conservation Area

Management Plan

2003

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PARKS *and* WILDLIFE
SERVICE TASMANIA

DEPARTMENT
of TOURISM,
PARKS, HERITAGE
and the ARTS

Waterhouse Conservation Area Management Plan 2003

This Management Plan for Waterhouse Conservation Area has been prepared in accordance with the requirements of Part 3 of the *National Parks and Reserves Management Act 2002*. The appendices do not form part of the statutory plan, but are provided as additional information to assist in management.

Unless otherwise specified, this plan adopts the interpretation of terms given in the *National Parks and Reserves Management Act 2002*. The term 'Minister' when used in the plan means the Minister administering this Act. The terms 'reserve' and 'conservation area' refer to the Waterhouse Conservation Area.

In accordance with Section 30(1) of the *National Parks and Reserves Management Act 2002*, the managing authority for the reserve, in this case the Director of National Parks and Wildlife, shall carry out his or her duties in relation to the reserve for the purpose of giving effect to, and in accordance with the provisions of, this management plan. The position of director is held by the Secretary of the Department of Tourism, Parks, Heritage and the Arts.

The plan may only be varied in accordance with procedures set out in Part 3 of the *National Parks and Reserves Management Act 2002* and, in any case, will be reviewed seven years after approval of the plan by the Governor.

ACKNOWLEDGEMENTS

Many people have assisted in the preparation of this plan by providing information and comments on earlier drafts. Their time and efforts are gratefully acknowledged.

APPROVAL

This management plan was approved by His Excellency, the Governor-in-Council, on 14 May 2003 and took effect on 17 September 2003, being seven days after publication of the approval in the Government Gazette.

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Summary

The Waterhouse Conservation Area, a reserve of 6,953 hectares, lies on the northeast coast of Tasmania. The reserve has many values.

Environmental Values

Relic sand dunes are of conservation significance.

A wetland site is of international significance.

Heaths and coastal forest communities are of high conservation value.

Twenty eight plants are scheduled by the *Threatened Species Protection Act 1995*, including two that are listed as vulnerable and one that is considered endangered.

Eleven fauna species are scheduled by the *Threatened Species Protection Act 1995*, including eight that are listed as vulnerable and one that is considered endangered.

Heritage Values

Past use by Aboriginal people has left a series of sites that form a valuable cultural resource.

Today's Aboriginal community continues to utilise the area for a number of cultural activities including visits to the numerous Aboriginal sites, shell collecting for necklaces, and as a departure point for 'Back to the Islands' trips.

Recreational and Tourism Values

The coastal landscapes are of high scenic value, along with outdoor recreational opportunities such as boating, fishing, and hunting that make the area popular for camping, particularly in summer.

Educational Values

There are valuable education themes with respect to coastal process, particularly dune processes, and the sometimes profound consequences of human influence.

The internationally significant wetland site provides unique interpretation opportunities with respect to Australia's conservation responsibilities on the world stage.

Threats to Conservation Area Values

There are a number of factors detracting from, or having the potential to diminish, values. These include:

- the proliferation of vehicular tracks and vehicle use on the beaches with resulting impacts on flora, fauna, tranquillity and scenic values;
- the continual expansion of campsites and construction of semi-permanent standing camps, as well as inappropriate camper behaviour;
- off-site pressure to continue to actively manage coastal processes to prevent loss of surrounding agricultural land;

- wildfire, which may threaten the safety of visitors and, if too frequent, lead to loss of stability of currently stable dune areas; and
- lack of firing, which may lead to a loss of species and community diversity.

Management Initiatives

The major management initiatives are summarised below:

- protection of the internationally significant wetland will be enhanced by many measures, including appropriate zoning, regulation of eel and trout bait fishing, the discontinuation of duck hunting and regulation of the use of outboard engines;
- improved protection of Aboriginal heritage will result from the introduction of a number of measures associated with vehicular tracks and camping;
- improved protection of fauna and flora, particularly in coastal habitats, will occur through the implementation of changes to camping and vehicular access;
- a basis is provided for improving the provision of recreational opportunities and facilities of the reserve.
- a basis is provided for the development of a fire management plan to improve fire management; and
- a basis is provided for assessing future proposals for land rehabilitation and stabilisation works.

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Section 1 Overview

1.1 Location and Access

The Waterhouse Conservation Area lies on the north east coast of Tasmania (see Map 1) within the Dorset Council Municipal area. The reserve is approximately 100 kilometres north east of Launceston and about 10 kilometres east of Bridport.

Access into the reserve is provided from the Waterhouse (B52) Road. Branching off the Waterhouse Road are several minor roads to the reserve, including Blackmans Lagoon Road, Homestead Road and Big Waterhouse Lake Road. There are several other unofficial access points to the reserve, running through private property. Homestead Road accesses the principal day use and camping areas in the north. The eastern end of the reserve, a narrow strip of coastal dune, is frequently accessed from the West Wyambi Road through private land.

Pedestrian access to the eastern tip of the reserve is gained via a footbridge from the town of Tomahawk.

1.2 Regional Context

The Waterhouse Conservation Area is used extensively for recreation, principally through the summer months. Many Tasmanians have an association with the area that spans years, in some cases even generations. People camp in the area, often for weeks at a time each summer, and use the area for activities such as hunting, fishing, boating and recreational vehicle use. Many such visitors live in the north-east of the State, although some come from further afield.

The area is also well used as a short term/weekend camping destination by both Tasmanians, interstate and overseas visitors.

1.3 Creation of the Conservation Area

Prior to its reservation under the *National Parks and Reserves Management Act 2002* the area was reserved under the *Crown Lands Act 1976*. The change in reservation status was brought about with limited consultation and raised community concern. With the recent reservation change new management arrangements are required under the *National Parks and Reserved Land Regulations 1999*, and as a result this management planning process was initiated.

The land was formally reserved under the *National Parks and Reserves Management Act 2002* as a conservation area by Statutory Rule No. 227 of 1996, which became effective on 25 December 1996. The reservation change was initiated on the basis of a particular type of dry sclerophyll forest found within the reserve, which lies on Quaternary sands and gravel, and on Quaternary calcareous deposits. This type of vegetation is not currently represented elsewhere in the State's reserve system.

Map 1 Location

The conservation area is listed on the Register of the National Estate, both for its natural values (aesthetic, heathland, wetland, species diversity and rare plant values) and for its Aboriginal values (shell middens, lithic scatters and a stone quarry). Prescriptions for the management of these National Estate values are found throughout the plan.

1.4 Area and Boundaries

The reserve is a coastal strip with a total area of 6,953 hectares (see Map 2), consisting largely of sand dunes and poorly drained coastal wetland and supporting coastal heath and coastal scrub. The reserve is bounded on the north by Bass Strait, and on the south by private farmland. The conservation area encompasses all of the former Waterhouse Protected Area along with a contiguous portion of the former Tomahawk Coastal Reserve, around as far as the Tomahawk River. The eastern extremity of the reserve is a narrow strip of coastline along Tomahawk Beach, widening at its eastern extremity, at the mouth of the Tomahawk River.

The reserve does not include the offshore islands of Waterhouse and Tomahawk. On the ocean boundary the reserve includes all the land mass down to the low water mark. The boundaries of the reserve are set out on Plan number LD 1493, registered in the Central Plan Office, Department of Primary Industries, Water and Environment.

1.5 Climate

The area experiences a mild maritime climate, but is windy, with prevailing winds varying from northwest to southwest. North-easterlies are also quite common during the summer months. The rainfall is generally less than 800mm, with rainfall occurring fairly evenly throughout the year, with a slight winter maximum.

Map 2 Land Tenure

Section 2 Vision, Objectives & Zoning

2.1 The Vision for the Conservation Area

A future visitor to Waterhouse Conservation Area finds healthy natural biodiversity, and viable populations of all indigenous species. Ecological processes are unfolding without interference.

Physiographic features, particularly sand features are allowed to gradually reassert their natural balance, with human interference being permitted only in exceptional circumstances.

The air, land and water are unpolluted.

The Aboriginal and historic heritage of the reserve is identified, well protected and explained.

Visitors enjoy the reserve for its many outdoor recreational opportunities. Visitors pursue recreation based on the features and values of the conservation area, without undue disturbance to flora, fauna and natural features and processes, and without disturbing or detracting from the experiences of other visitors.

Recreation and tourism facilities and services are discretely located and do not threaten the environmental, heritage or recreational values of the conservation area.

2.2 Conservation Area Values, Purposes and Objectives

A conservation area is a category of reserve under the Tasmanian reserve system. The general values, purposes and objectives of a conservation area are set out in the *Nature Conservation Act 2002* and the *National Parks and Reserves Management Act 2002* as follows.

Values

A conservation area is:

- an area of land predominantly in a natural state.

Purposes

Conservation areas are established for:

- the protection and maintenance of the natural and cultural values of the area of land and the sustainable use of the natural resources of that area of land.

Objectives

The objectives of conservation areas are:

- to conserve natural biological diversity (see Sections 3.3 to 3.5);
- to conserve geological diversity (see Section 3.1);
- to preserve the quality of water and protect catchments (see Section 3.2);

- to conserve sites or areas of cultural significance (see Sections 3.6 and 3.7);
- to provide for the controlled use of natural resources (see Section 4.8);
- to provide for exploration activities and utilisation of mineral resources subject to appropriate controls (see Sections 4.7 and 4.9);
- to provide for the taking, on an ecologically sustainable basis, of designated game species for commercial or private purposes, or both (see Section 5.7);
- to provide, in special circumstances, for other small-scale commercial or industrial uses (see Section 4.9);
- to encourage education based on the purposes of reservation and the natural or cultural values of the conservation area, or both (see Section 5.11);
- to encourage research, particularly that which furthers the purposes of reservation (see Section 6.2);
- to protect the conservation area against, and rehabilitate the conservation area following, adverse impacts such as those of fire, introduced species, diseases and soil erosion on the conservation area's natural and cultural values and on assets within and adjacent to the conservation area (see Section 4);
- to encourage appropriate tourism, recreational use and enjoyment consistent with the conservation of the conservation area's natural and cultural values (see Section 4.9);
- to encourage cooperative management programs with Aboriginal people in areas of significance to them in a manner consistent with the purposes of reservation and the other management objectives (see Section 3.6).

All of these objectives are confirmed in their application to the Waterhouse Conservation Area.

2.3 Management Zones

The reserve has been zoned to ensure appropriate management and use in its different parts.

Aims

- The aims of zoning are to:
 - take account of localised features, conditions, and values;
 - ensure substantial areas of the reserve are undisturbed;
 - protect and enhance reserve values by concentrating and directing tourism and recreation development to designated locations; and
 - provide a range of recreational and tourism opportunities consistent with the values of the reserve.

Prescriptions

- Four management zones apply to the reserve: the Visitor Services Zone, the Recreation Zone, the Natural Zone and the Special Use Natural (wallaby hunting) Zone. Table 1 establishes the aim of each zone. Map 3 shows the locations of these zones in the reserve.

Table 1 Management Zones (see Map 3)

ZONE /LOCATION	VALUES	GENERAL AIM
<p>Visitor Services Zone There are 6 such zones as follows:</p> <ul style="list-style-type: none"> • Blackmans Lagoon, • Big Waterhouse Lake, • South Croppies, • Herbies & Blizzards Landing, • Waterhouse Point, and • at the end of Homestead Rd. 	<p>High use areas with visitor services and facilities provided according to level of use. Management inputs and presence is high to protect natural and cultural values, recreation and tourism.</p>	<p>To provide visitor services and facilities where visitation is highest and accessible, consistent with reserve objectives.</p> <p>To maintain as far as possible, a natural setting and cultural integrity and to minimise impacts of facilities and visitor use.</p>
<p>Recreation Zone There are 3 such zones that include most of the coastal land of the reserve north of Blackmans Lagoon right through to Tomahawk.</p>	<p>Important natural values and scope for recreational use by suitably equipped people. They are areas which are suitable for relatively high levels of day and overnight use due to their location and proximity to road, water and walking track access.</p>	<p>To provide for sustainable dispersed recreational activities and small-scale recreational facilities without significant impact on natural processes.</p>
<p>Natural Zone The remoter areas of the reserve or those requiring special protection. There are 2 such zones, one surrounding Little Waterhouse Lake, and one south and east of Homestead Road.</p>	<p>Important natural values are found in this zone. Wetlands of special significance have been identified. The Regional Forest Agreement process identified wilderness values. Key habitat areas have been identified.</p>	<p>To conserve natural integrity and protect, maintain and monitor the diversity of plant and animal species and communities.</p> <p>To conserve heritage values.</p> <p>To maintain the character of naturalness, tranquillity and isolation.</p>
<p>Special Use Natural There are 2 such zones, one encompassing the southern part of the reserve and another south and east of Homestead Road.</p>	<p>This zone is a modified Natural Zone intended to provide a high level of environmental protection while allowing access for wallaby hunting.</p>	<p>The management objectives for this zone are as for the other Natural Zones, while providing an area for the sustainable taking of wallaby.</p>

Prescriptions for the Visitor Services Zone

- Facilities which harmonise with the natural and/or cultural environment will be provided to facilitate recreational and tourism use.
- The Zones are intended to provide the principal focus for vehicular based camping activities. Within the zones camping will be available only in designated camping areas.

Map 3 Zoning

- The visual impact of development will be limited.
- Concessions for providing recreational or tourism opportunities will be considered if consistent with the zone's natural and cultural values.
- Fuel loads may be managed to reduce fire risks, or to maintain a low risk environment for the public.
- This zone will be the main location for provision of education and interpretation facilities and activities.
- Visitors will be encouraged to take their rubbish home.
- Campers will be encouraged to bring fuel stoves.
- Provide where possible, environmentally sustainable toilet facilities sufficient for the demand placed upon them.

Prescriptions for the Recreation Zones

- Concessions for guided tour operations, including standing camps and services associated with them, will be considered and may be allowed if consistent with the zone's natural and cultural values. Concessions for other types of accommodation, facilities and services will not be considered.
- Subject to environmental assessment and conditions, temporary standing camp, equipment cache, or similar visitor accommodation provisions may be permitted in the Recreation Zone at sites located within 500 metres of any actual or potential public camping area.
- Signs will be limited.
- Rubbish bins will not be provided.
- Tracks will be maintained to ensure protection of the environment and the reasonable safety of users.
- Tracks will be clearly marked.

Prescriptions for the Natural Zones

- Encourage existing development in these Zones to be removed.
- Except for natural or cultural protection works, exclude other types of development, including visitor or private buildings or other structures and facilities.
- Interpretation signs will not be provided in the Zone apart from limited interpretative signage at Little Waterhouse Lake in recognition of its Ramsar wetland status.

Prescriptions for the Special Use Natural Zone

- Allow for sustainable wallaby hunting.

Section 3 Reserve Conservation

3.1 Geodiversity

Geodiversity refers to the natural range of bedrock, landform and soil features, assemblages, systems and processes. Geodiversity includes evidence for the history of the earth including past life, ecosystems, and environments, as well as a range of processes (biological, hydrological and atmospheric) currently acting on rocks, landforms and soils. These features may be vulnerable to disturbance and could have conservation values requiring protection and management.

Bedrock Geology

The basement rocks are dominated by Devonian granites. These rocks form part of a much larger series of granite bodies extending from north east Tasmania to Wilsons Promontory. They formed during a major continental collision in eastern Australia 370 million years ago. The granite has in turn been intruded by 165 million year old Jurassic dolerite, such as found underlying Hardwicks Hill.

Overlaying Deposits

The basement rocks of the area are overlain by much younger sandy deposits as a result of coastal processes during Pleistocene and Holocene times. According to Sharples (1997) sea levels at that time were much lower, about 130 metres below present levels:

... and most of Bass Strait was exposed as a broad inland plain. The climate at the time was colder, more arid, and windier than at present, which resulted in a sparse vegetation cover over much of Tasmania. These conditions favoured the mobilisation by wind of marine sands in the Bass Strait area ... and an extensive complex of longitudinal inland desert dunes formed, extending onto what is now the north-eastern coastal platform of Tasmania.

Today these sand features can be seen at the northern, broad section of the reserve extending from Croppies Points through to Tomahawk Beach, and consist of undulating sand plains traversed by relic east west dune formations, now vegetated and stable. The high coastal sand dunes are of different origin again, being even more recent (Holocene). According to Thomas (1996), following the last ice age:

The formation of Bass Strait eventually isolated the dune fields and mobilised fresh sediment to eventually form the parabolic and transverse dune systems which today form the backdrop to the north east Tasmanian beaches.

Sand landforms are generally inherently sensitive to disturbance and easily destabilised, and most particularly so in the windy Waterhouse environment. The pattern of land use in the last 100 years (see Section 3.7) has no doubt resulted in increased instability. During the last 45 years a major program to restabilise the dunes has occurred (see Section 3.7). The sand landscapes of the Waterhouse Conservation Area are, as a consequence, highly modified.

Conservation Significance

The Waterhouse Pleistocene dunes and more recent Holocene dune features are listed as significant sites on the Tasmanian Geoconservation Database. This includes both stabilised and destabilised features, the latter providing excellent examples of transgressive dunefields.

Aims

- The aims of geoconservation in the reserve are to:
 - preserve and maintain sites of geoconservation significance and geodiversity; and
 - maintain the natural rates and magnitudes of change in earth processes.

Prescriptions

- Ensure management and development do not affect the integrity of sites of geoconservation significance or impact on earth surface processes.
- Potential impacts on geodiversity and earth processes will be assessed when planning any development or action.
- Land rehabilitation and stabilisation will only be carried out after a geological and geomorphological assessment is undertaken.
- The use of exotic species for dune stabilisation will be consistent with the Parks and Wildlife Service *Policy on Coastal Conservation and Management Works*.
- A written authority will be required to collect any earth materials from reserves.

3.2 Water Quality

The protection of the quality of Tasmania's water resources is important to securing the State's future. To ensure adequate levels of protection, the *State Policy on Water Quality Management 1997* now requires that protected environmental and water quality objectives are set for all surface waterbodies around the State.

Accordingly, this plan contains prescriptions for the level of protection to be given to the surface waters of the Waterhouse Conservation Area.

Aims

- The aims of water quality management are to:
 - maintain or enhance aquatic ecosystems; and
 - maintain or enhance recreational water quality.

Prescriptions

- Designated protected environmental values (PEVs - see *State Policy on Water Quality Management 1997*) will be adopted as the minimum standard for water quality.
- Fresh water ecology will be maintained to a level that acknowledges the generally modified nature of catchments (ie an A(ii) PEV see *State Policy on Water Quality Management 1997*).

- The fresh water recreation quality will be maintained so that it remains safe for direct contact for activities like paddling, boating and fishing, but where it is unlikely that water will be swallowed (ie a B(ii) PEV see *State Policy on Water Quality Management 1997*).
- Liaise with other relevant agencies and neighbouring landowners to develop and implement strategies (such as buffer zones along watercourses) to reduce run-off of sediment, pesticides and fertilisers.

3.3 Flora

The vegetation of the reserve is a complex mosaic of heathland, wetlands, grasslands, coastal shrubberies, scrub and woodlands. Within these community types many subgroups can be recognised. The type of vegetation is controlled by several factors including soil type, drainage and exposure to wind. Generally the vegetation is quite different in the northern and southern sections of the reserve.

The vegetation north of Little Waterhouse Lake is dominated by heaths, coastal shrubberies and wetland communities (see Map 4). Graminoid heath, rich in the spectacular grass tree *Xanthorrhoea australis* tends to occupy the dune tops, with tall dense coastal shrubbery in more sheltered areas. *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.

South of Little Waterhouse Lake the vegetation wages a constant battle with shifting sand. The area is dominated by open sand, sand planted with marram and coastal shrubberies with wetland communities (various *Juncus* and *Lepidosperma* species) occupying the damp swales. The coastal shrubberies change in composition with distance inland:

- the foredunes are colonised by *Acacia sophorae* and *Leucopogon parviflorus*;
- between one and three kilometres inland this *Acacia* scrub is replaced by a dense shrubbery dominated by banksia; and
- she-oak *Allocasuarina verticillata* and eucalypt become important still further inland.

Conservation Significance

The reserve contains one of the largest areas of heathland on the north east coast, much of it weed free.

According to Kirkpatrick (in Mesibov 1996) the lowlands of north east Tasmania have an:

extremely poor representation of Tasmanian endemic plants and animals...

...In contrast to its relative paucity of Tasmanian endemics the region has substantial numbers of vascular plant species that are rare in Tasmania.

Many plants found in the region are southernmost populations of mainland species. Kirkpatrick (1977) indicated the coastal heaths of the reserve to be of high conservation significance.

Williams (1989) indicates ‘The Waterhouse Protected Area is important for the regional conservation of coastal forest communities on Quaternary calcareous

Map 4 Vegetation

deposits... particularly for *Eucalyptus pauciflora* and *Allocasuarina verticillata*.

Many plant species of the reserve are listed in the *Threatened Species Protection Act 1995* (See Table 2).

Table 2 - Flora scheduled under the *Threatened Species Protection Act 1995* and found in Waterhouse Conservation Area

Botanic Name	Common Name	Scheduled Status
Dicotyledonous plants		
<i>Acacia ulicifolia</i>	juniper wattle	Rare
<i>Angianthus preissianus</i>	salt angianthus	Rare
<i>Brachyloma depressum</i>	spreading brachyloma	Rare
<i>Brachyscome perpusilla</i>	tiny daisy	Rare
<i>Brunonia australis</i>	blue pincushion	Vulnerable
<i>Calandrinia granulifera</i>	grainy purslane	Rare
<i>Drosera glanduligera</i>	scarlet sundew	Rare
<i>Gynatrix pulchella</i>	common hemp bush	Rare
<i>Helichrysum bicolor</i>	everlasting daisy	Rare
<i>Hibbertia virgata</i>	twiggy guinea-flower	Rare
<i>Lasiopetalum baueri</i>	slender velvet bush	Rare
<i>Lotus australis</i>	austral trefoil	Rare
<i>Mitrasacme distylis</i>	tiny mitrewort	Rare
<i>Stylidium despectum</i>	small trigger plant	Rare
<i>Stylidium perpusillum</i>	small or tiny trigger plant	Rare
<i>Viola cunninghamii</i>	cunningham's violet	Rare
<i>Wilsonia rotundifolia</i>	round-leaf wilsonia	Rare
Monocotyledonous plants		
<i>Caladenia saggicola</i>		Rare
<i>Chorizandra enodis</i>	black bristle-rush	Endangered (presumed extinct)
<i>Lepidosperma viscidum</i>	sticky sword-sedge	Rare
<i>Microtis atrata</i>	yellow onion orchid	Rare
<i>Microtis orbicularis</i>	swamp onion orchid	Rare
<i>Potamogeton pectinatus</i>	fennel pondweed	Rare
<i>Schoenus brevifolius</i>	zig-zag or short-leaf bog-rush	Rare
<i>Sporobolus virginicus</i>	salt couch	Rare
<i>Tricostularia pauciflora</i>	needle bog-rush	Rare
<i>Triglochin minutissimum</i>	tiny arrow-grass	Rare
<i>Xanthorrhoea bracteata</i>	grass-tree	Vulnerable

The Department of Primary Industries Water and Environment Threatened Species Unit is preparing Listing Statements for some scheduled species that will include management guidelines. Most of the species listed are heath species, and require a suitable fire regime and the exclusion of *Phytophthora cinnamomi* (see Section 4.3).

According to Cameron (pers comm) several species of conservation significance, but not listed by the Act, are found in the reserve including pond algae of the *Characeae* family and another pond species *Nitella congesta*.

Management Issues

The major issues for flora conservation in the reserve include developing an appropriate fire regime (see Section 4.1), controlling weeds (see Section 4.4) and controlling damage to flora from activities like camping and off-road vehicle use (see Sections 5.2 and 5.4).

Anecdotal information indicates some unauthorised commercial seed collection occurs in the reserve.

Aims

- The aims of flora conservation in the reserve are to:
 - conserve and maintain natural diversity and natural ecosystems;
 - conserve and protect threatened flora species;
 - conserve and protect plant communities of high conservation value; and
 - minimise harmful impacts on reserve vegetation.

Prescriptions

- Establish long-term monitoring plots in relation to ecological management burns and threatened species sites.
- All practicable efforts will be made to manage wildfire, particularly in high conservation areas, to optimise flora conservation.
- Prepare programs for prescribed burning, setting out the fire frequencies necessary to maintain viable populations of species and communities of conservation value.
- Non-natural disturbance of vegetation will be minimised to protect flora values and limit the risk of introducing pests, weeds or pathogens.
- Only local provenance species will be used in rehabilitation works unless special approval is given.
- Implement management established in listing statements for all *Threatened Species Protection Act 1995* scheduled species, unless such management is in direct contradiction with the provisions of this plan.
- All seed collecting within the reserve requires a written authority.

3.4 Fauna

The Waterhouse Conservation Area contains a diversity of fauna habitats including marine, coastal, wetland, open woodland and heathland habitats.

A total of 138 birds have been recorded within the reserve, including six of Tasmania's 14 endemic species. Birds of particular conservation significance found in the reserve include nine species listed in the *Threatened Species Protection Act 1995* (See Table 3).

Table 3 - Birds scheduled under the Threatened Species Protection Act 1995 and found in Waterhouse Conservation Area

Scientific Name	Common Name	Scheduled Status
<i>Aquila audax fleayi</i>	wedge-tailed eagle (tas)	Vulnerable
<i>Diomedea cauta cauta</i>	shy albatross	Vulnerable
<i>Diomedea melanophrys</i>	black-browed albatross	Vulnerable
<i>Halobaena caerulea</i>	blue petrel	Vulnerable
<i>Pachyptila turtur subantarctica</i>	fairy prion sthn. sub-species	Vulnerable
<i>Phoebetria palpebrata</i>	light-mantled sooty albatross	Vulnerable
<i>Pterodroma lessonii</i>	white-headed petrel	Vulnerable
<i>Sterna albifrons sinensis</i>	little tern	Endangered
<i>Sterna nereis nereis</i>	fairy tern	rare

The marine and coastal areas provide habitat for most of the birds of conservation significance. The wedge-tailed eagle, and fairy tern may breed in

the reserve. Of particular significance is the little tern *Sterna albifrons sinensis* which breeds on this coast and is listed as endangered.

The Caspian tern is protected under the Japan/Australia Migratory Bird Agreement and the China/Australia Migratory Bird Agreement. The nationally vulnerable hooded plover *Charadrius rubricollis* breeds within the reserve.

The wetland and open waterbodies provide excellent habitat for waterfowl.

The reserve 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, the eastern quoll, the Tasmanian bettong and possibly the eastern or little pygmy possum. The reserve may also contain the only mammal species considered rare in Tasmania, the New Holland mouse. The reserve contains extensive areas of apparently suitable habitat and the species has been recorded to the west and east of the reserve. However despite extensive trapping, the species has not been recorded in the reserve. This may be due to the low levels of firing found when the searches were made.

Reptile density and diversity within the reserve was found to be low (Brereton in Holdsworth 1995).

Other fauna species of conservation significance found in the reserve include a fresh water fish - the dwarf galaxias *Galaxiella pusilla* - listed as rare, and the green and golden frog *Litoria raniformis*, listed as vulnerable (*Threatened Species Protection Act 1995*). Blackmans Lagoon and its feeder creeks constitute probably the single most important site in the State for the green and golden frog.

The Threatened Species Unit is preparing Listing Statements for some scheduled species that will include management guidelines. The Threatened Fauna Handbook will provide prescriptions for listed birds that occur in the reserve.

The reserve has many introduced species (see Section 4.2).

Aims

- The aims for fauna conservation in the reserve are to:
 - ensure maximum protection of threatened fauna species;
 - maintain viable populations of indigenous fauna; and
 - maintain the diversity of natural habitats of indigenous fauna.

Prescriptions

- Consider developing richer species habitat in sand dune areas supporting only marram grass through direct seeding or other rehabilitative mechanisms.
- The following habitats will be targeted for special protection:
 - threatened species habitats;
 - sea bird habitats;
 - habitats of beach breeding birds during the breeding season;
 - wetlands.
- Continue the New Holland mouse survey program.
- Monitor the breeding success of shore birds.
- Use of shore bird breeding areas may be limited or access restricted if monitoring shows disturbance of breeding.
- Collection of fallen timber for firewood is limited to the prescriptions of Section 5.2.

- Implement the management requirements established in listing statements for all *Threatened Species Protection Act 1995* scheduled species, unless such management is in direct contradiction with the provisions of this plan.
- Undertake surveys to define the distribution and requirements of fauna species and communities.
- Prepare programs defining the fire frequencies necessary to maintain habitat and viable populations of threatened species and any other species of conservation significance.
- Educate visitors about the harmful effects of feeding wildlife.

3.5 Wetlands

The Waterhouse Conservation Area contains many wetland communities. These communities are of high conservation significance.

The build-up of high coastal dunes during the recent Holocene period has resulted in the impediment of the drainage of the sand plains of north-east Tasmania and the impoundment of many lagoons and swamps. Within the reserve this includes three major permanent water bodies - Blackmans Lagoon and Big Waterhouse and Little Waterhouse lakes. They are all deep-water lagoons with vegetated wetland margins and substantial areas of open water. There are also a number of smaller deep-water bodies with open water varying in size from less than a quarter hectare up to five hectares. Many wetlands also occur throughout the reserve, with substantial diversity of character (Brown in Holdsworth 1995). Some are large, being in excess of 50 hectares, but most are under five hectares in area. Most of the reserve wetlands are heavily vegetated. Some of the smaller wetland areas are permanent, while others dry out in summer.

Management Issues

The hydrology of the area has been highly modified in the last hundred years as a result of both dune destabilisation and development of agricultural land. Several lagoons covering tens of hectares have been reduced to small remnants or totally destroyed, and the size and nature of the remaining wetlands has been greatly altered. The area both around and within the Waterhouse Conservation Area has had many channels dug to facilitate the drainage of surrounding cleared agricultural land. This has resulted in seasonal changes in stream flow patterns in the natural watercourses, with higher flood peaks and lower dry weather flows. The combined effect of modifications have contributed to major changes to all three of the major water bodies in the reserve.

Big Waterhouse Lake is currently being filled by a sand blow. Steane (1996) records that in 1964 after a period of very high rainfall, the creek connecting Big Waterhouse Lake to the sea could not drain quickly enough. As a result bare dunes damming the lake gave way and the lagoon almost emptied. The outlet was later repaired and a weir built by the Sand Dune Reclamation Unit.

Anecdotal evidence indicates that Little Waterhouse Lake also broke through to the sea during a wet winter, probably at much the same time as Big Waterhouse. The lake almost emptied, and the local fishing club reportedly brought in a bulldozer and built the earthen wall that can be currently seen damming the lake. Further downstream a ford has been built for fire management purposes.

In 1985 anglers (see Section 5.6) supplemented the waters of Blackmans Lagoon by constructing a drainage channel into it from Stone Chimney Creek, passing through Blackmans Swamp. The work resulted in partial drainage of Blackmans Swamp.

All of the major water bodies of the conservation area have been stocked with trout and other recreational fish species and have been heavily used by recreational fishers. The area is also extensively used for shooting with direct impact on wildfowl numbers, as well as indirect effects associated with the use of lead shot.

Development around the edges of the major waterbodies includes camping areas, shacks, roads and boat ramps.

In very recent years there has been increased intensification of farming in the region, and increasing use of irrigation and agri-chemicals. This may lead to further changes to water tables, salinity levels and other water quality indices within the reserve.

Water is currently being pumped from Blackmans Lagoon for agricultural purposes.

Conservation Significance

Wetlands are considered globally to be one of the most threatened groups of habitats. International agreements have been formulated to assist with their protection, including the *Convention on Wetlands of International Importance Especially as Waterfowl Habitat*. The convention, commonly referred to as the *Ramsar Convention*, came into force in 1975. The convention aims to provide a framework for international co-operation for the conservation and wise use of wetlands. While sovereignty of sites remains with the countries of location, management should be in accordance with the duties and obligations of convention signatories. Australia has 63 sites, ten of which are located in Tasmania.

Little Waterhouse Lake has been listed under the convention as an internationally significant wetland. Accordingly this plan has been developed in accordance with Australia's Ramsar Management Principles. The lake was listed as a Ramsar Wetland on the basis of the following criteria (RAMSAR 1990):

- 1(b): it is a particularly good representative example of a natural or near-natural wetland, common to more than one biographical region; and
- 2(b): it is of special value for maintaining the genetic and ecological diversity of a region because of the quality and peculiarities of its flora and fauna.

As indicated, Little Waterhouse Lake has been modified by human use. On the other hand the nature of the wetlands of the Waterhouse area, being fresh water wetlands in a very sandy coastal environment in a temperate climate, make them quite rare and ecologically important. Little Waterhouse Lake, like many of the surrounding wetlands, is known to have naturally high nutrient levels and to be a very productive lake, supporting a high diversity of species. Species of particular conservation significance include: *Wolfia australis*, the smallest flowering plant in the world and a species considered rare in Tasmania; and, most probably (but unconfirmed) *Galaxiella pusilla* the rare Dwarf Galaxias.

Blackmans Lagoon is a wetland of national significance

Aims

- The aims for managing all wetlands are to:

- describe, protect and conserve their conservation values;
 - work with landowners, other special interest groups such as community and conservation groups, and State agencies to minimise impacts on the wetlands where possible; and
 - provide for continuing community and technical input into decision making and management.
- In particular, the aims for managing the Ramsar wetlands are to:
 - implement planning to promote conservation and promote wise and sustainable use, for the benefit of humanity, in a way that is compatible with the maintenance of values; and
 - provide better interpretation and information about values.

Prescriptions

- Any action which has, will have, or is likely to have a significant impact on the ecological character of the Little Waterhouse Lake Ramsar Wetland, will be referred to the Commonwealth Minister for Environment and Heritage to determine whether the action is subject to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- Continue to liaise with the Inland Fisheries Service with respect to the release of recreational fish species into the wetlands of the reserve.
- Liaise with, and support the Inland Fisheries Service with regard to assessment and monitoring of potential environmental impacts of the trout and salmon fishery in the reserve.
- Adopt, where feasible, the precautionary principle in relation to recreation use and development on and in the immediate vicinity of Little Waterhouse Lake.
- Ensure that relevant water users are adhering to the requirements of the *Water Management Act 1999* in their use of water from Blackmans Lagoon.
- Any applications for licences to extract water for commercial purposes from lakes in the reserve would be assessed, taking into account the environmental values and significance of the reserve and would not normally be approved.
- Assess the stability of dunes and the earthen wall that dams Little Waterhouse Lake, and undertake restoration or rehabilitation activities, if required (see Section 3.1).
- Update the Ramsar Information Sheet for the Little Waterhouse Lake Ramsar Wetland (see Appendix 1) to include a more comprehensive description of the lake and the ecological values for which it was listed.

Ramsar Wetland Management

Little Waterhouse Lake and its surrounding area has been included in a Natural Zone (see Section 2.3 and Map 3). Other prescriptions found throughout the plan relating to the management of Little Waterhouse Lake are listed below.

- Encourage the removal of existing development in the Natural Zone (see Section 2.3).

- Except for natural or cultural protection works, exclude other types of development, including visitor or private buildings or other structures and facilities (see Section 2.3).
- Survey and monitor water bodies in the conservation area and catchment to establish baseline information; identify environmental water requirements and identify changes that might threaten the ecological character of wetlands in the reserve (see Section 3.2).
- Liaise with other relevant agencies and neighbouring landowners to develop and implement strategies (such as buffer zones along watercourses) to reduce run-off of sediment, pesticides and fertilisers (see Section 3.2).
- Priority will be given to weed management strategies around Little Waterhouse Lake (see Section 4.4).
- The continued conduct of any commercial eel fishery within the Waterhouse Conservation Area will be subject to a regional fishery management plan when it is developed, until then the conditions of the current licence will continue to apply (see Section 4.6).
- No eel restocking will occur within the reserve unless authorised under an approved fishery management plan (see Section 4.6).
- To prevent the inadvertent drowning of platypus or other species, only eel nets fitted with a screen or set with a raised cod-end may be used in the reserve (see Section 4.6).
- Stakes used for eel netting will be removed at the completion of each season (see Section 4.6).
- Monitor Little Waterhouse Lake for human impacts and, where necessary, implement preventative or remedial actions (see Section 5.1).
- All fish stocking within the reserve is to be carried out under the strict supervision of the Inland Fisheries Service (see Section 5.6).
- Bait fishing in Little Waterhouse Lake will continue to be subject to a general authority (see Section 5.6).
- Bait fishing and bait collection is limited to the use of:
 - 'mudeyes' (dragonfly larvae), brought in or collected on site; and
 - wattle grubs, brought in from outside the reserve (see Section 5.6).
- PWS will liaise with and assist IFS in managing the impacts of bait fishing in the reserve, including the provision of information to anglers about acceptable bait and other requirements of the management plan and the monitoring of angler pressure on the lakes, particularly Little Waterhouse Lake (see Section 5.6).
- Proposals for manipulative changes to fish habitat including drainage changes and the damming of flood-affected lakes will be assessed according to the procedures established in Section 4.9 (see Section 5.6).
- Liaise with the Inland Fisheries Service on the dissemination of information to fishers (see Section 5.6).

- Prepare and disseminate information for local fishers publicising the changes to fishing regulations within the conservation area (see Section 5.6).
- Educate fishers about the environmental impacts of bait fishing and benefits of using lures (see Section 5.6).
- Encourage a more strategic and informed basis for restocking the lakes of the reserve (see Section 5.6).
- In recognition of its Ramsar status, as well as the need for a well distributed sanctuary system within Tasmania to provide for sustainable duck hunting, the taking of duck on Little Waterhouse Lake is prohibited (see Section 5.7).
- All duck hunting hides on Little Waterhouse Lake will be removed (see Section 5.7).
- The use of boats on Little Waterhouse Lake is restricted to un-powered vessels or vessels powered by electric motors with a maximum speed of 5 knots (see Section 5.8).

3.6 Aboriginal Heritage

European knowledge of indigenous history in the Waterhouse area is restricted to a combination of historical records and archaeological investigation of the sites created by thousands of years of Aboriginal occupation and use. There is now evidence which shows Aboriginal people have lived in Tasmania continuously from at least 37,000 years ago, spanning the coldest periods of human history.

The Waterhouse area was probably within the territory of the Leenerreter Band of the North East Tribe (Ryan 1996) and according to Ryan:

The North East people had heaths and plains behind their coast which they kept open and clear by firing. Game included kangaroos, wallabies, emus and possums. The coastline and the associated lagoons and estuaries provided abundant seasonal food resources, such as muttonbirds, swans, ducks, and seals. From late July to early September the eggng season enticed the bands to congregate around these lagoons and estuaries to collect the eggs of swans and ducks. In summer they hunted fur seals and in autumn muttonbirds. The coast and its immediate hinterland was capable of supporting a high Aboriginal population during most of the year...

Aboriginal people were also experienced sealers, using seal meat, fat and skins.

It is now clear from investigations that the extensive pattern of past occupation has resulted in the reserve possessing a richness of places, particularly in immediate proximity to coastal waters. According to the Register of the National Estate listing for the reserve:

The area contains important Aboriginal sites...including coastal shell middens, lithic scatters and a stone quarry adjacent to rock platforms...

Aboriginal places and landscapes have a strong and continuing significance to the Tasmanian Aboriginal community (see next Section). Places, where they exist within the reserve, need to be located and protected, particularly from the

impacts of development and visitor use. There is potential for the Tasmanian Aboriginal community to promote and interpret these places to the wider community and provide greater understanding of Aboriginal culture in the conservation area.

Management Issues

Aboriginal places are often found in areas of contemporary activity, which may threaten their conservation. Aboriginal values are currently being damaged.

Aims

- The aims of management of Aboriginal heritage, in co-operation with the Aboriginal community, are to:
 - identify and record places of Aboriginal heritage;
 - protect and conserve Aboriginal heritage;
 - interpret Aboriginal heritage; and
 - provide for special management conditions as necessary.

Prescriptions

- Improve the level of protection afforded Aboriginal places through prescriptions outlined in Sections 4.8, 5.2, and 5.4.
- In co-operation with users avoid or mitigate existing impacting processes on Aboriginal values.
- Aboriginal heritage values will be assessed and protected in accordance with both the aims and prescriptions of this management plan, and any agreed national or state charter or guidelines for Aboriginal places.
- Aboriginal places will not be publicised unless the place has been assessed, in co-operation with the Aboriginal community, for educational or interpretative use. Where applicable, make use of any agreed Aboriginal interpretation strategy.
- The Aboriginal community will be consulted on any undertaking or development which may impinge upon Aboriginal places.
- All proposed landscape modification, development, or maintenance within the reserve will be subject to the prescriptions of this management plan.
- As far as possible, development will be located well away from areas of Aboriginal heritage.
- Aboriginal heritage will not be deliberately disturbed for management, development or research purposes unless the Director determines there is no practicable alternative and a written authority has been issued under the *Aboriginal Relics Act 1975*.
- Report all Aboriginal places discovered in the reserve to the Director, in accordance with the *Aboriginal Relics Act 1975*.
- Monitor Aboriginal places for, and protect from, damage.

3.7 Historic Heritage

The post-contact history of the area around Waterhouse Conservation Area is briefly summarised below.

1798 Mathew Flinders and George Bass on their epic circumnavigation of Tasmania were the first Europeans to sail past and chart the northeast coast of Tasmania. They named Waterhouse Island, for the Captain of HMS *Reliance*.

1804-1810s Furneaux Archipelago sealers were probably the first regular visitors to this stretch of coast. Although there was some conflict, Aborigines allowed these white sealers to establish regular contact to conduct trade. According to Ryan (1996), trade commenced first at Cape Portland around 1804, ‘...and later along the whole north coast of Tasmania’. Sealers made annual visits to conduct trade with Aboriginal groups exchanging ‘seal and kangaroo skins for tobacco, flour and tea.’ According to Ryan:

By 1810 the North East people had begun to gather each November at strategic points along the northeast coast, such as Waterhouse Point... in anticipation of the sealers’ arrival.

Some Aboriginal women were taken forcibly, while others went more willingly, as partners to the white Furneaux Archipelago sealers

1810-1831 The Aboriginal population of the area appears to have plummeted under the influence of the European invasion. George Augustus Robinson conducted several searches through the Waterhouse area for Aborigines between 1830 and 1831. According to Ryan (1996) what he found were:

...remnant groups of desperadoes engaged in a tenacious war with the settlers...

1830s On the heels of Robinson, according to Jennings (1983):

The early thirties produced considerable interest in the North East from people eager to take up land left vacant by the removal of the aborigines [sic].

Holmes (1980) indicates the first land grants in the Waterhouse area occurred in 1830s, ‘including the original Waterhouse block granted to Williams Morgan Orr’. However Holmes indicates that following inactivity the original grants reverted to the Crown.

1837-1868 Captain Charles Hardwick and Thomas G Williams were next to select the Waterhouse block. According to Holmes (1980) Hardwick’s son Charles had commenced farming at Waterhouse by 1839.

1869-1873 Holmes (1980) indicates a stockman employed at Waterhouse found specimens of gold ore on the property, resulting in a stampede of miners. The town of Lyndhurst quickly established near the junction of the Waterhouse Road and Blackmans Lagoon Road. By 1870 approximately 1,000 people were living in the town, which boasted a courthouse, police station, four hotels, stores and dwellings. Tomahawk became an important port for the community, with a regular steamer service. The land for miles around was pegged with some 685 mining leases, and several shafts were sunk. The financial return on developed mines proved disappointing, and by early 1873 Lyndhurst had become a ghost town. Attempts to revive mining in the area occurred in the late 1870s, 1881, 1888 and 1907, but all were short lived.

1870-pre 1950s Holmes (1980) records that parts of the original Waterhouse grazing property were sold off in 1870, 1882 and 1889. The balance of the property also changed hands several times.

According to Steane (1995), under the management of successive graziers the pressure of burning, heavy grazing and introduced rabbits resulted in severe degradation of the coastal dunes.

1950s Significant advances in agricultural technology provided the means for much more intensive settlement and utilisation of the area. Under a joint State and Federal initiative, the Closer Settlement Board purchased Waterhouse Farm and other surrounding properties to sub-divide, principally for soldier settlement.

The leap in land values associated with the clearance, drainage and development of pastoral properties in the area led to major concern for the huge sand blows on the coast. In places these enormous mobile land forms threatened to engulf and bury new farms.

1955 The Sand Dune Reclamation Unit was established under the umbrella of the Lands Department. The unit was tasked with developing and implementing a reliable dune stabilisation system for north-east Tasmania. Over a period of 45 years the unit successfully stabilised vast tracts of land both within and beyond the reserve.

1966-1967 The Federation of Field Naturalists Clubs of Tasmania approached the Minister for Lands and Works about reserving a portion of the northeast coast heath and sand dune country. While there is no evidence the proposal proceeded further, the suggested land was never re-alienated as part of the closer settlement scheme.

1975 The Scottsdale Council wrote to the Minister for National Parks and Wildlife requesting the Crown land at Waterhouse be made a national park. In May 1976 Cabinet deferred the reserve proposal.

1980 The Waterhouse Protected Area was declared under Section 8 of the *Crown Lands Act 1976*.

The Physical Record

At the time of writing, research has revealed no systematic surveys of historical artefacts within the reserve. Anecdotal evidence indicates little readily identifiable physical record survives. A tip site adjacent to Homestead Road, near the entrance to the reserve, is of unknown origin but may be old. The remains of old fence lines can be seen at various locations within the reserve.

Social Heritage Values

The Waterhouse Conservation Area continues to have strong meaning and significance for several sections of the community.

Today, Tasmanian Aborigines have strong links and attachment to the northeast and continue to use the area. Many of the ancestral links for the Aboriginal community come from this region. People regularly get together for trips to the northeast participating in a range of activities including camping, collecting shellfish to eat, and collecting shells for necklaces. These types of activities help to reinforce the strong Aboriginal ties to the land, ties which have existed for thousands of years, illustrating the survival and continuation of Aboriginal culture.

Recreational users also have a long and continuing association with the area, an association that in instances may span several generations and time periods of perhaps sixty years.

Aims

- The aims of historic heritage management are to:
 - identify and record historic heritage sites in the reserve;
 - protect and conserve all remaining significant heritage fabric and features;
 - consult with the community on management changes;
 - maintain the integrity and authenticity of structural and other historic remains and movable heritage; and
 - present and interpret historic heritage.

Prescriptions

- Conservation and management of historic heritage in the reserve will adhere to the Burra Charter of Australia ICOMOS (Marquis-Kyle & Walker, 1992) and its associated guidelines.
- A conservation policy statement or conservation plan, including specific assessment of significance, will be prepared before any decisions about major works, use, removal or interpretation of individual elements within a heritage precinct or site.
- Accurate, detailed working documentation, appropriate to the scale and significance of the works, will be prepared prior to any conservation works and to record any conservation works ‘as built’.
- Identifiable community groups that may have a stake in management changes will, as far as practicable, be consulted on major cultural heritage driven undertakings or developments.
- Missing fabric elements may be reconstructed in accordance with a conservation policy statement or plan, but hypothetical reconstruction of built fabric will not be permitted.
- Laboratory conservation and curation will be sought for any items removed for protection, security or scientific purposes.
- Development or disturbance to the fabric of heritage sites will be strictly limited and controlled to retain their heritage integrity.
- Future developments and uses in any heritage site will benefit its conservation as an historic place or, at least, not detract from this.
- Unless approved by a conservation policy statement or conservation plan, new stand-alone buildings will not be permitted in heritage precincts or sites.

Section 4 Reserve Protection

4.1 Fire Management

The vegetation of the Waterhouse region has been exposed to periodic fire for thousands of years and fire is a natural part of the reserve environment. In some cases, fire maintains a diversity of plant communities by enabling more fire-tolerant communities (principally grasslands, heathlands and woodlands) to regenerate. Many heathland species are short lived, regenerating freely after fire. Fire management activities need to take particular account of the distribution and regeneration strategies of different plant communities.

Post European contact the area of the reserve was almost certainly subject to a high fire frequency. With changes in the pattern of agriculture in the last 50 years fire frequency has no doubt decreased, and according to Steane (in Holdsworth 1995) the incidence of bushfires in the last 20 years has been relatively low. Steane suggests this may be largely as a result of the pine plantations within the reserve, plantations that have been actively protected from fire.

The flammable nature of the heathland and grasslands, the area's isolation and its popular recreational use, makes the Waterhouse Conservation Area a high risk area for bushfire. Records indicate the following recent fires in the reserve:

- A fire occurred in the vicinity of Hardwickes Hill in September 1987, the cause was believed to be arson.
- A major fire in June 1993 burnt a large part the northern part of the reserve, west of Homestead Road right across to the eastern boundary. It was deliberately lit.
- In December 1996 an escaped campfire burnt extensive areas around South Croppies Point.
- In February of 1997 fire again broke out within the conservation area, burning much of Waterhouse Point north of Homestead Road. The fire necessitated the evacuation of many campers.
- Another fire in March of 1997 burnt an area at Ransons Beach.

The spate of fires in 1997 may have been connected to community antagonism as a result of the change of reservation status of the reserve in December of 1996.

Criticism has also been levelled at the Service regarding the use of bulldozers to control the recent fires. While the burnt bush appears to be now recovering fast, considerable evidence remains of damage caused by the use of heavy earth moving equipment for the construction of firebreaks. Most damage is associated with breaks established to protect shacks at Little Waterhouse Lake, Croppies Point, Waterhouse Point and Ransons Beach.

In the recent past controlled burning within the reserve has probably been restricted to small burns of marram grass nurseries, these being regularly burnt for management purposes.

The Parks and Wildlife Service is responsible under the *Fire Service Act 1979* and the *Fire Service Regulations 1981* for all aspects of fire management within the conservation area, including prevention, containment and suppression. The Director of National Parks and Wildlife has a duty of care to visitors and

surrounding landowners to take reasonable steps to protect them against loss or damage caused by a reasonably foreseeable risk of escape of fire. The Director may be liable for damage or injury incurred to the person or property of another which arises from a failure to discharge that duty.

Aims

- The aims of fire management are to:
 - protect visitors and staff;
 - protect neighbours and their property;
 - protect reserve facilities and assets; and
 - maintain or improve nature conservation values.

Prescriptions

- Prepare a fire management plan for the reserve. The prescriptions of this plan will form a basis for the fire management plan.
- Erosion control measures, particularly wind erosion status assessments, will be included in the fire management plans.
- Earth moving equipment will only be used as a last resort and where absolutely necessary to protect life, property or specific high conservation values.
- The use of earth moving equipment within the reserve must have the consent of the Senior Ranger, the District Manager or the Duty Officer.
- In responding to a fire, consult with an authorised representative of the Tasmanian Aboriginal Land Council (TALC) unless precluded by the urgency of the situation.
- Fire management will be undertaken in consultation with relevant authorities and local landholders.
- Fire management and suppression procedures will accord with the Inter-Agency Fire Management Protocol.
- Fuel reduction may be used for bushfire prevention and containment.
- Prescribed management burning may be undertaken.
- Existing vehicular tracks not open to the public will be maintained only if they are required for fire management.
- New fire management vehicular tracks will only be constructed within the reserve after assessment of requirements and impacts confirms the need.
- The fire management plan will address limiting the spread of *Phytophthora cinnamomi*.
- Fires will be prohibited in the reserve during periods of high to extreme fire danger, as well as during days of Total Fire Ban.
- When fire danger conditions warrant, all or some areas of the reserve may be closed to visitors.

- Consider programs to explain fire management policies and fire safety procedures to summer visitors.
- Additional fire management prescriptions are contained in Sections 3.5 and 3.6

4.2 Introduced Fauna

Exotic mammals within the reserve include the house mouse *Mus musculus*, black rat *Rattus rattus*, cat *Felis catus*, rabbit *Oryctolagus cuniculus* and possibly goat *Capra hircus*.

According to anecdotal accounts it is not unusual that both sheep and cattle escape into the conservation area. In places boundary fencing is in poor condition.

Other introduced species includes trout, managed by the Inland Fisheries Service.

Aims

- The aims of management of introduced fauna in the reserve are to:
 - eradicate introduced species where this is feasible and warranted by the damage being caused; and
 - control and manage introduced species where eradication is not possible or warranted.

Prescriptions

- Investigate impacts of exotic fauna species on natural values and establish baseline data to monitor population fluctuations.
- Develop and implement an integrated exotic fauna management plan.
- Eradication will only be attempted where non-target species are not threatened by the proposed methods, unless the threat from the introduced species is greater than the threat from eradication methods.
- New introductions of fauna will not be permitted without an approved comprehensive scientific assessment.
- Liaise with neighbouring landowners about the need to upgrade and maintain boundary fences.

4.3 Phytophthora Protection

Root rot *Phytophthora cinnamomi* is known to be present within the reserve (Driessen and Holdsworth, in Holdsworth 1995). The continued spread of this disease in the reserve will inevitably result in a loss of plant diversity and a corresponding flow on effect for fauna. Management and recreational activities should be designed to minimise the spread of this pathogen (Bryant and Holdsworth, in Holdsworth 1995).

Aims

- The aims of *Phytophthora* protection are to:

- limit the spread of *Phytophthora cinnamomi*; and
- educate the community in *Phytophthora* prevention hygiene measures.

Prescriptions

- All practicable steps will be taken to prevent further introductions or spread of *Phytophthora*.
- As far as possible, all materials for upgrading roads and landscape works will be obtained from within the reserve. Any imported soil, fill or crushed rock used in any construction project will be obtained from sites where *Phytophthora* has not been found, using *Phytophthora*-free machinery.
- As far as possible, all plants used in planting works will be obtained by propagation, in *Phytophthora*-free soil or other medium.
- Visitors will be encouraged to wash equipment and vehicles prior to coming to the reserve.
- Undertake periodic surveys of *Phytophthora* prone areas to monitor the disease status of the reserve.
- Educate visitors about the *Phytophthora* threat to the reserve.
- Establish, disseminate and enforce guidelines for the entry into the reserve of all earth-moving vehicles and machinery.

4.4 Weeds

The techniques developed by the Sand Dune Reclamation Unit (see Section 3.7) relied heavily upon the planting of marram grass *Ammophila arenaria*, introduced from Europe, and to a lesser extent coast wattle *Acacia sophorae*, spinifex *Spinifex sericeus* and radiata pine *Pinus radiata*. Since establishment the unit has, as a consequence, been responsible for planting exotic species across hundreds of hectares of land both within and beyond the current reserve boundaries. The reliance on marram grass was based on the extraordinary hardiness of the species, which can successfully colonise raw primary dunes in the harshest of conditions. Once stabilisation has occurred, with improved site conditions in many areas, native species can be observed to be successfully invading and replacing the marram.

In recent years marram grass has been increasingly regarded as an environmental weed. The sand ecology of dunes planted with marram is distinctly different to dunes bound by native species. On the far southwest coast marram grass is suspected to have infested areas as far as 110 kilometres away from the nearest planting area. Studies indicate the species can successfully out-compete many native dune species. It is also likely there are flow on effects to fauna habitat.

The reserve still contains large 'nursery' areas of marram grass, areas where the grass maintains a thick, healthy, vigorous cover through the application of fire and fertiliser. These areas have in the past been harvested for marram runners for the works of the Sand Dune Reclamation Unit.

The reserve also contains many hectares of pine forest. Many of the pines have reached a size where they represent a considerable commercial asset to the

Service. Plans are current to harvest three of the most accessible and healthiest plantations within the reserve, one at Blackmans Lagoon, and two near the southern extremity of the reserve, accessed through private land. While concern has been expressed that removal of the pines may result in dune destabilisation, a timber harvest plan (Howe, Howell & Alexander, 1998) judges this is not likely to be a problem. The plan provides for the retention of a 10 metre strip along the seaward flank of harvested areas and native bush revegetation.

According to Steane (in Holdsworth, 1995), pasture and woody weed invasion from surrounding farmland is a major management issue.

A species of willow *Salix sp.* is found on the edge of Little Waterhouse Lake (Blackhall in Holdsworth, 1995).

Many exotic plantings are associated with human occupation sites within the reserve, including cotoneaster, blue gum, cootamundra wattle, fruit trees, exotic grasses and perennials such as daffodils.

Thistle has been introduced into the reserve along the edges of the road into Big Waterhouse Lake. It was almost certainly introduced with road gravel used to upgrade the road.

Sea spurge *Euphorbia paralias* has become a major weed of the reserve, spreading throughout the coastal dune complex, particularly in areas of disturbance. It is also likely that several other weed species are present in the coastal sand dune complex including beach daisy *Arctotheca populifolia* and various cakiles including *Cakile edentula*.

Aims

- The aims of weed management in the reserve are to:
 - eradicate weeds where practical; and
 - control and manage weeds where eradication is not practical.

Prescriptions

- Weed management will be linked with:
 - protection of geodiversity and geoconservation values;
 - erosion control; and
 - revegetation works.
- Eradication or control of introduced plants will only be attempted where non target species are not unduly threatened.
- Weed eradication, control, and containment actions and priorities will be based on clear, well documented contemporary knowledge or, where necessary, additional research which:
 - identifies species requiring priority for weed control;
 - identifies areas where introduced plants should be eradicated or controlled, and where they should be retained for their cultural interest or as a means of environmental protection;
 - assesses any threat plants of heritage significance pose as environmental weeds;
 - specifies methods of removal and disposal of weeds;
 - identifies protocols for the use of herbicides and fertilisers;
 - prescribes the appropriate time of year for control; and
 - outlines the structure of any further research into the most effective means of control.
- Priority will be given to weed management strategies around Little Waterhouse Lake.

- Pine plantations will be systematically replaced by endemic native species.
- Volunteers will be sought to assist in control and eradication where suitable planned and programmed works and effective supervision is available.
- As far as possible, all materials brought into the reserve for upgrading roads and landscape works will be weed free.
- It is recommended that weed management in the reserve be tackled as a component of a District-wide weed management plan.

4.5 Reserve Boundaries

The sprawling linear nature of the Waterhouse Conservation Area provides for management difficulties. Many existing boundaries appear to have little to do with ecological boundaries, particularly around the major water bodies of the reserve and along the narrow corridor of land extending to Tomahawk Point. The conservation values of the latter section of land are severely compromised by inappropriate camping activity.

The boundaries of the reserve do not include Tomahawk Island. This is considered a major oversight, the island is:

- close offshore from the reserve,
- Crown land,
- free of any lease or licences, and
- in possession of important natural values.

It is unclear whether two Crown blocks at Tomahawk Point are part of the reserve.

Aims

- The aims for boundary changes are to:
 - provide where possible, ecological boundaries;
 - provide boundaries that are clearly justifiable from a conservation perspective; and
 - maximise the clarity of the legal and enforcement environment.

Prescriptions

- If the opportunity arises, incorporate any areas, including marine areas, which will improve the integrity of the conservation values of the reserve.
- Review the boundaries of the conservation area and recommend appropriate new boundaries, particularly in relation to the narrow corridor of land out to Tomahawk Point, Tomahawk Island, and the two Crown blocks on Tomahawk Point.

4.6 Leases, Licences, Written Authorities

The following agreements provide for activities within the conservation area:

- 10 annual licences for shack sites issued under the *Crown Lands Act 1976* (see Section 5.3);
- an exploration license issued under the *Mineral Resources Development Act 1995* (see Section 4.7);
- an apiary licence, issued under the *Crown Lands Act 1976*;
- a licence to conduct an eel fishery, issued under the *Inland Fisheries Act 1995* and an associated permit issued under the *National Parks and Reserves Management Act 2002*; and
- written authorities issued under the *National Parks and Reserved Land Regulations 1999* to undertake a range of activities including bait fishing, hunting, horse riding and bringing dogs in the reserve (see Section 5).

The apiary licence enables the holder to place no more than 200 hives at eight specified locations within the reserve, subject to certain conditions.

During eel fishing operations eels are netted from Blackmans Lagoon and Big and Little Waterhouse lakes. The fishery has been largely based on a natural population supplemented by stocking by Inland Fisheries and the eel fisher.

Management Issues

The impact of a commercial eel fishery on the lakes of the reserve, particularly associated with a restocking program, is poorly researched and understood. Lack of knowledge has particular significance for Little Waterhouse Lake, given that it is a wetland of international significance (see Section 3.5). It is possible that impact on natural values is occurring.

In the past, eel fishing at other locations around the State has resulted in a by-catch of platypus, usually resulting in the death of these animals. Platypus have not been recorded in the reserve, but they have been recorded in streams close by.

While netting for eels, vertical timber stakes are driven at intervals along the margins of water bodies. Of minor aesthetic concern, in the past these stakes may have been left standing from year to year.

With the change in reservation status of the reserve (see Section 1.3), licenses issued under the *Crown lands Act 1976* need to be issued under the *National Parks and Reserves Management Act 2002*.

Aims

- The aims for managing leases are to:
 - protect and conserve natural and cultural values.

Prescriptions

- The continued conduct of any commercial eel fishery within the Waterhouse Conservation Area will be subject to a regional fishery management plan when it is developed. Until then the conditions of the current licence will continue to apply.
- No eel restocking will occur within the reserve unless authorised under the above fishery management plan.
- To prevent the inadvertent drowning of platypus or other species, only eel nets fitted with a screen or set with a raised cod-end may be used in the reserve.

- Stakes used for eel netting will be removed at the completion of each season.
- All new leases, licences and written authorities will be consistent with the aims and prescriptions of this management plan.
- Subject to the *National Parks and Reserves Management Act 2002* and this management plan, leases and licences to provide services within the reserve may be issued for tourism, recreation, or education purposes.
- Written authorities to conduct infrequent, organised events or activities within the reserve, of not more than one week duration, may be issued by the Director. Where Section 25B of the *National Parks and Reserves Management Act 2002* applies, a business licence will be required.
- Leases, licences and written authorities may be issued for any of the Zones in the reserve, provided that they conform with the aims and prescriptions for that Zone.
- An environmental impact assessment may be required before lease, licence or written authority proposals are considered. A detailed site plan may also be required.
- Compliance with the terms and conditions of leases and licences will be monitored and reviewed prior to any renewal.

4.7 Prospectivity and Mining

As indicated in Section 2.2, the reservation status of the reserve provides for the sustainable use of the area's natural resources, including mining activity.

The Mathinna Beds which outcrop in a restricted part of the area have some potential to be mineralised with gold.

At present there are no mining leases or retention licences within the reserve. There is one exploration licence extending into the southeast corner of the reserve.

All exploration activity undertaken within the reserve requires the approval of the Mineral Exploration Working Group which has Parks and Wildlife Service representation and must accord with the *Mineral Exploration Code of Practice*.

Should mineralisation warrant bulk sampling, a mining lease would normally be required. Dependent on the scale of the proposal, Environment Tasmania will make an assessment of the proposal under the *Environmental Management and Pollution Control Act 1994* and set conditions to be incorporated in the permit. Environmental conditions, performance and rehabilitation bonds will normally apply.

Should a mining operation be proposed, a change in scale of the former approvals would trigger re-assessment of the performance bond and the permit. The proponent's environmental management plan, normally drafted by consultants, provides the basis for assessment, public comment, approval and permit conditions.

Aims

- To ensure that exploration, or any subsequent extraction and rehabilitation are undertaken in accordance with best practice to provide maximum environmental protection.

Prescriptions

- Mineral exploration shall be conducted in accordance with conditions laid out in the *Mineral Exploration Code of Practice*.
- Extraction will be subject to the *Quarry Code of Practice* and environmental assessment as required by State legislation including the *Environmental Management and Pollution Control Act 1994*, the *Mineral Resources Development Act 1995* and the *Mining Act 1993*.
- Rehabilitation shall be carried out on all activities associated with mineral exploration and mining activity.
- Exclude the area zoned as Natural surrounding Little Waterhouse Lake (see Map 3) from all future exploration and mining activities. This exclusion is made on account of the Ramsar listing of the lake.
- Exclude the coastal strip 100 metres back from high water along the entire coast of the reserve from all future exploration and mining activities. This exclusion is made on account of the Aboriginal heritage values in the area.

4.8 Exercise of Statutory Powers

Section 27(6) of the *National Parks and Reserves Management Act 2002* establishes that a management plan may prohibit or restrict the exercise of any statutory powers (within the meaning of the Act). The following statutory powers will be restricted in their exercise in the Waterhouse Conservation Area.

Inland Fisheries Service

- The exercise of statutory powers by the Inland Fisheries Service, its staff or agents, or to the granting of any right for any commercial purpose within the reserve, may only be done in consultation with, and with the agreement of, the Director of National Parks and Wildlife. Such agreement may be reached through a regional fishery management plan prepared by the Inland Fisheries Service.

4.9 Development Works & Resource Utilisation

Development works can range from manipulative research, construction of a road, camping area or toilet, through to constructing or renovating buildings, and installing or repairing services. Development works can also refer to commercial or industrial uses of coastal areas within the conservation area. Resource utilisation refers to the controlled use of natural resources, including as an adjunct to utilisation of marine resources, mineral exploration activities, and the utilisation of mineral resources.

Aims

- The aims of managing development works and resource utilisation are to:
 - provide for development or resource utilisation in identified locations;
 - minimise their impacts on conservation area values;
 - protect and conserve tourism and recreational values; and
 - foster public confidence in developments and resource utilisation.

Prescriptions

- All development will accord with this management plan.
- The best available and practicable technology will be used to protect environmental quality from human impacts.
- Toilets will be managed to ensure that adjacent water bodies are not polluted by waste discharge.
- Assess all proposals for minor works, research, or maintenance involving any ground breaking, disturbance, or environmental manipulation of any kind in accordance with procedures approved by the Director.
- Unless already detailed in a site plan, all major development and resource utilisation proposals will require a comprehensive environmental and heritage effects assessment in accordance with guidelines established by the Service.
- New development proposals will define planning, design objectives, and performance standards in a site plan. Documentation must include environmental standards and the extent and quality of visitor and management facilities and services.
- All works and resource utilisation will meet applicable statutory requirements.
- Erosion, particularly wind erosion status assessments, will be included in development proposals where there could be an impact on dune stability.
- Site plans will be available for public comment for a period of not less than thirty days prior to approval, and subsequently whenever modifications are proposed.
- Provide visitors with on-site information about the intent and progress of any significant developments.
- Proposals to develop tourism and recreational opportunities, facilities, or services will:
 - base themselves on the features and values of the reserve;
 - adopt environmentally sustainable operating practices, and use environmentally 'best practice' goods and technologies;
 - behave and operate in a manner compatible with protection of features and values;
 - explain the principles of minimal impact on environmental and heritage values to clients;
 - avoid impact on the legitimate enjoyment and experience of the reserve's features and values by others; and

- contribute to any external costs (for example road or sewerage upgrading) resulting from the proposal.
- Tourism and recreation development proposals will provide a clearly demonstrated benefit to the Tasmanian community.
- All commercial development proposals will submit a detailed business and financial plan showing at least a three year projection of operations, demonstrating economic viability while according with this management plan.
- The extent of any financial, infrastructure, managing authority services, or environmental resource subsidy of a tourism or recreation proposal will be made explicit and public.
- Tourism and recreation in the reserve will directly and identifiably assist meeting the costs of researching, conserving or managing the reserve.

Section 5 Visitor Management

5.1 Visitors to the Conservation Area

The greatest use of Waterhouse Conservation Area is for summer camping. Other popular uses of the reserve include hunting, fishing, diving, boating and sailing, recreational vehicle use and horse riding.

The Waterhouse Coastcare Group carried out a survey of visitors during the summer of 1997-98. The survey indicated that at peak times the reserve may have well over eight hundred visitors, most of them staying between one night and four nights. Compared to many other reserves within the State, this represents a very high number of 'user nights'. The survey confirmed the family orientation of visits to Waterhouse. Families, according to the survey, come to the area for a wide variety of reasons including, in descending order:

- relaxing;
- fishing;
- beach combing;
- four wheel driving;
- exploring the flora and fauna; and
- hunting.

The survey indicated that 35% of respondents were intending to stay for 4 nights or less, while 14% intended to stay for 4 weeks or longer. The survey confirmed that camping activity tended to be concentrated around Waterhouse Point with almost 70% of people surveyed during mid-summer staying in that area.

Only 11 percent of people surveyed indicated this was their first visit to the area, while 54% indicated they had been using the area for 10 years or more and 8% indicated they had been coming for 35 years or more.

Campers considered the biggest threats to the conservation area to be, in descending order:

- bush fire;
- lack of a management presence;
- camper attitudes;
- recreational vehicle abuse; and
- too many campers.

General Prescriptions

- Provide for the further development of appropriate recreational facilities, while minimising impact on area values.
- Inform visitors of appropriate minimal impact use of the reserve (see Section 5.11).
- Require visitors to take their garbage with them.
- Forbid the cleaning of vehicles and boats within the reserve.
- Monitor Little Waterhouse Lake for human impacts and, where necessary, implement preventative or remedial actions.

5.2 Camping

Camping is probably the most popular recreation activity within Waterhouse Conservation Area. Camping varies from a small overnight tent to standing camps in the reserve over summer.

Many of the region's residents claim a special long-term attachment to the area as a location for 'free range' summer camping. Groups and families return to the same spot year after year, establishing large standing camps that may include tents, caravans, generator sets, boats and several cars. Camps may be established for a week or may extend right through the summer period. Some camps are established early in December, many remain occupied until the return of school in mid February, and some may be left standing until the end of Easter.

The major concentrations of camping activity are Blackmans Lagoon, Big Waterhouse Lake, South Croppies Point, Herbies Landing, Waterhouse Point, Ransons Beach and Tomahawk Beach. Each area is briefly described below.

Blackmans Lagoon: Established at the southern end of the lagoon, under the cover of a pine plantation, this camping area is particularly popular at the opening of the trout season. A long drop toilet and barbecue have been provided. This camping area will most certainly lose appeal if the pine plantation is harvested (see Section 4.4).

Big Waterhouse Lake: On the northern shore of the lake is a small camping area used mainly by duck shooters, but also sometimes by fishermen. No facilities are provided.

South Croppies: Camp sites are dispersed around the northern side of the point, the junction of South Croppies Road, and the track to the southern side of the point. No facilities are provided. The camping areas on the northern side of the point are located over Aboriginal heritage sites.

North Croppies: The overgrown condition of the track to the point discourages most users, so this area receives only occasional use.

Blizzards Landing: This site is exposed and windy and no facilities are offered. It is however often used for caravan camping during the summer.

Herbies Landing: This summer camping area has been rapidly expanding into the bush. No facilities are provided. Aboriginal heritage conflicts occur over some sites.

Waterhouse Point: The largest of the summer camping areas, several sub-areas can be separately identified on the point:

- On the western side, immediately behind the beach is a camping area known locally as the Village Green. A long drop toilet has been provided for camper use.
- On the north-east extremity of the point, at Mathers (see Map 5) is a series of beach camp sites. These sites are, according to anecdotal reports, expanding rapidly with the destruction of coastal vegetation. The beach in this area is receding fairly rapidly, possibly as a result of wave action. The area is underlain by an Aboriginal site.
- About half a kilometre south of the above site another track emerges onto the northern end of Ransons Beach at Brads, providing camping, beach and boat access. Aboriginal heritage sites occur within the camping area.
- Many additional camp sites are located well back from the beach, screened from the summer winds in clearings in the thick bush along the maze of vehicular tracks that wind through Waterhouse Point. A single toilet has been provided. Many sites are expanding.

Map 5 Recreation Facilities

Ransons Beach: Two sub-areas have been identified:

- At Langleys (see Map 5) where a toilet has been provided. Limited Aboriginal heritage conflicts have been identified.
- At the end of Homestead Road in the vicinity of the two shack sites. No facilities are provided.

West Tomahawk Beach: Several free range camping areas have established on the back side of the narrow fore-dune within the very narrow strip of the conservation area extending across to Tomahawk Point. These areas are usually accessed from the West Wyambi Road across private property.

Management Issues

Aboriginal Heritage Sites: Surveys have revealed that some of the camping areas in the reserve are over the top of sites and may be damaging values.

Site Structures: When occupying a site all summer the development of fixed structures often occurs. Such structures are typically built of wood and sheet metal and are of a permanent or semi-permanent nature. Examples include fireplaces, toilets, screened seating areas, shelters, and fences. Historically the development of shacks has been a natural progression of this activity. To curtail this trend management has at different times enforced construction bans, and at the end of each summer systematically demolished structures. Generally in the past visitors have been allowed to retain a fixed fireplace, a long-drop toilet enclosure and simple seating.

Lack of Facilities/Fouling around Camp Sites: Few toilets are provided. They are all 'long drops' and likely have consequences for ground water quality. Some campers provide their own 'long drop' facilities, often crudely built structures scattered through the bush. Some campers litter the bush with excrement and toilet paper.

Incremental Expansion of Sites: Over the years the number of cars, caravans, tents and amount of equipment associated with each group has tended to incrementally increase. This has been accompanied by an incremental expansion of each camping site, necessitating more tree and scrub removal and more disturbance. There has also been a gradual addition to the total number of camping sites in the reserve.

Camp Fires: The traditional open wood fire remains the focus of the evening camp. Camp fires poorly attended or poorly extinguished may result in wildfires. Firewood is often collected locally, causing the removal of all fallen dead wood in the areas of camping and the inevitable destruction of live trees. This has caused significant habitat damage, particularly as many fauna species rely upon the accumulation of dead wood. Many campers do bring in their own firewood.

Restriction Upon Access by Other Users: A few camp sites, because of their size or location, tend to block other people's access, particularly to beach areas.

Inappropriate Camper Behaviour: Inappropriate behaviour may include alcohol abuse, loud noise and inappropriate use of recreational equipment like trail bikes and surf skis.

Pets: Many campers bring family pets, mostly dogs, but sometimes other animals including cats. These animals are capable of significantly impacting natural values. With the recent change in the reserve status at Waterhouse owners must be duly authorised to bring pets in.

Exotic Plantings: Some camp sites, particularly long established ones, have exotic plantings associated with them. Exotic plantings include cotoneaster, blue gum, cootamundra wattle, fruit trees, exotic grasses and perennials such as

daffodils. Exotic introductions may become serious threat to the integrity of the natural flora and fauna of the reserve.

Dune Damage: Some camp sites are located in primary dunes. As indicated in Section 3.1, sand landforms are sensitive to disturbance.

Lack of a Booking System: The lack of camper regulation leads to an annual rush for campers to claim their own special camp sites, leading to pre-season stakeouts, accusations of claim jumping and occasional open disputes. The Service is often placed into a position of providing dispute resolution in lieu of a booking system.

Notwithstanding the many issues surrounding the pattern of camping within Waterhouse Conservation Area, the Parks and Wildlife Service has limited capacity to respond and facilitate change because of funding restraints. At present camping within the reserve is free, it being one of the last areas within the State to provide camping without cost.

Aims

- To provide visitors with an enjoyable camping destination that has minimal impact on the values of the reserve, and that provides visitors safety, tranquillity and certainty.

Prescriptions

- Improve camping arrangements by preparing site plans for all camping within the reserve, in consultation with users and giving consideration to the following:
 - establishing maximum camp site numbers;
 - providing boundaries to individual camp sites;
 - the standardisation of fire places at individual camp sites; allowing camp fires only at these locations;
 - development of a booking/regulatory system;
 - development of a sign system;
 - maximum duration of stay;
 - provision of toilets, including consideration of the compulsory use of personal portable environmentally acceptable toilets;
 - creation of a new, short term camping area;
 - the creation of generator free areas and/or curfews;
 - the creation of dog free areas;
 - providing a revenue stream for maintenance through the implementation of camping fees;
 - free camping for the first 48 hours; and
 - promoting environmentally and socially sustainable camping behaviour.
- Confine camping to designated areas at Blackmans Lagoon, Big Waterhouse Lake, South Croppies, Waterhouse Point, Ransons Beach and the western end of Tomahawk Beach.
- Grant a general authority to visitors to bring dogs into the reserve, provided they are not being used for hunting, and subject to the following minimum conditions:
 - dogs must be kept under close control at all times; and
 - owners must ensure there is no disturbance to wildlife and other visitors.This general authority is to be granted through the display of appropriate signs.
- Dogs being used for hunting are covered by separate prescriptions in Section 5.7.

- No other pets may be brought into the reserve.
- While the collection of firewood from within the reserve is generally prohibited, the Ranger may allocate fire wood collection zones from time to time.
- Consider how the sale of camper firewood can be achieved.
- Bringing in and planting of exotic plant material in the reserve is prohibited.
- Close the following camping areas:
 - on the north side of South Croppies over the known area of Aboriginal midden material;
 - at Brads, only at those sites closest to the beach;
 - at Herbies Landing where it is located over Aboriginal midden material;
 - at North Croppies Point;
 - at the eastern end of Tomahawk Beach due to the environmental sensitivity of the narrow coastal dune; and
 - at any other non-designated camping sites.
- Open, in consultation with campers, replacement camping sites in the reserve. Development must be in accordance with an approved site plan, the provisions of Section 4.8, and must be extensions to camping areas approved under this plan.
- Where Aboriginal sites are located at or near campsites, consultation with the Aboriginal community shall occur regarding the management of those campsites, preparation of site plans, and the installation of toilets and associated camping facilities.
- Free range camping shall not be permitted on Aboriginal sites.
- Manage camping areas to minimise future erosion and consequent damage to Aboriginal heritage values.
- Direct vehicular traffic off Aboriginal midden material at the camp site near Langleys (see Map 5).
- Unauthorised construction of all permanent or semi-permanent camping related structures within the reserve is prohibited.
- Remove all unauthorised structures from camping areas.
- Prohibit the discharge of wastes, including portable toilet waste, in the reserve.
- Develop and implement a suitable information dissemination program to inform campers of the changes taking place.

5.3 Shacks

As indicated in the previous Section the area has a history of establishment and incremental development of semi-permanent summer occupation sites, spanning perhaps a sixty year period. Historically some of these well-used occupation sites gradually became shacks.

This incremental, and often illegal development of shacks has long been recognised as a management issue. In 1975 Scottsdale Council criticised the Lands Department for its inability to control development and in September 1976 the Examiner carried a story which read:

Scottsdale Council has agreed that shacks on the foreshore in the Waterhouse area are detrimental to proper management and agreed phasing out was a likely solution to the problem.

In discussions between the Lands Department and Scottsdale Council in July 1981 Council reiterated opposition to their existence and pushed for a phase out. The Director-General of Lands agreed with this approach and issued 10 temporary annual licences to the existing shack owners. The date of 1 September 1986 was established as the cut-off, beyond which these licences would no longer be renewed.

In February 1987 licence holders received correspondence indicating their shacks could remain, continuing under annual licence. However a Ministerial letter to a shack owner in 1990 indicated:

The area is considered to be of high conservation value, hence ultimate removal of the remaining shacks is still considered desirable.

At present there are 10 licensed shack sites within the conservation area, one at Tomahawk Beach, two at Ransons Beach, two in the Waterhouse Point area, one at both North and South Croppies and three at Little Waterhouse Lake.

Conservation Conflicts

Many of the shacks present conflicts with the conservation of the reserve values. For instance they may:

- have inadequate waste disposal systems;
- be visually intrusive;
- be located within sensitive coastal dune and beach areas;
- be fenced and gated to exclude the public;
- include a collection of out-buildings;
- require associated access tracks;
- require a level of fire protection and emergency fire response that is generally inconsistent with conservation of flora values;
- have pets associated with their use;
- have associated access tracks or require beach transits;
- pose conflicts with Aboriginal heritage values; and
- be surrounded by exotic plantings.

Legislative and Policy Conflicts

Most of the shacks are unlikely to conform with the Council planning scheme, the *Building Code of Australia* and public health regulations.

It is clear the existence of the shacks in the reserve is becoming increasingly inconsistent with evolving State policy. The *State Coastal Policy 1996* directs, among other things, that within the coastal zone:

- shack expansion on public land not be permitted;
- free public access should be maintained where possible;
- mobile landforms should not be built upon; and
- that maintenance of water quality is critical.

Resource Conflicts

During the recent bushfires in the reserve (see Section 4.1), considerable effort was directed at protecting the shacks from fire damage. The use of heavy earth moving equipment resulted in major damage to flora and sand features. The

direct cost of this protection and post-fire rehabilitation work is substantial. With security of tenure and the improvements bound to follow, the onus to increase levels of protection will increase.

The direct cost of administering shack licences can be high.

Blackmans Lagoon

Adjoining the conservation area, on the edge of Blackmans Lagoon, is a small parcel of Crown land with five shacks located on it. This land has had shacks associated with it since at least the 1950s. Records indicate the Crown Lands Department became the managing authority in 1978 when it was transferred to them from the Closer Settlement Board. Licence conditions over these lots have allowed transfers and additions by approval, both of which have occurred often. These shacks have direct bearing on the water quality of Blackmans Lagoon within the conservation area. The small area of land associated with each shack may well preclude an appropriate waste disposal system.

A Policy Process

The shacks within and adjacent to the Waterhouse Conservation Area, like many throughout the State, have provided their owners uncertainty with respect to long term tenure. This uncertainty has presented both owners and the State with management issues, and provided the major incentive for the development of a new legislative instrument, the *Crown Land (Shack Sites) Act 1997*. This Act provides a framework and process for making decisions on long term tenure, based on performance criteria.

The Minister has already indicated that 'other than in exceptional circumstances' shack sites within Waterhouse Conservation Area will not be converted to freehold tenure. Further the Minister has defined a set of criteria to apply in deciding whether a shack should be physically removed, including if it:

- is necessary to protect Aboriginal heritage;
- is located on actively mobile dunes;
- gives rise to significant management costs or difficulties;
- results in environmental degradation; and/or
- if it harms or interferes with natural values.

Prescriptions

- The future of all shacks in the Waterhouse Conservation Area will be in conformity with the conclusions of the shack categorisation process being undertaken by the Crown Land Services Branch of the Department of Primary Industries, Water and Environment.

5.4 Vehicle Use and Access

Many people use vehicles within the reserve to reach destinations where they undertake recreational activities such as fishing, camping or sight seeing. However, for some users the more important attraction of several of the tracks, trails and routes in the area is the challenge of driving them. Conventional two wheel drive vehicles, four wheel drive vehicles, dune buggies and motorcycles are all used within the reserve.

While there are only three minor roads providing access into the conservation area there are a range of other vehicular entry points into the reserve, and within the reserve is a network of vehicular tracks, trails and routes.

Existing Tracks and Routes

A four-wheel drive track provides access to the southern tip of the reserve from Waterhouse Road, crossing fenced and gated private land. Once in the reserve this track branches several times, providing access to Sand Dune Reclamation Unit work sites and the beach. Following recent trouble and disturbance from recreational vehicle users, the owners of the private land are currently keeping access gates locked.

A four wheel drive track extends from the end of the Blackmans Lagoon Road out to the surf beach, providing vehicular access to the southern part of the reserve via the beach. Around Blackmans Lagoon a network of unofficial tracks has developed, providing anglers access to the back of the lagoon for fishing and camping.

Homestead Road, after entering the reserve has side tracks providing access to South Croppies, Little Waterhouse Lake, North Croppies, Herbies Landing, Waterhouse Point and several points along Ransons Beach. All of these side tracks divide again, often multiple times providing access into a range of locations, including shacks, camp sites day use areas and beaches.

A rough track extends from the end of the West Wyambi Road across private land and then into the reserve across the coastal dune, providing access to Tomahawk Beach.

Also within the reserve is a complex series of trails, many of which are regarded as strategically important for fire protection, while others serve less apparent purposes. A few have been actively 'closed' to the public through the construction of physical barriers.

Beaches within the reserve are an important component of this unofficial trail system. There are very few beaches within the reserve that are not currently vehicular accessible, and vehicles are regularly observed on all the major beaches, as well as the coastal dunes of the reserve. As well several 'through routes' exist along the beaches of the reserve including:

- Waterhouse Beach, from the end of the Blackmans Lagoon track to Little Waterhouse Road at South Croppies Point;
- Ransons Beach, from Waterhouse Point through to the eastern extremity of homestead Road; and
- West Tomahawk Beach, from the end of Homestead Road through to the West Wyambi Road.

Maintenance responsibility for the reserve's road network lies with the Parks and Wildlife Service.

Current Regulation

A sign at Ransons Beach indicates the beach and associated through routes is closed to all traffic from 1 December until after Easter. The prohibition has been little enforced.

A sign at Blackmans Lagoon indicates the track providing access to the back of the lagoon and to the ocean beach is closed to vehicles and is only available for walking. The prohibition is not enforced.

Off road vehicles such as dune buggies, all-terrain vehicles and trail bikes are all required under the *Traffic Act 1925* to carry, at minimum, Restricted Registration to be operated on the Crown estate. To use such vehicles within the Waterhouse Conservation Area users must have:

- an appropriately registered vehicle;
- be a holders of a current drivers licence of the appropriate class (and therefore must be 16 years old or older; and

- must be in possession of a written authority issued by the Parks and Wildlife Service to operate the vehicle within the reserve.

Management Issues

The inappropriate use of vehicles is associated with many management issues:

- Use of recreational vehicles on the States beaches is in direct conflict with the protection of coastal birds and almost certainly causes the annual destruction of eggs and chicks of hooded plover, red-capped plover, pied oystercatcher and fairy tern. The relatively low abundance of hooded plover within otherwise ideal habitat indicates that vehicular activity may already be having a significant impact.
- Inappropriate vehicle use can cause considerable vegetation damage leading to erosion, habitat damage, visual scarring and to the destabilisation of sensitive dune formations and sand blows.
- Once tracks are established other impacts may follow, including use of tracks by feral predators such as cats, increase in fire risk, and further spread of *Phytophthora*.
- The inappropriate use of vehicles in the reserve may impact on the quality and safety of the recreational experience of other users, who come for the peace and quiet of a natural setting. Shack residents at Blackmans Lagoon have for instance made complaints about excessive noise from vehicle abuse in the immediate vicinity of their shacks, particularly from motor bike riders.
- Many current vehicle users within the reserve fail to comply with provisions of the *Traffic Act 1992*. Rangers are not empowered to enforce this Act.
- The operation of a vehicle off-road in a conservation area without an authority is unlawful.

Maintenance of the road system of the reserve is a major management issue. Estimates indicate \$7,500 is required annually to maintain the approximately 25 kilometres of tracks, with a major maintenance effort every 7 years to resheet these roads, costing a further \$100,000. At present the level of annual road maintenance is low and sporadic. The immediate budget outlook indicates this situation is unlikely to change in the immediate future.

Environmental issues, particularly the spreading of weeds and soil born diseases may also be associated with road maintenance. These concerns are addressed by prescriptions in Section 4.4.

Aims

- The aims for provision of vehicular access in the Waterhouse Conservation Area are:
 - to provide for responsible vehicle use within the reserve;
 - to close access to areas where further use may cause unacceptable damage to other values;
 - to reduce the number of publicly accessible vehicle tracks, trails and routes in the reserve consistent with providing reasonable access to highly used areas; and
 - to minimise conflicts with other recreational activities.

Prescriptions

- Promote compliance with the 'Policy for the Use of Recreational Vehicles on State Owned Lands in Tasmania'.
- Visitors are authorised to undertake lawful use of the designated roads and vehicular tracks of the reserve without restriction.
- The designated roads and tracks of the reserve, as indicated on Map 5 are:

- Homestead Road right terminating at the beach access, at Ransons Beach;
 - the Blackmans Lagoon Road to the lagoon, camping area and shacks;
 - Big Waterhouse Lake Road to the camping and boat launching area;
 - the One Tree Hill Track, except for the last half kilometre providing access to Tomahawk Beach;
 - Vaughns Track, providing access to the rocky coast about three kilometres east of North Croppies Point;
 - the Little Waterhouse Lake Road to the end of the last shack;
 - the South Croppies Point Road and tracks providing access to camping areas, boat launching, the Point and the shacks;
 - the track to the summit of Hardwickes Hill;
 - the North Croppies Point Track to the Point and a single spur to the shack;
 - the Herbies Point track;
 - the boat launching sites at Herbies and Blizzards Landings;
 - Waterhouse Point, to the 'village green', shack sites, boat launching areas and the other designated camping areas; and
 - Langleys track providing access to camping areas and beach boat launching.
- Consistent with the provisions of the *Aboriginal Relics Act 1974*, protect Aboriginal sites along the section of the South Croppies Point Track running out to the Point. Hardening the track with gravel has been identified as the appropriate measure to prevent further damage.
 - Prepare a program for the relocation of vehicle routes over Aboriginal sites and identify alternative routes in consultation with the Aboriginal community and other users.
 - If the shacks at South Croppies Point and/or North Croppies Point are removed then the sections of tracks providing access to them will cease to be designated tracks and will be closed.
 - Visitors may, subject to controls, use vehicles off-road on the following routes and beaches:
 - the sand track from Blackmans Lagoon to the ocean, and a single route to the back of the Lagoon;
 - Waterhouse Beach from the ocean end of the Blackmans Lagoon track to the southern limit of the reserve;
 - West Tomahawk Beach from the boat launching site at the end of Homestead Road eastward; and
 - authorised beach boat launching sites (as listed in Section 5.8).
 - Control measures for off-road vehicle use include:
 - with the exception of boat launching, the off-road operation of all vehicles in the reserve is restricted to users with a written authority issued by the Parks and Wildlife Service;
 - a general authority is granted to access the authorised beach boat launching sites (as listed in Section 5.8) only for the purposes of launching or retrieving boats;
 - written authorities existing prior to the approval of this plan will no longer be valid;
 - beach access is strictly limited to driving on damp firm sand below the most recent high tide; and
 - West Tomahawk Beach is closed to all traffic from 1 December until after Easter.

- The Parks and Wildlife Service will have the discretion to issue individual authorities for special, limited and conditional use of recreational vehicles on non-designated routes.
- Rationalise the tracks, trails and routes within the reserve. Tracks to be closed to the public include:
 - the vehicular tracks into the southern parts of the reserve, entered across private land;
 - tracks around to the west side of Blackmans Lagoon;
 - the track to the ocean from the most westward shack at Little Waterhouse Lake;
 - tracks on South Croppies Point not covered above;
 - tracks on North Croppies Point not covered above;
 - tracks leading to camping areas closed as a result of other concerns;
 - tracks in to the Tiger Scrub; and
 - any duplications of the existing track network leading to no obvious separate destination.
- Gate or otherwise restrict public access to roads and vehicular tracks designated for management purposes only.
- Permanently close roads and vehicular tracks not required for public or management use.
- Before proceeding with any re-routing of existing tracks, the proposed route will be surveyed for disease risk, habitat and species significance, and cultural significance
- No new publicly accessible vehicular tracks will be built in the reserve for the life of this plan with the exception of access tracks specified in approved camping area site plans (see Section 5.2).
- Develop and implement a suitable information dissemination program to inform vehicle users of the changes taking place.

5.5 Walking

While walking is popular within the reserve, it is almost entirely limited to beach walking.

The only significant walker infrastructure in the vicinity of the reserve is a pedestrian bridge over the Tomahawk River, crossing from the township of Tomahawk. In the last few years the bridge fell into dis-repair and the Service decided to remove it. Intense community and political pressure resulted in the recent upgrade of the bridge.

A sign at Blackmans Lagoon indicates there is a walking track from the lagoon to the beach, a distance of three kilometres. The sign indicated there is no un-authorized vehicular access along the track. In reality very few people walk the track, and it is mainly used for vehicular access to the beach by surf fishermen and recreation vehicle users.

At present there is sometimes conflict between walkers and other passive users of the beaches and vehicle users (see Section 5.4). Vehicle users may intimidate, endanger and at the very least, destroy the tranquillity of the natural setting for walkers.

Aims

- The aims for provision of pedestrian access in the reserve is to enhance recreational walking opportunities on at least some beaches.
- The aims for provision of pedestrian access to the reserve at Tomahawk Point are to:
 - minimise the direct cost of the provision of this service when possible
 - provide as safe as practicable environment for users.

Prescriptions

- To provide a safer walking environment vehicles transits are only permitted on the beaches of the reserve set out in Section 5.4.
- Transfer responsibility for the maintenance of the pedestrian bridge at Tomahawk, if the opportunity presents itself.
- At all times and in all parts of the reserve, unless specifically designated otherwise, pedestrians have absolute right of way over any motor vehicle, bicycle or other wheeled vehicle, and any horse or horse drawn vehicle.
- Track construction in the reserve will only be undertaken on the basis of clearly demonstrated demand, and with due consideration of maintenance regimes.
- New track construction must comply with the requirements of Section 4.8.

5.6 Fishing

Currently the Waterhouse Conservation Area is used for a wide variety of fishing activities. The beaches of the reserve are popular for surf fishing. Small boats are launched from the reserve for fishing around the rocky coast or further off-shore. Trout fishing occurs in the major water bodies within the reserve.

Management of the trout fishery, as well as other aquatic fauna within the reserve, is the responsibility of the Inland Fisheries Service. Under the Commission's management the three major lakes of the reserve have been stocked with exotic fish species, most particularly trout, and now support a valuable recreational fishery. Breeding is negligible in these lakes, so the continuation of the recreational fishery is reliant upon a continuous stocking program. In recent years local fishermen have assisted the Inland Fisheries Service in the restocking program.

The earliest introductions prospered in Blackmans Lagoon, and its reputation for good fishing spread far and wide. While anecdotal evidence indicates the quality of the fishery has declined since the 1980s, the lake continues to reward anglers. On the other hand the productivity of both Big and Little Waterhouse Lakes has always been much lower.

Blackmans Lagoon was, for many years, the focus of a very active fishing club. The fishing club was responsible for many 'works' in the conservation area including the road into Blackmans Lagoon and perimeter fencing. In 1985 the club, concerned with the gradually dwindling water levels of Blackmans Lagoon, constructed a drainage channel from Stone Chimney Creek through Blackmans Swamp into Blackmans Lagoon. Similarly, when Little Waterhouse

practically emptied one wet winter the local fishing club reportedly brought in a bulldozer and built the earthen wall that can be currently seen damming the lake.

Under recent Fisheries Rules amendments netting is now illegal in the Tomahawk River, from the river mouth upstream.

Management Issues

The conservation status of Little Waterhouse Lake as an internationally significant wetland (see Section 3.5) requires that special consideration be given to the impact of the trout fishery on that lake.

Prior to late 1996, while Waterhouse was reserved under the *Crown Lands Act 1976*, fishers were free to bait fish in the reserve. With the change of reservation status the *National Parks and Reserved Land Regulations 1999* effectively prohibit fishers from collecting or bringing in to the reserve worms, 'mudeyes' and other common types of bait without written authority. Additionally, on-site collection of bait involves some degree of habitat disturbance. The transport of any live animals into the reserve increases the risk of accidental release of harmful species or disease.

Surf fishers and boat fishers access the coast from a series of access tracks, as well as driving along the beach itself. This poses management issues that are separately considered in Section 5.4.

Aims

- The aims for managing fishing in the Waterhouse Conservation Area are to:
 - provide recreational fishing opportunities while minimising impacts on other values
 - to encourage minimal impact angling practices.

Prescriptions

- Continue trout fishing in the reserve, subject to Inland Fisheries Service regulations.
- Brown and rainbow trout, salmon and salmon hybrids may be used to stock the lakes within the reserve and is to be carried out under the strict supervision of the Inland Fisheries Service.
- Liaise with and support the Inland Fisheries Service with regard to assessment and monitoring of potential environmental impacts of the trout and salmon fishery in the reserve.
- A general authority is granted to bait fish at Blackmans Lagoon, Little Waterhouse and Big Waterhouse Lakes, using specified bait.
- Bait fishing and bait collection is limited to the use of:
 - 'mudeyes' (dragonfly larvae), brought in or collected on site; and
 - wattle grubs, brought in from outside the reserve.
- PWS will liaise with and assist IFS in managing the impacts of bait fishing in the reserve, including the provision of information to anglers about acceptable bait and other requirements of the management plan and the monitoring of angler pressure on the lakes, particularly Little Waterhouse Lake.
- Proposals for manipulative changes to fish habitat including drainage changes and the damming of flood affected lakes will be assessed according to the procedures established in Section 4.9.

- Liaise with the Inland Fisheries Service on the dissemination of information to fishers.
- Prepare and disseminate information for local fishers publicising the changes to fishing regulations within the conservation area.
- Educate fishers about the environmental impacts of bait fishing and benefits of using lures.
- Encourage a more strategic and informed basis for restocking of the lakes of the reserve.

5.7 Hunting

Hunting for wallaby and duck both currently occur within Waterhouse Conservation Area. The lagoons and wetlands of the reserve, particularly the three principal water-bodies - Blackmans, Little Waterhouse and Big Waterhouse - are the focus of duck hunting. Wallaby hunting occurs in the open scrub of the reserve, particularly in the large block of land east and south of Homestead Road. Dogs are frequently used to facilitate hunting.

The 98/99 wallaby season opened on 4 April 4, 1998 and closed on 21 February 1999. The duck season generally opens on the first weekend in March and closes on the first Sunday of June.

The number of people using the reserve to hunt is not currently known, although anecdotal information indicates that hunting was historically much more important in the reserve than is currently the case. The growth and spread of marram and boobialla has reportedly made hunting access much more difficult.

Prior to late 1996, while Waterhouse was reserved under the *Crown Lands Act 1976*, hunters required only the verbal permission of an authorised officer to hunt in the reserve, along with a game licence to hunt the designated game species. With the change of reservation status (see Section 1.3), hunters now require both a game licence to hunt the designated game species and a written authority to hunt within the reserve. Additionally, if dogs are used, a written authority is required to take them into the reserve.

Management Issues

There are two management objectives for the reserve with particular significance for hunting, specifically:

- the conservation of biological diversity; and,
- the requirement that hunting be ecologically sustainable.

Processes are required to demonstrate these responsibilities are being fulfilled. At present, state-wide monitoring of both duck and wallaby is occurring.

Consideration must be given to the State's responsibilities under the Ramsar agreement (see Section 3.5). In consideration of this agreement duck hunters have agreed to not continue duck shooting on Little Waterhouse Lake.

Public safety and tranquillity issues need to be carefully considered, given the high use of the reserve by non-hunters, particularly campers. At present there is overlap between the wallaby season and the peak camping times.

The use of lead shot has been conclusively linked to elevated lead levels, in the State's waterfowl species (Smith et al, 1995). A recent Australian and New

Zealand Environment and Conservation Council (ANZECC) recommendation is to phase out the use of lead shot Australia wide by the year 2000.

Dogs used for hunting in the reserve have the potential to unnecessarily disturb wildlife. Care must be taken to avoid unnecessary impact upon non-target species, particularly breeding species.

Duck hunters traditionally build duck hides—small enclosed shelters, often over open water - where hunters wait for game birds. There are many such hides within the conservation area and it is considered likely that many are no longer in use. Being fixed structures they provide many of the same management issues that are associated with shacks and standing camps. General Parks and Wildlife Service policy has been to limit the further growth of hides and to licence existing ones.

Aims

- The aims for managing the taking of game in the Waterhouse Conservation Area are to:
 - provide for the taking of wallaby and duck;
 - ensure the taking of duck and wallaby is sustainable;
 - establish conditions under which game may be taken;
 - control the taking of game by written authority; and
 - minimise conflict between taking of game and other activities in the conservation area.

Prescriptions

- Subject to sustainability and safety criteria, the hunting of duck and wallaby, under written authority and appropriate licence is a permitted activity within the reserve.
- Any future limitations placed upon hunting because of sustainability issues will be based on the best available scientific knowledge.
- Except for approved management purposes, the taking of game will only be authorised during daylight hours.
- To gain vehicular access to the reserve all hunters must keep to authorised roads and tracks (see Section 5.4).
- A maximum of two dogs per person will be permitted for the purpose of hunting, with a maximum of six dogs per party.
- The taking of wallaby will only be permitted in the two Special Use Zones designated for that purpose (see Section 2.3). The northeastern zone is bounded:
 - on the north by the One Tree Hill track;
 - on the west by a straight line from One Tree Hill to Tobacco Hill;
 - on the northeast by a line approximately 300 metres back from the beach; and
 - on the south and east by the reserve boundary.

The southwestern zone is bounded:

 - on the north by a line 100 metres south of the track from Blackmans Lagoon to the ocean; and
 - on the remaining sides by the reserve boundaries.
- Apart from the prescriptions of this section, the prescriptions for the Natural Zone will apply in all other respects to the above Special Use Zone.

- The taking of wallaby is limited to hunters on foot, not vehicular based hunting.
- The taking of wallaby in this reserve is permitted from the State wide opening date in April through to the last Sunday in October.
- In recognition of its Ramsar status, as well as the need for a well distributed sanctuary system to provide for sustainable duck hunting, the taking of duck on Little Waterhouse Lake is prohibited.
- Big Waterhouse Lake and Blackmans Lagoon will continue to remain available to authorised duck hunters
- In accordance with State government policy, the use of lead shot will be phased out across the State on a schedule developed in consultation with hunters.
- All hides on Little Waterhouse Lake will be removed.
- Elsewhere in the reserve existing hides will require a licence or will otherwise be removed. Hide licences will be renewable annually and may be transferred.
- Licensed hides must be maintained using material from outside the conservation area. Hides should be simple, small, and inconspicuous.
- No new hides will be permitted, but existing licensed hides may be moved.
- Hunters may build temporary hides, on a daily basis only, using materials brought into the reserve, including camouflage nets strung between posts.
- Prepare, disseminate and enforce a code of practice for the taking of game in the conservation area.
- Erect signs at all the approved entrances to the reserve indicating that conditions apply to hunting.

5.8 Boating Access

Boating activity within the conservation area includes:

- small outboard powered dinghies;
- jet skis;
- a range of small sailing craft including sail boards; and
- water-skiing vessels.

The waters used include the three main fresh water bodies and the ocean. While the ocean waters below low water are not part of the Waterhouse Conservation Area, and are hence beyond the scope of this plan, boats are usually launched from sites within the reserve.

Ocean access points for boat launching include South Croppies, Blizzards Landing, Herbies Landing, both sides of Waterhouse Point and several places on Ransons Beach. The choice of boat launching site is heavily influenced by the weather, the proposed fishing destination and the type of boat. Many of the boat launching sites have very basic improvements including access tracks, rock clearance and in some cases, rough levelling of ramps with concrete.

Big Waterhouse Lake has sometimes been used for water-skiing.

Management Issues

Use and control of vehicles on the beaches is an issue that is largely covered in Section 5.4.

Concern exists for the steepness of the track into Herbies Landing, and consequent erosion problems.

Concern exists for the continued use of petrol engine powered boats on Little Waterhouse Lake, a wetland site of international significance (see Section 3.5). The use of petrol engines is accompanied by low level environmental pollution.

Safety and environmental concerns exist with the use of high powered, high speed vessels on the relatively small area of Big Waterhouse Lake.

Prescriptions

- Visitors may, at authorised boat launching sites, take vehicles across beaches to launch and retrieve boats without restriction. However restrictions apply to vehicles transiting beaches (see Section 5.4). The authorised boat launching sites are as follows:
 - the end of the South Croppies Road on the southern side of the point;
 - Blizzards Landing;
 - Herbies Landing;
 - Waterhouse Point at the Village Green (see Section 5.2),
 - Ransons Beach at Mathers, Brads, Bennetts, Langleys and the end of Homestead Road; and
 - West Tomahawk Beach towards the western end of the beach.
- The use of boats on Little Waterhouse Lake is restricted to un-powered vessels or vessels powered by electric motors with a maximum speed of 5 knots.
- Powered vessels operating on Blackmans Lagoon and Big Waterhouse Lake are restricted to a maximum speed of 5 knots, with the single exemption of 'Regatta Day' (see below).
- No speed limit applies on Big Waterhouse Lake on 'Regatta Day'.
- Ensure appropriate signs are displayed within the reserve to give effect to the above policies.
- Investigate the re-routing of the vehicular access track in to Herbies Landing.
- Investigate the possibility of further improving boat launching facilities at a single suitable location to alleviate pressure on beach launching sites.

5.9 Horse Access

At present there are only small numbers of riders bringing horses into the reserve. From time to time the reserve is a venue for club outings that may involve quite large groups of riders. There is no dedicated infrastructure associated with the activity. Use is currently assumed to be limited to day use.

Management Issues

The environmental issues associated with horse riding on land with nature conservation values are well documented, and within Waterhouse Conservation Area are primarily twofold - physical damage and weed introductions. The reserve's sand landscapes are inherently sensitive to disturbance and easily destabilised, while the diverse wetlands of the reserve are also sensitive to trampling damage. The seeds of many exotic pasture species present in horse manure are often provided suitable circumstances to germinate and thrive.

Under the *National Parks and Reserved Land Regulations 1999* a written authority is required to bring horses into the conservation area.

Prescriptions

- The entry of horses into the reserve will be subject to written authority and a code of practice for their use.
- In applying for a written authority, riders must specify their intended trip route, which is to be included in the written authority conditions. Generally riders will only be permitted to use the existing public access tracks, beach access points and beaches of the reserve.
- Riders visiting the reserve as part of an organised group outing may be issued a single written authority covering the entire group. The written authority will be for a single trip only, but may provide some flexibility for the exact timing (to allow for weather). Maximum party numbers may be specified.
- Horses may not be kept in the reserve overnight.
- Horse access on beaches is restricted to damp, firm sand below the high tide line.
- At all times and in all parts of the reserve, pedestrians have absolute right of way over any horse or horse drawn vehicle.
- Prepare, disseminate and enforce a code of practice for the use of horses in the reserve.

5.10 Air Access

Currently the only practicable landing areas for fixed wing aircraft are the beaches of the reserve.

Management Issues

The beach areas are important and vulnerable habitat, particularly for breeding birds (see Section 3.4).

Prescriptions

- Except for emergencies or management purposes, all aircraft, including helicopters, will require a written authority to land or take off as required by the *National Parks and Reserved Land Regulations 1999*.

5.11 Interpretation and Education

Aims

- The aims of interpretation and education area are to:
 - reveal the diversity and values of natural and cultural features;
 - realise its educational values;
 - canvas issues to be confronted in managing it;
 - increase public awareness of safety issues; and
 - inform visitors of etiquette and minimal impact practices.

Prescriptions

- Interpretation programs and facilities will mainly be concentrated in the Visitor Services Zones.
- Use of the conservation area for teaching about its natural and cultural values will be encouraged.
- Private memorials or commemorative plaques will not be permitted in the conservation area.
- Public memorials or commemorative plaques may be permitted in the conservation area if they commemorate events or people of the area that are of state, national or international significance and are approved by the Director.
- Plaques acknowledging infrastructure or services provided by bequests or commercial sponsorship may be attached to the infrastructure, but no advertising will be permitted.
- Develop interpretation of the Aboriginal heritage of the conservation area in consultation with the Aboriginal community.
- Inform visitors of hazards likely to be encountered, within the normal risks associated with the activity being undertaken.

5.12 Self-funding Facilities

At present all facilities and services offered to visitors to the reserve are free. Services currently provided to visitors include:

- the maintenance of non serviced and partially serviced camping sites; and
- authorities to fish, hunt, use vehicles off-road and bring in horses.

The 'user pays' principle is being widely applied in relation to the provision of facilities on public lands. To encourage compliance it is desirable that any such fees are – and are seen to be – utilised for the direct benefit of the reserve in which they are collected. Where feasible this process may be facilitated by the establishment of an autonomous body such as a 'local enterprise unit'.

Aims

- To consider ways in which funds contributed for the provision of facilities and services at Waterhouse can best be utilised to maintain and improve services and management.

Section 6 Field Operations

6.1 Community Support

Aims

- The aims of fostering community support are to:
 - develop community appreciation of and support for reserve values;
 - promote a positive image of the reserve and its benefit to the community; and
 - encourage community involvement in reserve management.

Prescriptions

- Relevant people, communities and groups will be consulted on major issues when their interests may be affected.
- Regularly liaise with adjacent land owners on management issues and projects of common interest.
- Management agreements may be developed with neighbours.
- Partnerships will be developed with communities, volunteers and groups that wish to be involved in the management of the reserve.
- Encourage community involvement through the Wildcare structure.

6.2 Monitoring and Research

Aims

- The aims of monitoring and research are to:
 - improve the inventory and understanding of natural and cultural features and processes;
 - assess rates and magnitudes of change;
 - improve knowledge and understanding of visitor behaviour in the reserve; and
 - assess and improve management of the reserve.

Prescriptions

- Prioritise the resourcing of monitoring and assessment programs.
- Written approval of all manipulative research will be required before research begins.
- Monitor the natural rates and magnitudes of change according to the proposed monitoring protocol for the Department.

- Researchers will submit to the managing authority not less than three copies of all work produced during the period of the research.
- Authorities for the collection of material will not be issued where it is possible and appropriate to collect the material outside.
- Only research that does not have long term adverse effects on the natural, cultural, or aesthetic values will be permitted.
- The approval of the Tasmanian Aboriginal community will be obtained for any research involving Aboriginal heritage.

6.3 Plan Implementation

- The prescriptions of this management plan will be subject to funding and other resources sufficient to meet them, and may be prioritised by the Director of National Parks and Wildlife at the Director's discretion according to resource availability.
- Prepare a five-year rolling program for the reserve linked to service agreements, to co-ordinate development, protection and conservation work.
- The works program will conform with this management plan and other plans such as site plans, conservation plans, fire management plan, and the interpretation plan.

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Appendix 1 The Ramsar Site

Appendices of the Ramsar Information Sheet for Little Waterhouse Lake Ramsar Wetland, and a map showing the boundaries of the wetland, Information Sheet on Ramsar Wetlands (RIS) Categories approved by Recommendation 4.7 of the Conference of Contracting Parties.

1. Date this sheet was completed/updated: 2000

2. Country: Australia

3. Name of wetland: Little Waterhouse Lake, Tasmania

4. Geographical coordinates: 405230 1473640

5. Elevation: 40 m ASL.

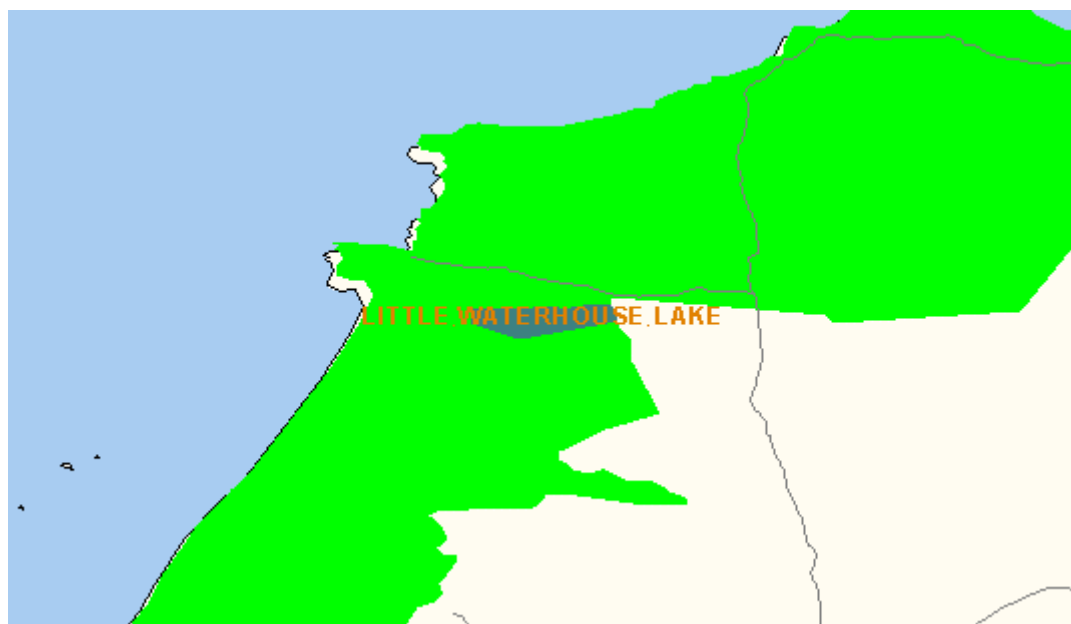
6. Area: 56 ha

7. Overview: Little Waterhouse Lake is a coastal freshwater lagoon situated in the Waterhouse Conservation Area (north-east coast of Tasmania). It is an important habitat for a group of rare and poorly reserved species. Access is possible by 2-wheel drive.

8. Wetland type: K,

9. Ramsar criteria: 1b, 2b,

10. Map of site included



11. Name and address of the compiler of this form: Stewart Blackhall, Anne McEntee and Elizabeth Rollins
Department of Primary Industries, Water and Environment
134 Macquarie Street Hobart 7000

12. Justification of the criteria selected under point 9: Little Waterhouse Lake is a good example of a coastal freshwater lagoon at a regional scale. The high species richness of the wetland forms an integral part of the coastal community. The lagoon also supports several species and communities which are both rare and poorly reserved in Tasmania and a recently described species of scientific value.

13. General location: The lagoon is 7 km south-west of Waterhouse Point which lies between the towns of Bridport and Tomahawk on the north-east coast of Tasmania.

14. Physical features: The site is an example of a lake formed in the depression between parabolic dunes of the Waterhouse transgressive dunefield, when seaward drainage was blocked by mobile coastal 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 a low peat content.

15. Hydrological values: The lake level fluctuates with rainfall and with dune and stream movement. Drainage patterns are dynamic due to the movement of sand dunes or use of water for agriculture. Maximum lake depth is 2-4 m. The lake is brackish with water conductivity being 1300 EC and pH is 7.5. Average annual rainfall is 500-625 mm.

16. Ecological features: The lagoon has dense aquatic growth and a high species richness. To the east an open scrub covers most of the area with *Banksia marginata* and *Xanthorhoea australis* dominating. West of the site marram grass (*Ammophila arenaria*) occurs on the foredunes with *Acacia sophorae*, *Banksia marginata* and *Acacia verticillata*.

17. Noteworthy flora: *Wolffia australiana*, *Schoenoplectus validus* (river/lake club rush; Rare, Sr; Threatened Species Protection Act (TSPA) 1995), *Schoenoplectus pungens* and *Bolboschoenus caldwellii* (sea club-rush; Rare, Sr; TSPA 1995) are rare and poorly reserved in Tasmania. The community, *Schoenoplectus pungens* sedgeland, is also poorly reserved.

18. Noteworthy fauna: The lake supports a significant population of the freshwater planktonic dinoflagellate, *Procentrum foveolata*, a recently described species classified in a taxon previously considered entirely marine. This site is habitat for the dwarf galaxias (*Galaxiella pusilla*; Rare, Sr; TSPA 1995, Vulnerable Nv, Endangered Species Protection Act (ESPA) 1992), which is locally rare due to a limited distribution at unprotected sites.

19. Social and cultural values: The area is valued as a site for various recreational activities.

20. Land tenure/ownership: On site: Waterhouse Conservation Area
Surrounding area: Private freehold

21. Current land use: On site: Fishing and duck shooting. Surrounding area: Recreational camping, grazing.

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

On site: Overgrazing of coastal vegetation in this area in the past has resulted in severe erosion and uncontrolled movement of dunes. The spread of invasive exotic plant species (*Typha*, *Populus*, and *Salix* spp.) threatens the integrity of the native flora and geomorphological processes in the area.

Surrounding area: Water use for agricultural purposes unnaturally alters the water level of the wetland. Dune and lake development and drainage are likely to be affected by further agricultural water use. Grazing is likely to continue to erode the surrounding landscape and the planting of marram grass (*Ammophila arenaria*) to stabilise this problem may lead to further degradation of the areas natural features.

23 & 24. Conservation measures taken and proposed (but not yet implemented):

Conservation Measures: The site is listed under the Convention on Wetlands of International Importance and also on the Register of the National Estate. Little Waterhouse Lake is reserved within the Waterhouse Conservation Area. A long term strategy is in place to contain erosion of the dune system in the surrounding area. It would be preferable to use a native species for dune stabilisation.

Conservation Measures Proposed: A management plan is being produced for the lake. Control of the weed species present has been proposed.

25. Current scientific research and facilities: An intensive study of the Waterhouse Conservation Area was undertaken by a group of scientists from the Parks and Wildlife Service in 1993. The resulting vegetation map was useful in redefining the boundary for the protected area. An investigation of the limnology of the lake (Croome and Tyler 1987) revealed novel and scientifically interesting species.

26. Current conservation education: None at present.

27. Current recreation and tourism: The area is subject to occasional recreational use, especially in summer when approximately 80 anglers visit the area.

28 & 29 Jurisdiction and management authority:

Jurisdiction: Territorial: Dorset Municipal Council.

Functional & Management: Director, Parks & Wildlife Service, Tasmania.

30. Bibliographical references:

Croome, R.L. & Tyler, P.A. (1987). *Proocentrum playfairi* and *Proocentrum foveolata*, two new dinoflagellates from Australian freshwaters. *Br. phycol. J.* 22: 67-75.

Horwitz, P. (1992). Macrocrustaceans, physicochemical properties and estimated trophic status of some coastal wetlands in northeastern Tasmania. Report to the Plomley Foundation and the Queen Victoria Museum and Art Gallery, Hobart.

Appendix 2 Implementation Priorities

Key Actions and Priorities

High Priority Actions

Section	Action
3.6	Monitor Aboriginal places for, and protect from, damage.
5.1	Monitor Little Waterhouse Lake for human impacts and, where necessary, implement preventative or remedial actions.
5.2	Improve camping arrangements by preparing site plans for all camping within the reserve, in consultation with users
5.2	Confine camping to designated areas at Blackmans Lagoon, Big Waterhouse Lake, South Croppies, Waterhouse Point, Ransons Beach and the western end of Tomahawk Beach.
5.2	Grant a general authority to visitors to bring dogs into the reserve.... this general authority is to be granted through the display of appropriate signs
5.2	Close listed camping areas:
5.2	Direct vehicular traffic off Aboriginal midden material at the camp site near Langleys.
5.2	Remove all unauthorised structures from camping areas.
5.2	Develop and implement a suitable information dissemination program to inform campers of the changes taking place.
5.4	Rationalise the listed tracks, trails and routes within the reserve.
5.4	Gate or otherwise restrict public access to roads and vehicular tracks designated for management purposes only.
5.4	Permanently close roads and vehicular tracks not required for public or management use.
5.4	Develop and implement a suitable information dissemination program to inform vehicle users of the changes taking place.
5.7	All hides on Little Waterhouse Lake will be removed.
5.7	Elsewhere in the reserve existing hides will require a licence or will otherwise be removed. Hide licences will be renewable annually and may be transferred.
5.7	Erect signs at all the approved entrances to the reserve indicating that conditions apply to hunting.
5.8	Ensure appropriate signs are displayed within the reserve to give effect to the above policies.
6.2	Prioritise the resourcing of monitoring and assessment programs.
6.2	Monitor the natural rates and magnitudes of change according to the proposed monitoring protocol for the Department.
6.3	Prepare a five-year rolling program for the reserve linked to service agreements, to co-ordinate development, protection and conservation work.

Medium Priority Actions

3.3	Prepare programs for prescribed burning, setting out the fire frequencies necessary to maintain viable populations of species and communities of conservation value.
3.5	Continue to liaise with the Inland Fisheries Service with respect to the release of recreational fish species into the wetlands of the reserve.
3.5	Liaise with, and support the Inland Fisheries Service with regard to assessment and monitoring of potential environmental impacts of the trout and salmon fishery in the reserve.
3.5	Ensure that relevant water users are adhering to the requirements of the <i>Water Management Act 1999</i> in their use of water from Blackmans Lagoon.
3.5	Assess the stability of dunes and the earthen wall that dams Little Waterhouse Lake, and undertake restoration or rehabilitation activities, if required. (see Section 3.1).
4.1	Consider programs to explain fire management policies and fire safety procedures to summer visitors.
4.2	Liaise with neighbouring landowners about the need to upgrade and maintain boundary fences.
4.3	Educate visitors about the <i>Phytophthora</i> threat to the reserve.
4.3	Establish, disseminate and enforce guidelines for the entry into the reserve of all earth-moving vehicles and machinery.

Appendix 2 – Implementation Priorities

5.1	Provide for the further development of appropriate recreational facilities, while minimising impact on area values.
5.1	Inform visitors of appropriate minimal impact use of the reserve (see Section 5.11).
5.1	Require visitors to take their garbage with them.
5.1	Forbid the cleaning of vehicles and boats within the reserve.
5.11	Develop interpretation of the Aboriginal heritage of the conservation area in consultation with the Aboriginal community.
5.11	Inform visitors of hazards likely to be encountered, within the normal risks associated with the activity being undertaken.
5.2	Open, in consultation with campers, replacement camping sites in the reserve. Development must be in accordance with an approved site plan, the provisions of Section 4.8, and must be extensions to camping areas approved under this plan.
5.2	Prohibit the discharge of wastes, including portable toilet waste, in the reserve.
5.4	Consistent with the provisions of the <i>Aboriginal Relics Act 1974</i> , protect Aboriginal sites along the section of the South Croppies Point Track running out to the Point. Hardening the track with gravel has been identified as the appropriate measure to prevent further damage.
5.4	Prepare a program for the relocation of vehicle routes over Aboriginal sites and identify alternative routes in consultation with the Aboriginal community and other users.
5.6	Liaise with and support the Inland Fisheries Service with regard to assessment and monitoring of potential environmental impacts of the trout and salmon fishery in the reserve.
5.6	PWS will liaise with and assist IFS in managing the impacts of bait fishing in the reserve, including the provision of information to anglers about acceptable bait and other requirements of the management plan and the monitoring of angler pressure on the lakes, particularly Little Waterhouse Lake.
5.6	Liaise with the Inland Fisheries Service on the dissemination of information to fishers.
5.6	Prepare and disseminate information for local fishers publicising the changes to fishing regulations within the conservation area.
5.6	Educate fishers about the environmental impacts of bait fishing and benefits of using lures
5.7	Prepare, disseminate and enforce a code of practice for the taking of game in the conservation area.
5.8	Investigate the re routing of the vehicular access track in to Herbies Landing.
5.8	Investigate the possibility of further improving boat launching facilities at a single suitable location to alleviate pressure on beach launching sites.
5.9	Prepare, disseminate and enforce a code of practice for the use of horses in the reserve.
6.1	Regularly liaise with adjacent land owners on management issues and projects of common interest.
6.1	Partnerships will be developed with communities, volunteers and groups that wish to be involved in the management of the reserve.
6.1	Encourage community involvement through the Wildcare structure.

Low Priority Actions

2.3	Encourage existing development in these (Natural) Zones to be removed.
3.2	Liaise with other relevant agencies and neighbouring landowners to develop and implement strategies to reduce run-off of sediment, pesticides and fertilisers.
3.3	Establish long-term monitoring plots in relation to ecological management burns and threatened species sites.
3.4	Continue the New Holland mouse survey program.
3.4	Monitor the breeding success of shore birds.
3.4	Undertake surveys to define the distribution and requirements of fauna species and communities.
3.4	Prepare programs defining the fire frequencies necessary to maintain habitat and viable populations of threatened species and any other species of conservation significance.
3.4	Educate visitors about the harmful effects of feeding wildlife.
3.5	Update the Ramsar Information Sheet for the Little Waterhouse Lake Ramsar Wetland (see Appendix 1) to include a more comprehensive description of the Lake and the ecological values for which it was
4.1	Prepare a fire management plan for the reserve. The prescriptions of this plan will form a basis for the fire management plan.
4.2	Investigate impacts of exotic fauna species on natural values and establish baseline data to monitor population fluctuations.
4.2	Develop and implement an integrated exotic fauna management plan.

Appendix 2 – Implementation Priorities

4.3	Undertake periodic surveys of <i>Phytophthora</i> prone areas to monitor the disease status of the reserve.
4.4	Pine plantations will be systematically replaced by endemic native species.
4.5	Review the boundaries of the conservation area and recommend appropriate new boundaries, particularly in relation to the narrow corridor of land out to Tomahawk Point, Tomahawk Island, and the two Crown blocks on Tomahawk Point.
5.2	Consider how the sale of camper firewood can be achieved.