

Arthur–Pieman
Conservation Area

Management Plan

2002

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Parks and Wildlife Service
Department of Primary Industries,
Water and Environment

Arthur–Pieman Conservation Area Management Plan

This management plan for Arthur–Pieman Conservation Area has been prepared in accordance with the requirements of Part IV of the *National Parks and Wildlife Act 1970*. A draft of this plan was released for public comment from 10 June 2000 to 4 August 2000.

Unless otherwise specified, this plan adopts the interpretation of terms given in Section 3 of the *National Parks and Wildlife Act 1970*. The term ‘Minister’ when used in the plan means the Minister administering the *Act*. The term ‘Director’ refers to the Director, National Parks and Wildlife. The term ‘reserve’ refers to the Arthur–Pieman Conservation Area. The initials ‘PWS’ refer to the Parks and Wildlife Service.

In accordance with Section 23 of the *National Parks and Wildlife Act 1970*, the managing authority for the reserve will give effect to the provisions of this management plan.

The plan may only be varied in accordance with procedures set out in Sections 19 and 20 of the *National Parks and Wildlife Act 1970*.

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 17 December 2001 and took effect on 16 January 2002, being seven days after publication of that approval in the *Government Gazette*

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Summary

The Arthur–Pieman Conservation Area, a reserve of 100,135 hectares, lies on the north-west coast of Tasmania. Extensive parts of the Arthur–Pieman Conservation Area are listed on the Register of the National Estate (see Map 7). The reserve provides protection to an extraordinary richness of Aboriginal cultural heritage, to highly significant and diverse ecosystems, and to spectacular coastal landscapes and wilderness values.

The conservation area has been described as ‘... one of the world’s great archaeological regions’ (Richards & Richards in Harries 1992) on account of its Aboriginal heritage values.

Several vegetation communities in the reserve have been identified to be of conservation significance (Harries, 1992) including:

- buttongrass moorland communities;
- rainforest communities;
- wet eucalypt forest communities;
- dry sclerophyll heathy communities; and
- *Sphagnum* communities.

The coast of the Arthur–Pieman Conservation Area serves as an important part of the Bass Strait migratory corridor for many bird species including the threatened orange-bellied parrot, and provides valuable breeding habitat for numerous shore birds that are threatened elsewhere in Australia (Slater in Harries, 1992).

The reserve has historic cultural heritage significance. The major themes are cattle grazing and mining. Known sites include remnants of the Balfour–Temma tramway, the Balfour telegraph, the Balfour track and the Sandy Cape Lighthouse, but many other sites are likely to exist.

The reserve is a popular place for recreation, particularly with residents of north-west Tasmania. Recreational pursuits range from sea-orientated activities such as fishing, boating, surfing and skindiving to land-based activities such as camping, recreational vehicle driving, hunting, angling, bushwalking, photography, nature study and horse riding.

The reserve is also important for a range of commercial activities that have economic implications, particularly for the local community. Activities include agistment, mineral prospecting, tourism and as a base for commercial fishing. The reserve has potential importance for wind electricity generation, bull kelp collection and many other small scale commercial activities.

The reserve will be managed to protect values, while providing for a range of activities. The major management initiatives for the reserve are summarised below.

- Far greater emphasis will be placed upon careful management and interpretation of the reserve’s Aboriginal heritage values.
- Cattle agistment will be subject to closer regulation, and will be placed on a stronger commercial footing.
- The use of off-road recreation vehicles in the reserve will continue, but with careful regulation and emphasis on the education of users about low impact use.
- Camping will continue to be provided for in the area but the general southward migration of camping activities will be discouraged.

Summary

- Visitor services will be concentrated into existing activity nodes.
- An enterprise unit will be established to manage the provision of visitor services.
- Degraded sites will be rehabilitated and values restored where practicable.
- There will be enhanced opportunity for community involvement through the creation of a Management Committee and various consultation groups.

All provisions of this plan requiring expenditure are subject to the availability of funding.

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Glossary of Terms

Following is a list of terms without common meaning or with special meaning in the context of this plan.

agistment

the practice of providing pasture for livestock owned by others in exchange for a fee

aquatic

pertaining to water

consultation

the process of seeking views and information to inform decision making

cultural construct

in reference to wilderness, it points to wilderness existing as an idea rather than a more definite object, and therefore capable of many interpretations

cultural heritage

(see heritage below) used as umbrella term to name both Aboriginal and historic heritage

development

for the purposes of this plan the definition contained in the *Land Use Planning and Approvals Act 1993* is adopted. Development is:

- (a) the construction, exterior alteration or exterior decoration of a building;
- (b) the demolition or removal of a building or works;
- (c) the construction or carrying out of works;
- (d) the subdivision or consolidation of land, including buildings or airspace;
- (e) the placing or relocation of a building or works on land;
- (f) the construction or putting up for display of signs or hoardings.

Devonian

a geological age, from 354 million to 417 million years ago

ecological (management) burning

the lighting of fire(s) in an area of land to promote the growth and flourishing of key species

eradication

the removal or extermination of pest species

extraction

in reference to mining, refers to quarrying or shaft cutting activities aimed at digging up and removing ore bodies

fauna
animals

flora
plants

free range
in reference to camping or vehicle use, activities undertaken in the absence of supporting infrastructure, either formalised camping areas or formed roads or tracks

habitat
the combination of place, climate, soil *et cetera* providing the suitable circumstances for specific plants or animals to live

heritage
places or things that are important to our history and/or identity, and that we wish to protect

Holocene
The present geological age, from now through to 10,000 years ago

indigenous
found originally in this area

interpretation
communication aimed at revealing meanings and relationships through the use of objects, experience and illustrative media

intrusion
A geological term referring to the injection (and subsequent solidifying) of molten rock into other rock sequences

invertebrate
animals without a backbone, such as insects, worms and spiders

local provenance
in reference to the planting of native plants, the use of genetic stocks that come from the immediate vicinity of the area being planted

managing authority
the person(s)/organisation that has ultimate legal authority for the management of the reserve

metamorphosis a geological term referring to rock-altering processes that occur within the earth's crust

mineralisation
a geological term referring to the presence of minerals in rock sequences

pluton
a molten intrusion that solidifies below the surface

Pleistocene
a geological age, from 10,000 to 1.8 million years ago

prescription
prescriptions lie at the heart of this management plan, and are specific directions or instructions with respect to management of the reserve.

prescribed burning

controlled fires lit in the reserve for intentional reasons, likely to be either to limit fuel, or for ecological reasons

Proterozoic

a geological age, from 545 million to 2.5 billion years ago

Phytophthora cinnamomi

a soil-based fungal disease that infects plant roots and kills some species of native plants

reserve

public land that is intended to remain public in the foreseeable future, in this case chiefly to promote conservation and recreation

reservation status

land may be reserved in one of many categories, including forest reserve, national park, State reserve and public reserve. Each reserve type has been created to fulfil a particular need

scheduled (threatened) species a species that, because of threats to its survival, has been given special protection under the *Threatened Species Protection Act 1995*

security

with reference to a species that is rare, this refers to the degree of longer term assurance that the species can survive

sustainable/sustainable development

is given the meaning assigned to it by the resource management and planning system of Tasmania, viz.:

sustainable development means managing the use, development and protection of natural and physical resources in a way, or at a rate, that enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while –

- (a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and
- (b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
- (c) avoiding, remedying or mitigating any adverse effects of activities on the environment.

statutory

having the force of law

tenure

category of land ownership/management, i.e. private, forestry, hydro, reserved (including type of reserve)

Tertiary

a geological age, from 1.8 million to 65 million years ago

Togari Group

a geological term, the name given to a particular sequence of rocks common in NW Tasmania

values

places and things found in the reserve, including plants, animals, geological formations, landscapes, historic places or Aboriginal places that have special meaning and whose conservation is considered important

wilderness

many definitions exist for wilderness. The one adopted here is the one adopted in the Comprehensive Regional Assessment:

an area larger than 8,000 hectares having a National Wilderness Inventory (NWI) rating of 12 or larger.

The NWI measures wilderness quality on a class scale by adding scores derived from four standard indicators:

- remoteness from settlement;
- remoteness from access;
- apparent naturalness; and
- biophysical naturalness

wildfire

an uncontrolled bushfire, likely one that presents risk to life or property

works

includes any change to the natural or existing condition or topography of land including the removal, destruction or lopping of trees and the removal of vegetation or topsoil

Section 1 Overview

1.1 Location and Access

The Arthur–Pieman Conservation Area lies on the north-west coast of Tasmania (see Map 1) within the Circular Head Municipal Area. The reserve is approximately 35 kilometres south-west of Smithton, stretching 85 kilometres along the west coast of Tasmania from near Marrawah in the north almost to the Pieman River in the south.

There are three principal roads to the reserve. From the east access is provided by the A2 from Smithton, which joins the Arthur River Road (C214) just south of Marrawah. This route provides principal access into the northern parts of the reserve. Also providing access from the north-east is the Blackwater Road (C214). From the south, travelling from Corinna, access is provided by the Western Explorer Road (C249).

1.2 Regional Context

The northern section and coastline of the Arthur–Pieman Conservation Area is used extensively as a place for recreation, principally during the summer months. Many residents of north-west Tasmania 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 including hunting, fishing, boating and recreational vehicle use. While most visitors probably come from the north-west, many visitors come from further afield, from interstate and overseas, to enjoy activities such as walking and recreational vehicle use.

Today, Tasmanian Aborigines have strong links and attachment to the Arthur–Pieman Conservation Area and Aborigines continue to visit and use the area. The area has strong regional significance but is also recognised at a national level for the importance of its Aboriginal Heritage.

The conservation area also has a long association with commercial uses including pastoral use, mining and fishing. Pastoral activity is principally winter agistment of cattle, a use that still continues. Commercial fishing is an activity practised in the Arthur–Pieman since the Second World War and contributes to the social character of the area. No mining currently occurs in the reserve.

1.3 Creation of the Conservation Area

The Arthur–Pieman Conservation Area was first reserved as a Protected Area under the *Crown Lands Act 1976* on 25 August 1982.

The reserve became the Arthur–Pieman Conservation Area as a result of Statutory Rule 1999, Number 36. This Rule proclaimed, among other things, the commencement of Schedule 9 of the *Regional Forest Agreement (Land Classification) Act 1998*, effective as of 30 April 1999. The Schedule reclassified the Arthur–Pieman as a conservation area. The official plan of the

reserve, CPR (Central Plan Register) 4748 also documents some modifications to the reserve boundary. These modifications resulted in an overall increase in the reserve size, however some small areas of the former Protected Area have also been removed to become unallocated Crown land (see Section 6.2).

The change of reservation status was largely as a result of a recommendation contained in the final report of the *Inquiry into Tasmanian Crown Land Classifications* (PLUC 1995). The report pointed to community concern for the lack of protection afforded much of the State's coastal land resources, and recommended many coastal areas, including the Arthur–Pieman, have upgraded reserve status.

The conservation area is part of the State's Comprehensive Adequate and Representative (CAR) reserve system. The Regional Forest Agreement (RFA) signed between the State and the Commonwealth binds the parties to manage the system to maintain identified CAR values (see Sections 3.2, 3.3, 3.7 and 3.8).

Extensive parts of the Arthur–Pieman Conservation Area (approximately 74,250 hectares) are listed on the Register of the National Estate (see Map 7) on the basis of Aboriginal heritage, natural and wilderness values. Part of the Arthur–Pieman Conservation Area forms part of the 350,000 hectare 'Tarkine Wilderness' identified in the National Wilderness Directory and provided interim National Estate listing.

1.4 Area and Boundaries

The Arthur–Pieman Conservation area has an approximate area of 100,135 hectares. The former Protected Area had an area of 97,250 hectares. The increase in reserve size is a result of the inclusion of several Recommended Areas for Protection as follows:

- Wildwave with 1,547 hectares;
- Pedder with 1,650 hectares; and
- Rocky Creek with 284 hectares.

The boundaries of the reserve are complex and include sections of the Leigh, Toner and Donaldson Rivers, sections of watershed boundaries and sections with ecological boundaries. The long west coast boundary with the Southern Ocean extends to low water.

Surrounding tenures include several other reserves including the Pieman River State Reserve, Sundown Point State Reserve, West Point State Reserve, and a forest reserve, as well as State forest, freehold land, and unallocated Crown land (see Map 2). The reserve has a large common boundary with Forestry Tasmania.

The boundaries of the conservation area have been drawn to exclude many of the shack communities in the former Protected Area (see Map 2). These shack communities now lie on land designated as unallocated Crown land. This includes shacks at:

- Bluff Hill Point,
- Arthur River,
- Nelson Bay,
- Sarah Anne,
- Couta Rocks,
- Stinking Beach, and
- Temma.

The boundaries of the conservation area have also been drawn to exclude any portion of the watercourse of the Arthur River.

Two freehold blocks lie within and wholly surrounded by the boundary of the conservation area. The Crown has an obligation to provide the owners of these blocks a vehicular access route across the reserve.

1.5 Previous Management Plans

Management planning for the area has a long history. Circular Head Council first promoted the idea of a Norfolk Range National Park in 1969, but was rebuffed by successive State governments which regarded the area as more important for mining than nature conservation. In 1974, the Minister for National Parks told a Circular Head Councillor that the Government was still studying the matter: *‘One would have no idea of the final decision, but I can assure you it is receiving most careful consideration before the final management plan for the area is adopted’* (Lane 1975).

The Lands Department first prepared a draft management plan for the area in 1979 (Lands Department 1979). The plan was prepared after consultation with other land managers and groups with interests in the Arthur-Pieman. Lands Department staff used the draft plan for guidance in managing the area in the 1980s.

In 1987 the Department released an expanded draft plan (Lands Department 1987) which took note of major studies of the area, including the *Norfolk Range Environment Study* produced by the Tasventure Environment Centre (Macphail, Shepherd and Brown 1975) and a government review of the economics and impacts of agistment.

The 1987 draft was considered early in 1988 by a Cabinet Sub-Committee. The committee sought written submissions from the public as well as receiving verbal submissions at public hearings. An Interim Plan was published in 1991 (Department of Parks, Wildlife & Heritage 1991) taking into account the conclusions of the Cabinet Sub-Committee.

Following a change of Government the 1991 draft was set aside by the Department, which argued that the draft would have to be revised in the light of findings from a major National Estate study of north-west Tasmania. The study, undertaken by the Tasmanian Conservation Trust, was entitled **Forgotten Wilderness: North West Tasmania** (Harries 1992).

The government changed again, and in 1993 the new Minister for Parks, Wildlife and Heritage established the Arthur-Pieman Protected Area Management Advisory Committee (APPAMAC). The committee’s membership represented a range of user groups as well as government agencies, and one of its terms of reference was to ‘Oversee a review and implementation of the Arthur-Pieman Protected Area Management Plan’.

During the several years APPAMAC functioned, difficulty was experienced getting consistent representation from Aboriginal and conservation interests. While accounts of the reasons for this difficulty vary, some observers indicate an unsympathetic, and at times hostile, audience was given to these interest groups. Notwithstanding the consistent lack of adequate input from Aboriginal and conservation interests, the work of the committee continued.

Difficulties aside, for several years APPAMAC was highly successful in assisting local Departmental staff with planning for the day-to-day management of the Arthur-Pieman. APPAMAC also oversaw the production of a fire management plan for the area and the substantially revised Arthur-Pieman Protected Area Management. Though a major advance, even if this plan had been approved, it could not have had statutory effect because at the time the *Crown Lands Act 1976* had no provisions for the preparation and approval of management plans.

This obstacle to effective management was overcome when the Arthur-Pieman became a conservation area in 1999. Once approved by the Governor, this management plan has statutory force, binding the managing authority to act in accordance with the management prescriptions it contains.

In 1998 APPAMAC, along with many other community consultative groups, was formally disbanded. The PWS entered into a new district-based standing committee system for community consultation, forming seven new committees spanning the entire State. These committees were called District Community Consultative Committees (DCCCs). Each DCCC has a person with an interest in Aboriginal heritage and standing with the local Aboriginal community. The North-West DCCC has been extensively consulted on the preparation of the present plan.

In November 1999 public comment was invited on the Arthur-Pieman Conservation Area Consultation Draft. This document provided background information and examined management issues, but did not include prescriptive material. Thirty-four submissions were received.

In June 2000 a full draft of the Arthur-Pieman Conservation Area Management Plan, including prescriptive material, was made available for comment by the general public and the National Parks and Wildlife Advisory Council. The closing date for submissions was 4 August 2000. Three hundred and three written submissions were received.

In July 2000 a reference was issued to the Resource Planning and Development commission (RPDC) to conduct an enquiry and recommend to the Minister on amendments to the plan in the light of the 303 submissions. The RPDC enquiry process included two further phases of community consultation; following the release of a draft background and recommendations report, and through the conduct of public hearings.

The current plan reflects the almost total adoption of the RPDC's final recommendations.

2.1 Vision and Key Desired Outcomes

A future visitor to the Arthur-Pieman Conservation Area finds the natural and cultural values of the area well conserved, managed and presented.

The Arthur-Pieman Conservation Area remains, as it has been for thousands of years, a large area of land predominantly in a natural state. People are using the natural resources of the area, and come to the area for experiences that give meaning to their lives and tie them to the land and its beauty.

A community partnership has been established, providing strategic direction and on-ground support for reserve management activities. This partnership reflects the fact that all Tasmanians have a stake in the Arthur-Pieman Conservation Area and has a balanced composition reflecting the diversity of interests in the community.

Informed community management partnerships have achieved:

- respect for and protection and interpretation of the rich Aboriginal heritage of the area;
- sustainable use of the appropriate areas for cattle grazing in the winter months;
- responsible use of designated areas for off-road vehicular recreation;
- intelligent use of fire for promoting and maintaining a diversity of plant communities and associated fauna as well as effective protection of life and property;
- rehabilitation of degraded areas;
- appropriate visitor behaviour;
- enhanced participation by the community in management;
- increased community appreciation of the sensitivity of particular natural and cultural features to disturbance.

Visitors will be helping pay the costs of managing the area, and in return will be able to:

- travel safely on defined tracks and beach routes;
- camp at well-maintained, well-serviced sites;
- learn about the area from tour guides and high-quality maps and interpretive programs.

2.2 Conservation Area Purposes and Objectives

A conservation area is a category of reserve under the Tasmanian reserve system.

This reserve system arose following a Public Land Use Commission (now RPDC) inquiry into a revision of Crown land classifications. The inquiry was referred to the Commission by the Government in 1994. The Commission made its recommendations in a report to Government in November 1995 and these were largely adopted in the *Regional Forest Agreement (Land Classification) Act 1998*.

The new system aims to provide a simpler land classification system based on primary management objectives. The conservation area tenure is intended to provide for conservation outcomes in conjunction with a range of other possible uses. The two major 'Protected Areas' and many of the 'Coastal Reserves' under the old land classification system have become conservation areas.

The general values, purposes and objectives of a conservation area are set out in the *National Parks and Wildlife Act 1970* 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 3.7 and 3.8);
- to conserve geological diversity (see Section 3.2);
- to preserve the quality of water and protect catchments (see Sections 3.4);
- to conserve sites or areas of cultural significance (see Sections 3.5 and 3.6);
- to provide for the controlled use of natural resources, including as an adjunct to utilisation of marine resources (see Section 5);
- to provide for exploration activities and utilisation of mineral resources (see Section 5.3);
- to provide for the taking, on an ecologically sustainable basis, of designated game species for commercial or private purposes, or both (see Section 6.7);
- to provide for other commercial or industrial uses of coastal areas (see Section 5);
- to encourage education based on the purposes of reservation and the natural or cultural values of the conservation area, or both (see Section 6.11);
- to encourage research, particularly that which furthers the purposes of reservation (see Section 8.1);
- 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 Sections 5.6 and 6);
- to encourage co-operative 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 3.5 and 6.11).

All of these objectives are confirmed in their application to the Arthur–Pieman Conservation Area.

2.3 Management Zones

The reserve has been zoned to ensure appropriate management and use in different parts of the reserve. Zoning is applicable to use and development associated with tourism, recreation, reserve management and the controlled use of natural resources, with the exception of mining. Zoning does not apply to mining but is intended to provide a sensitivity guide for mining activities.

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 development to designated locations; and
- provide a range of recreational and tourism opportunities consistent with the values of the reserve.

General Prescriptions

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

Development associated with the reserve and its tourism, recreation and natural resources is strongly encouraged to locate outside the reserve. All proposals to locate such development within the reserve are subject to consistency with the reserve management objectives (see previous section) and conditions established in Sections 4.4 and 5.6.

Prescriptions for the Visitor Services Zone

- A range of developments associated with tourism, recreation, reserve management and the controlled use of natural resources, may be considered.

2. Vision, Objectives & Zoning

Table 1: Management Zones in the Arthur–Pieman Conservation Area (see Map 3)

ZONE /LOCATION	VALUES/ACCESS	GENERAL AIM
<p>Visitor Services Zone</p> <p>There are 3 such zones as follows:</p> <ol style="list-style-type: none"> 1. just south of Arthur River 2. a very small area at the junction of the Western Explorer and the Temma Rd, and 3. surrounding Temma. 	<p>High use areas with visitor services and facilities provided according to level of use. Management inputs and presence are high to protect natural and cultural values, recreation and tourism.</p>	<p>To provide a location for visitor and other 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</p> <p>There are several such zones as follows</p> <ol style="list-style-type: none"> 1. much of the northern part of the reserve, to just south of Temma 2. areas for camping, at Tiger Flats, Rebecca, Greenes Creek and Sandy Cape. 	<p>Important natural and cultural values and scope for recreational use by suitably equipped people. Areas which are suitable for relatively high levels of day and overnight use due to their location and proximity to vehicular routes.</p>	<p>To provide for sustainable dispersed recreational activities and small-scale facilities including low-key camping, without significant impact on natural processes.</p>
<p>Natural Zone</p> <p>The more remote and least disturbed areas of the reserve.</p>	<p>Important natural and cultural values, including National Estate listed values, due to relatively low human access and impact levels. The Regional Forest Agreement process identified high quality wilderness values, old-growth forest communities and key fauna habitat for threatened species in parts of the reserve, mostly contained within this zone.</p>	<p>To conserve natural integrity and protect, maintain and monitor the diversity of plant and animal species and communities.</p> <p>To conserve cultural heritage values.</p> <p>To maintain the wilderness character of naturalness, tranquillity and isolation.</p>
<p>Natural (controlled access) Zone</p> <p>Following the centre lines of existing tracks, these 100-metre wide corridors accommodate the principal existing vehicular roads and routes including the:</p> <ul style="list-style-type: none"> - Western Explorer - Balfour Road - Balfour Track - Sandy Cape Track and spurs to Gannet Point and Dartys Corner. 	<p>Passing through areas with important natural values, these are vehicular access/transport corridors.</p>	<p>To provide room for works necessary to maintain and support vehicular access and/or minimise environmental and cultural heritage intrusion.</p>

- The zone is intended to provide the principal focus for serviced long-term vehicular-based camping activities. Within the zone camping will be available only in designated camping areas.
- This zone will be the main location for provision of education, interpretation and reserve management facilities and activities.
- Fixed infrastructure necessary to support concessions and other commercial tourism and recreation opportunities will be most likely located in this zone.

2. Vision, Objectives & Zoning

- Development must harmonise with the natural and/or cultural environment. The visual impact of development will be limited.
- Fuel loads may be managed to reduce fire risks, or to maintain a low risk environment for the public.
- Visitors will be encouraged to take their rubbish home.
- Provide where possible, environmentally sustainable toilet facilities sufficient for the demand placed upon them.

Prescriptions for the Recreation Zones

- Low-key development associated with commercial tourism and recreation operations, including standing camps and minor associated infrastructure, may be considered. Fixed buildings supporting tourism and recreation development including accommodation, facilities and services will not be considered.
- Camping for lengthy periods within the zone is restricted to designated areas. Within these designated areas support infrastructure is limited to toilets, selected hardening and delineation of sites.
- Development associated with the controlled use of natural resources (excluding mining) is to be low-key. Fixed buildings to support accommodation will not be considered.
- All development must be subservient to the natural and/or cultural environment. The visual impact of development is to be strictly limited.
- Signs will be limited.
- Rubbish bins will not be provided.

Prescriptions for the Natural Zone

- Encourage the removal of existing development lacking cultural heritage value.
- Natural and cultural protection works may be considered. Other types of development, including visitor or private buildings or other structures and facilities, are excluded.
- Interpretation signs will not be provided in the zone.

Prescriptions for the Natural (controlled access) Zone

- Dogs may travel in vehicles traversing the zone.
- Additional prescriptions for this zone are identical to that for the Natural Zone, except that works necessary to maintain and support vehicular access will be permitted subject to appropriate consultation.

3.1 Topography and Climate

The Arthur-Pieman area has low to moderate relief (see Map 4). There are three easily distinguished topographic features—the coastal land, an extensive elevated plateau and, further inland, the north-south aligned Norfolk Range.

The coastal land comprises rocky headlands, sandy beaches, well-developed sand dune systems, and a coastal plain which contains several lagoons and swamp areas.

Somewhat inland there is an elevated plateau which occupies most of the study area. The altitude of the plateau increases gradually from approximately 100 metres at the seaward edge to a little more than 200 metres at the foothills of the Norfolk Range.

The Norfolk Range runs due south from Balfour to within 10 kilometres of the Pieman River. From north to south, the more impressive peaks are Mt Hazelton (670 m), West Bluff, Mt Mabel and Mt Norfolk (740 m).

The many creeks and rivers that rise in the Norfolk Range and its foothills, as well as in the hills to the north, flow in deeply incised valleys dissecting the plateau on their journey to the coast. The major watercourses are the Arthur and Nelson Rivers, Rebecca Creek, Thornton and Pedder Rivers at either end of Sandy Cape Beach, and the Lagoon, Interview and Pieman Rivers to the south (see Map 4).

The climate of the Arthur-Pieman area is wet temperate maritime and is determined by the transit of high and low pressure systems from the Indian and Southern Oceans. Average annual rainfall ranges from 1,000 mm on the coastal plains to over 2,000 mm on the highlands. Winds are predominantly north-west to south-west. Summers are mild with frequent cloud cover, and winters are mild and wet with prolonged periods of westerly gales. Temperatures fall and frost incidence increases dramatically with increasing altitude and distance from the sea.

3.2 Geodiversity

Geodiversity refers to the natural range of bedrock, landform and soil features, assemblages, systems and processes. Geodiversity includes evidence about the history of the earth including evidence of past life, ecosystems and environments, as well as a range of processes (biological, hydrological and atmospheric) currently acting on rocks, landforms and soils. This section provides an assessment of the geodiversity of the Arthur–Pieman Conservation Area.

Bedrock

The oldest rocks in the area result from the partial metamorphosis of shallow marine sediments laid down during the Proterozoic Age. These rocks are known as the Rocky Cape Group (Turner et al.1992). The Group consists of

cross-bedded quartz sandstone, siltstone, black carbonaceous mudstone, and minor dolomite and conglomerate. The main feature of the Rocky Cape Group is a series of north-easterly trending folds. The Norfolk Range represents one of these folds. Within the Rocky Cape Group there are rock associations called the Balfour Slates and Sandstones, and Interview Siltstones. The Balfour Slates and Sandstones extend from the lower reaches of the Arthur River south towards the lower Pieman River where the association becomes known as the Interview Siltstones.

Rocks of the younger overlying Togari Group are exposed in the middle Arthur River area and in two inliers some five kilometres to the south. These consist of siliceous conglomerate, diamictite, dolomite, chert, a turbidite mudstone-sandstone sequence and associated basalt. These rocks date from the Late Proterozoic Age (Seymour and Calver 1995).

During the Late Devonian granite was intruded into the area, represented by the Interview Granite, a pluton extending as a five kilometre wide strip along the west coast from the Pieman Heads to Sandy Cape.

Zones of mineralisation are often associated with granite intrusions, and minor deposits of tin, copper and lead-zinc occur near the Interview River. There are indications that a buried spine of granite extends northwards, and is related to, the mineralisation in the Balfour region. In the region extending south south-east from the Clump at the Frankland River, through Balfour to near Mt Hazelton in the Norfolk Ranges, a system of copper-bearing veins of quartz with pyrite, chalcopyrite, and cassiterite may be related to granite underlying the Balfour Slates and Sandstones (Sharples in Harries 1992).

Patches of Tertiary gravel and small discrete plateaux of Tertiary basalt are distributed throughout the Arthur–Pieman Conservation Area. The nutrient-rich basalt plateaux support some of the best developed tall wet sclerophyll forests of the Arthur–Pieman Conservation Area or have been turned into cattle grazing farms. The main example of this material is located north-east of Temma.

Extensive dune sands probably of Pleistocene to Holocene age occur along the coast from the Pieman Heads to the north. Although there are some stabilised beach ridges at Temma, the coastline is dominated by mobile and semi-mobile, wind blown sand dunes between rocky headlands.

Soils

The diversity of environments provided by the geology, topography and climate of the area has produced a range of soils which include gravelly skeletal soils derived from Precambrian quartzites, deep sands on marine deposits, well-drained friable soils on Tertiary basalt, and coarse-structured dull mottled profiles which are waterlogged most of the year.

There are extensive areas of organic soils and peats, often with sandy surfaces and dense clay subsoils. The peats are associated with buttongrass moorlands.

The coastal landforms around the Pieman Heads are also considered to be representative and outstanding examples of a rugged coastal landscape (Bradbury 1995). Features include cliffs, stacks, boulder beaches and sandy beaches.

Conservation Significance

The Arthur–Pieman Conservation Area contains small discrete basalt plateaux that are extremely important particularly where they support relatively undisturbed native vegetation.

Australia is considered to be one of the driest continents and examples of extensive peatlands are typically restricted and very rare. Western Tasmania has the most extensive peatlands in the southern hemisphere and the Arthur–Pieman Conservation Area contains a large proportion of those peatlands. Peatlands form part of a highly significant terrestrial ecosystem.

The coastal section of the Arthur–Pieman Conservation Area is considered as the best example in Tasmania of a long, linear coastline whose overall form is controlled by onshore and offshore structural trends in the bedrock (Sharples in Harries 1992). The dune fields in the vicinity of Sandy Cape represent the largest area of such dunes in Tasmania on the Register of the National Estate, (see Map 7) and are listed in the Inventory of Sites of Geoconservation Significance (Bradbury 1995). The dunes also possibly represent the largest Tasmanian dune system that is not extensively planted with marram grass (Bradbury 1995).

In its present, relatively undegraded state, the Arthur River estuary is of considerable geomorphic significance.

The Norfolk Range area, listed on the Register of the National Estate, was nominated for a range of values including significant geoheritage. This includes relict rock platforms, sand dunes and marine platforms.

Management Issues

Most geological features are robust and fairly secure from threats. However, certain activities can threaten vulnerable features that depend on bedrock features.

Despite their association with water, peats can be vulnerable to fire and are seriously affected by physical disturbance, particularly if vegetation and roots are lost.

Erosion by water, or wind in the case of the coastal sand deposits, and the burning of peats are the greatest hazards to the soils of the area.

Rill, gully and/or sheet erosion is evident to some degree over much of the reserve.

Dunes are inherently unstable and blowouts will occur as a result of natural processes (Pemberton, 1994). Notwithstanding this natural mobility, much sand mobility is attributed to land management practices, particularly to the introduction of livestock (Macphail *et al.* 1975; Stockton 1982). Marram grass has been planted to stabilise dunes mobilised by the removal of native vegetation. The planting of marram grass is now regarded as an inappropriate method of dune stabilisation due to the resultant changes in dune morphology, its fire susceptibility and attendant burning practices, and the exclusion of native species.

Aims

The aims of geodiversity conservation in the reserve are to:

- preserve and maintain geodiversity;

3. Reserve Conservation

- preserve and maintain significant geoconservation sites;
- maintain the natural rates and magnitudes of change in earth processes; and
- minimise harmful impacts on geoconservation sites.

Prescriptions

- Ensure that management practices and development does not affect the integrity of sites of geoconservation significance or impact on geomorphological processes.
- Potential impacts on geodiversity and earth processes will be assessed when planning any development or action.
- Erosion, particularly wind erosion status assessments, will be included in development proposals where there could be an impact on land stability.
- Land rehabilitation and stabilisation, including in coastal and riparian areas, will only be carried out after a geological and geomorphological assessment is undertaken.
- Permits will be required to collect any earth materials from the reserve.
- Generally marram grass will only be used for further stabilisation works in the reserve if no other species or methods are considered suitable.
- Monitor impacts on geodiversity.

3.3 Landscape and Wilderness

Notions of landscape and wilderness quality are cultural constructs, with different meaning for different people. For most Australians, however, the Arthur–Pieman Conservation Area clearly possesses wilderness and landscape values.

The comprehensive regional assessment (CRA), conducted as part of the Regional Forest Agreement, described the Norfolk Range in the southern part of the Arthur–Pieman Conservation Area as containing ‘High Quality Wilderness’ (Tasmanian Public Land Use Commission 1997a, p. 37). When discussing wilderness value, and those parts of the Arthur–Pieman that possess wilderness value, this plan adopts the definition and findings of the CRA (see the Glossary of Terms).

Values associated with wilderness areas of the reserve include undisturbed hinterland, rivers, extensive buttongrass moorlands, forested habitats, rocky headlands and associated pocket beaches, and massive dune systems bordering long deserted beaches.

The Arthur–Pieman is also considered a good example of an Aboriginal landscape. Many of the landforms and plant communities were altered, maintained and managed through past Aboriginal land management practices, not least the use of fire.

This view of the Arthur-Pieman as an Aboriginal landscape is seen by some as the antithesis of wilderness which almost by definition is untouched by human hands. In practice however, contemporary definitions of wilderness are measured and defined in terms of lack of impact by 20th Century technological society. In reality the two concepts often apply to areas with similar values and characteristics. The two concepts however, have different management implications.

Conservation Significance

Wilderness is an identified CAR value of the reserve (see Section 1.3).

Aboriginal landscapes are of particular value to Aboriginal people who wish to see them maintained.

The natural visual landscapes of the reserve and even the semi-rural rustic landscapes associated with some of the settlements in the northern coastal strip are valued by stakeholders who want to see them retained.

The Norfolk Range area, listed on the Register of the National Estate, was nominated for a range of values including significant wilderness qualities.

Management Issues

Since the CRA was conducted there has been a significant expansion in the level of off-road vehicle use and in the type of vehicles available to undertake this use in the Arthur-Pieman Conservation Area. An increase in the number of tracks and vehicle use from Sandy Cape to the Interview River and further south to the Pieman River has the potential to detract from the identified wilderness values.

In some wilderness areas in other States of Australia and overseas a ballot system is often used to regulate the level of use in order to protect environmental values and to ensure a quality visitor experience.

The concept of an Aboriginal landscape implies the need for continuing active management by people to maintain that landscape. Alternatively the concept of wilderness implies a minimal human presence. There is potential for conflict between these two value systems, wilderness and Aboriginal landscapes, as to the extent and nature of active management.

Aims

The aims of wilderness conservation in the reserve are to:

- sustain naturalness and a lack of recent human disturbance;
- preserve a sense of tranquillity for visitors; and
- maintain the perception of isolation from settlement and human activities.

The aim in respect of Aboriginal landscapes is to:

- retain the character of the reserve as a living landscape much as it is today.

The aim in respect of the natural and rustic landscapes is to:

- retain the character of the reserve as a living landscape much as it is today.

Prescriptions

- Wilderness values will be protected through appropriate zoning (see Section 2.3).
- Further wilderness-value protection should be afforded through appropriate measures to limit off-road vehicle use (see Section 6.4).
- Aboriginal landscape values will be protected through appropriate fire management (see Section 4.1).
- Monitor impacts on wilderness values.
- Retain the essential character of the present landscapes by excluding intrusive elements except where an environmental impact assessment has been completed and an assessment made that the development is in the best interests of the State.

3.4 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 values (PEVs) and water quality objectives to be set for all surface water bodies around the State.

PEVs have been set for the reserve in the *Environmental Management Goals for Tasmanian Surface Waters, Catchments within the Circular Head and Waratah/Wynyard Municipal Areas* report approved by the Board of Environmental Management and Pollution Control (see Table 2).

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 (Table 2) will be adopted as the minimum standard for water quality within the reserve.
- Liaise with other relevant agencies and neighbouring landholders to ensure integrated management of the catchment of the reserve.

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Table 2: Protected Environmental Values

<p>Surface waters flowing through the Arthur-Pieman Conservation Area from private land, state forest or un-allocated Crown land;</p> <p>and:</p> <p>surface waters in areas available for grazing; surface waters north of Richardson Point that are contiguous with the coast; surface waters affected by the settlement at Sandy Cape; and the Interview River, Italian River, Chimney Creek, Sunday Creek, Cassiterite Creek and Sundown Creek</p>	<p>A: Protection of Aquatic Ecosystems</p> <p style="margin-left: 40px;">(ii) Protection of modified (not pristine) ecosystems</p> <p style="margin-left: 80px;">a. from which edible fish are harvested;</p> <p style="margin-left: 40px;">having regard for the management objectives outlined in Schedule 4 of the <i>National Parks and Wildlife Act, 1970</i></p> <p>B: Recreational Water Quality & Aesthetics</p> <p style="margin-left: 40px;">(i) Primary contact water quality</p> <p style="margin-left: 40px;">(ii) Secondary contact water quality</p> <p style="margin-left: 40px;">(iii) Aesthetic water quality</p> <p>D: Agricultural Water Use (Arthur-Pieman Conservation Area only)</p> <p style="margin-left: 40px;">(ii) Stock watering (where such activities are permitted under the management plan or regulations)</p> <p>That is, as a minimum, water quality management strategies should seek to provide water of a physical and chemical nature to support a modified, but healthy aquatic ecosystem from which edible fish may be harvested; which will allow people to safely engage in recreation activities such as swimming, kayaking, paddling or fishing in aesthetically pleasing waters. In the Arthur-Pieman Conservation Area only, water quality should also support stock watering where such activities are permitted under the management plan or regulation.</p>
<p>All other surface waters that have their headwaters within the Arthur-Pieman Conservation Area</p>	<p>A: Protection of Aquatic Ecosystems^{*(See note below)}</p> <p style="margin-left: 40px;">(i) Protection of pristine or nearly pristine ecosystems</p> <p style="margin-left: 40px;">having regard for the management objectives outlined in Schedule 4 of the <i>National Parks and Wildlife Act 1970</i></p> <p>B: Recreational Water Quality & Aesthetics^{*(See note below)}</p> <p style="margin-left: 40px;">(i) Primary contact water quality</p> <p style="margin-left: 40px;">(ii) Secondary contact water quality</p> <p style="margin-left: 40px;">(iii) Aesthetic water quality</p> <p>That is, as a minimum, water quality management strategies should seek to provide water of a physical and chemical nature to support a pristine or near pristine aquatic ecosystem; which will allow people to safely engage in recreation activities such as swimming, kayaking, paddling or fishing in aesthetically pleasing waters.</p>

***Note:** Historic mining activities or other historic land uses may have resulted in long-term water quality impacts to some streams or rivers within these reserve classes and to their associated ecosystems. This may mean that the water quality in these rivers or streams may not currently support pristine or nearly pristine ecosystems or primary contact recreational activities. This should be taken into consideration at the time that management decisions are being made for individual rivers or streams. Water quality data is not currently available for most surface waters in these areas.

3.5 Aboriginal Values

European knowledge of human history in the Arthur–Pieman area, prior to contact, 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 that Aboriginal

3. Reserve Conservation

people have lived in Tasmania continuously from at least 37,000 years ago, spanning at least the last two ice-ages.

Jones (1974) describes a North-West Tribe that occupied the coast between Table Cape and Cape Grim and down the west coast to Macquarie Harbour. The Tribe comprised nine or ten bands, with three of those bands the Peerapper, the Manegin and Tarkinener occupying sections of the coast in the Arthur–Pieman region (Ryan 1996). The people comprising the bands were semi-sedentary, living for long periods of the year in semi-permanent coastal settlements, but moving seasonally to exploit a large range of coastal and inland resources (Collett *et al.* 1998). Both archaeological surveys and ethnographic evidence suggest that the local Aboriginal populations were numerous. In addition the groups of huts observed by Robinson (Plomley 1966) at West Point and elsewhere show that several ‘villages’ of a dozen or so huts existed in the area. The conservation area can be considered an Aboriginal landscape where no doubt many of the landforms and plant communities were altered, managed and maintained through past Aboriginal land management practices.

Post-contact, competition for resources very quickly brought the North-West Tribe and white invaders into direct conflict. The first conflicts were with sealers, and then with pastoral interests, chiefly the Van Diemens Land Company. Aboriginal deaths and massacres were reported. G.A. Robinson, acting on behalf of the colonial administration, first as a ‘conciliator’ then as a ‘captor’ (Ryan 1996) made several visits to the Arthur–Pieman between 1830 and 1834. During his last visit in 1834, Robinson removed the last officially-recognised Aborigines of the North-West Tribe from their traditional land. According to Ryan, Robinson:

on 6 March set off to find the two remaining families. He crossed the Arthur River again, camping at Sundown Point. The next morning the mission Aborigines set off, and on 14 March found one family near the Arthur River. On 7 April they found the other family at Sandy Cape.

There is now a significant Aboriginal community living in the north-west. They, and indeed the entire Tasmanian Aboriginal community, have a strong association with the Arthur–Pieman Conservation Area. The coastal zone of the conservation area contains a richness of Aboriginal sites and landscapes that make this area unique and important to the Aboriginal community.

Scientific interest in the richness of cultural heritage material is also high. The Arthur–Pieman has been described as ‘...one of the world’s great archaeological regions’ by the Australian Heritage Commission (Richards & Richards in Harries 1992). Extensive parts of the Arthur–Pieman Conservation Area are listed on the Register of the National Estate (see Map 7) because of Aboriginal heritage values including:

- Bluff Hill Point;
- the Greenes Creek area;
- the Interview Art Site;
- the Nelson Bay area;
- the Norfolk Range, particularly the Sandy Cape and Johnsons Head area;
- the Ordnance Point area;
- the Temma coastal area.

Aboriginal sites are numerous and extensive. Sites include innumerable middens, artefact scatters and hut depressions, several art sites including rare examples of rock engravings, and ceremonial stone arrangements.

Aboriginal heritage objects are all protected by the *Aboriginal Relics Act 1975*.

Conservation Significance

Ceremonial stone arrangements are rare in Tasmania with less than 20 recorded, of which six are on the west coast and five within the Arthur–Pieman Conservation Area. The Arthur–Pieman Conservation Area contains most of the major known rock engraving (petroglyph) sites in Tasmania. It also contains one of the largest and probably the most spectacular example of a pebble ‘pathway’ within Tasmania.

The significance of the area does not however depend simply on the presence of some remarkable individual sites, but on the cultural integrity of the coastal strip as a whole. The sites and Aboriginal landscapes within the Arthur–Pieman Conservation Area are of international significance and display a richness of cultural heritage and relative lack of disturbance that is extremely rare.

Social Significance

As a result of its historical links, the area continues to have contemporary significance for the Aboriginal community. The Aboriginal community uses the area to reconnect with its heritage places. The area is visited to continue practices such as hunting, shell fishing and plant gathering and to educate younger generations. The community has a major interest in the future of the area.

Management Issues

The impact of recreational vehicle use on the coastal strip continues to degrade heritage sites, many of which are not yet fully surveyed and researched (see Section 6.4).

Agistment of cattle in dune areas causes erosion which can destroy Aboriginal middens (see Section 5.1).

Shacks have been constructed on Aboriginal midden sites (see Section 6.2).

Vandalism is infrequent but has had a very serious impact on Aboriginal values.

Aims

The aims of management of Aboriginal heritage are, in co-operation with the Aboriginal community, to:

- identify and record sites and landscapes of Aboriginal heritage;
- protect and conserve Aboriginal heritage;
- where possible enlist the assistance of the wider community in collaboration with Aboriginal groups to assist in properly managing and protecting the sites;
- interpret Aboriginal heritage to assist in educating the wider community about the importance of the Aboriginal sites along the coast; and
- facilitate and enrich Aboriginal community use of the area, its resources and its educational opportunities.

Prescriptions

- The Tasmanian Aboriginal Land Council is nominated as the peak Aboriginal group advising the managing authority on issues arising under the plan and its implementation.

3. Reserve Conservation

- The relevant principles of the Burra Charter (see Appendix) will be used to guide the conservation, protection and management of Aboriginal sites.
- Apply the provisions of the State Coastal Policy 1996 with respect to Aboriginal sites in consultation with the Aboriginal community.
- Provide maximum protection to those specific sites found within the areas inscribed on the Register of the National Estate (see Map 7).
- Protect Aboriginal sites identified by National Estate listing or within National Estate listed areas by order under the *Aboriginal Relics Act 1975*.
- The Director of National Parks and Wildlife is to be the managing authority for sites protected by order under the *Aboriginal Relics Act 1975*, as provided for in the Act.
- Permit no development on sites protected by order under the *Aboriginal Relics Act 1975*, other than that required to protect and manage the site.
- Close vehicle routes over sites protected by order under the *Aboriginal Relics Act 1975*. Alternative routes are to be determined by the managing authority if necessary. Alternative routes are to be identified in consultation with the Aboriginal community and relevant consultative groups.
- Implement a fencing plan involving selective fencing to keep cattle from sites protected by order under the *Aboriginal Relics Act 1975*. Integrate this fencing plan with other exclusion mechanisms.
- Consider protecting, by order under the *Aboriginal Relics Act 1975*, Aboriginal sites outside National Estate listed areas, in conjunction with the Aboriginal community.
- Prepare a program for the relocation of vehicle routes over sites other than those protected by order under the *Aboriginal Relics Act 1975*. Alternative routes are to be identified in consultation with the Aboriginal community and relevant consultative groups. Where an alternative route is not feasible an appropriate permit to deal with the site should be sought from the Minister under the *Aboriginal Relics Act 1975*.
- Prepare, in conjunction with the Aboriginal community, affected community groups and users, a program for the fencing of Aboriginal sites not protected by order under the *Aboriginal Relics Act 1975* but that are under continuing or immediate threat of damage or degradation.
- Erect, where it is considered appropriate, and in conjunction with the Aboriginal community, signs indicating the presence of Aboriginal sites and the need for user respect.
- Prepare and approve, in conjunction with the Tasmanian Aboriginal Land Council, a program for the recording, evaluation, conservation and monitoring of Aboriginal sites.

3. Reserve Conservation

- Prepare, in conjunction with the Tasmanian Aboriginal Land Council, a program for the assessment of damage to Aboriginal sites. Develop priorities for the rehabilitation and protection of sites subject to ongoing damage.
- Improve the level of protection and interpretation afforded Aboriginal cultural heritage in the reserve through policies and actions outlined in Sections 5 and 6 of this plan.
- Aboriginal sites will not be publicised unless the site 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 that may impinge upon Aboriginal sites.
- 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 permit has been issued under the *Aboriginal Relics Act 1975*.
- Report all Aboriginal sites discovered in the reserve to the Director, in accordance with the *Aboriginal Relics Act 1975*.
- Monitor Aboriginal sites to ensure that protection is being achieved.
- Facilitate, with the Aboriginal Community, a more comprehensive understanding of the Arthur-Pieman Conservation Area as an Aboriginal landscape.

3.6 Historic Heritage

The post-contact history of the area around the Arthur–Pieman Conservation Area is not well documented. Surviving glimpses of this history are briefly summarised below. The major themes are cattle grazing, mining, forestry and maritime activities.

- 1816 onwards** Probably the earliest visitors to the region were 'piners' who navigated many of the coastal rivers including the Pieman River collecting cargoes of Huon Pine.
- 1825** The Van Diemens Land Company was granted land in the then unexplored north-west of Tasmania. While most activity concentrates on the Surrey Hills district, some activity extends well beyond and into the Arthur–Pieman.
- 1827** Working on behalf of the Van Diemens Land Company, Hellyer surveyed the course of the Arthur River while Lorymer and Jorgenson surveyed the coast from Robbins Passage to the Pieman River.

3. Reserve Conservation

- 1830 to 1834** Acting on behalf of the colonial administration G.A. Robinson makes three separate trips along the north-west coast (see previous Section).
- by 1840** Despite navigation difficulties in bad weather, Temma (or Whales Head Boat Harbour as it was known) became established as the best landing place along the coast.
- 1880 to 1895** Mining is established at Zeehan, building to a boom in 1892. Cattle are driven down the coast through the Arthur–Pieman region to support the town of 10,000 people (Lane 1973).
- Early 1900s** Almost the entire coastal strip from Marrawah to the Thornton River is leased for grazing, with sporadic leases south of the Interview River.
- Messrs Ford, Wells, Meeve, Gaffney, Evans and Murray selected blocks in the Temma area. Ford’s selection was 1,000 acres, most of the others were 100 acres each. Later the properties were combined into a single property owned by Gaffney and named ‘Kaywood’ (Lane 1973).
- 1902 to 1912** Copper is discovered at Balfour and the town briefly booms with a population of up to 700. A tram line is built from Balfour to Whales Head (Temma) in order to ship the ore (Lane 1973). The largest mine is the Murray Brothers Reward Mine. Many other mineral leases are taken up throughout the region from the Nelson River south to the Interview River.
- post 1945** Soldier Settlement schemes in the area resulted in the establishment of small-scale dairy farms near Smithton and the opening up of winter dairy cattle agistment areas on Crown land north of Arthur River.
- 1950** Kaywood is sold to the Messrs Fenton Brothers (Lane 1973). Now usually known as Temma Farm, the property remains the only agricultural property south of Arthur River in the Arthur–Pieman area.
- 1968** Opening of a bridge over the Arthur River at its mouth (Lane 1973) heralds more intensive use of the southern parts of the conservation area. Winter agistment of dairy cattle commences, along with increased levels of recreation use.
- 1969** Circular Head Council first promoted the idea of a Norfolk Range National Park.
- 1973** The opening, by the Forestry Commission, of the Kanunna Bridge on the Arthur River heralds extensive exploitation of the State forest on the border of the conservation area (Lane 1973).
- 1984** Investigations commences into construction of a road link between Couta Rocks and Corinna. Construction commences in the following year, starting from Arthur River. Opposition to the road on environmental grounds results in the suspension of works under the Labor-Green Accord in 1989. In 1995, despite continuing opposition construction recommences, being completed the following year. The new road is named the Western Explorer.

The offshore waters adjacent to the reserve are difficult and dangerous for navigation, being subject to strong onshore winds, strewn with offshore reefs and rocks, and with few safe, protected anchorages. Nevertheless, for many years the sea was the principal means of access to this area. Many shipwrecks have occurred, including the following vessels: Lady Denison (1850), Rebecca (1853), Alert (1854), Ethel Cuthbert (1877), Flying Arrow (1878), Sarah Anne (1879), Eva (1880), Tasman (1891), Yolla (1898), Australia (1899), Hazard (1908), Koonya (1919), and Kahika (1940). In more recent years many fishing boats have been lost on this coast including Marie B (1960), Doris Bethume (1963), Lady Kathleen (1969), Barrapete (1972), Esperence Bay (1973) and Moonda (1982). Surviving artefacts of such shipwrecks found in the reserve form an important component of the area's historic and social heritage.

The Physical Record

Currently recorded surviving historic sites in the Arthur–Pieman Conservation Area include remnants of the Balfour–Temma tramway, the Balfour telegraph, the Balfour track and the Sandy Cape lighthouse.

Other possible sites of heritage significance include:

- various mine sites and associated features within the reserve, such as those still visible at Rebecca Point and at the Nelson and Interview Rivers;
- sites associated with the early use of Whales Head Boat Harbour (Temma) by pastoralists and miners;
- stockman's huts such as at Sandy Cape and Rebecca Creek along with stock routes and stockyards;
- shipwreck remains;
- surviving evidence of cording on the Temma Track;
- hut remains at Sundown and Greenes Creek.

Conservation Significance

Identified historic places in the Reserve are generally, for internal PWS management purposes, recorded in the Tasmanian Historic Places Inventory. Places of wider historic significance are entered in the Tasmanian Historic Register and/or the Register of the National Estate. Management of these places must accord with the provisions of the applicable State or Commonwealth legislation. No places in the reserve are currently registered on the Tasmanian Historic Register.

The Sandy Cape Lighthouse is the only historic place listed on the Register of the National Estate. The Sandy Cape Lighthouse, the Balfour–Temma tramway and the Balfour Track are registered on the Tasmanian Historic Places Inventory.

To date there have been only limited assessments of the historic heritage of the reserve and it is possible there are many more sites of significance.

Social Significance

Recreational and commercial users also have a long and continuing association with the area, an association that in instances may span several generations and periods of over 100 years.

Strong social and cultural heritage values are attached to cattle droving, family camping and hunting on the west coast.

Management Issues

The European history of the area has been poorly documented (Du Cros in Harries 1995).

Management of European cultural heritage would benefit greatly from the preparation of a detailed history and follow-up archaeological survey to identify the historic resource and form the basis for a historic heritage assessment for the Arthur–Pieman Conservation Area.

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;
- present and interpret historic heritage;
- exclude intrusive development and activity.

Prescriptions

- Promote and facilitate research into the European history of the reserve, followed up by an archaeological survey.
- Identify the social significance of the reserve or elements within it to local and user communities.
- Prepare conservation policy statements or plans for all identified significant buildings and heritage sites.
- Prepare and/or use cyclic maintenance programs for historic heritage maintenance.
- Conservation and management of historic heritage in the reserve will adhere to the Burra Charter (Australia ICOMOS 1999) and its associated guidelines.
- A conservation policy statement or conservation plan, including specific assessment of significance, will be prepared before any decisions are made about major works, use, removal or interpretation of individual elements within a heritage precinct or site.
- Community consultation will occur prior to making management changes that may impact on areas or places of social significance.
- Priority in conservation works will be given first to maintenance, then preservation, then restoration (with possible adaptation).
- 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.
- Make safe dangerous structures.

3.7 Flora

The generally low but variable soil fertility and conditions induced by high rainfall, high fire frequency, wind and variable drainage result in a complex and diverse vegetation assemblage (see Map 5). While vegetation communities include small rainforest pockets and patches of wet eucalypt forest, the vegetation is dominated by wet woody scrub, sedgeland and, in extreme conditions, buttongrass moorland. Of these vegetation types buttongrass moorland dominates.

Rainforest pockets are chiefly found on the eastern flanks of the Norfolk Range and along the Donaldson Valley. Callidendrous rainforest is found on fertile soils (350 hectares) and thamnic rainforest is found on poorer soils (3,500 hectares). The Donaldson Valley rainforest pockets include stands of Huon pine *Lagarostrobos franklinii*.

Stringybark *Eucalyptus obliqua* is present in the reserve as both dry forest (6,000 hectares or 6% of the reserve) and wet forest (8,500 hectares or 8% of the reserve).

West coast peppermint *Eucalyptus nitida* is present in the reserve as both dry forest (9,000 hectares or 9% of the reserve) and wet forest (700 hectares or 1% of the reserve).

The largest patches of both wet eucalypt *Eucalyptus obliqua* forest and dry sclerophyll heathy *Eucalyptus nitida* forest are found around the Wildwave, Pedder and Thornton Rivers as well as Rocky Creek. Many smaller patches are found in the Donaldson Valley and the Norfolk Range.

Other forest communities in the reserve include woody tea-tree/paper bark *Leptospermum lanigerum*/*Melaleuca squarrosa* swamp forest (400 hectares), blackwood *Acacia melanoxylon* forest (200 hectares), blackwood swamp (10 hectares) and rocka rivulet gum *Eucalyptus brookeriana* wet forest (20 hectares).

Sedgelands are generally dominated by buttongrass *Gymnoschoenus sphaerocephalus* mixed with woody shrubs.

Sphagnum communities have been identified in the reserve.

The coastal vegetation is complex, determined in part by soil type and the extent of dune formation, salt exposure, wetness and grazing pressure. Coastal heaths are extensive, and occur generally as a narrow belt of wind and salt limited vegetation on infertile soils. Dunes once covered by a *Banksia marginata*/*Themeda triandra* grassy woodland are now largely occupied by marram grass *Ammophila arenaria* (Kirkpatrick & Bickel unpublished). On the back side of dunes, swales and dune barred depressions form herbfields and wetland associations, with occasional open water in permanent or near permanent lagoons, supporting dense aquatic vegetation.

Conservation Significance

There are many individual species of State and Commonwealth conservation significance in the reserve. Table 3 presents those plants found in the reserve and scheduled under the *Threatened Species Protection Act 1995* (State legislation) or under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth legislation).

Table 3: Plants Found in the Reserve and Scheduled Under the *Threatened Species Protection Act 1995* or Under the *Environment Protection and Biodiversity Conservation Act 1999*

Common name	Name	State	C'wealth
juniper wattle	<i>Acacia ulicifolia</i>	r	
pink fingers	<i>Caladenia atkinsonii</i>		EX
tailed spider orchid	<i>Caladenia caudata</i>	r	VU
windswept spider orchid	<i>Caladenia dienema</i>	v	EN
Paterson's spider orchid	<i>Caladenia patersonii</i>	v	
tiny caladenia	<i>Caladenia pusilla</i>	r	
large gnat orchid	<i>Cyrtostylis robusta</i>	r	
heath bent grass	<i>Deyeuxia densa</i>	r	
large golden moths	<i>Diuris lanceolata</i>	e	EN
swamp diuris	<i>Diuris palustris</i>	e	
Curtis' heath	<i>Epacris curtisiae</i>	r	
everlasting daisy	<i>Bracteantha bicolor</i>	r	
austral trefoil	<i>Lotus australis</i>	r	
Mueller's geebung	<i>Persoonia muelleri</i>		
	<i>angustifolia</i>	r	
lime fern	<i>Pneumatopteris pennigera</i>	v	
western leek orchid	<i>Prasophyllum favonium</i>	e	EN
northern leek orchid	<i>Prasophyllum secutum</i>	v	EN
sickle greenhood	<i>Pterostylis falcata</i>	r	
Arthur River greenhood	<i>Pterostylis rubenachii</i>	e	EN
river buttercup	<i>Ranunculus amphitrichus</i>	r	
Australian dusty miller	<i>Spyridium parvifolium parvifolium</i>	r	
winged spyridium	<i>Spyridium vexilliferum</i>	r	
slender stackhousia	<i>Stackhousia viminea</i>	r	
swamp trigger plant	<i>Stylidium inundatum</i>	r	
New Holland speedwell	<i>Veronica novae-hollandiae</i>	v	

Due to its variety of habitats and burning frequency, the Arthur River heathlands and heathy/sedgy forest patches are extremely rich in orchids. Several new species have been described from the area in the last few years including Arthur River greenhood *Pterostylis rubenachii*. A number of these orchids are due to be listed in the *Threatened Species Protection Act 1995*.

Several vegetation communities in the reserve have been identified to be of conservation significance (Harries 1992) including:

- buttongrass moorland communities;
- rainforest communities;
- wet eucalypt forest communities;

3. Reserve Conservation

- dry sclerophyll heathy communities; and
- *Sphagnum* communities.

Widespread forest communities of the reserve have CAR values (see Section 1.3).

The Norfolk Range area, listed on the Register of the National Estate, was nominated for a range of values including significant flora. This includes endemic plants such as Huon Pine, *Lagarostrobos franklinii* found along the Donaldson and Pieman Rivers, an undescribed species of epacris known only from the area, and localised endemics such as *Nablonium calyceroides* and *Plantago bellidioides* which are restricted to the west coast of Tasmania.

Management Issues

While there are many species of conservation significance in the reserve (see Table 3), little is known about specific management regimes that may be required to ensure their future security. The Parks and Wildlife Service is preparing listing statements for some scheduled species that will include management guidelines. The Arthur–Pieman Conservation Area is of particular significance for conservation of some species which do not occur in other reserves. Two of these species include the lime fern, *Pneumatopteris pennigera* and Curtis Heath, *Epacris curtisiae*.

Weeds are a major threat to the conservation of flora. Invasions are primarily related to grazing, vehicle use and high fire frequencies.

Cattle grazing (see Section 5.1), appropriate burning regimes (see Section 4.1) and the use of recreation vehicles (see Section 6.4) are all major management issues for flora conservation.

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;
- maintain natural processes;
- minimise harmful impacts on reserve vegetation; and
- prevent, contain or eradicate weeds threatening native vegetation.

Prescriptions

- Adopt management recommendations contained in listing statements and/or recovery plans developed for species scheduled under the *Threatened Species Protection Act 1995*.
- Non-natural disturbance of vegetation will be minimised to protect flora values and limit the risk of introducing pests, weeds or pathogens into the reserve.
- protect sensitive dune areas by controlling public access and stock agistment.
- Revegetate and rehabilitate disturbed areas.

3. Reserve Conservation

- Only local provenance of species native to the reserve will be used in rehabilitation works unless special approval is given for alternatives. Use of marram grass will be limited (see Section 3.3).
- All practicable efforts will be made, consistent with the available resources, prevailing Fire Danger Rating, fire intensity and fire crew safety, to exclude wildfire from or restrict spread of wildfire in fire-sensitive flora communities of conservation significance, or, where up-to-date information is readily available, manage wildfire for flora conservation purposes. For example, attempts should be made to exclude fire from the pockets of rainforest on the eastern flanks of the Norfolk Range and riverine rainforests associated with some of the larger rivers.
- Prepare programs for ecological management burning, establishing the fire frequencies necessary to maintain viable populations of species and communities of conservation value.
- Manage buttongrass moorland to maintain a mosaic of age classes through an appropriate regime of prescribed burning.
- Encourage research into the effect of fire on vegetation communities and associated fauna, particularly the orange-bellied parrot.
- Continue the refinement of vegetation mapping, particularly with respect to vegetation age since firing.
- Eradication or control of introduced plants will only be attempted where other values are not unduly threatened.
- Weeds are to be managed in accordance with the *Weed Management Act 1999*.
- Weed management will follow three priorities:
 1. Prevention: prevent the introduction of new invasive species (e.g. *Erica spp.* present on roadsides north of Arthur River).
 2. Control: control of localised populations of established weeds threatening sites supporting high conservation values (e.g. gorse, sea spurge).
 3. Eradication: eradication of small pockets of scheduled weeds or weeds posing significant environmental threat and for which prompt action could prevent significant threat and cost in the future.
- Weed eradication, control, and containment actions and priorities will be based on clear, well documented contemporary knowledge or, where necessary, additional research which:
 - identifies weeds requiring priority for control;
 - maps the distribution of significant species;
 - 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 that plants of heritage significance pose as environmental weeds;
 - specifies methods for 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.

- Include the Arthur-Pieman Conservation Area in state wide management plans for major weeds integrating control strategies across land tenures (e.g. gorse).
- A program to monitor the distribution, spread and control of environmental weeds will be maintained as part of the Tasmanian Weeds Plan.
- Volunteers will be sought to assist in control and eradication where suitable planned and programmed works and supervision available.
- As far as possible, all materials brought into the reserve for upgrading roads and landscape works will be weed-free.

3.8 Fauna

Since 1975 a total of 196 vertebrate species have been recorded in the region including 28 terrestrial mammals, 3 marine mammals, 100 land-based birds, 21 pelagic oceanic birds, 11 reptiles, 8 amphibians, 13 freshwater fish, and 12 marine fish (Slater in Harries 1992). The wide range of species identified reflects the varied habitats provided by the region's mosaic of vegetation, range of topography, and relative isolation.

The Arthur–Pieman Conservation Area contains a wide diversity of vertebrate fauna typical of western Tasmania.

The Arthur–Pieman Conservation Area is known to contain eight of Tasmania's eleven species of amphibians. A scarcity of frogs has been noted along the coastal area despite intensive searching and the presence of suitable habitat (Slater, 1992).

Thirteen of Tasmania's 44 native fish species and two introduced trout species have been recorded in the Arthur–Pieman Conservation Area and its surrounds.

Information on terrestrial invertebrates in the Arthur-Pieman Conservation Area was reviewed by Mesibov (in Harries 1992). A subsequent survey at 61 coastal sites between the Arthur and Pieman Rivers recorded a wide range of snails, amphipods, isopods, centipedes, millipedes and beetles (Mesibov 1993).

Richardson & Serov (in Harries 1992) conducted a very brief survey of the freshwater invertebrates in the Arthur–Pieman Conservation Area, concluding that the freshwater invertebrate fauna of the area does not seem to be exceptional and, further, that none of the insects collected had restricted ranges within Tasmania.

The bird life of the reserve is diverse and includes many shore birds and migratory species. The endangered orange-bellied parrot *Neophema chrysogaster* passes through the conservation area on its migratory route from breeding grounds in south-west Tasmania to the southern mainland States of Victoria and South Australia. The parrot population is estimated at between 150 and 200 individuals. The migration route for the orange-bellied parrot in Tasmania is a narrow coastal corridor (< 2 km wide) between Macquarie Harbour and Marawah. During the course of the migration the parrots feed on a variety of coastal and sedgeland plants which are usually within 500 m of the high water mark within the corridor. The

3. Reserve Conservation

APCA contains 48.9% (134.5 km) of the Tasmanian coastal migration route and several key feeding sites.

Cattle favour succulent and seeding coastal plants that are important for the parrot. In most cases, the entire food resource is destroyed soon after cattle are released onto runs. The reduction of this food resource for the migrating birds may reduce fitness of the birds and force them to use lower quality food or travel greater distances in search of food.

Conservation Significance

There are several individual species of State and Commonwealth conservation significance in the reserve. Table 4 presents those animals found in the reserve and scheduled under the *Threatened Species Protection Act 1995* (State legislation) or under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth legislation).

Table 4: Animals Found in the Reserve and Scheduled Under the *Threatened Species Protection Act 1995* or Under the *Environment Protection and Biodiversity Conservation Act 1999*

Common name	Name	State	Commonwealth
wedge-tailed eagle	<i>Aquila audax fleayi</i>	e	EN
shy albatross	<i>Thalassarche cauta</i>	v	VU
green and gold frog	<i>Litoria raniformis</i>	v	VU
orange-bellied parrot	<i>Neophema chrysogaster</i>	e	EN
Australian grayling	<i>Prototroctes maraena</i>	v	VU
caddis fly (Bluff Hill Creek)	<i>Stenopsychodes lineata</i>	r	
fairy tern	<i>Sterna nereis nereis</i>	r	
thylacine	<i>Thylacinus cynocephalus</i>	x	EX

Key:

x	extinct	EX	extinct
e	endangered	EN	endangered
v	vulnerable	VU	vulnerable
r	rare		

Several other species found in the reserve and considered to have conservation significance are listed in Table 5.

Table 5: Species Found in the Arthur-Pieman Conservation Area and Considered to Have Conservation Significance

Common name	Name
ground parrot	<i>Pezoporus wallicus</i>
azure kingfisher	<i>Alcedo pusilla</i>
hooded plover	<i>Charadrius rubricollis</i>
Latham's snipe	<i>Gallinago hardwickii</i>
broad-toothed rat	<i>Mastacomys fuscus fuscus</i>
spotted-tail quoll	<i>Dasyurus maculatus</i>
long-nosed potaroo	<i>Potorous tridactylus</i>
little penguin	<i>Eudyptula minor</i>
short-tailed shearwater	<i>Puffinus tenuirostris</i>

Large and remote areas of relatively undisturbed habitat like the Arthur–Pieman Conservation Area are important for vertebrate conservation. Species such as the broad-toothed rat, the long-nosed potaroo and the wedge-tailed eagle have

suffered declines in both Tasmania and mainland Australia. The Arthur–Pieman Conservation Area provides a stronghold for these species.

The coast of the Arthur–Pieman Conservation Area serves as an important part of the Bass Strait migratory corridor for many bird species including the nationally endangered orange-bellied parrot, and provides valuable breeding habitat for numerous shore birds that are threatened elsewhere in Australia (Slater in Harries 1992).

The Norfolk Range area, listed on the Register of the National Estate, was nominated for a range of values including significant fauna. This includes the ground parrot, which is threatened in Australia; the sacred kingfisher, *Halcyon sancta*, which is uncommon in Tasmania; and the orange-bellied parrot.

Australia is signatory to two international agreements relating to migratory birds found in the reserve. The orange-bellied parrot is listed as endangered under the Japan-Australia Migratory Bird Agreement (JAMBA) and the Latham's snipe is listed under the JAMBA and the China-Australia Migratory Bird Agreement.

Management Issues

Cattle grazing (see Section 5.1), appropriate burning regimes (see Section 4.1) and the use of recreation vehicles (see Section 6.4) are all management issues for fauna conservation.

Existing coastal activities and further development along with cattle agistment are both threats to the security of the orange-bellied parrot.

Future development of wind farms in the area may result in significant bird collision risks (see Section 5.2).

Future granting of licences for the collection of cast bull kelp in the reserve has likely impact on fauna habitat and resources.

Aims

The aims for fauna conservation in the reserve are to:

- ensure threatened fauna species are protected;
- maintain viable populations of indigenous species of fauna throughout their natural range; and
- maintain the diversity of natural habitats of indigenous fauna.

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

- All practicable efforts will be made to prevent impacts on threatened species.
- Prescribed burning will be planned and conducted to assist with the protection of threatened species and maintenance of their habitat (see Section 4.1).

3. Reserve Conservation

- Identify the status, distribution, habitat and local conservation requirements of fauna, with emphasis on species of conservation significance, in particular:
 - breeding and roosting habitats of the hooded plover;
 - feeding, breeding and roosting habitats of the azure kingfisher (Tasmania); and
 - feeding and roosting habitats of the orange-bellied parrot and Latham's snipe.Adopt, as appropriate, strategies to limit use of or access to sensitive feeding, habitat, breeding and roosting sites.
- Collection of fallen timber may be restricted where its removal is causing a significant impact on the availability of animal habitats.
- Adopt management recommendations contained in listing statements and/or recovery plans developed for species scheduled under the *Threatened Species Protection Act 1995*.
- New introductions of fauna to the reserve will not be permitted without an approved comprehensive environmental assessment.
- Develop and implement monitoring programs for species of conservation significance.
- Monitor introduced fauna populations and undertake regular surveys of key species.
- Eradication of introduced fauna will only be attempted where non-target species are not unduly threatened by the proposed methods.
- Eradication, control, and containment programs and priorities will be based on approved codes of control for each species or, in the absence of such, on clear, well-documented contemporary knowledge or, where necessary, additional research.
- Undertake or facilitate surveys to define the distribution and ecological requirements of the fauna.
- Prepare programs of ecological management, defining the fire frequencies necessary to maintain the diversity of habitat and viable populations of species of conservation value.
- Educate visitors about the harmful effects upon wildlife of inappropriate food and dependence on humans and discourage feeding of wildlife.
- Liaise with neighbouring landowners about the need to upgrade and maintain boundary fences.

4.1 Fire Management

Fire has been a major force in the evolution of Australian flora and fauna and this is particularly relevant in the Arthur–Pieman Conservation Area. The vegetation of the region has been exposed to periodic fire for thousands of years.

Before the Arthur–Pieman area was utilised by Aborigines, fires would have resulted from natural ignition sources.

Fire frequency altered with the arrival of the Aborigines. They used fire to flush and hunt game, concentrate the game by promoting grasslands (Dyring 1992), to promote the proliferation of certain useful plants (e.g. kangaroo apple, orchids) and to create walking trails through the area.

With the arrival of Europeans the fire frequency in the reserve almost certainly changed again. By the mid to late 19th century fire was used by Europeans to clear tracts of land for grazing (Dyring 1992) while the west coast was extensively and repeatedly burned to facilitate mining exploration. While little is known of the precise details of the fire history of the reserve, European use of fire has almost certainly resulted in significant changes in the distribution of plant communities and consequently in the distribution of wildlife. The loss of areas of organic soils can be directly attributed to fires lit by Aboriginal people, Europeans or both. Fire has been used in recent years for protection of assets and enhancement of cattle agistment. Arson and escaped prescribed fires have also had an impact on plant communities.

The development of an appropriate fire regime is important to the ecology of the area. 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.

The Department of Primary Industries, Water and Environment is responsible under the *Fire Service Act 1979* and the *Fire Service (Miscellaneous) Regulations 1996* for all aspects of fire management within the conservation area, including prevention, containment and suppression. There is a duty of care towards the safety of visitors and neighbours and their property.

A fire management plan has been written for the area entitled *Fire Management Plan, Arthur–Pieman Protected Area 1996*.

Aims

The aims of wildfire management are:

- to protect people from wildfires;
- to protect buildings, facilities and visitor, belongings from wildfires;
- to prevent wildfires burning onto neighbouring properties;
- to protect those natural and cultural assets that will be damaged by wildfire.

The aims for ecological fire management are to:

- maintain peat soils;
- maintain the diversity of plant and animal communities.

Prescriptions

- Review the fire management plan within twelve months of this management plan coming into effect.
- Implement the above fire management plan as a matter of priority.
- Fire management will prioritise conservation of the following species and communities:
 - suitable habitat for orange-bellied parrots
 - the forest communities of the reserve
 - diversity in the heaths and sedglands of the reserve.
- Earth moving equipment will only be used as a last resort and where absolutely necessary to protect life and property.
- 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.
- Prescribed burning, including burning, slashing, mowing and similar methods, may be used for bushfire prevention and containment.
- Prescribed burning will be conducted in accordance with guidelines set out in the fire management plan.
- Undertake ecological management burning according to programs established by prescriptions in Sections 3.7 and 3.8.
- Seek to manage fire in a manner so as to retain the balance of plant communities as they presently exist in the landscape.
- New fire management vehicular tracks will only be constructed within the reserve after assessment of requirements and impacts confirms the need.
- Fires will be prohibited in the reserve during periods of high to extreme fire danger, as well as during days of Total Fire Ban. Take all practicable measures to inform visitors of such prohibitions.
- When fire danger conditions warrant, all or some areas of the reserve may be closed by restricting access under Regulation 12 of the *National Parks and Reserves Regulations 1971*.
- Interpretation programs to explain fire management policies and fire safety procedures to summer visitors will be developed.
- Further fire management prescriptions are contained in Sections 3.7 and 3.8.

4.2 *Phytophthora* Protection

Phytophthora cinnamomi is known to be present and widespread within the reserve. Its distribution is strongly correlated with vehicle access which is the primary manner in which infected soils are moved around the reserve. Other vectors including walkers, animals and down-slope wash usually are responsible for localised distribution of the fungus.

Aims

The aims of *Phytophthora* protection are to:

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

Prescriptions

- All practicable steps will be taken to prevent further introductions or spread of *Phytophthora*.
- 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.

4.3 Reserve Boundaries

Cross-boundary activities can be responsible for creating management issues. For instance, shack sites located outside the reserve provide a base for activities that impact on the reserve's natural and cultural values. Conversely, many activities initiated within the conservation area spill over into adjacent land, providing management challenges there. For instance both agisted cattle and off-road vehicle users roam out of the Arthur-Pieman Conservation Area (APCA) into Sundown Point State Reserve, and West Point State Reserve damaging these places.

The eastern boundary of the reserve, particularly in the northern third, is long and tortuous. Management difficulties are associated with multiple access points particularly from adjacent commercial logging.

At present the Arthur River is not part of the conservation area. This is likely to present future difficulty in ensuring appropriate management of river-based activities.

It may be that some minor boundary modifications could significantly improve management of the conservation area.

Aims

The aims for any future boundary changes are to:

- provide, where possible, for ecological boundaries;
- provide boundaries that are clearly justifiable from a management perspective; and

- simplify and clarify boundaries.

Prescriptions

- If the opportunity arises, incorporate minor boundary changes that may improve the integrity of the conservation values, or simplify management.
- Enter into discussions with Forestry Tasmania to identify boundary amendments that would improve management.
- A period of public consultation will be undertaken before making any decisions in respect of the above boundary changes.
- Amend the boundary of the APCA to include the Arthur River, its banks and the land north of the Arthur River township.
- Following determination under the shack sites categorisation process (see Section 6.2), incorporate those areas of unallocated Crown land adjoining the APCA and not required for shack sites or ancillary infrastructure.

4.4 Assessing and Approving Development

From time to time new developments in the reserve may be proposed by the managing authority or private developers. This section outlines the processes for assessing and approving new development proposals that are consistent with this management plan. Proposals lacking consistency require amendment of this plan in order to proceed.

Major developments are those which are large in scale, or attract high public interest, or have the potential for substantial impacts on the values of the reserve, or have significant impact on the provision of facilities or services outside the reserve. Examples include accommodation developments, new roading and primary production facilities.

Minor developments are considerably smaller in scale, have low public interest and have low potential for impact on values, e.g. re-routing a section of walking track, fencing, refurbishment of an existing facility.

It is anticipated that the *Land Use Planning and Approvals Act 1993* will be soon amended to provide some level of jurisdiction over development in the PWS reserve system

Aims

- To ensure that decisions related to proposed developments or activities reflect the management objectives of this plan.
- To ensure that sound processes exist for the assessment of potential impacts of proposed developments and activities (including scientific and management activities).

Prescriptions

- The following prescriptions of this section have effect unless future legislative amendments, including to the *Land Use Planning and Approvals Act 1993* are intended to take precedence.

4. Reserve Protection

- The Director will determine what constitutes a minor or major development in accordance with the criteria established in this section of the plan.
- Assess all proposals for minor developments, works, research or maintenance involving any ground breaking, disturbance or environmental manipulation of any kind in accordance with internal procedures approved by the Director. Undertake such works in accordance with the Reserve Management Code of Practice (in preparation).
- Cooperate with the Circular Head Council in the consideration of all major development and resource use proposals. Such proposals will require
 - the approval of the Minister;
 - preparation of an environmental impact assessment in accordance with guide-lines and principles established by PWS, the Circular Head Council and section 74 of the *Environmental Management and Pollution Control Act 1994*.
 - a site plan detailing how impacts will be managed; and
 - demonstration of compliance with the State Coastal Policy and all other relevant statutory and State policy requirements.
- Assessment of development proposals will take into account the requirements listed in Section 5.6.
- All commercial development proposals will be required to 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.
- In approving a development proposal, the extent of any financial, infrastructure, managing authority services or environmental resource subsidy will be made explicit and public.
- Site plans will define planning and design objectives, environmental performance standards and the extent and nature of visitor and management facilities and services.
- Environmental impact assessments and site plans will be available for public comment for a period of not less than 30 days prior to approval and, subsequently, whenever modifications are proposed.
- Co-operate with the Tasmanian Aboriginal Land Council about any determination on development proposals that may have potential impacts on Aboriginal cultural heritage or values.
- Ensure that conditions of operation or use of the reserve contain adequate provisions to cover the costs of any necessary subsequent requirements for environmental protection or remedial measures.

The Arthur–Pieman area provides important contributions to the economy of the local community, and where those activities are sustainable they are accommodated by the management objectives of the reserve. Consistent with protecting the values of the reserve it is important that sensible guidelines and controls are developed and applied to these activities.

5.1 Stock Agistment

Historically the Arthur–Pieman region was declared a Crown Agistment Area to provide agistment for Circular Head farmers. Agistment was sought to feed dairy herds between lactations in an area off the home farm. This practice has in the past provided a range of benefits including resting of the home farm, saving pasture growth for early feeding of calving animals and reducing soil pugging on farms prone to seasonal waterlogging. Many north-west dairy farmers have now developed strategies to obviate the need for agistment.

Stock, including beef cattle, are agisted between March and September each year. The agistment area is divided into four runs. From north to south the runs are the Northern, Arthur-Rebecca, Temma and Southern. Each of the runs is allocated different stock types during the agistment season as follows:

- the Northern Run is restricted to dairy cows;
- the Arthur-Rebecca Run is used for dairy cows from 15 March to 15 July and all stock from 15 July to 30 September;
- the Temma Run is used by beef breeding stock;
- the Southern Run is open to beef steers and beef cows.

Management Issues

Since the beginning of the 20th century graziers have lit most of the coastal strip of the Arthur–Pieman Conservation Area to rejuvenate vegetation and to induce ‘green pick’ (Dyring 1992). The effect of this continued burning is to maintain a disclimax vegetation community (Harris 1988). Burning, followed by the sowing of exotic pasture species, has also been used for pasture improvement along most of the coastal strip of the Arthur–Pieman Conservation Area (Dyring 1992).

The area of native *Poa* grassland has, through this process, been severely reduced and replaced by pasture species. If fire was totally excluded the vegetation would change. In many cases the low heath would change to tall, dense and wet vegetation (Dyring 1992), marram grass (*Ammophila arenaria*) would be replaced by *Acacia sophoreae* dominated vegetation (Harris 1988), and buttongrass communities would be altered (Askey-Doran *et al.* in Harries 1992). Firestick farming practices together with the impact of hoofed animals and other introduced species including rabbits has no doubt been a major contributor to the high dune mobility of the area (see Section 3.2).

Grazing, even without firing, affects native vegetation communities. Grazing perpetuates pasture species by seed transportation and the mechanical action of grazing (Duffey *et al.* 1974). Overgrazing may lead to the dominance of unpalatable exotic species that benefit from the increased nutrient levels on previously nutrient-deficient soils (Dyring 1992).

The coastal dunes of the Arthur–Pieman Conservation Area contain high densities of Aboriginal heritage places (see Section 3.5). Wind and water

erosion are constant threats to these cultural sites and the effect is amplified when stabilising vegetation is disturbed by cattle (Richards & Richards in Harries 1992). Direct physical impact on sites by cattle is sometimes locally severe.

An economic analysis of agistment in the Arthur–Pieman Conservation Area (Brownscombe 1992) concluded that, among other things, the current system of management is not necessarily able to protect the environment and is probably resulting in taxpayer subsidy to a small number of cattle farmers.

Agistment provides circumstances where different herds mix together before eventually returning to home farms, circumstances where diseases can be widely transmitted. Diseases of particular concern include ruminant paratuberculosis, commonly called Bovine Johnes, and salmonella.

Under the *Animal Welfare Act 1993*, animals under agistment are the responsibility of the party providing the agistment (unless there is a legal agreement otherwise). As an agister, the Parks and Wildlife Service attracts a duty of care for the animals placed under its control.

While agistment presents management challenges, consideration needs to be given to its contribution to the broader community. Agistment is an activity of interest to visitors, it plays a role in presenting traditional activities such as cattle mustering and is of possible future importance as a focus for tourism. Agistment plays a role in maintaining the open nature of some of the hind dune areas. There is strong local support for the continuation of cattle agistment, based both on a need for alternative winter feed and the desire to retain a traditional practice. Strong social and cultural heritage values are attached to cattle droving on the west coast.

Aims

The aims for stock agistment in the conservation area are:

- the clear demonstration of sustainability;
- protection of natural and cultural heritage sites and landscapes,
- financial neutrality for the Crown;
- protection for the Crown from any liability under the provisions of the *Animal Welfare Act*;
- presentation, where appropriate, of traditional practices for the benefit of visitors and the local community.

Prescriptions

- Establish a grazing consultative group, responsible to the management committee (see Section 7.3), whose task is to recommend ongoing management arrangements for agistment.
- The grazing consultative group is to include:
 - three local nominees representing beef and dairy industry interest, and currently actively engaged in APCA agistment;
 - a nominee representing conservation interests;
 - a nominee representing Aboriginal values; and
 - a nominee representing the managing authority.
- The priority function of the grazing consultative group is to prepare a five year grazing management plan for the APCA, setting out, among other things:
 - the operational conditions for agistment, including areas to be made available;

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- recommendations on the capital and maintenance program for infrastructure;
 - identifying exclusion areas;
 - a fencing plan to exclude cattle from hazardous watering points and badly degraded creek banks, integrated with other exclusion imperatives such as dune protection and cultural heritage protection;
 - an evaluation of the need for, and if necessary, a program for the control and management of livestock disease, for example Bovine Johnes Disease;
 - a carcass disposal policy; and
 - an annual budget.
- The above grazing management plan is to be endorsed by the management committee and approved by the managing authority before implementation.
 - All costs associated with stock agistment are the responsibility of agistors, including maintenance of stockyards, mustering paddocks, erection and maintenance of fencing, associated agistment infrastructure and general livestock management. All revenue generated by livestock agistment is to be made available to the grazing consultative group to enable it to carry out its functions.
 - Whilst grazing is to continue, the managing authority is to ensure that agistment of stock in the reserve is managed sustainably:
 - to minimise impacts on the Aboriginal cultural heritage associated with the coastal strip;
 - to ensure the integrity of the dune systems and associated vegetation are not impacted significantly;
 - to minimise impacts on the habitats of threatened species;
 - otherwise in accordance with the provisions of this plan.
 - A three year review of the progress toward a sustainable grazing regime will be made by the managing authority and reported to the Minister.
 - Agistment in the reserve is to be limited to those stock owners holding an agistment licence issued by the managing authority. Such licences are to be renewable for periods not exceeding five years. The managing authority, following recommendations from the grazing consultative group, should determine the period.
 - Issuing of an agistment licence is subject to demonstration that APCA agistment is an integral part of a whole farm management plan.
 - Agistment licences must be made out to a person, not a trust, farm, holding company or other similar entity.
 - Agistment licences are to be non-transferable and surrendered to the Crown when no longer required.
 - Agistment licences are to be made available only to stock owners who have, in the past, regularly utilised the area and have an acceptable record of management of stock in the APCA.
 - Agistment licences will establish the maximum number of cattle that the person licensed may agist. This number is to be based on practices

established in the three years prior to this management plan taking effect. Once this number is established it may not be increased.

- The managing authority is to ensure that stock agistment is managed sustainably to protect and maintain the protected environmental values of water bodies.
- The managing authority is to set an annual cap on the total number of cattle that can be agisted, following recommendations from the grazing consultative group. In setting the annual cap, the managing authority is to take into account not only the feed levels and water availability but also the effect of cattle on other values.
- The managing authority is to provide for the assessment of stock arriving for agistment to ensure that their general health and body condition is acceptable.
- The managing authority is responsible for appointing a suitably qualified person(s) to undertake the above described assessments.
- The managing authority may take necessary steps to allow for regeneration of agistment runs and to minimise adverse impacts.
- Protect sensitive dune areas by controlling stock agistment.
- The cultural heritage values attaching to the practice of cattle grazing in the Arthur–Pieman Conservation Area will be documented and options for its presentation explored.
- Horses and dogs can be used without specific authorisation in cattle management operations.
- Agistment infrastructure such as fences and stockyards will be retained whilst agistment is continued.
- The cultural heritage values of the stockyards and other grazing infrastructure will be conserved (see Section 3.6).

5.2 Electricity Generation Potential

Recording of west coast wind profiles has indicated potential for the commercial development of wind power.

Currently the Hydro holds a licence to place monitoring equipment within the northern end of the Arthur–Pieman Conservation Area to further examine and analyse the available wind resource. This licence gives Hydro Tasmania exclusive rights to conduct research into the wind power potential. This may lead to construction of a large scale wind farm and transmission tower corridor within the current boundaries of the conservation area.

Management Issues

The wind generation potential of the area is likely to assume special importance for the future development of the State. A significant wind farm could however conflict with other values of the reserve.

These values include natural values such as rare plants and animals. Bird collision risk, particularly in relation to the endangered orange-bellied parrot, requires a detailed assessment. There would also be a need to manage the impacts on cultural, social and landscape values.

Aims

- Allow for wind resource investigation subject to appropriate conditions to protect the environment.
- Any further development of the wind resource will be subject to the preparation of a full environmental impact assessment process that includes community review.

Prescriptions

- Provide for wind resource investigation subject to any conditions established by the management authority or any relevant statutory authority.
- Any further development of the wind resource will be subject to:
 - the preparation of a full environmental impact assessment and environmental management plan involving community consultation and review;
 - the proposal receiving all required statutory approvals;
 - full consideration of the spirit and intent of the management objectives endorsed in this plan;
 - clear demonstration that the CAR values identified in the RFA receive adequate protection through an appropriate management regime.

5.3 Mineral Resources

The Arthur–Pieman Conservation Area has a long history of mining activity, and is a prospective source of many minerals.

Known mineral resources and potential (undiscovered) mineral resources of Tasmania have been assessed as part of the Comprehensive Regional Assessment. This assessment identified the Arthur–Pieman Conservation Area as having high composite mineral potential.

Mineral deposits of tin (cassiterite), tungsten (wolfram), and copper (chalcopyrite, chalcocite, covellite) have been historically worked in the area, notably at Balfour and Interview River. Deposits of all these ores remain along with possible deposits of lead, zinc, silver, rutile, zircon, leucosene, monazite, platinum and gold. Sand, gravel and shingle deposits are plentiful in some parts, but workable deposits are limited. Some of the young calcareous sands contain high proportions of lime.

The conservation area status of the reserve provides for exploration activities and utilisation of mineral resources (see Section 2.2). Mineral exploration and development is principally controlled under the *Mineral Resources Development Act 1995*, which is administered by Mineral Resources Tasmania (MRT), a division of the Department of Infrastructure Energy and Resources. Exploration licences and mineral leases are current within the Arthur–Pieman Conservation Area.

Exploration is currently being conducted on two exploration licences within the Arthur–Pieman Conservation Area. Exploration activity graduates from airborne geophysics, reconnaissance, field mapping, stream and soil sampling early in a program, to more intensive work such as drilling and bulk sampling which require access tracks for equipment. At present no mining is taking place.

Historically small operators and prospectors have played a part in the mining history of the west coast, and the Arthur–Pieman Conservation Area in particular.

Assessment and Approval Procedures

All exploration activity undertaken within the reserve requires the approval of the Mineral Exploration Working Group 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, the Department of Primary Industries, Water and Environment 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 provides the basis for assessment, public comment, approval and permit conditions.

Rehabilitation is a normal condition of any lease or licence to undertake mining activities and bonds are held to ensure it is successfully carried out.

Aims

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

Prescriptions

- 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 in the Arthur–Pieman Conservation Area.

5.4 Leases and Licences

There are currently many leases and licences proposed or operating within or adjacent the conservation area, including for:

- commercial river activities;

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- commercial tour groups;
- commercial eel fishing;
- commercial shore-based fishing;
- shacks (see Section 6.2);
- slipways (see Section 5.5);
- grazing-related purposes;
- apiary activities;
- proposed cast bull kelp collection;
- proposals to establish wind monitoring sites by the Hydro (see Section 5.2).

River Activities: Currently two commercial river cruises and a commercial boat hire provider operate from the mouth of the Arthur River. Because of the boundary description (see Section 4.3) all these activities operate entirely outside the conservation area.

Wave-induced bank erosion issues have been identified on the Arthur River. Experience in the Gordon River indicates that commercial tour boats can be major contributors to such damage.

Tour Groups: There are four separate tour groups authorised to conduct tours within the reserve. Three conduct walking tours while two conduct four-wheel drive tours.

If commercial four-wheel drive tours operate outside conditions that apply to the general public, this is likely to generate antagonism.

Commercial Eel Fishing: A licence to conduct an eel fishery in the reserve, subject to the consent of the land manager (PWS), has been issued under the *Inland Fisheries Act 1999*.

Re-stocking programs need to take account of the potential to impact on natural values. Measures to avoid a significant by-catch of platypus, which usually results in death of these animals, need to be taken.

Shore-based Commercial Scale-fish Seine Netting: A licence to conduct this activity in the reserve, subject to the consent of the land manager (PWS), has been issued under the *Living Marine Resources Act 1999*.

Cattle Grazing: Four special licences pertain to cattle grazing within the reserve.

One, the result of a fence encroachment, provides the licensee authority to graze stock along a strip of land along the boundary to Temma Farm. Adjacent to this licensed land, the Temma Road occupies a narrow strip traversing between the back side of the coastal dune and the farm fence. Scope for road widening or realignment is restricted by these current circumstances.

A second licence provides authority for stock to graze a narrow strip of foreshore within the reserve and abutting freehold farmland. The licence is located over an area particularly rich in Aboriginal cultural heritage sites, sites that are being damaged by the cattle. One of the chief reasons for the existence of the licence is to provide cattle access to foreshore springs.

The other two licences provide authority to use areas of land in the reserve to locate mustering huts and stock holding areas.

Apiarists: Natural forest populations of the leatherwood tree *Eucryphia lucida* form the basis of the Tasmanian leatherwood apiary industry. The opening of

the Western Explorer Road has provided access to previously inaccessible forests containing leatherwood. The possibility of siting commercial bee-hives along the highway has been raised by the apiary industry.

Honeybees interact with a diversity of native flora and fauna. There have been many studies conducted in an effort to determine the effects of this interaction but the results are often conflicting. As a result the Parks and Wildlife Service has generally adopted a precautionary approach to the introduction of honeybees to new areas.

Cast Bull Kelp: *The Partnership Agreement June 1999* signed between the Government of Tasmania and the Circular Head Council binds the State to facilitate the development of the cast kelp harvest industry and to allocate access to the resource. The Arthur–Pieman Conservation Area has been specifically targeted as a possible cast kelp harvest area. Permits to collect cast bull kelp have been issued to several parties in the community, subject to the approval of the land manager (PWS).

Cast bull kelp collection requires direct access to coastal collection areas by vehicles, often heavy vehicles. The collection of kelp may also have impact on shore habitat, nutrient cycles and Aboriginal sites. There are many areas of the coast within the Arthur–Pieman area that are served by authorised, good quality roads and tracks, providing opportunities for kelp harvesting.

Aim

The aim for managing leases and licences is to allow for a range of activities while protecting and conserving natural and cultural values.

Prescriptions

- Monitor bank erosion on the Arthur River.
- Commercial four-wheel drive tours in the reserve will comply with the general regulations for recreation vehicle use described in Section 6.4.
- All commercial eel fishing is to comply with an Eel Fishery Management Plan, which is to be prepared by the Inland Fisheries Service in consultation with the Director, PWS.
- If road widening or realignment is required within the reserve along the boundary of Temma Farm, cancellation of encroachment rights is favoured ahead of disturbance of dunes.
- The mustering huts will be issued temporary licences consistent with other shacks and be subject to the same review process (see Section 6.2). Subject to the outcome of this process the mustering huts and stock yards will be retained whilst required for management of stock or for retention of cultural heritage values.
- Apiary sites may be permitted in the recreation and visitor services zones and along the Western Explorer Road. All proposals to site hives will be subject to an approved comprehensive environmental assessment.
- An environmental impact assessment, including an environmental management plan, is to be prepared before collection of cast bull kelp is authorised in the APCA. All cast bull kelp harvesting is to be

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conducted in a sustainable manner in accordance with the *State Coastal Policy 1996* and this management plan.

- Monitor the impacts of kelp harvesting on bird species and their feeding habitats.
- All new leases, licences and permits will be consistent with the aims and prescriptions of this management plan.
- Subject to the *National Parks and Wildlife Act 1970* and this management plan, leases and licences to provide services within the reserve may be issued for tourism, recreation, or education purposes.
- Permits 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 Wildlife Act 1970* applies, a business licence will be required.
- Leases, licences and permits 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 permit proposals are considered (see Section 5.6). A detailed, proposal-specific, 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.

5.5 Commercial Fishing Infrastructure

The coastal strip extending from Bluff Hill Point to Greenes Creek is an important commercial fishing centre. Scale fish, crayfish and abalone are caught in significant numbers. A high proportion of abalone harvested along the west coast is landed at Couta Rocks. Boat moorings are located at Bluff Hill Point, Sundown Point, Nelson Bay, Couta Rocks, Temma and Gannet Point. Privately owned slipways exist at Temma and Couta Rocks, the principal commercial fishing nodes within the reserve.

People of European descent began exploiting the abundant marine resources of the area in the 1940s. The primary commercial catch in the early days was crayfish, caught in ring nets from the shore at Temma and transported back to Smithton along rough tracks in ex-army jeeps.

By the 1960s commercial cray fishers began to base themselves along the coast with established shore facilities and shacks. The development of the abalone industry around 1970 speeded up the process of fishing settlement. In excess of \$20M worth of seafood, principally abalone, is landed at Couta Rocks each year which, with seven registered moorings and four established slipways is, in effect, a small fishing village.

The unique style of fishing practised within the conservation area and the shore-based infrastructure which supports it is part of the colour and local culture of the west coast. There are opportunities to interpret this important local industry for visitors and to identify possible linkages with the tourism industry.

Most of the commercial fishing nodes of activity are outside the boundaries of the conservation area (see Section 1.4). Some small commercial fishing nodes, such as Gannet Point, are still in the conservation area, and are subject to the provisions of this plan.

Management Issues

Commercial fishing, and the associated requirement of getting product swiftly to market, places high demands upon the track system of the reserve. Where these tracks are poorly formed (as in the Gannet Point track) water-logging and braiding may result (see Section 6.3).

West coast weather results in the need, for boat safety, to frequently haul the commercial fishing fleet above the storm wash zone. For this purpose some fishermen have fixed slipways, others use large portable cradles, hauled by tractor or similar. The practice can sometimes result in direct physical impact along shore-lines.

Boat maintenance involves the use of materials such as anti-fouling paints and lubrication and hydraulic oils. These need to be managed carefully in order to maintain the environmental values of the coast.

Infrastructure associated with commercial fishing, such as including slips, moorings, nets, dinghies, ancillary machinery, fuel tanks, tractors and trailers, needs to be managed to minimise potential adverse visual impact.

Most of the fishers based on the Arthur-Pieman coast are permanent or semi-permanent residents during the 10-month fishing season. The shacks/houses of these fisherman have been assessed as part of the shack categorisation process with a view to offering freehold title, provided environmental and cultural conditions are met. In those few cases where caravans are used for long-term accommodation close to moorings, these environmental conditions may not be met. Most of the shacks are outside the plan area. The issues associated with shacks are discussed in Section 6.2.

Aims

- To develop protocols and codes of conduct with and for commercial fishers which identify best practice in environmental management of shore-based activities, and which reward compliance.
- To minimise any adverse impacts commercial fishing infrastructure may have on the conservation area.
- To develop ways of interpreting the social and economic contribution of those commercial fishers based in the Arthur-Pieman Conservation Area, with particular reference to the growing tourism market.

Prescriptions

- All commercial fishing currently located in the conservation area is strongly encouraged to relocate into established nodes of shack development on unallocated Crown land. Temma and Couta Rocks are particularly identified in this regard.
- Further commercial fishing infrastructure is to be located within the established shack nodes outside the conservation area.

- Caravans providing seasonal accommodation for fishers will not be permitted within the conservation area, but may be accommodated within the unallocated Crown land at:
 - Bluff Hill Point,
 - Arthur River,
 - Nelson Bay,
 - Sarah Anne,
 - Couta Rocks,
 - Stinking Beach,
 - Temma.
- Develop protocols with commercial fishers identifying best-practice management of shore-based activities.
- Promote and facilitate interpretation of the history and structure of commercial fishing within the reserve.

5.6 Development Works Including Visitor Services

Development works can range from manipulative research, construction of visitor services such as a new roads or tracks, or installation of a toilet, to constructing new buildings or refitting existing ones, and installing or repairing services. Development works can also refer to commercial or industrial uses of coastal areas within the conservation area. This section excludes activities covered by Sections 5.2 and 5.3.

A reserve code of practice is in preparation and is intended to provide standards and guidelines for works in reserves.

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;
- foster public confidence in developments and resource utilisation;
- ensure that all developments or works are ecologically sustainable.

Prescriptions

- All development will accord with this management plan and the reserve code of practice, when it is approved. Assessment and approval of development will be in accordance with Section 4.4.
- Use or construction of access routes and infrastructure that adversely impacts on Aboriginal sites is prohibited. Infrastructure does not include selective fencing or other exclusion mechanisms specifically provided for the protection of Aboriginal sites.
- Commercial developments in the reserve must provide a clearly demonstrated benefit to the Tasmanian community and directly demonstrate a capacity to assist meeting the costs of researching, conserving or managing the values of the reserve affected by the development.
- Tourism and recreational opportunities, facilities or services will:
 - base themselves on the features and values of the reserve;

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- 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;
- Commercial operations will;
 - explain the principles of minimal impact on natural and cultural values to clients;
 - avoid impact on the legitimate enjoyment and experience of the reserve's values by others;
 - contribute to the external costs (for example road or sewage treatment services) resulting from the proposal.
- All development will adopt environmental best practice methods for:
 - sewage treatment;
 - stormwater management;
 - water supply;
 - energy generation and conservation;
 - machinery installation and maintenance;
 - fuel delivery and storage;
 - storage and disposal of solid and liquid waste.
- All development will meet applicable statutory requirements.
- Provide visitors with on-site information about the intent and progress of any significant developments.

Section 6 Visitor Services

The conservation area is a popular recreational destination for a wide range of users. Recreational use is well established over much of the coast and parts of the hinterland. The pattern of use is changing and visitor pressure is growing.

Over the past 30 years recreational use of the west coast has expanded significantly. Several factors have contributed to this pattern of growth:

- the advent of off-road recreational vehicles;
- the construction of the Arthur River Bridge;
- the upgrading of the Temma Road;
- the completion of the Western Explorer Road ;
- increased leisure time.

Apart from the diversity of recreational opportunities in the coastal zone, there are also recreational values in the hinterland, especially associated with the mountains, rivers and forests.

Types of recreation practised in the Arthur–Pieman Conservation Area range from sea-orientated pursuits such as fishing, boating, swimming, surfing and skin-diving to land-based activities such as camping, recreational driving, hunting, angling, bushwalking, photography, nature study and horse riding.

There are limited figures available on which to assess visitor use of the conservation area. However, between October 1999 and October 2000 almost 600 authorities were issued for off-road vehicle use.

All provisions of this plan requiring expenditure are subject to the availability of funding.

6.1 Camping

At present much of the camping in the region occurs on the fringe of the Arthur–Pieman Conservation Area at three formalised PWS managed camping areas in or close to the Arthur River township. The range of facilities provided includes individual mown camp sites, water, fireplaces, garbage collection and toilets.

There is also a serviced caravan camping area located at Arthur River adjacent to the PWS office. The caravan area provides toilets.

In addition to the above formal camping facilities, free-range camping occurs throughout the whole of the Arthur–Pieman Conservation Area. The reserve is one of the few ‘open’ and accessible wild places in Tasmania. It offers unrivalled opportunities for four-wheel drive-equipped families to pursue a genuine four wheel drive camping adventure in a place of extraordinary beauty. Camping and off-road vehicle use permits are currently required for persons wishing to camp with vehicles south of Temma. A rapid growth in demand for four-wheel drive-based free-range camping has led to many semi-formalised camping areas becoming established. Most of these areas are unserviced, although toilets were recently installed at sites on Sandy Cape.

Free-range camping and caravanning, as well as camping in the designated areas, is at present limited to stays not exceeding four weeks.

Management Issues

The cost of providing garbage collection for campers at designated camping areas around Arthur River has been rapidly increasing, to the point where it has become a major cost.

There are several major management issues associated with free-range camping, including:

- lack of facilities and fouling around camp sites;
- incremental expansion of sites and a southward migration;
- habitat damage from firewood collection;
- long-term occupation of sites to the exclusion of others.

A range of localised issues are associated with camping including water pollution, introduction of exotic plant species, new track creation, management of domestic animals, and damage to water courses, wetlands and lagoons.

Each of the major issues is discussed below.

Lack of Facilities and Fouling around Camp Sites: The responsible disposal of camper wastes, particularly faecal wastes, remains a major problem (indeed it is state-wide). Few toilets are provided by the PWS, they are all ‘long drops’ and are likely to have consequences for ground water quality. Some campers litter the bush with excrement and toilet paper.

Incremental Expansion of Sites and a Southward Migration: Over the years the number of cars, caravans, tents and pieces of recreational equipment associated with each group of people tends to incrementally increase. This directly links to an expansion of each camping site, necessitating more tree and scrub removal and more disturbance. Also generally over time there has been a gradual southward migration of camping activity, increasing management effort and difficulty.

Habitat Damage from Firewood Collection: The traditional open wood fire remains the focus of the evening camp. Such fires require fuel, which very often is 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 on the accumulation of dead wood. Many campers do bring in their own firewood.

Long-term Occupation of Sites to the Exclusion of Others: The lack of camper regulation may lead 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 PWS is often placed in a position of providing dispute resolution. During November to May many campers leave unoccupied caravans in the reserve for lengthy periods. These caravans are used on an intermittent basis such as on long weekends and Easter holidays. Many of these caravans are located at premium sites such as grassed areas near beaches.

Aims

The aims for the management of camping are to:

- provide for the unique recreational experiences provided by camping in the APCA in such a way as to minimise the impact on social, environmental and cultural values;
- work with the local community and the community of users to address the environmental impacts of free-range camping.

Prescriptions

- Three levels of camping will be provided for within the reserve, serviced camping (long and short term), long-term unserviced camping and short-term free-range camping.
- Designated camping areas are not to be located over Aboriginal sites.
- Consistent with the *State Coastal Policy 1995*, the principal focus for formalised (serviced and long-term unserviced) camping in the region will be within existing areas of development.
- The reserve's principal serviced camping areas will continue to be the three existing camping areas in or near the township of Arthur River on the fringe of the conservation area.
- Long-term unserviced camping is provided for within the conservation area, but only at designated locations in the vicinity of Tiger Flats, Rebecca, Greenes Creek, Stinking Beach and Sandy Cape. Existing campsites at these locations may be subject to relocation if conflicts with other values are revealed. Suitable, close camping areas will be chosen in consultation with campers.
- Additional unserviced camping areas will be provided at areas of unallocated Crown land at:
 - Bluff Hill Point,
 - Arthur River,
 - Nelson Bay,
 - Sarah Anne,
 - Couta Rocks,
 - Stinking Beach,
 - Temma.
- Short-term free-range camping may occur throughout the conservation area.
- Long-term unserviced camping in the reserve is by written authorisation only.
- The Management Committee (see Section 7.3) will provide the management authority advice on suitable time limits for each style of camping.
- Develop strategies to prevent free-range camping on Aboriginal sites.
- In consultation with campers, garbage collection at serviced sites will be reviewed with a view to minimising the cost of garbage collection.
- Campfires are permitted in the reserve, however collection of reserve firewood is limited to wood cast up on beaches. The use of fuel stoves will be encouraged.
- Collection of beach-cast wood is limited to personal, reasonable campfire use within the APCA.
- Chainsaws are not permitted without a permit for their use.
- Campfires must not be left unattended and must be properly extinguished before leaving the camp.

- Investigate possible arrangements for providing firewood for sale.
- In consultation with users, prepare site plans for all long-term unserviced camping sites.
- Camping south of Temma is limited to those forms that do not adversely impact on National Estate values. This prescription is to be given effect through the development of site plans (see previous prescription). These site plans should at least place limits on the extent of the areas available for camping and regulate its scale (e.g. small scale - low impact).
- Where Aboriginal sites are located at or in the vicinity of campsites, consultation with the Aboriginal community will occur on the management of campsites, the preparation of site plans and the installation of toilets and associated camping facilities.
- Install toilets at all long-term unserviced camping sites where existing camping practices require.
- The managing authority will explore opportunities to encourage low impact camping practices in consultation with campers.
- Improvements to camping areas will be funded by revenue raised from fees (see Section 6.12).
- Provide suitable signs at each of the major entries to the reserve, informing visitors of the conditions applying to camping.
- Camping areas may, at the discretion of the managing authority, be subject to closure from time to time to facilitate maintenance and rehabilitation works.
- Develop and implement a suitable information dissemination program to inform campers of the changing conditions applying to camping, as they develop.

6.2 Shacks

The coastal strip stretching from Bluff Hill Point to the Pieman River contains many shacks, both isolated and in small communities.

Most of these shacks are not in the Arthur–Pieman Conservation Area, but rather are contained within separate small areas of unallocated Crown land as documented in CPR 4748 (see Sections 1.3 and 1.4). This includes most of the shacks at Bluff Hill Point and Nelson Bay and shacks at:

- Arthur River,
- Sarah Anne,
- Couta Rocks,
- Stinking Beach,
- Temma.

However some shacks are in the conservation area. This includes shacks at:

- Nelson Bay (1),
- Dartys Corner (3),

- Gannet Point (1),
- Smiths Gulch (5),
- Brooks Creek (1),
- Sandy Cape (4).

Recognition of the problems associated with ad hoc development of shacks in the area is long-standing.

A Policy Process

The shacks within and adjacent to the conservation area, like many throughout the State, have had uncertain tenure. The *Crown Land (Shack Sites) Act 1997* provides a framework and process for determining the future of shack sites on Crown land, based on performance criteria.

Aim

The future of all shacks in the Arthur–Pieman Conservation Area will conform with the conclusions of the shack categorisation process being undertaken by the Department of Primary Industries, Water and Environment.

Prescriptions

- The future of all shacks in the Arthur–Pieman Conservation Area will be in conformity with the conclusions of the shack categorisation process being undertaken by the Department of Primary Industries, Water and Environment.
- Work closely with shack owners to address conservation and management issues, particularly those relating to:
 - fire management
 - the effects of shack-based recreation activities on the surrounding conservation area.
- Provide information to shack owners about Aboriginal heritage in the immediate area of shacks.
- Develop an awareness program in conjunction with the Aboriginal community to inform shack owners on how to avoid activities detrimental to Aboriginal sites.
- Use or construction of access routes and infrastructure which adversely impacts on Aboriginal sites is prohibited.

6.3 On-Road Access

There are three main vehicular access routes to the Arthur–Pieman Conservation Area (see Map 1) as follows:

- the A2 from Smithton, which joins the Arthur River Road (C214) just south of Marrawah, providing principal access into the northern parts of the reserve from the east;
- the Blackwater Road (C214) also providing access from the east;
- The Western Explorer Road (C249) from the south, travelling through Corinna.

Within the reserve a good-quality gravel road parallels the coast from the reserve's northern extremity, terminating at Temma. This road is known locally as the Arthur River Road north of Arthur River, and the Temma Road south of Arthur River. A track continues south of Temma but it is poorly formed and is generally considered only to be suitable for off-road vehicles (see Section 6.4).

A network of formed spur roads provides access off this road to West Point State Reserve, Bluff Hill Point lighthouse and shack community, the mouth of the Arthur River, Sundown Point State Reserve, and shack communities at Nelson Bay, Sarah Anne Rocks, Couta Rocks and Temma Farm. Within the reserve these roads are generally all-weather gravel and suitable for conventional vehicles.

Responsibility for maintenance of roads within the Arthur–Pieman Conservation Area is as follows:

- The Western Explorer Road is the responsibility of the Department of Energy Infrastructure and Resources.
- The Circular Head Council is responsible for maintaining the Arthur River Road, the Temma Road, the West Point Road and the access road to Temma Farm.
- The PWS has primary responsibility for the remainder of the formed roads within the reserve.

The Parks and Wildlife Service has hardened many of the spur roads in the reserve, and where tracks have been hardened, erosion caused by braiding is minimal.

Management Issues

The Parks and Wildlife Service has insufficient resources to maintain all the roads it has traditionally taken responsibility for. Many of these have been created by use, are not properly formed and lack a firm base. As a result sections of the road network become impassable resulting in braiding and localised erosion.

Some external agencies currently accept responsibility for maintaining some roads within the reserve. There is a need to ensure road management practices adopted by these other agencies are consistent with maintaining reserve values.

Aims

The aims for management of roads are:

- to define a set of roads that will be used by the public and that can be maintained;
- to develop protocols for management of roads in keeping with the Reserve Management Code of Practice (under development);
- to develop information for visitors and locals on appropriate use of roads;
- to develop partnerships with users providing for management of roads and tracks.

Prescriptions

- The designated roads of the reserve (see Map 6) are:
 - the Western Explorer;
 - the Arthur River Road;
 - the Temma Road as far south as Temma;
 - the West Point State Reserve spur;

- the Bluff Hill Point spur and sub-spur to the lighthouse;
 - the road to the mouth of the Arthur River;
 - the Nelson Bay and Sundown Point State Reserve spur;
 - the Sarah Anne Rocks spur;
 - the Couta Rocks spur;
 - the spur to the township of Balfour.
- Through consultation with appropriate external agencies, develop management protocols for maintenance of roads within the reserve.
 - Include in the protocol for the Western Explorer Road that all drainage systems within the Arthur–Pieman Conservation Area should be surveyed and, if required, silt trapping devices installed.
 - With the exception of minor works such as re-alignments or lay-bys required for visitor services, no new roads will be built in the reserve for the life of this plan.
 - Make available at entry points informative pamphlets detailing appropriate behaviour within the Arthur–Pieman Conservation Area.

6.4 Vehicles Used Off-Road

Many people use vehicles off the designated road system within the reserve to reach destinations where they undertake recreational activities such as fishing, camping or sight-seeing. However, for many users the more important attraction of the Arthur–Pieman area is the challenge of driving off-road. Conventional two-wheel drive vehicles, four-wheel drive vehicles, dune buggies and two and four-wheeled motorcycles are all extensively used within the reserve. The Arthur-Pieman region, being remote and largely undeveloped, is a favoured recreational destination for off-road drivers.

Current Use

Evidence indicates a rapid growth of off-road vehicle use in the conservation area over the last 10 to 15 years. Increased use was first associated with the ever-increasing penetration of road-registerable four-wheel drive vehicles into the 'everyday use' market, but has now been eclipsed by motorbike use, particularly the newer four-wheel bikes. Market analysts are predicting that purchases of this latter kind of vehicle by Tasmanians still has major growth potential.

Many off-road drivers have joined clubs, and the Parks and Wildlife Service works closely with many such clubs. For instance, the Braddon Four-Wheel Drive Club has been active in assisting the PWS address degradation issues in the reserve. However most off-road drivers are not club members.

Current Regulation

To operate any vehicle off-road within the conservation area, the operator must carry a specific authorisation issued under regulation 12(3) of the National Parks and Reserved Land Regulations 1999.

Authorisations currently issued provide for a wide range of off-road vehicle use opportunities, including the following routes:

- from Temma south to Native Well Bay (southern side of Sandy Cape);

- from Native Well Bay to the Interview River, subject to suitable weather conditions;
- the Balfour Track;
- access to private shacks using existing tracks; and
- access to approved camping areas;

the following beaches:

- Mawson Bay Beach from Bluff Hill Point to Woodside Creek;
- Arthur River Beach from Arthur River to the northern boundary of Sundown Point State Reserve; and
- Stinking Beach from the Temma end north to Rebecca Creek;

and the following dune areas:

- in the area known as 'The Bowl' immediately south of Arthur River and north of the Alert Creek.

The authorisations establish conditions for this use including:

- 12-month authority validity;
- that the vehicle used be registered;
- that the driver must be suitably licensed;
- that the authority must be carried and produced on demand while undertaking the activity;
- that while driving on beaches, vehicles must stay below the most recent high water mark.

Management Issues

The central management issue is the rapid rise in the use of motorbikes, particularly four-wheel bikes, and the complete failure of most attempts to regulate their use through the mechanisms described above. Use of bikes in the reserve is currently much more aptly described as 'free-range'. The broad open nature of the landscapes of the reserve and fragility of the soil structure mean that track formation is an accelerating process. An examination of aerial photography in the Arthur–Pieman indicates that new tracks are being opened up continuously. There is barely a place on the coast of the conservation area that is not currently accessed by bikes. Opening of the Western Explorer Road has allowed access to the eastern parts of the Arthur–Pieman Conservation Area. Vehicles are now creating new tracks off the highway and reopening old disused tracks.

The management issues associated with the current free-range style of use in the area have been described by the work Wood & Robertson (1976) and more recently Good (1991). This work provides a checklist of the effects including:

- social impacts, including interference with other users of the reserve, injuries, vandalism, theft, trespass, disruption of domestic life;
- physical impacts, including soil compaction, soil erosion, destruction of vegetation, disturbance of wildlife, destruction of animal habitat and generation of fires;
- hydrological impacts, including disturbance of drainage patterns, lowering water quality by generation of turbidity;
- pollution, including generation of noise, oil, fumes, litter;
- introduction of weeds and pests, including the spread of weed species and fungal and bacterial pathogens;
- economic impacts, including disturbance of stock, resulting in a loss of productivity, damaged property, fences and gates, long-term cost of rehabilitating areas and the loss of their potential earning capacities (tourism);

- aesthetic impacts, including impairment of ‘wilderness experience’ of other recreationalists leaving evidence of having been present (litter);
- cultural impacts, including damage to historic and prehistoric sites;
- impacts on scientific sites, including damage to important geomorphic features indicating major past events such as past sea levels.

Many current practices in the conservation area are unlawful, including:

- use of unregistered vehicles;
- operation of a vehicle without the permission of the land manager (the Parks and Wildlife Service);
- under-age unlicensed drivers;
- almost universal operation outside of the areas covered by authorisations.

Impediments to better application of the current regulation system include:

- a strong local culture of the acceptance of the legitimacy of uncontrolled use of vehicles in the conservation area;
- the current high degree of ambiguity/uncertainty in the community concerning the current regulations;
- the large number of people currently operating vehicles off-road in the conservation area;
- the concentration of use around and between the many shack communities on the coast;
- the evasiveness of some users, particularly those on high-speed, high-powered bikes.

The *Interim Arthur–Pieman Protected Area Plan of Management 1991* recognised many of the problems associated with using vehicles off-road. The plan proposed a policy of allowing vehicles to be used off-road while minimising associated damage. Despite adoption, impacts in the conservation area have accelerated.

In adopting a new off-road vehicle policy in the Arthur–Pieman Conservation Area, the following factors will need to be considered:

- the urgent need to protect vulnerable natural and cultural heritage values;
- the legal constraints on free-range use;
- the limited resources of PWS staff;
- the degree of difficulty in regulating many users by traditional policing methods;
- the failure of many operators to self-regulate their activities;
- the development of a close working relationship between club members and the PWS.

Aims

The aims for provision of sustainable off-road access in the conservation area are to:

- provide for responsible, low-impact experiences within the reserve;
- recognise the contribution to responsible use that can be made by clubs;
- develop a system that is enforceable;
- minimise conflicts with other recreational activities;
- minimise conflicts with conservation of the natural and cultural values of the conservation area.

Prescriptions

- An Off-Road Vehicle Consultative Group is to be established to undertake a review of the current system of managing off-road use in the conservation area and report to the managing authority. Prior to commencing the review the consultative group will prepare a project brief for the managing authority's approval that includes but is not necessarily limited to the following tasks:
 - identify all tracks within APCA and determine their function (e.g. fire trail, access to fishing area), condition (e.g. all-weather access, subject to inundation) and whether an alternative route is available;
 - prepare a management response to each track identified. In determining a management response, the consultative group should address, where relevant, all those matters identified in the 'checklist of effects' under Management Issues in section 6.4 Vehicles Used Off-Road;
 - identify methods of engaging recreational vehicle clubs in taking a proactive role in the management of responsible off-road vehicle use;
 - recommend enforcement measures that could be adopted in the APCA;
 - identify measures that will minimise conflicts between recreational vehicle use and other users in the APCA; and
 - identify methods of minimising and mitigating impacts on natural and cultural values of the APCA.

- The Consultative Group will comprise:
 - a nominee of the Tasmanian Aboriginal Land Council;
 - a nominee of the Tasmanian Conservation Trust;
 - a nominee of the Tasmanian Fishing Industry Council;
 - two nominees of the Circular Head Council;
 - two representatives of off-road vehicle clubs, with one being a member of the Tasmanian Recreational Vehicle Association; and
 - a representative of the PWS.

- The managing authority is to explore a system based on a variety of regulatory tools which include (but are not limited to) user education, legal authorisation and self-management. This new system is to be operational within 12 months and shown to be effective within three years of the commencement of this plan. In the interim the permit system and constraints, as currently administered, will continue to operate.

- The benchmarks to measure an effective management system are:
 - substantial compliance by users with permit/authority conditions;
 - demonstrated capacity of the system to move toward recovering the costs of sustainably managing off-road vehicle use in the reserve;
 - a substantial reduction in the rate of degradation of natural and cultural resources assessed by objective measures recommended by the consultative group.

- If in the opinion of the Minister the benchmarks have not been met, the default prescriptions outlined below come into effect.

6. Visitor Services

- The current authorisations under the National Parks and Reserved Land Regulations 1999 will remain in place until the new off-road vehicle management system comes into effect.

General Prescriptions to apply for the life of the plan

- Use or construction of access routes and infrastructure which adversely impacts on Aboriginal sites is prohibited.
- protect sensitive dune areas by managing use.
- Investigate and trial a system for allowing off-road vehicle use in the Natural Zone south of Native Well Bay that does not compromise the natural and cultural values.
- Carry out rehabilitation work in close co-operation with the Aboriginal community.
- Maintain the section of track between Temma and Greenes Creek as a high-clearance vehicle track. It will be maintained sufficiently to restrict users to a single route and track duplications will continue to be closed and rehabilitated.
- The final route to access Church Rock will be decided on the basis of negotiation between interested parties.
- Re-route, where appropriate, vehicle tracks from time-to-time to prevent or limit environmental or cultural heritage damage.
- 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.
- Work closely with Service Tasmania, the police and other regulators to ensure a clear consistent message is delivered to restricted vehicle drivers.
- Update the information and interpretation at the off-road driving information booth just south of Temma.
- Erect signs to inform users of the new conditions prevailing and advertise as widely as possible through organised clubs and associations.
- Limit off-road convoy size in the reserve to a maximum of 15 vehicles.
- Restrict travel south of Greenes Creek to group travel, with groups to have a minimum of two vehicles.
- When driving on beaches vehicles should proceed as close to the waterline as is practicable and safe.
- Promote compliance with the 'Policy for the Use of Recreational Vehicles on State Owned Lands in Tasmania'.
- Gate or otherwise restrict public access to roads and vehicular tracks designated for management purposes only.

6. Visitor Services

- Close tracks not designated for public use and not required for management.
- Develop a strong enforcement program for the above changes to be phased in after an appropriate period of public education.
- Vehicle use on the beaches of unallocated Crown land at Bluff Hill Point, Nelson Bay, Sarah Anne, Couta Rocks, Stinking Beach and Temma is not affected by this plan.

Default Prescriptions

- Vehicles may, subject to controls, be used off-road on the following areas, routes and tracks (see Map 6):
 - designated 'off-road dune areas' within the Visitor Service Zone south of Arthur River;
 - the Arthur Beach south to Sundown Point State Reserve;
 - the Mawson Bay Beach from the unallocated Crown land at Bluff Hill Point north to Woodside Creek;
 - Stinking Beach from the unallocated Crown land north to Rebecca Creek;
 - a single route south of Temma to the southern side of Sandy Cape at Native Well Bay;
 - a single spur to Dartys Corner off the Temma route;
 - a single spur to Gannet Point of the Temma route;
 - the Balfour track.
- Off-road operation of all vehicles in the reserve is restricted to users with a written authority issued by the Parks and Wildlife Service.
- Any commercial motor off-road tours operating within the Arthur–Pieman Conservation Area are subject to the same constraints as the general public.
- The designated access areas within the Visitor Services Zone south of Arthur River may be changed and/or closed from time to time at the discretion of the management authority.
- Charge a fee for off-road authorisations.
- In setting fees incentives may be given to responsible users and members of organised clubs.
- Use fees raised from the issue of authorisations to support responsible use and rehabilitation efforts.
- Do not grant repeat authorisations if conditions contained in earlier authorisations are not adhered to.

6.5 Walking

The Arthur-Pieman Conservation Area presents some outstanding walking opportunities with its beaches, rocky headlands, coastal wetlands, island forests and the Norfolk Range. Despite its potential, walking has a low profile in the conservation area in a State which boasts world class walks such as the Overland Track, the Tasman Trail and the South Coast Track. Current walker numbers are

therefore low with participants typically involved in the range of other activities that take place in the area.

Management Issues

With tourism growing at a significant rate in the conservation area, demand will increase for high-quality short and medium walks through which visitors can sample the features and qualities of the area. No work has yet been undertaken identifying potential walking opportunities.

Walkers expecting a wilderness experience in the Arthur-Pieman may encounter other people undertaking a wide range of recreational or commercial activities such as recreational vehicle use, cattle droving and fishing.

Aims

- To identify and, subject to resources, develop and promote walking opportunities in the Arthur–Pieman which enable visitors to appreciate the special natural and cultural values of the area.
- To provide relevant information about settings and develop protocols between different recreational groups so that recreational users can make informed choices about the location and character of the recreational experience they seek.

Prescriptions

- Pedestrians have right of way over any motor vehicle, bicycle or other wheeled vehicle, horse riders and any horse-drawn vehicle.
- Track construction in the reserve will only be undertaken on the basis of clearly demonstrated demand, and with due consideration of environmental and cultural heritage effects and cost of maintenance regimes.
- Before construction of any new walking tracks, survey the proposed route for disease risk, habitat and species significance, and cultural heritage significance.
- Exact track locations and standards will be determined, and construction undertaken, using approved guidelines (Parks and Wildlife Service, 1998) and according to any applicable site plan.
- To retain the natural character of the zone, walking tracks will not be constructed in the Natural Zone during the life of this plan.

6.6 Family Pets

In the past many visitors to the reserve, particularly campers, have brought in family pets, mostly dogs, but sometimes other animals including cats. Some of these animals are capable of significantly impacting natural values. With the recent change in the reserve status it is now unlawful to bring such animals into the reserve without an authority (*National Parks and Reserved Land Regulations 1999* Section 7). This authority may be granted in several ways including through a management plan.

An exception to this regulation allows visitors to carry pets confined within a moving vehicle on a road that does not terminate in reserved land.

Aim

To permit dogs into parts of the conservation area under conditions that ensure they create minimal disturbance to wildlife and visitors.

Prescriptions

- Visitors may bring dogs into all zones with the exception of the Natural Zone, subject to the following conditions:
 - dogs must be kept under close control at all times;
 - owners must ensure there is no disturbance to wildlife and other visitors.
 - in the Natural (controlled access) Zone dogs must be confined within a vehicle.
- Dogs being used for cattle mustering or hunting are covered by separate prescriptions in Sections 5.1 and 6.7;
- No other pets may be brought into the reserve.

6.7 Hunting

Limited hunting has historically occurred in the conservation area. The main species hunted are wallabies and quail.

The brown quail *Coturnix australis* population in the reserve is low, and according to anecdotal information, has noticeably declined in recent years. The Arthur–Pieman Conservation Area does not represent ideal habitat for the bird, which prefers grasslands to coastal heathlands and buttongrass plains. It may be necessary to periodically close the reserve to quail hunters to enable recovery of the numbers.

Wallabies are currently abundant within the Arthur–Pieman Conservation Area.

Hunting and shooting are currently conducted in accordance with the *Wildlife Regulations 1971* of the *National Parks and Wildlife Act 1970* and hunters and shooters must obtain permits and licences from the PWS.

Aim

To continue to allow sustainable hunting in parts of the conservation area.

Prescriptions

- Authorisations, issued at the discretion of the managing authority, may specify hunting zones and any other conditions consistent with the general conditions pertaining to the relevant game licence.
- Authorisations may permit a maximum of two dogs per person be used for hunting, with a maximum of six dogs per party.
- Authorisations will not be issued for hunting in the Natural Zone.

- Hunting and shooting is not permitted in the vicinity of shack areas, camping grounds, the more popular recreational areas, and the Natural Zone.
- The Parks and Wildlife Service will continue to monitor the conservation status of hunted species and establish appropriate controls when necessary.
- Assessment of the populations of the hunted species will be undertaken where practicable to obtain baseline information against which to assess the sustainability of hunting.

6.8 Horse Access

There is a long history of horse use in the Arthur–Pieman area associated with stock management and droving. In more recent times horses have also been used for recreation.

Horses continue to be used in the conservation area both in association with cattle agistment and for recreation. The predominant recreational use is day use although there is some use of the area for long-distance treks south along the stockroute to the Pieman River and beyond. The number of recreational riders using the area is not high.

While stock infrastructure exists in the reserve there is no dedicated infrastructure associated with horse riding.

Management issues

The environmental management issues associated with horse riding on land with nature conservation values are well documented. Within the Arthur–Pieman Conservation Area they are primarily twofold, being physical impacts and weed introductions. As indicated (see Section 3.2) the conservation area's sand landscapes are inherently sensitive to disturbance and are easily destabilised. The seeds of many exotic pasture species present in horse manure are often provided with suitable circumstances to germinate and thrive.

Under the *National Parks and Reserved Lands Regulations 1999*, a permit is required to bring horses into the conservation area.

Aims

To provide for controlled horse riding in the conservation area so as to minimise environmental damage and conflicts with other users.

Prescriptions

- entry of horses into the reserve will be subject to a general authority.
- Generally riders will be permitted to use the Visitor Services Zones, Recreation Zones and Natural (Controlled areas) Zones subject to not damaging the natural and cultural values of the area.
- A code of practice for the use of horses in the reserve will be prepared in consultation with key user groups and appropriate measures will be taken to maximise compliance. The code of practice is to address:

- the protection of cultural heritage sites and in particular Aboriginal sites;
 - the protection of beach nesting birds and vegetation associated with the fore dunes;
 - the prevention of soil erosion problems;
 - the protection of other sensitive environmental sites identified in this plan; and
 - weed establishment.
- Horse access on beaches is restricted to damp, firm sand below the high tide line where practicable and safe to do so.
 - Pedestrians have right of way over horse riders or horse drawn vehicles.

6.9 Air Access

There is a single airstrip within the Arthur–Pieman Conservation Area located near Balfour. It is maintained and used by Forestry Tasmania for fire fighting and fire detection. Forestry Tasmania is listed with the Commonwealth Department of Transport as the legal owner of the strip.

There is no formally designated helipad area at the Arthur River township but there is an area near the PWS office that is suitable.

The beaches of the reserve have been used for aircraft landings.

Management Issues

The beach areas are important and vulnerable habitat, particularly for breeding birds (see Section 3.8). The beaches of the reserve are also known to be treacherous for wheeled vehicles.

Aims

To allow the continued use of Balfour airstrip and to control other aircraft landings by permit.

Prescriptions

- The maintenance of the Balfour airstrip by Forestry Tasmania may continue.
- Except for emergencies, or management purposes, all aircraft, including helicopters, will require a permit to land or take off, as required by the *National Parks and Reserved Lands Regulations 1999*.
- Aircraft, including helicopters, land within the reserve at their own risk.
- Airdrops within the reserve will only be permitted for management or emergency purposes.

6.10 Tourism

While currently there are no reliable data on the number of visitors to the reserve, it is clear that the settlements, particularly Arthur River, are busy places during summer. For instance, the bridge at Arthur River averages about 150 vehicle passes per day during mid-winter, increasing to about 360 in mid-summer.

While most visitors to the area have traditionally been north-west coasters undertaking weekend and summer holiday recreation, this pattern is slowly changing. Anecdotal information indicates there is an increase in visitors from further afield. For instance, in 1997 Club Tarkine commenced ecotourism operations in the reserve, and continues to bring in small numbers, particularly of international visitors, every year. Further in January 1999, 214 groups of visitors to Arthur River were interviewed revealing, among other things that 35% of groups were non-Tasmanian. The opening of the Western Explorer Road in 1995 has no doubt contributed to this gradual change in the composition of visitors.

The opening of the Western Explorer road has brought some additional tourists into the area. In 1997 an average of 17 vehicles per day were recorded on the road (Department of Transport, Tasmanian State Road Statistics, 1997). The Department of Transport has indicated that in 1999 this figure had reduced to 14 vehicles per day.

The principal motivations for non-Tasmanian visitors coming to the area are probably the trout fishing in the Arthur River, the challenge of driving the Western Explorer and enjoyment of the scenery. Anecdotal evidence indicates that many non-Tasmanian visitors are keen to know more about the Aboriginal heritage in the area after seeing signs indicating Aboriginal sites.

Potential for the further development of tourism based on reserve values is high and areas of tourism potential include the following:

- development, in association with the Aboriginal community, of attractions based on the outstanding Aboriginal heritage of the conservation area (see Section 3.5);
- further development of tours based on the on-road and off-road driving experiences offered;
- beach-based horse riding in the Temma—Sandy Cape area;
- surfing.

Aim

The aim for tourism is to facilitate development of the regional economy through encouraging tourism based on and consistent with the maintenance of reserve values.

Prescriptions

- Ensure a focus on providing educational and interpretation material for tourists (see 6.11).
- Ensure that visitor services provided by the business enterprise are responsive to the needs of the tourism market (see Sec 6.12).
- Arrange appropriate surveys to gain an understanding of visitor profiles.

- Consult with the Aboriginal community on the scope for partnerships in interpretation and presentation of the rich Aboriginal heritage of the area for the tourist market (see 6.11).

6.11 Interpretation and Education

There are many possible interpretation themes relating to the special values of the area, including:

- Aboriginal heritage;
- historic and social heritage;
- flora and fauna themes, particularly threatened species, such as the orange-bellied parrot;
- geodiversity, particularly the sand landscapes;
- wilderness and National Estate values.

A major asset of the Arthur-Pieman Conservation Area is its position as ‘... one of the world’s great archaeological regions’ (see Section 3.5). Yet, for the broader community of Tasmanians and visitors, the ability to examine, experience and appreciate the extraordinary Aboriginal heritage values is almost non-existent. Lack of appreciation of the value of this cultural material has undoubtedly led to high levels of conflict over many local land management decisions.

Strategies for elevating the appreciation of Aboriginal heritage values through appropriate interpretation are urgently required.

Aims

The aims of interpretation and education are to reveal to visitors the richness of values found in the area and particularly to:

- concentrate on developing a partnership with the Aboriginal community to develop strategies for revealing the richness of the Aboriginal heritage values in the reserve;
- reveal through interpretation the richness of wilderness and National Estate values;
- reveal through interpretation some of the richness of the European history of the area, particularly the association of the area with cattle grazing;
- inform visitors of minimal impact practices and approaches to minimise adverse impact on other users; and
- interpret the geomorphic and biological diversity of the region.

Prescriptions

Interpretation of Aboriginal Heritage

- Investigate the development of a partnership with the Aboriginal community to dramatically raise the profile of Aboriginal heritage interpretation in the reserve.
- Develop links, where possible, with local people concerned with Aboriginal heritage.

6. Visitor Services

- Place regular articles in newspapers highlighting the special Aboriginal values of the area, and the work of local people associated with these values.
- Appoint, where resources allow, summer rangers to promote Aboriginal values.
- Develop low key interpretive displays highlighting Aboriginal heritage values.
- Development of Aboriginal heritage interpretation material will only be done in partnership and agreement with the Aboriginal community.

Interpretation of Other Values

- Interpretation and educational material should also include focus on the natural values, non-Aboriginal heritage values, wilderness and National Estate values, recreational uses, commercial uses and responsible management of the reserve.
- Develop low key interpretive displays or material featuring European use of the reserve with particular reference to the grazing, fishing, mining and recreation themes.
- Encourage and facilitate public access to information about the European use of the area that may be derived from historical or archaeological surveys.
- Install interpretative, educational, and instructional signs at entry points to the Western Explorer Road and at other entry points to the Arthur–Pieman Conservation Area.
- Interpretation programs and facilities will not extend into the Natural Zone.
- Use of the conservation area for teaching about its natural and cultural values will be encouraged.
- School and other groups undertaking educational activities will be encouraged to discuss their proposed program with staff when booking.
- 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 managing authority.
- Plaques acknowledging reserve infrastructure or services provided by bequests or commercial sponsorship may be attached to the infrastructure.

6.12 An Enterprise Unit

At present several facilities are offered to visitors to the region; some are subject to a 'donation', others are free. Services currently provided to users include:

- partially-serviced camping sites;
- serviced caravan sites;
- authorities to use vehicles off-road;
- management of agistment.

Across the State increased conservation responsibilities coupled reduced public-sector funding has led the PWS to introduce user-pays fees. Present financial arrangements require Treasury approval for establishment of revenue retention schemes to pay for the cost of providing service. An enterprise unit approved by Treasury can ensure the revenue is retained locally and is spent in supporting the provision of such services. An enterprise can provide additional fee-for-service products such as:

- firewood for campers;
- maps and publications;
- promotional materials including postcards.

Aims

- To initiate an enterprise unit based on the implementation of a user-pays system for the provision of common services in the Arthur–Pieman region and to oversee subsequent financial management.
- To provide upgraded and enhanced visitor facilities through revenues generated.

Prescriptions

- The Management Committee (see Section 7.3) is to implement a user-pays system for the provision of common services in the Arthur–Pieman region and to oversee subsequent financial management. The committee will, subject to approval by Treasury:
 - implement and review a business plan to cover PWS commercial activities within the region;
 - set the level and structure of user-pays fees;
 - oversee the business and commercial operations of the Arthur–Pieman Conservation Area;
- prepare recommendations to the managing authority on how funds collected by the Enterprise will be expended.
- The Management Committee (see Section 7.3) will review the permit system when considering how to implement a user-pays system.
- The provision of facilities for visitors should be upgraded and financed by the introduction of a user-pays system.

7.1 Community Support

The key to successful implementation of the management plan will be to have the community understand, accept and own the plan. This is being achieved by ensuring the plan reflects the community's concerns through effective consultation during its development. Furthermore, there is a need to involve the community directly in aspects of management of the reserve. Experience has shown that community partnerships are an effective way of keeping management of the reserve in touch with the community's expectations and maintaining support for the management arrangements.

The key management issues lend themselves to constructive community partnerships. These include:

- the control of vehicle use;
- maintenance of the road network and any off-road recreational vehicle areas;
- management of kelp harvesting;
- hunting;
- grazing management;
- interpretation of and education about the area's values and management;
- management of the area's rich cultural heritage.

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;
- involve the local and broader community in reserve management partnerships.

Prescriptions

- The managing authority is required to consider the appointment of volunteers to assist PWS rangers to implement this plan.
- Relevant people, communities and groups will be consulted when their interests may be affected.
- Partnerships will be developed with local and other communities and groups that wish to be involved in the management of the reserve in accordance with this management plan.
- Develop mechanisms and opportunities for consulting with people interested in management of the reserve.
- Encourage community involvement through the partnerships with appropriate community organisations.

7.2 Working with Neighbours

Good working relationships with neighbouring land managers is important for effective management of the Arthur–Pieman Conservation Area. Surrounding tenures include State forest, forest reserve, freehold land and unallocated Crown land.

There are a number of private enclaves within or on the edges of the reserve with access through the reserve.

The PWS and Forestry Tasmania currently liaise on matters of mutual concern such as the impact of logging close to the boundary, landscape management, off-road vehicle use and fire management. The Reserves Fire Management Plan was prepared in co-operation with Forestry Tasmania and both agencies respond co-operatively to bushfires.

Forestry Tasmania currently maintains a landing strip within the conservation area near the Balfour turn-off (see Section 6.9).

Aims

The aims of working with neighbours are to:

- take account of concerns of neighbours in managing the conservation area ;
- encourage conservation and sound land management practices on lands adjoining the conservation area;
- co-ordinate protective works between the conservation area and surrounding land.

Prescriptions

- Neighbouring landowners and land managers will be consulted when their interests may be affected.
- Management agreements may be developed with neighbours.
- The PWS and Forestry Tasmania will continue to liaise closely on any activities that will impact on either of the neighbouring land tenures. This includes management burns and how they may affect conservation values in non-forest areas.
- Regularly liaise and develop good working relations with adjacent landowners and land managers on management issues and projects of common interest.
- Identify the special needs of owners of private land accessed only through the reserve.

7.3 Management Options & Community Involvement

Management responsibility for a reserve as large and as important as the Arthur–Pieman Conservation Area is complex. The reserve is an important source of economic resources, recreational opportunities and historical linkages for local people. It is also a reserve of national standing when it comes to the conservation of Aboriginal heritage and as part of the National Reserve System

for conservation of natural systems. It is an area in which all Tasmanians have a stake in ongoing management.

All modern park management agencies are looking for ways to involve the community in the business of managing parks and reserves. This is not a case of governments abdicating responsibility for management but is aimed at ensuring that management is relevant to community needs and expectations and that the community supportive of the direction of management.

Principles for Community Involvement

- Transparency** Government has a responsibility to ensure any arrangements aimed at participation in management made with particular interest groups are open, transparent and fair to the wider community.
- Inclusiveness** Management must be inclusive of all groups in society. To exclude particular interest groups, either from being consulted or from having a direct input into day-to-day management, is to foster division in the community.
- Equity** Management decisions must take account of all stakeholders including future generations.
- User Pays** In general, where users derive particular benefit from an area they should be prepared to at least cover the costs of managing that activity.
- Efficacy** Community involvement in management should be commensurate with the capacity of the community group to undertake the responsibility on behalf of the wider community.

Options for Community Involvement

There are a number of different levels at which the community can become involved in management of reserves. These can be considered in terms of the spectrum:

information → consultation → collaboration → participation → self-management

Provision of information about a reserve or its management is a very important but basic form of involvement.

Consultation goes a step further and seeks the community's views about policy and management direction. This document is an important example of consultation.

Collaboration is where the managers and the public work side by side. Volunteer groups working with the managing authority to repair a road, build a toilet or conduct a survey are all examples of collaboration.

Participation in management partnerships provides for groups within the community to take responsibility for aspects of reserve management and then to operate with a degree of autonomy in line with the terms of a partnership agreement

Self-management is where a community group becomes the managing authority for the reserve.

Aims

- To achieve an appropriate level of public involvement in management of the conservation area consistent with the principles outlined above.
- To achieve community ownership through involvement in policy development, planning and on ground management.
- To increase the efficiency of management by encouraging community groups to take responsibility for managing their particular activities in the conservation area.

Prescriptions

- Establish a two tier approach to the management of the reserve, recognising that:
 - the reserve has values of State, national and international significance that need to be managed on behalf of this broad audience; and
 - the local community has a large stake in the reserve, and that working closely with the community can reap significant advantages of local knowledge, goodwill and on-ground stewardship.
- The Director of National Parks and Wildlife is the responsible managing authority for the APCA. The managing authority is responsible for:
 - overall management of the reserve and its suite of natural and cultural values ;
 - overseeing implementation of the management plan; and
 - coordinating, liaising with and supporting the Management Committee and sub-committees set up under this plan.
- Establish a non-statutory Management Committee to undertake the management of functions under the Plan as agreed between the Director and the committee and as approved by the Minister. The Management Committee will be responsible for:
 - engaging the users of the reserve in supporting the overall management strategy;
 - advising the management authority on the management of recreation and commercial use;
 - contributing to development and implementation of works programs.
 - overseeing the operation of an enterprise unit; and
- Management Committee members will be appointed by the Minister. In selecting members the Minister will consult with the range of interest groups, however, the members of the committee will be appointed to serve the best overall interests of the reserve rather than specific interests.
- The Management Committee will be made up of six full members and one ex officio member selected to provide a balanced range of expertise. The members will be selected to cover the following skills and knowledge:
 - a chairperson, skilled in facilitation, mediation and having an appreciation of the significance of the reserve for its users;

7. Involving the Community

- a person with skills and knowledge of nature conservation issues;
 - a person with skills and knowledge in local government;
 - a person with skills and knowledge in the recreational uses of the reserve;
 - a person with business skills and an appreciation of the economic uses of the reserve; and
 - a person with skills in cultural heritage and an appreciation of the cultural heritage of the APCA.
 - In addition an ex officio member will be nominated by the managing authority to assist the committee in discharging its functions.
- The Management Committee's mode of decision making is to be based, where possible, on consensus seeking rather than on an adversarial model. A dispute resolution process will only be employed when it becomes clear consensus is unreachable.
 - Constitutional and procedural details for the Management Committee, the Off-Road Vehicle Consultative Group and Grazing Consultation Group are to be developed as part of the above establishment process.

8.1 Monitoring and Research

Research, involving surveying, recording, monitoring and analysing, is a requisite for conservation of the values of the conservation area.

Aims

The aims of monitoring and research in the reserve are to:

- improve the inventory and understanding of natural features and processes;
- improve the inventory and understanding of cultural features;
- use the reserve as a scientific reference area;
- encourage socio-anthropological studies to understand the significance of the APCA to the north-west and Tasmanian community;
- monitor the natural rates and magnitudes of change;
- improve knowledge and understanding of visitor behaviour in the reserve;
- assess impacts of and long term cumulative changes caused by development or use of the reserve;
- assess and improve management of the reserve.

Prescriptions

- Research into the values of the Arthur–Pieman Conservation Area will be encouraged with particular emphasis on the analysis and evaluation of the impacts of the recently completed Western Explorer Road and the management of fire on organic soils in peatlands.
- Prior approval of all manipulative research proposed within the reserve, including detailed study proposals and methods, will be required before research begins.
- Proposals by the Parks and Wildlife Service for manipulative research will be subject to the prescriptions of this management plan.
- Researchers will submit to the managing authority not less than three copies of all work produced during the period of the research and electronic copies of data.
- Encourage research that improves the inventory and understanding of natural features of the reserve, or assists management of these features.
- Encourage research that improves the inventory and understanding of Aboriginal and historic heritage and archaeological features of the reserve, or assists management of these features.
- Cooperate with the Tasmanian Aboriginal community on approval processes for any research involving Aboriginal heritage.
- Encourage research that improves the inventory and understanding of visitor numbers and characteristics, behaviour, needs and expectations, or assists visitor management.

- Monitor the efficacy of management practices in the reserve and the effects of management actions on reserve values, and where necessary, modify those practices.

8.2 Plan Implementation

The prescriptions of this management plan will be subject to the provision of 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.

Prescriptions

- Prepare an ongoing works program for the reserve to co-ordinate development, protection and conservation work.
- Review the program annually and revise if necessary. Base any revision on analysis of past progress and incorporate newly identified requirements. Add a further year's program at each annual review.
- The works program will identify:
 - all development and other works planned;
 - preliminary scientific studies required;
 - those responsible for each stage of implementation;
 - the anticipated costs;
 - the staff requirements;
 - ongoing maintenance and monitoring requirements.
- The works program will conform with this management plan and other plans such as site plans, conservation plans, the fire management plan, and the interpretation plan.
- The Director of National Parks and Wildlife will conduct a minor review of this plan three years after it comes into effect. This review will be primarily an implementation audit to determine what progress has been made towards implementing the plan.
- The above review will address the effectiveness of management in achieving the following key desired aims, derived from the indicated plan sections. Effectiveness will be measured using the performance indicators listed in Table 6.

Table 6: Key Aims and Performance Indicators

Aim 1 [Section 3.3 Landscape and Wilderness]: Maintain naturalness and lack of recent human disturbance.

Performance Indicators

Indicator 1.1: Changes in the area of wilderness and/or wilderness quality as determined by the methodology adopted by the Comprehensive Regional Assessment.

Indicator 1.2: Evidence of change in the number or extent of tracks and/or vehicular impacts.

~~**Aim 2** [Section 3.5 Aboriginal Values]: Protect and conserve Aboriginal heritage.~~

Performance Indicators

Indicator 2.1: National Estate listed sites have been protected by order under the *Aboriginal Relics Act 1975*.

Indicator 2.2: Sites protected by order have been identified and protected as necessary through the erection of fencing.

Indicator 2.3: Tracks and camping areas that threaten sites protected by order have been identified and closed or relocated.

Indicator 2.4: Other Aboriginal heritage sites have been the subject of specific protection and conservation management measures.

Aim 3 [Section 3.8 Fauna] Protect threatened fauna species and their habitat.

Performance Indicators

Indicator 3.1: Key areas of recovery plans have been implemented.

Aim 4 [Section 5.1 Stock Agistment] Demonstrate sustainability and protection of natural and cultural heritage values.

Performance Indicators

Indicator 4.1: A grazing management plan that includes measures to protect the natural and cultural values has been approved and is being implemented.

Indicator 4.2: Cattle have been excluded from environmentally or culturally sensitive areas including Aboriginal cultural heritage sites, dune areas, and watercourses.

Aim 5 [Section 6.1 Camping] Provide for camping while minimising the impact on social, environmental and cultural values.

Performance Indicators

Indicator 5.1: The incidence of camping over Aboriginal sites has ceased or significantly reduced.

Indicator 5.2: Site planning for the management of sustainable long-term unserviced camping has been substantially completed and management measures are being successfully implemented.

Indicator 5.3: The environmental conditions around camp sites have significantly improved.

Aim 6: [Section 6.4 Vehicles Used Off-Road] Provide for experiences while minimising conflicts with conservation of the natural and cultural values of the conservation area.

Performance Indicators

Indicator 6.1: A practical and achievable off-road vehicle management system that protects the natural and cultural heritage of the reserve and minimises conflicts with other recreational users has been developed by the Off-Road Vehicle Consultative Group.

Indicator 6.2: There is a high level of user compliance with the off-road vehicle management system and/or other management measures to achieve the aims.

Indicator 6.3: There has been significant recovery of the costs associated with the management of off-road vehicle use in the reserve.

Indicator 6.4: There is evidence of a substantial reduction in the rate of degradation of natural and cultural resources.

Aim 7 [Section 7.3 Management Options & Community Involvement] Achieve an appropriate level of public involvement in management through involvement in policy development, planning and on-ground management.

Performance Indicators

Indicator 7.1: A non-statutory Management Committee has been established and is successfully undertaking the management of specific functions in accordance with the management plan

Aim 8 [General] Identify obvious gaps in knowledge of reserve values and conduct appropriate research to fill these gaps.

Performance Indicators

Indicator 8.1: Gaps have been identified and specific research undertaken so that the managing authority is now confident that a sufficient grasp of values exists to enable appropriate management.

- At the earliest opportunity, and where necessary, initiate baseline surveys to allow appropriate application of the above performance indicators.
- The managing authority may, where inadequate resources are available to ensure that values are protected and maintained, consider options such as closing access to sensitive areas. Closure is an option of last resort and will only be undertaken in the following circumstances:
 - after relevant processes mapped out in this plan have been given the opportunity to work; and
 - following full discussion with the Management Committee (see Section 7.3) and, if relevant, the Off-Road Vehicle Consultative Group.

8.3 Public Safety, Search and Rescue, First Aid

The Arthur–Pieman Conservation Area is becoming more heavily used. The limited access, rugged topography and isolated nature of the Arthur–Pieman Conservation Area pose particular problems for search and rescue operations.

Police Tasmania has responsibility for the organisation and conduct of search and rescue operations throughout Tasmania. The PWS, together with local volunteer groups, assists as far as possible any search and rescue operations.

Aims

The aims for public safety, search and rescue and first aid are to ensure the Parks and Wildlife Service meets its duty of care with respect to the safety and wellbeing of visitors.

Prescriptions

- Tasmania Police and State Emergency Services are responsible for all search and rescue within the reserve. Co-operate with them in search and rescue operations.
- Continue to train staff in search and rescue.
- Inform visitors of hazards likely to be encountered and ways to avoid or minimise risks, within the normal risks associated with the activity being undertaken.
- Detail ways for visitors to prepare for visiting the reserve, and to handle any emergency situations during their visit.

- Establish a risk-management system that provides for regular identification, inspection, reporting and amelioration of existing and potential risks to public and staff safety.

8.4 Law Enforcement

The Arthur–Pieman Conservation Area is a difficult area to police effectively. A major difficulty is presented by the size of the reserve and limitations on access. Patrolling is slow and only a small area can be effectively maintained under surveillance.

At present the main law-enforcement role is filled by the rangers who are authorised under a range of Acts. However the co-operation of Tasmania Police is critical to the resolution of many issues such as the control of motor vehicles. A Tasmania Police presence, especially in holiday periods, makes the control of this popular area far easier for PWS staff.

Community assistance is critical to effective enforcement. The information provided by the community and visitors on illegal activities and inappropriate behaviour should be encouraged and a system should be developed to facilitate this assistance.

Prescriptions

- The PWS and Tasmania Police will continue to liaise and work closely together with a view to achieving and maintaining effective policing and surveillance of the Arthur–Pieman Conservation Area.

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Appendix 1 Principles for the Management of Aboriginal Heritage

The principles to be applied in the conservation, protection and management of Aboriginal cultural heritage are those set out below. They are to be used in the management of specific archaeological sites such as middens, stone arrangements, hut depressions and petroglyphs. These principles are drawn from those embraced by the Australian branch of ICOMOS (International Council on Monuments and Sites), and flow from the *Burra Charter 1999*.

The Principles

- *Place* means site, area, land, landscape, and may include not only the contents of a site but also, spaces between items and views from the site (article 1.1).
- The *cultural significance* of such places refers to the ‘aesthetic’, ‘historic’, ‘scientific’ and ‘social’ values it can be said to represent.
- Cultural significance of a place embraces its physical location (article 9.1), and its visual setting. Consequently conservation involves the retention of an appropriate visual setting where that contributes to the cultural significance of the place.
- *Conservation* involves any act that protects the place. Places of cultural significance should be conserved in such a way as to retain their cultural significance (article 2.1-2.2). Current use of any place should respect its cultural significance (article 1.11).
- Conservation works require a cautious approach, one that involves changing as much of the place as is necessary but as little as possible (article 3.1).
- Change may be necessary to retain cultural significance, but is undesirable where it reduces cultural significance (article 15.1). New construction, or other changes that would adversely affect the setting or relationships are not appropriate (article 8).
- People with appropriate knowledge and skills should implement any changes (article 30).
- Work on a place should be preceded by studies to understand the place, including analysis of physical, documentary, oral and other evidence, drawing on appropriate knowledge, skills and disciplines (article 26.1).
- Changes should be documented through the institution of a log of changes and decisions (article 31). The records associated with the conservation of a place should be placed in a permanent archive (article 32.1).
- Conservation, interpretation and management of a place should provide for the participation of people for whom the place has special associations and meanings, or who have social, spiritual or other cultural responsibilities for the place (article 12).
- The cultural significance of many places is not readily apparent, and should be explained by interpretation. Interpretation should enhance understanding and enjoyment, and be culturally appropriate (article 25).
- The organisations and individuals responsible for management decisions should be named and specific responsibility should be taken for each such decision (article 29).