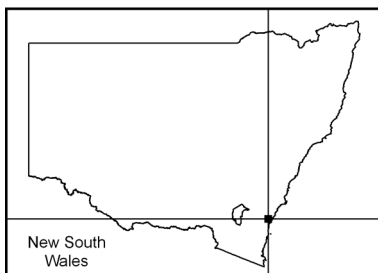




Plan of Management



Clyde River National Park



CLYDE RIVER NATIONAL PARK
PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

January 2012

This plan of management was adopted by the Minister for the Environment on 19th January 2012.

Acknowledgments

This plan of management is based on a draft plan prepared by staff of the South Coast Region of the National Parks and Wildlife Service (NPWS), part of the Office of Environment and Heritage, Department of Premier and Cabinet.

The NPWS acknowledges that this park is within the traditional country of the Walbanja Aboriginal people.

Valuable information and comments were provided by Department specialists, the South Coast Region Advisory Committee and other community members.

For additional information or enquiries about any aspect of this park or this plan, contact the NPWS South Coast Region Office at 55 Graham Street Nowra (PO Box 707 Nowra 2541) (phone (02) 4423 2170) or the NPWS Ulladulla Office at Lot 9 Collier Road, Ulladulla or by phone on (02) 4454 9500.

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FOREWORD

Clyde River National Park is located on the Clyde River approximately five kilometres north-west of Batemans Bay. The park was established in 2001 and consists of several sections with a total area of 1,278 hectares.

Clyde River National Park consists of gently to steeply sloping land on both sides of the Clyde River, as well as two islands. The park contains eight vegetation communities, including three endangered ecological communities - River Flat Eucalypt Forest, Swamp Oak Floodplain Forest and Coastal Saltmarsh. It supports populations of the vulnerable glossy black-cockatoo, masked owl and yellow-bellied glider, and the regionally rare rat's tail orchid and elkhorn. Several Aboriginal campsites and middens are known to occur and some areas of the park are reported to have been used traditionally for ceremonial, teaching and other purposes.

Clyde River National Park provides opportunities for viewing scenery and picnicking at Holmes Lookout, and bush camping, picnicking and fishing along the river.

The New South Wales *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each national park. A draft plan of management for Clyde River National Park was placed on public exhibition from 9 January to 27 April 2009. The submissions received were carefully considered before adopting this plan.

This plan provides for the protection of threatened plant and animal species, endangered ecological communities and Aboriginal sites and places. It also provides for the upgrading of Holmes Lookout and the provision of interpretive information and a short loop walking track at this location, as well as for continued vehicle-based, walk-in and boat-based camping at designated locations within the park.

This plan of management establishes the scheme of operations for Clyde River National Park. In accordance with section 73B of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.



Robyn Parker MP
Minister for the Environment

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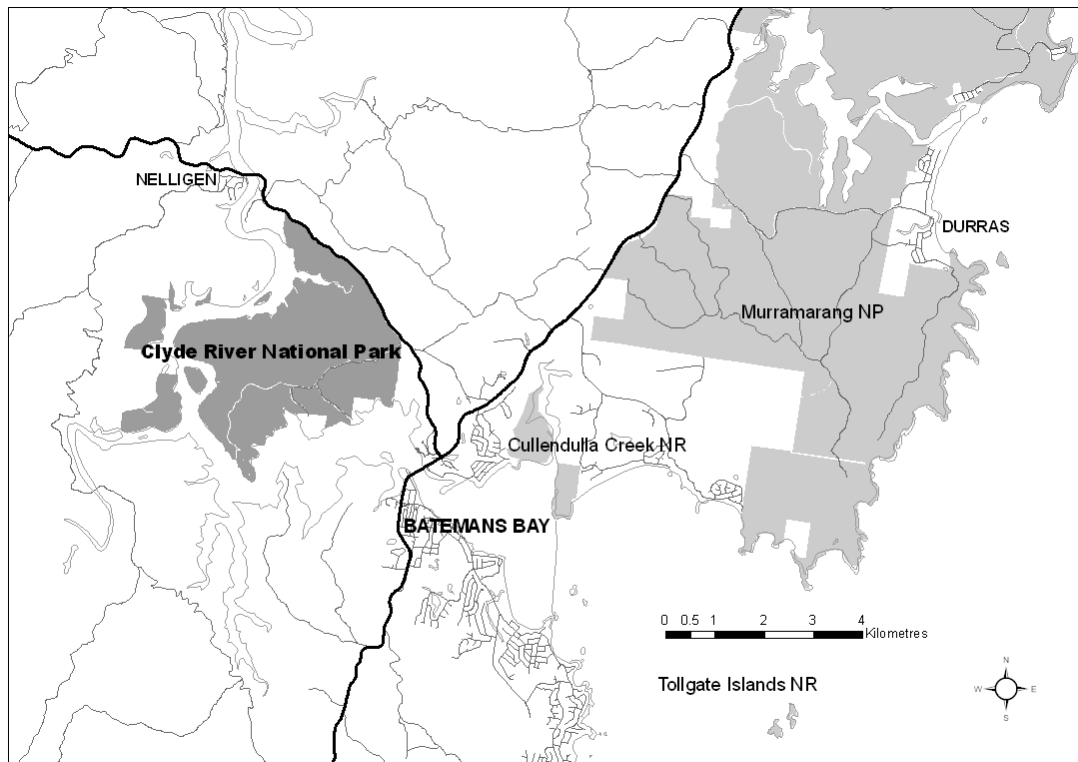
1. CLYDE RIVER NATIONAL PARK

Clyde River National Park is located on the south coast of NSW approximately 5 kilometres northwest of Batemans Bay, within the Eurobodalla Local Government Area (see map below). It includes a relatively large area of former state forest on the eastern side of the Clyde River and former Crown land on the western side of the river. The park includes Big and Little Islands (see Park Map), and extends to mean high water mark except for the islands and the lands on the western side of the river which extend down to mean low water mark. The park was reserved on 1 January 2001 and has an area of 1,278 hectares.

The park forms part of a system of conservation reserves on the south coast, which includes three other reserves on the Clyde River estuary at Batemans Bay: Cullendulla Creek Nature Reserve, Tollgate Islands Nature Reserve and Murramarang National Park. The upper reaches of the Clyde River lie within Morton National Park.

The park adjoins the Batemans Marine Park, gazetted in 2006. The marine park covers the tidal waters of the Clyde River and Batemans Bay and the coastline up to high water mark between Bawley Point and Wallaga Lake.

The south-eastern and north-eastern boundaries of the national park adjoin urban settlement within the township of Nelligen to the north and North Batemans Bay to the east. The surrounding land use is predominantly forestry, some agriculture and river-based recreation. The Kings Highway provides the primary access to the park, and forms its eastern boundary.



2. MANAGEMENT CONTEXT

2.1 LEGISLATIVE AND POLICY FRAMEWORK

The management of national parks in NSW is in the context of a legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act), the NPW Regulation, the *Threatened Species Conservation Act 1995* (TSC Act) and the policies of the National Parks and Wildlife Service (NPWS). The matters to be considered in the preparation of a plan of management are listed in Section 72AA of the NPW Act. NPWS policies relate to nature conservation, cultural heritage conservation, recreation, fire management, commercial use, research and communication.

Other legislation, agreements and charters may also apply to management of the area. In particular, the *Environmental Planning and Assessment Act 1979* (EPA Act) may require the assessment and mitigation of the environmental impacts of works proposed in this plan.

The Southern Regional Forest Agreement (RFA) covers the park and provides for, amongst other things, ecologically sustainable forest management. Regional Forest Agreements are one of the principal means of implementing the National Forest Policy Statement of 1992, under which Commonwealth, State and Territory governments agreed to work towards a shared vision for Australia's forests. Joint comprehensive regional assessments (CRA) were undertaken of the natural, cultural, economic and social values of forests and these assessments formed the basis for negotiation of RFAs.

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, the plan must be carried out and no operations may be undertaken within the area covered except in accordance with the plan. The plan will also apply to any future additions to Clyde River National Park. Should management strategies or works be proposed in the future that are not consistent with the plan, an amendment to the plan will be required.

2.2 MANAGEMENT PURPOSES AND PRINCIPLES

National parks are reserved under the *National Parks and Wildlife Act* to protect and conserve areas containing outstanding or representative ecosystems, natural or cultural features or landscapes or phenomena that provide opportunities for public appreciation and inspiration and sustainable visitor use.

Under the Act, national parks are managed to:

- conserve biodiversity, maintain ecosystem functions, protect geological and geomorphological features and natural phenomena and maintain natural landscapes;
- conserve places, objects, features and landscapes of cultural value;
- protect the ecological integrity of one or more ecosystems for present and future generations;

- promote public appreciation and understanding of the park's natural and cultural values;
- provide for sustainable visitor use and enjoyment that is compatible with conservation of natural and cultural values;
- provide for sustainable use (including adaptive reuse) of any buildings or structures or modified natural areas having regard to conservation of natural and cultural values; and
- provide for appropriate research and monitoring.

3. KEY VALUES AND MANAGEMENT DIRECTIONS

3.1 VALUES OF THE AREA

The park is of regional conservation significance for its rare and threatened vegetation communities and of local significance for its Aboriginal cultural values and scenic and recreational values related to the Clyde River.

Natural values

- The park contains a total of eight vegetation communities, comprising dry open forest on the ridges and slopes and grading to moist forest and estuarine communities in proximity to the river. Four of the communities are listed as endangered ecological communities under the Threatened Species Conservation Act; Swamp Oak Floodplain Forest, Coastal Saltmarsh, and two forms of River Flat Eucalypt Forest on Coastal Floodplains. Areas of tall open forest are also of conservation significance, as well as mangrove stands adjacent to the park.
- The regionally rare rat's tail orchid (*Dendrobium teretifolium*) and elkhorn (*Platyserium bifurcatum*) are found in the park.
- The threatened glossy black-cockatoo (*Calyptorhynchus lathami*), yellow-bellied glider (*Petaurus australis*) and masked owl (*Tyto novaehollandiae*) have been recorded in the park and it provides significant potential habitat for several other threatened animal species.
- The park protects part of the catchment and foreshores of the lower Clyde River, contributing to river water quality, foreshore stability and habitat value, and to maintenance of the environment of the adjacent Batemans Marine Park.

Cultural heritage values

- Two Aboriginal campsites and two middens have been formally recorded in the park and additional archaeological material is known to occur along the river foreshores. Some locations in the park are reported to have been used traditionally for ceremonial, communication, teaching and refuge purposes.
- There are garden borders and exotic plants at Chinamans Point that are reported to date from the mid 20th century when Chinese fishermen lived there.

Recreation and scenic values

- The park provides locally important recreational opportunities focussed primarily on the Clyde River foreshores, including viewing scenery, picnicking, fishing and bush camping. Holmes Lookout is a well visited local picnic facility close to Batemans Bay.
- The park is scenically attractive and provides an important forested backdrop to the waters of the lower Clyde River. Holmes Lookout provides expansive views of Batemans Bay and the coastal ranges to the south and east, and filtered views of the Budawang Ranges to the west and northwest.

3.2 MANAGEMENT DIRECTIONS

The management strategies in this plan aim to conserve and restore the park's significant vegetation communities, threatened species habitat and Aboriginal cultural values while providing appropriate and sustainable visitor opportunities. They reflect an integrated approach to management of the terrestrial and estuarine components of the Clyde River and complement the adjacent Batemans Marine Park.

The majority of the park has been disturbed by logging and it contains a network of vehicle trails, as well as several foreshore clearings formed by unregulated camping. These impacts are affecting significant vegetation communities and cultural values and there is potential for water pollution adjacent to the camping areas. Protection and recovery of the park's natural and cultural values will be achieved by closure of several vehicle tracks, ongoing weed control and regulation of use.

Holmes Lookout will continue to be the primary visitor facility and will be re-designed to address erosion and amenity problems. Orientation and interpretive information will be provided to introduce visitors to the park and discourage damaging activities.

Low-key day use and bush camping opportunities will continue to be provided on the foreshores but impacts will be reduced by designating suitable locations, providing toilets and limiting the use of wood fires.

Climate Change

Climate change has been listed as a key threatening process under the Threatened Species Conservation Act. Projections of future changes in climate for NSW include higher temperatures, increasing sea levels and water temperatures, elevated CO₂, more intense but possibly reduced annual average rainfall, increased temperature extremes and higher evaporative demand. These changes are likely to lead to greater intensity and frequency of fires, more severe droughts, reduced river runoff and water availability, regional flooding, increased erosion and ocean acidification.

Climate change may significantly affect biodiversity by changing population size and distribution of species, modifying species composition and altering the geographical extent of habitats and ecosystems. The potential impact of climate change is difficult to assess since it depends on the compounding effects of other pressures, particularly barriers to migration and pressure from feral animals. Species most at risk are those unable to migrate or adapt, particularly those with small population sizes or with slow growth rates.

Management programs contained in this plan of management aim to help reduce the severity of the effects of climate change on the park by reducing the pressures arising from threats such as habitat fragmentation, invasive species, bushfires, pollution, urban expansion and clearing of adjacent lands.

4. CONSERVATION OF NATURAL AND CULTURAL HERITAGE

This plan of management aims to conserve both the natural and cultural values of the park. The location, landforms and plant and animal communities of the area have determined how it has been used and valued by both Aboriginal and non-Aboriginal people. For reasons of clarity and document usefulness, components of natural heritage, cultural heritage, threats and on-going use are dealt with individually, however their inter-relationships are recognised.

4.1 GEOLOGY, LANDFORM AND SCENERY

The geology of the park is relatively homogenous and is dominated by tightly folded Ordovician undifferentiated metasediments including quartzite, quartz phyllite, phyllite and slate. Riverine alluvium of Quaternary age occurs on low-lying areas adjacent to the Clyde River and along lower creek lines (CSIRO Australia 1995).

The terrain is gently sloping to moderately steep, with an elevation range from sea level on the river shore to 140 metres at Holmes Lookout. A central ridge runs east-west along the eastern section of the park, with spur ridges falling to the river. The western sections of the park are the lower slopes of a similar series of spur ridges. The islands are quite low and relatively level.

Most of the park streams flow directly to the Clyde River. In the north east, however, they drain to Sheep Station Creek, which has the majority of its catchment in the adjoining Benandarah State Forest. The far south western section of the park drains into Buckenbowra River close to its junction with the Clyde. The Clyde River, Buckenbowra River and Sheep Station Creek are tidal, as are the lower sections of several small un-named creeks. As areas below high water mark are outside the national park boundaries it will be necessary to work with Batemans Marine Park and the Southern Rivers Catchment Management Authority to ensure their conservation.

As stated in section 2.1, the park is scenically attractive and provides an important forested backdrop to the waters of the lower Clyde River. Views from within the park, the river and lands outside the park are all important. Power lines traverse the eastern end of the park and have a significant effect on this area's scenic quality. Maintenance of the power line easements to maximise vegetation cover is dealt with in section 7. Camp site clearings on the foreshores are visible from the river and any facility provision in these locations needs to take into account maintenance of the area's natural scenic character. Any unsympathetic development on private foreshore land adjacent to the park could have a significant impact on visitor experiences.

Desired Outcomes

- The islands, foreshores, estuaries and other vulnerable features are protected.
- The scenic values of the park are protected and, where necessary, improved.

Management Response

- 4.1.1 *Avoid expansion of foreshore clearings. Rehabilitate disturbed areas not required for visitor or management facilities.*
- 4.1.2 *Set visitor facilities back from the foreshores where possible, to minimise their visual impact from the river (refer section 6).*
- 4.1.3 *Work with the Batemans Marine Park, the CMA and other authorities to protect estuarine areas adjacent to the park.*
- 4.1.4 *Liaise with neighbours and authorities to minimise the impact of adjacent land uses on the scenic values of the park, particularly views from Holmes Lookout and river foreshores.*

4.2 NATIVE PLANTS AND ANIMALS

Vegetation Communities

A vegetation survey of the eastern section of the park (Douglas and Bell 2003) found a total of eight vegetation communities on park, plus another on adjacent Crown land along the river. The communities can be generally categorised as dry and moist open forests and estuarine forests. The survey updated vegetation modelling undertaken under the Southern CRA.

The most extensive community is Coastal Lowlands Cycad/Shrub Dry Forest, dominated by spotted gum (*Corymbia maculata*) with white stringybark (*Eucalyptus globoidea*) and grey ironbark (*E. paniculata*). Understorey elements include a small tree layer of black sheoak (*Allocasuarina littoralis*) and a shrub layer of burrawang (*Macrozamia communis*), *Persoonia linearis*, *Leucopogon lanceolatus*, *Hibbertia aspera* and *Platysace lanceolata*. The community occurs on the ridge lines and slopes of most of the eastern section of the park, on spur ridges in the western section and on the higher parts of the two islands. Logging substantially disturbed the eastern section immediately prior to gazettal of the national park and many areas are floristically modified. There are recognisable variants and ecotonal complexes within the community and it is possible that the vegetation mapping and classification will be modified as the park recovers from the effects of logging.

Northern Coastal Hinterland Moist Shrub Forest occurs extensively in lower areas west of the river and at Chinamans Point. Blackbutt (*E. pilularis*) and spotted gum generally dominate the canopy but the Chinamans Point stand is almost pure blackbutt. Rough-barked apple (*Angophora floribunda*) and Sydney blue gum-bangalay (*E. saligna-E. botryoides*) may occur in more sheltered situations. Mesic elements such as blueberry ash (*Elaeocarpus reticulatus*), bastard rosewood (*Synoum glandulosum*) and native olive (*Notelaea longifolia*) are found in the understorey with sclerophyll shrubs like *Persoonia linearis* and *Acacia longifolia*. Vines and ferns are common. The stand at Chinamans Point has been logged.

Two areas of tall open forest dominated by Sydney blue gum-bangalay occur in north-facing gullies in the eastern part of the park. The community has a sparse midstorey of black sheoak, cheesetree (*Glochidion ferdinandi*) and blueberry ash over a ground stratum dominated by sedges and bracken (*Pteridium esculentum*). It

has similarities to Northern Coastal Hinterland Moist Shrub Forest but was considered sufficiently distinctive to map separately. Further survey may find additional patches of this community and it is possible that rainforest elements will increase as the forests regenerate from logging.

A combination of Hinterland Heath Shrub Dry Forest and Northern Plateau and Escarpment Heath Shrub Dry Forest occurs on an exposed ridgeline south of Sheep Station Creek. This community is a low forest of red bloodwood (*C. gummifera*) and yertchuk (*E. consideniana*), with black sheoak and a sclerophyll shrub understorey. The community has been significantly affected by logging and burning.

Areas of Forest Red Gum Open Forest/Woodland occur on both sides of the Clyde River near Little Island and Sheep Station Creek. Forest red gum is co-dominant with swamp oak (*Casuarina glauca*) in some places, with *Goodenia ovata* in the understorey. A stand south of Sheep Station Creek has been significantly degraded by camping.

An area of Woollybutt/Forest Red Gum Forest occurs along a tributary of Sheep Station Creek. The community is an open to tall forest dominated by woollybutt (*E. longifolia*), forest red gum (*E. tereticornis*) and rough-barked apple, with a moist understorey. Most of this community has not been logged and it contains old growth canopy trees.

Stands of South Coast Swamp Forest Complex are found on estuarine flats in several locations along the river and its tributaries, including the islands. The canopy is swamp oak and boobialla (*Myoporum acuminatum*) occurs occasionally in the understorey. There is a sparse groundcover of sedges. Some areas of swamp forest have been damaged by vehicle and boat-based camping.

Small patches of saltmarsh occur adjacent to most areas of swamp forest.

Mangrove Estuarine Low Forest, a low estuarine forest dominated by *Aegiceras corniculata* and/or *Avicennia marina*, is found extensively on mudflats adjacent to the park along the Clyde River, Sheep Station Creek and the islands. Some patches are quite large.

Further vegetation survey is needed to check CRA modelling in the western part of the park and on the islands, and to more extensively sample the less common vegetation communities in the eastern section.

Significant plant communities and species

Forest red gum is a rare and restricted species because of extensive clearing for agriculture. The two communities in the park containing this species are part of the endangered ecological community River Flat Eucalypt Forest on Coastal Floodplains.

The Forest Red Gum Open Forest/Woodland community has been degraded by vehicle and boat-based camping (Red Gum Camp), with several trees cut down or damaged by axe marks. Delineation of the area where camping can occur and limits on firewood use are needed to protect the remaining trees and allow regeneration (see section 6.2).

The Woollybutt/Forest Red Gum Forest contains plants that were not recorded elsewhere in the park and is one of the few old growth areas. The community is traversed by a power line easement and a vehicle track and is at risk from weed invasion (see section 5.2). Closure of public vehicle access is provided for in section 5.1.

Areas of *Casuarina glauca* and saltmarsh are listed as the endangered ecological communities Swamp Oak Floodplain Forest and Coastal Saltmarsh respectively. South Coast Swamp Forest Complex has a limited distribution around the estuarine flats of the park and has been greatly reduced elsewhere by coastal development. It is important for shoreline protection in the park and contains the restricted species rat's tail orchid (*Dendrobium teretifolium*). *Casuarina glauca* is vulnerable to fire and some stands in the park are threatened directly by camping impacts and the potential for fire escape. Measures to minimise impacts are in section 6.

The areas of Sydney blue gum-bangalay and of mangrove forest are also of high conservation value because of their rarity in the region. The tall open forest contains several uncommon species, including the regionally rare elkhorn (*Platyserium bifurcatum*).

Under the Threatened Species Conservation Act, strategies for promoting the recovery of threatened species, populations and ecological communities have been set out in a state-wide Threatened Species Priorities Action Statement (PAS). Individual recovery plans may also be prepared requiring management needs to be considered in more detail. Several threat abatement actions are outlined in this plan and survey, monitoring and research may also be carried out within the park in line with the PAS.

The 2003 vegetation survey was not designed to detect rare or threatened flora but the ROTAP (Rare or Threatened Australian Plants) species *Ancistrachne maidenii* was tentatively identified. Habitat is present for the threatened plant species *Correa baeuerlenii* and it has been recorded near the north-western border of the park. This species grows in moist forest and searches of moist gully forests, particularly west of the river, should be undertaken to determine if the species is present. Survey is also needed to determine the extent of the two regionally rare plants found in the park, rat's tail orchid and elkhorn.

Native animals

Although much of the park has been logged, it retains significant fauna habitat values as part of the extensive forests of the Clyde River valley. There has been good tree and shrub regrowth since reservation in 2001 and the habitat value and diversity of the park will increase as disturbed areas further recover. It is likely that in the future the park will play an important role as a refuge and source of recolonisation of native species to adjacent state forest areas.

Closure of unnecessary vehicle trails (section 5.1) will contribute significantly to improvement of the park's habitat values, by reducing fragmentation and removing barriers to the movement of small animals. Control of introduced predators (section 5.3) and appropriate fire management (5.4) will also be important.

Three threatened fauna species have been recorded in the park; the vulnerable glossy black-cockatoo (*Calyptorhynchus lathamii*), the masked owl (*Tyto novaehollandiae*) and the yellow-bellied glider (*Petaurus australis*). Habitat modelling conducted for the CRA indicates that the park may provide significant habitat for several other threatened species including the grey-headed flying-fox (*Pteropus poliocephalus*), spotted-tailed quoll (*Dasyurus maculatus*), sooty owl (*Tyto tenebricosa*), greater broad-nosed bat (*Scoteanax rueppellii*), long-nosed potoroo (*Potorous tridactylus*), smoky mouse (*Pseudomys fumeus*) and swift parrot (*Lathamus discolor*). The first three of these species have been recorded nearby and are therefore likely to occur in the park. Other threatened species such as the powerful owl (*Ninox strenua*) and pied ostercatcher (*Haematopus longirostris*) may also be present.

The management needs of threatened animal species are also set out in the PAS. Specific management actions may be undertaken to assist the survival of threatened species such as public education and pest control programs.

The Clyde River provides important habitat for a number of native fish species. As stated in section 2.1 the river adjacent to the park is within Batemans Marine Park. At the time of writing most of this area of the marine park is a Habitat Protection Zone, which allows most recreational fishing apart from hand hauled prawn nets. NPWS aims to contribute to the protection of fish habitat through such means as protecting foreshore vegetation and minimising sediment from park roads entering the river.

Connections to other areas

The park is adjacent to large areas of Crown land to the west and to Benandarah State Forest to the north-east (although it is separated from the state forest by the Kings Highway). These connections enhance the long term viability and maintenance of biodiversity in the park and the general area. Adjacent areas of naturally vegetated private land also contribute to these connections.

Desired Outcomes

- Significant and restricted vegetation communities are conserved.
- The habitat and populations of all significant plant and animal species are protected and maintained.
- Vegetation structural diversity and habitat value progressively recovers to its pre-logging state.

Management Response

- 4.2.1 *Undertake additional vegetation surveys to validate the modelled communities on the islands and the western part of the park, determine the extent of uncommon communities and species, and check for the presence of the threatened species *Correa bauerlenii*.*
- 4.2.2 *Undertake targeted surveys for threatened fauna species that may occur in the park but have not yet been recorded.*

4.2.3 Implement relevant priority measures in the PAS and recovery plans prepared for threatened species and ecological communities occurring in the park.

4.2.4 Liaise as needed with landuse authorities and neighbours to encourage retention of areas of significant native vegetation adjacent to the park, through planning instruments, voluntary conservation agreements and other mechanisms.

4.3 CULTURAL HERITAGE

Aboriginal heritage

South Coast Aboriginal people of the Walbanja language group occupied the area incorporating the park. At the time of white settlement Aboriginal people affiliated with the Walbanja lived between Cape Dromadery and near Ulladulla on the coast and inland to Braidwood and the Shoalhaven River (Organ 1990).

The Clyde River, particularly the shellfish beds, would have provided an important and abundant food source and adjacent forests are likely to have been a source of roots and tubers, food animals and materials. Middens indicates that Aboriginal use of the park area was concentrated along the foreshores where there are freshwater soaks and flat areas suitable for camping.

An oral history study carried out for the Eurobodalla Local Government Area (DECC, 2006) identified Holmes Lookout as part of a dreaming story associated with the Clyde River. While not identified in the oral history study, it has also been reported that Holmes Lookout may have been a meeting and communication site. The lookout area has a line of sight with other hills towards the Southern Budawang Range. It is thought that communication sites were maintained on high points of the landscape, as observation points and to send information via changes in smoke height and colour.

It has been reported that Big Island has cultural significance as a place used for ceremonies, as a training and testing location for girls, and a refuge for women and children during times of trouble. Little Island potentially has similar significance.

Following European settlement of the Batemans Bay area, some Aboriginal people found jobs in local industries, particularly fishing and logging. They continued to live along the foreshores but are reported to have been progressively moved further upstream as white settlement expanded.

Four Aboriginal sites have been formally recorded in the park; two open campsites along the main ridgeline and two foreshore middens. Artefacts in the camp sites are made of silcrete, a material that does not occur in the park and would have been brought there from elsewhere. Midden material appears to be scattered along much of the shoreline and a survey would be needed to determine the full extent of Aboriginal sites.

In some locations camping, vehicle and boat access are causing damage to Aboriginal sites. Fencing of the river foreshore at Beach Camp and Red Gum has been undertaken to protect middens and encourage revegetation. Other strategies to

protect Aboriginal sites and places are incorporated into the management of visitor use discussed in section 6.

The park is within the area of the Batemans Bay Local Aboriginal Land Council but other groups and individuals may have an interest in management of cultural heritage in the park. While the NSW Government has legal responsibility for the protection of Aboriginal sites in national parks it acknowledges the right of Aboriginal people to make decisions about their own heritage. Therefore Aboriginal communities will be consulted about the management of Aboriginal places and sites and related issues and how the Aboriginal culture and history of the park should be promoted and presented.

Historic heritage

European explorers and settlers reached the Batemans Bay area in the early 19th century and there were progressive land grants and development of timber and fishing industries.

It is reported that during the first half of the 20th century there were three huts located at Chinamans Point that were occupied by Chinese immigrants who worked in the fishing and oyster industries (David Tout). Garden borders and exotic plants remain. A more modern shed located on the Point is currently used by oyster farmers (see section 7).

Huts were also reportedly located on the eastern and western shores further upstream. The hut on the western shore is said to have been used by a Chinese fisherman (David Tout). An Aboriginal woman, Josephine Carpenter, is reported to have lived in a hut on Little Island during the 1960s and 1970s and to have been buried there (David Tout). The location of the burial is unknown and no remains are known from the huts.

Logging of the park area took place during the latter half of the 20th century, with some areas logged just prior to gazettal of the park. The only remains, apart from changes to the forest structure, are logging trails.

The lower Clyde Valley was a focal point for gold mining in the late 1800s, particularly on the Brimbramalla gold field to the north of the park. There was some mining activity in forested areas surrounding the Nelligen village but no evidence has been found of gold mining in the park. Nelligen was formerly a bustling trade and commercial centre providing a link between the Southern Tablelands and the coast.

The park has a history of informal vehicle and boat-based recreational use, focussed on the islands and parts of the river shoreline. Picnic facilities at Holmes Lookout were constructed by Batemans Bay Rotary Club in 1968 but the site was probably used as a lookout and picnic area before then.

The features and sites remaining in the park from past use are of local interest but, based on current knowledge, are not likely to be historically significant. The structures and garden remains at Chinamans Point should be recorded, however, and further research undertaken into the use of this area and other parts of the park.

Desired Outcomes

- Significant cultural heritage sites and features are protected from damage.
- The community is involved in the management of cultural values in the park.

Management Response

- 4.3.1 *Manage Aboriginal heritage in consultation with the Batemans Bay Local Aboriginal Land Council and other relevant Aboriginal community organisations and individuals, including traditional custodial families. Involve Aboriginal community members in preparation of any interpretive or promotional material covering Aboriginal culture.*
- 4.3.2 *Undertake an archaeological survey and cultural assessment of foreshore and island areas being used for camping and day use. Record Aboriginal sites found and undertake protective works where needed. Restrict recreational use if it is damaging significant locations or is culturally inappropriate.*
- 4.3.3 *Undertake and/or encourage historic research into the use of the Chinamans Point area and other parts of the park.*
- 4.3.4 *Record the features remaining from early fishing and oyster farming at Chinamans Point. Assess their significance and prepare a management strategy based on their historic value and the potential for spread of the introduced plants (refer also section 5.2).*

5. PARK PROTECTION

5.1 SOIL EROSION AND WATER QUALITY PROTECTION

The Ordovician metasediments that occur within Clyde River National Park produce gravelly and clayey soils that are subject to sheet and gully erosion and soil creep (CSIRO 1995).

Erosion is notable on some of the steep sections of the vehicle trails in the park, particularly on lower sections near the river. These trails are used to gain access to the informal camping areas along the river foreshore. The trail to the camping area on the eastern shore north of Chinamans Point (Beach Camp) is particularly steep and also crosses a poorly drained area at the base of the slope. Relocation of the trail is not practical and it will be closed to public vehicle use (see section 6).

Sheet erosion as a result of previous uncontrolled vehicle access at Holmes Lookout has resulted in loss of top soil and reduced the area to a gravel surface. A formal parking area has been provided but further work is needed to keep vehicles off the picnic area.

Some foreshore erosion is occurring on the river bank at areas used for camping, in particular the area south of Sheep Station Creek (Red Gum). This is likely to be a result of vegetation loss caused by boat launching and pedestrian access. The bank is being undercut and is progressively collapsing in one location in this area and remedial action is needed, combined with controls on vehicle access (see section 6).

Some foreshore erosion is occurring on the river bank at areas used for camping. This is likely to be a result of vegetation loss, boat launching and pedestrian access. Fencing to protect Aboriginal middens and promote revegetation (see section 4.3) will assist with foreshore stability. At Red Gum the bank was being undercut and progressively collapsing in one location. Remedial works have been undertaken, combined with controls on vehicle access.

As stated in section 4.1, most streams arise within the park. Sheep Station Creek and streams to the west of the Clyde River begin outside the park and water quality is therefore influenced by land use management outside the park, although at present there are few concerns.

Unsealed vehicle trails can be a significant source of sediment input into streams. Trail maintenance and closure of unnecessary trails in the park will be important in order to decrease sediment input into waterways as well as other impacts such as habitat fragmentation. The trails to be retained but closed to public vehicular use (management trails) and the main trails to be closed and rehabilitated to promote revegetation are shown on the Park Map.

There are at present no toilet facilities in the park and there is therefore potential for water pollution to occur in the informal camping areas, as well as health and visual impacts. Measures to address these impacts are in section 6.

Desired Outcomes

- Human induced soil erosion in the park is minimised.
- The park's catchment values, and the water quality and health of park streams, are maintained.
- River bank stability is maintained or is remediated where necessary.

Management Response

- 5.1.1 *Design and undertake all work in a manner that minimises soil erosion and water pollution.*
- 5.1.2 *Close and rehabilitate former logging trails that are not essential for access.*
- 5.1.3 *Undertake regular road maintenance to minimise sediment input to waterways. Where necessary, undertake engineering works to address significant erosion.*
- 5.1.4 *Re-design access at Holmes Lookout and erect barriers where necessary to keep vehicles off the picnic area.*
- 5.1.5 *Monitor bank stability in the Red Gum camping area and undertake further erosion control work if needed.*
- 5.1.6 *Monitor foreshore erosion throughout the park and take steps to address any significant problems.*
- 5.1.7 *Liaise as needed with neighbours, the Southern Rivers Catchment Management Authority and Eurobodalla Shire Council with regard to protection of the park's catchments and water quality.*

5.2 INTRODUCED SPECIES

Several introduced plant and animal species occur within the park and on adjoining land. Some of these species are of concern as they have the potential to have detrimental effects on ecological, visual and recreational values.

Introduced Plants

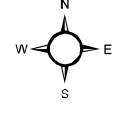
Most of the park is free of weeds but they occur in areas that have been disturbed, particularly along the powerline easements, former log dumps, foreshore camping areas and at Chinamans Point. Weed occurrences along the river foreshores generally have a higher density because of the greater soil depth, moisture and nutrient content than on the slopes and ridges.

A total of 25 weed species were identified during a survey undertaken as part of preparation of a weed management strategy for the park (Bush and Landcare Services, 2001), although other weeds may have been dormant at the time of the survey.

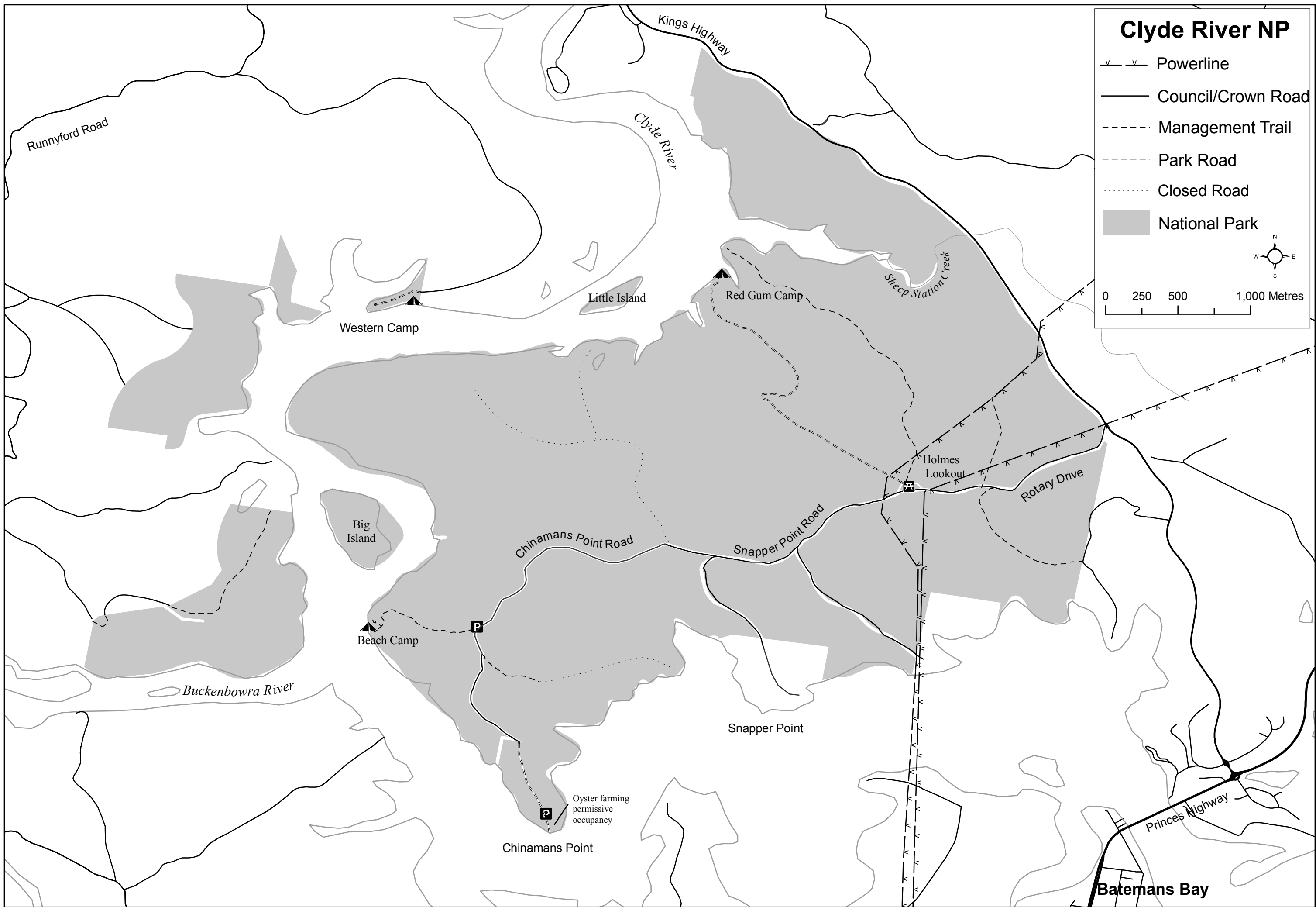
Bridal creeper (*Asparagus asparagoides*) occurs on the shoreline and islands and there are occurrences of Cape ivy (*Delairea odorata*), wild tobacco (*Solanum mauritianum*), wandering Jew (*Tradescantia fluminensis*) and blackberry (*Rubus fruticosus*). Lantana (*Lantana camara*) is found in the forest red gum communities

Clyde River NP

— v — v — Powerline
— Council/Crown Road
- - - Management Trail
- - - Park Road
..... Closed Road
■ National Park



0 250 500 1,000 Metres



near Sheep Station Creek. Bridal creeper, lantana and blackberry are declared noxious weeds. Control programs have been undertaken for these species but ongoing work will be needed.

The introduced sharp rush (*Juncus acutus*) has been recorded at Sheep Station Creek and at Chinamans Point (Kevin Mills, pers. comm.). This species could threaten areas of endangered Swamp Oak Floodplain Forest and Saltmarsh.

Infestations of whisky grass (*Andropogon virginicus*) occur along the power lines. Whisky grass is primarily a weed of disturbed areas but can invade undisturbed native bushland. It is spread by slashing and also occurs along parts of the power line easements outside the park. Control would need to be undertaken in cooperation with the Department of Primary Industries and Country Energy, in order to minimise spread and prevent re-infestation of treated areas.

As stated in section 4.5, several garden plants are found at Chinamans Point. These are of historic interest but could pose a threat to naturally vegetated areas. Assessment is needed to determine the historical significance and degree of threat.

Introduced Animals

Little evidence has been found of introduced animal species in the park, although foxes, rabbits, wild dogs and pigs are known to occur on adjacent lands. On-going monitoring of feral animals will be needed in order to ascertain their distribution and level of activity in the park.

Desired Outcomes

- Introduced species are eliminated or kept to low levels to minimise impacts on native animal and plant species, natural habitats and on neighbouring properties.

Management Response

- 5.2.1 *Control introduced species and eradicate them where practicable. Give priority to species that have been declared noxious, have a high capacity for dispersal or are a significant risk to important species or communities.*
- 5.2.2 *Undertake weed and pest animal control programs in cooperation with neighbours, the South East Livestock Health and Pest Authority and Eurobodalla Shire Council where appropriate.*
- 5.2.3 *Continue control programs for bridal creeper and other weeds on the foreshores.*
- 5.2.4 *Control lantana in the forest red gum communities.*
- 5.2.5 *Assess the historic value and potential for spread of the garden plants on Chinamans Point, and determine a management strategy (refer also section 4.3).*
- 5.2.6 *Seek the cooperation of the Department of Primary Industries and Country Energy in minimising the spread of whisky grass.*

5.2.7 *Monitor the presence and abundance of introduced plant and animal species, including the presence of sharp rush in areas of swamp oak and saltmarsh. Introduce additional control programs if needed.*

5.3 FIRE MANAGEMENT

Fire is a natural feature of the environment and is essential to the survival of some plant and animal communities. Inappropriate fire regimes, however, can cause loss of particular plant and animal species and communities. Fire can also potentially endanger park visitors and affect neighbouring land and assets.

Management of bushfire in the park is an important and complex issue. Management must aim to achieve both long-term conservation of native plant and animal communities and ongoing fire management obligations that contribute to the protection of life and property within and adjacent to the park.

Fire history

Records of wildfires and prescribed burning operations by NSW Forests indicate that most of the park has burnt infrequently, although an extensive fire burnt the majority of the park during the 1980s. The northern section west of the river has had several fires over the last 30 years and there have been a series of fires around the Beach Camp area, north of Chinamans Point.

Prescribed burning as part of forestry operations, escaped camp fires and illegal dumping of vehicles have been the sources of human-caused fires in the park. Fire escapes from camp fires have the potential to be an on-going problem, particularly on the islands and for the eastern section of the park, since the camp sites are located on its western perimeter at the base of slopes. Measures to reduce this risk are in section 6.2.

Ecological requirements

Bushfire regimes are a major determinant of the distribution and abundance of plants and animals. They also affect nutrient cycles, erosion patterns and hydrological regimes. Ecological and hazard reduction burns within national parks should be planned within a broad, long-term fire management framework and with a central objective of conserving biodiversity.

Some vegetation communities in the park are vulnerable to the impacts of fire whilst others require fire for regeneration. Forests with *Casuarina glauca* (South Coast Swamp Forest Complex and Forest Red Gum Open Forest/Woodland) contain several fire sensitive species and too-frequent fire would be damaging.

The tall moist forests of the park have a proportion of rainforest understorey species, which are fire sensitive. Wildfires may be necessary for canopy species regeneration but prescribed burning would be likely to be detrimental to the wet understorey and should be avoided (Douglas and Bell 2003).

Most canopy species in open forests and woodlands are adapted to infrequent high intensity fires but successive fires can circumvent the regeneration process if the fire interval is too short. Conversely, a long interval between fires can result in smaller shrubs and herbs disappearing from the understorey. The timing of prescribed burning in open forests should aim to achieve a balance between promoting and inhibiting regeneration of understorey species and reducing fuel levels so as to minimise the risk of successive intense wild fires (Douglas and Bell 2003).

It appears that most vegetation types in the park have experienced fire frequencies that are appropriate for the maintenance of species and community diversity, although the tall open forests in the north western sections and the area around Beach Camp have probably been burnt too frequently. Logging of the eastern section has had an effect similar to fire, leading to a lack of understorey vegetation and reduced biodiversity in certain areas. Protection of this area from fire, particularly the moist gullies, would be desirable until there has been substantial recovery from the effects of logging.

Strategies and cooperative arrangements

Under the *Rural Fires Act 1997* the NPWS is a fire authority that may undertake fire suppression within reserves and under cooperative arrangements with other fire authorities. As a land management agency, NPWS is responsible for managing fire on the park including activities that contribute to the protection of life, property and community assets both within the park and on adjoining lands. An important part of fire management for the park is participation in local co-operative fire management arrangements, including implementation of Bush Fire Risk Management Plans developed by District Bush Fire Management Committees. The NPWS is a member of the Eurobodalla Bush Fire Management Committee that is responsible for the region in which the park is located.

A Fire Management Strategy has been prepared for the park that identifies bushfire threats and provides guidelines for the conservation of native plants and animals and cultural heritage features. It also identifies NPWS commitments in meeting its obligations to limit the spread of fire from land that it manages. This will contribute to mutually cooperative arrangements that enhance the protection of life and property on adjoining lands and within the park. A particular consideration is protection of private property to the east of the eastern section of the park. A strategic fire advantage zone has been designated along Rotary Drive and fuel management programs are being developed for this area. Specific strategies have been designated for protection of threatened fauna habitat.

Desired Outcomes

- Fire regimes are appropriate for long-term maintenance of the park's plant and animal communities.
- The occurrence and effects of unplanned bushfires caused by human activity are minimised.
- The potential for spread of bushfires on, from, or into the park is minimised.
- Bushfire mitigation measures that contribute to the cooperative protection of life, property and community assets are maintained.

- Any culturally significant features are afforded protection from damage by bushfires and bushfire suppression activities.

Management Response

- 5.3.1 *Implement the Fire Management Strategy for the park.*
- 5.3.2 *Use prescribed burns or other means to achieve fuel management as needed in strategic areas and to achieve a variety of fire regimes that maintain fire thresholds for each vegetation community in accordance with the Fire Management Strategy. Where possible, avoid the introduction of fire in vegetation types that are fire sensitive, particularly the estuarine communities and areas of tall moist forest.*
- 5.3.3 *Wherever possible avoid the use of heavy machinery for fire suppression in areas of estuarine wetland, forest red gum communities, tall moist forest and Aboriginal sites. Rehabilitate areas disturbed by fire suppression operations as soon as practical after fire.*
- 5.3.4 *Continue to actively participate in the Eurobodalla Bush Fire Management Committee. Maintain close contact and cooperation with the Rural Fire Service, Department of Primary Industries and volunteer bush fire brigades.*
- 5.3.5 *Where appropriate, carry out fuel management in cooperation with neighbours for mutual protection.*

6. VISITOR OPPORTUNITIES AND EDUCATION

Overview

Under the NPW Act, national parks are managed to promote public appreciation and understanding of the area's natural and cultural values and provide for sustainable visitor use and enjoyment that is compatible with conservation. Appropriate visitor access, facilities and information are provided to support these aims.

Access to Clyde River National Park is via unsealed roads off the Kings Highway to the eastern section, via Runnyford Road to the western sections, or by boat along the Clyde River.

Existing use of the park is primarily for picnicking and viewing scenery at Holmes Lookout, and informal picnicking, camping and fishing on the river foreshores and islands. Some waterskiing and other boating activities occur on the river adjoining the park. There are picnic facilities at Holmes Lookout but no facilities elsewhere in the park.

It is estimated that the park receives approximately 16,000 visitors each year. The majority of visits are to Holmes Lookout. Most vehicle-based visitors don't venture to the river foreshores but it is estimated that about a third of day visitors and half of campers arrive by boat. Roughly a third of the total visitors are campers.

The majority of park users are thought to be locals, although it is likely that a significant number of tourists visit Holmes Lookout. Use is likely to increase as development progresses in Nelligen and the Batemans Bay area and as the new park becomes better known. The park is steep and relatively small, however, and much of the foreshore is lined by mangroves. These characteristics limit the recreational value of the park and it is not expected to attract large numbers of visitors.

Provision for visitor use of the park needs to be considered in a regional context. Batemans Bay, Nelligen and Murramarang National Park all have picnic areas and caravan parks with relatively sophisticated facilities while there are basic day use and camping areas and walking tracks in Murramarang, Meroo, Morton, Budawang and Deua National Parks. Shallow Crossing, located 14 kilometres north of the park on the Clyde River, is a popular area for swimming and camping and the state forests of the lower Clyde Valley provide many locations for camping without facilities.

The main recreational values of the park will continue to be focussed on Holmes Lookout and the river. Accessible parts of the shoreline, particularly the few sandy beaches, provide an attractive environment for relaxing low key activities. These sites provide a sense of isolation because of the forested setting and views. Holmes Lookout, the foreshores and islands are sensitive to disturbance, however, because of their erodibility, significant vegetation communities and Aboriginal cultural values.

Given its character and the large number of recreation destinations in the district it is considered that Clyde River National Park should continue to provide low key visitor opportunities similar to those presently available. Some modification of existing use patterns and provision of basic facilities will be needed to address environmental damage at popular locations.

Vehicle access

The majority of the trails in or through the park were constructed during former logging activities. Several are used for vehicle access to Holmes Lookout, private property and the river but the remainder are little used and beginning to revegetate. Most of the trails in use are located along ridges and are relatively stable. They are generally of dry weather 2WD standard. Some sections are quite steep, however, with high potential for erosion or impacts on drainage. In particular, the lower part of the trail to Beach Camp (see the Park Map) is steep and eroding and cannot sustain continued public vehicle use.

As stated in earlier sections, reduction in the number of trails is needed to reduce habitat fragmentation and sediment input into the river. Only trails that are essential for private property, management or recreational access will be retained and these are shown on the Park Map. Trails to be closed to public vehicular use (management trails) or closed and rehabilitated (returned to native vegetation) are also shown on the Map, apart from some very short trails that receive little use.

Cycling and horse riding

Some occasional bicycle riding occurs in the park but generally the trails are too steep for comfortable cycling. They are also not part of a through-trail system and are therefore of limited value for bicycle touring. The trails are also not generally suitable for horse riding since they are used by vehicles, do not form loops and lead directly to visitor use sites. Closure of some trails to public vehicle use but retention for management vehicle access may make the park more attractive for riders.

Boating and fishing

Boating on the Clyde River ranges from canoeing to holidays in houseboats, and the park provides a natural backdrop for these activities. Canoeing is a very appropriate activity in and adjacent to national parks since it has minimal environmental impact and promotes appreciation of the natural environment. A commercial canoeing tour operation uses the park, for both short stops and overnight, along with other parts of the Clyde estuary.

A small amount of water skiing occurs adjacent to the park in more sheltered areas. Use of the park beaches as bases for water skiing is not compatible with quiet enjoyment of the national park and conflicts with other users, particularly given the small size and limited number of beaches. Extensive sheltered areas for waterskiing are available upstream from Nelligen.

Boat launching by vehicle is not appropriate in most parts of the park because of the steep slopes and potential for erosion. Trailer-boat launching at the Red Gum Camp has resulted in bank erosion and will not be permitted given the availability of boat launching facilities nearby at Nelligen and Batemans Bay. Small boats will be able to be carried or trolleyed to the water.

A draft boating plan is being prepared by the NSW Maritime Authority for the Clyde River estuary. NPWS has contributed to the draft plan to encourage sympathetic use adjacent to the park and to minimise impacts.

Recreational fishing is permitted in national parks and in most parts of the Batemans Marine Park. The zoning plan for the marine park designates a sanctuary zone along most of the Buckenbowra River, where fishing is not permitted. This is unlikely to affect national park visitors since there are no known access points in this part of the park.

Camping

Informal camping, both vehicle and boat-based, occurs at several sites on the park foreshores. The main sites are two locations on the eastern side of the Clyde River (Red Gum and Beach Camp), Little and Big Islands, and a peninsula on the western side of the river near Little Island (Western Camp). The western shore is less used than the eastern shore because of the longer drive.

All the camp sites are of concern. As previously stated, the track to the most heavily used area, Beach Camp, is steep and erodible and crosses a poorly drained area at the base of the slope. The site is within an area of endangered Swamp Oak Floodplain Forest. Red Gum Camp is located in an area of the endangered River Flat Eucalypt Forest on Coastal Floodplains and is suffering from tree cutting and trampling impacts. Camping on the islands is also resulting in tree damage, particularly on Little Island. All the camp sites are subject to some foreshore erosion, littering and vandalism and could affect Aboriginal cultural heritage values and water quality.

Surveys undertaken in the camping areas indicate that the majority of campers have been visiting the park regularly over a number of years. Most stay 2-4 days in the park and seek a quiet, secluded bush camping experience. The majority of campers would welcome the provision of basic facilities such as toilets.

It is recognised that camping is an important recreation opportunity and it will continue to be provided. The current use patterns are not sustainable, however, and measures such as closure, delineation or provision of basic facilities are needed. Four areas will be designated for boat and/or vehicle-based camping and other sites will be closed. The other sites are generally less attractive because of the absence of beaches and therefore receive little use.

The main impacts are caused by vehicle-based camping within the two main eastern sites. As stated above, Beach Camp has a steep access track that needs to be closed to public vehicular use. This site will therefore be closed to vehicle based

camping but boat-based and walk-in camping, as well as walk-in day use, will continue to be permitted.

Red Gum Camp has a relatively well-graded road and is therefore more suitable for vehicle-based camping. Most camping sites will be separated from vehicle parking, however, and the area will be delineated to minimise impacts on the forest red gum community and, if needed, to protect Aboriginal sites. This area will also provide for day use (see below).

Vehicle-based camping will continue to be permitted at Western Camp but vehicle access will be restricted if necessary to protect Aboriginal or other values.

Boat-based camping generally has less impact than vehicle-based camping as long as use levels are low, but still needs to be directed to designated sites in order to protect conservation values. Boat-based camping will be permitted at the three designated foreshore camping areas and at Big Island. It will not be permitted on Little Island, where the area available is limited and significant damage is occurring from tree cutting. It may also be prohibited in future at Red Gum if necessary to provide sufficient space for vehicle-based camping.

Section 4.3 provides for survey of the camping areas to check for Aboriginal sites. Site delineation and provision of facilities will be designed to protect Aboriginal values.

Wood fires will be prohibited on the islands in order to reduce tree cutting and other damage caused by firewood collection. It may also be prohibited at other camping areas if measures to discourage tree cutting are not successful.

Toilets will be provided at the Red Gum and Beach camping areas. It is likely that pump-out toilets will be necessary because of the high water table at these camp sites. Toilets will also be provided at Western Camp and on Big Island if necessary.

Toilets will be provided at Red Gum Camp, and will be provided at Beach Camp and Western Camp if necessary. It is likely that pump-out toilets will be needed at the first two sites because of the high water table. Toilets will not be provided on Big Island as they would be costly to maintain and would be likely to encourage increased use and therefore impacts on vegetation and cultural values.

Picnicking and day use

Holmes Lookout has picnic tables and a disused water tank. As outlined in section 5.1, previous uncontrolled vehicle access onto the area has resulted in erosion and reduction in amenity. This situation will improve with control of vehicle movement but some refurbishment and landscaping are needed. The lookout is located partly on the road reserve for Rotary Drive, which is managed by Eurobodalla Shire Council. The Council provides rubbish bins for visitors.

Day visitors use the foreshore areas for fishing and boating activities. Big Island in particular is a popular boat-based picnic area and stopover. Day visitors will be able to share facilities provided for campers at Red Gum, Western Camp and Beach Camp (walk-in) and will also have vehicle access to a small car park at Chinamans

Point. It would not be appropriate to provide additional foreshore facilities specifically for day visitors because of the park's high conservation values, relatively low levels of use and the availability of foreshore picnic areas nearby in Batemans Bay and Nelligen.

Walking

There are no formal walking tracks in the park. It is relatively easy to walk along most of the foreshores but the rest of the park is steep and not particularly attractive for walking. Walking on the foreshores is impeded in some areas by the presence of mangroves. It is not proposed to create a system of walking tracks given the extensive walking opportunities in nearby parks. A short track may be provided at Holmes Lookout, however, if a suitable route can be found that provides additional views to surrounding areas.

Walkers may use management trails following their closure to public vehicle use. This will create opportunities to walk to foreshore destinations where vehicles are not permitted, including opportunities for walk-in camping at Beach Camp.

Information provision

There is currently no signposting of the park's roads or visitor opportunities, apart from a sign to Holmes Lookout, and this limits use by non-locals. In addition, promotion of appreciation of the park's conservation values and of minimal impact use is needed to assist in minimising damage to its significant vegetation communities.

Provision of information will involve:

- orientation to enable visitors to find their way around the park, introduce them to the landscape and advise them about visitor opportunities;
- interpretation of components of the park's environment in order to increase visitor understanding of the park's values and of the environment in general; and
- information about restrictions designed to ensure that use is sustainable.

The primary opportunity for information provision is at Holmes Lookout, which has easy access from Batemans Bay and the Princes and Kings Highways. This site provides views of the park and surrounding forests and presents an excellent opportunity to orient visitors and interpret the park's natural and cultural values. It will also be necessary to provide some signage at the camping areas in order to inform visitors about limits on use and explain the need for these limits.

Desired Outcomes

- Low key visitor opportunities are available that encourage appreciation of the natural environment.
- Visitors are aware of the park's values and recreation opportunities.
- Visitor use is compatible with the purposes of national parks, is safe and ecologically sustainable and does not compromise cultural significance.

Management Response

- 6.1 *Allow public vehicle use on the park roads shown on the Map (centre pages).*
- 6.2 *Allow cycling and horse riding on park roads and management trails.*
- 6.3 *Undertake landscaping and facility refurbishment at Holmes Lookout to rehabilitate eroded areas and improve amenity (see also section 5.1).*
- 6.4 *Provide interpretive information at Holmes Lookout that includes the following:*
 - *the park's diverse and significant vegetation communities, particularly the estuarine wetlands and areas of forest red gum;*
 - *interrelationships between terrestrial and estuarine environments and the values of the adjacent marine park;*
 - *Aboriginal cultural heritage values; and*
 - *minimal impact use.*
- 6.5 *Investigate opportunities for provision of a short loop walk at Holmes Lookout that provides views of surrounding areas. Construct the track if a suitable route can be found.*
- 6.6 *Permit vehicle-based camping at Red Gum and Western Camp only. Allow walk-in and boat-based camping at Beach Camp, Red Gum and Western Camp, and boat-based camping at Big Island. Limit or prohibit boat-based camping at Red Gum if there is insufficient space for vehicle-based camping. Close Big Island to camping if there are unacceptable impacts on natural or cultural values. Do not promote camping on the island.*
- 6.7 *Construct a car park at Red Gum Camp and define an area for camping and picnicking. Install toilets. Provide a directional sign from Chinamans Point Road.*
- 6.8 *Terminate vehicle access at Western Camp back from the point if necessary to protect Aboriginal heritage or other values. Monitor impacts and install toilets if needed.*
- 6.9 *Close the road to Beach Camp to public vehicle use and provide a small car park at the junction with Chinamans Point Road. Install toilets at the camping area if necessary. Delineate the camping area if needed to prevent campers encroaching on the swamp oak forest.*
- 6.10 *Provide a small car park set back from the foreshore at Chinamans Point.*
- 6.11 *Prohibit firewood collection and wood fires on the islands. Prohibit wood fires at other locations if found necessary to prevent tree cutting, fire escape or unacceptable impacts from wood collection. Require campers at Red Gum and Beach Camp to collect wood from elsewhere in the park or to bring wood with them and erect signs prohibiting tree cutting.*
- 6.12 *Monitor the impacts of camping, including wood fires, and close or place further restrictions on camping if needed.*
- 6.13 *Continue to monitor visitor numbers, including spot counts of campers.*
- 6.14 *Prohibit recreational trailer boat launching in the park.*
- 6.15 *Liaise with the NSW Maritime Authority and the Batemans Marine Park in relation to management of boating adjacent to the park.*

- 6.16 *Seek to arrange signage at local boat ramps explaining restrictions on use of the park, particularly that camping is not permitted on Little Island and wood fires are not permitted on both islands.*
- 6.17 *Liaise with boat hire businesses and marinas to provide information to their customers about restrictions on use of the park.*
- 6.18 *Permit appropriate commercial tours and organised group activities that are conducted in an ecologically sustainable manner. Promote provision of interpretive and minimal impact use information during such activities. Limit such activities if necessary to avoid conflicts with other visitors and to minimise environmental impacts.*

7. RESEARCH AND MONITORING

The purpose of scientific study in national parks is to improve understanding of natural and cultural heritage and the processes affecting them. Research helps to identify the management requirements for particular species, communities or features and provides information to underpin effective decision-making and to evaluate the effectiveness of management initiatives. The results of research and monitoring will be used to guide management programs.

As stated in section 4.2, a vegetation survey has been conducted in the park but further survey is needed for the western sections, to determine the extent of uncommon vegetation communities and check for threatened plant and animal species. Section 4.3 provides for survey for Aboriginal sites in areas used for camping and day use. Additional survey and research with regard to natural and cultural heritage could also provide valuable information to guide management, particularly research into the fire requirements of significant plant species and communities.

Under the Southern Regional Forest Agreement all forest managers including the Department of Primary Industries and NPWS must demonstrate ecologically sustainable forest management (ESFM). ESFM aims to maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate, including:

- ecosystem biodiversity, health, vitality, productive capacity and functional processes;
- soil and water productive capacity and functional processes;
- long term social and economic benefit; and
- natural and cultural heritage values.

ESFM will be applied to all ecosystem types and implemented primarily through monitoring to provide feedback on management programs and directions for future adaptive management. Criteria and indicators of ecologically sustainable forest management have been identified and monitoring programs are being developed using the indicators to demonstrate the impact of management actions on ecological functions. Remedial management actions will then be undertaken as required.

NPWS assesses and reports on the condition and management adequacy of reserves through the State of Parks Program. This utilises a number of indicators related to the condition of natural and cultural heritage and visitor facilities, information availability and the management of threats such as fire and pests. Assessment of Clyde River National Park indicates that the impacts of past logging and frequent fire are diminishing and weeds are being well controlled, but the impacts of camping at some riverside sites continue to be of concern.

Desired Outcomes

- Research is undertaken that enhances the information base and assists management of the park.
- Research causes minimal environmental damage.

- Monitoring programs are in place to detect any changes in the status of park resources.

Management Response

- 7.1 *Work with other authorities and stakeholders in implementing ESFM principles across the landscape.*
- 7.2 *Undertake research and monitoring to provide additional information about the park's natural and cultural heritage and human use in order to facilitate management. Give priority to research needs identified within this plan of management.*
- 7.3 *Permit appropriate research by other organisations and individuals and promote research that is directly beneficial to management purposes.*
- 7.4 *Encourage contributions from park visitors and neighbours to the natural and cultural heritage information base.*

8. OTHER USES

Roads and trails within and through the park provide access for a variety of public and private uses and for NPWS management activities such as fire management and weed control.

The road to Holmes Lookout (Rotary Drive) is a Council-managed public road and the roads to Snapper Point and the point south of Holmes Lookout are Crown public roads excluded from the park. The latter two roads provide access to private property and their maintenance will continue to be the responsibility of the landowners.

Most of Chinamans Point Road is also a Crown road but it is maintained by NPWS. The southern end of Chinamans Point Road is vested in the Minister for Climate Change and the Environment under Part 11 of the NPW Act. This provides access to a permissive occupancy at the point (see below) as well as public recreational access.

Other roads and trails are reserved as part of the park.

Two power lines cross the park close to Homes Lookout. Clearings and vehicle trails along the easements have significant environmental and visual impacts, including habitat fragmentation and weed introduction. The impacts are minimised through maintenance agreements that provide for protection of threatened plants and habitats and retention of some vegetation cover for animal movement.

A channel lead marker maintained by the NSW Maritime Authority is located near the mouth of Sheep Station Creek. Access for occasional maintenance is gained via a vehicle trail through the park but it would be preferable to close this trail if boat-based access for maintenance work was feasible.

Oyster leases are located along rocky parts of the river shores adjacent to the park and there are also floating-type oyster leases off the southern shoreline of the park. Some of the leases may extend slightly into the park. Access to the oyster leases is by boat, apart from leases associated with a permissive occupancy at Chinamans Point. This area has been used for oyster farming since at least the late 1950s and has a jetty, landing stage, small storage shed and fenced yard. The permissive occupancy requires operations to be undertaken in a manner that avoids foreshore erosion or water pollution. It also allows general public access across the foreshore. Continued use of the area will be subject to environmental and other impacts being acceptable.

Several commercial bee keeping sites are licensed in the eastern section of the park. These will be allowed to continue in accordance with NPWS policy and requirements designed to minimise the impacts of site maintenance. A site located north of Chinamans Point is accessed from a trail running east from Chinamans Point Road. As this trail has no management value it would be desirable to relocate the bee site so that the trail can be closed.

Desired Outcomes

- Appropriate access is maintained for NPWS management and other uses.
- Non-park uses have minimal impact on natural and cultural heritage.

Management Response

- 8.1 *Maintain park vehicle trails.*
- 8.2 *Permit vehicle access for maintenance of the channel lead marker at Sheep Station Creek. Keep the need for vehicle access under review and close the trail if it is no longer required for maintenance purposes.*
- 8.3 *Arrange licences for the power lines. Monitor the implementation of maintenance agreements to maintain an adequate vegetation cover and minimise erosion potential.*
- 8.4 *Permit commercial oyster aquaculture, where present in the park, to continue to operate. No expansion of oyster aquaculture will be allowed but re-arrangement or relocation of existing leases may be permitted where this would not have detrimental impacts on natural or cultural values. Restrictions may be placed on aquaculture (s.144 Fisheries Management Act 1994) if found necessary for protection of water quality, waterbird habitat or other environmental protection purpose.*
- 8.5 *Permit the oyster lease permissive occupancy to continue at Chinamans Point, subject to there being no expansion of the area disturbed or increase in the number or footprint of structures. Keep the need for the existing structures under review and require their removal when no longer needed.*
- 8.6 *Permit the existing commercial beekeeping operations to continue in accordance with NPWS policy and licence conditions. Seek a contribution to road maintenance from beekeepers where trails are retained primarily for access to set-down sites. If feasible, arrange re-location of the site near Chinamans Point in order to enable closure of the access trail.*

9. PLAN IMPLEMENTATION

This plan of management establishes a scheme of operations for Clyde River National Park. It will remain in force until amended or replaced in accordance with section 73B of the NPW Act. The plan is part of a system of management that includes the National Parks and Wildlife Act, management policies, established conservation and recreation philosophies, and strategic planning at corporate, branch and regional levels. The latter may include development of related plans such as regional recreation plans, species recovery plans, fire management plans and conservation plans.

Relative priorities for activities identified in this plan are set out in the table below. These priorities are subject to the availability of necessary staff and funds, and to any special requirements of the Director-General or Minister. **High** priority activities are those considered imperative to achievement of the objectives and desired outcomes. They must be undertaken in the near future to avoid significant deterioration in natural, cultural or management resources. **Medium** priority activities are those that are necessary to achieve the objectives and desired outcomes but are not urgent. **Low** priority activities are desirable to achieve management objectives and desired outcomes but can wait until resources become available. **Ongoing** activities are undertaken on an annual basis or are statements of management intent that will direct the management response if an issue arises.

The environmental impact of proposed activities will be assessed at all stages in accordance with established environmental assessment procedures. If the impacts of any activity proposed in this plan are found to be unacceptable, the activity will not be undertaken or will be modified so as to comply with the environmental assessment outcomes.

Implementation Table

Theme	Management Response	Priority
On-Park Ecological Conservation	4.1.1 Avoid expansion of foreshore clearings. Rehabilitate disturbed areas not required for visitor or management facilities.	Ongoing
	4.2.1 Undertake additional vegetation surveys to validate the modelled communities on the islands and the western part of the park, determine the extent of uncommon communities and species, and check for the presence of the threatened species <i>Correa baeuerlenii</i> .	Medium
	4.2.2 Undertake targeted surveys for threatened fauna species that may occur in the park but have not yet been recorded.	Medium
	4.2.3 Implement relevant priority measures in the PAS and recovery plans prepared for threatened species and ecological communities occurring in the park.	Ongoing
	5.1.1 Design and undertake all work in a manner that minimises soil erosion and water pollution.	Ongoing
	5.1.2 Close and rehabilitate former logging trails that are not essential for access.	Medium

	<p>5.1.3 Undertake regular road maintenance to minimise sediment input to waterways. Where necessary, undertake engineering works to address significant erosion.</p> <p>5.1.4 Re-design access at Holmes Lookout and erect barriers where necessary to keep vehicles off the picnic area.</p> <p>5.1.5 Monitor bank stability in the Red Gum camping area and undertake further erosion control work if needed.</p> <p>5.1.6 Monitor foreshore erosion throughout the park and take steps to address any significant problems.</p> <p>5.1.7 Liaise as needed with neighbours, the Southern Rivers Catchment Management Authority and Eurobodalla Shire Council with regard to protection of the park's catchments and water quality.</p> <p>7.2 Undertake research and monitoring to provide additional information about the park's natural and cultural heritage and human use in order to facilitate management. Give priority to research needs identified within this plan of management</p> <p>7.3 Permit appropriate research by other organisations and individuals and promote research that is directly beneficial to management purposes.</p> <p>7.4 Encourage contributions from park visitors and neighbours to the natural and cultural heritage information base.</p>	<p>Ongoing</p> <p>High</p> <p>High</p> <p>Ongoing</p> <p>Ongoing</p> <p>Low</p> <p>Ongoing</p> <p>Ongoing</p>
Cultural Heritage	<p>4.3.1 Manage Aboriginal heritage in consultation with the Batemans Bay Local Aboriginal Land Council and other relevant Aboriginal community organisations and individuals, including traditional custodial families. Involve Aboriginal community members in preparation of any interpretive or promotional material covering Aboriginal culture.</p> <p>4.3.2 Undertake an archaeological survey and cultural assessment of foreshore and island areas being used for camping and day use. Record Aboriginal sites found and undertake protective works where needed. Restrict recreational use if it is damaging significant locations or is culturally inappropriate.</p> <p>4.3.3 Undertake and/or encourage historic research into the use of the Chinamans Point area and other parts of the park.</p> <p>4.3.4 Record the features remaining from early fishing and oyster farming at Chinamans Point. Assess their significance and prepare a management strategy based on their historic value and the potential for spread of the introduced plants (refer also section 5.2).</p>	<p>Ongoing</p> <p>High</p> <p>Low</p> <p>Medium</p>
Visitor Use and Services	<p>4.1.2 Set visitor facilities back from the foreshores where possible, to minimise their visual impact from the river (refer section 6).</p> <p>6.1 Allow public vehicle use on the park roads shown on the Map (centre pages).</p> <p>6.2 Allow cycling and horse riding on park roads and management trails.</p> <p>6.3 Undertake landscaping and facility refurbishment at Holmes Lookout to rehabilitate eroded areas and improve amenity.</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Medium</p>

	<p>6.4 Provide interpretive information at Holmes Lookout that includes the following:</p> <ul style="list-style-type: none"> – the park’s diverse and significant vegetation communities, particularly the estuarine wetlands and areas of forest red gum; – interrelationships between terrestrial and estuarine environments and the values of the adjacent marine park; – Aboriginal cultural heritage values; and – minimal impact use. <p>6.5 Investigate opportunities for provision of a short loop walk at Holmes Lookout that provides views of surrounding areas. Construct the track if a suitable route can be found.</p> <p>6.6 Permit vehicle-based camping at Red Gum and Western Camp only. Allow walk-in and boat-based camping at Beach Camp, Red Gum and Western Camp and boat-based camping at Big Island. Limit or prohibit boat-based camping at Red Gum if there is insufficient space for vehicle-based camping. Close Big Island to camping if there are unacceptable impacts on natural or cultural values. Do not promote camping on the island.</p> <p>6.7 Construct a car park at Red Gum Camp and define an area for camping and picnicking. Install toilets. Provide a directional sign from Chinamans Point Road.</p> <p>6.8 Terminate vehicle access at Western Camp back from the point if necessary to protect Aboriginal heritage or other values. Monitor impacts and install toilets if needed.</p> <p>6.9 Close the road to Beach Camp to public vehicle use and provide a small car park at the junction with Chinamans Point Road. Install toilets at the camping area if necessary. Delineate the camping area if needed to prevent campers encroaching on the swamp oak forest.</p> <p>6.10 Provide a small car park set back from the foreshore at Chinamans Point.</p> <p>6.11 Prohibit firewood collection and wood fires on the islands. Prohibit wood fires at other locations if found necessary to prevent tree cutting, fire escape or unacceptable impacts from wood collection. Require campers at Red Gum and Beach Camp to collect wood from elsewhere in the park or to bring wood, and erect signs prohibiting tree cutting.</p> <p>6.12 Monitor the impacts of camping, including wood fires, and close or place further restrictions on camping if needed.</p> <p>6.13 Continue to monitor visitor numbers, including spot counts of campers.</p> <p>6.14 Prohibit recreational trailer boat launching in the park.</p> <p>6.15 Liaise with NSW Maritime and the Batemans Marine Park in relation to management of boating adjacent to the park.</p> <p>6.16 Seek to arrange signage at local boat ramps explaining restrictions on use of the park, particularly that camping is not permitted on Little Island and wood fires are not permitted on both islands.</p> <p>6.17 Liaise with boat hire businesses and marinas to provide information to their customers about restrictions on use of the park.</p>	<p>Medium</p> <p>Low</p> <p>Ongoing</p> <p>High</p> <p>Ongoing</p> <p>High</p> <p>Low</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Medium</p> <p>Medium</p>
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	6.18	Permit appropriate commercial tours and organised group activities that are conducted in an ecologically sustainable manner. Promote provision of interpretive and minimal impact use information during such activities. Limit such activities if necessary to avoid conflicts with other visitors and to minimise environmental impacts.	Ongoing
Community Programs and Education / Off-park Ecological Conservation	4.1.3	Work with the Batemans Marine Park, the CMA and other authorities to protect estuarine areas adjacent to the park.	Ongoing
	4.1.4	Liaise with neighbours and authorities to minimise the impact of adjacent land uses on the scenic values of the park, particularly views from Holmes Lookout and river foreshores.	Ongoing
	4.2.4	Liaise as needed with landuse authorities and neighbours to encourage retention of areas of significant native vegetation adjacent to the park, through planning instruments, voluntary conservation agreements and other mechanisms.	Ongoing
	7.1	Work with other authorities and stakeholders in implementing ESFM principles across the landscape.	Ongoing
Weeds and Pest Animals	5.2.1	Control introduced species and eradicate them where practicable. Give priority to species that have been declared noxious, have a high capacity for dispersal or are a significant risk to important species or communities.	Ongoing
	5.2.2	Undertake weed and pest animal control programs in cooperation with neighbours, the South East Livestock Health and Pest Authority and Eurobodalla Shire Council where appropriate.	Ongoing
	5.2.3	Continue control programs for bridal creeper and other weeds on the foreshores.	Ongoing
	5.2.4	Control lantana in the forest red gum communities.	Ongoing
	5.2.5	Assess the historic value and potential for spread of the garden plants on Chinamans Point, and determine a management strategy.	Medium
	5.2.6	Seek the cooperation of Dept of Primary Industries and Country Energy in minimising the spread of whisky grass.	Ongoing
	5.2.7	Monitor the presence and abundance of introduced plant and animal species, including the presence of sharp rush in areas of swamp oak and saltmarsh. Introduce additional control programs if needed.	Ongoing
Fire Management	5.3.1	Implement the Fire Management Strategy for the park.	Ongoing
	5.3.2	Use prescribed burns or other means to achieve fuel management as needed in strategic areas and to achieve a variety of fire regimes that maintain fire thresholds for each vegetation community in accordance with the Fire Management Strategy. Where possible, avoid the introduction of fire in vegetation types that are fire sensitive, particularly the estuarine communities and areas of tall moist forest.	Ongoing
	5.3.3	Wherever possible avoid the use of heavy machinery for fire suppression in areas of estuarine wetland, forest red gum communities, tall moist forest and Aboriginal sites. Rehabilitate areas disturbed by fire suppression operations as soon as practical after fire.	Ongoing

	5.3.4	Continue to actively participate in the Eurobodalla Bush Fire Management Committee. Maintain close contact and cooperation with the Rural Fire Service, Department of Primary Industries and volunteer bush fire brigades.	Ongoing
	5.3.5	Where appropriate, carry out fuel management in cooperation with neighbours for mutual protection.	Ongoing
Infrastructure and Maintenance	8.1	Maintain park vehicle trails.	Ongoing
	8.2	Permit vehicle access for maintenance of the channel lead marker at Sheep Station Creek. Keep the need for vehicle access under review and close the trail if it is no longer required for maintenance purposes.	Ongoing
	8.3	Arrange licences for the power lines. Monitor the implementation of maintenance agreements to maintain an adequate vegetation cover and minimise erosion potential.	Low
	8.4	Permit commercial oyster aquaculture, where present in the park, to continue to operate. No expansion of oyster aquaculture will be allowed but re-arrangement or relocation of existing leases may be permitted where this would not have detrimental impacts on natural or cultural values. Restrictions may be placed on aquaculture (s.144 <i>Fisheries Management Act 1994</i>) if found necessary for protection of water quality, waterbird habitat or other environmental protection purpose.	Ongoing
	8.5	Permit the oyster lease permissive occupancy to continue at Chinamans Point, subject to there being no expansion of the area disturbed or increase in the number or footprint of structures. Keep the need for the existing structures under review and require their removal when no longer needed.	Ongoing
	8.6	Permit the existing commercial beekeeping operations to continue in accordance with NPWS policy and licence conditions. Seek a contribution to road maintenance from beekeepers where trails are retained primarily for access to set-down sites. If feasible, arrange re-location of the site near Chinamans Point in order to enable closure of the access trail.	Ongoing

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