

Performance Assessment Name:

Yalgorup Management Plan

PA Category:

Conservation Reserve Management Plan PA

Twelve month review details:

The full response to the 12 month review is attached. The response from DEC indicates that there has been significant progress in the time since this performance assessment was undertaken.

No further follow-up action is required and this performance assessment can now be closed.

Twelve month review:

31/08/2010

☒ Twelve month review undertaken

☐ Further action required

Comments:

Response to 12 month review received 31 August 2010.



YALGORUP NATIONAL PARK MANAGEMENT PLAN 1995 – 2005 PERFORMANCE ASSESSMENT – 12 MONTH REVIEW OF FINDINGS

I refer to the letter from Tom Hughson dated 25 June 2010 regarding the performance assessment in respect of Yalgorup National Park. Responses to the eight key findings of the assessment follow.

Finding 1

Monitoring of nutrient levels in Lake Clifton is inadequate for drawing representative conclusions in relation to the protection of the critically endangered thrombolite community.

A PhD study entitled *Algal mats of Lake Clifton in relation to the thrombolite community* is currently being undertaken by a Curtin University student. Regular monitoring for nutrients and microbes across four sites within Lake Clifton is a component of this study.

The thesis will be available after a final year of research and will detail the findings from the three years of sampling. DEC has provided funding for analysis associated with this study.

Finding 2

Off-road vehicles are adversely affecting the park by accessing dune areas from the beach.

The finding is supported. Considerable effort has been focused over the past 12 to 18 months on pursuing additions of land to Yalgorup National Park so that beach access can be controlled.

A milestone in this regard was the consolidation of the park into a single reserve. Negotiations are now concentrated on the addition of the old Lake Clifton townsite and Location 123 (just above Lake Clifton) to the national park.

In May 2010, the Environmental Protection Authority released its report *Strategic Environmental Advice on the Dawesville to Binningup Area* which recommends further consolidation of Yalgorup National Park.

Meanwhile, DEC will consider other management options to control dune access by off-road vehicles as a matter of priority.

Finding 3

Existing consultation processes appear ineffective in encouraging the sympathetic management of properties adjacent to the park.

Yalgorup National Park rangers have recently adopted a more proactive approach to liaison and engagement with neighbouring property owners. This has been achieved through courtesy visits and distributing letters of invitation to discuss and work towards collaboratively resolving local issues that affect the park. Examples of management issues that are being discussed include illegal off-road vehicle activity, illegal dumping and hunting, and antisocial behaviour within the park.

High priority will be placed on continuing this consultation.

Finding 4

Staffing levels and resources have restricted the management of the park and the implementation of the plan.

DEC believes its Swan Coastal District has maintained a sufficient level of funding to implement the outcomes of the management plan, relative to the District's other responsibilities. This includes funding for two national park rangers who provide services to the park. This is supplemented by specialist nature conservation, fire management and visitor services staff from across Swan Coastal District as required. Significant progress has been made with upgrading camping facilities and visitor services within the park. Ongoing improvements and maintenance are a priority for the district and additional capital funding of \$185,000 has been allocated for this in 2010/11.

Finding 5

Fine scale vegetation mapping, which is important for conservation of threatened and priority flora and for the effective management of dieback and fauna within the park, has not been completed.

The Environmental Protection Authority's report, *Strategic Environmental Advice on the Dawesville to Binningup Area*, also included information from vegetation surveys conducted in the study area. This information will contribute to improved vegetation mapping of the Swan Coastal Plain, including Yalgorup National Park. The Commission's concern is acknowledged and DEC will ensure improved vegetation mapping occurs in this area as part of ongoing priorities.

Finding 6

No documented monitoring of Commercial Tour Operator operations in Yalgorup is available.

DEC has introduced patrol data recording sheets to capture and record commercial tour operator activities and movements within the park. Minimal commercial tour operator activity has been observed within Yalgorup National Park over the past 12 months. In addition, the district has not been contacted by any commercial tour operators in relation to their activities or proposed activities within the park.

Finding 7

Weed control operations in the park appear sporadic with resources limiting the capacity for an ongoing program.

This finding is supported and this issue is being addressed. A weed management plan is due to be completed this financial year. The plan will detail and map priority weeds within Yalgorup National Park. The weed mapping will then be used to identify those weeds that pose the greatest threat to the park's values. It will also assist the district in identifying the most efficient use of the funds allocated annually for weed control.

Finding 8

Hygiene planning for a prescribed burn in Yalgorup was found to be lacking, which represents a risk for disease management.

A hygiene plan has been developed as part of the burn prescriptions for each of the burns planned for spring 2010 and spring 2011. The hygiene plan includes specific provisions for soil condition, vehicle hygiene and soil movement that aim to avoid and minimise the introduction or spread of disease.

The Conservation Commission's performance assessment of Yalgorup National Park is appreciated. It provides a valuable tool for ongoing improvement of management of the park. Please be assured that the issues raised by the Commission will be addressed in a timely manner.

Yours sincerely



Keiran McNamara
DIRECTOR GENERAL

30 August 2010

Conservation Commission

National Park Management Plan Performance Assessment

Yalgorup National Park Management Plan 1995 - 2005

Performance Assessment Number CRMPPA - 02/08



Conservation Commission
National Park Management Plan Performance Assessment
Yalgorup National Park Management Plan 1995 - 2005 – Performance Assessment
Number CRMPPA - 02/08



Conservation Commission
of Western Australia



Conservation Commission performance assessments are undertaken primarily to fulfil the functions described in S 19(g) of the Conservation and Land Management Act 1984; that is, to “assess and audit the performance of the Department and the Forest Products Commission in carrying out and complying with the management plans”. They will also help inform its policy development function and its responsibility to advise the Minister on conservation and management of biodiversity components throughout the State.

This performance assessment was undertaken in accord with the “*Conservation Commission policy and guidelines for the performance assessment of conservation reserve and forest management plans and biodiversity management in WA*”. Further details are available at www.conservation.wa.gov.au.

The use of Department of Environment and Conservation (DEC) data for the production of maps in this report is acknowledged.

Approved at Conservation Commission meeting – 16th February 2009

Conservation Commission of Western Australia

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Table of Contents

EXECUTIVE SUMMARY	1
INTRODUCTION	2
Description of Yalgorup National Park.....	2
PERFORMANCE ASSESSMENT FINDINGS	3
CONTEXT.....	4
Key Finding 1	8
PLANNING	11
Key Finding 2	15
Key Finding 3	16
INPUTS.....	17
Key Finding 4	18
Key Finding 5	19
MANAGEMENT SYSTEMS.....	19
Key Finding 6	20
Key Finding 7	22
Key Finding 8	24
OUTPUTS.....	25
OUTCOMES.....	30
CONCLUSION	31
APPENDIX 1 - Assessment Process	33
APPENDIX 2 – Internal review: Level of implementation against priority actions	35

EXECUTIVE SUMMARY

This Conservation Reserve Management Plan Performance Assessment reviewed the implementation of the Yalgorup National Park Management Plan 1995 - 2005.¹ The performance assessment was undertaken in 2008 in accord with the Conservation Commission policy and guidelines for performance assessments.

The assessment identified a number of challenges for future management. These include changes in hydrology and water quality in the lake system that threaten the local thrombolite community, along with accelerated tuart decline associated with a strain of *Phytophthora*. Increased pressure from the development of the surrounding area, and a substantial increase in visitation, present further challenges.

The assessment identified eight key findings that have resulted in management responses from the Department of Environment and Conservation. These are summarised below.

Key finding 1 - Monitoring of nutrient levels in Lake Clifton is inadequate for drawing representative conclusions in relation to the protection of the Critically Endangered Thrombolite community.

Key finding 2 - Off-road vehicles are adversely affecting the park by accessing dune areas from the beach.

Key finding 3 - Existing consultation processes appear ineffective in encouraging the sympathetic management of properties adjacent to the park.

Key finding 4 - Staffing levels and resources have restricted the management of the park and the implementation of the plan.

Key finding 5 - Fine scale vegetation mapping, which is important for conservation of threatened and priority flora and for the effective management of dieback and fauna within the park, has not been completed.

Key finding 6 - No documented monitoring of Commercial Tour Operator operations in Yalgorup is available.

Key finding 7 - Weed control operations in the park appear sporadic with resources limiting the capacity for an ongoing program.

Key finding 8 - Hygiene planning for a prescribed burn in Yalgorup was found to be lacking, which represents a risk for disease management.

INTRODUCTION

This Conservation Reserve Management Plan Performance Assessment reviewed the implementation of the Yalgorup National Park Management Plan 1995 - 2005. Yalgorup National Park (referred to as 'the park' in this document) is located in the Department of Conservation and Environment's (DEC) Swan Coastal District approximately 100 km south of Perth in close proximity to the City of Mandurah. This management plan was identified as a priority for performance assessment by the Conservation Commission as it has reached its nominal term end and because of the high biodiversity and recreational values within the National Park.

The performance assessment was undertaken in 2008 in accord with the Conservation Commission policy and guidelines for performance assessments. The assessment reviewed the design of the plan, management systems and the delivery of protected area outcomes. The focus of the assessment was on major threatening processes to the values of the park and associated operational issues. These include changes in hydrology and water quality in the lake system, tuart health, fire and disease management, and visitor use. Broad judgment of outcomes against plan objectives is reported where possible.

The assessment process incorporated a self-assessment survey completed by staff regarding the implementation of priority actions, followed by an examination of office records, in-depth interviews with staff and site inspections within the National Park. The assessment process is summarised in Appendix 1 and results of the implementation survey are provided in Appendix 2.

Description of Yalgorup National Park

Yalgorup National Park is located in the south-west of Western Australia between Mandurah and Bunbury approximately 100 km south of Perth. It is a long, narrow park that consists of a series of disconnected blocks of land that run from Tims Thicket in the North to Myalup in the south (Figure 1). The park includes a chain of brackish and saline lakes and forms part of a wider wetland system that is recognised internationally under the Ramsar Convention as having importance for migratory birds.

The park has a range of vegetation complexes that include iconic tuart (*Eucalyptus gomphocephala*) woodlands. The park supports a diverse range of flora and fauna including Declared Rare Flora (DRF) and priority flora taxa, the western ringtail possum and carpet python. Threatened ecological communities include shrubland on limestone ridges and calcareous silts. Lake Clifton is specifically recognised for the thrombolite community that exists on the eastern shoreline. The community was assessed as Endangered in 1996 and Critically Endangered in 2000.

The park offers a range of recreation and tourism opportunities including camping, walking, beaches and beach fishing. The park incorporates significant cultural values including sites associated with both Indigenous and early non-Indigenous occupation.

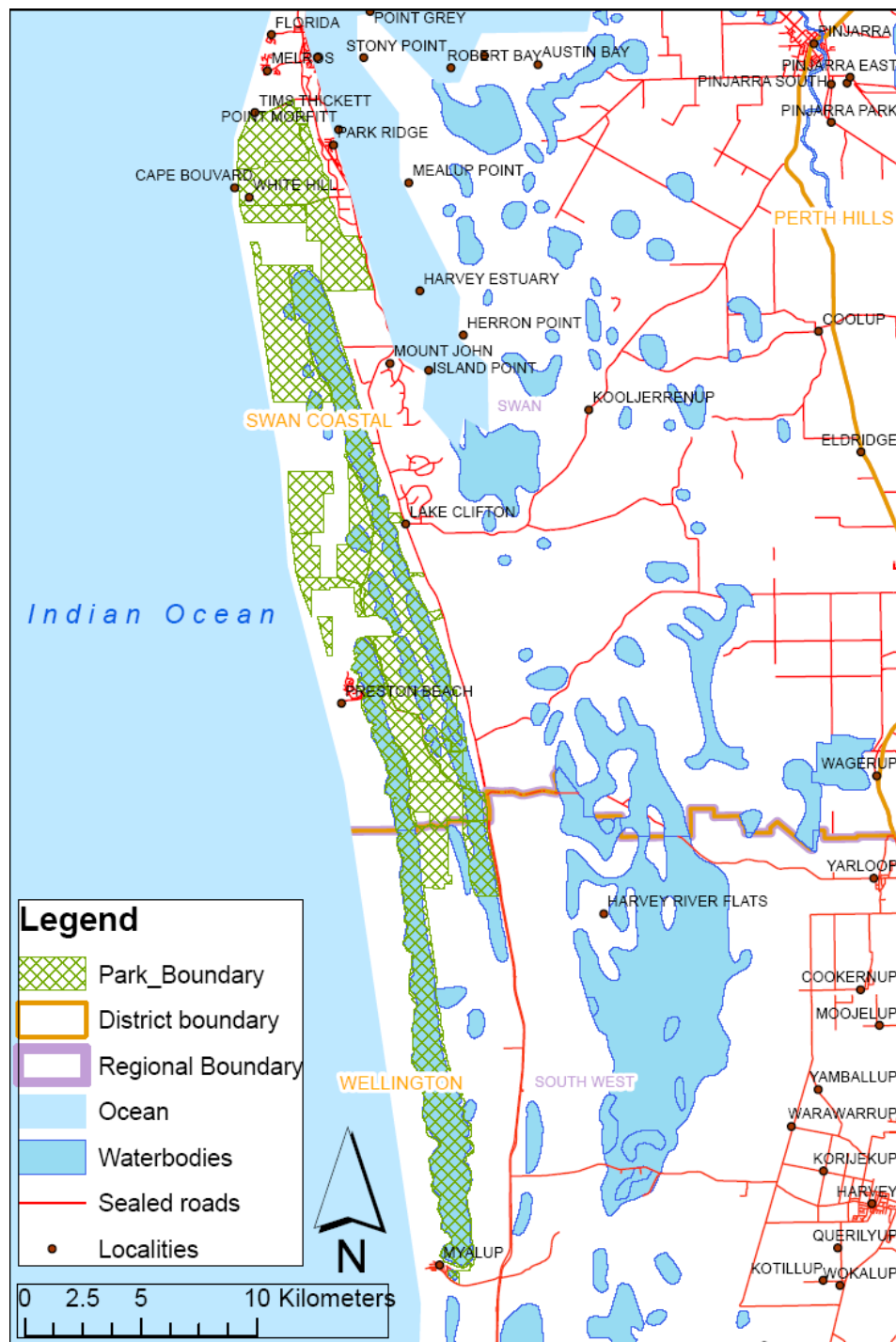


Figure 1: Yalgorup National Park

PERFORMANCE ASSESSMENT FINDINGS

The assessment utilises the World Commission on Protected Areas Performance Assessment Framework that incorporates a focus on design issues, the appropriateness of management systems and the delivery of protected area objectives. Design relates to the context in which the plan is operating and future planning. Management systems relate to the appropriateness of management systems and processes: in particular, inputs and processes. The delivery of objectives relates to outputs and outcomes.

Assessment findings are presented under the headings of Context, Planning, Inputs, Management Systems, Outputs and Outcomes. The assessment observations are

documented as either a general 'Finding' or a 'Key Finding'. Where a 'Key Finding' has been identified it is accompanied by a management response developed following provision of the draft to DEC and consideration of the response by the Conservation Commission.

The assessment indicated that a number of key strategies had not been implemented and that a relatively small number were categorised as having been completed. This finding is somewhat misleading for a range of reasons. For instance, the nature of most of the strategies in the management plan is that they are applied on an ongoing basis and are being applied effectively and as required, not all actions could be assessed for level of implementation, some actions are repeated in different sections of the plan and some of the priority actions achieved are no longer relevant or no longer a priority. This performance assessment focused on the implementation of those strategies that remain relevant and a priority. The assessment demonstrates that significant advances in key areas have been achieved (see Appendix 2).

It is important to note when considering the findings of this performance assessment that the park, and the management of the park is not isolated from external interest groups such as local government and private property. The Commission notes that many of the threatening processes associated with park management, particularly along the parks elongated boundaries are subject to, and influenced by broader jurisdictions. A cooperative approach is required if the objectives of future management plans are to be better achieved.

CONTEXT

Objectives of the performance assessment

To determine if there have been any significant changes in management context since the development of the management plan.

Findings

Several changes have occurred within the park, since the development of the management plan, which have implications for future management of the park and, in particular, the thrombolite community (Figure 2). These relate to hydrology and water quality in the lake system (water levels, salinity and nutrient input), accelerated tuart decline and improved knowledge of the local effects of *Phytophthora*, increased pressure from development of the surrounding area and a large increase in visitor use.



Figure 2: Thrombolites at Lake Clifton

Data pertaining to a range of criteria, including water levels and nutrients, has been routinely collected by DEC at Lake Clifton over the life of the plan. This builds on data from the previous period (Figure 3).

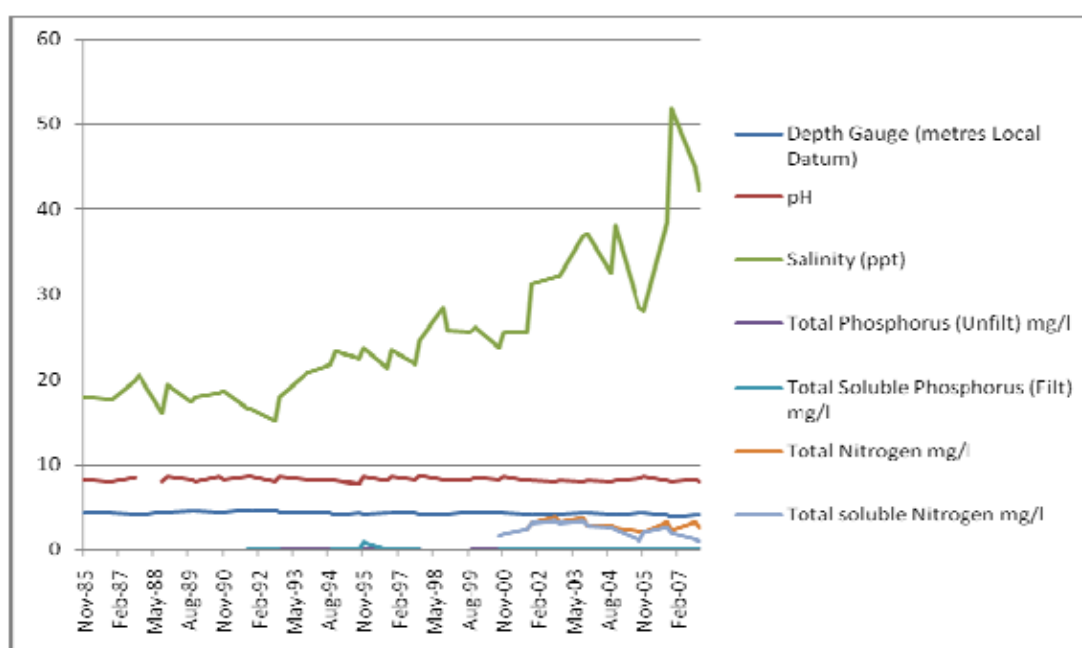


Figure 3: Routine DEC monitoring of Lake Clifton 1985-2007 shows increasing levels of salinity

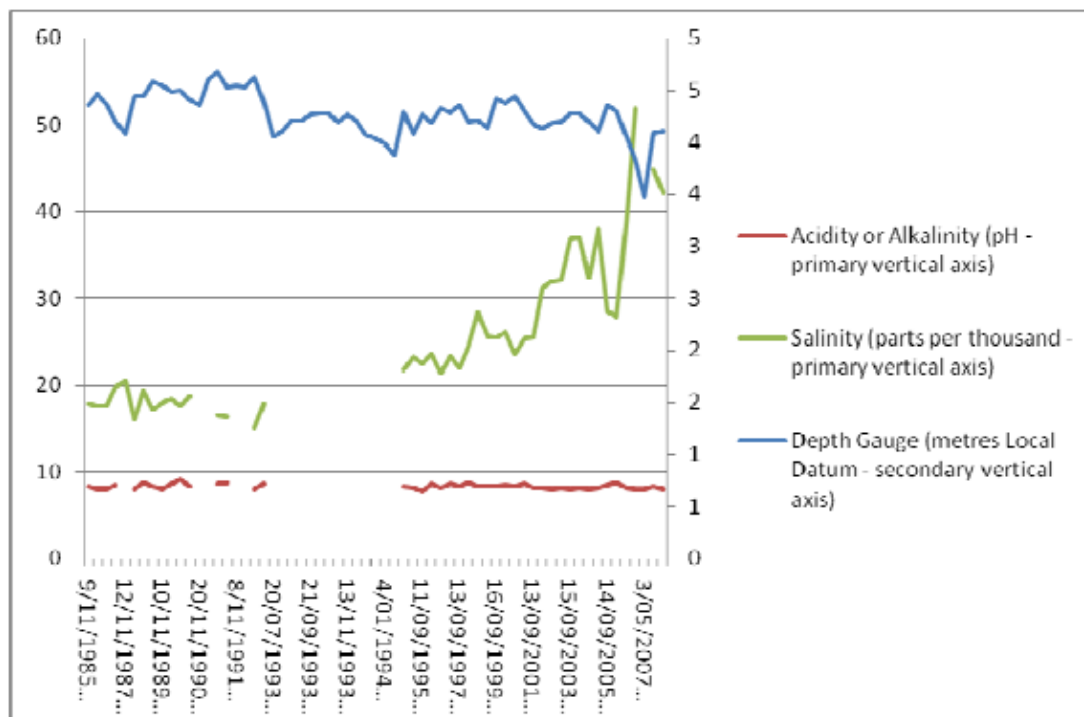


Figure 4: Routine DEC monitoring of Lake Clifton 1985-2007 shows decreasing water levels

The lake system: hydrology and water quality

A key objective of the management plan is to protect and conserve quality and quantity of surface water and groundwater and protect special conservation values associated with the lake system (Section C 10 - The lake system). Hale and Butcher's (2007) Report for DEC and the Peel-Harvey Catchment Council, Ecological Character Description of the Peel-Yalgorup Ramsar Site², confirms the significance of the Yalgorup lake system within the wider Peel-Yalgorup system that meets six criteria for listing as a wetland of international importance. When identifying an area of international importance in Australia, two criteria from the Ramsar Convention can be used to identify a wetland of international importance for shorebirds. These are sites that regularly support 20,000 or more shorebirds, or sites that regularly support 1% or more of the individuals in a population of one species or sub-species of shorebirds. Yalgorup National Park meets the second criteria in that it accommodates 2-3% of the known Hooded Plover population.

The Lake Clifton Thrombolite Recovery Team, incorporating representatives from DEC, local government, UWA, Waters and Rivers Commission, CSIRO, Lake Clifton Landcare group and Agriculture WA, was established in 2002 in response to the revised status of the thrombolite community. The *Thrombolite Interim Recovery Plan 2004-2009*³ outlines the recovery actions that are required to urgently address those threatening processes most affecting the ongoing survival of the thrombolite community of Lake Clifton.

A deficiency in data relating to hydrology and water quality was noted by Hale and Butcher (2007). Nevertheless, the available evidence suggests that significant changes to the lake system have occurred since the development of the management plan that threaten the conservation values of the park. These relate to water levels, salinity and nutrient input.

Declining water levels and increased salinity

The available evidence suggests that salinity in the lakes is increasing and in Lake Clifton in particular. Monitoring of water levels in Lake Clifton between 1985 and 2007 (Figure 4) indicates a significant decrease in water levels and this is supported by anecdotal evidence.



Figure 5: Monitoring water levels at Lake Clifton

The decrease in water levels is known to be associated with reduced rainfall, reduced groundwater inflow and ongoing groundwater abstraction in the vicinity and persists despite an increase in runoff associated with clearing and land use in the catchment. The decrease in water levels is also associated with an increase in salinity. Monitoring indicates an increase in salinity from approximately 18 parts per thousand (ppt) in 1985 to greater than 50 ppt in 2007.

The process of changing hydrology and increased salinity is recognised within the *Thrombolite Interim Recovery Plan 2004-2009* as a major threat to the lake ecosystems and the threatened thrombolite community. A reduction in lake water levels leads to dessication of the community by exposure of the growing surface and reduced groundwater limits the availability of ions and mineralisation processes essential for survival and growth. Increased salinity is likely to change the dominant microbes.

Nutrient input

The management plan highlights the potential for increasing intensity of land use in the catchment to change the character of the lakes and impact on conservation values. Although not readily apparent from routine DEC sampling (Figure 3), a significant increase in nutrient levels in both lake and groundwater in the period 1979 to 1996, associated with an increase in growth of the macroalga *Cladophora*, is well documented.

The threat posed by nutrient loading and algal growth to the thrombolite community was noted in the Environmental Protection Authority reports 788⁴ and 864⁵ in 1995 and 1997 respectively. An increase in nutrient concentration, and the likelihood of total destruction of the Lake Clifton thrombolite community within ten years if trends continue, underpinned the reassessment of the community from Endangered to Critically Endangered in 2000. The *Thrombolite Interim Recovery Plan 2004-2009*, which outlines the recovery actions that are required to urgently address those threatening processes most affecting the ongoing survival of the thrombolite community of Lake Clifton, confirms the ongoing significance of excess nutrients and the urgent need to reduce nutrient levels in the lake.

Despite the urgent need to reduce nutrient input into the lake, there is no evidence that this has occurred over the life of the plan. Moreover, although not necessarily indicated by routine annual monitoring for the period, there is evidence that nutrients have increased. Hydrological investigations of groundwater carried out by the Water and Rivers Commission in 1995 and 1996 revealed nutrient concentrations exceeding guideline levels.⁶ An abundance of *Cladophora* has been recorded and massive fish deaths in the autumn of 2002 and February 2007 have been associated with increased nutrients.



Figure 6: Algal growth in Lake Clifton

The Commission is concerned by the threat posed by future development in the region and ongoing arrangements for land use in the catchment, as developments will further impact on the nutrient levels in Lake Clifton and consequently the thrombolites.

The assessment also highlighted the lack of available comprehensive data regarding current nutrients levels. As indicated, there have been few investigations of water quality in the lake system. DEC Science Division also indicated during the assessment that the current sampling rate of two samples per year at one location (Lake Clifton) is inadequate for drawing representative conclusions. The Commission notes that a monitoring plan has been prepared for the greater Peel-Yalgurup site and the involvement of DEC in the preparation of the plan.

Key Finding 1

Monitoring of nutrient levels in Lake Clifton is inadequate for drawing representative conclusions in relation to the protection of the Critically Endangered Thrombolite community.

DEC response

The Department of Environment and Conservation agrees that many aspects of monitoring are inadequate. However, it is not only nutrient affected water impacting on the thrombolites.

It is possible that significant increases in salinity in Lake Clifton (doubling within 10 years) and changing water regimes associated with climate change pose a very significant threat to the Thrombolite Threatened Ecological Community and other biota and values of the lake, in addition to any nutrient increase.

Knowledge of the tolerances of the thrombolite community (and other aspects of the environment) to changes in water quality is limited. DEC is therefore unable to give definitive statements about the significance of specific changes in nutrients or salinity. The Lake Clifton Thrombolite Recovery Team is seeking ways that some of these questions can be answered and DEC has recently funded installation of water monitoring data-loggers at Lake Clifton. All previous research and monitoring at Lake Clifton has been short term and usually taken the form of externally funded student projects. There is no continuous, coordinated, or well recorded body of monitoring carried out for the lake or the Thrombolite Threatened Ecological Community.

Groundwater bore monitoring undertaken by the Department of Water may have assisted in understanding the regional groundwater system and its relationship to the lake. Unfortunately the Department of Water has reduced their level of funding over time.

Conservation Commission response

The Conservation Commission acknowledges the initiative of installing water monitoring data-loggers at Lake Clifton and looks forward to future reporting from the Lake Clifton Thrombolite Recovery Team.

Tuart health

A key objective of the management plan is to promote long-term stability of tuart stands in the park (Section C 19 – Tuart). At the time of implementation, a decline in tuarts had become apparent. Over the life of the plan, Tuart decline has become severe and accelerated, with Yalgorup identified as a key area of concern. In 1997 a major dieback occurred near Preston Beach involving decline in all age classes and mortality greater than 90%. Monitoring using aerial mapping and Landsat technology demonstrates a substantial increase in the extent of decline since 1999 with some areas exhibiting a severe decline (characterized by a mean canopy completeness of less than 30%) in 2003-2005, compared with a slight to moderate decline (characterized by a mean canopy completeness of 70%) throughout most of the tuart distribution in the state. The Tuart Response Group, a collaboration of government departments, was formed in 2001 to address protection, research and management issues.

At the time of first implementation of the management plan, reasons for the decline were unclear. Management objectives relating to tuart health pertained to questions of balance between tuarts and peppermints (*Agonis flexuosa*) as a result of land use and fire management and issues of recruitment. Phytophthora was not considered significant in the decline as it was considered that most of the park's vegetation complexes were low in susceptibility to the pathogen (Section C 19 1-3).

However, recent research indicates that Phytophthora is implicated in the decline along with other factors. The decline in tuart health over time (Figure 6), and the role of Phytophthora in the decline, has implications for future management of the park, particularly operations and hygiene standards.



Figure 7: Expanse of dead crowns showing tuart decline

Future development

Key objectives of the management plan relate to the need to negotiate for local government planning to be consistent with park management objectives (Section G 35 - Local Government) and for State Government planning to be consistent with park management objectives (Section G 36 - State Government). The plan notes high growth in the region (with population projections of 70,000 by 2001 and 90,000 by 2011), increasing pressure from surrounding development and increased visitor numbers, and the difficulties these present in managing the park for conservation.

These trends have continued and are expected to endure. The Peel region and South-West development corridor are recognised as areas of rapid growth with population projections higher than planned (population reached over 95,000 in 2006 and the current projected increase is 108,000 by 2011). The trend towards urbanization and hobby farming is considered a threat to the park, associated with neighbour issues (weeds, fire and access) and a need to focus management resources on these, waste systems and intensive agriculture that have the potential to increase nutrients in the lakes and a reduction in groundwater levels through licensed and unlicensed bores.

Proposals for major developments in the park's vicinity that have been considered include an urban development on the western side of the northern end of Lake Clifton. A major development of the Preston Beach townsite, that potentially incorporates urban expansion to both north and south of the existing townsite and includes a caravan park, is currently under consideration. The planned Kwinana-Freeway extension will enhance access to the region by reducing travel time by around 30 minutes, creating further demand for housing and infrastructure.

Visitor use

A key objective of the management plan is to monitor the impact of visitor use, land use and management activities (Section H 39 – Social research). The plan highlights increasing visitor numbers and the difficulties these present in managing the park, especially given the shape of the park. It also underlines the growing population and recreational demands, particularly in the northern section of the park as Mandurah expands.

As part of the assessment process the Commission undertook a desktop analysis of visitor statistics for Yalgorup National Park. The most up to date data from DEC's Recreation and Tourist Information System (RATIS) on visitor numbers to the park showed a steady increase in visitor numbers over the life of the management plan from 69,000 people in 1995 to 274,000 in 2006. Visitation in 2006-2007 was concentrated in the northern end of the park with 143,700 visitors at White Hill Road and 49,500 at Tims Thicket Road West. The Commission notes that there could be a degree of error in these figures as they were drawn from a combination of vehicle counters and estimations made by DEC staff. The Commission also recognises that some vehicles may have been counted twice at White Hill and Tims Thicket.

It is assumed that increased visitation to the northern end of the park is associated with an increase in beach access and the use of four-wheel drive vehicles on the beach. Tims Thicket and White Hill are the first points south of the Perth and Mandurah metropolitan areas where off-road vehicles can access the beach; therefore visitation is likely to remain high. Substantial increases in visitation that have occurred, and further increases expected as a result of the Kwinana Freeway extension, have implications for management.

PLANNING

Objectives of the performance assessment

To review the adequacy of the management plan to support the achievement of the objectives for the reserve and to identify any areas where changes are required.

The overarching purpose of the CALM Act as stated in its long title is to make "better provision for the use, protection and management of certain public lands and waters and the flora and fauna thereof". Within this overarching purpose section 56 (1)(c)&(d) of the Act describes required objectives for national parks and nature reserves respectively as:

- to fulfill so much of the demand for recreation by members of the public as is consistent with the proper maintenance and restoration of the natural environment, the protection of indigenous flora and fauna and the preservation of any feature of archaeological, historic or scientific interest;
- to maintain and restore the natural environment, and to protect, care for, and promote the study of, indigenous flora and fauna, and to preserve any feature of archaeological, historic or scientific interest.

In support of these broad objectives the management plan has identified six management goals. These are:

- **Conservation:** Conserve biological, physical, cultural and landscape values;
- **Recreation:** Facilitate public enjoyment of natural and cultural values in a manner compatible with conservation and other goals;
- **Community Relations:** Promote awareness, appreciation and understanding of natural and cultural values and facilitate liaison with the community;
- **Commercial and other uses:** Ensure that commercial and other uses are controlled and managed in a manner that minimises impact on other values;
- **Interaction with Nearby Lands and Waters:** Promote cooperation, and minimise conflicts in matters associated with the use of nearby lands and waters; and
- **Research and Monitoring:** Seek a better understanding of the natural and cultural environment and the impacts of management activities and visitor use.

The management plan also identifies 39 issue-specific objectives with supporting strategies. These are listed as part of the assessment provided as Appendix 2.

Since the finalisation of the management plan in 1995, other guiding documents have been produced that relate to management outcomes in the park, such as:

- Environmental Protection Authority Bulletin No. 788 *Criteria of environmental acceptability for land use proposals within the catchment of Lake Clifton* in 1995; and
- Environmental Protection Authority Bulletin No. 864 *Final criteria of environmental acceptability for land use proposals within the catchment of Lake Clifton* in 1997.

Findings

Significant planning issues relevant to the management goals identified by the assessment relate to visitor use (in particular, access) private property and sympathetic management, and overall management structure.

Visitor use

Negative impacts associated with visitation recorded by the Commission included littering and the dumping of household waste (Figure 7) and uncontrolled access from the beach into the dunes inside the park boundary.



Figure 8: Littering and the effects of high visitation on access to the northern end of the park

Access

A key objective of the management plan is to provide and maintain access to the extent that the park's values are not adversely affected (Section 22 – Access; Section 35 – Local Government). The plan identifies negative impacts caused by unregulated four wheel drive and motorbike access: destruction of native vegetation and erosion in the park, particularly in coastal dunes, and the potential for the spread of weeds and disease within the park. The plan

also indicates the desirability for reserves with very high conservation and recreation value that are adjacent to the park to be added to the park and/or local government management of adjacent reserves to be consistent with park management objectives.

The assessment found that access through the park was generally well controlled. Well-designed infrastructure for access has been provided at White Hill (Figure 8). The access route provides space for four wheel drive vehicles to inflate and deflate tyres without encroaching on vegetation. The infrastructure also utilizes the surrounding topography to limit opportunities for vehicle incursion into the dunes.



Figure 9: Access routes control off-road vehicles at White Hill. Photo taken from visitor lookout.

However, orthographic photographs and site assessment indicated incursion into the dunes by off-road vehicles, and subsequent damage to dune vegetation, in areas south of Tims Thicket (Figures 9 and 10). This was supported by anecdotal evidence provided by district staff.



**Figure 10: Damage to secondary dune vegetation as a result of off-road vehicles:
Yalgorup National Park south of Tims Thicket**



**Figure 411: Evidence of vehicles from the beach crossing foredune (left of screen)
into swale: Yalgorup National Park south of Tims Thicket**

The Commission recognises that dune blowouts are a naturally occurring process but is concerned that the use of off-road vehicles in the dune swale is accelerating the process and poses a risk to vegetation and particular threatened ecological communities. The Commission acknowledges public concern about dune health and efforts by DEC to protect the dune systems. This includes working with other stakeholders to establish and maintain a Coast

Care group (a major focus of which is user education) and attending all relevant planning meetings.

The Commission notes the importance of controlling access to protect the dunes and also efforts by DEC staff to restrict access and revegetate dunes within the park (see Outputs). However, there are significant challenges to overcome for regulating access to the dunes from the beach. The management plan identifies the value of extending the boundary to the low water mark also (Section 4.2). As the park has not been extended to the low water mark the role of restricting access to the park area from the beach has been predominantly carried out by the three local government authorities responsible for their relevant land areas. There are challenges for land managers for example, the City of Mandurah has the authority to carry out enforcement of the Off Road Vehicle Act on the strip of land between the park and the sea and carry out surveillance of the area, but DEC do not have delegated authority to enforce regulations on lands under the City's management.

Key Finding 2

Off-road vehicles are adversely affecting the park by accessing dune areas from the beach.

DEC Response

DEC's ability to manage this issue is limited as DEC does not have management responsibility to enable it to control access to the beach areas. Off-road vehicles are a state-wide issue for DEC and a major issue on the peri-urban boundary of Perth and Peel.

The land between the park's western boundary and the high water mark in the north is either unallocated Crown land (UCL) or Shire Reserve, and in the south freehold land extends to high water mark. Therefore DEC's ability to manage off-road vehicles is limited and is unlikely to change until vesting of these lands changes. Conversion of UCL to reserve will have native title implications and therefore the change in vesting is not likely to occur for some time. The vesting and management issue has been brought to the attention of the State Land Services section of the Department for Planning and Infrastructure.

Conservation Commission response

The Conservation Commission will seek an update of the action taken in relation to the vesting and management issue at the time of the 12 month review of this report.

Private property and sympathetic management

A number of the threatening processes to the park such as increasing nutrients and salinity levels, reduced water levels and noxious weeds are heavily influenced by private landholders. A large percentage of the lake edge is surrounded by private landholdings characterised by a high occurrence of septic tanks, horticultural fertilizers and grazing. The management plan encourages management of nearby private property to be in sympathy with management of the park (Section G 34 – Private Property). Sympathetic management includes reducing nutrient input into the lake, excluding stock, fire and weeds and rehabilitating areas of fringing vegetation. The need to provide information to surrounding landholders aimed at minimizing the use of fertilizers and avoiding the use of toxic chemicals is identified in the *Thrombolite Interim Recovery Plan 2004-2009*.

The assessment highlighted the difficulty facing DEC in encouraging sympathetic management from adjacent landholders. Action to ensure reduced nutrient input into the lakes has been incorporated to some extent in land use planning over the life of the plan. EPA

guidelines outlined in Bulletins 788 and 864, for example, restrict horticultural development on Vasse soils associated with fringing wetland of Lake Clifton, restrict lot sizes and the use of conventional septic systems for rural residential developments and advocate increased setbacks. Changes to management context were highlighted by the example of a rural residential development on an adjacent property to the north of Mount John Road. Unlike an earlier development to the south of Mount John Road, the new development was regulated by more stringent environmental conditions. Developers were required to increase the size of the buffer between the development and park (of over 40 metres to a minimum of 100 metres from the high water mark) and use alternative effluent systems.

Despite the changes that have occurred as a result of the new EPA guidelines, the assessment found that DEC is limited in its ability to encourage or enforce sympathetic management. There is no clearly documented approach to encourage sympathetic management from private landholders adjacent to the park. The guidelines of the DEC Good Neighbour Policy do provide some broad guidance to deal with boundary interactions however action to protect fringing vegetation by excluding stock, weeds and fire, to rehabilitate areas of fringing vegetation and to inform landholders of compatible land use practices is taken opportunistically. Based on anecdotal evidence and limited scientific data, it appears that the consultation process to encourage sympathetic management of properties adjacent to the park have been ineffective in reducing nutrient inflow to Lake Clifton.

The Commission notes that prior to the amalgamation of departments (Department of Environment (DoE) and Department of Conservation and Land Management (CALM)) and the formation of the DEC, CALM was limited in its ability to encourage sympathetic management beyond the parks boundaries. There is now potential for the amalgamated Department incorporating the previous roles of the DoE on lands adjacent to the park to further encourage and enforce adherence to environmental standards on private lands surrounding Yalgorup National Park.

Key Finding 3

Existing consultation processes appear ineffective in encouraging the sympathetic management of properties adjacent to the park.

DEC response

Contrary to the finding, the level of consultation and engagement with community groups and individuals is extensive and at a level commensurate with the resources available.

DEC is involved with the following groups:

- 1. Peel-Harvey Catchment Council*
- 2. City of Mandurah*
- 3. FRAGYLE (Friends of Ramsar Action Group for the Yalgorup Lakes Environment)*

DEC acknowledges that the level of consultation undertaken may not meet the expectations of all stakeholders.

The primary tools available to DEC are through requiring conditions as part of assessment of land use change in the statutory land use planning or formal environmental impact assessment processes. However these tools are limited to those situations and land where a change in land use is proposed (eg when proposing urban development on previously rural land). They do not give DEC the capacity to deal with land use practices that, while legal under a land use zone (eg. Fertiliser application to

rural land, groundwater abstraction by private bores, grazing by stock etc), still pose risk to the lakes and national park.

The success of any conditions set is largely determined by the capacity and will of the authority empowered to enforce or police the condition, to actually do so. Often conditions are allocated to the local government to enforce, in which case DEC has no statutory capacity to enforce the condition, and more often than not the local authority does not have the resources to physically audit or enforce a condition.

DEC does not agree that the formation of DEC has necessarily given the department any new or additional potential to further encourage and enforce adherence to environmental standards on surrounding private lands over those that were present prior to the formation.

Conservation Commission response

The Conservation Commission observed through the course of this assessment that:-

- *Future development in the region is expected to further impact on the nutrient and salinity levels in Lake Clifton and consequently the thrombolites;*
- *DEC is limited in its ability to encourage or enforce sympathetic management.*

The assessment report does not infer that the existing consultation processes have not been implemented, but rather that the existing processes do not appear to have been effective in reducing nutrient inflow into the lakes. There are apparent limitations to what can be achieved through existing consultation processes, and the Conservation Commission is seeking an indication of DEC planning to manage this situation in the future when pressures on the park are expected to increase.

It is acknowledged that the formation of DEC has not delivered any new enforcement provisions in a literal sense; however opportunities to better co-ordinate current activities (ex DoE and CALM) to protect the lake systems could be pursued. An update in relation to this finding will be pursued at the 12 month review of the report.

INPUTS

Objectives of the performance assessment

To review financial, human and other resources allocated to implement the management plan and to assess the adequacy of these relative to the reserve's context.

Findings

Resource allocation

A key objective of the management plan is to manage the park according to assigned priorities for implementation (Section 40 – Staff and funding). The plan emphasises the increased pressure from expanding population and associated need for an increase in DEC presence in the north of the park, including an additional ranger.

The assessment process identified staff resources as a major impediment to achieving objectives of the management plan. Despite the efforts of park staff, staffing levels and resources have restricted the management and implementation of the plan. Only one full time

DEC ranger was provided to control on-ground management of the park and there is no permanent DEC presence or resident in the park. The Commission is concerned that a lack of on-ground presence might increase the risk of uncontrolled access and activities that contribute to threatening processes. Furthermore, trends in visitation levels (previously discussed) and predicted expansion of town sites suggest greater resources will be required in future.

Key Finding 4

Staffing levels and resources have restricted the management of the park and the implementation of the plan.

DEC response

The level of staffing at Yalgorup National Park identified in the assessment does not reflect what has occurred over the life of the plan. The designated senior ranger has until recently been supported by a conservation employee from DEC's Dwellingup work centre on a needs basis. Additional support was available as required from ranger personnel based at Dwellingup. The allocation of additional resources has occurred to assist with the implementation and management of specific projects. Regional and corporate level assistance has been provided in the areas of planning and development on an ongoing basis. The establishment of an additional full-time permanent ranger position in the park staffing structure occurred in July 2006.

Management of the park has become more complex in terms of hydrological changes, the requirement for understanding of ecological issues and an increased number and complexity of land use changes and environmental impact assessment processes. This has necessitated a continued enhancement of the skill levels of existing staff.

Conservation Commission response

The Conservation Commission will request an update in relation to the current staffing levels and resources allocated to Yalgorup National Park at the 12 month review stage of this assessment.

Fine scale vegetation mapping

A key objective of the management plan is to protect and conserve vegetation communities, including their structure, diversity and distribution (Section 8 – Vegetation and flora). Strategies identified in the plan include:

1. locating threatened and priority flora species and storing information and specimens, to inform development or management activities; and
2. extending the detailed vegetation and flora survey undertaken in the park's northern section to cover the entire park and important adjacent areas, and develop management recommendations for their conservation particularly preceding any new recreational site development or burning operation.

During the course of the interviews for this assessment DEC staff reiterated the need, in this park, to implement fine scale vegetation mapping: in particular, the delineation of Landscape Conservation Unit's (LCUs) are important for predicting susceptibility to dieback, occurrence of fauna and occurrence of Rare and Priority flora species. LCU mapping has been introduced for most of the south-west of WA but does not include the Swan Coastal Plain. In previous assessments by the Commission, DEC indicated that funding was available for extending LCU mapping onto the Swan Coastal Plain; however, it is apparent that this work has not progressed.

Key Finding 5

Fine scale vegetation mapping, which is important for conservation of threatened and priority flora and for the effective management of dieback and fauna within the park, has not been completed.

DEC response

DEC acknowledges that fine scale vegetation mapping has not been completed and that it would provide an important management tool.

However, there have been a number of specific surveys over recent years that involve a vegetation assessment component including habitat assessment for native fauna including the western ringtail possum and the brush-tailed phascogale, and surveys for declared rare flora including significant finds of Caladenia huegelii.

Conservation Commission response

The assessment found that the management plan action of fine scale vegetation mapping had not been implemented for the park. An update of the status of implementation of this action will be requested at the 12 month review of this assessment.

MANAGEMENT SYSTEMS

Objectives of the performance assessment

To review the management systems that are used to implement the plan, including any subsidiary policies or guidelines that are referred to in the plan, and their appropriateness within the context of the reserve.

Findings

The assessment revealed a number of findings and key findings in relation to management systems. These pertain to prescribed burn procedures, management structure, commercial tour operations, weed control and dieback hygiene.

Prescribed burn procedures

A key objective of the management plan is to protect people, property and conservation values in and near the park by appropriate fire management and suppression techniques (Section C 18 – Fire). The plan highlights the need for a range of fire treatments for each vegetation type so that diversity in vegetation structure and habitat types is maintained. This incorporates vegetation management areas that are burnt as required to regenerate species within a vegetation type or to provide or protect specific habitats along with a need to exclude fire from scientific study reference areas.

The assessment identified scope for improvement in prescribed burn procedures. For instance, the Senior Ranger was sometimes not involved in the planning process and this resulted in an incident of a research plot being burnt. Hygiene planning for a prescribed burn was also found to be deficient (see Key Finding 8).

Management structure

The management plan stipulates that sufficient staff and funds are provided from available resources and through alternative sources to implement the plan (Section 41 – Staff and funding). The boundary of the park is stretched across two DEC Regions and two DEC Districts:

- Northern section is physically located in Swan Region – Swan Coastal District;
- Southern section is physically located in Southwest Region – Wellington District.

The responsibility for the management of the park in terms of funding and resources rests with the Swan Coastal District. The head offices and centre of resources of Swan Coastal District are in Wanneroo. Some resources are drawn from the Dwellingup work centre which is 30km from Yalgorup. The DEC Senior Ranger for Yalgorup is based in Mandurah.

Issues pertaining to management and resourcing were identified during the assessment. These related to the lineal and fragmented shape of the park and large boundary. The park is situated across district and regional boundaries, which presents management difficulties. Resources tend to be concentrated on the northern section of the park with limited resources and day to day management supplied to the southern section.

Commercial Tour Operators

A key objective of the management plan is to encourage tourism in the park that is environmentally and socially sensitive (Section F 32 – Tourism). Related actions include liaising with Commercial Tourism Operators (CTOs), ensuring CTOs maintain appropriate standards and obtain the appropriate level of permission to operate within the park, to identify the sustainable level of tourist operator use and monitor the impacts and regulate them as required.

At the interviews for this assessment key issues regarding CTOs were identified. Although not anticipated within the management plan, evidence suggests that there are a large number of active CTOs operating within the park (Table 1). There is some doubt that the available figures accurately represent the actual level of CTO activity, with District staff indicating that it is most likely that tour operators are accessing the thrombolite viewing platform on the way past the site. Nevertheless, this doubt highlights the lack of data and monitoring of CTOs and raises concerns about the ability to determine whether the objective of the plan had been achieved.

Table 1: Yalgorup National Park CTO Licenses between 2003 and 2008

	2003	2004	2005	2006	2007	2008
CTO Licenses	89	96	95	98	95	98

There is difficulty in adequately estimating and managing CTO activities on sites such as Yalgorup where there is no entry station or fees. In the absence of such an entry process, the only means of estimating CTO activity is the process for approving CTOs and generating licenses through the district. However, license renewal is not a reliable source of information as it is generally a process of 'ticking boxes' that can incorporate a number of national parks. Thus it is possible that a large number of CTOs have nominated Yalgorup National Park but never visited the site. The interviewed staff were unclear as to a means of determining to any degree of accuracy the types of commercial operations taking place on the park and the timing of these operations under the current 98 licenses.

Key Finding 6

No documented monitoring of Commercial Tour Operator operations in Yalgorup is available.

DEC response

Whilst Yalgorup National Park is included on the list of national parks that Commercial Tour Operators (CTOs) require a T class license to operate in, there are no registered CTOs who specifically identify Yalgorup National Park as a primary destination.

There are 99 registered CTOs who have included Yalgorup in the list of national parks they wish to have included on their licence. However, in almost every case, these CTOs have included Yalgorup National Park as part of their 'all park access'.

In the absence of any evidence of unacceptable environmental impacts, the logistical challenge and cost of undertaking monitoring in addition to the current methods, including traffic counters and personal observation, are unwarranted.

Conservation Commission response

The Conservation Commission noted in this assessment that the management plan action: to identify the sustainable level of tourist operator use and monitor the impacts and regulate them as required, was unable to be demonstrated. It is therefore difficult to determine whether the objective of the plan in relation to tourist operation has been achieved. The Conservation Commission accepts the DEC position that there are resource implications in relation to this action and will consider this fact during the development of the draft management plan for this area.

Weed control

A key objective of the management plan is to minimise the impact of introduced plants and noxious weeds and their control on park values (Section C 16 – Introduced plants and noxious weeds).

The assessment revealed that three noxious weed species that were well established within the park and adjacent private lands. These included Apple of Sodom (*Solanum linnaeanum*), onion grass (*Trachyandra divaricata*) and long-leafed cotton bush (*Gomphorcarpus fruticosa*) (Figures 11 and 12). The assessment also found that weed control operations were attempted without success. DEC staff identified contributing factors such as a lack of follow up, irregular monitoring and the absence of a cooperative strategy with neighbouring landholders. These factors were exacerbated by a lack of staff, resources and a systematic weed control plan. Implications for future regeneration programs associated with tuart decline were indicated.



Figure 12: Long-leafed cotton bush in Yalgorup National Park to the right of track



Figure 13: Long-leafed cotton bush on private land to the left of track

Key Finding 7

Weed control operations in the park appear sporadic with resources limiting the capacity for an ongoing program.

DEC response

DEC acknowledges the lack of a systematic management approach to this problem.

Weed management is undertaken on an environmental risk basis with funding directed toward the management of declared pest plants and the protection of rare flora or habitats within the limitations of available resources.

Conservation Commission response

The objective of the management plan to minimise the impact of introduced plants and noxious weeds on park values was unable to be demonstrated. The Conservation Commission accepts the DEC position that there are resource implications in relation to this objective but did note through the assessment that there were potential weed invasion implications for future regeneration programs associated with tuart decline. An update in relation to this finding will be sought at the time of the 12 month review of this assessment.

Disease hygiene

Key objectives of the management plan are to minimise the spread and intensification of disease where it is already present, to prevent introduction into disease free areas and to minimise detrimental effects of measures used to control disease (Section C 15 – Disease).

There is evidence of an accelerated rate of tuart decline at selected sites in Yalgorup as compared with other tuart woodlands (Figure 13). Assessment by the Commission of a prescription file for a prescribed burn within Yalgorup showed that operational planning components did not include a documented hygiene management plan. During interviews for this assessment it was apparent that there has historically been a presumption of low risk for dieback on coastal sandy soils. The management plan also states that most of the park's vegetation complexes are low in susceptibility to dieback. However, as indicated, new research indicates that *Phytophthora* – albeit a different strain than has previously been considered in relation to this park – is associated with tuart decline in the park.

The objectives of the plan relevant to disease may not have been met because of a presumption of low risk for dieback on coastal sandy soils and a lack of documented hygiene management procedures. Two points should be noted in regard to this finding. Firstly, now that the risk is better appreciated, the issue may be addressed through appropriate management practices. Secondly, a lack of documented hygiene management planning was also a finding of the recent performance assessment of Lesueur National Park. The Commission is concerned that there may be broader systematic issues where hygiene management standards are not being met outside of known dieback areas. The Commission has scheduled an issue based assessment of dieback management to be undertaken in 2009. The assessment will be carried out at key dieback sites within the southwest to identify any systematic issues with hygiene management.



Figure 14: Senescing tuart trees in the background with healthy banksia in the foreground Yalgorup National Park

Key Finding 8

Hygiene planning for a prescribed burn in Yalgorup was found to be lacking, which represents a risk for disease management.

DEC response

A check of the endorsed prescribed burn plans for Yalgorup National Park prepared for DEC's Swan Coastal District between Spring 2006 and Spring 2008 confirmed that all documents include a Phytophthora cinnamomi management plan that details the long-term management of the area to which prescribed fuel reduction burning is to be applied.

DEC acknowledges that the development of a 'whole of park' hygiene plan would provide benefits for disease management. It is important to note that whilst there have been some recent identifications of Phytophthora species associated with the tuart decline, they are not necessarily considered to be the causative agent at this time. Notwithstanding this, there is good reason to continually aim to improve operational hygiene practices. Phytophthora does not generally impact limestone soil types of the Swan Coastal Plain (due to high pH levels), so it is not a key feature of the coastal Quindalup and Spearwood dune systems that make up the bulk of the Yalgorup National Park.

Conservation Commission response

The Conservation Commission acknowledges that there are emerging facts in relation to the role of Phytophthora species in tuart decline. More certainty in relation to the role of Phytophthora in the decline of tuart is likely to be available at the time of the 12 month review of this assessment when an update will be requested. At this time clarification will also be requested in relation to the DEC methodology, assumptions and records for dieback interpretation in Yalgorup National Park.

OUTPUTS

Objectives of the performance assessment

To review the products and services which were provided against strategies identified in the management plan.

Findings

The assessment revealed numerous significant outputs for the park related to long-term objectives. These related to tuart health, dune rehabilitation, nature walks, specialised fauna management and signage.

Tuart health

As indicated, the context for managing tuart health has changed considerably over the life of the management plan. The Commission recognises the leading role played by DEC in the Tuart Response Group (TRG) and the Tuart Health Research Group (THRG).

The TRG formed in 2001 with government representation from the then departments of Conservation and Land Management, Environment, Water, Planning and Infrastructure; Agriculture and the South West and Peel Development Commission with the aims of developing a government plan for the protection of remnant tuart trees and woodlands, coordinating research into the decline in tuart health at Yalgorup and promoting improved management of tuart patches and trees on freehold land.

The THRG involves researchers from DEC working in collaboration with Murdoch University to investigate the decline of Tuart woodlands, in particular within Yalgorup National Park. Research commenced in 2003 with an ARC Linkage Grant.

Outputs include publications of:

- The *Tuart Atlas*, a desktop vegetation mapping system that is part of the first stage in the TRG strategy, which provides an assessment of tuart's extent, overstorey density and understorey condition and is available to the public;
- *Tools for Identifying Indicative High Conservation Tuart Woodlands* that was derived from the Tuart Atlas shows low visible understorey disturbance tuart woodlands by land category, soil type, rainfall zone and the presence of threatened flora, fauna and ecological communities;
- THRG Bulletins: A series of nine editions covering different research findings;
- THRG Activity Report entitled *Research into the cause and management of tuart decline. Report of Phase 1 Activity (July 2003 – June 2006) and Phase 2 Objectives (March 2006 – Feb 2009)*; and
- THRG conference papers and conference posters.

Dune rehabilitation

In line with the management plan's objective to restore degraded areas to a stable condition, resembling the natural environment as much as possible (Section C 14 – Erosion mining and rehabilitation), the Commission noted a number of positive outputs. These include the brushing of dune degradation adjacent to a threatened ecological community and the brushing and closing of tracks on the road to the beach at Tims Thicket (Figure 14). Consequent regeneration of dune vegetation between 2002 and 2008 is evident (Figures 15 and 16).



Figure 15: Foreground shows blocking of access to dune. Background shows established regeneration as a result



Figure 16: Image shows degraded dune system at Tims Thicket in 2002



Figure 17: Imagery showing regeneration of dune vegetation adjacent to tracks in the same section of dunes at Tims Thicket in 2008.

Nature walks

A key objective of the management plan is to provide walks and observation points from which the park's natural attributes can be viewed to enhance visitors' experience (Section D 24 – Nature observation and nature walks). At the time of implementation (1995), there were no designated bushwalking or nature walks located in the park. Actions outlined in the plan include the provision of a nature observation facility at the end of Mount John Road for viewing waterbirds and thrombolites in Lake Clifton and to design and develop a nature walk from the Mount John Road day use area. The Commission noted the boardwalk constructed in 1996 (Figure 17) and that nature walk facilities at Mount John Road have been provided.



Figure 18: Boardwalk at Lake Clifton

Specialised fauna management

A key objective of the management plan is to increase knowledge of the park's flora and fauna and increase knowledge and understanding of the park's natural processes (Section J 38 Nature Conservation Research). Actions associated with this objective include:

- assessment of the park's flora and fauna to determine appropriate release sites for the Western Ring-tailed Possum and any other native fauna; and
- implementation of a fox control program in association with landholders, and integrate and coordinate research efforts in the area.

A related objective the management plan is to *protect and conserve waterbird populations and habitats* (Section C 9 – Fauna).

In line with these objectives the Commission noted two significant outputs: the Western Ring-tailed Possum Reintroduction Program and the Hooded Plover Management Plan.

The Western Ringtail Possum Reintroduction Program involves the translocation of ringtails (*Pseudocheirus occidentalis*) to sites within the park, which lies within the temperate higher rainfall zones of the species' former range. Releases commenced in Yalgorup in July 1995

with a total of 142 possums released by September 2001. Fox baiting using 1080 was initiated prior to the first release and has been maintained. The Commission acknowledges the role of DEC in the research and management activities designed to assist the conservation of the western ringtail possum in the park.

The *Hooded Plover Management Plan (2002-2012) Western Australia* relates to the viability of the Hooded Plover *Thinornis rubricollis* subspecies *rubricollis* and *tregallasi*, which are classified Vulnerable and Near Threatened respectively under IUCN criteria. Yalgorup National Park is located in one of the five key Hooded Plover Management Regions in Western Australia. All important Hooded Plover sites in the Yalgorup region are located within the park. Workshops held in 2000 and 2001 identified management issues and strategies and a Hooded Plover Management Team that includes representatives from DEC was formed in 2001.

Predation by feral foxes and cats is a major issue associated with the conservation of the species; the Hooded Plover Management Plan acknowledges the significance of DEC's fox baiting program for the effectiveness of Hooded Plover conservation in the Yalgorup management region. The Commission notes the involvement of DEC in workshops, consultation processes and in prescribing and implementing appropriate strategies and actions to increase survival in the park.

Signage

A key objective of management plan is to increase awareness, appreciation and understanding of the park's values and management, and encourage responsible use of the park (Section D 29 – Information and Interpretation). The assessment determined that signage throughout the park is generally of a high standard. Interpretive displays have been provided at key sites such as Martins Tank, Mount John Road and Preston Beach Road (Figure 18). Signs advising of 1080 poison risk, and providing distance and walk times, have been erected at the entrance to walk trails (Figures 19 and 20). The Commission noted the need for more interpretive shelters at Tims Thicket and White Hill Rd in the north of the park, where the bulk of visitation occurs, to raise awareness of park values amongst beach users.



Figure 19: Interpretive information shelter provided at Preston Beach Road near entry to the park



Figure 20: Signage for 1080 baits placed at beginning of walk trails Preston Beach Road



Figure 21: Signage for walk trails providing distance and walking times Mount John Road

OUTCOMES

Objectives of the performance assessment

To assess broad levels of achievement against goals and objectives identified in the management plan.

Findings

Outcomes in relation to thrombolites and tuart health have been reported in relation to context, due to the changing nature of management requirements for these special conservation issues since the commencement of the plan. Other outcomes for the park pertaining to long-term objectives are summarised below.

Specialised fauna recovery plans

A key objective of the management plan is to protect and conserve indigenous fauna with an emphasis on threatened and protected species (Section C 9 – Fauna). With respect to this objective, the Commission noted the implementation and success of the Western Ringtail Possum Reintroduction Program in the park. Translocation processes have resulted in the establishment of what appear to be two viable populations at Preston Beach Road and White Hill Road. Populations have survived and there is evidence of successful breeding. Spotlight monitoring in 2006 resulted in 24 sightings. Recent data from a third site at Martin's Tank/Lake Pollard show similar results. Sightings from numerous locations north and south of release sights are now reported regularly. Monitoring of the hooded plover since 2002 is providing records of the number of adults, juveniles and breeding pairs for the Yalgorup lakes. While the hooded plover sightings have decreased slightly between 2002 and 2008, valuable information has been gathered on breeding patterns and behavioral characteristics that can assist in future management.

Specialised feral animal control programs

A key objective of the management plan is to minimise the impact of feral animals and feral animal control measures on park values (Section C 17 – Feral animals). Associated actions include the implementation of comprehensive feral animal control programs in conjunction with native fauna release programs and a fox control program in association with landholders (Section J 38 – Nature Conservation Research). The Western Shield fox control program commenced in 1996 in conjunction with the Western Shield Western Ringtail Possum Reintroduction Program. The Commission acknowledges that the success of the Western Ringtail Possum Reintroduction Program and of Hooded Plover conservation in the Yalgorup management region is related to the overall success of the Western Shield program for fox control in the park over the course of the plan.

CONCLUSION

This Conservation Commission performance assessment reviewed the implementation of the Yalgorup National Park Management Plan 1995 – 2005 reporting on information gathered in 2008. A range of outputs have been produced with relatively constrained resources. These relate to the protection of threatened ecological communities in coastal dunes from off-road vehicles and dune blowouts, the rehabilitation of dunes at Tims Thicket, effective and well-designed access at White Hill and the provision of visitor facilities and walk trails at Mount John Road. The Conservation Commission also acknowledges the efforts in relation to tuart research, thrombolite recovery, species reintroductions and predator control.

The assessment identified a range of factors, including a decline in water level and quality in the lake system, a decline in tuart health and increasing pressure from development and visitation. These processes are more threatening now than at the conception of the management plan. The park appears to be under staffed and under resourced given high visitation and conservation values. Other issues relate to:

- the need for management frameworks that foster sympathetic management of properties adjacent to the park;
- adequate means for regulating access into the park from the beach;
- fine-scale vegetation mapping;
- documented monitoring of commercial tourism operations;
- effective weed control; and
- hygiene planning.

Eight key findings resulted in responses from the Department of Environment and Conservation.

APPENDIX 1 - Assessment Process

Assessment undertaken in March 2008

The verification audit was based on a self-assessment (Appendix 2) of the progress made against the priority actions detailed within the Management Plan. The self-assessment was undertaken by staff at the DEC District Office located at Wanneroo. District staff were provided with approximately 4 weeks' notice of the performance assessment during which time they compiled records that would provide verification of implementation of priority actions in the Plan. These were reviewed in the course of the performance assessment.

In addition to the review of specific actions in the management plan, other relevant matters were considered. These included a discussion of significant threats to the park, changes in context for sections of the plan, and sections of the plan that were no longer relevant.

Assessment undertaken in April 2008

The assessment process was broken into two parts. Part I involved a meeting with relevant District staff to review the self assessment and verify relevant documentation. This took place at the DEC Offices in Mandurah on Tuesday 8th April. Part II involved a field assessment and verification within Yalgorup National Park. This took place on Wednesday 9th April.

Other staff members from DEC were interviewed as part of the assessment process. This helped to provide clarification of implementation or to verify elements where documentation was not available.

During the review of records, and interviews with staff, key sites or areas for field assessment were identified. These included sites that could provide verification that actions had been implemented and more generally to allow observation of the environmental outcomes being achieved through management. The field assessment, together with the review and interview process, enabled an assessment of the overall performance against outcomes and objectives.

Approximately one day was spent in the review of records and interviewing. The inspection of sites at Yalgorup took approximately one day. Follow-up interviews took a total of approximately half a day.

1 The Management Plan can be accessed at <http://www.dec.wa.gov.au/pdf/nature/management/yalgorup.pdf>

2 Hale, J. & Butcher, R. (2007). *Ecological Character Description of the Peel-Yalgorup Ramsar Site*, Report to the Department of Environment and Conservation and the Peel-Harvey Catchment Council, Perth, Western Australia.

3 Luu, R., Mitchell, D & Blyth, J. (2004). *Thrombolite (stromatolite-like microbialite) community of a coastal brackish lake (Lake Clifton)*. Interim Recovery Plan 2004-2009. Department of Conservation and Land Management Interim Recovery Plan No. 153.

4 Environmental Protection Authority (1995). *Criteria of environmental acceptability for land use proposals within the catchment of Lake Clifton*. EPA Bulletin 788.

5 Environmental Protection Authority (1997). *Final criteria of environmental acceptability for land use proposals within the catchment of Lake Clifton*. EPA Bulletin 864.

6 See Shams, R. (1999). *Assessment of hydrogeology and water quality inputs to Yalgorup Lakes*. Waters and Rivers Commission Hydrogeology Report No. HR90.

APPENDIX 2 – Internal review: Level of implementation against priority actions

YALGORUP NATIONAL PARK AUDIT				
Plan Section	Objectives	Actions	Level of Implementation	Comments
		Priority Ranking according to Yalgorup NP Management Plan 1995-2005 High Priority Group 1 High Priority Group 2 High Priority Group 3 Medium and Low Priority	Fully implemented (5) Partially implemented (4) Started (3) Planning stage (2) No planning or implementation (1) No longer relevant (NR)	
Plan Section	Objectives	Actions		
B4	Land Tenure and Park Boundaries Ensure that the gazetted purpose, vesting and tenure of the Park and its surrounds protect the Park's values.	1. Continue negotiations to cancel unnecessary road reserves within the Park boundaries including Quail Road Reserve which runs east-west, the northern section of Road Reserve 228 and 13736, and add these to Yalgorup National Park (Map 2).	(3) New Land use planner to check and review progress	

	Incorporate appropriate lands and waters within the Park where possible.	2. Extend the Park boundary along the coast to the low water mark.	(1) Low priority. Review requirement	
		3. Acquire, by purchase or exchange when opportunities arise and funds are available, private property enclaves and properties adjoining the Park that have exceptional conservation or recreation values, management benefits, or that could protect areas with these values within the Park.	(3) Ongoing. New land use planner to review.	
		4. Negotiate with the relevant State or local government authorities about adding to the Park the following reserves: 40372, 33285, 28796, 32261, 33843, 34745, 27458 and 25912 (Table 2).	(5) Completed	
		5. Acquire for the Park or seek sympathetic management, from current vesting bodies, of Melros Reserve 33139 and Tims Thicket Reserve 24198.	(4) NLR park boundary rationalised to Tims thicket RD	
		6. Encourage the Waroona Shire Council to include protection of the environment in the purpose of Reserve 22091.	(2) To be addressed in the Preston Beach townsite strategy	
		7. Investigate the conservation values of the Bouvard Reefs and coastal waters adjacent to Yalgorup National Park and if appropriate recommend their inclusion in a Marine Park or Marine Nature Reserve.	(1) Refer to Marine Science Branch. Currently not State priority.	
Plan Section	Objectives	Actions		
B5	Zoning	1. Introduce a zoning scheme to manage the Park (Map 3).	(5) Done Review motorised boating in light of Hooded plover conservation issues - zone may no longer be appropriate	

	The objective is to develop and implement a zoning system on which protection of the Parks conservation values and development of recreation and compatible uses can be based.	2. Develop appropriate access and recreational facilities in each zone according to environmental sensitivity and ease of management.	(5) Completed and ongoing	
		3. Control access to separate incompatible activities and provide for equitable use.	(4/5) Established bridle trail and separated horses from vehicles. Powered boating /unpowered boating zoning put in place. Bollard and gates around visitor sites.	
		4. Inform the public of the zoning system, including where access is allowed, and the reasons for the zones.	(3/4) signage brochure where appropriate	
Plan Section	Objectives	Actions		
C7	Geology, Landforms and Soils The objective is to protect and conserve geological features, landforms and soils.	1. Identify specific areas of the park that are vulnerable to damage due to the nature of the geology, soils and landforms.	(4) Access control undertaken in vulnerable sites, strategic track closure.	
		2. Minimise development along the edge of the lakes and disturbance to the vegetation and foreshores of the Vasse Lagoonal System (See Map 4).	5 within park 4 outside refer to LGA planning approval process	
		3. Locate and design recreation sites to prevent or minimise their impact on fragile geological features and landforms.	5 (ongoing)	

		4. Minimise management activities in, and public access to, the coastal dunes areas. 5. Locate access roads and recreation sites according to specialist advice on prevailing wind direction, stabilisation of slopes, disease-risk, and land capability. 6. Provide interpretative information on the Park's geology, its relationship with landforms, soils and vegetation and their vulnerability to damage.	5(ongoing) Coastal foreshore with LGA 5(ongoing) (4) Part of interpretation message in panels and brochures.	
Plan Section	Objectives	Actions		
C8	Vegetation and Flora - Protect and conserve vegetation communities, including their structure, diversity and distribution. - Protect and conserve indigenous flora with an emphasis on threatened and priority species.	1. Locate threatened and priority flora species and store information on biology, location, and herbarium specimens at the District Office, the State Herbarium and at CALM's Como Office. Consult records and take appropriate action before undertaking development or management activities. 2. Extend the detailed vegetation and flora survey undertaken in the Park's northern section to cover the entire Park and important adjacent areas. Locate populations of important vegetation groups and priority and fire sensitive species, and develop management recommendations for their conservation particularly preceding any new recreational site development or burning operation.	(4) Surveys and mapping of TEC occurrences and DRF and priority species undertaken and ongoing. (4)	

		3. Protect areas that are in good condition and protect and consider enhancing areas with threatened and priority flora, particularly those vegetation communities and species susceptible to disturbance, plant disease or weed invasion. 4. Protect and restore the Vasse Lagoonal Complex, the Quindalup Dune Complex and the fringing vegetation around the Lakes. 5. Minimise or prevent the removal of or damage to vegetation from constructing and maintaining roads and tracks, and developing and maintaining facilities for visitor use. 6. Provide visitors with opportunities to view and increase their knowledge of the Park's vegetation. Include appropriate walk tracks and provide interpretative material. 7. Retain representative areas of each vegetation community in locations that have been unburnt for extended periods of time (Section 18).	(4/5) ongoing. (4) Ongoing (5) No new tracks (4) Installed Pollard, Lakeside and Heath lands walk trails. (5)	
Plan Section	Objectives	Actions		
C9	Fauna Protect and conserve indigenous fauna with an emphasis on threatened and protected species	1. Protect fauna habitats from the spread of weeds, disease, wildfires and human disturbance.	(3) Weeds. (3/4) Wildfire - Protective mosaic burning undertaken. Tuart Heath Research Group. Hooded plover Management plan with Birds Australia. Limited dieback survey.	

	Protect and conserve waterbird populations and habitats.	2. Ensure mosquito and midge research and control programs are approved by CALM's Director of Nature Conservation by virtue of the power delegated to him by the NPNCA (NPNCA, 1993). 3. Increase knowledge of the Park's fauna by recording the incidences of death or injury to fauna resulting from motor vehicles and other causes. 4. Instigate more intensive fauna surveys and investigate reintroducing former known threatened fauna inhabitants in conjunction with a fox baiting program (See Section 17 Feral Animals).	(5) (3) Preston Beach Volunteer Group do some monitoring. (4) Ringtail possum recovery program	
Plan Section	Objectives	Actions		
C10	The Lakes System - Protect and conserve lake flora and fauna communities, structures, diversity, distribution and the natural processes that sustain them. - Protect and conserve quality and quantity of surface water and groundwater and protect special conservation values associated with the lake system. - Enhance knowledge of lake hydrology and its function in the lake ecosystem.	1. Liaise with local government to ensure that management of lakeside reserves is consistent with Park management objectives. 2. Survey poorly identified tenure boundaries. 3. Reposition or establish new fences on foreshores to stop stock entering the lakes or consider an incentive program for private property owners so they will take this initiative. 4. Inform landholders of the importance of	(3) Land use planning (4) consolidation of adjacent reserves completed see B4.4 above (1) It is done opportunistically with land use planning and subdivision and planning strategies. (1) Reassess. (2/3) Only via	

		minimising nutrient input into the lakes. 5. Liaise with local government, relevant State Government agencies, CSIRO and the DEP to provide advice to landholders on land-use practices that are appropriate within the Park catchment area (see State Government section). 6. Restrict recreational activities on the lakes to waterskiing and canoeing in the lower section of Lake Preston 7. Provide researchers with permits to use boats on any of the lakes for approved study purposes only. 8. Seek greater legislative protection of the Lake Clifton stromatolites and thrombolites	Thrombolite Recovery Team at present (4) ongoing via land use planning process (5) (5) Ongoing (5) Listed TEC with Recovery Plan and Team plus Ramsar site	
Plan Section	Objectives	Actions		
C11	Aboriginal History Protect and conserve the Park's Aboriginal cultural values.	1. Identify Noongar people having cultural links and ongoing interests in the Park. 2. Consult with Noongar people on matters of cultural interest in Park management or interpretation or field study activities in the Park (NPNCA, 1991). 3. Report Aboriginal artefacts or other findings to the Department of Aboriginal Sites, Western Australia Museum, and ensure artefacts or findings are protected. 4. Encourage archaeological and ethnographic surveys of the Yalgorup National Park.	(3) Department has links with local aboriginal groups in Mandurah as stakeholders .	

		5. Ensure that CALM's obligations under relevant legislation are fulfilled if any development activities are proposed in the Park.		
		6. Commence discussions with local aboriginals and other appropriate bodies to address access and use of an area, within or near the Park, for Aboriginal cultural purposes.		
Plan Section	Objectives	Actions		
C12	European History Protect and conserve European cultural values of the Park.	1. Collate existing information on historic sites located in the Park and maintain an up-to-date register of sites. Liaise closely with local government, the Peel Development Commission, National Trust of WA, the Heritage Council of WA and the Australian Heritage Commission to prepare and maintain registers and to evaluate potential additions. 2. Develop management guidelines for any historic sites in accordance with the Burra Charter, and in liaison with the WA Museum, National Trust, Australian Heritage Commission, tertiary institutions and historical societies. 3. Establish a program to conserve historic places, demarcate sites, develop facilities and disseminate visitor information Report Aboriginal artefacts or other findings to the Department of Aboriginal Sites, Western Australia Museum, and ensure artefacts or findings are protected. 4. Encourage historical research and an archaeological survey to be carried out at the lime kilns.		

		5. Liaise with local historical societies regarding volunteer work and other activities.		
Plan Section	Objectives	Actions		
C13	Landscape Protect and conserve the Park's visual landscape values.	1. Manage all Park landscapes according to CALM's Landscape Management Policy Statement No. 34 and seek specialist advice when implementing the management plan. 2. Plan and implement all activities in the Park to complement rather than detract from the inherent visual qualities of the Park and surrounding landscapes. 3. Classify Park landscapes according to the Departmental Landscape Management System. 4. Any visual alterations to the natural landscape should be subtle, and remain subordinate to natural elements by borrowing extensively from form, line, colour, texture and scale found commonly in the surrounding landscape. 5. The District Manager to view site development plans before any development, maintenance or rehabilitation works are implemented, to ensure conformity with landscape management principles. 6. Use interpretive and explanatory signs before and during operations that affect visual landscape qualities. 7. Focus views onto distinctive features by selective siting and aligning of roads and walking tracks.	(5) (5) 1 (4) (5) (5)	

		8. Give highest priority to rehabilitating previously disturbed sites, such as old quarries in the northern section of the Park, to attain the desired standard of scenic quality.	(3)	
		9. Encourage local authorities, other government agencies and private landholders to use landscape management skills when siting facilities and signs, selecting site-compatible materials and colours, and planning for utilities, roads and building envelopes.	(4) eg. Joint shire of Harvey development	
Plan Section	Objectives	Actions		
C14	Erosion, Mining and Rehabilitation - Minimise the impact of extracting basic raw materials on Park values and rehabilitate these sites - Restore degraded areas to a stable condition, resembling the natural environment as much as possible. - Protect the Park's values from deleterious effects from exploration and mining	1. Ensure that, as far as possible, any mining or excavation operation within or adjacent to the Park has minimum impact on the Park, particularly with regard to landscape values, spread of disease and decrease in water quality. 2. Monitor the movement of dune blowouts. If a blow out is expanding it is likely to destroy management infrastructure or important vegetation or habitats, implement control measures. 3. Prepare a detailed rehabilitation program that prioritises the works to be implemented and includes dune stabilization techniques. 4. Investigate more effective rehabilitation strategies and actively involve private and public groups and individuals in rehabilitation programs. 5. Monitor, evaluate and record progress of rehabilitation techniques used.	(5) Land use planning deals with this.Ongoing. (4) LGA manage coastal use with input from local staff as required. Senior ranger input through Coastcare CC (3) Erosion dunes adjoining park dealt with, a couple of limestone pits rehabilitated. (3) (3)	

		6. Ensure native plant species that occur in the Park are used in rehabilitation for brushing, planting and seeding. 7. Train Park staff in all aspects of disease identification and rehabilitation work. Seek specialist advice as required. 8. Ensure that, within any scenic areas, degraded landscapes (such as quarries) are rehabilitated after use or progressively in stages.	(4) yes ongoing (3) 1 None within scenic area.	
Plan Section	Objectives	Actions		
C15	Disease - Minimise the spread and intensification of disease where it is already present, and prevent introduction into disease free areas. - Minimise detrimental effects of measures used to control disease.	1. Conduct plant disease surveys and implement hygiene measures prior to commencing any operation that requires soil or plant material movement. 2. Educate Park users about plant disease, through printed information emphasising preference for summer activity use in the Park and the need to stay on well-formed roads or tracks. 3. Provide educational signs and printed information for horse riders and disease management strategies. 4. Train Park staff to recognise plant diseases, and in sampling a management techniques. 5. Determine how susceptible the Park's plant species are to disease, starting with all threatened and priority species.	(3) investigation of disease factors following Tuart decline No comprehensive dieback survey (1) (4) horse riding Code of conduct (4) (3)	

		2. Expand the Rabbit control program to include areas under rehabilitation and ensure chemicals used do not affect native fauna.	(1) Has not been a priority for available funding	
		3. Monitor feral animal populations and regularly assess the effectiveness of control programs and their threat to native flora and fauna.	(4)	
		4. Implement comprehensive feral animal control programs in conjunction with native fauna release programs.	(5)	WRP relocation sites baited monthly
Plan Section	Objectives	Actions		
C18	Fire Protect people, property and conservation values in and near the Park by appropriate fire management and suppression techniques.	1. Implement prescribed burns in accordance with the master-burning plan. Implement a range of fire regimes, including variation in season, intensity and size, particularly between different blocks according to the fire management plan (Map 6). 2. Burning will be conducted in accordance with written prescriptions approved by CALM's District Manager (available for viewing on request). The frequency of prescribed burns will depend on the succession of litter accumulation and protection, regeneration and conservation requirements. 3. Strategically placed fuel reduced areas will be maintained, rather than narrow buffers, along private property boundaries. Where possible successive burns in each block will be programmed in different seasons.	(3) Have commenced mosaic fuel reduction burning over last 5 years. (5) (2)	

		4. Roads required for fire control and essential management activities will be defined and maintained to suitable standards. Firebreak construction will be kept to a minimum. Those roads considered unsuitable for public use will remain closed to the public (See Section 22). 5. Continue to liaise with local government and the local Bush Fire Brigades to ensure an effective fire fighting force is in place. Establish agreements with adjacent landholder agencies, where necessary, regarding a cooperative approach to carry out fuel reduction requirements. If conditions or land responsibilities change, review agreements or establish new agreements to ensure ongoing protection. 6. Contain all fires in or threatening the Park, considering values at risk, disease risk, fire behaviour, resources, the presence of low fuel areas and ecological values. Suppression actions may include direct attack, back burning from established roads or buffers, or by allowing the fire to burn out to low fuel buffers. 7. Actively promote public education and awareness of fire risk, safety and survival through pamphlets, information boards and personal contact by Park staff.	(3/4) Ongoing Master burning plan. Rotational firebreak maintenance. Installed gates and physical barriers. Requires review. (5) (5) ongoing	
Plan Section	Objectives	Actions		
C19	Tuart Promote long-term stability of Tuart stands in the Park.	1. Initiate research to study the effects of land-use and fire management on the population dynamics of Tuart to determine whether or not Peppermint is replacing Tuart in some stands.	(3)	

		2. Select recruitment methods that do not adversely effect other Park conservation values such as habitat requirements for the Ring-tailed Possum.	(3)	
		3. Seek NPNCA approval of recruitment methods before they proceed, if research shows that intervention is necessary.	(3)	
Plan Section	Objectives	Actions		
D21	Attractions and Existing Use Provide recreation opportunities in an equitable manner that do not impact adversely on the Park's values and that maximise appreciation and enjoyment of those values.	1. Liaise with Park visitors to identify their specific needs and determine if and how opportunities and facilities to meet these needs can be provided.		
		2. Assess requests to use the Park for new recreational pursuits using the following criteria: - suitability in a national park - suitability in the Regional context - compatibility with existing uses - likely environmental impact - availability of alternative opportunities - management capability.		
		3. Monitor the impacts of all activities in the Park and make any necessary changes to management practices if unacceptable	(5)	

	· Design and develop any new access routes as low in the topography as possible and in a manner that complements Park landscapes while maximising scenic opportunities (Section 13).	(5) Ongoing	
	· Locate and design access routes in the Park so that they do not degrade surface and groundwater quality.	(5) Ongoing	
	· Conduct a full disease assessment of all areas in which track reconstruction will occur.	(5) Ongoing	
	· Develop and maintain access routes in ways that minimise the risk spreading disease.	(5) Ongoing	
	6. Monitor, in association with user groups and local government, all four wheel drive tracks, access to four wheel drive beaches, the use of dune buggies and motorbikes and instigate management action as necessary.	(4)	
	7. Progressively develop a varied system of walking tracks within the Park, distinct from tracks for vehicles or horses.	(4)	
	8. Maintain management tracks to a level suitable for visitor convenience and management requirements.	(4)	
	9. Provide access close to a safe area of beach that is vehicle free.		
	10. Provide access for motorised vehicles on roads and tracks developed and maintained to Departmental standards.		
	11. Direct motorised vehicles to the most appropriate areas, close unsuitable, roads and tracks and prescribe conditions of use that will minimise environmental and social impacts.	(4)	

		12. Restrict vehicles to using any vegetated beach areas between the low and high water marks and discourage access into vegetated fore dunes with signs and road closures.	(4)	
		13. Provide information to Park users on appropriate four wheel drive techniques for coastal areas. 14. Identify existing access roads and tracks suitable for bicycle riding.	(4)	
Plan Section	Objectives	Actions		
D23	Horse Riding Facilitate enjoyment of the Park by providing designated trails for horses while minimising any negative impacts of horse riding on the Park environment or other visitors.	1. Establish a code of ethics for horse riding elaborating on horse care and control to minimise any impact within the Park. 2. Further assess the land's capability and suitability for horse riding and determine the exact location of the trail. 3. Permit horse riding in the Park (including the possibility of commercial horse or camel rides) on a designated trail on the outside boundary of the Park (Map 7). No specific additional horse riding facilities will be provided. 4. Ensure that the designated horse trail Park entrance locations are well designed and signposted to ensure compliance through information on dieback disease hygiene principles, weed invasion impact	(5) Limited to designated trail (5) (5) (5)	 low level usage only 1 current registration Compliance signage in place (due for review) other info provided via

		and the effects of horse activity on water quality.		CoC
		5. Link the horse-riding trail with the existing 10th Light Horse Bridle Trail.	Not done. Subdivision precluded this.	
		6. Close tracks when maintenance work or rehabilitation is required.	(5)	
		7. Monitor the impacts of horse riding and modify or further restrict use if the activity appears environmentally unacceptable.	(5)	
		8. Encourage horse riding in areas outside the Park and its Lakes, such as pine plantations, which are able to sustain this activity.	(1)	
		9. Encourage horse riders to feed their horses on a seed free diet for 24 hours prior to entering the Park. 10. Require Park riders to display a license tag on their horse to show they have paid a registration fee. Use the fees to maintain horse riding trails. 11. Seek financial support from horse riding groups and neighbouring horse property owners to help establish and maintain the horse riding trail.	(5) Part of code of conduct (1) Not required, just carry their permit. (1) Very little use of trail. Not appropriate.	
Plan Section	Objectives	Actions		
D24	Nature Observation and Nature Walks	1. Provide a variety of walks throughout the Park (Map 8).	(4) See earlier action	

- Provide walks and observation points from which the Park's natural attributes can be viewed to enhance visitors' experience.

2. Provide adequate information from which visitors can choose the walk best suited to their needs.	(4) Brochure	
3. Designate preferred backpack camping areas along the path network where appropriate and consider fresh water availability and well maintenance if practical (Map 8).	(1)	
4. Provide safe access to points of special natural interest where this can be achieved without threat to the natural environment or visual landscape.	(5) Yes boardwalk at Lake Preston	
5. Locate a lookout at the end of White Hill Road and include relevant interpretive material.	(4) Look out constructed but no interpretation	
6. Provide a nature observation facility at the end of Mount John Road for viewing waterbirds and stromatolites and thrombolites in Lake Clifton.	(5)	Completed in 1996
7. Design and develop a short nature walk from the Mount John Road day use area.	(5) Completed	
8. Investigate the possibility of constructing waterbird viewing facilities at Lake Preston, Lake Hayward and Lake Pollard.	(4)	Pollard constructed - additional walkway required Preston - site closed Hayward - no action
9. Provide a walk loop to Lake Preston from the Lake Preston day-use area.	No longer required.	Site closed
10. Provide a walk from the Preston Beach Road Information Bay to a lookout and to Lake Preston.	(4)	Heath lands walk completed (no lookout)

		11. Develop a nature walk at the end of North Preston Beach Road which includes a lookout. 12. Develop a long walk from Martins Tank Lake north to location 5524 and around Lake Clifton to Mount John Road. Within this walk develop shorter loops around Lake Pollard and two varying length loops that each include a lookout in location 5524.	(1) (1)	Impact of proposed development to be assessed before proceeding
Plan Section	Objectives	Actions		
D25	Day Use Provide day-use recreational facilities appropriate to the environmental setting that encourage visitor enjoyment and understanding of the Park's values	1. Design and develop day-use sites and environmentally sensitive facilities in accordance with the Department's Policy Statement No. 18 Recreation, Tourism and Visitor Services and the Central Forest Region Regional Plan Day-Use Strategies. 2. Ensure that site development plans are completed and approved by the District Manager before development, maintenance or rehabilitation works are undertaken. 3. <u>Martins Tank</u> (High Priority) - Develop a day-use area at Martins Tank Lake for picnicking with a walk to Lake Pollard and further north 4. <u>Tims Thicket Road</u> (High Priority) - Designate a day-use area south of Tims Thicket Road if the site is added to the Park.	(4) (1)	Lake Pollard walk established specific DU are not

	· Provide further day-use facilities south of Tims Thicket Road in a suitable location near the beach with a walk track to the beach if the site is added to the Park.	(1)	
	· Rehabilitate all unnecessary vehicle tracks and disturbed areas.	(4) ongoing	
	· Investigate the possibility of using old quarries for recreation after further rehabilitation, including earth shaping and revegetation	(1)	
	5. <u>White Hill Road</u> (High Priority)		
	· Develop a day-use area at the end of White Hill Road with a lookout, picnic facilities, two wheel drive access close to the beach and four wheel drive beach access.	(4) (2)	Lookout completed Existing 4x4 track upgraded 2x4 redesign commenced
	6. <u>Lake Hayward</u> (Low Priority)		
	· Expand the existing day-use area if and when needed.	(5)	
	· Retain picnicking as the main activity at this site.	(5)	
	· If pedestrian impacts on the foreshore of Lake Hayward are detrimental to the lake environment, consider constructing a formal viewing platform.		
	7. <u>Lake Preston</u> (Medium Priority)		
	· Redesign the day-use area to provide for picnicking, walking and bird watching on Lake Preston.	NLR - SITE CLOSED	
	· Continue to rehabilitate the quarry at the Lake Preston day-use area.	NLR - SITE CLOSED	
	· In the redesign, investigate the potential to expand if and when the need is demonstrated.	NLR - SITE CLOSED	
	8. <u>Information Bay</u> (High Priority)		

	· Maintain information facilities at this site on Preston Beach Road, and consider including a toilet when the walk to Lake Preston and the lookout has been developed.	(1)		
	9. <u>Mount John Road</u> (High Priority) · Design a day-use site at the end of Mount John Road with the main activity being to interpret the stromatolites and thrombolites in Lake Clifton.	(5) 1996		Update of site due
	10. <u>Lime Kilns</u> (Medium Priority) · Provide vehicle access, parking, picnic facilities, interpretive information and toilets at the Lime Kilns while respecting the historical integrity of the site.	(1)		
	11. <u>Whittakers Moll</u> (Medium Priority) · Continue to use the Whittakers Mill site as a day-use area for roadside resting and picnicking <u>with allowance for dogs on a leash</u>.	(5)		
	· Upgrade picnic facilities, rationalise road and tracks and provide toilets and historical information on site.	(1)		
	12. <u>North Preston Beach</u> (Medium Priority) · Develop a day-use site near the beach and at the end of North Preston Beach Road. Provide picnic facilities in a suitable location if the need is demonstrated.	(1) NLR		ref PBTSS
	13. <u>Northwest of Martins Tank</u> (Medium Priority) · Develop a day-use site that focuses on a nature walk. Provide information, interpretation and limited picnicking facilities.	(4)		
	14. <u>Melros Area if included in the Park</u> (Low Priority) · Develop a day-use site for picnicking at Melros, if the area is included in the Park.	NLR		

		Development Plan. 10.Tims Thicket Road (High Priority) · Designate a camping area south of Tims Thicket Road if the site is added to the Park. · Rehabilitate all unnecessary vehicle tracks and disturbed areas. 11.<u>White Hill Road</u> (Low Priority) If Tims Thicket is not included in the Park, designate a camping area at the end of White Hill Road for a range of camping.	(1) (4) NLR	-
Plan Section	Objectives	Actions		
D27	Water Based Activities · Provide for water-based recreation activities that are compatible with protecting and maintaining conservation values · Provide for water-based recreation without impairing other recreation activities.	1. Retain the waterskiing zone, access by the Bunbury Water-ski Club and access by the public boat launching facility on Lake Preston subject to monitoring environmental impacts. 2. Continue to prohibit any water-based activities on all of the Yalgorup Lakes, except for the lower third of Lake Preston. 3.Provide information on the conservation values of Lakes Clifton, Hayward and Pollard to explain to visitors why water-based activities are not permitted on these lakes. 4. Monitor the effects of water-based recreation activities on the environment and modify the activities if necessary.	(5) retained BWC site only (5) (5) (1)	Pursue relinquishment of lease with Shire of Harvey based on current usage (non-existent). ref discussions SoH re transfer / relinquishment of BWC lease Brochure , signage and WEB

		5. Permit "overnight resting" in vehicles along the beach adjacent to the National Park for people beach fishing. "Overnight resting" is defined as sleeping in, or next to a vehicle for no more than one night. This recommendation will be subject to the coastal strip adjacent to the National Park being added to the Park and will be subject to periodic review once in place.	NLR	
		6. Consider introducing some form of conditional canoeing in Martins Tank Lake, and extending zoning for canoeing to include the entire lower third of Lake Preston, after an assessment has been made to determine the environmental impact canoeing will have on each of these lakes.	(2) informal scientific response negative. Not required as only potential location lake shallow and saline and not inviting for canoeing.	this conflicts with 2 above !!
Plan Section	Objectives	Actions		
D28	Pets The objective is to protect the Park and its users from the negative impacts of pets.	1. Provide information to Park visitors explaining the Department's policy on pets, and enforce the policy if necessary 2. Encourage the use of areas outside the Park, that are able to sustain activities such as pet exercising. 3. Allow dogs, on a leash, at the Whittakers Mill recreation area, which is proposed for addition to the National Park. If adjacent Park beaches at Tims Thicket, White Hill and Preston Beach are included in the Park, zoning for pets will be considered in consultation with the public. Pets will not be allowed in any other areas of the Park.	(4) Informal with signage at camping grounds and via code of conduct (5)	
Plan	Objectives	Actions		

Section				
E29	Information and Interpretation Increase awareness, appreciation and understanding of the Park's values and management, and encourage responsible use of the Park.	1. Develop and implement a community education and interpretation strategy for the Park.	(1)	
		2. Liaise with scientific study groups to develop an information base for use in education and interpretive programs.		
		3. Build small information/interpretation facilities at Mount John Road, Lake Hayward, Martins Tank, White Hill Road, and at the Lime Kilns as funds become available.	(4)	Matins Tank and Mount John (Lake Clifton) completed, White hills planning draft
		4. Prepare and make available publications such as a brochure to inform schools, the public, and local landholders of the intrinsic value of the Park's lakes and constraints on activities permitted within the Yalgorup catchment.	(5) due for reprint	
		5. Conduct seminars and information days for the public and landholders.		
		6. Provide information on opportunities for various types of day-use recreation activities both in the Park and on other lands in the area.		
		7. Provide information on points of scenic interest in the Park and provide interpretation at these points for visitors.		
Plan	Objectives	Actions		

Section				
E30	Education Facilitate and encourage the use of the Park by educational groups, maximise information dissemination and minimise impact on the Park's values.	1. Assist and encourage educational groups wherever appropriate. 2. Investigate the possibility of assisting the University of Australia to continue operating the Neville Stanley Field Station. 3. Liaise with educational groups using the Park to review the education programs and set standards for appropriate research. 4. Liaise with program coordinators to modify any educational activities that may be having a detrimental impact on the Park's environment. 5. Liaise Consider the impact of any proposed Park management activities on educational programs.	(5) ongoing NLR sold by UWA (5) 	 limited activities to special events only
Plan Section	Objectives	Actions		
E31	Community Involvement Develop, encourage and facilitate liaison with the community and their involvement in Park management.	1. Maintain and foster close communications and the active involvement of local individuals and groups interested in Yalgorup National Park. 2. Monitor community response to Departmental policies and management practices through both formal and informal contacts.	(4) (4)	

		3. Identify recommendations within this Management Plan that can be implemented by community involvement.	(1)	
		4. Seek assistance from volunteers in education programs and to monitor and control weed species in the Park.	(4)	
		5. Encourage volunteer programs to help with rehabilitation work.	(4)	
		6. Consider establishing an Advisory Committee or Strategy Group to facilitate ongoing community involvement.	(2)	
Plan Section	Objectives	Actions		
F32	Tourism Encourage tourism in the Park that is environmentally and socially sensitive and, where possible, is of educative or interpretive value to visitors.	1. Liaise with tour operators to inform them of regional and local management initiatives, developments and road conditions. 2. Ensure that commercial tour operators maintain appropriate standards with respect to information, quality of service provided and minimal environmental impact operations. 3. Ensure tour operators obtain the appropriate level of permission to operate within the Park and pay the necessary fees for their activities. 4. Identify the sustainable level of tourist operator use where concessionaires wish to operate, monitor the impacts of these activities and regulate them as required. 5. Call for expressions of interest for concessionaires and limit the number of operators to a sustainable level.	(3) Limited demand (5) (1)	 Limited level of interest for commercial operator use NO CONCESSIONAIRES

		6. Encourage tourism within the region particularly that which is of educational or interpretive value to visitors.		
		7. Advise on locations for proposed tourist complexes giving preference to those outside the Park, its catchment and those that are environmentally and socially sensitive.		
Plan Section	Objectives	Actions		
F33	Leases Ensure that lease arrangements and activities within the Park are compatible with other Park values and management objectives	1. Investigate the possibility of relocating some apiary sites.	(5)	
		2.Ensure that the present location of apiary sites or naturally established bee hives cause no inconvenience or danger to Park staff or visitors and are appropriately located within the natural environment of the Park.	(5)	
		3.Require occupiers of registered sites to comply with notice of hive ownership, as required by the Beekeepers' Act.	(5)	
		4. Implement a system of permanent signposting showing apiary site numbers at each site.	(3)	No currently active apiary sites in YNP
		5. Assess the environmental impact on Lake Preston of waterskiing and the foreshore facilities provided, and report the results to the NPNCA.	(1)	
Plan Section	Objectives	Actions		

G34	Private Property Encourage management of nearby private property to be in sympathy with management of the Park.	1. Encourage private property owners to manage their properties to reduce nutrient input into the lakes. 2. Encourage private property owners to protect fringing vegetation between private property and the lakes by excluding stock, weeds, fire and any use of the area that may degrade the soil or vegetation. 3. Encourage private property owners to rehabilitate areas of fringing vegetation with indigenous species, provide plants and trees when possible and inform property owners of preferred species to plant. 4. Seek to inform present and prospective landowners of compatible land use practices and environmental constraints on land-use in the Lake Clifton and Lake Preston catchments. 5. Actively encourage private land owners to fence their properties and control stock, the spread of disease, weeds, feral animals and fire particularly in areas near any of the lakes. 6. Inform Park neighbours about Park management practices and encourage them to manage their lands in sympathy with Park objectives.	(2) Limited but done to an extent for land use planning (2) opportunistically (2) opportunistically (2) opportunistically (2) opportunistically	
Plan Section	Objectives	Actions		
G35	Local Government	1. Negotiate with local government authorities to manage land near the Park		

	Negotiate with local government to introduce land management practices that complement Park management.	in a way that is consistent with Park management objectives.		
	Negotiate for local government planning to be consistent with Park management objectives.	2. Encourage local government to prepare management plans where property and conservation values of the Park, or in adjacent reserves may be at risk.		
		3. Liaise with local government planning staff and councillors to ensure that any proposal on private land is adequately assessed for potential impacts on Park values.		
		4. Negotiate with local government to refer any land development proposal to CALM if it may potentially affect Park values.		
		5. Assist local Shires and others, where possible, to conserve natural areas particularly areas adjacent to the Park.		
Plan Section	Objectives	Actions		
G36	State Government - Negotiate complementary management of nearby State Government land with management of the Park. - Negotiate State Government planning to be consistent with Park management objectives.	1. Arrange for all land owners who seek approval from local government to construct a bore in the Clifton/Preston catchment to be advised that they are required to consult with the Water Authority and the South West Coastal Groundwater Advisory Committee. 2. Encourage the Department of Environmental Protection to prepare an Environmental Protection Policy which provides for the protection of Lake Clifton and Lake Preston and in particular the associated vegetation and water quality.		

		3. Encourage the Department of Planning and Urban Development to: (i) complement the Environmental Protection Policy with a statement of planning (ii) ensure consistency between their Peel Region Plan, the Bunbury Wellington Region Plan and CALM's planning and policy documents regarding directions to local government on development control		
		4. Support the Department of Agriculture and the Community Catchment Support Group (Peel Harvey Community Catchment Centre in Pinjarra) in advising, educating and involving the Clifton/Preston catchment community to manage their properties to minimise nutrient loading and pollution in the catchment.		
		5. Encourage other State Government Departments to plan for operations and management consistent with CALM's planning and policy documents in the area.		
		6. Use a coordinated approach between the relevant authorities, departments and landowners to ensure land uses or sub-divisions of enclaves or adjoining private land do not adversely affect Park values.		
		7. Liaise with relevant authorities and departments to ensure that land-use on adjoining land does not adversely affect Park values. 8. Review the boundaries of the areas of State Forest proposed for addition to the Park and ensure that conservation values and resource management requirements are adequately accounted for.		

Plan Section	Objectives	Actions		
H38	Nature Conservation Research · Increase knowledge of the Park's flora and fauna. · Increase knowledge and understanding of the Park's natural processes	1. Implement an integrated program of nature conservation research, survey and monitoring within the Park and in surrounding areas, and investigate reporting on this program annually to the community. 2. Encourage research by CALM staff and others into aspects of the Park relevant to its management. Modify management practices on the basis of improved knowledge. 3. Carry out more detailed surveys to record the distribution, abundance and other details of flora and fauna. 4. Carry out detailed surveys of the Park's flora and vegetation to complement work recently done in the northern section. 5. Assess the efficiency of management control of weeds and feral animals and any effects these controls have on non-target species. Make changes to procedures if required. 6. Continue research to increase knowledge and understanding of patterns and processes in the Park's ecosystem and, particularly, within Lake Clifton and the Park catchment. 7. Actively encourage research into the hydrology of the Park and its surrounds, and monitor the impacts of catchment land-use practices on ground and surface waters to enable better scientifically-based land-use management decisions.	(3) Some monitoring of chudich. Assisted Tuart Health Research Group. Monitoring of TEC's and DRF. See previous actions See previous actions (3) (3) (3) DOW liaison and through Recovery Plan for thrombolites	

	8. Monitor the effectiveness and impacts of fire management measures and make any necessary changes to procedures in the light of research and experience. 9. Monitor the status of all plant diseases in the Park and carry out any necessary management actions in the event that new disease threats become evident. 10. Review management prescriptions in the light of any new research into the introduction, spread, impact or control of plant disease in the Park. 11. Review rehabilitation efforts, the population dynamics of Tuart and other key species and develop new rehabilitation techniques and species recruitment methods where necessary.	(3) tuart research burns (3) (2) (4) Tuart Research Program	
	12. Investigate the habitat requirements and ecology of vulnerable species in relation to the impact of feral predators, fire regimes and plant disease occurrence.	(4) Ringtail possum, hooded Plover and Carpet Python	
	13. Assess the Park's flora and fauna to determine appropriate release sites for the Ring-tailed Possum and any other native fauna. Implement a fox control program in association with landholders, and integrate and coordinate research efforts in the area. 14. Assess the effects of water-based recreation and disallow or modify management of the activity if environmental impacts are unacceptable.	(4) (2)	
	15. Monitor the impacts of horse riding and disallow or modify management of the activity if environmental impacts are found to be unacceptable.	(4)	
	16. Encourage volunteers, educational institutions and other organisations to participate in nature conservation research	(4)	

		projects		
Plan Section	Objectives	Actions		
H39	Social Research - Monitor visitor use including experience and perceptions and forecast future recreational demands. - Monitor the impact of visitor use, land use and management activities. - Increase knowledge of cultural values.	1. Implement an integrated program of social research, survey and monitoring within the Park to determine visitor numbers, patterns, preferences and perceptions, and to assess levels of satisfaction with Park management. 2. Monitor the need for additional facilities resulting from changes in visitor use, and consider their provision subject to an assessment of their likely impact. 3. Encourage volunteers, educational institutions and other organisations to participate in social research projects.	(4)	
Plan Section	Objectives	Actions		
I40	Priorities Manage the Park according to assigned priorities for implementation	1. Assign priorities to the management recommendations detailed in this Plan and implement them in order of priority, subject to availability of resources. 2. Review priorities periodically and make any necessary changes. 3. Seek resources to implement this plan, as detailed in Staff and Funding (Section	(4)	

		41).		
Plan Section	Objectives	Actions		
I41	Staff and Funding Provide sufficient staff and funds from available resources and through alternative sources to implement this plan.	1. Seek sufficient staff or staffing arrangements at Yalgorup National Park to enable recreational site developments to proceed, particularly in the northern section of the Park. 2. Actively seek sufficient funds to implement this Plan and to enable administrative and maintenance infrastructure to expand to cover the Park and additions to it. 3. Install a self registration camping fee collection station at Martins Tank. Use the funds collected to increase, improve and maintain Park facilities and services. 4. Seek revenue from external sources such as special grants, sponsorship and other alternative funding, which could be managed by a trust fund established to implement the Plan. 5. Continue to seek budget allocations for Yalgorup National Park sufficient to ensure the recommendations in this Plan are implemented.	(3)	
Plan Section	Objectives	Actions		

142	Evaluation and Review	1. Review the implementation of the Plan periodically to assess its progress and revise the priority status of recommendations.	(4)	
		2. Review recommendations in the light of new information, particularly from research and monitoring programs. If a major change in the direction of the Plan is required, any proposed revision is subject to NPNCA approval and if approved will be released for public comment. (There is provision for this under Section 61 of the CALM Act, 1984.).	(4)	

