

# Performance assessment - Nambung National Park Management Plan 1998 – 2008



Conservation Commission  
of Western Australia



## **Function of Conservation Commission performance assessments**

Conservation Commission of Western Australia performance assessments are undertaken primarily to fulfil the functions described in section 19 (g) of the *Conservation and Land Management Act 1984*. That is; to assess and audit the performance of the Department of Parks and Wildlife and the Forest Products Commission in carrying out and complying with the management plans. The assessments also help inform the Conservation Commission's policy development function and its responsibility to advise the Minister for Environment on conservation and management of biodiversity components throughout the state.

The performance assessment was undertaken in accordance with the *Conservation Commission policy and guidelines for the performance assessment of conservation reserve and forest management plans and biodiversity management in WA*. This document is available on the Conservation Commission's website [www.conservation.wa.gov.au](http://www.conservation.wa.gov.au).

This report has been prepared by the Conservation Commission of Western Australia.

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## **Executive summary**

The Nambung National Park Management Plan 1998-2008 (the Management Plan), including the Wanagarren Nature Reserve, Nilgarn Nature Reserve and Souther Beekeeper's Nature Reserve, recognises the significant conservation, landscape, cultural and recreational values of the Park and was prepared to resolve conflicts, plan for future needs and to ensure the Park's and Reserves' values were protected and maintained.

Through this performance assessment, the Conservation Commission has sought to identify the extent to which the Management Plan objectives have been achieved and strategies implemented. Overall, a majority of the high and ongoing management strategies (77%) are judged to have been fully implemented across the Management Plan area.

The Department of Parks and Wildlife (Parks and Wildlife) has advised that strategies to deal with incompatible activities taking place in the nature reserves, developed at the time the Management Plan was drafted, (including amending the nature reserves to national park and conservation park status), have not been achieved. However, it was noted that the presence of a ranger based at Lancelin has enabled better management of these activities and lessened the need for the envisaged changes in tenure. Parks and Wildlife has also not achieved the removal of the shacks at Grey and Wedge in accordance with the Management Plan and Government policy on squatter shacks. Instead leases have been granted to shack occupiers at Wedge and Grey on short term renewals while negotiations on the timing of the removal of existing dwellings take place.

The opening of the Indian Ocean Drive has caused a significant fragmentation of the Management Plan area. Parks and Wildlife has advised however that the new road does provide better access to the southern part of the management area and allowed for improved access for management of the squatter shack areas. Furthermore, the Vegetation and Land Offset Package for impacts to reserves from the alignment of the Lancelin to Cervantes section of the Indian Ocean Drive which was considered and endorsed by the Conservation Commission in 2003, was used to fund the acquisition of an important freehold area which was enclosed within Nambung National park and is now part of the reserve.

Further work is required to determine the accuracy of imagery which indicates that there is a major negative trend in vegetation density for the majority of the Nilgen Nature Reserve. It was not clear from discussions with Parks and Wildlife district staff if changing weather patterns (as observed elsewhere in the state) were an emerging threat to biodiversity and other values of the plan area.

This performance assessment indicates that overall management standards for preserving the principle values of the reserves under this plan are good. The threatening processes have been identified and the principle values are being effectively managed. It was noted however that the management plan strategies generally concentrate on outputs or specific projects, which do not readily enable the Conservation Commission to measure whether the 'outcomes' sought (particularly those related directly to nature conservation) have been achieved. The management plan's focus on 'outputs' relates to the principle values of the plan area which are more generally associated with facilitating recreation and tourism in a manner that is compatible with conservation and other goals.

In general though, the goals and objectives of the Management Plan are generally still pertinent and relevant, and the plan will continue to provide management direction until it is replaced. No significant changes in context have occurred for this plan area and Parks and Wildlife staff have advised that, from an operational perspective, the development of a new plan for the area is not a priority. The results of this performance assessment support that view. The Management Plan was generally well conceived in that it successfully identified the key issues and provided for the implementation of key strategies to manage these issues.

## **1 Background**

The area Management Plan is for the Nambung National Park and Wanagarren, Nilgen and Southern Beekeeper's Nature Reserves. Some brief details from the Management Plan on these areas is provided below:-

## Nambung National Park (NNP)

Nambung is an Indigenous Australian word meaning crooked or winding referring to the Nambung River that drains into the area. Prior to July 1994, it comprised three separate reserves:

- Reserve No. 24522 was gazetted in 1956 as an 'A' class reserve for the purpose of 'National Park and Water'.
- Reserve No. 28393 was gazetted in 1967 as a 'C' class reserve for the purpose of 'Preservation of Natural Formations - Pinnacles'.
- Reserve No. 29149 was gazetted in 1968 as a 'C' class reserve for the purpose of 'National Park'.

In July 1994, Reserve Nos 29149 and 28393 were cancelled and included into Reserve No. 24522. Its gazetted name is Nambung National Park with an area of 18 362 ha. It is an 'A' class reserve with the purpose of 'National Park and Water' and is vested in the Conservation Commission. The Park extends to low water mark (See Map 1).

## Wanagarren Nature Reserve (WNR)

Wanagarren Nature Reserve was named after an abandoned homestead in the area. It comprises Reserve No. 31675 which was gazetted in 1972 as a 'C' class reserve for the purpose of 'Conservation of Flora and Fauna'. It has an area of 11 069 ha and is vested in the Conservation Commission. Its gazetted name is Wanagarren Nature Reserve and it extends to low water mark (see Map 1). The reserve is representative of the coastal heath ecosystem but contains no known rare species or specially protected communities.

## Nilgen Nature Reserve (NNR)

Nilgen Nature Reserve was named after a swamp that was originally named after a well on Location 942. (The well was first noted on lease plan 1897 and has since been filled in). It comprises Reserve No. 31781 which was gazetted in 1973 as a 'C' class reserve for the purpose of 'Conservation of Flora and Fauna'. It has an area of 5 507 ha and is vested in the Conservation Commission.

The reserve's gazetted name is Nilgen Nature Reserve and it extends to low water mark. This reserve's close proximity to Lancelin (and both the off-road vehicle area and defence training area) has resulted in heavy vehicle use causing a proliferation of tracks, and the consequent degradation of the vegetation and dune system along the coast.

## Southern Beekeeper's Nature Reserve (SBNR)

Southern Beekeeper's Nature Reserve comprises Reserve No. 36053 which was gazetted in 1979 as a 'C' class reserve for the purpose of 'Apiculture and Conservation of Flora'. It has an area of 10 841 ha and extends to high water mark. It was an unvested reserve until the proclamation of the *CALM Amendment Act (1991)* which stipulated that any unvested lands which had 'conservation' in their purpose be vested in the NPNCA (now Conservation Commission) as nature reserves and managed by CALM (now Parks and Wildlife).

The Nambung National Park and Wanagarren Nature Reserve were entered into the Register of the National Estate (RNE) prior to the closure of the RNE in 2007 with the following description:-

### Register of the National Estate

#### *Statement of Significance*

*The area is significant for its dune systems, limestone pinnacles and caves associated with the Nambung River. It also has high aesthetic value from its range of landforms, particularly The Pinnacles.*

#### *Description*

##### *Primary nominator:*

*The area consists largely of rolling dunes extending some distance inland from the coast. The vegetation is mainly low heath rich in fabaceae, myrtaceae and acacias. The area contains numerous limestone pinnacles formed by ground water movement of lime within unconsolidated sands. Their shapes are constantly changing through erosion by wind blown sand. The northern end is traversed by the Nambung River which in one area has been blocked by dunes and now flows underground through a cave system. Permanent springs also occur in this Northern area.*

##### *Secondary Nominator:*

*The Pinnacles is the name given to a unique abundance of limestone pillars and tors in the Nambung National Park (28393) on the West Australian coast, south of the township of Cervantes, 270km north of Perth. The area is a popular tourist spot, with well-defined access tracks and surveillance by a Park Ranger. The name is derived from the abundance of limestone pillars and tors, which rise up to 5m above the surrounding sandy plain. There is a wide variety of shapes and, in addition to the robust pillars 30cm-150cm across, delicate filigree rhizolith structures only millimetres thick are developed in discrete narrow zones over small areas.*

*(As detailed in the RNE) The existence of an entry for a place in the RNE does not in itself create a requirement to protect the place under Commonwealth law. Nevertheless, information in the register may continue to be current and may be relevant to statutory*

*decisions about protection.* (Department of the Environment; Australian Government, 2014)

## Term of the Management Plan

In accordance with Section 55 of *Conservation and Land Management Act 1984* (the Act), the term of a management plan is nominally 10 years but the management plan remains in place until a new management plan is gazetted.

For the Nambung National Park, a Management Plan amendment (the Wedge and Grey Master Plan 2000) was prepared to *'provide a framework to guide future planning, development and management of recreation and tourism at Wedge and Grey, so that visitors can enjoy the areas' natural attractions in a sustainable manner'* (Department of Conservation and Land Management, 2000). In essence this plan indicated that the 500 or so recreational squatter shacks occupying Wedge and Grey were to be removed after the expiry of leases on 30 June 2001. In their place, a range of nature based recreation facilities and visitor accommodation types were to be established, and the sites incorporated into Nambung National Park. At the time of publication of this report the squatters' shacks remain. This management issue is discussed under the heading 'Squatter shack removal' below.

## **2 Assessment objectives, scope and criteria**

### **2.1 Assessment objectives**

This assessment aims to measure the extent to which the objectives have been achieved and strategies implemented, the reason for the lack of achievement or implementation, and a summary of information that may affect future management.

### **2.2 Scope and description of work**

The area Management Plan is for the Nambung National Park and Wanagarren, Nilgen and Southern Beekeeper's Nature Reserves.

Assessment criteria through this performance assessment, the Conservation Commission has sought to identify the extent to which the Management Plan objectives have been achieved and strategies implemented. Appendix 1 to this report contains the response from Parks and Wildlife to each of the Management Plan strategies. Further detail has been included in the body of the report on the high priority strategies from the Management Plan and on the key issues identified on page 3 of the Management Plan as follows:-



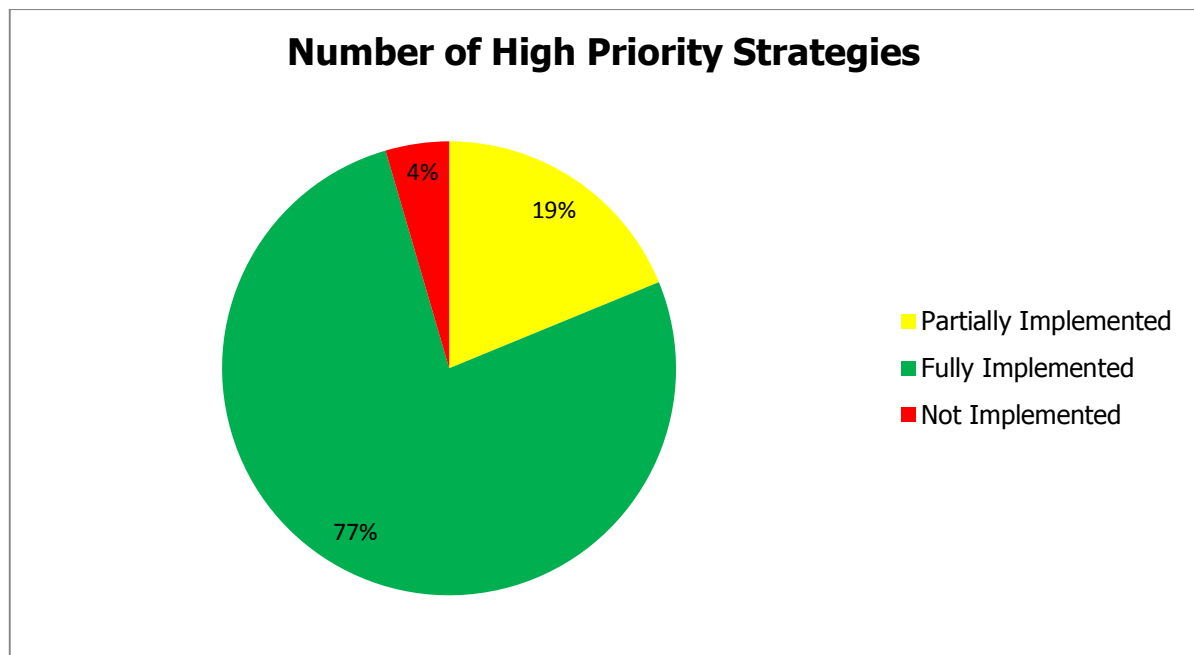
### Key Issues for Future Management

All issues relevant to management of the reserves are considered in this Management Plan, however, the following are considered to be key issues (which are not in order of priority).

- Tenure and purpose
- Fire risk and access for control
- Phytophthora dieback
- Recreation pressure on coastal lands
- Squatter shack removal
- Proposed coastal road connection between Jurien and Lancelin.

## 3 Plan implementation

Appendix 1 to this report contains the responses from Parks and Wildlife to each of the Management Plan strategies. Using the high priority and ongoing strategies listed in the Management Plan, a graphical summary of the level of implementation has been included below, Figure 1.



**Figure 1: Graphical summary of the level of implementation of the high and ongoing strategies from the Management Plan**

A majority of the high and ongoing management strategies (77%) are judged to have been fully implemented across the Management Plan area. However, as noted for other Conservation Commission management plans which were developed prior to the inclusion of performance indicators it was challenging for the assessment team to report on the 'outcomes' of the implementation of these strategies. The management plan strategies concentrate on outputs or specific projects, which do not readily enable the Conservation Commission to measure whether the outcomes sought (particularly those related directly to nature conservation) have been achieved. The management plan's focus on 'outputs' relates to the principle values of the plan area which are more generally associated with facilitating recreation and tourism in a manner that is compatible with conservation and other goals. This topic is further discussed in section 5 - Other observations and future issues.

## **4 Key Issues identified in the plan**

### **4.1 Proposed coastal road connection between Jurien and Lancelin.**

At the time of the publication of the Management Plan, the coastal towns of Cervantes and Jurien Bay were connected to the Brand Highway via long feeder roads with no direct north-south road linking the two towns.

In 2003 a vegetation and land offset package was considered by the Conservation Commission in relation to the then proposed Indian Ocean Drive. The Minutes of the Conservation Commission meeting 17 March 2003 show that members were informed about the proposed alignment of Indian Ocean Drive and the Vegetation and Land Offset Package, and that:-

*... "There will be 223ha of vegetation cleared for the project and 121ha of this will be conservation estate. The Department has negotiated with Main Roads Western Australia (MRWA) for the road alignment to be moved so as not to isolate part of Nilgen Nature Reserve and land with similar values are to be targeted for purchase with the funds from the Land Offset Package. Members agreed that the offset package was a good outcome.*

*It was suggested that MRWA forward to the Commission twelve months of traffic monitoring on the Brand Highway beforehand instead of the six months as stated in the land offset package so that any change in heavy traffic use of that highway was identified.*

*Resolution 38/03: The Commission endorsed the proposed land excisions and Vegetation and Land Offset Package proposed by Main Roads WA for impacts to reserves from the alignment of the Lancelin to Cervantes section of the Indian Ocean Drive.*

With the opening of the Indian Ocean Drive in September 2010, the coastal sections of the plan area are now more accessible to the public. As outlined in the plan:-

*The coast road may become the major north-south highway, and is likely to pass within 6 km of the Pinnacles Desert. Visitor numbers to the Pinnacles are expected to increase substantially and could easily double when the coast road is built*

This has indeed turned out to be a significant increase in visitation to the Nambung National Park recorded in the departments VISTAT (Visitor Information & Statistics) database (see further detail below in the section titles visitor pressure on coastal lands).

Since the opening of the Indian Ocean Drive Parks and Wildlife has advised that the road, while not ideal because of the fragmentation of the management planning area, had allowed better access to the southern part of the management area and allowed for improved access to the squatter shack areas.

## 4.2 Tenure and purpose

Nambung National Park is an 'A' class reserve with the purpose of 'National Park and Water' and is vested in the Conservation Commission. A portion of Nambung National Park is also designated as a Public Drinking Water Source Area (PDWSA). These areas require protection to maintain the quality of raw water used to supply public drinking water schemes. There are three types of PDWSAs: Underground Water Pollution Control Areas (UWPCAs), Catchment Areas and Water Reserves. The 'Cervantes Water Reserve' overlays parts of the Nambung National Park and Beekeepers Nature Reserve. PDWSAs are further classified into one of three management categories referred to as 'priority classification areas' (P1, P2 and P3). Priority classifications are based on the strategic importance of the land or water source, local planning scheme zoning, land tenure and existing approved land uses and activities. Priority 1 (P1) classification areas are defined to ensure that there is no degradation of the water source. P1 areas are declared over land where the provision of the highest quality public drinking water is the prime beneficial land use. P1 areas would typically include land under public ownership, ie. Crown land. P1 areas are managed in accordance with the principle of risk avoidance therefore land development is generally not permitted. The areas of the Cervantes Water Reserve which overlay parts of the Nambung National Park and Southern Beekeepers Nature Reserve area are designated as P1 areas.

The proposed tenure changes outlined in the Management Plan under Tables 1 and 2 have been progressed in part. A full summary for each of the proposed areas has been provided from Parks and Wildlife with an explanation where the relevant actions have not been able to be achieved. The Vegetation and Land Offset Package for impacts to reserves from the alignment of the Lancelin to Cervantes section of the Indian Ocean Drive was used to fund the important acquisition of a freehold area which was enclosed within Nambung National Park. The former freehold area CG 2490 (654 ha) is located in the middle of Nambung National Park and contains tuart woodlands which are not well represented in the other reserves, and the entrance to the underground section of the Nambung River.

*The Nambung River flows into the underground karst system in private property enclaved in the National Park and seeps out along the coastline. This river system has important conservation value for the diversity of habitats it provides in the Park, and for the opportunities it provides for scientific study<sup>1</sup>.*



**Figure 2: Former freehold area now part of Nambung National Park containing Tuart woodlands and the entrance to the underground section of the Nambung River.**

As stated in the Management Plan

*Under their current tenure, many activities taking place in the nature reserves are not consistent with their primary purpose. These include camping, lighting of campfires, and off-road driving which causes a proliferation of tracks and degradation of dune vegetation. These problems are exacerbated by the presence of squatters' shacks at Wedge and Grey<sup>2</sup>.*

<sup>1</sup> Nambung National Park Management Plan 1998-2008 Conservation Commission of Western Australia p16

<sup>2</sup> Nambung National Park Management Plan 1998-2008 Conservation Commission of Western Australia p1

Parks and Wildlife has advised that strategies to deal with incompatible activities taking place in the nature reserves, developed at the time the Management Plan was drafted, (including amending the nature reserves to national park and conservation park status), have not been achieved. However, the presence of a ranger based at Lancelin has enabled better management of these activities and lessened the need for these change in tenure strategies.

Actions 9 and 10 of Table 2 in the Management Plan relate to the incorporation of Reserves 43284 (Grey) and 43283 (Wedge) into Nambung National Park upon removal of the removal of the squatter shacks. This action has also not been achieved and is discussed in the following section.

### 4.3 Squatter shack removal

As indicated in the 'Background' section above, a management plan amendment (the Wedge and Grey Master Plan 2000) aimed to 'provide a framework to guide future planning, development and management of recreation and tourism at Wedge and Grey, so that visitors can enjoy the areas' natural attractions in a sustainable manner' (Department of Conservation and Land Management, 2000). In essence, this plan indicated that the 500 or so recreational squatter shacks occupying Wedge and Grey were to be removed after the expiry of leases on 30 June 2001. In their place, a range of nature based recreation facilities and visitor accommodation types were to be established, and the sites incorporated into Nambung National Park. At the time of publication of this report, the squatters' shacks remain. The state's squatter policy was reiterated in the Parliamentary Inquiry into shack sites. An extract of the covering letter from that inquiry has been included below:-

*The Squatter Policy is consistent with the objectives of a number of State Planning Policies. Existing Western Australian Planning Commission strategic planning documents reflect the intention of the endorsed squatter policy and the removal of shacks in accordance with the policy has largely been achieved, with the exception of land managed by the Department of Conservation and Land Management (now Parks and Wildlife). The location of the remaining shacks conflicts with a number of State Planning Policies in relation to the provision of services, location relative to existing settlements, coastal setbacks and protection of environmental and natural resource values. Their location is not consistent with the provision of recreational and coastal facilities for the wider population in a planned, orderly and lawful way. To ensure well planned and connected communities and for reasons of equity, the objectives of the endorsed squatter policy should continue to be applied to the few settlements that remain on Crown land.<sup>3</sup>*

Professional fisher shacks are a recognised exemption from the Squatter Policy and generally are permitted to remain. (Department of Environment and Conservation, 2010). Parks and Wildlife has maintained a leasing arrangement for the shacks at Wedge and Grey while the squatter shacks remain in place. The Management Plan details that, 'The squatter areas at Grey and Wedge Point place burdens on public services and infrastructure in the area. The growth of these squatter areas has led to unacceptable environmental and social impacts'.<sup>4</sup>

It was discussed during this assessment with the district that the most recent removal of 170 shacks from Jurien Bay in 2001 (by the local shire) enabled development of the Sandy Cape recreation area which provides basic amenities for camping, caravanning and day visitors.

<sup>3</sup> Submission on Inquiry into Shack Sites in Western Australia – covering letter (by XXX???) date in 2010

<sup>4</sup> Nambung National Park Management Plan 1998-2008 *Conservation Commission of Western Australia* p48



**Figure 3: Squatter's toilet at Grey settlement**

The shacks are not on land vested in the Conservation Commission but with the Conservation and Land Management Executive Body, or in other words the managing agency Parks and Wildlife.

**Table 1: Estimated shack numbers by location**

Shack location	Vesting	Estimated number of shacks	Managing agency
Wedge	Conservation and Land Management Executive Body	320	Parks and Wildlife
Grey	Conservation and Land Management Executive Body	170	Parks and Wildlife



With the approval of both the then Minister for Lands and Minister for Environment, the Governor placed these unvested reserves with the the Department of Conservation and Land Management (Parks and Wildlife) on 14 February 1995 under section 33(2) of the Act. At this time the reserves became subject to the lease and enforcement provisions of the Act. On 25 August 1995, the Executive Director of the then Department of Conservation and Land Management was granted powers and duties under the then Land Act 1933, through an instrument of delegation, to exercise powers and duties for offences on public lands, removal of unauthorised structures from public lands, and the power to extend the time limit for removal of structures. (Department of Environment and Conservation, 2010)

Leases have been granted to shack occupiers at Wedge and Grey on short term renewals while negotiations on the timing of the removal of existing dwellings take place.

After the Government's Squatter Shack Policy is implemented and the squatter settlements removed, the Management Plan outlines that these areas would then be incorporated into the Nambung National Park with potential for, *'multifaceted developments which could include a range of accommodation, food services, day use activities, fishing excursions and other recreational tours and commercial pursuits'*.

#### 4.4 Recreation pressure on coastal lands

The Management Plan indicates that, 'The distribution of most alien taxa is influenced by their proximity to squatters' areas and Lancelin and Cervantes<sup>5</sup>. At the time when the management plan was written, strategies to deal with the incompatible activities which were taking place in the nature reserves (including amending the nature reserves to national park and conservation park status) have not been achieved. However, the presence of a ranger based at Lancelin and the Indian Ocean Drive providing better access to the southern part of the management area and for management of the squatter shack areas, has enabled better management of these activities and lessened the need for these change in tenure strategies.

<sup>5</sup> Nambung National Park Management Plan 1998-2008 *Conservation Commission of Western Australia* p30



**Figure 4: Vehicle activity in the Wanagarren Nature Reserve adjacent to the Wedge settlement**

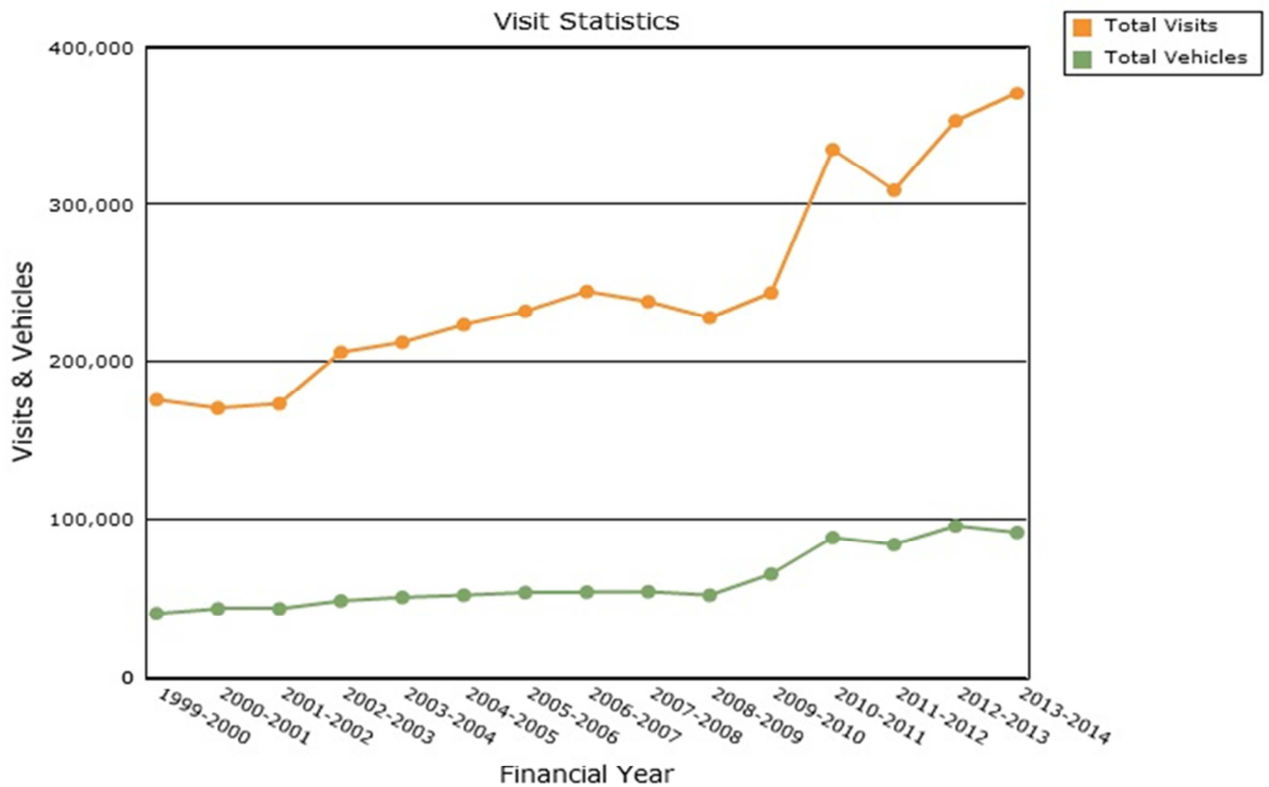
As foreshadowed in the Management Plan, there has been a significant increase in visitation to the Nambung National Park recorded in the Parks and Wildlife VISTAT database (see Figure 3). Management direction for the increase in visitation is foreshadowed in the Management Plan as follows:-

This level of increased visitation may:

- place substantial pressures on the geological formations;
- have a significant impact on the visitors' experience (congestion is already a concern at peak times);
- require a major redevelopment of facilities including roads, carparks, toilets and interpretation<sup>6</sup>.

<sup>6</sup> Nambung National Park Management Plan 1998-2008 *Conservation Commission of Western Australia* p35

The increase in visitation from the opening of the Indian Ocean Drive in September 2010 is reflected in the graph below.



**Figure 5: Nambung visitor statistics from the DPaW VISTAT database**

A major redevelopment of the recreation facilities at the Pinnacles (the Pinnacles Desert Discovery Area) was opened in November 2008 followed by the major redevelopment at Hangover Bay in 2012. A viewing boardwalk and 1.5km walk trail has also been constructed around the stromatolites (threatened ecological community) at Lake Thetis. Parks and Wildlife did not indicate any increased impacts on the geological formations at the Pinnacles with the redevelopments seemingly providing a solution to the problems of visitor congestion. Foot access has been improved in the Pinnacles Desert area by providing foot paths and defined trails. Pedestrian access has been separated from vehicular traffic.





**Figure 6: Hangover Bay recreation area in 2009**



**Figure 7: Hangover Bay recreation area in 2012**



From the site visits undertaken during this assessment, it was apparent that visitors and vehicles were well controlled and signage was excellent in the high visitation areas of Management Plan area.



**Figure 8 Access ramp at Lake Thetis**

#### 4.5 *Phytophthora* dieback

The Management Plan indicates the following in relation to *Phytophthora* dieback:-

*- The area around the Nambung River has a high dieback hazard rating. The soils are a mixture of yellow and grey sands of the Bassendean System, and the vegetation is comprised of a low Banksia woodland with a significant component of susceptible species (see Map 6). There are already infections in this drainage system and the impact associated with periodic flooding events has been significant in the past. Any operations in this area need to be planned and executed with the most up to date hygiene methods possible. Uncontrolled access to this area is deemed inappropriate<sup>7</sup>.*

Parks and Wildlife has indicated that:

- Moora District hygiene management guidelines are adhered to with both the Jurien and Cervantes work centres having wash down facilities. Hygiene infrastructure audit conducted in 2012, detailing NNP's dieback sign infrastructure.
- No formal monitoring occurs, however sites are informally monitored during routine patrols in areas covered by the Management Plan.
- 'Scope of Work' statements involving contractors working within the district conservation estate are provided with advice on hygiene management as a matter of course, along with specific requirements, e.g. all machinery and vehicles coming onto conservation estate are required to be clean on entry and are inspected by a departmental officer prior to starting work. Hygiene information sheets are provided to researchers, exploration operations and the public.

Relevant documentation was cited during the interviews for this assessment.

#### 4.6 Fire risk and access for control

The Management Plan details the following in relation to the management of fire:-

*Prescriptions will be prepared for all proposed burns in accordance with CALM's Policy No. 19 (Fire Management), No. 9 (Conservation of Threatened Flora in the Wild) and No. 33 (Conservation of Endangered and Specially Protected Fauna in the Wild).*

*This will also involve the completion of a pre-burn checklist which takes into consideration all potential environmental impacts, especially the need to control dieback, and minimise impacts on landscape and visual resources<sup>8</sup>.*

<sup>7</sup> Nambung National Park Management Plan 1998-2008 Conservation Commission of Western Australia p28

<sup>8</sup> Nambung National Park Management Plan 1998-2008 Conservation Commission of Western Australia - page 25

The Indicative Burn program for the plan area was provided by the district and appeared consistent with the fire management zoning scheme outlined in the plan. A recent prescribed burn and burn prescription was viewed during the assessment in kwongan heath shrublands – (Southern Beekeeper’s Nature Reserve) adjacent to the Cervantes town site. Once again the prescribed burning activities were consistent with the fire management zoning scheme outlined in the plan. However, large wildfires in the northern section of the plan area in 2003 and the southern areas of the planning area in 2011 were not able to be contained and resulted burning of no plan burn areas. Parks and Wildlife has indicated the following in relation to fire management:-

- The majority of the northern half of NNP and all of SBNR was burnt by bushfire in 2003. The majority of NNR was burnt during a bushfire in 2011 and a buffer burn planned for that area was postponed. In summary the occurrence of large bushfire events over the plan area has made it impractical to follow the zoning system.
- Bushfires and prescribed burns added to the district records and databases annually as a matter of course. As above, these events are taken into account when burn planning. Approval granted by the Director of Regional and Fire Management Services for burns to occur.



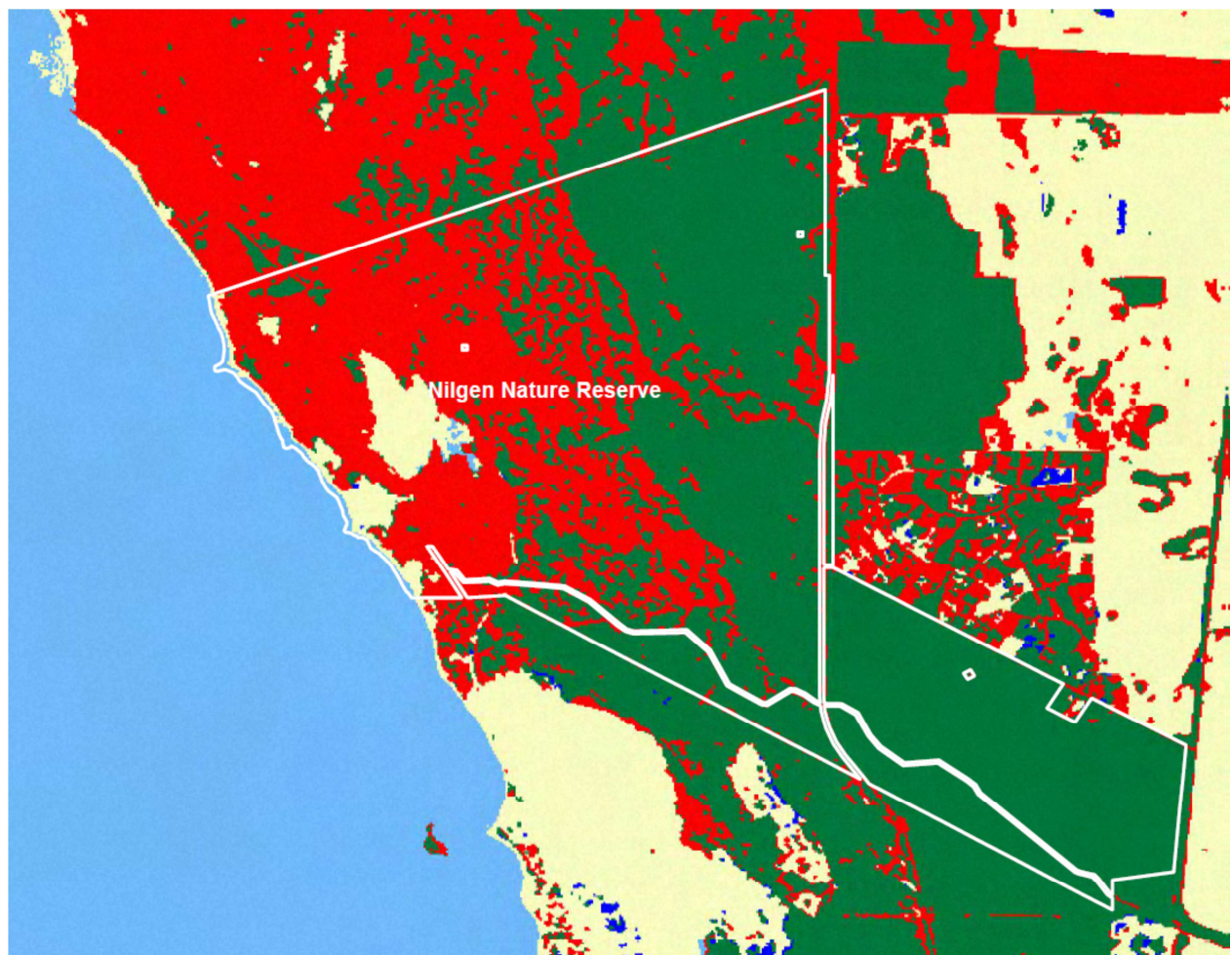
**Figure 9: Edge of prescribed burning in kwongan heath shrublands - Southern Beekeepers Nature Reserve**



## 5 Other observations and future issues

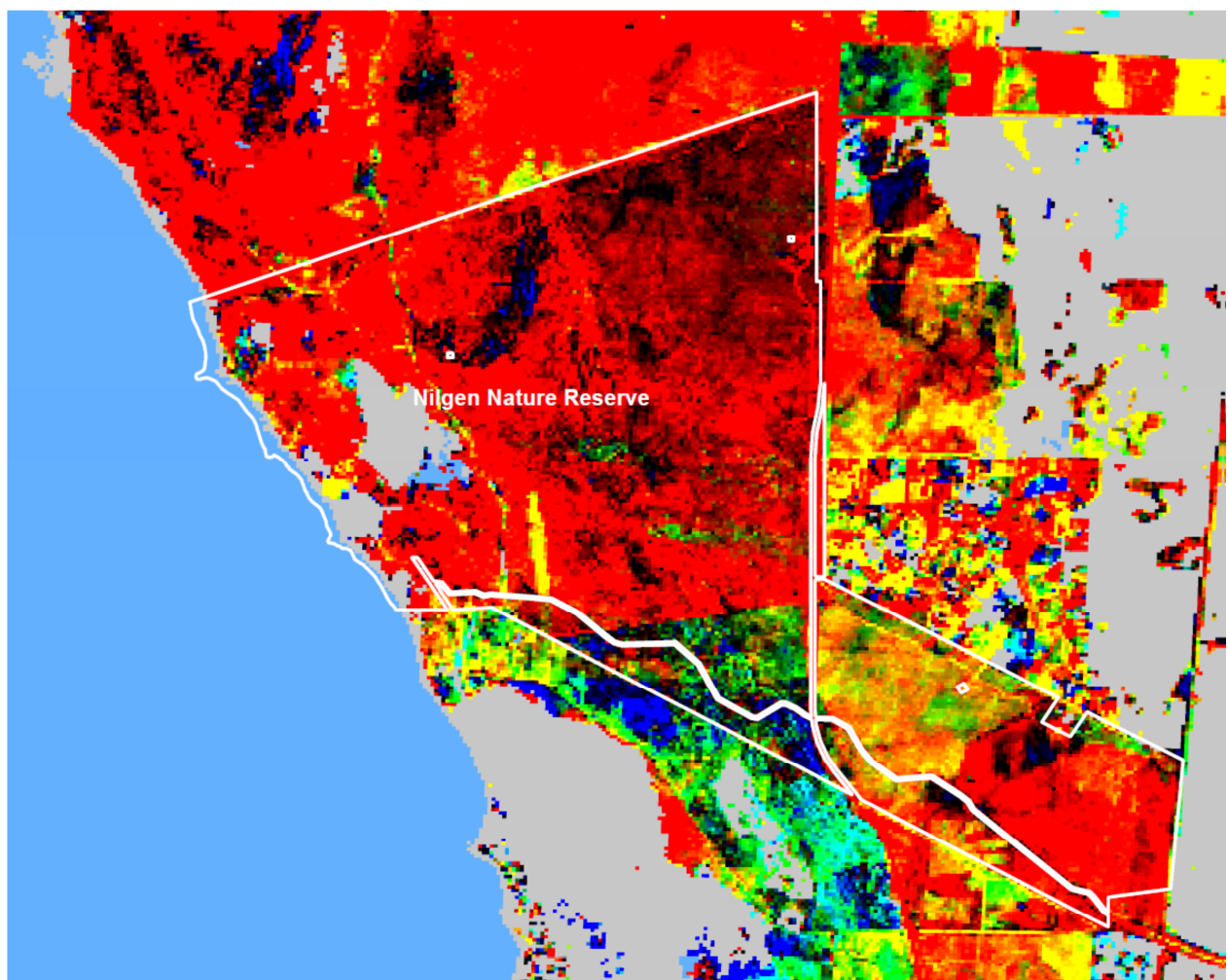
### Vegetation Change

The area covered by this Management Plan also lies within the Land Monitor project area which was originally aimed to systematically monitor salt-affected land and remnant vegetation change over the agricultural area of south west of Western Australia. The Vegetation change product in the Land Monitor suite is particularly useful for mapping and detecting changes in the extent and condition of naturally vegetated areas. The bands can be displayed to produce maps of change in perennial vegetation extent over time in the instance provided in this report, the time intervals are 1990-2012.'



**Figure 10: Land Monitor imagery depicting vegetation change in Nilgen Nature Reserve comparing images from 1990 and 2012. Red indicates vegetation loss, green stable and blue is a vegetation gain.**

Figure 9 shows vegetation change between the 1990 image and the 2012 image, where the red area indicates vegetation loss. One limitation of this information is that it only depicts the changes between these two particular images, to check for a pattern in the fluctuations of vegetation cover, the vegetation trend product for this area is also available. The 'Vegetation Trend' product is a multi-channel image file that contains summaries of change in reflectance of vegetation over time. It is produced from seventeen dates of calibrated summer Landsat TM data from 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012.



**Figure 11: Land Monitor imagery depicting vegetation trends in Nilgen Nature Reserve, where:- Blue: Major positive trend in vegetation density over the entire period; Green: Positive trend; Yellow: No major change; Orange: Negative trend; Red: Major negative trend.**

The classes have been determined by numeric changes in the reflectance index and can be interpreted as follows - The imagery indicates that there is a major negative trend in vegetation density over the entire period for the majority of the NNR. The same imagery indicates no major change for the vegetation density of the remainder of the management plan area. Without ground interpretation and further analysis these results need to be interpreted tentatively. If verified, changes in vegetation density of this magnitude would likely have impacted on the biodiversity values of this nature reserve.

Declining rainfall and consequent reductions in groundwater levels and streamflows have been observed in the south-west of Western Australia since the 1970s. It was not clear from discussions with Parks and Wildlife district staff if weather patterns were changing in the management plan area. However as observed elsewhere in the state, the threats to biodiversity and other values from a changing climate may require a management response in the near future.

The lack of readily available information in relation to this issue reinforces that this management plan does not focus on reporting of the conservation of nature 'outcomes'. The management plan's focus on 'outputs' relates to the principle values of the plan area which are more generally associated with facilitating recreation and tourism in a manner that is compatible with conservation and other goals. The management plan also does not include performance indicators which used in more recent Conservation Commission planning documents.

## Mining

There is also the potential for future mining in the Management Plan area, with a number of mining tenements in the locality. Of particular concern are recent efforts to expand exploration for shale gas within the Management Plan area.

## 6 Assessment conclusions

The overall management standards for preserving the principle values of the reserves under this Management Plan are good. The threatening processes have been identified and the principle values are being effectively managed. The Management Plan was generally well conceived in that it successfully identified the key issues and provided for the implementation of key strategies to manage these issues. It was noted that the lack of readily available information in relation to the outcomes of naturally occurring fire and climate change reinforces that this plan does not focus on reporting of the conservation of nature 'outcomes'. The management plan's focus on 'outputs' relates to the principle values of the plan area which are more generally associated with facilitating recreation and tourism in a manner that is compatible with conservation and other goals. However, the goals and objectives of the Management Plan are generally still pertinent and relevant, and the plan will continue to provide management direction until it is replaced. No significant changes in context have occurred for this plan area and Parks and Wildlife advises that from its perspective the development of a new plan for the area is not a priority. The results of this performance assessment support that view.

## 7 Works Cited

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## 8 Appendix 1 – DPaW response to strategies

REVIEW OF IMPLEMENTATION OF NAMBUING NATIONAL PARK MANAGEMENT PLAN – DEPARTMENT OF PARKS AND WILDLIFE (DPaW) RESPONSE			
Section	Strategy	Priority	Implemented; Partially Implemented; Not implemented; No longer relevant
3.1	1	High	See Appendix 2
3.2	1	High	See Appendix 2
	2	High	A complex arrangement for land exchanges with the Dandaragan Shire and Ardross Estates were negotiated and agreed with by Council and the then National Parks and Nature Conservation Authority (NPNCA). These agreements in principle still stand, however there has been little implementation due to complexities of Native Title and opposition from DMP.
	3	Ongoing	Some areas have been assessed and declined due to lack of conservation value, while others have been purchased or acquired – although not necessarily adjoining the plan area. Awaiting advice from PPB.
	4	Ongoing	Routinely occurs via fire brigade meetings. Coordination and cooperation exists regarding feral animal control.
4	1	High	Generally the reserves have been managed in accordance with the zoning scheme (see Strategy 2).
	2	Ongoing	The review identified needs outside the existing zones e.g. Nilgen Lookout and there are a couple of recreation zones that have not been developed, e.g. The Springs and Crescent Dunes.
	3	Ongoing	Additions have not been formally zoned – historic use has prevailed.
5	1	Ongoing	This occurs – firebreaks have been re-routed to avoid caves, Telstra proposals diverted due to karst features, Indian Ocean Drive (IOD) required sub surface surveys, fine tuning of IOD alignment was influenced etc.
	2	Ongoing	Interpretive information provided at the Pinnacles Desert Discovery Centre (PDD), caving groups facilitated.
	3	Medium	A detailed inventory has not been prepared due to reluctance of caving groups to disclose information. This has improved in recent times due to a more rigorous application process to gain lawful authority to enter caves requiring locations to be provided. A classification system has not been developed, however access policies exist.
	4	Ongoing	This occurs as required, e.g. re-routing of Strathmore Track occurred following advice from caving groups.
6	1	Ongoing	A Water Resource Plan was developed for parts of the plan area. DPaW participated in a total water use planning process that included part of the plan area.
	2	Ongoing	During the life of the plan there has been formal and informal involvement through NRM groups and processes.
	3	High	Ongoing.
	4	Medium	Information on wetlands is provided at Lake Thetis.
	5	Ongoing	This is ongoing, e.g. planning for the Lake Thetis Redevelopment Project included consideration of water



			management issues. Bores exist at this location both east and west of the lake, which are monitored by the Department of Water.
	6	Ongoing	Has occurred at Lake Thetis via boardwalks and pedestrian control. Management of this area is ongoing.
7	1	Low	Has not been a priority due to the relatively low occurrence of rare species in the plan area.
	2	Ongoing	Interpretation material at the PDD, Lake Thetis and Hangover Bay. Bush Book – flora of the Midwest.
	3	Ongoing	Management practices minimise the disturbance of vegetation and flora, e.g. site developments at Hangover Bay, construction of PDD involved careful design to ensure minimal disturbance and impact.
	4	High	DPaW is not aware of any species that are more vulnerable to fire than others in the plan area. Natural occurrence of fire has meant that DPaW has had little influence on outcomes anyway.
	5	Ongoing	Surveys are conducted prior to works to determine presence of priority flora.
8	1	High	Surveys have occurred via Western Shield program and other external organisations such as Main Roads Western Australia (MRWA) during road planning.
	2	High	Natural fire occurrences have meant this has not been an option for much of the plan area.
	3	Medium	MRWA was encouraged/required to carry out stygofauna surveys along the alignment of IOD.
	4	Medium	This occurs at the PDD and some publications.
9	1	Ongoing	Liaison has occurred and is ongoing with Yued representatives. Archeological and ethnographic surveys occur as part of the site development process, considered in impact evaluation checklists and ground disturbance operations are supervised by traditional owners.
	2	Medium	Cross cultural and Aboriginal significant site awareness was provided to staff by Department of Aboriginal Affairs and DPaW Indigenous Heritage unit staff. Customary activities legislation introduced strengthened ability for Aboriginal people to use conservation estate for traditional purposes.
	3	Ongoing	These factors are considered in impact evaluation processes and site design.
	4	Ongoing	This occurs at the PDD where displays incorporate heritage information.
	5	Low	DPaW was involved with a steering group that investigated the feasibility of a trail. The idea has not progressed.
10	1	Ongoing	The policy is out of date, however where relevant it has been implemented.
	2	Ongoing	Yes, these guidelines are followed as general principles in recreation site planning. Landscape values are considered during site development such as the PDD, Hangover Bay and influence over other agencies such as MRWA during the planning and design of IOD.
	3	Low	Ongoing, but limited opportunities. It is considered when providing feedback to town plan proposals etc., e.g. Ardross Estates.
11	1	High	The majority of the northern half of NNP and all of SBNR was burnt by bushfire in 2003. The majority of NNR was burnt during a bushfire in 2011 and a buffer burn planned for that area was postponed. In summary the occurrence of large bushfire events over the plan area has made it impractical to follow the zoning system.
11	2	High	Bushfires and prescribed burns added to the district records and databases annually as a matter of course.

			HighAs above, these events are taken into account when burn planning. Approval granted by the Director of Regional and Fire Management Services for burns to occur.
11	3	High	District tracks are maintained as part of fire management expenditure including contract grading, weed spraying and rock grinding. Fire access tracks and breaks within all district reserves are assessed generally on a 5 yearly basis with between 500 and 700km of tracks maintained each year. Appropriate hygiene measures are adhered to and the majority of work is carried out in dry weather.
11	4	Medium	There are 21 water points maintained across the district. Some of these are provided adjacent to the plan area.
11	5	High	Gas BBQs are available at Kangaroo Point and Hangover Bay. Private gas BBQs are permitted. Open fires are not permitted anywhere in the district's reserves, except for permitted Aboriginal customary activities (no formal local area arrangements in place).
11	6	High	Bushfires are responded to and suppressed as per departmental requirements and the Moora District Incident Preparation and Response Plan (IPRP). Control measures failed to contain several large bushfires to management zones due to the scale and/or intensity on at least 2 occasions.
11	7	Ongoing	Volumes 1 and 2 of the Moora District IPRP (superseded the Moora District Fire Control Working Plan) used – Volume 2 updated each year. Fire suppression arrangements are in line with departmental procedures.
11	8	Ongoing	District fire coordinator attends local shire Bush Fire Brigade meetings biannually – which approximates 12 per year; and also the annual Bush Fire Advisory Committee meeting.
11	9	Medium	Annual 'Blessing of the Fleet' festival held in Jurien Bay generally provides an opportunity for information about bushfires and fire management as delivered by DPaW. Press releases often follow bushfire events or alerts for prescribed burn in local papers.
11	10	Medium	Observations of fire behaviour are sometimes recorded, however not necessarily in the plan area.
11	11	High	Research undertaken in the Moora District that is relevant to the plan area includes "The Effect of Short Inter-fire Intervals on the Biodiverse, Fire-prone and Mediterranean-type Shrublands of the Eneabba Sandplain" (Vanessa Westcott 2010) and "The Effects of Increased Fire Frequency on Calcareous Shrubland Communities of the Geraldton Sandplain Region" (Janneke Christina Lade 2010).
12	1	Ongoing	Moora District hygiene management guidelines are adhered to with both the Jurien and Cervantes work centres having wash down facilities. Hygiene infrastructure audit conducted in 2012 detailing NNP's dieback sign infrastructure.
12	2	Ongoing	No formal monitoring occurs, however sites are informally monitored during routine patrols in areas covered by management plan.
12	3	High	Moora District staff will note any suspected infections as a matter of course when working in the field. Much of the tenure covered by the management plan is labelled 'uninterpretable' due to lack of indicator species, as described in the Project Dieback Strategic Atlas for the Northern Agricultural Region, produced by the then Department of Environment and Conservation's (DEC) Forest Management Branch (June 2008).

12	4	High	In addition to signage placed throughout the district, information is provided to the general public via the annual 'Blessing of the Fleet' festival held in Jurien Bay. DPaW provides a marquee at this event, showcasing work that the department does and information such as dieback posters and brochures. Staff are also available for people to speak to throughout the event. Researchers and others are provided with a copy of the district dieback information sheet when the opportunity arises.
12	5	High	Control and containment strategies are implemented through standard hygiene measure. No eradication has been attempted.
12	6	High	Dieback training equivalent to the "Green Card" training provided on the south coast was provided to district staff. There is currently a member of staff undertaking a post graduate course on detecting and mapping canker.
12	7	Ongoing	'Scope of Work' statements involving contractors working within the district conservation estate are provided with advice on hygiene management as a matter of course, along with specific requirements, e.g. all machinery and vehicles coming onto conservation estate are required to be clean on entry and are inspected by a departmental officer prior to starting work. Hygiene information sheets are provided to researchers, exploration operations and the public.
12	8	High	Some tracks are sign posted to restrict access, however gating is difficult and ineffective due to nature of vegetation and land form.
13	1	Medium	Weed database held within the district office, along with separate database in the Cervantes work centre, focused on the district's national parks. An aerial goat eradication program has been conducted in 2012 and 2013, which includes SBNR. This program is likely to continue, however it will not be conducted in 2014.
13	2	High	Planning and implementation of weed management strategies occurred with MRWA as part of the IOD project. Liaison with Ardross Estates (neighbour to SBNR) resulted in permission to destroy goats on their property using aerial control measures during the larger DPaW operation. Support was given to the West Midlands Group to carry out hand baiting in conjunction with the Western Shield 'Nambung Cell', on adjacent private properties.
14	1	High	Coastal Assessment and Restoration (CAR) Project carried out 2006 – 2009. A joint project between the Northern Agricultural Catchments Council (NACC) and the then DEC. The project included the rationalisation and rehabilitation of over 30 recreation sites within NNP and Wanagarren and Nilgen nature reserves. The Lake Thetis Redevelopment Project was also part of this project, which included the rehabilitation of 11ha of adjacent bushland. This project is ongoing with an annual program to monitor and remove the weed <i>Juncus acutus</i> (spiny rush) from the area.
16	1	Ongoing	Site development plans are produced in conjunction with the department's Recreation and Landscape Unit prior to works being undertaken, e.g. PDD, Nilgen Lookout, Hangover Bay and Lake Thetis.
16	2	Ongoing	Projects are developed strategically to complement and maintain the suite of recreation sites across the region. Recreational development priorities are identified each year with capital request applications put forward by districts and vetted by the Regional Leader for Parks and Visitor Services.



16	3	Medium	Staff at the PDD, district and Cervantes work centre offices regularly receive enquiries about other areas within the district not managed by DPaW. This information is freely given as part of the overall experience in visiting the area. Advertising is apparent at the PDD complex advertising the Coral Coast, which includes estate not managed by the department.
16	4	Ongoing	Shires were approached and informed of the work proposed for the CAR Project, given a presentation on the subject and opportunity for comment – this was especially important as some of the work occurred on shire lands, e.g. North Head near Jurien Bay. Prior to the development of the PDD, district management presented the project to the Cervantes Chamber of Commerce, fielding questions and concerns regarding the proposal. Other management authorities are liaised with regularly concerning works that occur on DPaW lands, e.g. Telstra's Optic Fibre installation adjacent to NNP. Staff have participated on broader consultation groups associated with the provision of facilities associated with IOD and a proposal for a heritage trail along the old stock route.
16	5	Ongoing	Signage for three parks is located at the shire-managed Sandy Cape Recreation Reserve, providing information about Nambung and Lesueur national parks plus Stockyard Gully Reserve. Likewise Jurien Bay Marine Park signage is located in a public recreation area (Dobbyn Park) also managed by the Shire of Dandaragan. Park staff also work closely with the Western Australia Police (WAPOL) to manage Wedge Reserve (within WNR) through long weekends and other busy periods such as Christmas and Easter. Consultation also occurs with Tourism WA in relation to promotion of appropriate use.
16	6	High	Much of the PVS output for the district is directed at maintaining the iconic Pinnacles Desert to ensure its protection not only for DPaW values but for the local community as a whole – a lot of business generated for the area is a result of visitors coming to see this attraction. The park is patrolled and maintained on a daily basis along with the PDD which is manned 364 days per year. Other recreation sites relevant to the management plan include Hangover Bay, Kangaroo Point, Lake Thetis, Wedge Island Reserve, Molah Hill Lookout, Nilgen Lookout, Wedge Lookout and Grey – most of which are inspected on a daily basis. Opportunities to redevelop individual sites such as Kangaroo Point, Wedge and Grey are planned for in the Midwest Regional PVS Plan 2011.
16	7	High	Design guidelines dictate development that maximises the presentation of the natural assets of an area while maintaining efficient access and minimal impact objectives. These guidelines were upheld in the development of the PDD, Lake Thetis and Hangover Bay. VISTAT statistics are scrutinised during the development process, along with a scheduled consultative period prior to works beginning.
16	8	High	The PDD was developed with the expectation that numbers of visitors to the area would increase with the opening of IOD – this was reflected in an approximate 20% increase in visitation in comparison from 07/08 to 12/13. MRWA traffic counter data were collected on the opening of IOD to assess the impacts to enable a response to changes in pressure.
16	9	High	This occurred with the PDD as an outcome.
17	1	High	Access was rationalised in NNP, WNR and NNR as part of the NACC funded CAR Project hosted by the

			then DEC. Many tracks were closed and rehabilitated, particularly along the popular stretch of coastline between Grey and Wedge (Old Grey Rd). Old access routes were closed and rehabilitated once their need was replaced with the IOD construction, e.g. Grey access road.
17	2	High	Signage is displayed at both ends of Strathmore Rd in NNP, prohibiting access to prevent the introduction of Dieback. Access points to tracks are purposefully kept hard to find to minimise access onto Management Access Only tracks as gates are ineffective due to vegetation type and land form.
17	3	High	All tracks leading off IOD into NNP (apart from Pinnacles Drive and Lake Thetis access track off Hansen Bay Rd) are marked Management Access Only.
17	4	High	Future scenarios for visitor access into the Pinnacles Desert are being considered as part of the draft PDD Business Plan. A proposed walk trail (White Desert Trail) is also being considered by the district as an addition to the recreational experiences available in the park. A study was undertaken as part of the consultancy to determine the appropriate location of the PDD to test the feasibility of alternative access (shuttle bus) into the Pinnacles Desert.
17	5	Medium	The Pinnacles access road was sealed prior to the PDD construction, however this occurred as part of the overall facilities review for the park. Recent road works completed upgrading the road shoulders along Pinnacles Drive. Funding has been requested to reseal the length of the road during 2014/15. Public access tracks such as the Pinnacles Loop Drive and access tracks into Kangaroo Point and Lake Thetis are generally graded on an annual basis.
17	6	High	Vehicle free beaches exist as detailed in the management plan and these are mostly achieved by natural barriers such as rocky headlands. These generally work well except for unusual weather or tide conditions.
17	7	High	Speed limits are provided at main access tracks/roads such as Pinnacles Drive and the Wedge and Grey squatter shack areas. Vehicles are restricted to size (and trailers) for access into the Pinnacles Desert – this is managed from the entry gate.
17	8	High	The Pinnacles Drive was sealed. Access is maintained to a safe level and upgraded as necessary and as funds permit.
17	9	High	IOD was completed in 2009, including spur roads into Wedge and Grey and Hangover Bay, plus new intersections for Pinnacles Drive and Kangaroo Point.
17	10	High	MRWA approached the then DEC for input into the interpretive signage located at current road-side stops along IOD. Attendances at multi-agency meetings are ongoing, e.g. attended with MRWA along with the Shire of Dandaragan and the Department of Planning regarding Planning's proposal to install a toilet along IOD. The district will be liaising with MRWA in the near future regarding possible strategies to improve road safety at the Pinnacles Drive/IOD intersection.
17	11	High	DPaW had extensive influence over the preparation of ministerial conditions for the construction of IOD. Many impact management plans were required to be developed to DPaW standard, e.g. drainage, dieback.
18	1	High	Site development plans are produced as a standard for all new developments, through the Recreation and Landscape Unit. Recreation areas are maintained daily, weekly, monthly or annually, depending on level of

			use, e.g. NNP recreation sites are maintained on a daily basis, whereas NNR recreation sites (e.g. Nilgen Lookout) are inspected once per week. Proposals for activities are assessed against Policy Statement 18 to assess their degree of pre-determined acceptability.
18	2	High	The Pinnacles Desert is inspected daily, sometimes several times per day, and impacts from visitors are minimised due to this attention. Signage is maintained to a high standard and reviewed as to effectiveness as a matter of course. The interpretive hall at the PDD provides detailed information about the Pinnacles and rangers are available for the general public to speak with when in the park. All proposals for group activities are assessed in line with Policy Statement 18 – post activities assessments occur and actions are taken to address shortfalls (e.g. Hash House Harriers visit).
18	3	High	Alternative access strategies were examined as part of the study undertaken to determine the best location for the PDD. This included a shuttle bus strategy, however this was determined to be unviable. The pedestrian access was modified as part of the PDD project – primarily to separate pedestrian traffic from vehicular and to encourage more the pedestrian experience. The PDD was completed and opened in 2008, providing a world class interpretive centre for visitors.
18	4	High	The redevelopment of the Pinnacles Desert Recreation Site included the construction of the PDD, new toilets, car parking, interpretation and walk trails. These were all constructed using 'access for all' principles. The Lake Thetis redevelopment incorporated "access for all" principles including a boardwalk and raised deck to the edge of the lake. The Hangover Bay redevelopment included construction of three day use shelters, BBQs, interpretation, walk trails, sealed car parking and a new toilet block. 'Access for all' principles were employed. Molah Hill Lookout, Nilgen Lookout and other visitor stop sites associated with IOD were all planned and constructed using 'access for all' principles.
18	5	Ongoing	NNP visitor numbers are monitored by two traffic counters located within the park and data are uploaded into VISTAT. A pedestrian counter is installed at the PDD to collect visitor numbers entering the centre and the toilet block. Visitor data are collected by gatekeepers as people enter the Pinnacles facility and recorded against the NAMSTAT program. These data are used for monitoring visitor trends and planning for site development.
19	1	Ongoing	Permitted recreational activity is assessed by the district to ensure an area is not degraded and its conservation value is not reduced. These activities are assessed against Policy Statement 18 for compatibility to departmental objectives.
	2	Ongoing	Intensity of activities (if they have been deemed acceptable) is managed by providing alternatives to share the load and/or by improving facilities in popular areas.
19.1	1	High	Examples of the opportunities to provide natural feature appreciation include the Pinnacles Desert (limestone formations), Hangover Bay (marine park/beach, fishing and surfing activities), Kangaroo Point (wildlife appreciation and fishing) and Lake Thetis (stromatolites, bird viewing).

19.2	1	Medium	Foot access has been improved in the Pinnacles Desert area by providing foot paths and defined trails. Pedestrian access has been separated from vehicular traffic. A board walk and associated loop trail has been constructed around Lake Thetis. The wider network of tracks in the parks and reserves are open for bushwalking. Molah Hill Lookout in SBNR and Nilgen Lookout in NNR both provide disabled access to high vantage points via sealed concrete pathways. Walk trail network at Hangover Bay has been upgraded.
	2	High	Other than cave access, foot access has not been restricted or deemed necessary in any areas of the park and reserves.
19.2	3	Low	Rangers regularly speak to bushwalkers using the various trails and have received positive feedback through personal communication. It would appear that needs are met, however there are proposals for further trail development. There is no evidence of environmental damage.
	4	Low	NNR provides a guided flora walk along a 1.2km limestone loop walk trail which includes numerous flora plinths describing the vegetation. Molah Hill Lookout walk trail has numerous interpretation panels leading up to the lookout. The PDD has a major role in providing interpretation and information for NNP visitors. In addition rangers conduct guided walks through the Pinnacles Desert for school groups, commercial film projects (documentaries) and the general public on a request basis.
	5	Low	Walk trail information is provided to visitors via trail head signage at the beginning of the Desert View Walk Trail in the Pinnacles area. Broader information regarding longer walking opportunities is provided by direct staff contact.
19.3	1	High	The Hangover Bay recreational site has been redeveloped to include three large picnic shelters with 8 picnic tables spread across the site. Five new BBQ stations have also been installed. The Pinnacles Desert Lookout has been renovated and includes picnic seating. The Lake Thetis recreational site has two new picnic tables installed allowing for this activity. The Molah Hill Lookout has a picnic table. Nilgen Lookout has two large picnic shelters and Kangaroo Point provides a sheltered picnic table with a gas BBQ.
	2	High	Wood fires are not permitted in any of the parks and reserves in the plan area. No fire signage has been installed at key recreation sites.
19.4	1	Ongoing	The plan details camping sites in WNR once the tenure changes have been affected in NNP. This has not occurred and therefore camping sites have not been provided.
	2	High	Tenure changes have not occurred.
	3	Medium	Camping has not been provided due to lack of tenure changes.
	4	Ongoing	Prospective campers are directed to facilities run by others (Local Govt., private enterprise). Stakeholder liaison occurs regarding future plans for Wedge and Grey – this includes the provision of camping opportunities.
19.5	1	Ongoing	Caving groups regularly use the park for their activities. Four wheel drive groups, scouts, school groups, naturalist clubs, photographic clubs, schools, various board riders, wind surfers, etc. are all catered for. This includes ranger talks, advice on routes, etc.
	2	Ongoing	Groups of larger than 100 are required to apply for a permit. During this process special needs etc. are

			considered and if practical, arranged.
	3	Medium	Groups of larger than 100 are required to apply for a permit. During this process special needs etc. are considered and if practical, arranged.
	4	High	If relevant charges are levied consistently with policies and guidelines in the interests of cost recovery.
19.6	1	High	The construction of IOD has allowed several fishing access tracks to be closed and rehabilitated. This is mainly due to better access being provided therefore superseding the previous rough bush track. Much of this was undertaken in conjunction with the NACC/DEC joint CAR Project. Although not strictly within the plan area, vehicle access in conjunction with a 'Caring For Country' project was undertaken by the Kwelena Mambekort Aboriginal Corporation and has seen numerous track closures within the Wedge Island Reserve.
	2	High	Camping has not been provided due to lack of tenure changes.
	3	Medium	Liaising with local recreational fisher groups was undertaken during track closures through personal communication and consultation during the CAR Project.
	4	High	Rangers regularly patrol the coastal access tracks and undertake visitor risk management (VRM) inspections of these tracks. Awareness is raised through personal contact and signage at coastal risk sites.
19.7	1	Ongoing	Beach boat launching continues at Kangaroo Point, Hangover Bay, Grey and Wedge.
	2	Low	Planning is still underway for the future of Grey and Wedge, however boat launching will likely be included in this exercise once a future direction is determined.
19.8	1	High	Horse riding continues to be prohibited within the plan area.
	2	High	A sign has been installed at the north side of the Lake Thetis tenure boundary to discourage this practice.
20	1	High	All commercial tour operators obtain a DPaW Commercial Operators Licence and pay the necessary fees.
	2	High	DPaW Licensing Unit continues to regulate these activities. Commercial operator licences are issued with site specific conditions attached to regulate the activity. Gate staff and ranger staff are kept up to date with current licence holders and have standard operating procedures in place in dealing with issues arising with tour operators.
	3	High	Safety standards are addressed as part of the site specific conditions attached to the licence. A certificate of currency showing public liability coverage is required as part of the application approvals process.
	4	High	A size limit has been set for entry into the Pinnacles, however it is not as complex as a system. The need for the strategy was derived from an issue of over-size coaches trying to access the Pinnacles Desert. This issue has diminished with the provision of better parking and walk path facilities. Large coaches no longer try to enter the desert area.
	5	Ongoing	This is undertaken via regular tour operator alerts (broadcast emails) relaying up to the minute news and information relating to road conditions, weather, fire, etc. Information is also given directly to the local visitor centre and tourist outlets when required.
	6	Medium	A tour operator accreditation program is managed by the DPaW Licensing Unit.

	7	Low	A tour operator accreditation program is managed by the DPaW Licensing Unit.
	8	Ongoing	All commercial proposals are considered that are consistent with this plan and purpose of the reserves. This includes a commercial helicopter tour business operation within the Pinnacles Desert.
21	1	High	Domestic animals are not allowed within any of the reserves within the plan area, including NNR. The consideration to allow dogs in NNR was assessed and it was decided to continue with the prohibition.
	2	High	Visitors are informed by ranger staff as to why dogs are prohibited. This includes the danger of 1080 western shield baiting to domestic animals. Visitors are also informed through brochures and signage.
22	1	High	A formal vehicle use review has not occurred over the plan area, however access and use has been modified following the completion of IOD. The demand for four wheel drive access has declined allowing the rehabilitation of many tracks. The better access has also improved the ability to provide a management presence and control of off road vehicles.
	2	High	UXO clearance work was completed along the IOD alignment and the WNR beach area. Department of Defence has responded if and when UXO have been discovered and disposed of as required.
	3	High	Visitor safety is actively promoted in the parks and reserves. This occurs in response to staff observing unsafe practise and through provision of signage at higher risk sites. The DPaW VRM program is current and actively implemented.
	4	Ongoing	Liaison continues with WAPOL and emergency services and support is provided when required for management of incidents, e.g. shark attack, vehicle accidents, search and rescue operations, etc.
	5	High	The contingency plan is to cordon off the area, inform WAPOL, the Department of Defence and the Department of Fire and Emergency Services.
	6	High	Information is provided via personal contact, signage and brochure content.
	7	High	DPaW's VRM program ensures ongoing opportunistic observations and formal periodic audits occur throughout the parks and reserves. Issues are documented and remediation programmed.
	8	High	A documented bushfire contingency plan is in a draft form. Procedures have been identified for site evacuation if required.
23	1	High	The ranger team at the Cervantes Work Centre has developed a school presentation program which is delivered biannually. The program takes in a number of schools within the Moora District, at Cervantes, Jurien Bay, Badgingarra, Lancelin and Moora. Topics covered include NNP and the Pinnacles; the role of national park rangers; tracks and scats; 'creepy crawlies'; marine debris – adopt a beach; bush survival skills; plant identification; and fire management.
23	2	Ongoing	Ranger staff provide guided walks for schools and groups when approached to do so. Interest from volunteer groups to assist with this initiative has not been expressed.
23	3	High	Completed.
23	4	Medium	A basic information sheet is available in several languages at the PDD. The PDD is also undertaking a process to receive 'China Accreditation' to cater for Chinese tourists.
24	1	Ongoing	Ongoing liaison with traditional owners in matters including conservation and land management. Regular

			applications are received from speleology groups with interests in the karst system of the park. Interested groups or individuals are welcomed and supported where possible.
24	2	Ongoing	DPaW is in regular communication with other agencies such as the Department of Environment Regulation consulting on development proposals within and adjacent to tenure covered by the management plan. Other agencies include Telstra and WAPOL (communications tower). Issues are worked through systematically and an agreed outcome reached; e.g. Telstra wished to bring a Fibre Optic cable through NNP along Strathmore Rd – the values of the karst system were highlighted and an alternative route was identified (around the boundary instead). Close liaison occurred with MRWA during the planning and construction of IOD through the reserves to ensure the values of the areas were maintained.
25	1	Ongoing	There is limited use of the parks and reserves covered by the plan by commercial fishers. However district staff are in regular communication with Department of Fisheries officers, particularly in relation to the Jurien Bay Marine Park. Joint operations are carried out by DPaW with WAPOL and Fisheries, such as road blocks and these often occur on roads within the plan area.
25	2	High	Commercial fishing operations are located at Wedge, however are infrequent at Grey. Current planning for the future of Wedge includes the retention of the commercial fishing shack leases/licences within the shack settlement. Rangers managing this area liaise with commercial fisherman on an as-needs basis.
25	3	Ongoing	Impacts have not been apparent from commercial fishers in the reserves covered by the management plan.
25	4	Ongoing	There are no aquaculture proposals or operations currently operating. There have been no impacts from aquaculture projects on the plan area.
26	1	High	All applications for mining and exploration proposals are forwarded through by the department's Environmental Management Branch (EMB) for district comment coordinated through the Midwest Region. Government legislation and policy are adhered to through the process, with stringent environmental conditions placed upon proposals should they be permitted.
26	2	High	These threats are addressed through the environmental conditions imposed. Included in any works conducted on DPaW estate is the requirement of a Hygiene Management Plan.
26.1	1	Ongoing	The Conservation Commission of Western Australia (CCWA) has replaced the NPNCA and all extraction for raw materials is approved through the CCWA, with regional comment. Minimal raw material extraction has occurred for the duration of the management plan, however the Grey Dune sand was accessed during the construction of IOD, for use as road sub-base. The impacts were managed by rehabilitation measures implemented by MRWA. A small area within SBNR was also accessed, although this has since been rehabilitated, also by MRWA.
26.1	2	High	The Central Coast Regional Strategy is among the suite of documents available to the district when providing comment to the CCWA on raw material extraction.
26.1	3	High	Should approval be given for raw material extraction, a submitted Dieback Management Plan from the proponent is a mandatory requirement prior to extraction taking place. Conditions related to any permission given for this industry would be monitored and enforced where necessary.



26.1	4	High	Rehabilitation has occurred at the Grey Dune after MRWA removed a quantity for sub-base material for the IOD; Lake Thetis – 11ha of historic marl pit as part of the CAR Project and; SBNR adjacent to the Cervantes Spur Road – MRWA rehabilitated also as part of the IOD project.
27	1	High	Telstra fibre optic cable alignment negotiated by the district and EMB to traverse the boundary of NNP instead of cutting through along Strathmore Rd – this was done to protect the karst system values of the park. The alignment, development and implementation of IOD was also negotiated with MRWA through EMB and the region.
27	2	High	A result of the negotiations with MRWA regarding the construction of IOD, a minimum road reserve width was agreed upon to minimise impacts and future development within the reserves concerned. Hygiene, weed and other environmental management objectives were also agreed upon.
27	3	Low	DPaW staff will monitor utility corridors as part of normal operational duties, reporting significant issues to the relevant agency when necessary.
28	1	High	Hive locations are reviewed on an ongoing basis dependent upon issues identified.
28	2	High	One active hive location remains in NNP on the eastern side straddling Strathmore Rd. The site is not near known dieback areas.
28	3	High	No additional sites have been issued in the area covered by the management plan.
28	4	High	Some work was conducted on control measures for feral bee infestations, however current status is unknown.
29	1	Medium	Research projects are forwarded from Nature Protection Branch for comment or granting of lawful authority to proceed. Speleologists visit the area on a regular basis which is facilitated and managed by the district, issuing authority (with conditions) where appropriate. These groups are encouraged to provide reports on their findings which are noted and filed in the district office. Volunteer research and monitoring programs run by NRM groups are supported.
29	2	High	An integrated research and monitoring program does not exist other than what is associated with feral animal control programs.
29	3	Ongoing	There is no integrated research and monitoring program other than what is associated with feral animal control programs.
29	4	High	Research activities are carefully managed through conditions to ensure reserve values are maintained.
30	1	High	Cervantes work centre has a full contingent of staff, including 2 extra rangers funded via the squatter shack trust fund. Parks and Visitor Services Coordinator in place along with Business Manager, admin staff and visitor services officers for the PDD. Nature Conservation staff continue to assist with the management of reserves covered by the management plan.
30	2	High	The funds used for management are generated by revenue raised in NNP, recurrent funds, PVS capital and squatter trust revenue generated by leases of shacks at Grey and Wedge. There is sponsorship for feral animal control programs across much of the plan area. Funding would appear adequate.
30	3	High	Park entry fees are collected at NNP and this provides a major contribution to the operational funding of the



			plan area. There is currently a review underway to pursue revenue building opportunities at the PDD.
30	4	Low	The implementation of the CAR Project involved an occasional partnership with Conservation Volunteers Australia. Other volunteering efforts are facilitated on a case by case basis.
31	1	High	A formal implementation program was not developed, however priorities have been implemented as per the management plan when resources have allowed. The Midwest Regional PVS Business Plan 2011 outlines and reflects many of the priorities.
31	2	High	The Senior Ranger develops and implements a works program, dependent on current issues. On an annual basis, the VRM issues are addressed as a priority, with maintenance items, capital works and management plan priorities in succession. Regular works meetings are held to direct resources to appropriate areas.
31	3	High	While this audit process provides a mechanism for review on plan implementation, there are no immediate plans to review the plan in terms of rewriting.

## 9 Appendix 2 - Tenure changes

The following summary was provided by DPaW in relation to the tenure changes which are outlined in tables 1 and 2 of the management plan.

Tenure Changes – nature reserves:

1. Wanagarren Nature Reserve - incomplete as per Management plan recommendation. Impediment being opposition from Department of Mines and Petroleum (DMP) regarding concerns that national park status would make it more difficult to access minerals.
2. Nilgen Nature Reserve (NNR) – incomplete as per Management plan recommendation. Addition of 9.5342 and excision of 1 hectare in 2008 – 2009 for road reserve creation. – No change. This strategy was identified as it was thought at the time that it would not be possible to manage the illegal camping and other activity in line with the purpose of the nature reserve. This situation changed with the presence of a ranger based at Lancelin that allowed the area to be better managed
3. Southern Beekeepers Nature Reserve – incomplete as per Management plan recommendation. Additions of 609.0359 hectares and excisions of 554.676 hectares have occurred between 2004 – 2008 (has not been a priority). Tenure Changes – other lands:
4. Reserve 19206 - incomplete Res 19206 – liaison occurred and agreement reached regarding future land tenure arrangements, however there has been limited exchange due to Native Title and DMP impediments
5. Reserve 33048 – incomplete some consultation with the Shire of Dandaragan – awaiting advice from department's Policy and Planning Branch (PPB).
6. Hill River Mouth – incomplete – Reserve 19206 (Lot 12008 on Plan 243177) currently management order to the Shire of Dandaragan.

7. VCL Hill River corridors - 5(1) (h) Reserve 48205 (13.57 hectares) created in 2005.

Further UCL (PIN 11130603, PIN 11156840 and PIN 1049187) incomplete.

8. VCL east of Nambung NP – incomplete – comprising Lot 306 on Plan 54549 and Lot 4114 on Plan 217467

These three UCL Lots and one purchased Lot are proposed to be added as a group once all approvals obtained – they fit within description of recommendation 8 'VCL east of Nambung NP:

- Melbourne Location 3961 – Shire and Dept of Mines and Petroleum have objected to addition, requires further approach. Proposed purpose "Conservation and Wildflower Harvesting' OR proposed addition to Nambung National Park A24522Lot 3115 on Plan 144562 purchased 18th November 2008. Enclave block within Melb Loc 3961 - Lot 3115 is currently held as Crown freehold - dept interest.
- Lot 4064 – proposed addition
- UCL (PIN 579104) – proposed addition

9. Reserve 43284 (Grey) - incomplete

10. Reserve 43283 (Wedge) - incomplete

11. Reserve 35819 (Lake Thetis) - complete – (Lot 615 on Plan 43663) added to Nambung NP 31st March 2008.

Additionally, UCL (Lot 350 on Plan 68223, previously Lot 1109) adjacent to Lake Thetis was approved for addition to Nambung NP by the Minister on 31st January 2011. \*(see note below)

12. CG2409 - complete - purchased 18th November 2008. and added to Nambung National Park 26th October 2009.

13. CG 3392 – incomplete - Lot 3392 on Plan 159407

14. Portion of Old North Road Stock Route – incomplete - small portion of old north road stock route – PIN 947683) – east side of river adjoining Lot 3392

15. Road Reserve 17252 – completed in 2008 incorporated into Wanagarren NR at time of coast road construction (addition to nature reserve of 86.6 hectares).
16. Road Reserve 15599 – incomplete cancellation of road reserve within Nilgen Nature Reserve
17. Road Reserve 15441 - incomplete cancellation of road reserve within Nilgen Nature Reserve
18. Road Reserve 16638 - incomplete cancellation of road reserve within Nilgen Nature Reserve
19. Reserve 36804 – Liaise with Shire – district responsibility.

Note: The Department of Lands advised Parks and Wildlife in July 2012 that 'it would be prudent to delay adding any of the UCL to Reserve 24522 until after RDL's South West Settlements Land Base identification process is completed'. This appears to also apply to other reserves being added to Nambung NP.