

Appendix E: Recommendations of the Goegrup and Black Lakes Action Plan (2006)

Table 7.1 Summary of Recommendations

| | RECOMMENDATIONS | PRIORITY | KEY STAKEHOLDERS | PROPERTIES/ ZONES |
|----|---|--|---|-------------------|
| | RESTORATION | | | |
| 1 | Within Priority Restoration, carry out assisted natural regeneration following the principles of the Bradley method (see Appendix Three) in Very Good condition areas, gradually progressing into Good areas. | HIGH | NAC, DEC, CoM, SoM, WAPC, private landholders | Zones 1 & 2 |
| 2 | Within Priority Restoration, carry out reconstruction / revegetation in areas of Poor and Very Poor condition bushland (see Map 3) using local provenance genetic material. | Zone 3 – HIGH Zone 4 – HIGH Zone 5 – MED Zone 6 - LOW | NAC, DEC, CoM, SoM, private landholders | Zones 3 to 6 |
| 3 | Priority Restoration which contains existing restoration needs continued maintenance with additional weed control and Infill planting. | HIGH | DEC | Zone 3 |
| 4 | Document all management practices onsite. This should identify, as a minimum, the type of works, the boundary of works, a planting list and native plants present that require protection, species that are introduced into the study site. | HIGH | NAC, DEC, WAPC, CoM, SoM | All Reserves |
| 5 | Monitor restoration works annually and ensure that accurate records are kept of progress. | MEDIUM | NAC, DEC, WAPC, CoM, SoM | All Reserves |
| | REVEGETATION | | | |
| 6 | Map 2 – Vegetation Communities in association with Table A1.1 in Appendix 1 – Flora list should be used to determine the mix of species to use within areas to be revegetated. | HIGH | All landholders | All properties |
| 7 | At all times only species sourced from local propagation stocks (seeds, cuttings, divisions) from the local vegetation communities should be used in restoration programs (in the absence of genetic provenance data that indicates broader genetic provenance boundaries). | HIGH | NAC, DEC, WAPC, CoM, SoM | All Reserves |
| 8 | Investigate the feasibility, between the City of Mandurah and the Shire of Murray, of developing a regional seed bank which will aid in acquiring plant propagation material of local provenance for landscape enhancement projects within the region. | MEDIUM | NAC, DEC, PHCC, CoM, SoM | All properties |
| | WEED CONTROL | | | |
| 9 | Use an integrated approach to weed control including herbicides, manual removal, modifying microclimates (in terms of shade, moisture etc) and biological controls | HIGH | NAC, DEC, WAPC, CoM, SoM, private landholders | All properties |
| 10 | Undertake annual surveys for Bullrush (<i>Typha orientalis</i>), <i>Watsonia (Watsonia meriana)</i> , Pampas Grass (<i>Cortaderia seloana</i>) and Perennial Veldt Grass (<i>Ehrharta calycina</i>) to ensure they do not become established. | HIGH | NAC, DEC, WAPC, CoM, SoM, private landholders | All properties |
| 11 | Undertake species-led control within Priority Restoration Zones according to weed priorities in Table 6.3.2 and control methods in Appendix Four, Table A4.1 | HIGH | NAC, DEC, CoM, SoM, WAPC, private landholders | Zones 1 and 2 |
| 12 | Undertake site-led control of weeds within Priority Restoration Zones in conjunction with revegetation works. | Zone 3 – HIGH Zone 4 – HIGH Zone 5 – MED Zone 6 - LOW | NAC, DEC, CoM, SoM, private landholders | Zones 3 – 6 |

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| 13 | Remove Bullrush (<i>Typha orientalis</i>) found at site 5, 32 and 33. | HIGH | DEC & private landholders | Lots 3 & 16, Reserve 35283 |
| 14 | Remove Watsonia (<i>Watsonia merlana</i>) at site 23 and 39. | HIGH | NAC & private landholder | Lots 91 & 216 |
| 15 | Remove Pampas Grass (<i>Cortaderia seloana</i>) near site 37. | HIGH | private landholder | Lot 91 |
| 16 | Prevent the expansion of populations of Perennial Veldt Grass (<i>Ehrharta calycina</i>). | HIGH | DEC & private landholders | Reserves 35283 & 26351, and Lots 3, 16, 51, 425 & 442 |
| 17 | Control Weeds in Restoration Zone 1 as a priority | HIGH | NAC, DEC, CoM, SoM, WAPC, private landholders | Zone 1 |
| 18 | Ensure that weed control is only undertaken by trained/experienced/licensed personnel who operate in a manner appropriate for bushland & wetlands | HIGH | Landholders | All properties |
| DISEASE MANAGEMENT | | | | |
| 19 | Establish standard hygiene protocols for management operations within the study site | HIGH | NAC, DEC, WAPC, CoM, SoM | All Reserves |
| 20 | Ensure that any soil or plant material used for bushland restoration is disease free. | HIGH | NAC, DEC, WAPC, CoM, SoM | All Reserves |
| WATER QUALITY | | | | |
| 21 | Continue to monitor water quality regularly on Serpentine River and Nambeelup Brook | HIGH | DEC | Reserves 35283 & 26351 |
| 22 | Expand water quality monitoring program in both number of sites and measurements (e.g. adding macro invertebrate measurements) | MEDIUM | DEC | Reserves 35283 & 26351 |
| 23 | Ensure that any adjacent subdivisions comply with Peel-Harvey Coastal Catchment Water Sensitive Urban Design – Technical Guidelines. | HIGH | SoM, DEC | All undeveloped properties |
| FIRE MANAGEMENT | | | | |
| 24 | Reduce fuel loads through control of weeds such as Perennial Veldt Grass and Bulrush | MEDIUM | DEC, private landholders | Reserves 35283 & 26351, and Lots 3, 16, 51, 425 & 442 |
| 25 | Fire to be actively managed as a tool for cultural and environmental outcomes. | HIGH | DEC, NAC, WAPC, CoM, SoM, PHCC, FESA | All properties |
| 26 | Document fire history with the extent of fires mapped, and dates and causes recorded. | LOW | DEC, NAC, WAPC, CoM, SoM, PHCC | All Reserves |
| 27 | Control access into burnt areas as soon as possible after the fire. Access to any burnt areas should be limited to management vehicles only for the first six to twelve months. Seed germination and resprouting of vegetation or regeneration should be monitored for a year following fire. | HIGH | DEC, NAC, WAPC, CoM, SoM, PHCC | All Reserves |
| 28 | Revise weed control works after any fires to ensure potential damage by works are minimised and efficiencies are maximised. | HIGH | DEC, NAC, WAPC, CoM, SoM, PHCC | All Reserves |
| ACCESS, RECREATION AND INFRASTRUCTURE | | | | |
| 29 | Construct signage that can be used to inform visitors that access is restricted to environmentally sensitive areas such as weed control areas, erosion control areas and restoration work. | HIGH | DEC, NAC, WAPC, CoM, SoM, PHCC | All Reserves |
| 30 | Replace vandalised signs at Dunkerton Road (near Goegrup and Black Lake crossing) and at the end of Bedingfeld Road. | HIGH | DEC | Reserves 35283 & 26351 |

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|---------------------------|---|------|---|---|
| 13 | Remove Bullrush (<i>Typha orientalis</i>) found at site 5, 32 and 33. | HIGH | DEC & private landholders | Lots 3 & 16, Reserve 35283 |
| 14 | Remove Watsonia (<i>Watsonia merlana</i>) at site 23 and 39. | HIGH | NAC & private landholder | Lots 91 & 216 |
| 15 | Remove Pampas Grass (<i>Cortaderia seiloana</i>) near site 37. | HIGH | private landholder | Lot 91 |
| 16 | Prevent the expansion of populations of Perennial Veldt Grass (<i>Ehrharta calycina</i>). | HIGH | DEC & private landholders | Reserves 35283 & 26351, and Lots 3, 16, 51, 425 & 442 |
| 17 | Control Weeds in Restoration Zone 1 as a priority | HIGH | NAC, DEC, CoM, SoM, WAPC, private landholders | Zone 1 |
| 18 | Ensure that weed control is only undertaken by trained/experienced/licensed personnel who operate in a manner appropriate for bushland & wetlands | HIGH | Landholders | All properties |
| DISEASE MANAGEMENT | | | | |
| 19 | Establish standard hygiene protocols for management operations within the study site | HIGH | NAC, DEC, WAPC, CoM, SoM | All Reserves |
| 20 | Ensure that any soil or plant material used for bushland restoration is disease free. | HIGH | NAC, DEC, WAPC, CoM, SoM | All Reserves |

Appendix F: Recommendations of the Yalgorup National Park Management Plan

TABLE 8. MANAGEMENT PRIORITIES
(by Section and Action)

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| <p>HIGH PRIORITY - GROUP 1</p> <p>4. Land Tenure and Boundaries</p> <p>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).</p> <p>7. Geology, Landforms and Soils</p> <p>2. Minimise development along the edge of the lakes and disturbance to the vegetation and foreshores of the Vasse Lagoonal System (See Map 4).</p> <p>8. Vegetation and Flora</p> <p>4. Protect and restore the Vasse Lagoonal Complex and the Quindalup Dune Complex and the fringing vegetation around the Lakes.</p> <p>10. The Lake System</p> <p>1. Liaise with local government to ensure that management of lakeside reserves is consistent with Park management objectives</p> <p>2. Survey poorly identified tenure boundaries.</p> <p>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.</p> |
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HIGH PRIORITY – GROUP 1 (cont)

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.
8. Seek greater legislative protection of the Lake Clifton stromatolites and thrombolites.

24. Nature Observation and Nature Trails

6. Provide a nature observation facility at the end of Mount John Road for viewing waterbirds and stromatolites and thrombolites in Lake Clifton.

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.
5. Actively encourage private land owners to fence their properties and control stock, the spread of disease, weeds, feral animals and fire particularly in any areas near the lakes.

HIGH PRIORITY - GROUP 2

4. Land Tenure and Boundaries

5. Acquire for the Park or seek sympathetic management, from current vesting bodies, of Melros Reserve 33139 and Tims Thicket Reserve 24198.

7. Geology, Landforms and Soils

4. Minimise management activities in, and public access to, the coastal dunes areas.

8. Vegetation and Flora

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 CALMs 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.
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.

9. Fauna

1. Protect fauna habitats from the spread of weeds, disease, wildfires, and human disturbance.
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).

13. Visual Landscape

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.

14. Erosion, Mining and Rehabilitation

2. Monitor the movement of dune blowouts. If a blowout is expanding and is likely to destroy management infrastructure or important vegetation or habitats, implement control measures,
8. Ensure that within any scenic areas, degraded landscapes (such as quarries) are rehabilitated after use or progressively in stages.

15. Disease

1. Conduct plant disease surveys and implement appropriate 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 on disease management strategies.
4. Train Park staff to recognise plant diseases, and in sampling and management techniques.

16. Introduced Plants and Noxious Weeds

1. Liaise with the Agriculture Protection Board, landholders and local authorities regarding weed control on Park boundaries and adjacent properties.
2. Continue to maintain a register of all known occurrences and severity of introduced weeds.
3. Prepare and implement an introduced plants and weeds control program.
4. Monitor any effects of control programs on non-target species and make changes to procedures if required.

4. Implement comprehensive feral animal control programs in conjunction with native fauna release programs.

18. Fire

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,
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.

Appendix G: Recommendations of the Lake McLarty Management Plan (2008)

MANAGEMENT SUMMARY TABLE

| KEYPOINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS* | | |
|--|---|-------------------------------|---|------------------------|
| | | Performance Measure | Target | Reporting Requirements |
| PART B. MANAGEMENT DIRECTIONS AND PURPOSE | | | | |
| <p>9. LAND TENURE</p> <ul style="list-style-type: none"> The planning area comprises two 'class A' nature reserves that should be amalgamated into a single reserve of 21.9 ha and officially named Lake McLarty Nature Reserve. Aggregated road reserve marks the eastern boundary of the nature reserve. This should be added to the nature reserve. There is a significant amount of vegetation on the private property adjacent to the eastern side of the nature reserve which effectively doubles the width of the vegetated buffer subject to rezoning agreement with the owners, consideration should be given to acquiring these areas by direct purchase or as an environmental contribution if the current agricultural land is subdivided in future. | <p>OBJECTIVE</p> <p>To protect the values of the reserve by securing areas of greatest value into the conservation estate.</p> <p>THIS WILL BE ACHIEVED BY</p> <ol style="list-style-type: none"> securing additions to the reserve wherever possible, including the road reserve on the eastern side of the lake; amalgamating Reserve 44978 into Lake McLarty Nature Reserve (Reserve number 39004), resulting in a consolidated reserve of 21.9 hectares; officially naming the two reserves that comprise the nature reserve 'Lake McLarty Nature Reserve'; seeking to enter into voluntary agreements with reserve neighbours to protect remnant vegetation via future purchase of land for addition to the reserve; and | | | |
| <ul style="list-style-type: none"> The Conservation Commission and the Department will recommend that any future subdivisions adjoining the reserve will be subject to the principle of net conservation benefit, and that environmental conditions to minimise environmental impacts should be duly placed on proponents. | <ol style="list-style-type: none"> negotiating environmental contributions with developers should further subdivisions be approved. | | | |
| PART C. MANAGING THE NATURAL ENVIRONMENT | | | | |
| <p>12. WETLAND AND CATCHMENT PROTECTION</p> <p>Managing Water Levels</p> <ul style="list-style-type: none"> Lake McLarty is a surface expression of groundwater that has formed where the water table intersects with the ground surface. Therefore, the lake's water levels are directly affected by management of the regional groundwater system. The surface water levels of the lake have been monitored monthly on the western side of the lake by the Peed Preservation Group since 1996. | <p>OBJECTIVE</p> <p>To maintain a water level regime that supports the lake's water-dependent ecosystems and meets the needs of the range of waterbirds that use the lake.</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> negotiating a Memorandum of Understanding with State and local government agencies and other land managers to ensure integrated planning and management of Lake McLarty, to enable the Department to achieve the objectives of this plan; liaising with the Department of Water regarding the monitoring and maintenance of water levels. | Change in groundwater levels. | No significant change to the current hydrology of the lake (including seasonal patterns). | Every two-three years |

| KEY POINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS * | | |
|---|---|---|---|------------------------------|
| | | Performance Measure | Target | Reporting Requirements |
| <p>Managing Water Levels (continued)</p> <ul style="list-style-type: none"> The pattern of water level changes within the lake is dictated by local rains. The lake is marginally ephemeral and dries, on average, for 1-4 months of the year. The timing of inundation and drying of Lake McIwarty is important for bird species and bird numbers. Groundwater, and subsequently, wetland water levels may be under threat as a result of a combination of dry climate and groundwater abstractions in surrounding areas Management of the groundwater resource within the Peel-Harvey Catchment is the responsibility of the Department of Water. | <p>THIS WILL BE ACHIEVED BY: (continued)</p> <ol style="list-style-type: none"> working cooperatively with the Department of Water to ensure that the management of the lake's water levels considers waterbird and other fauna habitats; and liaising with the Department of Water to establish at least two more water monitoring bores in the area surrounding the lake. | | | |
| <ul style="list-style-type: none"> Groundwater levels at Lake McIwarty are currently monitored twice annually by the Department of Water from four bores located within a three kilometer radius of the lake. The establishment of further monitoring bores within the subdivision and to the east of the lake is required to determine the impact of continued residential development on groundwater levels within the catchment. | | | | |
| <p>12. WETLAND AND CATCHMENT PROTECTION</p> <p>Managing Water Quality</p> <ul style="list-style-type: none"> Factors such as nutrient runoff from surrounding residential and rural land influence the water quality of Lake McIwarty. The Department is responsible for monitoring the water quality in the lake. They are assisted by the Peel Preservation Group. | <p>OBJECTIVE</p> <p>To maintain a healthy aquatic ecosystem, thereby ensuring the provision of a feeding ground and refuge for waterbirds and protection of the reserve's ecological values.</p> | <p>Changes in abundance, species diversity and structure of naturally occurring aquatic macro-invertebrate populations.</p> | <p>No decline in the abundance or diversity of naturally occurring aquatic macro-invertebrate populations based on 2000 levels.</p> | <p>Every two-three years</p> |

| KEY POINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS * | |
|---|---|---|------------------------------|
| | | Performance Measure | Reporting Requirements |
| <p>Managing Water Quality (continued)</p> <ul style="list-style-type: none"> Establishing new and maintaining existing buffer vegetation is vital in assisting to maintain and improve water quality. A buffer will act as a filter and storage for nutrients, as well as providing a physical barrier to problem insects such as midges between the lake and surrounding development. An integrated whole of catchment approach is required for managing ground water quality and levels throughout the Peel Harvey Catchment. The EPA, together with the Peel Harvey Catchment Council, is developing a Water Quality Improvement Plan for the catchment, which contains key recommendations to achieve reductions in phosphorus. | <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> supporting the Peel Preservation Group in continuing to monitor the water quality (including dissolved oxygen, pH, salinity, total nitrogen and phosphorus, and macro-invertebrates) of the lake every six months; ensuring that the management of water quality considers waterbird and other fauna habitats; continuing to re-establish buffer vegetation surrounding the lake; working cooperatively with state and local government authorities regarding the management of surface and subsurface drainage; maintaining the Department's role on the Peel-Harvey Catchment Council; and supporting the recommendations of the EPA's Water Quality Improvement Plan for the Peel Harvey catchment, particularly when commenting on development proposals on land adjoining Lake McIarty. | <p>Changes in salinity and total nitrogen and phosphorus levels of the lake.</p> | <p>Every two-three years</p> |
| | | <p>No significant increase in the salinity or changes in levels of total nitrogen and phosphorus in the lake.</p> | |

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| <p>13. NATIVE ANIMALS AND HABITATS</p> <ul style="list-style-type: none"> Lake McIarty as part of the Peel-Yilgong Wetlands, was designated to the List of Wetlands of International Importance under the Convention on Wetlands, Ramsar Convention, 1971. In 1990, it is also listed in the Directory of Important Wetlands in Australia as part of the McIarty System. Cattle grazing has occurred within the reserve since the 1880s, although at the time of writing not within the past few years. Grazing at Lake McIarty has contributed to the creation of valuable habitat for waterbirds. The planning area is an important breeding ground for local birds, and supports 31 and 36 species protected under the JAMBA and CAMBA, respectively and is a summer refuge for 29 migratory wader species. A total of 160 bird species have been recorded in the reserve, including 81 species of waterbirds, and supports four specially protected species and one priority fauna species. | <p>OBJECTIVES</p> <ol style="list-style-type: none"> To conserve indigenous fauna, with an emphasis on threatened and priority species and those protected by international agreements. To conserve and enhance the reserve for waterbirds as per the management requirements for Ramsar-listed wetlands. <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> maintaining shorebird habitat by controlling the type and structure of shoreline vegetation by: <ul style="list-style-type: none"> allowing cattle grazing to continue under a formal lease/licence, with cattle restricted to i) specified areas in the southern and south-eastern part of the reserve and iii) seasonal use, until the impact of its activity on the wetland system can be established; and assessing and evaluating alternative management options to cattle grazing for maintaining mudflat habitats for shorebirds; protecting native fauna from introduced and problem animals through appropriate control regimes where necessary (see introduced and other Problem Animals); | <p>Number of migratory waterbirds utilising the lake as a summer refuge and feeding ground.</p> <p>Changes in species diversity and species composition of migratory waders.</p> | <p>Every three years</p> |
| | | <p>Subject to natural variations, no decline in the number of migratory waterbirds visiting lake.</p> <p>Subject to natural variations, maintain or increase the species diversity and species composition of migratory birds from 2007 levels.</p> | |

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| KEY POINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS * | | |
|---|---|---|--|------------------------|
| | | Performance Measure | Target | Reporting Requirements |
| <p>13. NATIVE ANIMALS AND HABITATS (continued)</p> <ul style="list-style-type: none"> The lake supports a high diversity of invertebrate fauna, which are an important food source for the waterbirds that use it. The main threats to the native fauna and fauna habitats are changes in hydrology (water levels and water quality), environmental weeds, unexplained fire, and predation by foxes and cats and, potentially the absence of cattle grazing. | <p>THIS WILL BE ACHIEVED BY: (continued)</p> <ol style="list-style-type: none"> Encouraging and supporting groups (eg. Birds Australia, community groups, tertiary institutions) to undertake specific research and/or monitoring projects within the reserve; and supporting the preparation and implementation of recovery plans for any threatened fauna species that are identified in the reserve. | Extent of emergent vegetation. | No increase in the extent of emergent vegetation. | Every three years |
| <p>14. NATIVE PLANTS AND PLANT COMMUNITIES</p> <ul style="list-style-type: none"> Vegetation communities in the reserve are representative of those once widespread on the Swan Coastal Plain that have now been significantly cleared. | <p>OBJECTIVE</p> <p>To conserve indigenous plant species and communities</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> Identifying and conserving vegetation and flora that is rare, threatened or in need of special consideration; | Density and diversity of native vegetation. | An improvement in the density and diversity of understory vegetation from 2007 levels. | Every five years. |
| <ul style="list-style-type: none"> There are no known records of rare or priority flora in the Lake Mandary Nature Reserve. The main threats to the vegetation are water levels and quality, environmental weeds, human disturbance (including pet), cattle grazing and fire. The western side of the lake has been highly degraded as a result of historical land use, with almost all of the original vegetation removed. | <ol style="list-style-type: none"> maintaining vegetation biodiversity by reducing threatening processes; maintaining the variety of habitats that are available at the lake to support the diversity of bird species, including encouraging some areas of emergent native vegetation to re-establish to provide habitat for targeted bird species (eg. Australian reed warbler); rehabilitating degraded areas around the lake to restore a vegetation barrier, and maintaining fences within the reserve to ensure that cattle grazing occurs only in designated areas. | Changes in range of native habitats available. | Maintain or increase the variety of habitats available at the lake from 2007 levels. | Every five years |
| <p>15. ENVIRONMENTAL WEEDS</p> <ul style="list-style-type: none"> Thirteen weed species have been identified within the reserve. As rated in the Environmental Weed Strategy for Western Australia two species are rated as High and seven as Moderate according to their impact on biodiversity. | <p>OBJECTIVE</p> <p>To prevent species loss and community decline from weed invasion.</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> controlling environmental weeds rated as High or Moderate in the Environmental Weed Strategy for Western Australia, and declared weeds, including cottonbush; mapping and annually monitoring the distribution of 1. ornamental and immediately controlling new satellite clumps and | Changes in abundance and distribution of priority environmental weeds as identified in the Environmental Weed Strategy for Western Australia. | No increase in the abundance and distribution of high and moderate rated environmental weeds from 2007 levels. | Every three years |

| KEY POINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS * | | |
|--|---|---|---|-------------------------|
| | | Performance Measure | Target | Reporting Requirements |
| <p>15. ENVIRONMENTAL WEEDS (continued)</p> <ul style="list-style-type: none"> • <i>Typha orientalis</i> has the potential to further reduce the area of open water at Lake McLarty. Although its current distribution is limited, <i>Typha</i> has been widespread on the lakebed previously and may again become a management issue. • Other weed species threatening reserve values include cottongrass (a declared weed), brome grass (high priority weed species) and goosefoot. | <p>THIS WILL BE ACHIEVED BY: (continued)</p> <ol style="list-style-type: none"> 3. trialling different cost effective methods to control <i>T. orientalis</i> to determine the most effective method for Lake McLarty. | | | |
| <p>16. INTRODUCED AND OTHER PROBLEM ANIMALS</p> <ul style="list-style-type: none"> • Problem animals associated with the reserve include foxes, cats (feral and domestic), dogs and rabbits. | <p>OBJECTIVE</p> <p>To prevent, and where possible, negate the impacts of problem animals on the reserve's values.</p> | <p>Changes in the numbers of mosquitoes trapped within the reserve.</p> | <p>No significant increase in the mosquito populations present at the lake.</p> | <p>Every five years</p> |
| <ul style="list-style-type: none"> • Foxes and cats may pose a threat to native fauna, and it is thought that foxes may have been a major cause of decline in the local population of oblong turtles. • A fox baiting program commenced in the nature reserve at the end of 2006, which is planned to continue on a monthly basis at least until the end of 2011. • Mosquito and midge breeding within the lake is a potential problem for future residents. The Shire of Murray monitors mosquito larvae numbers adjacent to Lake McLarty. | <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> 1. preparing a control program for problem animals based on the following criteria: <ol style="list-style-type: none"> a. existing and potential impact of the species; b. the efficiency and effectiveness of control measures; c. availability of resources; and d. the capacity for long term monitoring of the population; 2. establishing a formal lease/licence to allow closely monitored cattle grazing to continue in the reserve (see <i>Native Animals and Habitats</i>); 3. reinforcing the vegetation buffer around the lake to negate potential problems with midges and mosquitoes; 4. releasing proposals to spray for midge and mosquito control to the Conservation Commission; and 5. increasing community awareness of the need to keep domestic animals out of the reserve, and increasing the effectiveness of the dog-resistant fence on the western side of the lake if necessary. | | | |

| KEY POINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS * | | |
|---|--|--|--|------------------------|
| | | Performance Measure | Target | Reporting Requirements |
| <p>17. DISEASE</p> <ul style="list-style-type: none"> Lake Mclarty Nature Reserve is 'unrecoverable' for the presence of <i>Phytophthora cinnamomi</i>. However sections of the adjacent Mclarty Nature Reserve are 'interceptable' and susceptible to this pathogen. <i>Phytophthora cinnamomi</i> could have an impact on revegetation programs in the reserve if the species planted are vulnerable to it. <i>P. cinnamomi</i> can be spread by humans, vehicles and animals moving infested soil and plant material. | <p>OBJECTIVE: To prevent the introduction and spread of <i>Phytophthora cinnamomi</i>.</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> surveying the adjoining Mclarty Nature Reserve for <i>P. cinnamomi</i> infection and quarantining affected areas; reducing the risk of introducing and spreading the disease to uninfected areas by limiting access to affected areas, and ensuring appropriate hygiene standards for machinery and vehicles when undertaking works within the reserve; ensuring soils and other materials brought into the reserve are free of <i>P. cinnamomi</i>; and raising community awareness of the impacts and management issues associated with dieback (see <i>Awaking the Community</i>). | | | |
| <p>18. FIRE</p> <ul style="list-style-type: none"> Wildfire is a significant threat to the natural values of the reserve, and to adjoining properties. The Department has the lead role in fire suppression within the reserve and, in the event of fire, would be assisted by the Shire of Murray. Fire management at Lake Mclarty is guided by the Bushfires Act 1954 and the Department's Fire Management Policy. Fires in small reserves surrounded by agricultural land usually promote weed invasion. Large infestations of introduced bulrush are a fire hazard. | <p>OBJECTIVE: To protect the biodiversity of the reserve, as well as people and property, by minimising the impact of wildfire.</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> minimising the area of <i>Spina</i> infestations to prevent the build up of fuel; maintaining the concrete tank and bore on the western side of the lake for fire lighting purposes; ensuring that access for fire protection purposes is considered and provided when any subdivisions are proposed; and considering selective prescribed burning only for the protection of specially protected, threatened or priority species. | | | |
| <p>19. REHABILITATION</p> <ul style="list-style-type: none"> Degradation and loss of natural vegetation, particularly on the western side of the lake, has occurred historically as a result of farming practices and cattle grazing. | <p>OBJECTIVE To restore degraded areas of the reserve to a condition resembling the natural environment.</p> | Change in the area of land rehabilitated within the reserve. | Land in the southern and western parts of the reserve satisfactorily rehabilitated | Every five years |

| KEY POINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS * | | |
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| | | Performance Measure | Target | Reporting Requirements |
| <p>19. REHABILITATION (continued)</p> <ul style="list-style-type: none"> Rehabilitation of the western side of the lake was undertaken in 2004 using native species grown from seed collected from the reserve. | <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> rehabilitating with plants that have been propagated from seeds and cuttings collected either from within the reserve or from provenance from the Swan Coastal Plain; coordinating rehabilitation works with weed control, fire protection and cattle exclusion; encouraging members of the local community, community groups and schools to participate in rehabilitation works, and to seek external funding for such works; ensuring much and soil used in rehabilitation works does not contain unwanted seeds or plant diseases; encouraging natural regeneration as much as possible by managing grazing pressure from cattle and rabbits; and undertaking rehabilitation works on the southern and south-eastern sides of the reserve, and contributing rehabilitation on the western side. | | | |

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| PART D. MANAGING CULTURAL HERITAGE | | | | |
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| KEY POINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS * | | |
| | | Performance Measure | Target | Reporting Requirements |
| <p>20. INDIGENOUS AND 21. NON-INDIGENOUS HERITAGE</p> <ul style="list-style-type: none"> There are no known Aboriginal sites in the reserve, although registered sites exist within the Peel Inlet/Marvey Estuary area. | <p>OBJECTIVE To protect the reserve's cultural heritage.</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> notifying relevant Native title claimants and authorities when proposing to undertake public works in registered heritage sites; ensuring management activities do not impact upon cultural heritage values; and collating information on cultural heritage sites and adding them to the register on the Department's Recreation and Tourism Information System (RATIS) database. | | | |
| PART E. MANAGING VISITOR USE | | | | |
| <p>23. VISITOR ACCESS</p> <ul style="list-style-type: none"> Visitor access to the reserve is limited to gates located on the western and southern sides of the lake, although the southern access is for management vehicles only. Walkers also use management and fire access tracks. | <p>OBJECTIVE To provide safe and convenient access within the reserve for visitors and management, that is consistent with reserve values.</p> | | | |

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| KEY POINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS * | | |
|--|---|------------------------------|--------|------------------------|
| | | Performance Measure | Target | Reporting Requirements |
| <p>23. VISITOR ACCESS (continued)</p> <ul style="list-style-type: none"> • Camping on the lake is only permitted for management and scientific research purposes. | <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> 1. maintaining designated access points to the reserve to facilitate walking and bird watching activities; 2. installing an information sign at each of the access points; 3. continuing to permit pedestrian access on management and fire access tracks unless otherwise signposted; 4. pending future subdivisions, considering upgrading vehicle access to the south of the lake off Mills Road to allow off-road parking; 5. pending a future increase in visitor numbers, consider developing defined walking trails if required; and 6. prohibiting the use of recreational watercraft (including motor boats) in the lake, and allowing the use of canoes only for education, research and management purposes by approved users. | | | |

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| <p>24. VISITOR USE</p> <ul style="list-style-type: none"> • The most popular visitor uses at the reserve are bird watching and nature appreciation. • Visitor use at Lake McLarty is expected to increase over the life of the management plan as residential development on adjoining land progresses and the area becomes more accessible with the completion of the Pedestrian Freeway. • Facilities are limited to an information board on the western side of the lake. | <p>OBJECTIVE:</p> <p>To provide for passive, low-impact visitor uses in a manner that is consistent with the reserve's purpose and values, and which minimises conflict between visitors.</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> 1. promoting visitor use that is consistent with the protection and promotion of the reserve's values; 2. ensuring that visitor uses do not impact on the values of Lake McLarty; and 3. constructing a viewing platform on the western side of the lake. | | | |
| <p>PART F. INVOLVING THE COMMUNITY</p> | | | | |
| <p>25. INFORMATION, EDUCATION AND INTERPRETATION</p> <ul style="list-style-type: none"> • Information, education and interpretation provide targeted communication with the public. • It is important for the effective implementation of the management plan that community understanding and support is fostered. | <p>OBJECTIVES</p> <ol style="list-style-type: none"> 1. To increase community awareness, appreciation and understanding of the reserve's values, and to gain support for management practices. 2. To increase community awareness, appreciation and understanding of Lake McLarty's national and international importance for waterbirds. | | | |

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| KEY POINTS | OBJECTIVES AND STRATEGIES | KEY PERFORMANCE INDICATORS * | |
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| | | Performance Measure | Target Reporting Requirements |
| <p>INFORMATION, EDUCATION AND INTERPRETATION (continued)</p> <ul style="list-style-type: none"> There is limited community awareness of Lake McLarty's importance as a nationally and internationally significant wetland. | <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> providing information to visitors on reserve values and issues such as its importance for migratory waterbirds, visitor safety, permitted activities and regulations; and installing signs and information for the purpose of public education and interpretation to assist in achieving conservation objectives. | | |
| <p>26. WORKING WITH THE COMMUNITY</p> <ul style="list-style-type: none"> Community involvement is an integral component of the Department's operations. Community groups and individuals are encouraged to be involved in the management of Lake McLarty. Community support is essential for the successful implementation of this management plan. | <p>OBJECTIVE To facilitate effective community involvement in the management of the reserve.</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> continuing to encourage, promote and support volunteers and community groups with essential resources to help them carry out their activities; and involving the community in the implementation of this management plan. | <p>Change in the numbers of volunteers contributed hours to reserve management.</p> | <p>20 percent increase in the numbers of volunteer hours contributed to the management of the reserve from 2006 levels.</p> <p>Every five years</p> |
| <p>27. SCIENTIFIC AND RESEARCH USE</p> <ul style="list-style-type: none"> Data collected at the reserve includes water quality indicators, water levels, bird counts and mosquito larvae counts. Opportunities exist for further studies to complement proposals in this management plan, particularly in relation to impacts and/or benefits of cattle grazing and alternatives for habitat maintenance. All research should be co-ordinated by the Department. | <p>OBJECTIVE To increase knowledge and understanding of key values to provide for improved management of the planning area and to monitor the possible impacts associated with implementing the management plan.</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none"> conducting research and monitoring as resources permit and according to priority that focuses on issues and values required to report on this management plan, and the establishment of baseline information encouraging and supporting, wherever possible, external agencies, organisations, volunteer groups and individuals to undertake research and monitoring projects where they contribute to biodiversity conservation and reflect visitor's use of the area; and supporting, and where possible, seeking grant applications to encourage scientific research and monitoring within the planning area, particularly in relation to impacts and/or benefits of cattle grazing and alternatives for habitat maintenance. | <p>Research within the reserve is conducted according to Departmental priorities and Government initiatives, and to assist with the performance assessment for this management plan.</p> | <p>Research undertaken is that which has been deemed a high priority</p> <p>Every five years.</p> |

*Note: the response to targets should be reported for each of the key performance indicators to the Department to investigate the cause and report to the Conservation Commission for action.