

PLAN OF MANAGEMENT

FOR

NATURAL AREAS -
Lucas Heights Conservation Area



Adopted by
Sutherland Shire Council
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SECTION 1

INTRODUCTION

1.1. Background

Plans of Management are required to be prepared by all Councils in New South Wales for public land classified as ‘community’ under the Local Government Act 1993.

The land management provisions in the Local Government Act enable Councils to move towards more positive land management practices with definite objectives. The Plan of Management identifies objectives and performance targets, means of achievement and assessment criteria, all of which will become accountable to the community. The Plans allow Council to effectively co-ordinate present and future use of public land within the local government area.

A Plan of Management is not the only document that governs the use and management of community land. Under the Act, community land is required to be used and managed in accordance with the following: -

- The Plan of Management applying to the land; and
- Any law which permits the use of land for a specific purpose, or otherwise regulates the use of the land. (This includes the Environmental Planning and Assessment Act and planning instruments made under the Act. A Plan of Management should not be inconsistent with any environmental planning instrument applying to that land).

1.2. Purpose of the Plan

1.2.1 General

Community land must be used and managed in accordance with a Plan of Management. Until a Plan of Management for community land is approved and adopted by Council, the nature and use of the land must not be changed.

A Plan of Management enables management to proceed in an efficient manner; helps reconcile competing interests; identifies priorities for the allocation of the available resources and facilitates public understanding. Periodic revision of a plan also enables changing social, economic and ecological conditions and new knowledge relevant to land management to be taken into account as they arise.

This Plan of Management is intended to provide detailed management, planning and design proposals and to provide a sufficient level of management information and guidance to Council officers in the day to day management of the Lucas Heights Conservation Area.

The purpose of this Plan of Management is to achieve a balance between the environmental, social and economic factors influencing the management of the site. The plan also provides a framework for all stakeholders so that a consistent approach to the management of the land can be achieved.

The Plan of Management aims to be a useful resource for Council and an informative document to the public. It will provide an on-going source of data and information for informed management decision making.

1.2.2 Lucas Heights Conservation Area

An Environmental Management Plan has been prepared by National Environmental Consulting Services on behalf of Waste Services NSW and Sutherland Shire Council and forms the basis for this Plan of Management. In accordance with the Local Government Amendment (Community Land Management) Act 1998, Council has prepared this Plan of Management for the site known as the Lucas Heights Conservation Area.

As the Environmental Management Plan (EMP) forms the basis of the Plan of Management for the Lucas Heights Conservation Area, the EMP is attached to this Plan of Management as a reference document as Appendix D.

1.3. Property Description & Ownership

1.3.1 Property Details

The Lucas Heights Conservation Area is located at Lucas Heights, to the north of, and adjacent to, the Lucas Heights Waste Management Centre. The site has its title reference as Lot 2 DP1032102 and has a total area of 111.7 hectares.

Site plans are attached as Appendix B.

1.3.2 Site Description

The Lucas Heights Conservation Area (LHCA) is located at Lucas Heights, on the south western boundary of Sutherland Shire, approximately 30 kilometres south west of Sydney's CBD. It is situated directly north of the Lucas Heights Waste Management Centre (LHWMC) and is bordered to the west by Heathcote Road and Holsworthy Military Reserve and to the east by Crown Land, Little Forest Road (an unmade road) and former waste disposal sites. Appendix B – Figure 1.1 shows the LHCA in relation to the LHWMC.

1.3.3 Ownership Details

In a report to Sutherland Shire Council and Waste Service NSW (Woodward 1996), the Office of Environmental Mediation and Inquiry reported on the status of the LHCA and appropriate management responsibilities. These responsibilities have subsequently been agreed to by major stakeholders.

It was a requirement of the mediation that the following transfers of land from Waste Services NSW take place. All these transfers have now been completed:

- The area of the LHCA which is the subject of this Plan of Management, was transferred to Sutherland Shire Council in April 2002 (refer to Appendix C Figure 5.2);
- The site of approximately 6 hectares of Stringybark/Ironbark open forest to National Parks and Wildlife Service. This area is proposed for use as a Nature Reserve; and
- A parcel of about 2 hectares to the Gandangara Local Aboriginal Land Council for use as a cultural tourist centre.

Sutherland Shire Council will be entering into a Voluntary Conservation Agreement (VCA) with the Minister for the Environment for the management of the LHCA. VCA's are

provided for in Section 69 of the National Parks and Wildlife Act. The objective of a VCA is to conserve the natural, cultural and/or scientific values of all, or part of, the land owned or managed by the landholder by agreed management. Agreements are registered on the title of the land and are binding on the owner and future owners of the land.

Waste Services NSW will provide the resources for the LHCA, which will be managed by Waste Service NSW as authorised by this Plan of Management and in accordance with the EMP (Appendix D) during its ongoing environmental responsibilities at the Lucas Heights Waste Management Centre which would extend for about 50 years.

1.4 Categorisation of Community Land

1.4.1 General Context

Under the Local Government Act 1993, all ‘community’ land must be categorised as one or more of the following:

- (a) A Natural Area (NA)
- (b) A Sportsground (SG)
- (c) A Park (PK)
- (d) An Area of Cultural Significance (CS)
- (e) General Community Use (GC)

Land that is to be categorised as a Natural Area is to be further categorised as one or more of the following: -

- (a) Bushland (BU);
- (b) Wetland (WE);
- (c) Escarpment (ES);
- (d) Watercourse (WA);
- (e) Foreshore (FO); and/or
- (f) A category prescribed by the Regulations.

These categories have been defined by the Local Government (General) Amendment (Community Land Management) Regulation 1999 (Appendix A).

Council has prepared Generic Plans of Management for Sportsgrounds, Parks and General Community Use Areas and is in the process of preparing Site Specific Plans of Management for Natural Areas and Areas of Cultural Significance and other sites where appropriate.

The following Site Specific Plan of Management applies to ‘community’ classified land known as the Lucas Heights Conservation Area, which has been categorised as a Natural Area. Site plans are attached as Appendix B to this Plan. Additional site plans can be found throughout the EMP, which is attached as Appendix D to this plan.

1.4.2 Categorisation of Lucas Heights Conservation Area

The Local Government (General) Regulations 1999 provides guidelines for the categorisation of sites and is attached as Appendix A to this Plan.

Having regard to the guidelines, the subject site has been categorised as:

- (i) Natural Area
- (ii) Cultural Significance
- (iii) Bushland
- (iv) Escarpment
- (v) Watercourse

1.5 Management Objectives

1.5.1 Natural Area Legislative Objectives

Section 36E of the Local Government Act 1993 states that:

“The core objectives for management of community land categorised as a natural area are:

- (a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area, and;
- (b) to maintain the land, or that feature or habitat, in its natural state or setting, and
- (c) to provide for the restoration and regeneration of the land, and
- (d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and
- (e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the **Threatened Species Conservation Act 1995** or the **Fisheries Management Act 1994.**”

1.5.2 Natural Area Site Specific Objectives

- To progressively reverse the process of degradation, to undertake rehabilitation and to enhance, maintain and protect the natural heritage values of the site.
- To educate the community regarding the change in land use for the site, from uncontrolled recreational use for trail bikes and 4WD vehicles, to a conservation area for the community.

1.5.3 Cultural Significance Legislative Objectives

Section 36H of the Local Government Act 1993 states that:

- (1) The core objectives for management of community land categorised as an area of cultural significance are to retain and enhance the cultural significance of the area (namely its Aboriginal, aesthetic, archaeological, historical, technical or research or social significance) for past, present and future generations by the active use of conservation methods.
- (2) Those conservation methods may include any or all of the following methods:
 - (a) the continuous protective care and maintenance of the physical material of the land or of the context and setting of the area of cultural significance,
 - (b) the restoration of the land, that is, the returning of the existing physical material of the land to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material,

- (c) the reconstruction of the land, that is, the returning of the land as nearly as possible to a known earlier state,
 - (d) the adaptive reuse of the land, that is, the enhancement or reinforcement of the cultural significance of the land by the introduction of sympathetic alterations or additions to allow compatible uses (that is, uses that involve no changes to the cultural significance of the physical material of the area, or uses that involve changes that are substantially reversible or changes that require a minimum impact),
 - (e) the preservation of the land, that is, the maintenance of the physical material of the land in its existing state and the retardation of deterioration of the land.
- (3) A reference in subsection (2) to land includes a reference to any buildings erected on the land.”

1.5.4 Cultural Significance Site Specific Objectives

- To enhance, maintain and protect the Aboriginal archaeological sites within the Lucas Heights Conservation Area.
- To educate the community regarding the value of Aboriginal and European historic sites.

1.5.5 Bushland Legislative Objectives

Section 36J of the Local Government Act 1993 states that:

“The core objectives for management of community land categorised as bushland are:

- (a) to ensure the ongoing ecological viability of the land by protecting the ecological biodiversity and habitat values of the land, the flora and fauna (including invertebrates, fungi and micro-organisms) of the land and other ecological values of the land, and
- (b) to protect the aesthetic, heritage, recreational, educational and scientific values of the land, and
- (c) to promote the management of the land in a manner that protects and enhances the values and quality of the land and facilitates public enjoyment of the land, and to implement measures directed to minimising or mitigating any disturbance caused by human intrusion, and
- (d) to restore degraded bushland, and
- (e) to protect existing landforms such as natural drainage lines, watercourses and foreshores, and
- (f) to retain bushland in parcels of a size and configuration that will enable the existing plant and animal communities to survive in the long term, and
- (g) to protect bushland as a natural stabiliser of the soil surface.”

1.5.6 Bushland Site Specific Objectives

- Remove excess weeds and non-indigenous plants and encourage natural regeneration processes.
- Minimise further loss or damage to indigenous species.
- Plant indigenous species where necessary.
- Minimise adverse impacts of recreational use in the reserve.
- Reduce the impacts of stormwater run-off onto the reserve.
- Support and encourage community involvement through the Voluntary Bushcare Group.

- Maintain and enhance the native tree population.
- Educate the community on the importance of protecting biodiversity.
- Continue to collect data on local indigenous flora species.

1.5.7 Escarpment Legislative Objectives

Section 36L of the Local Government Act 1993 states that:

“The core objectives for management of community land categorised as an escarpment are:

- (a) to protect any important geological, geomorphological or scenic features of the escarpment, and
- (b) to facilitate safe community use and enjoyment of the escarpment.”

1.5.8 Escarpment Site Specific Management Objectives

- Maintain vegetation around escarpments.
- Prohibit the use of escarpments for abseiling/rock climbing purposes.

1.5.9 Watercourse Legislative Objectives

Section 36M of the Local Government Act states that:

“The core objectives for management of community land categorised as a watercourse are:

- (a) to manage watercourses so as to protect the biodiversity and ecological values of the instream environment, particularly in relation to water quality and water flows, and
- (b) to manage watercourses so as to protect the riparian environment, particularly in relation to riparian vegetation and habitats and bank stability, and
- (c) to restore degraded watercourses, and
- (d) to promote community education, and community access to and use of the watercourse, without compromising the other core objectives of the category.”

1.5.10 Watercourse Site Specific Objectives

- To rehabilitate eroded areas and improve water quality in Mill Creek by reducing sedimentation.

1.6 Activities Expressly Authorised by this Plan

Subject to compliance with the Local Government Act 1993 and the core objectives for community land, the following activities are expressly authorised:

- i. Lease, licence or hire the site for the purpose as listed in Section 5.2 – Granting of Leases, Licences and Other Estates, and only where community use and access occurs in a manner that will minimise and mitigate any disturbance caused by said lease, licence or other estate.
- ii. That all necessary Fire Control exercises by Council or its agents be authorised, eg, implementation of hazard reduction strategies, construction of fire trails, firebreaks, etc, and the management of fire regimes and fuel.

In accordance with the Lucas Heights Conservation Area EMP (Appendix D), the following activities are expressly authorised:

- Access for bushwalking, educational and research purposes via a network of walking tracks.
- Access for firefighting vehicles.
- Rehabilitation of disturbed areas including tracks and clay quarry area.
- Maintain and facilitate access by the Aboriginal community to the identified Aboriginal archaeological sites.

The Sydney International Clay Target Association (SICTA) currently holds a 30 year licence over part of the western section of the site. Under an agreement between SICTA, Waste Services NSW and Council, the area covered by the licence will be managed as part of the Conservation Area.

SECTION 2

MANAGEMENT STRATEGIES

2.1 Legislative Requirements

2.1.1 Section 36(3) Requirements

Section 36(3) of the Local Government Act 1993 states that:

“A plan of management for community land must identify the following:

- a) the category of the land;
- b) the objectives and performance targets of the plan with respect to the land;
- c) the means by which the council proposes to achieve the plan’s objectives and performance targets;
- d) the manner in which the council proposes to assess its performance with respect to the plan’s objectives and performance targets, and may require the prior approval of the council to the carrying out of any specified activity on the land,”

2.1.2 Section 36(3A) Requirements

Section 36(3A) of the Local Government Act 1993 states that:

A plan of management that applies to just one area of community land:

- a) must include a description of:
 - i) the condition of the land, and of any buildings or other improvements on the land, as at the date of adoption of the plan of management, and
 - ii) the use of the land and any such buildings or improvements as at that date, and
- b) must
 - i) specify the purposes for which the land, and any such buildings or improvements, will be permitted to be used, and
 - ii) specify the purposes for which any further development of the land will be permitted, whether under lease or licence or otherwise, and
 - iii) describe the scale and intensity of any such permitted use or development.

2.1.3 Section 36A – 36C Requirements

Section 36A of the Act requires that any site comprising the habitat of endangered species and is declared a critical habitat, a plan of management must be prepared for that area. This site has not been declared as a critical habitat.

Section 36B of the Act requires that any site comprising the habitat of threatened species and is covered by a threat abatement plan or recovery plan, a plan of management must be prepared for that area. The site comprises the habitat of threatened species as outlined in Section 3.1.3 – Threatened Species of this plan.

Section 36C of the Act requires that a plan of management be prepared for any site containing significant natural features being a known natural, geological, geomorphological, scenic or other feature that is considered by Council to warrant protection or special management considerations, or is part of a wildlife corridor.

2.2 Overall Management Strategy

The overall management strategy for this Plan of Management has been prepared on the basis that over an initial three-year period, management of the Lucas Heights Conservation Area (LHCA) will focus primarily on activities associated with rehabilitation and prevention of ongoing disturbance. During this period, maintenance activities will also be undertaken. After the initial three-year period, the focus of the management tasks will change to ongoing environmental protection and enhancement, drawing upon the results of monitoring over the initial period.

Within this framework, the following strategies are proposed:

- Rehabilitation of the site and management as a Conservation Area;
- No development to take place on the site;
- Prevention of further fragmentation of the Transition Forest. Within the LHWMC is located 3 hectares of Transition Forest which does not form part of the LHCA (see Appendix B – Figure 5.2). However, in order to prevent further fragmentation of this community, the existing fence between the Transition Forest and the LHCA will be removed to allow this area to be managed consistently with the rest of the LHCA;
- Rehabilitation and revegetation of the clay quarry area with species collected from the surrounding area, including the open forest species, which originally colonised the clay quarry area;
- Maintenance of the integrity of vegetation communities so that the individual characteristics of each community are not lost;
- Removal of rubbish and litter, which may smother habitat, change nutrient regimes or drainage and thus affect vegetation;
- Increase the knowledge base of species and communities within the LHCA, including the fire requirements of significant species and communities;
- Removal of weeds from the site, in order to prevent their spread and competition with native species within the LHCA;
- Implementation of a Pest Control Programme, as part of an integrated regional approach, in conjunction with the NPWS, to prevent pest and feral animals from using the area; and
- Implementation of an educational programme, in order to advertise the significance of the LHCA and proposed Nature Reserve, and to encourage the community to value and look after these areas.
- Conservation and protection of the identified Aboriginal archaeological sites within the LHCA in consultation with the Gandangara Local Aboriginal Land Council (LALC);
- Fencing of the LHCA in such a way to prevent the entry of vehicles, however, at the same time to allow fauna movement in and out of the site. Barriers will be placed along Heathcote Road in order to prevent existing informal parking areas from being used;
- Provision of access to the LHCA for pedestrians and maintenance and fire fighting vehicles only. A pedestrian stile will be situated at the entrance to a proposed parking area along Heathcote Road. A management track will be maintained for the purpose of monitoring, fire fighting and movement into the area of equipment for rehabilitation.
- Use of the site by 4WD vehicles and trail bikes has created tracks within the LHCA, many of which are eroding. Identified tracks for emergency vehicles and walking

will be rehabilitated to prevent erosion and to reduce fragmentation of vegetation communities. Tracks no longer required will be closed;

- Provision of a network of walking tracks, which meets educational, scientific, bushwalking and Aboriginal site access requirements. The walking track will be available for use within 12 months of the commencement of rehabilitation;
- Provision of access for bushwalking, educational and research purposes;

2.3 Specific Management Strategies for the Lucas Heights Conservation Area

This plan will meet the core objectives through the implementation of management strategies as outlined in the following table. Each of these issues is accompanied by one or more objective(s) and performance target(s), a means of achieving the objective(s) and a manner in which the objective(s) will be assessed.

A number of site specific objectives have also been identified and are outlined in Section 1.5 – Management Objectives. These objectives will also be met through the implementation of the management strategies as outlined in the following Table 2.3 – Management Strategies for the Lucas Heights Conservation Area.

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Bio-diversity	<p>Ensure that bio-diversity is maintained or enhanced in Natural Areas.</p> <p>Maximise bio-diversity of flora and fauna in Natural Areas.</p>	<ul style="list-style-type: none"> ◆ Protection to ensure the diversity of plant and animal life. ◆ Plan development and activities so as to minimise impact on Bio-diversity. 	<ul style="list-style-type: none"> ◆ Degree of bio-diversity in Natural Areas.
Threatened Native Species	<p>Protect native and threatened species and their habitats.</p>	<ul style="list-style-type: none"> ◆ Regulation of public access to sensitive habitats via pathway location. ◆ Education and awareness via interpretive signs. ◆ Implementation of Threatened Species Conservation Act 1995. 	<ul style="list-style-type: none"> ◆ The condition and survival of native species and their habitats.
Exotic Flora & Fauna	<p>Minimise the impacts that may be caused by exotic flora and fauna on Natural Areas.</p> <p>Control and limit the existence of exotic flora and fauna within Natural Areas.</p> <p>Control feral animals within Natural Areas.</p>	<ul style="list-style-type: none"> ◆ Appropriate design and implementation of works within Natural Areas. ◆ Implementation of Noxious Weeds Act 1993. ◆ Community education on exotic flora and fauna. ◆ Creating community awareness via interpretive signs. 	<ul style="list-style-type: none"> ◆ Minimal presence of exotic flora and fauna. ◆ Elimination of problem exotic flora and fauna. ◆ The physical conditions of natural areas.
Environmental Weeds	<p>Minimise weed infestation and distribution and the associated impacts in Natural Areas.</p>	<ul style="list-style-type: none"> ◆ Minimise rubbish dumping in Natural Areas, eg. garden refuse. ◆ Appropriate design of water 	<ul style="list-style-type: none"> ◆ Minimal presence of environmental weeds. ◆ Elimination of environmental

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
	<p>Minimise the impact of environmental weeds.</p> <p>Minimise the impacts of run-off from adjoining lands.</p>	<p>quality control devices.</p> <ul style="list-style-type: none"> ◆ Community education on the impacts of environmental weeds. ◆ Minimise nutrient loads and weed propagules content of run-off through appropriate control devices. 	<p>weeds.</p> <ul style="list-style-type: none"> ◆ Degree of infestation of environmental weeds.
Feral Animals	Control feral animals within natural areas.	<ul style="list-style-type: none"> ◆ Community education on feral animals. ◆ Trapping and eradication. 	<ul style="list-style-type: none"> ◆ Impacts that feral animals have on native flora and fauna in natural areas.
Tree and Bushland Vegetation Preservation	Manage, protect and control existing and future trees in Natural Areas.	<ul style="list-style-type: none"> ◆ Application of Council's Tree and Bushland Preservation Order. ◆ Application of correct horticultural and tree surgery techniques. ◆ Monitor tree age and health. 	<ul style="list-style-type: none"> ◆ Condition of trees in Natural Areas. ◆ Number of breaches of Tree and Bushland Preservation Order.
Bushland Regeneration	Preserve and enhance remnant bushland.	<ul style="list-style-type: none"> ◆ Regeneration of bushland where applicable under the guidance of Council's Bushcare Officers. 	<ul style="list-style-type: none"> ◆ Quality of bushland in Natural Areas.
Rehabilitation of Disturbed Areas	Allow for the rehabilitation of disturbed Natural Areas.	<ul style="list-style-type: none"> ◆ Utilise correct rehabilitation methods and techniques. ◆ Regeneration of Natural Areas where applicable under the guidance of Council officers. 	<ul style="list-style-type: none"> ◆ Degree of successful rehabilitation of Natural Areas. ◆ Resilience of Natural Areas to regenerate.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Vegetation	<p>Retain existing indigenous species in Natural Areas.</p> <p>Manage and protect existing species in Natural Areas.</p>	<ul style="list-style-type: none"> ◆ Identify species indigenous to the area. ◆ Use recognised suitable native species to revegetate Natural Areas. ◆ Restrict clearing of vegetation in accordance with Council's Tree and Bushland Preservation Order. 	<ul style="list-style-type: none"> ◆ Quality and health of vegetation in Natural Areas. ◆ Physical appearance of vegetation.
Habitat Protection	Protect natural flora and fauna and their habitats in Natural Areas.	<ul style="list-style-type: none"> ◆ Regulation of public access to sensitive habitats via pathway location. ◆ Education and awareness via interpretive signs. ◆ Implementation of Threatened Species Conservation Act 1995. 	<ul style="list-style-type: none"> ◆ The condition and survival of native species and their habitats. ◆ Number of suitably protected habitats.
Wildlife Corridors	<p>Enable the connection of Natural Areas to form wildlife corridors.</p> <p>Allow for the protection and reinstatement of wildlife corridors.</p>	<ul style="list-style-type: none"> ◆ Identification of suitable wildlife corridors. ◆ Recognition of wildlife corridors in Council's Bushland Management Programs. ◆ Consideration of wildlife corridors in applying Council's Tree and Bushland Preservation Order. 	<ul style="list-style-type: none"> ◆ Increased bio-diversity.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Removal of Flora & Fauna	Protection of native flora and fauna of Natural Areas.	<ul style="list-style-type: none"> ◆ Compliance with Council's Plans, Policies and Guidelines. ◆ Council approval for removal of flora and fauna. 	<ul style="list-style-type: none"> ◆ Number of reported incidences of flora and fauna removed from sites.
Seed Collection	Allow authorised seed collection from natural areas.	<ul style="list-style-type: none"> ◆ Collections within recognised natural areas. ◆ Collections in accordance with Bush Regeneration Guidelines. ◆ Council approval. 	<ul style="list-style-type: none"> ◆ Number of unauthorised incidents of seed collection. ◆ Degree of compliance with Bush Regeneration Guidelines.
Ecological Fire Practices	Maintain ecological quality of natural areas through the use of fire and its management. (Refer – Section 5.8 Environmental Management Plan)	<ul style="list-style-type: none"> ◆ Fire management in accordance with bush regeneration practices and guidelines. ◆ Compliance with Council's Fire Management Plan. 	<ul style="list-style-type: none"> ◆ Degree of floristic diversity.
Landscape Character	<p>Reflect and maintain the indigenous character of the site.</p> <p>Complement the character of the existing Natural Area.</p> <p>Provide a positive contribution to the local character both physically and visually.</p> <p>Enhance an area to be consistent with its natural heritage where</p>	<ul style="list-style-type: none"> ◆ Appropriate design and selection of materials in accordance with Council's Plans, Policies and Guidelines. ◆ Preserve and reinforce indigenous Natural Areas. ◆ Sensitive design to ensure a balance between indigenous and cultural landscapes. ◆ Selection of appropriate landscape species. 	<ul style="list-style-type: none"> ◆ Quality of landscape character. ◆ Minimal infestation of exotic plant species. ◆ Comments about the appearance of Natural Areas.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
	appropriate.		
Natural Heritage	Preserve and protect the natural heritage and features of significance in Natural Areas.	<ul style="list-style-type: none"> ◆ Promote awareness and educate via interpretive signs where appropriate. ◆ Minimise physical disturbance of sensitive areas. ◆ Identification of significant Natural Areas. 	<ul style="list-style-type: none"> ◆ The condition of natural heritage items and significant features. ◆ Reports following inspections. ◆ Incidents of vandalism.
Preservation Opportunities/Conservation	<p>Maximise the opportunities for environmental preservation.</p> <p>Prevent the loss of existing Natural Areas.</p> <p>Conserve and manage Natural Areas as a valuable component of an ecosystem.</p>	<ul style="list-style-type: none"> ◆ Seek to preserve/conservate Natural Areas where possible. ◆ Retain existing Natural Areas where possible. 	<ul style="list-style-type: none"> ◆ Number and area of Natural Areas presently conserved. ◆ Number and area of Natural Areas for potential future conservation.
Soil Erosion/Deposition	<p>Minimise the degree of erosion/deposition from and to Natural Areas.</p> <p>Prevent soil collapse and minimise sedimentation.</p>	<ul style="list-style-type: none"> ◆ Implementation of appropriate preventative techniques and erosion control measures. 	<ul style="list-style-type: none"> ◆ Degree of soil erosion/deposition in Natural Areas. ◆ Degree of sediment accumulation.
Removal of bushrock/sand/soil	Protection of the natural resources of Natural Areas.	<ul style="list-style-type: none"> ◆ Compliance with Council's Plans, Policies and Guidelines. 	<ul style="list-style-type: none"> ◆ Reports of removal of material.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Land Use/Development Control	Prevent further destruction of natural areas.	<ul style="list-style-type: none"> ◆ Application of relevant Council Plans, Policies and Guidelines. 	<ul style="list-style-type: none"> ◆ Adequacy of regulations to prevent degradation to natural areas. ◆ Assessment of the degree of degradation caused by development.
Adjoining Land Use	<p>Minimise the impacts of adjoining land uses on natural areas.</p> <p>Ensure adjoining land uses do not compromise the integrity of natural areas.</p>	<ul style="list-style-type: none"> ◆ Appropriate selection of land use adjoining natural areas. ◆ Implementation of appropriate preventative techniques. 	<ul style="list-style-type: none"> ◆ Physical conditions of natural areas. ◆ Degree of degradation caused from adjoining land use.
Size/Shape of Natural Areas	<p>Ensure that natural areas are of appropriate size and shape for purpose and demand.</p> <p>Ensure size and shape is appropriate to conserve natural features, including flora and fauna.</p>	<ul style="list-style-type: none"> ◆ Appropriate allocation of suitable natural areas. ◆ Appropriate design and siting of natural areas. 	<ul style="list-style-type: none"> ◆ Number of comments from community. ◆ Loss of bio-diversity.
Landfill Sites	<p>Minimise environmental impacts of closed landfill sites.</p> <p>Minimise impact of existing landfills in Natural Areas</p>	<ul style="list-style-type: none"> ◆ Compliance with Sutherland Shire Local Environment Plan. ◆ Monitoring and recommended remedial works on inspected areas of existing closed sites. ◆ Rehabilitate old landfill sites as appropriate. 	<ul style="list-style-type: none"> ◆ Incidents of unauthorised landfill operations. ◆ Degree of environmental degradation. ◆ Degree of impact of existing landfills on Natural Areas.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Run-off and Drainage	<p>Minimise the quantity of stormwater entering Natural Areas while maintaining environmental flows.</p> <p>Maximise water quality in accordance with relevant Council adopted guidelines.</p> <p>Maximise the quality of habitat value within watercourses.</p> <p>Minimise erosion and sedimentation impacts.</p> <p>Minimise weed infestation.</p>	<ul style="list-style-type: none"> ◆ Appropriate selection and design, monitoring and maintenance of devices, such as detention basins, soak pits, gross pollutant traps, nutrient removal ponds, artificial wetlands and the like. ◆ Inspections, cleaning and maintenance. ◆ Community education and awareness programs. ◆ Effective erosion and sediment control on construction and development sites. ◆ Report all surcharges and leakages of sewage. 	<ul style="list-style-type: none"> ◆ Quality in accordance with Council adopted guidelines for stormwater and run-off. ◆ Degree of weed infestation. ◆ Number of prosecutions under the Clean Waters Act 1970. ◆ Increased natural bio-diversity. ◆ Incidents of erosion and sedimentation requiring remedial works.
Groundwater/Water Table Quality	<p>Protect the quality of existing groundwater.</p> <p>Maximise the quality of water recharging the groundwater/water table.</p> <p>Aim to maintain natural groundwater levels.</p>	<ul style="list-style-type: none"> ◆ Control and regulate landfill operations and leachates. ◆ Control and regulate groundwater usage. ◆ Control and limit impervious areas. ◆ Minimise cut and fill disturbances to ground water flows. 	<ul style="list-style-type: none"> ◆ Testing of groundwater. ◆ Degree of infiltration of polluted surface water into groundwater. ◆ Number of comments and incidents of polluted groundwater.
Watercourse Buffer Zones	<p>Protect and enhance buffer zones around watercourses in Natural Areas.</p>	<ul style="list-style-type: none"> ◆ Pro-active regeneration of vegetated areas and revegetation of degraded areas. 	<ul style="list-style-type: none"> ◆ Effectiveness of buffer zones. ◆ Number of creek lines with appropriate buffer zones.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
		<ul style="list-style-type: none"> ◆ The development of appropriate planning controls for environmental and watercourse protection. 	
Water features (artificial)	Allow for the appropriate use of water in natural areas (eg., artificial wetlands).	<ul style="list-style-type: none"> ◆ Appropriate functional and aesthetic design. ◆ Appropriate design and siting. ◆ Council approval for the utilisation of water in natural areas. 	<ul style="list-style-type: none"> ◆ Public response to feature.
Creek/Drainage Line/ Watercourse Maintenance	<p>Maintain creeks and drainage lines in a manner that is not detrimental to the natural area.</p> <p>Maintain creeks and drainage lines in accordance with adopted Council guidelines.</p> <p>Minimise the degree of polluted stormwater run-off entering creeks and drainage lines in natural areas.</p> <p>Minimise the impacts of creek line maintenance.</p>	<ul style="list-style-type: none"> ◆ Monitoring and inspections. ◆ Cleaning and maintenance in accordance with Council's maintenance schedule and works program. ◆ Appropriate selection, design and construction of water control devices such as dish drains, detention basins, soak pits, gross pollutant traps, nutrient removal ponds and sediment basins near natural areas. ◆ Manage weed infestation and creek and drainage line blockages. ◆ Regulate flow of drainage to minimise flooding. 	<ul style="list-style-type: none"> ◆ Condition of creeks and drainage lines in natural areas. ◆ Degree of damage caused by stormwater. ◆ Degree of sedimentation in creeks and drainage lines. ◆ Number of comments received by Council from residents. ◆ Degree of weed infestation. ◆ Loss of habitat. ◆ Loss of native flora. ◆ Degree of deviation from natural course.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
		<ul style="list-style-type: none"> ◆ Environmentally responsible creek line maintenance techniques. 	
Scientific Research	Allow for scientific research to take place in Natural Areas to benefit the environment.	<ul style="list-style-type: none"> ◆ Ensure sustainable research techniques in Natural Areas. ◆ Ensure Council benefits from the scientific research. ◆ Council approval. 	<ul style="list-style-type: none"> ◆ Successful implementation. ◆ Increase in knowledge base within Council.
Buildings and Facilities, eg. - Public Amenities - Ancillary Buildings - Public Toilets	Minimal impact of facilities on adjoining natural areas.	<ul style="list-style-type: none"> ◆ Appropriate levels of cleaning and maintenance. ◆ Provision of facilities where appropriate. ◆ Application of relevant Council Building Plans, Policies and Guidelines. ◆ Appropriate design and use of material and equipment. ◆ Development Consent where necessary. 	<ul style="list-style-type: none"> ◆ Reports of vandalism. ◆ Comments about maintenance and hygiene. ◆ Reports from maintenance inspections. ◆ Degree of environmental damage from accessways and pedestrians. ◆ Compliance with relevant Council Building Plans, Policies and Guidelines. ◆ Design within the context of its setting.
Parking	Minimise impact of parking near Natural Areas.	<ul style="list-style-type: none"> ◆ Appropriate location, layout and design. ◆ Use of regulatory signs. 	<ul style="list-style-type: none"> ◆ Adequate parking provided for users of Natural Areas where appropriate. ◆ Degree of environmental damage from accessways and

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
			pedestrians.
Pedestrian Access/Bushwalkers etc	Manage and facilitate pedestrian access with minimal impact on natural areas.	<ul style="list-style-type: none"> ◆ Appropriate design and siting of access points. ◆ Use of regulatory signs. 	<ul style="list-style-type: none"> ◆ Number of comments from the public. ◆ Degree of environmental damage from accessways and pedestrians.
Accessways: - Footpaths - cycleways	Enable appropriately located walking trails/boardwalks, which contribute to the landscape character of Natural Areas. Restrict footpaths and cycleways in sensitive Natural Areas.	<ul style="list-style-type: none"> ◆ Clear identification of trails and walks via interpretive signs. ◆ Appropriate design and siting of accessways in accordance with Council's Plans, Policies and Guidelines. ◆ Accessways are only allowed as designated by Council. ◆ Clear identification of path usage via signs. ◆ Provision of facility where appropriate. 	<ul style="list-style-type: none"> ◆ Number of community comments with regard to the provision and use of Natural Areas and facilities. ◆ Impact of access on Natural Areas. ◆ Appropriateness of accessways in Natural Areas. ◆ Number of community comments.
Mountain Bikes	Minimise the damage bikes may cause to natural areas.	<ul style="list-style-type: none"> ◆ Restrict cyclists to designated paths using regulatory signs. ◆ Education of clubs in appropriate areas. 	<ul style="list-style-type: none"> ◆ Number of bikes in natural areas. ◆ Degree of damage caused to natural areas from mountain bikes.
Picnic Facilities	Allow for the installation of picnic facilities, eg. barbeques, benches and tables where appropriate in Natural Areas so as to minimise impact.	<ul style="list-style-type: none"> ◆ Ensure suitable design, maintenance and location of installed picnic facilities. ◆ Provision of facilities where 	<ul style="list-style-type: none"> ◆ Acceptance by the community with regard to the suitability of the location and style. ◆ Compliance with relevant

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.1 – Conservation of Biodiversity & Ecosystem Function

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
		appropriate.	Council Plans, Policies and Guidelines.
Fencing	Allow for appropriate fencing of natural features.	<ul style="list-style-type: none"> ◆ Appropriate design and siting of fencing in accordance with Council's Plans, Policies and Guidelines. ◆ Maintenance of fencing. 	<ul style="list-style-type: none"> ◆ Appropriately located and effective fencing. ◆ Repairs after monitoring of fencing. ◆ Level of damage to the feature that the fence protects.
Group and School Usage	Allow groups/schools to utilise natural areas within environmental limitations.	<ul style="list-style-type: none"> ◆ Notifications to Council by groups of intentions and proposals to use natural areas. ◆ Council approval. 	<ul style="list-style-type: none"> ◆ Reports of environmental damage caused by user groups. ◆ Degree of environmental damage by groups.
Boating Activity	Allow boating access & activity and provision of boating facilities so it does not adversely impact upon the ecology of natural areas.	<ul style="list-style-type: none"> ◆ Appropriate design and siting of boating facilities and access points. ◆ Liaison & consultation with appropriate authorities and user groups. 	<ul style="list-style-type: none"> ◆ Degree of environmental degradation from boating activity.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.2 – Community Use, Access & Education

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Buildings and Facilities, eg. - Public Amenities - Ancillary Buildings - Public Toilets	Allow for the provision of safe, clean, convenient and hygienic public amenity facilities for persons of all abilities. Allow for the provision of aesthetically adequate and suitable buildings and facilities.	<ul style="list-style-type: none"> ◆ Appropriate levels of cleaning and maintenance. ◆ Regulated hours of use. ◆ Provision of facilities for the disabled. ◆ Provision of facilities where appropriate. ◆ Application of relevant Council Building Plans, Policies and Guidelines. ◆ Appropriate design and use of material and equipment. ◆ Development Consent where necessary. 	<ul style="list-style-type: none"> ◆ Reports of vandalism. ◆ Comments about maintenance and hygiene. ◆ Reports from maintenance inspections. ◆ Adequacy of building for community use needs. ◆ Compliance with relevant Council Building Plans, Policies and Guidelines. ◆ Level of user conflict. ◆ Public acceptance and use levels. ◆ Design within the context of its setting.
Parking	Allow adequate safe and convenient parking near Natural Areas in accordance with site plan.	<ul style="list-style-type: none"> ◆ Appropriate layout, design and location. ◆ Provision of emergency and disabled spaces. ◆ Use of regulatory signs. 	<ul style="list-style-type: none"> ◆ Adequate parking provided for Natural Areas users where appropriate.
Outdoor Furniture, Shade/ Shelter Structures	Allow for the provision of adequate outdoor furniture, eg. tables, seats, bins etc, where appropriate. Allow integration of the structures harmoniously, eg. visually and functionally with the character of Natural Areas.	<ul style="list-style-type: none"> ◆ Complement and be consistent with the character of the Natural Area. ◆ Appropriate design and location of structures. 	<ul style="list-style-type: none"> ◆ Community response to appearance of the structures. ◆ Compliance with relevant Council Plans, Policies and Guidelines.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.2 – Community Use, Access & Education

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Group Usage	Allow groups/schools to utilise natural areas within environmental limitations.	<ul style="list-style-type: none"> ◆ Council approval. ◆ Notifications to Council by groups of intentions and proposals to use natural areas. 	<ul style="list-style-type: none"> ◆ Levels of usage by groups/schools. ◆ Degree of usage by groups/schools.
Recreation/Recreational Opportunity	<p>Maximise the opportunities for appropriate recreation within environmental limitations.</p> <p>Maximise the quality of recreational experience in natural areas.</p>	<ul style="list-style-type: none"> ◆ Identification of appropriate and inappropriate activity. ◆ Identification of environmental limitations. ◆ Appropriate design siting and maintenance of the recreational setting within natural areas. 	<ul style="list-style-type: none"> ◆ Environmental degradation resulting from recreational activity.
Fishing	<p>Allow recreational fishing to occur within natural areas.</p> <p>Allow pedestrian access for fishing on defined tracks, paths and accessways.</p> <p>Minimise health implications associated with fishing activity (eg., bait, fish cleaning etc).</p> <p>Encourage people to keep recognised fishing spots clean.</p>	<ul style="list-style-type: none"> ◆ Use of regulatory signs. ◆ Appropriate design and siting of access points. ◆ Location of recognised fishing spots. ◆ Community education. 	<ul style="list-style-type: none"> ◆ Degree of degradation caused by fishing activity. ◆ Number of comments related to fishing debris.
Domestic Animals	Allow dogs on leashes only under full control of owner/handler.	<ul style="list-style-type: none"> ◆ Appropriate Use of regulatory signs. ◆ Community education and 	<ul style="list-style-type: none"> ◆ Comments about unsupervised animals. ◆ Comments about loose dogs &

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.2 – Community Use, Access & Education

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
		involvement in monitoring.	attacks.
Mountain Bikes	Allow mountain bikes only on designated tracks. Minimise the damage bikes may cause to natural areas.	<ul style="list-style-type: none"> ◆ Restrict cyclists to designated paths using regulatory signs. ◆ Education of clubs in appropriate areas. 	<ul style="list-style-type: none"> ◆ Number of bikes in natural areas. ◆ Degree of damage caused to natural areas from mountain bikes.
Special Events	Allow special events to occur within natural areas and within environmental limitations.	<ul style="list-style-type: none"> ◆ Council approval as required under Council's Plans, Policies and Guidelines. 	<ul style="list-style-type: none"> ◆ Number of comments from the public about special events in natural areas. ◆ Degree of environmental impact on natural areas.
User Group/Resident Conflict	Allow groups to utilise natural areas with minimal conflict with adjoining residents.	<ul style="list-style-type: none"> ◆ Notification by groups of intentions and proposals for the use of natural areas. ◆ Council approval for formal group activities. 	<ul style="list-style-type: none"> ◆ Number of comments from adjoining residents.
Anti-Social Behaviour	Minimise anti-social behaviour within natural areas.	<ul style="list-style-type: none"> ◆ Enforcement of relevant state legislation. 	<ul style="list-style-type: none"> ◆ Number of incidents and comments about anti-social behaviour.
Fencing	Allow for appropriate safety/security fencing.	<ul style="list-style-type: none"> ◆ Appropriate design and siting of fencing in accordance with Council's Plans, Policies and Guidelines. ◆ Maintenance of fencing. 	<ul style="list-style-type: none"> ◆ Appropriately located and effective fencing. ◆ Repairs after monitoring of fencing.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.2 – Community Use, Access & Education

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Signs	Allow suitable information, regulatory, identification and directional signs relating to Natural Areas.	<ul style="list-style-type: none"> ◆ Appropriate design and siting of signs in accordance with Council's Plans, Policies and Guidelines. ◆ Development Consent where necessary. 	<ul style="list-style-type: none"> ◆ Assessment of the need for appropriate signs in Natural Areas. ◆ Number of comments regarding signs.
Lighting	Allow for appropriate lighting for security purposes.	<ul style="list-style-type: none"> ◆ Appropriate illumination levels. ◆ Appropriate design and siting of lighting facility. ◆ Development Consent where necessary. 	<ul style="list-style-type: none"> ◆ Number of comments from Natural Area users.
Paved Areas	<p>Allow paved surfaces that are aesthetic, safe and easily maintained and that are in context with the natural setting.</p> <p>Allow for the provision of paved areas that satisfy function.</p>	<ul style="list-style-type: none"> ◆ Clear identification of pavement usage. ◆ Appropriate design and selection of materials in accordance with Council's Plans, Policies and Guidelines. ◆ Maintenance and repair as required. 	<ul style="list-style-type: none"> ◆ Adequacy of paving for function. ◆ Appropriateness of paved area within the context of natural areas.
Pedestrian Access/Bushwalkers etc	Allow pedestrian access on defined tracks, paths, accessways.	<ul style="list-style-type: none"> ◆ Appropriate design, siting, construction and maintenance of access points. ◆ Use of regulatory signs. 	<ul style="list-style-type: none"> ◆ Number of comments from the public. ◆ Degree of environmental damage from accessways and pedestrians.
Disabled Access	Wherever practical, allow for the provision of access for people with	<ul style="list-style-type: none"> ◆ Appropriate design of accessways for the disabled 	<ul style="list-style-type: none"> ◆ Number of comments on ease of access.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.2 – Community Use, Access & Education

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
	disabilities.	complying with Australian Standards.	◆ Extent of use by people with disabilities.
Statutory Authorities	Minimise the environmental impacts of statutory services through natural areas. Explore alternative options in sensitive areas.	◆ Authorisation from Council where required. ◆ Conditions of authorisation.	◆ Adequate and appropriate access in natural areas for the Statutory Authority.
European Heritage	Preserve and protect the European heritage of Natural Areas.	◆ Promote awareness and educate via interpretive signs. ◆ Minimise physical disturbance of sensitive areas.	◆ The condition of natural heritage items and artefacts. ◆ Reports following inspections. ◆ Incidents of vandalism.
Aboriginal Heritage	Preserve and protect the indigenous heritage and associated artefacts of Natural Areas.	◆ Promote awareness and educate via interpretive signs where appropriate. ◆ Minimise physical disturbance of sensitive areas. ◆ Notification to relevant authorities on the existence of heritage and artefact items.	◆ The condition of natural heritage items and artefacts. ◆ Reports following inspections. ◆ Incidents of vandalism.
Visual Amenity	Preserve and maintain the visual quality and character of Natural Areas.	◆ Protection of existing character and visual quality of Natural Areas.	◆ Degree of modification of Natural Areas.
Bushland Regeneration	Encourage the regeneration of Natural Areas where appropriate.	◆ Regeneration of bushland where applicable under the guidance of Council's Bushcare Officers.	◆ Quality of bushland in Natural Areas.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.2 – Community Use, Access & Education

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
		<ul style="list-style-type: none"> ◆ Encourage community involvement through the Bushcare Program. ◆ Works carried out by Council's Bush Regenerators. 	
Rehabilitation of Disturbed Areas	Encourage the natural regeneration of Natural Areas where applicable.	<ul style="list-style-type: none"> ◆ Relevant rehabilitation methods and techniques. ◆ Regeneration of Natural Areas where applicable under the guidance of Council officers. ◆ Encourage community involvement in Natural Areas rehabilitation and regeneration programs. 	<ul style="list-style-type: none"> ◆ Degree of successful rehabilitation of Natural Areas. ◆ Resilience of Natural Areas to regenerate.
Environmentally Sensitive Areas	Prohibit public access into environmentally sensitive natural areas.	<ul style="list-style-type: none"> ◆ Use of regulatory signs. ◆ Community education. ◆ Appropriate design and siting of public accessways. 	<ul style="list-style-type: none"> ◆ Condition of sensitive habitats in natural areas.
Size/Shape of Natural Areas	<p>Ensure that Natural Areas are of appropriate size and shape for purpose and demand.</p> <p>Ensure that natural areas are both aesthetically and visually attractive.</p>	<ul style="list-style-type: none"> ◆ Appropriate allocation of suitable natural areas. ◆ Appropriate design and siting of natural areas. 	<ul style="list-style-type: none"> ◆ Number of comments from community. ◆ Loss of bio-diversity.
Seed Collection	Allow authorised seed collection from natural areas.	<ul style="list-style-type: none"> ◆ Council approval. ◆ Collections within recognised natural areas. 	<ul style="list-style-type: none"> ◆ Number of unauthorised incidents of seed collection. ◆ Degree of compliance with Bush

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.2 – Community Use, Access & Education

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
		<ul style="list-style-type: none"> ◆ Collections in accordance with industry standards. 	Regeneration Guidelines.
Scientific Research	Encourage and promote for scientific research to take place in Natural Areas to benefit the community.	<ul style="list-style-type: none"> ◆ Council approval. ◆ Ensure sustainable research techniques in Natural Areas. ◆ Ensure Council benefits from the scientific research. 	<ul style="list-style-type: none"> ◆ Successful implementation. ◆ Increase in knowledge base within Council and community.
Environmental Education	<p>Encourage natural areas to be used for environmental education purposes.</p> <p>Educate, liaise and encourage participation of the community on issues relating to the management of natural areas.</p>	<ul style="list-style-type: none"> ◆ Notification to Council of groups' intentions and proposals for natural areas usage. ◆ Produce appropriate educational resources for schools and community groups. ◆ Use of interpretive signs where appropriate. 	<ul style="list-style-type: none"> ◆ Reports of damage by excessive use. ◆ Level of usage by groups. ◆ Level of achievement by Community in regard to involvement. ◆ Level of appropriate involvement of community.
Public Awareness	Educate the public on the value of natural areas in the urban environment.	<ul style="list-style-type: none"> ◆ Guidance and publicity by Council and its officers. ◆ Develop brochures and educational material for natural areas. 	<ul style="list-style-type: none"> ◆ Public acceptance and appreciation of natural areas. ◆ Number of comments on education.
Bushcare Groups	Encourage community involvement in the management of natural areas.	<ul style="list-style-type: none"> ◆ The formation and operation of Bushcare Groups under the guidance of Council's Bushcare Officers. 	<ul style="list-style-type: none"> ◆ Level of achievement by the Bushcare Groups. ◆ Education of Bushcare Groups. ◆ Number of Bushcare Groups/memberships.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Total Catchment Management	Allow provision for total catchment management/integrated catchment management principles to be applied as a future management tool for all catchment areas.	<ul style="list-style-type: none"> ◆ Implementation of total catchment policies and guidelines. 	<ul style="list-style-type: none"> ◆ Adherence to adopted catchment management plans.
Wildlife Corridors	<p>Enable the connection of Natural Areas to form wildlife corridors.</p> <p>Protect and reinstate wildlife corridors.</p>	<ul style="list-style-type: none"> ◆ Identification of existing wildlife corridors. ◆ Enhance existing corridors by developing vegetation linkages. ◆ Consideration of wildlife corridors in applying Council's Tree and Bushland Vegetation Preservation Order. 	<ul style="list-style-type: none"> ◆ Increased bio-diversity.
Exotic Flora & Fauna	<p>Control and limit the existence of exotic flora and fauna within Natural Areas.</p> <p>Control feral animals within Natural Areas.</p>	<ul style="list-style-type: none"> ◆ Appropriate design and implementation of works within natural areas. ◆ Implementation of the relevant legislation. ◆ Community education on exotic flora and fauna. ◆ Creating community awareness using a variety of media. 	<ul style="list-style-type: none"> ◆ Minimal presence of exotic flora and fauna. ◆ Elimination of problem exotic flora and fauna. ◆ The physical conditions of natural areas.
Removal of Flora & Fauna	Prohibit the removal of native flora and fauna from Natural Areas.	<ul style="list-style-type: none"> ◆ Imposition of fines. ◆ Compliance with Council's Plans, Policies and Guidelines. 	<ul style="list-style-type: none"> ◆ Reports of removal of flora and fauna. ◆ Number of ordinance investigations and prosecutions.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Native Flora & Fauna	<p>Protection all indigenous flora and fauna and their habitats.</p> <p>Control of introduced species in accordance with the National Parks & Wildlife Act, the Noxious Weeds Act 1993 and any other relevant Act.</p>	<ul style="list-style-type: none"> ◆ Regulation of public access to sensitive habitats via pathway location. ◆ Education and awareness via interpretive signs. ◆ Implementation of Threatened Species Conservation Act 1995. 	<ul style="list-style-type: none"> ◆ The condition and survival of native species and their habitats. ◆ Reports following inspections and monitoring. ◆ Assessment of the plants and animals within the site.
Environmental Weeds	Reduce the extent of environmental weeds in natural areas.	<ul style="list-style-type: none"> ◆ Minimise dumping of rubbish and garden refuse in Natural Areas. ◆ Appropriate design of water quality control devices. ◆ Minimise nutrient loads and weed propagules content of run-off through appropriate control devices. ◆ Encourage the use of indigenous plant species in domestic and public gardens. 	<ul style="list-style-type: none"> ◆ Minimal presence of environmental weeds. ◆ Elimination of environmental weeds. ◆ Degree of infestation of environmental weeds.
Noxious Weeds	Compliance with the Noxious Weeds Act 1993.	<ul style="list-style-type: none"> ◆ Development and implementation of Noxious Weeds Eradication Program. 	<ul style="list-style-type: none"> ◆ Presence of noxious weeds in Natural Areas.
Waste Control Management/ Rubbish Dumping	<p>Minimise the amount of rubbish entering Natural Areas.</p> <p>Control rubbish dumping in Natural Areas.</p>	<ul style="list-style-type: none"> ◆ Use of appropriate control devices eg. gross pollutant traps. ◆ Imposition of fines for offenders. ◆ Use of regulatory signs. ◆ Community education on 	<ul style="list-style-type: none"> ◆ Number of incidents of illegal dumping. ◆ Cost of clean up and rubbish collection. ◆ Amount of rubbish in Natural

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
		<p>environmental impacts of rubbish dumping.</p> <ul style="list-style-type: none"> ◆ Removal of dumped material. 	<p>Areas.</p>
Domestic Animals	Prohibit the entry of all domestic animals in natural areas.	<ul style="list-style-type: none"> ◆ Use of regulatory signs. ◆ Community education and involvement in monitoring. 	<ul style="list-style-type: none"> ◆ Reports of domestic animals within natural areas.
Seed Collection	Prohibit seed collection from environmentally sensitive areas.	<ul style="list-style-type: none"> ◆ Council approval. ◆ Collections within recognised natural areas. ◆ Collections in accordance with Bush Regeneration Guidelines. 	<ul style="list-style-type: none"> ◆ Number of unauthorised incidents of seed collection. ◆ Degree of compliance with Bush Regeneration Guidelines.
Run-off and Drainage	<p>Allow for the control and regulation of stormwater flow quantities to and within Natural Areas.</p> <p>Minimise pollutant inputs into Council stormwater systems.</p>	<ul style="list-style-type: none"> ◆ Appropriate selection and design, monitoring and maintenance of devices, such as detention basins, soak pits, gross pollutant traps, nutrient removal ponds and artificial wetlands. ◆ Inspections, cleaning and maintenance. ◆ Community education and awareness programs. ◆ Effective erosion and sediment control on construction and development sites. ◆ Report all surcharges and leakages of sewage. 	<ul style="list-style-type: none"> ◆ Quality in accordance with Council adopted guidelines for stormwater and run-off. ◆ Degree of weed infestation. ◆ Number of prosecutions under the Clean Waters Act 1970. ◆ Increased natural bio-diversity. ◆ Incidents of erosion and sedimentation requiring remedial works.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Creek/Drainage Line/ Watercourse Maintenance	<p>Minimise the degree of polluted stormwater run-off entering creeks and drainage lines in natural areas.</p> <p>Minimise the impacts of creek line maintenance.</p>	<ul style="list-style-type: none"> ◆ Monitoring and inspections. ◆ Cleaning and maintenance in accordance with Council's maintenance schedule and works program. ◆ Manage weed infestation and creek and drainage line blockages. ◆ Regulate flow of drainage to minimise flooding. ◆ Environmentally responsible creek line maintenance techniques. 	<ul style="list-style-type: none"> ◆ Condition of creeks and drainage lines in natural areas. ◆ Degree of damage caused by stormwater. ◆ Degree of sedimentation in creeks and drainage lines. ◆ Number of comments received by Council from residents. ◆ Degree of weed infestation. ◆ Loss of habitat. ◆ Loss of native flora. ◆ Degree of deviation from natural course.
Removal of bushrock/sand/soil	Prohibit the removal of bushrock/sand/soil from Natural Areas.	<ul style="list-style-type: none"> ◆ Imposition of fines. ◆ Compliance with Council's Plans, Policies and Guidelines. 	<ul style="list-style-type: none"> ◆ Reports of removal of material. ◆ Number of ordinance investigations and prosecutions.
Land Use/Development Control	<p>Manage natural areas as a renewable resource on a sustainable basis.</p> <p>Control development on land adjacent to natural areas to minimise detrimental impacts.</p>	<ul style="list-style-type: none"> ◆ Application of relevant Council Plans, Policies and Guidelines. 	<ul style="list-style-type: none"> ◆ Adequacy of guidelines to prevent degradation of natural areas. ◆ Assessment of the degree of degradation caused by development.
Landfill Sites	Prohibit landfill in the Shire's natural areas.	<ul style="list-style-type: none"> ◆ Compliance with Sutherland Shire Local Environment Plan. ◆ Monitoring and recommended remedial works on inspected areas of existing closed sites. 	<ul style="list-style-type: none"> ◆ Incidents of unauthorised landfill operations. ◆ Degree of environmental degradation.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Earthworks	Regulate and control earthworks in natural areas to minimise environmental degradation. Prohibit dumping of excavated materials in natural areas.	<ul style="list-style-type: none"> ◆ Council approval and conditions. ◆ Prohibit unauthorised earthworks. 	<ul style="list-style-type: none"> ◆ Adherence to conditions of Council approval. ◆ Incidents of unauthorised earthworks.
Consolidation of Properties	Allow consolidation of individual allotments where applicable.	<ul style="list-style-type: none"> ◆ Prepare a Consolidation Plan for lodgement at the Land Titles Office. ◆ Council approval. 	<ul style="list-style-type: none"> ◆ Registration of the Consolidation Plan.
Encroachments	Prohibit encroachments from private property onto natural areas.	<ul style="list-style-type: none"> ◆ Investigations of reported encroachments. ◆ Enforcement of Council regulations regarding encroachments. 	<ul style="list-style-type: none"> ◆ Number of identified encroachments. ◆ Correction of encroachments.
Anti-Social Behaviour	Control the impacts of anti-social behaviour within natural areas.	<ul style="list-style-type: none"> ◆ Relevant State Legislation. 	<ul style="list-style-type: none"> ◆ Number of incidents and comments about anti-social behaviour.
Agriculture/Agistment/ Aquaculture	Prohibit the entry and agistment of animals into natural areas. Regulate Agriculture/Aquaculture in natural areas.	<ul style="list-style-type: none"> ◆ Compliance with the Sutherland Shire Local Environment Plan. 	<ul style="list-style-type: none"> ◆ Degree of compliance with Local Environment Plan.
Usage Control	Manage and control the use of natural areas where appropriate.	<ul style="list-style-type: none"> ◆ Restriction of hours of usage where appropriate. 	<ul style="list-style-type: none"> ◆ Levels of usage. ◆ Number of comments from users

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
	Exercise discretion in the type of use of natural areas.	<ul style="list-style-type: none"> ◆ Council approval. 	and user groups.
Trail Bikes	<p>Prohibit the entry of trail bikes into the Conservation Area.</p> <p>To cease unauthorised use of the LHCA by trail bikes</p>	<ul style="list-style-type: none"> ◆ Use of regulatory signs. ◆ Provision of effective barrier fencing. ◆ Restriction of access to parking areas for cars, trailers and trail bikes. ◆ Rehabilitation of tracks to reduce attractiveness of area for trail bike use. ◆ Community education program outlining the importance of the Conservation Area. ◆ Liaison between LHCA Manager, NPWS officers, Police and Sutherland Shire Council. ◆ If necessary, law enforcement. 	<ul style="list-style-type: none"> ◆ Number of comments from the public. ◆ Number of successful investigations and prosecutions. ◆ Number of breaks in fencing. ◆ Number of trail bikes using the area. ◆ Number of vehicles parked along Heathcote Road.
Off-Road Vehicles	<p>Prohibit the entry of unauthorised off-road vehicles into the Conservation Area.</p> <p>To cease unauthorised use of the LHCA by 4WD vehicles.</p>	<ul style="list-style-type: none"> ◆ Use of regulatory signs. ◆ Provision of effective barrier fencing. ◆ Rehabilitation of tracks to reduce attractiveness of area for 4WD vehicle use. ◆ Community education program outlining the importance of the Conservation Area. ◆ Liaison between LHCA 	<ul style="list-style-type: none"> ◆ Number of comments from the public. ◆ Number of ordinance and Police investigations. ◆ Number of breaks in fencing. ◆ Number of 4WD vehicles using the area. ◆ Number of vehicles parked along Heathcote Road.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
		Manager, NPWS officers, Police and Sutherland Shire Council. ♦ If necessary, law enforcement.	
Camping	Prohibit camping in natural areas.	♦ Use of regulatory signs.	♦ Reported incidents of camping.
Fishing	Regulate and limit land based commercial fishing in Natural Areas.	♦ Use of regulatory signage. ♦ Appropriate licensing.	♦ Number of reported commercial fishing incidents without Council approval.
Mountain Bikes	Regulate the use of mountain bikes in Natural Areas.	♦ Restrict cyclists to designated paths using regulatory signs.	♦ Number of reports of incidents concerning mountain bikes.
Hunting	Prohibit all forms of hunting in natural areas.	♦ Use of regulatory signs. ♦ Implementation of the National Parks & Wildlife Services Act 1995.	♦ Comments from the public of such activity.
Weapons/Firearms	Prohibit the possession and/or use of any weapon or firearm in natural areas.	♦ Use of regulatory signs. ♦ Liaison and consultation with police. ♦ Adherence with relevant legislation.	♦ Comments from the public of unlawful use.
Alcohol Consumption and/or Possession	Minimise the negative impacts of alcohol on and in natural areas.	♦ The implementation of alcohol free zones when and where appropriate. ♦ Identification of problem areas.	♦ Number of alcohol related incidents.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
Vandalism	Minimise vandalism within natural areas.	<ul style="list-style-type: none"> ◆ Encouragement of community involvement and education. ◆ Prompt repair of vandalised areas. 	<ul style="list-style-type: none"> ◆ Degree of vandalism.
Noise	Allow for the management and control of excessive noise within natural areas.	<ul style="list-style-type: none"> ◆ Council approval for special events. ◆ Appropriate use of signs. ◆ Community education. 	<ul style="list-style-type: none"> ◆ Number of comments from the public related to excessive noise.
Parking	Exclude unauthorised private parking within Natural Areas.	<ul style="list-style-type: none"> ◆ Appropriate signs ◆ Enforcement of parking regulations. 	<ul style="list-style-type: none"> ◆ Number of reports of unauthorised parking.
Vehicle Access	<p>Prohibit the entry of unauthorised vehicles to Natural Areas.</p> <p>Enable access for maintenance, emergency service and patrol vehicles.</p>	<ul style="list-style-type: none"> ◆ Use of regulatory signs. ◆ Use of traffic control devices, such as boom gates, barriers and bollards. ◆ Appropriate design of accessways not to impact on Natural Areas. 	<ul style="list-style-type: none"> ◆ No unauthorised usage. ◆ Number of incidents of illegal or unauthorised vehicular entry.
Site Utility Services	Allow for the installation of appropriately located and designed services where required.	<ul style="list-style-type: none"> ◆ As approved by Council and Statutory Authorities. ◆ Registration of appropriate easements. 	<ul style="list-style-type: none"> ◆ Facilities are adequately serviced, identified and located.
Signs	<p>Use of authorised regulatory signs.</p> <p>Prohibit permanent advertising signs.</p>	<ul style="list-style-type: none"> ◆ Appropriate design and siting of signs in accordance with Council's Plans, Policies and 	<ul style="list-style-type: none"> ◆ Assessment of the need for appropriate signs in Natural Areas.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
		<p>Guidelines.</p> <ul style="list-style-type: none"> ◆ Development Consent where necessary. 	
Interagency Relations on Management Issues, Plans, Strategies and Policies (eg. DLaWC, EPA, Council)	Ensure a consistent approach of management in natural areas from all relevant authorities.	<ul style="list-style-type: none"> ◆ Adequate consultation with relevant authorities. 	<ul style="list-style-type: none"> ◆ Degree of conflict/co-operation between authorities over management issues.
Regulatory Breaches	Address all breaches of prohibited or inappropriate activity within the natural area.	<ul style="list-style-type: none"> ◆ Investigation of breaches by Council's Ordinance Inspectors and/or police. ◆ Prosecute and reprimand offenders as appropriate. 	<ul style="list-style-type: none"> ◆ Number of reported breaches. ◆ Number of successful investigations and prosecutions.
Levels of Service	Have natural areas appropriately maintained within allocated budgets.	<ul style="list-style-type: none"> ◆ Implementation of maintenance servicing appropriate to the usage of natural areas. 	<ul style="list-style-type: none"> ◆ Conditions of the natural area. ◆ Number of comments from residents about natural areas.
Statutory Authorities	Ensure works are in compliance with the objectives of the Plan of Management.	<ul style="list-style-type: none"> ◆ Authorisation from Council where required. ◆ Conditions of consent. 	<ul style="list-style-type: none"> ◆ Adequate and appropriate access in natural areas for the Statutory Authority.
Maintenance and Management	<p>An efficient and effective management and maintenance system for natural areas.</p> <p>Specific areas of responsibility and allocation.</p> <p>A well defined method of attaining</p>	<ul style="list-style-type: none"> ◆ Employment of staff with relevant training for task. ◆ Retraining of existing staff. ◆ Monitoring and maintenance of natural areas in compliance with maintenance schedules and works program. 	<ul style="list-style-type: none"> ◆ Condition of the natural area. ◆ Number of comments from residents about natural areas.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

2.3.3 – Implementation of Provisions and Land Management

Management Issues	Objectives & Performance Targets	Means of Achievement	Manner of Assessment
	management and maintenance targets.		
Council Funding and Finance	Allow for adequate funding of natural areas in accordance with Council's adopted Annual Financial Management Plan.	<ul style="list-style-type: none"> ◆ Provide sufficient Council funds from annual budgets where available. ◆ Development of a suitable Management Strategy or Operational Plan to identify funding. 	<ul style="list-style-type: none"> ◆ Natural areas that are well maintained. ◆ Adequate resources for maintenance. ◆ Achievement of an Operational Plan or Management Plan. ◆ Resources matched to the Management Plan.
Grants and Subsidies	Allow grants for natural areas for their maintenance in accordance with Council's adopted Financial Management Plan.	<ul style="list-style-type: none"> ◆ Seek external grants and subsidies where available. 	<ul style="list-style-type: none"> ◆ Number of external grants or subsidies received.
Extractive Industries	Prohibit any form of extractive industry activity.	<ul style="list-style-type: none"> ◆ Compliance with the Sutherland Shire Local Environment Plan. 	<ul style="list-style-type: none"> ◆ Incidents of extractive industry activity within natural areas.

Table 2.3 – Management Strategies for the Lucas Heights Conservation Area

SECTION 3

NATURAL FEATURES OF THE SITE

3.1 Biodiversity of Site

The EMP for the LHCA provides the source for much of the information contained within this Plan of Management. In particular, the EMP outlines in great detail the natural features of the LHCA. It is for this reason that the EMP has been attached as Appendix D to this Plan.

Section 3 of the Plan of Management summarises the natural features, however, the detail of the site features is provided within the EMP. Accordingly, this section extensively refers to the EMP for more detail.

3.1.1 Vegetation

The Lucas Heights Conservation Area mainly supports native vegetation that is well adapted to the shallow and infertile sandstone soils of the area. A smaller area of vegetation suited to shale soils also exists on the site. The site contains a varied and complex group of plant communities which vary according to the topography, geology, aspect and soil depth. Five different plant communities have been identified for the site and are as follows:

- Sydney Turpentine Ironbark Forest – found on shale soils in the north east corner of the site. This community has been listed as an endangered ecological community under the Threatened Species Conservation Act 1995.
- Smooth-barked Apple Woodland – found in the sandstone gully of the site
- Scribbly Gum/Red Bloodwood Woodland – covers much of the sites sandstone slopes and plateau
- Mallee/Heathland – occurs along broad drainage lines
- Wet Heath/Sedgeland – also occurs along broad drainage lines.

Detailed descriptions of the communities can be found in Appendix G of the Lucas Heights Conservation Area EMP, attached as Appendix D to this Plan.

The Lucas Heights Conservation Area EMP contains composite lists of the flora found in the region and have been taken from the following sources:

- Kevin Mills & Associates (1991)
- National Parks Association of NSW Inc and Allan Fairley
- National Parks and Wildlife Service Atlas
- The Society for Growing Australian Plants to the Fauna Assessment of Mill Creek Catchment.
- Lesryk (1997)

These lists can be found in Appendix F of the EMP, attached as Appendix D to this Plan.

3.1.2 Fauna

There is a large variety of fauna represented in the area typical of that found in a sandstone-based habitat. Several fauna studies have been completed for the area and are listed in Appendix E of the attached EMP. The EMP is attached as Appendix D to this Plan.

3.1.3 Threatened Species

The following threatened species have been recorded for the site:

Flora:

Communities: Sydney Turpentine Ironbark Forest
Sandstone Shale Transition Forest

Species: *Melaleuca deanei*

Fauna:

Red Crowned Toadlet *Pseudophryne australis*

Powerful Owl *Ninox Strenua*

Sooty Owl *Tyto tenebricosa*

At present, Threat Abatement Plans or Recovery Plans, as required for threatened species under the Threatened Species Conservation Act, 1995, currently do not exist for these species.

3.1.4 Exotic Flora and Fauna

As stated in Section 5.9 – Weed and Feral Animal Control, of the Lucas Heights Conservation Area Environmental Management Plan, introduced weed species mainly occur in disturbed areas. These areas include sites close to Heathcote Road, areas near dumped rubbish, at disturbed sites such as the clay quarry and along the numerous tracks.

With regards to feral animals, evidence of their presence has been noted. The potential impact of these animals could result in the decline of native species in the area. The Conservation Area is sufficiently close enough to urban development to contribute to this problem.

Section 5.9 of the EMP, attached as appendix D to this plan, outlines how the issues of weeds and feral animals will be dealt with for the Conservation Area.

3.2 Significant Natural Features

3.2.1 Watercourse

Mill Creek, which originates within the Lucas Heights Waste Management Centre, flows northwards through the Conservation Area to the Georges River. Smaller tributaries of Mill Creek arise from within the Conservation Area.

3.2.2 Foreshore

There are no foreshore areas present within the Lucas Heights Conservation Area.

3.2.3 Escarpment & Geological Features

There is an extensive network of rock platforms and sandstone escarpments throughout the Conservation Area.

3.3 Heritage

3.3.1 Aboriginal

The Lucas Heights Conservation Area lies within the boundaries of the Gandangara Local Aboriginal Land Council area. The Lucas Heights area has been extensively surveyed for Aboriginal archaeological evidence with a survey of the Conservation Area completed in 1997. The results of the survey are discussed in Section 4.10 of the Lucas Heights Conservation Area Environmental Management Plan.

An initial survey was conducted and identified several sites of Aboriginal significance within the Lucas Heights Conservation Area ranging from grinding grooves and artefact scatters to aboriginal art. Further information regarding these sites can be found in Appendix H of the Lucas Heights Conservation Area EMP, attached as Appendix D to this plan.

Further cultural surveys will be conducted by the Gandangara Local Aboriginal Land Council (LALC), which will identify further sites of Aboriginal Cultural Significance. These surveys will enable Council to appropriately site the carpark and walking tracks as proposed in both this Plan and the Environmental Management Plan and in co-ordination with the Gandangara LALC.

The Lucas Heights Conservation Area is listed on the New South Wales Aboriginal Heritage Information Management System maintained by the New South Wales National Parks and Wildlife Service. All Aboriginal sites and artefacts are protected under the National Parks and Wildlife Act, 1974, under which it is illegal to damage or remove artefacts significant to Aboriginal Heritage.

3.3.2 European/Historic

A review of the registers of heritage items was completed during the preparation of the Lucas Heights Conservation Area Environmental Management Plan. This review revealed no recorded items of European heritage in the area.

A clay quarry was in existence in the south eastern quarter of the site. This area has since been rehabilitated and revegetated with plants native to the area.

SECTION 4

PURPOSE OF THE SITE

4.1 Use of Land, & Facilities and Environmental Impacts

4.1.1 Current Uses

In the past, the site has had limited use as it incorporates mostly vacant land. The eastern area was previously quarried for clay. This area is now being rehabilitated. As noted in Section 3.3.2 of this Plan, this area has since been filled and the revegetation of the area has commenced.

The only known recreational uses have been trail bike riding, 4WD vehicle driving, bushwalking and jogging. Some parts of the site have been disturbed by past clearing of trees and rubbish dumping. These uses have been undertaken without the permission of the owner.

4.1.2 Community Involvement

The Lucas Heights Environmental Management Technical Group (LHEMTG), which will consist of representatives from the Environmental Protection Agency, Department of Land & Water Conservation (DlaWC), National Parks & Wildlife Service, Gandangara Local Aboriginal Land Council, Sutherland Shire Council and many other groups will be formed and will also carry out community liaison.

Education of, and liaison with, the community will be required to enable successful management of the LHCA. Education of existing 4WD vehicle and trail bike users of the area will be required to obtain their co-operation in not using the area and relocating to nominated alternative area(s).

Education of the broader community has two roles: firstly to enable them to understand and appreciate the environmental and conservation values of the area; and secondly, so they understand the activities being undertaken under this Plan and the EMP and their role in protecting the area.

There is a need for an education program focused at groups interested in using the LHCA for recreation.

4.1.3 Environmental Impacts

Section 5 – Environmental Management, of the EMP details the environmental issues for the area and outlines the goals and principles, management strategies and performance indicators and targets for each issue. The greatest environmental impact is caused by trail bikes and 4WD vehicles. This has had the following impacts on the Conservation Area:

- Deterioration of vegetation communities and fauna habitat within the LHCA;
- Erosion of tracks caused by vehicle activity;
- Deterioration of water quality in Mill Creek caused by track erosion;
- Introduction of weeds and changes to the soil nutrient regime due to the proximity of the former clay quarry, former waste disposal sites and the LHWMC.

4.2 Permitted Use of Land & Facilities

The site will only be permitted to be used for purposes as considered appropriate by Council and which are consistent with the management objectives for Natural Areas generally and the Lucas Heights Conservation Area specifically. As such, the following uses are permissible under this Plan of Management:

- Access for bushwalking, educational and research purposes via a network of walking tracks.
- Access for firefighting vehicles.
- Rehabilitation of disturbed areas including tracks and clay quarry area to reduce the attractiveness of the area for 4WD and trail bike use.
- Maintain and facilitate access by the Aboriginal community to the identified Aboriginal archaeological sites.

These uses are provided in detail in the EMP - Section 5.6 – Management of Recreational Activities.

Unauthorised access by 4WD and trail bike users will be controlled through the implementation of the following strategies:

- Fencing of the Lucas Heights Conservation Area;
- Restriction to parking areas for cars and trailers;
- Signposting;
- Education;
- Liaison between LHCA Manager, NPWS officers, Police and Sutherland Shire Council; and
- If necessary, law enforcement.

4.3 Permitted Further Development of Land

The overall objective for the LHCA is to implement an environmental and conservation strategy based upon a pro-active approach to the protection and conservation of the natural and cultural heritage values of the LHCA. Implicit in the strategy is the need to ensure an appropriate balance between the objectives of environmental protection and heritage conservation and the need to allow and facilitate low impact access to the area for bushwalking, educational and scientific research purposes.

To achieve these objectives, the following works are proposed:

- The entire site will be fenced which will delineate the LHCA and prevent unauthorised access to the LHCA whilst allowing fauna movement.
- In conjunction with the Roads and Traffic Authority (RTA), informal parking areas along Heathcote Road will be closed off by the installation of barriers along the roadway at these points.
- A parking area will be established at the pedestrian access point south of the Cultural Centre site allowing parking for six vehicles. The carpark area will be cleared, topsoil material removed, levelled and covered with gravel. To prevent vehicle access to the LHCA, barriers will be erected around the parking area boundaries.

- Signs will be erected along the Heathcote Road boundary of the LHCA and at the entry points of existing tracks into the area. The signs will notify that the area is closed to 4WD vehicles and trail bikes and that rehabilitation is being undertaken. This will take place concurrently with fencing.
- Gates to allow vehicular access for site management, fire fighting and water quality sampling will be located at the end of Little Forest Road adjacent to the proposed Nature Reserve and on the vehicle track, which is an extension of Little Forest Road, which enters the LHCA from the North.
- At Heathcote Road, south of the Cultural Centre site, a pedestrian access will be provided to link with the walking track.
- Rehabilitation of the LHCA will be undertaken. The detail of works is provided in Section 5.4 of the EMP, attached as Appendix D to this Plan.

4.4 Scale & Intensity of Permitted Use & Development

It is intended that any proposed developments, such as the track network, shall not compromise the site's biodiversity, ecological or heritage values. The primary objective for the future of the LHCA is that the site becomes a valuable community resource for bushwalking, education and scientific research programs.

SECTION 5

**LEASES, LICENCES AND
OTHER ESTATES**

5.1 Legislative Requirements

The Local Government Act 1993 states the following requirements in relation to the granting of leases, licences, and other estates:

Section 46 Leases, Licences and other estates in respect of community land – generally

- (1) A lease, licence or other estate in respect of community land:
- a) may be granted for the provision of public utilities and works associated with or ancillary to public utilities
 - b) may be granted, in accordance with an express authorisation in the plan of management and such provisions of the plan of management as apply to the granting of the lease, licence or other estate:
 - i) for a purpose prescribed by subsection (4) or for a purpose prescribed as a core objective of the land concerned, or
 - ii) for a purpose prescribed by the regulations, if the plan of management applies to several areas of community land, or
 - iii) for a short term, casual purpose including:
 - the playing of a musical instrument, or singing, for fee or reward
 - engaging in a trade or business
 - delivering a public address
 - commercial photographic sessions
 - picnics and private celebrations such as weddings and family gatherings
 - filming for cinema or television
 - the agistment of stock(however the use or occupation of community land for such purposes is prescribed only if the use or occupation does not involve the erection of any building or structure of a permanent nature)
 - iv) for the purpose of providing pipes, conduits or other connections under the surface of the ground for the connection of premises adjoining the community land to a facility of the council or other public utility provider that is situated on the community land

but may not otherwise be granted.

Section 47: Leases and Licences of community land for more than 5 years – additional requirements

- 1) If a council proposes to grant a lease, licence or other estate in respect of community land for a period exceeding 5 years, it must:
 - a) give public notice of the proposal
 - b) exhibit notice of the proposal on the land to which the proposal relates, and
 - c) give notice of the proposal to such persons as appear to it to own or occupy the land adjoining the community land, and
 - d) give notice of the proposal to any other person, appearing to the council to be the owner or occupier of land in the vicinity of the community land, if in the opinion of the council the land the subject of the proposal is likely to form the primary focus of the person's enjoyment of community land.
- 2) A notice of the proposal must include:
 - (i) Information sufficient to identify the community land concerned.
 - (ii) The purpose for which the land will be used under the proposed lease, licence or other estate.

- (iii) The term of the proposed lease, licence or other estate (including particulars of any options for renewal)
 - (iv) The name of the proposed lessee or licensee (if known)
 - (v) A statement that submissions in writing may be made to the council concerning the proposal within a period, not less than 28 days, specified in the notice
- 3) Any person may make a submission in writing to the council during the period specified for the purpose in the notice
 - 4) Before granting the lease, licence or other estate, the council must consider all submissions duly made to it
 - 5) If a person makes a submission by way of objection to the proposal, the council must not grant the lease, licence or other estate except with the Minister's consent
 - 6) If the council applies for the Minister's consent, it must forward specific information to the Minister
 - 7) On receipt of the application, the Minister must request the Director of Planning to furnish a report concerning the application within such a period as the Minister specifies
 - 8) After considering the application and any report of the Director of Planning, the Minister, if satisfied, may consent to the granting of the lease, licence or other estate in respect of the whole or any part of the land to which the application relates, subject to such terms and conditions as the Minister specifies.
 - 9) On request by any person, the minister must provide that person, within 14 days of that request, with a written statement of reasons for consenting to, or refusing to consent to, the granting of a lease, licence or other estate.

Section 47A: Lease, licences and other estates in respect of community land – terms of 5 years or less

- 1) This section applies to a lease, licence or other estate in respect of community land granted for a period that (including options) does not exceed 5 years
- 2) If a council proposes to grant a lease, licence or other estate to which this section applies:
 - a) the proposal must be notified and exhibited
 - b) the provisions of section 47(3) and 47(4) apply to the proposal
 - c) on receipt by the council of a written request from the Minister, the proposal is to be referred to the Minister, who is to determine whether or not the provisions of section 47(5-9) are to apply
- 3) If the Minister, under subsection 2(c), determines that the provisions of section 47(5-9) are to apply:
 - a) the council, the Minister and the Director of Planning are to deal with the proposal in accordance with the provisions of section 47(1-8), and
 - b) section 47(9) has effect with respect to the Minister's consent

Section 47B: Lease or licence in respect of a natural area.

- 1) A lease, licence or other estate must not be granted, in respect of community land categorised as a natural area:
 - a) to authorise the erection or use of a building or structure that is not a building or structure of a kind prescribed by the regulations, or
 - b) to authorise the erection or use of a building or structure that is not for a purpose prescribed by the regulations.
- 2) A lease, licence or other instrument granting any other estate is void to the extent that its provisions are inconsistent with this section.
- 3) In this section, **erection** of a building or structure includes rebuilding or replacement of a building or structure.
- 4) The following buildings and structures are prescribed for the purposes of subsection 1)a):
 - a) walkways,
 - b) pathways,
 - c) bridges,
 - d) causeways,
 - e) observation platforms,
 - f) signs.
- 5) The following purposes are prescribed for the purposes of subsection 1)b):
 - a) information kiosks,
 - b) refreshment kiosks (but not restaurants),
 - c) work sheds or storage sheds required in connection with the maintenance of the land,
 - d) toilets or restrooms.

The Local Government (General) Regulation 1999 allows for the following exemptions in relation to leases, licences and other estates:

25 Exemptions from section 47A (Leases, licences and other estates in respect of community land – terms of 5 years or less)

- 1) Leases, licences and other estates granted for the following purposes are exempt from the provisions of section 47A of the Act:
 - a) residential purposes, where the relevant community land has been developed for the purposes of housing owned by the council
 - b) the provision of pipes, conduits or other connections under the surface of the ground for the connection of premises adjoining the community land to a facility of the council or other public utility provider that is situated on the community land,
 - c) use and occupation of the community land for events such as:
 - i) a public performance (that is, a theatrical, musical or other entertainment for the amusement of the public)
 - ii) the playing of a musical instrument, or singing, for fee or reward,
 - iii) engaging in a trade or business
 - iv) playing of any lawful game or sport
 - v) delivering a public address

- vi) conducting a commercial photographic session
 - vii) picnics and private celebrations such as weddings and family gatherings
 - viii) filming for cinema or television
- 2) However, the use or occupation of community land for events listed in subclause (1)(c) is exempt only if:
- a) the use or occupation does not involve the erection of any building or structure of a permanent nature, and
 - b) in the case of any use or occupation that occurs only once, it does not continue for more than 3 consecutive days, and
 - c) in the case of any use or occupation that occurs more than once, each occurrence is for no more than 3 consecutive days, not including Saturday and Sunday, and the period from the first occurrence until the last occurrence is not more than 12 months.

5.2 Granting of Leases, Licences and Other Estates

5.2.1 Granting of Leases and Licences

A licence to the Sydney International Clay Target Association (SICTA) has been granted over part of the western portion of the site. The licence, with options, runs for 30 years. Under an agreement between SICTA, Waster Service NSW and Sutherland Shire Council, the area covered by the licence will be managed as part of LHCA.

A portion of the Licence Area is a Safety Buffer Zone for approved shooting activities in the SICTA site (refer to Appendix C – Figure 5.4). Public access will be restricted at times because shot could potentially land in the area where firing takes place. There is no entry restriction to the remainder of the Licence Area in the LHCA. A fence will be constructed and signposted around the Safety Buffer Area.

Further Details of the SICTA licence area is provided in Section 5.7 of the EMP, attached as Appendix D to this Plan.

5.2.2 Granting of Other Estates

In order to facilitate surrounding development, Council has traditionally made its land available for drainage purposes. In this respect Council has set the following objectives, means of achievement and manner of assessment.

Intended Use/Target Strategy/Objective

- Provide drainage opportunities for surrounding properties.
- To minimise impact on the environment of drainage easements.
- To minimise the financial burden on ratepayers in the provision and maintenance of natural areas.

Means of Achievement

- Granting of Easements to drain water that do not impinge on natural areas.
- Prevent erosion and changes to soil conditions and water quality.

Manner of Assessment

- Registration of Easements to Drain Water.
- Inspection of easements and surrounds for damage to environment.
- Monitoring of site for erosion and changes in soil conditions and water quality.

Section 6

CONCLUSION

6.1 Future Management

The LHCA is a valuable natural resource which has been allowed to be degraded over time. It possesses vegetation associations and habitats and Aboriginal and cultural resources which are of regional and State significance.

This Plan of Management along with the EMP for the LHCA establishes the framework to enable the environmental and conservation values of the area to be rehabilitated, enhanced and protected. The LHCA will be a valuable community resource for bushwalking, education and scientific research programs.

This Plan of Management has been concerned with the following objectives:-

- a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area, and
- b) to maintain the land, or that feature or habitat, in its natural state and settings, and
- c) to provide for the restoration and regeneration of the land, and
- d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and
- e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in the recovery plan or threat abatement plan prepared under the Threatened Species Conservation Act 1995 or the Fisheries Management Act 1994.”

The plan, therefore, provides a framework to develop a balanced response to future pressures. However, as management issues may change over time, Plans of Management should be subject to regular review. This is to ensure its objectives and strategies remain relevant and consistent with community expectations.

Appendix A:

Guidelines for the Categorisation of Community Land

Extract from Local Government (General) Amendment (Community Land Management) Regulation 1999

10. Guidelines for categorisation of land as a natural area

Land should be categorised as a natural area under section 36(4) of the Act if the land, whether or not in an undisturbed state, possesses a significant geological feature, geomorphological feature, landform, representative system or other natural feature or attribute that would be sufficient to further categorise the land as bushland, wetland, escarpment, watercourse or foreshore under section 36(5).

Section 36A of the Act provides that community land that has been declared a critical habitat under the Threatened Species Conservation Act 1995 or the Fisheries Management Act 1994 must be categorised as a natural area.

Section 36B of the Act provides that community land all or part of which is directly affected by a recovery plan or threat abatement plan under the Threatened Species Conservation Act 1995 or the Fisheries Management Act 1994 must be categorised as a natural area.

Section 36C of the Act provides that community land that is the site of a known natural, geological, geomorphological, scenic or other feature that is considered by the council to warrant protection or special management considerations, or that is the site of a wildlife corridor, must be categorised as a natural area.

11 Guidelines for categorisation of land as a sportsground

Land should be categorised as a sportsground under Section 36 (4) of the Act if the land is used or proposed to be used primarily for active recreation involving organised sports or the playing of outdoor games.

12 Guidelines for categorisation of land as a park

Land should be categorised as a park under section 36(4) of the Act if the land is, or is proposed to be, improved by landscaping, gardens or the provisions of non-sporting equipment and facilities, for use mainly for passive or active recreational, social, educational and cultural pursuits that do not unduly intrude on the peaceful enjoyment of the land by others.

13 Guidelines for categorisation of land as an area of cultural significance

Land should be categorised as an area of cultural significance under section 36(4) of the Act if the land is:

- a) an area of Aboriginal significance, because the land:
 - i) has been declared an Aboriginal place under section 84 of the National Parks and Wildlife Act 1974, or
 - ii) whether or not in an undisturbed state, is significant to Aboriginal people in terms of their traditional or contemporary cultures, or
 - iii) is of significance or interest because of Aboriginal associations, or

- iv) displays physical evidence of Aboriginal occupation (for example, items or artefacts such as stone tools, weapons, engraving sites, sacred trees, sharpening grooves or other deposits, and objects or materials that relate to the settlement of the land or place), or
 - v) is associated with Aboriginal stories, or
 - vi) contains heritage items dating after European settlement that help to explain the relationship between Aboriginal people and later settlers,
- b) an area of aesthetic significance, by virtue of:
- i) having strong visual or sensory appeal or cohesion, or
 - ii) including a significant landmark, or
 - iii) having creative or technical qualities, such as architectural excellence, or
- c) an area of archaeological significance, because the area contains:
- i) evidence of past human activity (for example, below-ground features such as building foundations, occupation deposits, features or artefacts or above-ground features such as buildings, works, industrial structures, and relics, whether intact or ruined), or
 - ii) any other deposit, object or material that relates to the settlement of the land, or
- d) an area of historical significance, because of the importance of an association or position of the land in the evolving pattern of Australian cultural history, or
- e) an area of technical or research significance, because of the area's contribution to an understanding of Australia's cultural history or environment, or
- f) an area of social significance, because of the area's association with Aboriginal life after 1788 or the area's association with a contemporary community for social, spiritual or other reasons.

14 Guidelines for categorisation of land as general community use

Land should be categorised as general community use under section 36(4) of the Act if the land:

- a) may be made available for use for any purpose for which community land may be used, whether by the public at large or by specific sections of the public, and
- b) is not required to be categorised as a natural area under section 36A, 36B or 36C of the Act and does not satisfy the guidelines under clause 6B-6E for categorisation as a natural area, a sportsground, a park or an area of cultural significance.

15 Guidelines for categorisation of land as bushland

- 1) Land that is categorised as a natural area should be further categorised as bushland under section 36(5) of the Act if the land contains primarily native vegetation and that vegetation:
 - a) Is the natural vegetation or a reminder of the natural vegetation of the land, or
 - b) Although not the natural vegetation of the land, is still representative of the structure or floristics, of the natural vegetation in the locality.
- 2) Such land includes:

- a) Bushland that is mostly undisturbed with a good mix of tree ages, and natural regeneration, where the understorey is comprised of native grasses and herbs or native shrubs, and which contains a range of habitats for native fauna (such as logs, shrubs, tree hollows and leaf litter), or
- b) Moderately disturbed bushland with some regeneration of trees and shrubs, where there may be a regrowth area with trees of even age, where native shrubs and grasses are present in the understorey even though there may be some weed invasion, or
- c) Highly disturbed bushland where the native understorey has been removed, where there may be significant weed invasion and where dead and dying trees are present, where there is no natural regeneration of trees or shrubs, but where the land is still capable of being rehabilitated.

16 Guidelines for categorisation of land as wetland

Land that is categorised as a natural area should be further categorised as wetland under section 36(5) of the Act if the land includes marshes, mangroves, backwaters, billabongs, swamps, sedgelands, wet meadows or wet heathlands that form a waterbody that is inundated cyclically, intermittently or permanently with fresh, brackish or salt water, whether slow moving or stationary.

17 Guidelines for categorisation of land as an escarpment

Land that is categorised as a natural area should be further categorised as an escarpment under section 36(5) of the Act if:

- a) the land includes such features as a long cliff-like ridge or rock, and
- b) the land includes significant or unusual geological, geomorphological or scenic qualities

18 Guidelines for categorisation of land as a watercourse

Land that is categorised as a natural area should be further categorised as a watercourse under section 36(5) of the Act if the land includes:

- a) any stream of water, whether perennial or intermittent, flowing in a natural channel, or in a natural channel that has been artificially improved, or in an artificial channel that has changed the course of the stream of water, and any other stream of water into or from which the stream of water flows, and
- b) associated riparian land or vegetation, including land that is protected land for the purposes of the Rivers and Foreshores Improvement Act 1948 or State protected land identified in an order under section 7 of the Native Vegetation Conservation Act 1997.

19 Guidelines for categorisation of land as foreshore

Land that is categorised as natural area should be further categorised as foreshore under section 36(5) of the Act if the land is situated on the water's edge and forms a transition zone between the aquatic and terrestrial environment.

Appendix B:

**Lucas Heights Conservation Area
Site Plans**

Appendix C:

**Sydney International Clay Target
Association Safety Buffer Zone**

Appendix D:

**Lucas Heights Conservation Area
Environmental Management Plan**

Prepared by National Environment Consulting Services