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ALDINGA SCRUB CONSERVATION PARK MANAGEMENT PLAN

Southern Metropolitan Adelaide

SOUTH AUSTRALIA



National Parks and Wildlife Service
DEPARTMENT OF ENVIRONMENT AND PLANNING



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This plan of management has been prepared and adopted in pursuance of Section 38 of the *National Parks and Wildlife Act, 1972-81.*

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FOREWORD

The Scrub has major conservation significance as it represents the last remnant of relatively undisturbed native coastal scrubland left along the Adelaide metropolitan coast between Port Gawler in the north and Normanville in the south. It is noted for its unusual association of plants, including species characteristic of sclerophyll forest, mallee scrub and coastal sands. It includes a number of uncommon plants including one of only four recorded habitats of the Lacy Coral Lichen (Cladia ferdinandii). Surrounding seasonal wetlands (now partially drained) appear to be closely linked with the maintenance of the vegetation of the Scrub.

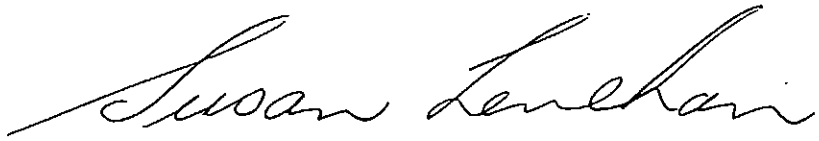
The Scrub survived while the surrounding countryside was developed for agriculture in the decades following European settlement. However, the threat of subdivision in the 1960s and subsequent expressions of community concern resulted in the purchase of the Scrub by the State Planning Authority. With the demise of the State Planning Authority in 1982, control of the land passed to the National Parks and Wildlife Service. The reserve was proclaimed as Aldinga Scrub Conservation Park in 1985, under the provisions of the National Parks and Wildlife Act, 1972.

This management plan is the culmination of a period of consideration of existing management problems and expressions of community interest.

The management plan was released in draft form for public review in January, 1991, and resulted in eleven written submissions from interested individuals and organisations. All representations received have been considered in preparing the plan for adoption.

Following consideration of the public comments and advice from the Reserves Advisory Committee, the plan has now been formally adopted under

Section 38 of the National Parks and Wildlife Act, 1972, as the Plan of Management for Aldinga Scrub Conservation Park.

A handwritten signature in cursive script that reads "Susan Lenehan". The signature is written in black ink on a white background.

Susan Lenehan
MINISTER FOR ENVIRONMENT AND PLANNING

THE PLANNING PROCESS

The National Parks and Wildlife Act 1972 provides the means by which the Minister for Environment and Planning controls and manages all reserves in South Australia which are proclaimed under the Act.

Section 38 of the Act states that plans of management are required for all reserves. Plans should include proposals for the management and improvement of reserves and indicate the means by which relevant objectives of the Act are to be achieved.

Section 37 lists ten objectives which the Minister, Chief Executive Officer and Director "shall have regard to" in managing reserves:

1. The preservation and management of wildlife.
2. The preservation of historic sites, objects and structures of historic or scientific interest within reserves.
3. The preservation of features of geographical, natural or scenic interest.
4. The destruction of dangerous weeds and the eradication or control of noxious weeds and exotic plants.
5. The control of vermin and exotic animals.
6. The control and eradication of disease of animals and vegetation.
7. The prevention and suppression of bushfires and other hazards.

8. The encouragement of public use and enjoyment of reserves and education in, and a proper understanding and recognition, of their purpose and significance.
9. In relation to managing a regional reserve - to permit the utilization of natural resources while conserving wildlife and the natural or historic features of the land.
10. Generally the promotion of the public interest.

These objectives form the foundation for all management plans and have been duly considered, where relevant, in preparing this Management Plan for Aldinga Scrub Conservation Park.

Upon completion of a draft plan, it must be announced in the Government Gazette and placed on public exhibition for at least two months. During this period, interested persons may make submissions on the plan. The plan, with all such submissions, is then referred to the Reserves Advisory Committee who may make further comments or suggestions.

The Minister, after considering all representations, may then adopt the plan of management with or without any alterations. Notice of such official adoption is published in the Government Gazette and copies of the plan are made available to the public.

A similar process applies for any amendment proposed to a plan of management. Once a plan of management is adopted, its provisions must be carried out in relation to the reserve in question and no operations may be undertaken unless they are in accordance with the plan.

PURPOSE OF THE PLAN

This plan outlines the more significant natural and cultural values of Aldinga Scrub Conservation Park. It includes a philosophy of management, lists a series of management objectives and describes how these are to be achieved.

The reserve is seen as a significant remnant of the natural habitat that once occurred all along the southern Adelaide coastline. The continued protection of the Scrub and education of the public in its conservation value is the major aim of this plan.

PARK DESCRIPTION

Introduction

This section only attempts to briefly describe the more significant values of Aldinga Scrub. Because of the scientific interest in this area, there have been a number of surveys undertaken and comprehensive resource information summaries prepared. Readers are referred to these source documents for details of the natural and cultural attributes of the area. A selected listing is provided in the References section.

Location and Size

The park is located on the coast of Gulf St. Vincent, between the townships of Aldinga Beach and Sellicks Beach, approximately 46km south of Adelaide (by road) (Figure 1). The surrounding land use was once predominantly rural/agricultural but is in the process of change to suburban/residential.

Section 821, Hundred of Willunga, was dedicated as reserve in 1985 and covered approximately 239 ha. A further 26 ha was added in 1991, comprising allotments 4, 14, 15 and 100, bringing the total reserve area to approximately 265 ha.

Bitumen roads, leading to formed gravel roads, provide two-wheel-drive access to the reserve boundaries. Within the reserve itself there are several four-wheel-drive access tracks used only by Service vehicles. Public access within the reserve is restricted to foot traffic; there is an existing network of tracks/trails that are used for walking (Figure 2).

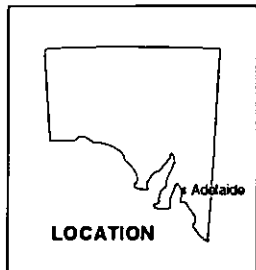
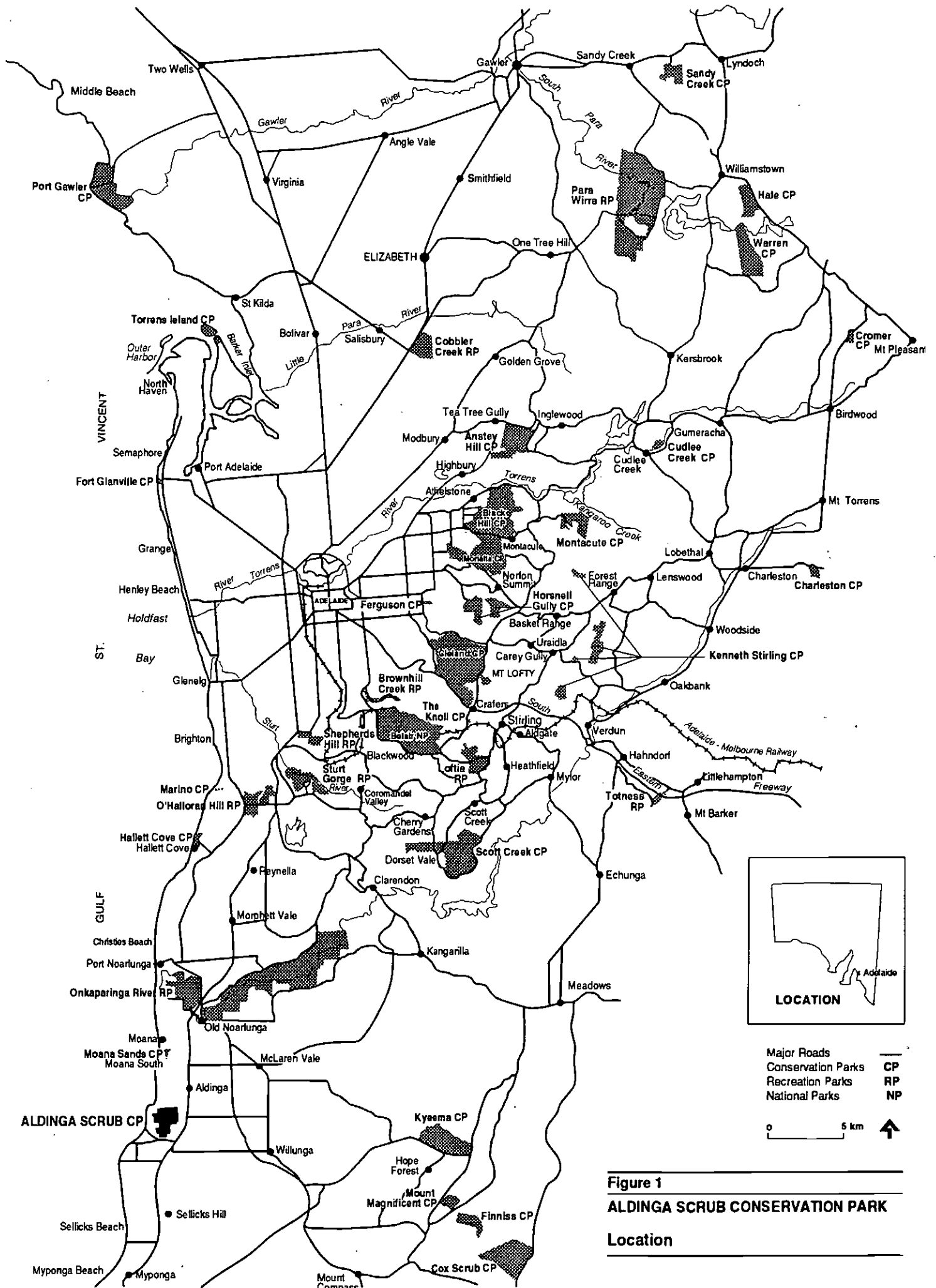
History

Information on the Aboriginal use of the area and the post-European settlement history of Aldinga Scrub and environs is contained in the Report on Aldinga Scrub Conservation Park (Wollaston 1989).

In summary, numerous relics of both the earlier Kartan culture people (10,000 - 20,000 B.P.) and the more recent Kurna population, have been found in the Aldinga Scrub area. The Kurna used the scrub for gathering food, hunting and shelter until they were displaced by Europeans early this century. The area was evidently a major workshop site for the manufacture of stone tools and for curing skins. Native wells still exist on the reserve and the abundance of food sources probably allowed year-round occupation by indigenous people.

European settlement, commencing in the 1840s, brought with it attempts to farm the area of Aldinga Scrub that met with mixed success. The cleared (but now regenerating) areas within the reserve relate to these endeavours. Crops grown included potatoes, peas and melons.

Properties along the Main South Road between Aldinga and Sellicks Beach flooded each year. In response, various drains were dug to alleviate the problem, commencing around the turn of the century and up to the late 1940s (Wollaston 1989). Drainage of the surrounding area to facilitate agricultural pursuits had the affect of lowering the water table under the Scrub, and also resulted in the drying out of the lagoon areas to the north-east and to the south of the reserve. This severely impacted the well-known wetlands, the Washpool and Blue Lagoon, both of which were to the south of the reserve. While it is speculated that a lowered water table is adversely affecting the Scrub vegetation, this has not been quantitatively documented (Fatchen 1986).



Major Roads —
 Conservation Parks CP
 Recreation Parks RP
 National Parks NP

0 5 km ↑

Figure 1
ALDINGA SCRUB CONSERVATION PARK
Location

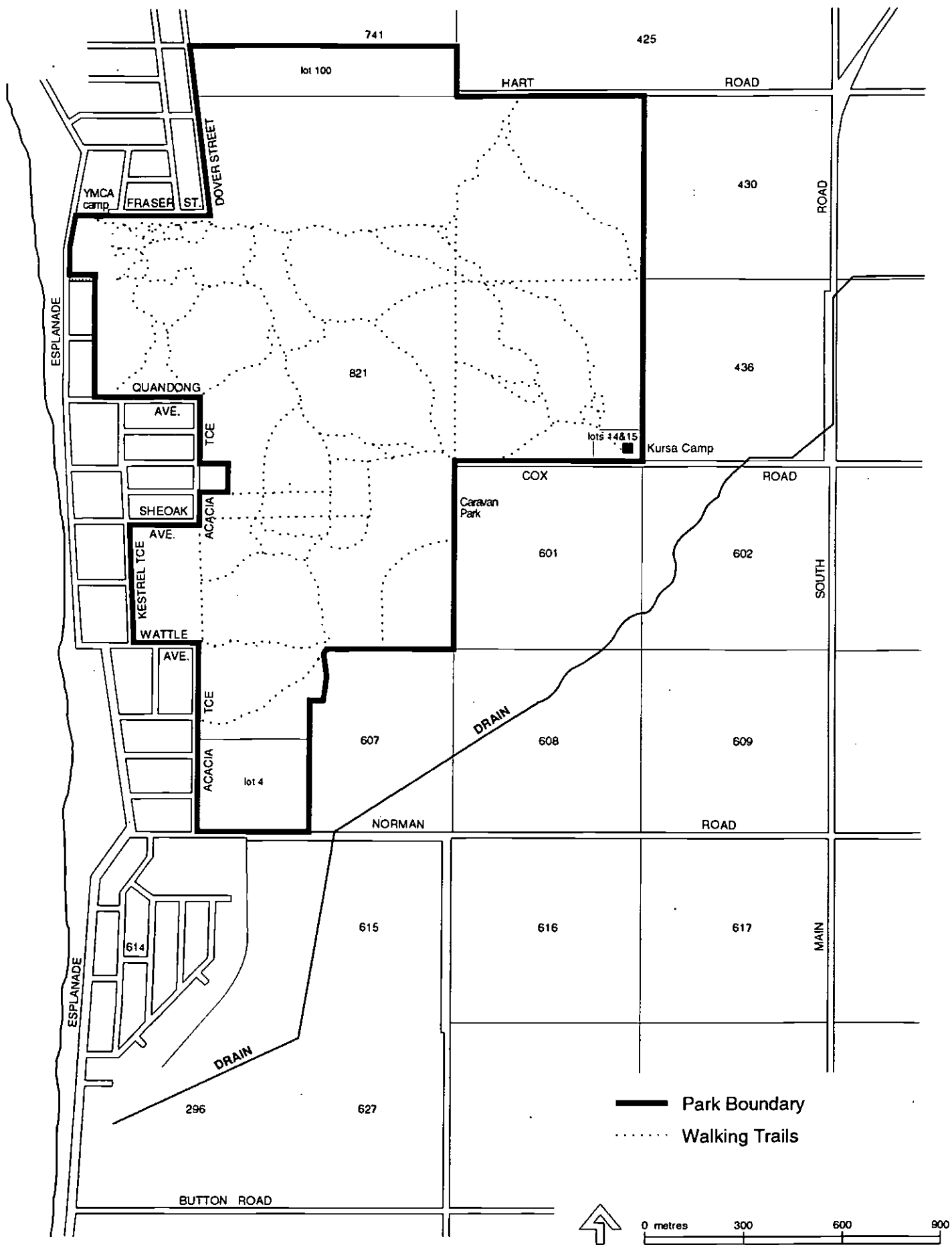


Figure 2

ALDINGA SCRUB CONSERVATION PARK
Existing Developments

In the mid 1950s, the local Council became concerned about subdivision, mainly for fear that housing development would cause soil erosion on the unstable dunes. Consequently, in response to these subdivision applications, the Report on the Metropolitan Area of Adelaide (1962) identified Aldinga Scrub as a Major District Open Space:

"The function of major district open spaces is to provide for active and passive recreation for large numbers of people within each district of the metropolitan area Each site should be large enough to provide for all forms of recreation, including sports grounds, children's playgrounds, parks and gardens and a golf course should be included where possible....

The large open spaces within a metropolitan area can serve the dual purpose of providing for recreation areas and also forming "buffer strips" between the various suburbs so that each suburb or groups of suburbs retains a separate identify....

Aldinga Scrub: The need to acquire land well ahead of requirements applies particularly in the coastal areas south from the Onkaparinga River to Sellicks Beach. An area of approximately 200 acra (81 ha) at Aldinga Scrub is attractively wooded and close to the beach."

Thus it can be seen that Aldinga Scrub was to be acquired (at least officially) as a strategically located area, suitable for providing for recreational pursuits and as a buffer between future suburbs. Its conservation significance was not mentioned; perhaps because that role was not considered to be particularly important by the Government in the early 1960s, although certain individuals and groups (such as the Field Naturalists' Society) were aware of the scientific important of the Scrub.

This earmarking however, enabled the Government to take steps to purchase the land to prevent it being cleared and developed. From 1965 to 1982, some 277 hectares were purchased at Aldinga, to be managed as one of the State Planning Authority (SPA) Open Space Reserves. The SPA did not treat the scrub as a recreation area but respected its conservation function by erecting fencing and confining access to foot traffic. The use of the land was thus limited to passive pursuits such as bush walking, bird watching and nature study.

Existing records do not indicate that any major fires have occurred in the vicinity of the reserve since European settlement, although a number of small fires are known from more recent times. In summary, known fires from the past 35 years are as follows:

1955 - Small area burnt east of Wattle Avenue.

1980 - Two hectares of grassland burnt on north-west corner of the reserve.

1981 - Four hectares of scrub burnt north of Quondong Avenue.

1990 - Seven hectares of scrub and grassland burnt in north-east portion of the reserve, north of Cox Road.

Further details of these events are included in the Fire Management Plan (N.P.W.S. 1989).

Prior to European settlement, the area would have been extensively used by Aborigines, but the influence of any burning carried out by them is now open to conjecture. Over the years, proposals to instigate an artificial, controlled burning programme have been resisted. However, fire access tracks around the reserve were constructed and are still maintained by the National Parks and Wildlife Service.

Climate

The following information is based on Adelaide Airport data.

Average annual rainfall at Aldinga is approximately 500mm.

Approximate mean maximum temperatures: winter 14.9°C; summer 27.9°C.

Approximate mean minimum temperatures: winter 2.1°C; summer 9.4°C

Prevailing summer winds in the region of the park are from the south to southeast, swinging to southwest in the afternoon, generally in the range 10-20kph. During winter months, winds are generally from the north-west to south-west; the passage of cold fronts from the south-west can bring gale-force winds.

Topography

Mobile coastal sand dunes occur along the western boundary of the reserve, north of Wattle Avenue. These mobile dunes are backed by semi-stabilized sand dune ridges which reach a maximum elevation of 35 metres. Inland, stabilized sand dunes of low relief (generally less than 10 metres), alternate with swales to form an undulating sand plain.

The north eastern and southern portions of the reserve extend into a poorly drained depression which borders the entire eastern boundary of the reserve. The northern and north-eastern portions of the reserve were, at one time, seasonally flooded to a depth of approximately one metre, until a series of drains outside the reserve were constructed, beginning around the turn of the century. These drains are believed to have progressively reduced the amount of surface and ground water available to the Scrub. The natural drainage flow was to the south-west, culminating in the low-

lying basin known as the Washpool and thence to the sea.

Geology and Soils

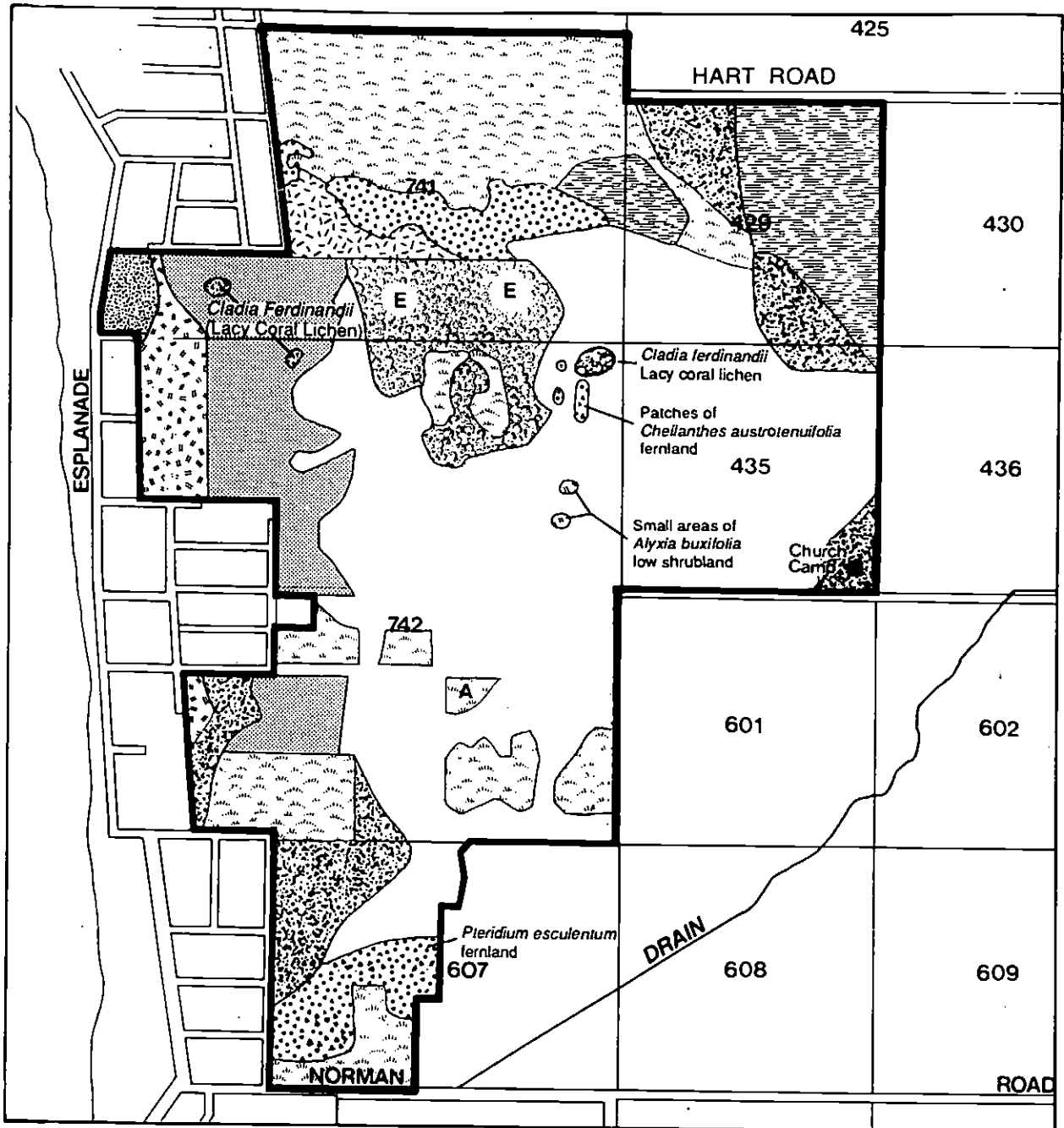
The park conserves a number of interesting geological features such as Holocene coastal sand dunes and swamps and may also have outcrops of older (late Pleistocene/Tertiary) strata. Elsewhere along the Adelaide coastal plain, these features have been built over or otherwise developed. Consequently Aldinga Scrub has scientific value as it protects these geological features. At present there is no published data available on the geology of the park.

The following information on soils has been summarized from the chapter on native vegetation in the Report on Aldinga Scrub Conservation Park (Wollaston (1989)). On the western (coastal) boundary of the reserve, deep, recent aeolian sand ridges are superimposed on consolidated, red sand deposits (of marine origin) dating from the Tertiary Period. The coastal cliffs are of a white sandy nature on the surface but are more reddish underneath. Outcrops of travertine (kunkar) limestone occur in small gullies dissecting the cliff faces.












In the north-eastern and eastern portions of the reserve, brown sandy loams intrude into the middle of the main white dune system, and limestone is present below the surface. Low, reddish sand dunes occur near the former swamplands on the north-eastern edge of the reserve.

Vegetation

The main area of the reserve is covered by dry sclerophyll woodland and heath, according to the Report on Aldinga Scrub Conservation Park



FORMATION TYPES

-  Closed Heath
-  Low Shrubland
-  Tall Shrubland
-  Open Scrub
-  Low Woodland
-  Low Open Forest
-  Low Closed Forest
-  Fernland
-  Grassland
-  Sedgeland
-  Low Open Shrubland

DOMINANCE TYPES

- A** *Acacia pycnantha*
- E** *Eucalyptus porosa*



Scale 1:15000

0 metres 300 600 900

Map 3

**ALDINGA SCRUB CONSERVATION PARK
Vegetation**

(Wollaston 1989). Lesser areas are occupied by coastal cliffs, beach fringe, sedge swamps and grasslands.

The Scrub is of conservation significance, being the last substantial remnant of native coastal bushland in the Adelaide region. It is also significant for supporting an unusual association of plants including species characteristic of sclerophyll forest, mallee scrub and coastal sands (Wollaston 1989).

Gent et al. (1980) produced a more sophisticated analysis of the vegetation of the area. In that report the reserve is described as including eleven vegetation formations; closed heath, low shrubland, tall shrubland, low woodland, low open forest, low closed forest, open scrub, grassland, fernland, sedgeland and low open shrubland. Figure 4 depicts this vegetation classification.

It can be seen Aldinga Scrub includes a range of vegetation types; this diversity being an important attribute. In addition, the reserve includes a number of interesting and rare species of plants. In total, 284 species of native plants have been recorded from the Scrub. Readers are referred to the Aldinga Scrub Conservation Park Report (Wollaston 1989) for detailed descriptions of the flora of the area.

A number of alien plants have gained a foothold in the Scrub and some have assumed pest status. The most significant is probably African Veldt Grass (Ehrharta calycina). Wollaston (1989) lists a total of 79 introduced species from the reserve and Kraehenbuehl (undated) discusses the more significant of these weed species. The Friends Group has made an effort in recent years to control pest species, such as Bridal Creeper (Myrsiphyllum asparagoides), Boneseed (Chrysanthemoides monilifera) and Horehound (Marrubium vulgare) by hand pulling.

Notable Plant Species

The following information has been summarized from the work of D. Kraehenbuehl that is included in the Aldinga Scrub Conservation Park Report (Wollaston, 1989). Many of the rarer plant species which occur in Aldinga Scrub are dwarf shrubs, herbs and bryoids, which are particularly susceptible to trampling damage and fire. One of the most notable of these is the Lacy Coral Lichen (Cladia ferdinandii). Lacy Coral Lichen occurs in two areas of the Sheoak (Allocasuarina verticillata) dominated Tall Shrubland (Figure 3).

Lignum (Meuhlenbeckia cunninghamii) was once locally common in the wetland areas of the Scrub. Nardoo (Marsilea drummondii) also occurs in such damp places and would have been used by Aborigines as a food plant. These wetland areas have, however, been disturbed by the drainage system constructed for the surrounding agricultural land (Taylor 1980).

It is stated that the Lignum-dominated Sedgeland in the reserve is disappearing and being replaced in successional sequence by Bracken (Pteridium esculentum) dominated Fernland and Golden Wattle (Acacia pycnantha) dominated Tall Shrubland (Taylor 1980). The evidence for this ecological shift is subjective and anecdotal; more investigation is needed to quantify the changes being wrought by drainage.

Other rare, interesting or uncommon species are listed in Wollaston (1989) and emphasise the biological importance of the Scrub.

Fauna

The following information has been summarized from the 1989 Aldinga Scrub Conservation Park Report edited by E. Wollaston. Information was also

included from the Sellicks Beach Marina and Residential Project;
Supplement to Draft Environmental Impact Statement (1989).

Mammals

The extensive clearing of natural vegetation in the area surrounding the Scrub has substantially reduced the availability of habitat for larger mammals. The Supplement to the Draft EIS (1989) presents a listing of mammal species recorded from Aldinga Scrub, based on surveys undertaken by the Mammal Club of the Field Naturalists' Society of South Australia and R. Sharrad.

Echidnas (Trachyglossus aculeatus), Common Brushtail Possums (Trichosurus vulpecula) and six bat species are known to occur. Kangaroos (species unknown) have been seen in the park. Certain introduced mammals such as Rabbits (Oryctolagus cuniculus), Foxes (Vulpes vulpes), Domestic Cats (Felis catus) and Domestic Dogs (Canis familiaris) frequent the area. Black Rats (Rattus rattus) and House Mice (Mus musculus) may also be present.

Birds

Aldinga Scrub supports a varied population of bird species. Prior to the second World War, adjacent lagoons south and north-east of the Scrub supported many waterbirds and the Washpool area still provides seasonal habitat for ducks, swans, Cape Barren Geese and a variety of waders. The Aldinga Scrub Conservation Park Report (Wollaston 1989) lists 166 bird species as recorded from the Scrub area. An updated, annotated list of birds was also included in the Supplement to the Draft E.I.S. for the Sellicks Beach Marina and Residential Project (1989).

Other Fauna

The Aldinga Scrub Conservation Park Report (Wollaston 1989) provides listings of Reptiles, Amphibians, Spiders, Butterflies, Insects and Myriopods and should be referred to by those interested in these animals. Honeybees (Apis mellifera) and Portuguese Millipedes (Ommatoiulus moreletii) are two introduced species that have proliferated.

Current Usage and Management Issues

The reserve is managed as part of the Sturt Region of the National Parks and Wildlife Service. Protecting and maintaining the conservation status of the natural habitat is the principal management aim. A number of current uses and management issues, however, need to be taken into consideration as they impact the reserve to a greater or lesser extent.

Internal

- (i) There are no internal recreation development sites on the reserve. The reserve is used by visitors travelling by foot who gain access via a number of entrances.
- (ii) A leased area - Camp Kursa - is located on the eastern boundary (Cox Road) and campers based at this facility utilize the Scrub.

External

Various existing (and proposed) developments outside the reserve may directly or indirectly impact on it to varying degrees:

- (i) the housing development of Silver Sands on the western boundary,
- (ii) the township of Aldinga Beach on the north-western corner of the northern boundary,

- (iii) the township of Sellicks Beach on the south-western boundary,
- (iv) the adjacent farmlets on northern, eastern and southern boundaries of the reserve, many stocking horses,
- (v) the Aldinga Holiday Park caravan park on the eastern boundary (Cox Road),
- (vi) the Y.M.C.A. Cooranga Camp on the north-western corner,
- (vii) the E. & W.S. sewage treatment plant planned for a site immediately north-east of the reserve,
- (viii) the future use and development of the Washpool area to the south.

Nearby residential areas generate use of the reserve; mainly foot traffic but also entry by vehicles, horses and other domestic animals. Trampling damage to susceptible vegetation and a proliferation of tracks in the sandy soils are some of the resulting impacts. Pesticides and fertilizers can drift in from surrounding properties and garden plants can establish themselves in the Scrub.

Any developments that have the potential to alter the hydrology of the area are also of concern.

MANAGEMENT CONTEXT

PURPOSE OF ORIGINAL GOVERNMENT AQUISITION

In 1962, the Report on the Metropolitan Area of Adelaide highlighted "the need for open spaces in the metropolitan area to provide for outdoor recreation, because of the growing population and the trends for leisure hours to increase". It also called for a "balanced system of open spaces to provide opportunities for recreation for various wishes and ages of population". As a result, certain areas were purchased to provide for the dual purposes of recreation beyond the limits that which could be provided within the "built up area", while at the same time preserving the natural character of the landscape and the flora and fauna. These areas were also to function as "buffer strips" between the various suburbs and/or rural areas. The Report identified a number of Major District Open Spaces, of which Aldinga Scrub was one.

The Scrub had, in fact, been recognized for a number of years as being of particular scientific interest and the well known conservationist, Professor Sir John Cleland had, at one time, suggested that the area should be reserved as a unique remnant of native scrubland. However, it was not until 1968, that the moves for its formal preservation were initiated. These efforts, stimulated by the Willunga Council, gained the support of conservation bodies and other concerned people, with the result that the Scrub was eventually purchased by the State Planning Authority as a Major District Open Space.

The 1962 Report had stated:

"The need to acquire land well ahead of requirement applies particularly in the coastal areas south from Onkaparinga River to Sellicks Beach. An area of approximately 200 acres at Aldinga Scrub is attractively wooded and close to the beach".

It can thus be seen that Aldinga Scrub was originally perceived as a strategically located area, suitable for providing recreation opportunities and preserving the natural character of the landscape and flora and fauna.

Aldinga Scrub is recognised as an integral part of the Metropolitan Open Space System (MOSS), otherwise known as the Second Generation Parklands. Unlike the older suburbs of Adelaide where there is, in general, a well established reserve system offering a variety of open space opportunities, this is not the situation in the far southern suburbs, where community open space is at a premium. There is likely to be, consequently, significant pressure brought to bear on the park to provide for a range of recreational pursuits as the surrounding region is developed.

However, given its biological significance, the management philosophy for Aldinga Scrub must emphasise the need to protect the only remaining stand of Willunga Plains vegetation, while at the same time maintaining the function of a natural buffer zone between areas of residential and rural development. Given the Scrub's conservation significance, public use should be limited to sensitive, non-destructive pursuits (such as bush-walking on defined tracks or nature study).

The long-term survival of the vegetation communities represented in the reserve, having regard to the surface and subsurface water, should also be considered.

MANAGEMENT PHILOSOPHY

Aldinga Scrub was dedicated as a Conservation Park in 1985. This designation means the fundamental objective of this park is to conserve the wildlife, natural and historic features of the area. Aldinga Scrub Conservation Park preserves a remnant stand of the coastal vegetation that existed on the Willunga Plains prior to European settlement. The purpose of this plan is to determine strategies to protect the natural and cultural assets of the park and to establish the nature and extent of permissible uses.

Scientific surveys have been conducted on the history, archaeology, vegetation and fauna of the area. Information contained in these reports and summarized in the Park Description section of this plan, indicates that the Aldinga Scrub is a biologically distinct area.

Consequently, the whole area of native vegetation should (as far as possible) be retained in, or restored to, a natural state. Measures undertaken to achieve this aim should include removal of alien plant species, and in degraded parts of the reserve revegetation with indigenous species of local provenance as re-inforcement to natural regeneration.

Furthermore, special protection should be given to:

- the area of Lacy Coral Lichen (Cladia ferdinandii),
- the Lignum (Muehlenbeckia cunninghamii) swamp with Nardoo (Marsilea drummondii),
- any areas of Aboriginal significance.

Lacy Coral Lichen, in particular, has only very limited occurrence elsewhere in this State; this reserve is thus of State significance. Actions to minimise and, where possible, prevent further alteration of the hydrology of the area will be undertaken.

In view of the special significance of the Scrub, development should be kept to an absolute minimum and any works that are necessarily undertaken should be compatible with high conservation status. Management practices should, however, allow for environmental education and interpretive opportunities.

Hence, only low key developments should be considered for approval within the reserve and these only for environmental education or interpretation purposes. Any such development projects should be confined to already cleared areas within the park or to a buffer zone external to the reserve. Various sources of funding should be explored.

MANAGEMENT OBJECTIVES

1. To protect and enhance the natural values of the reserve.
2. To undertake fire management practices to reduce the incidence and impact of wildfire, while maintaining the natural values of the reserve.
3. To encourage natural regeneration of the indigenous flora of the reserve and to undertake weed management practices and re-establish native vegetation cover with minimum destruction to existing indigenous species.
4. To monitor and control vermin.
5. To assess the significance of any archaeological or historical sites and institute protection measures.
6. To evaluate the impact of any developments on the hydrology of the reserve and to take appropriate action to minimise adverse effects.
7. To evaluate land for acquisition, dedication or divestment and determine the future of Camp Kursa.
8. To provide a walking trail system.
9. To develop education and information services.

10. To promote community involvement in the care and maintenance of the reserve.

CONSIDERATIONS AND STRATEGIES

OBJECTIVE 1

To protect and enhance the natural values of the reserve.

BACKGROUND

INTRODUCTION

The park has been recognized since at least the 1960s as a significant area for nature conservation. The Aldinga-Sellicks Scrub Report, originally published in 1973 and revised several times (Wollaston 1989), highlighted the area's natural and historic values and made recommendations for the retention of a greater land area than is currently dedicated. A percentage of the present reserve was, however, cleared of scrub for past agricultural activities; these areas are now degenerated pasture.

The park also has significant landscape values, although it is difficult to obtain an overview of the park except from the coastal dunes.

The environs of Aldinga Scrub include housing development, rural holdings and commercial interests on or near the reserve boundary. These enterprises bring together a diversity of potentially conflicting activities which, if not managed properly/catered for, may compromise the conservation values of the reserve. It is probable that the land area surrounding the reserve will be increasingly closely settled in the foreseeable future, bringing more suburban pressures to bear on the remaining natural habitat.

CURRENT USES

Current uses of the park include bush walking and some (illicit) horse riding; the majority of users come from the local community. However, the natural, aesthetic qualities of the bushland also attract people to the area from beyond the local community. Many users do not appreciate the generally fragile nature of this particular coastal landscape. As a result, plants particularly significant in this area of South Australia (including Lacy Coral Lichen and Nardoo Fern) could be destroyed by trampling.

The sandy soil means that without carefully sited and defined walking trails, even a small increase in walking activity may lead to the degradation of soil stability. The use of the park as a pedestrian thoroughfare to the beach particularly from Camp Kursa and the caravan park on the eastern side of the reserve, puts pressure on the walking trail system. Often the walking trail system is used to exercise dogs and to ride horses, contrary to the National Parks and Wildlife Regulations. The Y.M.C.A. camp on the western side of the park caters for youth programmes which include orienteering and bushcraft; such activities can be damaging to the natural environment.

Detailed information, however, on actual numbers of persons visiting the reserve and their attitudes towards it has not been researched to date.

ANALYSIS OF USE

Location of the reserve amongst suburban housing, adjacent to rural developments and with commercial interests nearby, means there is a latent demand in the community to use the reserve for a variety of pursuits. However, severe limitations are posed by the concept of the reserve (as being primarily for conservation), fragile soils, delicate ecosystems and

historic features, which restrict the type and style of activities and developments that could reasonably occur in this park.

There are currently three commercial enterprises just outside the park boundary that have an impact on the reserve. Two of these; the Y.M.C.A. Camp and Camp Kursa, generate patterns of use that include activities such as environmental education, orienteering and bushcraft.

Some (but not all) of these activities could be considered to be inappropriate to this reserve if they result in damage to soil or vegetation.

Other activities currently taking place without close supervision are also damaging fragile parts of this landscape. For example, the patrons of the caravan park on the eastern side of the reserve use the fire track that leads to Boomerang Avenue as a thoroughfare to the beach. As this caravan park allows pets, dogs are often found in the reserve contrary to the National Parks and Wildlife Regulations. Visitors are generally unaware of the impact of domestic dogs on conservation values; for example, dogs dig holes, harass wildlife and can affect the pH and nutrient status of soil with their faeces.

People riding horses in the park contrary to National Parks and Wildlife Regulations also contribute to the damage to vegetation, cause increased erosion of walking trails and spread weeds via horse faeces. Sometimes boundary fences are cut to gain entry.

Local children visit the reserve and construct cubby houses using native vegetation as part of their holiday activities. While this is normal play activity, it is nevertheless destructive of native vegetation and undesirable.

Educational institutions frequently use the park because of its scientific interest, but many such groups are unsupervised, and student activities sometimes cause excessive impact in areas of the reserve that are subject to heavy use. Such institutions may, however, be interested in undertaking research into, or monitoring of, any changes that occur over time and this involvement should be encouraged.

ACTIONS

- * To ensure that the reserve is managed to protect the natural environment in perpetuity, any management actions undertaken should have conservation as a priority.
- * Protect significant native plant species by fencing (although this may be counter-productive), or by education and relocation of walking trails as preferred options.
- * Walking trails intended to cater for educational and passive recreational use will be assessed and, if necessary, closed or relocated (Objective 8). Surfaces of trails in areas of fragile soils will require special protection measures.
- * Public vehicle access will be restricted to trail heads on the perimeter of the reserve. Pedestrian access through the reserve from the eastern side will be from Cox Road to Boomerang Avenue. This will allow pedestrian traffic from the caravan park, Camp Kursa and any future developments on the eastern side of the reserve, easy access the beach (see Figure 4).
- * Liaison will be established with the management of the Y.M.C.A. camp, Camp Kursa and the caravan park to seek co-operation in their use of the reserve.
- * Remove cubby houses and initiate education programme to inform local children about park values and non-destructive use of the reserve.
- * Signs will be placed to indicate the prohibition of horses in the reserve and the community will be encouraged to report offenders.

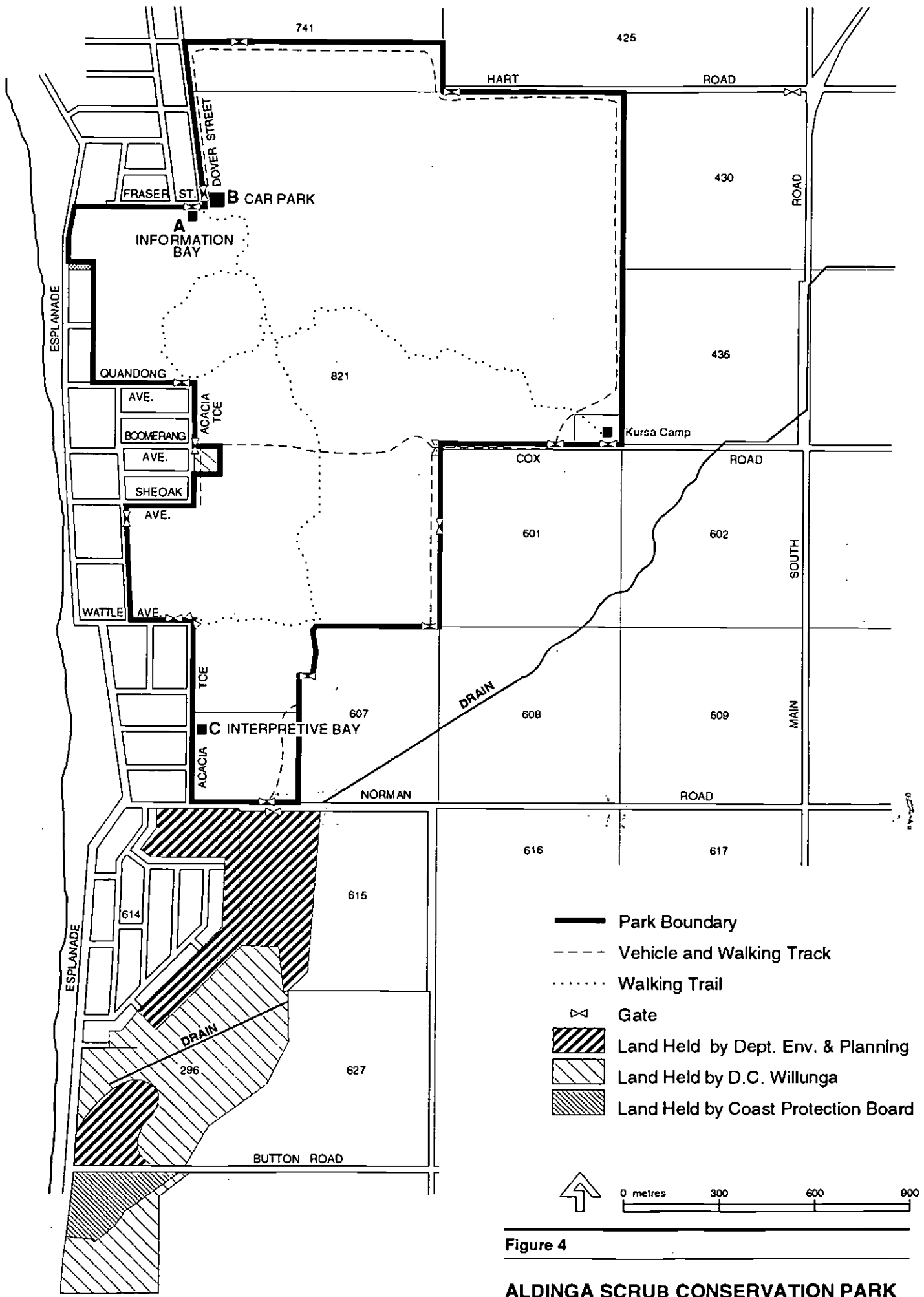


Figure 4

**ALDINGA SCRUB CONSERVATION PARK
Proposed Developments**

- * Liaison with educational institutions will be undertaken to ensure minimal impact on fragile areas within the reserve.
- * Liaison should be maintained with the District Council of Willunga regarding development of the area surrounding the park, to ensure that consideration is given to protecting the reserve's natural and cultural assets and hydrological regime.
- * Non-destructive programmes should be set up to monitor the "health" of the natural systems within the park. Educational or research institutions, as well as special interest or community groups, may be prepared to undertake this work. Research might involve recording any changes that occur in the vegetation over time, in such parameters as species composition or vigour.
- * Results of research and monitoring indicating changes in particular aspects of management will be incorporated into the future management of the reserve.

OBJECTIVE 2

To undertake fire management practices to reduce the incidence and impact of wildfire

BACKGROUND

The Management Plan is complemented by the Draft Fire Management Plan for Aldinga Scrub Conservation Park (N.P.W.S. 1989). This document is being produced separately by the National Parks and Wildlife Service, in conjunction with local authorities. However, the fact that a number of fires have occurred over the past decade would indicate the potential problem that fire poses, both to the natural assets of the park and to the surrounding residences. A long-term aim should be to reduce the growth of introduced annual grasses on the perimeter of the Scrub, by re-establishing native vegetation, thereby reducing the quantity of flammable fuel.

Guiding principles for fire management should generally preclude any fuel reduction burning, but should ensure that the strategic system of fire access tracks around the boundary and within the reserve is maintained. Any fires that do occur should be responded to with speedy suppression measures.

The Fire Management Plan provides for the:

- description of the park and its values.
- identification of fire hazards and possible risk agencies.
- definition of fire management objectives.
- description of fire management resources; e.g. staff, equipment, access tracks, water supply, etc.
- description of strategies for fire prevention.
- prescription of strategies for fuel management.
- prescription of actions to be taken in the event of fire.

ACTIONS

- * Involve the C.F.S. in the preparation of the Fire Management Plan and make the plan available for comment by Council and other interested groups or individuals.
- * Adopt and implement the Fire Management Plan, once public consultation is completed.

OBJECTIVE 3

To undertake weed management practices and re-establish native vegetation cover.

BACKGROUND

The advent of European settlement resulted in the introduction of alien plants, both deliberately and inadvertently. This resulted in substantial changes to the natural landscape.

Farming enterprises in the Scrub commenced during the early 1900s, and such pursuits involved the clearing of native vegetation. Grazing of stock has also had an adverse effect. The grasslands in the northern section of the reserve reflect these past activities. A legacy of exotic tree species, which formed part of the "Farm House Gardens", remains today and needs to be removed, especially those introduced species which have a propensity to spread into the surrounding area.

Sections of land in the Scrub were subdivided in the 1930s. What is now the central, western portion of the reserve was further subdivided into 10 acre allotments in the mid 1950s. Removal of vegetation proceeded in preparation for roadworks, resulting in soil erosion.

Weed species have consequently colonised the reserve, predominately in cleared areas, on land formerly used for farming and along tracks. Weed seed blown from neighboring land will continue to infest the Scrub edges for the foreseeable future. A list of introduced plants is contained in the Aldinga Scrub Conservation Park Report (Wollaston 1989).

Weed management programmes need to be matched to the extent of the problem; revegetation should support weed control in a commensurate way.

A positive approach to native vegetation management must be implemented which demands that weeds (woody and otherwise) be removed with minimum disturbance to the native vegetation. The areas of best native vegetation will be the ones from which exotic plants are removed first. In such areas this will be done sensitively by hand removal and not by using large machinery and/or spraying. In this way, the good areas of vegetation can be preserved and progressively enlarged.

Where re-vegetation is undertaken, care will be taken that naturally regenerating understorey species are recognised, retained and not disturbed.

ACTIONS

- * Specific pest plant species, identified as having the most immediate threat to significant features of the reserve, will be given priority for removal. Woody species, especially, will be removed to discourage further spread.
- * Areas of native vegetation with minor weed infestation will also be given a high priority for treatment.
- * Areas of degenerated pasture will be revegetated with indigenous species of local provenance to encourage competition with introduced (weed) species, but having always due regard for any natural regeneration of indigenous understorey species, which should be carefully monitored.
- * A weed management programme is therefore required which recognizes these approaches, as well as the legal requirements of the Animal and Plant Control Act 1986 and the National Parks and Wildlife Act 1972. Such a programme should be drawn up and implemented as a matter of priority.

OBJECTIVE 4

To monitor and control vermin

BACKGROUND

It is recognised there are numbers of introduced pest animals within and outside the reserve. These include rabbits, feral cats and foxes. Dogs and cats obviously stray into the reserve from neighbouring properties. Rabbits are regarded as the most significant problem at this time.

Other introduced species, that compete to the detriment of native fauna, include Starlings, Blackbirds, Honeybees and Portuguese Millipedes.

ACTIONS

- * Undertake a monitoring programme to identify feral animal species impacting the reserve.
- * Investigate and, where necessary, implement integrated programmes to control introduced animals on the park where these have been found to be having significant adverse effects.
- * Inform the local community as to the need to restrict roaming dogs and cats.

OBJECTIVE 5

To assess the significance of any archaeological or historical sites and institute protection measures.

BACKGROUND

Aldinga Scrub is of significance as one of the major workshop sites of the Kurna Tribe (Wollaston 1989). Two very large camp sites and workshop

areas in the southern part of the reserve have yielded many stone implements and flakes. Other still relatively undisturbed areas are known to exist. Aboriginal people have, in recent times, demonstrated an interest in the area for its historic and cultural significance.

There is also strong evidence to show that people of the Kartan culture were present 10,000 - 20,000 years ago. Kartan stone implements are still found in this area. However, when an area known to contain artifacts is disturbed its scientific value is reduced. Hence, archaeological sites should be protected until they can be competently assessed. In addition, the mythological value of the area should be ascertained.

The Willunga area was first settled by Europeans in the 1840s. The first known European settler in the Scrub is believed to have been a Mr. F. Culley, who lived in a mud hut whose location is now unknown. Other remains from this pioneering era have yet to be located and documented, but the park has known links with the early days of the colony.

ACTIONS

- * Surveys and investigations will be undertaken to identify any sites or localities of archaeological or mythological significance.
- * Appropriate protection measures for known archaeological and mythological sites will be undertaken in consultation with the Aboriginal Heritage Branch of the Department of Environment and Planning and the South Australian Museum.
- * Liaison will be maintained with Aboriginal people regarding their links with and interests in the park.
- * The possibility of developing interpretation programmes based on Aboriginal ties with the park will be investigated further.
- * Surveys will also be undertaken to assess the possibility of any

European relics of significance being present. Depending on their historic value, they will be protected and interpreted.

OBJECTIVE 6

To evaluate the impact of any developments on the hydrology of the reserve and to take appropriate action to minimize adverse effects.

BACKGROUND

It is recognized that the hydrology of the area is of particular significance and developments within and adjacent to the reserve have affected, and may further affect, the ground water regime beneath the Scrub.

Prior to European settlement, the park area was subject to inundation in the north-eastern, eastern and southern sections for periods of up to six months each year. The development of the surrounding areas for agriculture substantially reduced the frequency and extent of this inundation; through initially, the installation of diversion channels and subsequently the construction of drains taking the water directly to the sea. It is known that the surface and ground water regimes, on and beneath the Scrub, have been substantially reduced as a result. While it has been claimed that vegetation associated with the wetter areas of the Scrub has been adversely affected as a consequence, any ecological re-adjustments have not yet been quantified.

The further development of the surrounding area for suburban housing and sewage effluent treatment, could further impact the already modified hydrology of the park. While the proposal for a marina south of the park has been rejected, other proposals could emerge in the future which have the potential to impact the ground-water regime in the area. These

potential impacts must be duly considered as part of any assessment of proposed developments in the surrounding region.

Suggestions have also been made that the pre-drainage water regime could somehow be restored by directing, for example, stormwater runoff into the Scrub or by developing wetland areas on adjacent land. While such schemes have some appeal, very careful investigations need to be undertaken (especially as regards water quality, as stormwater runoff from suburban areas can be heavily contaminated) before they are implemented.

Furthermore, any re-flooding might subject nearby residential areas to flood hazard, and should be only undertaken after a thorough assessment.

ACTIONS

- * Investigate and assess any proposed future developments in the surrounding area that might affect surface or ground water regimes.
- * Seek expert advice to more fully investigate the impact of any proposed development that may impact on the hydrology of the reserve.
- * Liaise with the District Council of Willunga regarding the potential impacts of proposed developments which might affect surface or ground water regimes.
- * Register concern, where appropriate, with the District Council of Willunga or other relevant authorities if aspects of any proposed development in the vicinity of the park are likely to affect the extent, quantity and quality of groundwater within the park.
- * Take appropriate action to prevent/minimize any adverse effects.

OBJECTIVE 7

To evaluate land for acquisition, dedication or divestment and determine the future of Camp Kursa

BACKGROUND

PREAMBLE

The present (1992) boundaries of Aldinga Scrub Conservation Park include all the intact natural vegetation remaining in the locality. However, there have been suggestions made that the park should be increased in size. The area originally proposed for reservation was larger, and land to the south of the park, was purchased (but not dedicated), and remains in Government ownership.

Suggested extensions have also included proposals for buffer areas to the north and east, and inclusion of the former wetland areas to the south. If the purpose of having a buffer zone is to retain a relatively undeveloped belt of land around the park, it might be possible to achieve this objective through planning controls that prohibit intensive development and avoid the expense of land purchases. However, the majority of land north and east of the park is zoned as "deferred residential". Ultimately, these areas will be developed for suburban housing. The reserve requires a wide buffer around all boundaries to ensure residential allotments do not abut the park. This buffer should include seasonal wetlands outside the northern and eastern boundaries of the park. This would assist in minimising interference with the hydrology, and would function as a weed barrier and as a safety zone for dwellings, in the event of wildlife within the park.

Proposals have been made for wetland restoration and development which, if they were found to be feasible and it was decided to implement them, would require land to be acquired. While it is not the role of this management

plan to evaluate such schemes in any detail, there have been a number of proposals to develop (or restore) the former wetland area known as the "Washpool". This was originally a brackish lagoon and still fills with, and retains, water (to a reduced extent) each winter. A feasible scheme may eventually be devised that retains open space assets, but special consideration will need to be given if any change in water regime is contemplated; nearby residential developments could be affected by any rise in ground water.

This area is remote from the Scrub but is an important habitat for five plant species of conservation significance. Further, oral history describes the Tjirbruki Spring near the Washpool as part of the only dreaming track of the Kaurna people with a complete song cycle to survive European settlement. The Washpool site is a focus of contemporary identity for a number of Aboriginal people. Dedication as a conservation park or recreation park under the National Parks and Wildlife Act may be a possibility. Proclamation of a recreation park would enable opportunities for outdoor activities (e.g. picnics, barbecues, dog walking) to be provided away from the Scrub, which has high conservation value and cannot sustain heavy recreation use.

Allotments 14 and 15, Pt. Section 435 are the site of Camp Kursa. This land, of a little over 2 ha in extent, is leased until 2001. The Camp Kursa land was dedicated as part of the park in 1991.

LAND UNDER SERVICE CONTROL

Some land adjacent to Aldinga Scrub Conservation Park was purchased by the State Planning Authority some years ago but was not dedicated as part of the reserve. This land includes: Pt. Sections 614 and 615 Hundred of Willunga (Figure 4).

Pt. Section 614 is located south of Norman Road, is about 8 ha in area, and is known as "Blue Lagoon". The title to this land also includes the low-lying portion of Section 296 (part of the "Washpool").

Allotments 1 and 2, Pt. Section 615 are also located south of Norman Road and comprise cleared pasture land, currently used for grazing; area involved is about 11 ha.

LAND NOT CONTROLLED BY THE SERVICE

An area of land considered suitable for acquisition, but not under National Parks and Wildlife control, is Pt. Section 741, which is located on the coastal dune system adjoining the north west corner of the reserve; area approximately 2 ha.

There is also an area of approximately 1 ha of land, controlled by the District Council of Willunga, that forms a re-entrant to the reserve east of Boomerang Avenue. Pt. Section 742 is integral to the reserve and should be added to it.

South of the reserve, there are further land parcels, presently controlled by the District Council of Willunga and the Coast Protection Board, which include portions of the former "Washpool" wetland. Two Council reserves (Pts Section 614) are located west of Section 296, while the remaining areas are located south of Button Road. At this stage there are no plans to acquire these areas, but in assessing proposals to recreate wetland habitat south of the park, consideration will obviously have to be given to the future use and management of these land parcels.

North and east of the reserve, it is important that what is presently private land be utilized as a buffer zone with minimal development. The

actual area required has not been specifically defined at this time (1992). However, any assessment of the schemes for buffer zones or wetland areas in this locality will need to take land purchase into consideration. As stated previously, if land adjacent to the reserve is subdivided for residential development, a wide buffer is required to ensure housing allotments do not abut the park. Such a buffer could be managed by Council.

Camp Kursa

Lots 14 and 15, Pt. Section 435 (Camp Kursa) involve the Service in being responsible (as lessor) for the existing buildings. The present lease terminates in 2001. The future use of this leased area should be reviewed at a time nearer the termination date of the existing lease. Management of the camp needs to be undertaken with the interests of the park's natural habitat in mind. This is best achieved by a lease over the built facilities on dedicated reserve land and by maintaining an ongoing liaison with the lessees.

ACTIONS

In relation to these various parcels of land, it is proposed as follows:

- * Pt. Section 614 should be retained, pending further investigations into the best use of the land south of Norman Road.

Justification

- The natural ecosystem of this area has been substantially destroyed by agricultural practices but it does have open-space attributes and is still a low-lying, damp area.
- Blue Lagoon now bears little resemblance to its pre-European settlement condition, has few natural resource values and is a doubtful prospect for re-flooding or rehabilitation. However,

it does support a stand of Lignum.

- The site is surrounded by suburban housing but any wetland reconstitution would involve at least part of this area, which could be linked to Section 296 (to the south).
- * Lots 1 and 2, Pt. Section 615 should also be retained, pending further investigations.

Justification

- The land has been subject to a long history of agricultural use; while its natural resource value is low the area has open space value.
 - Any wetland reconstitution would involve at least part of these areas.
- * Pt. Section 741 should be acquired and dedicated as an addition to Aldinga Scrub Conservation Park to extend the park over the coastal dune area.

Justification

- Proclamation would give reserve status to the coastal dune system, which is partly within, and contiguous with, the existing land form and vegetation of the reserve. Dune systems are not well preserved; most now are almost lost from the entire coast of Gulf St. Vincent.
- As part of the park, the Service could control public access to the reserve via this area, which is suffering from human impact at this time.
- This site is one of the few places where one can appreciate the landscape qualities of the park; it thus has lookout potential.

- * Pt. Section 742 should be acquired and dedicated as an addition to the park.

Justification

- The subject land borders the park on three sides; it should be added for reasons of boundary rationalisation.

- * Land to the north and east of the Scrub has been proposed as a buffer area; more investigation is needed.

Justification

- The actual requirement for such a buffer is based on ensuring the viability of such a small bushland area and restoring water regimes and preventing suburban development occurring immediately adjacent to the Scrub are two valid considerations. It may be possible to achieve the desired buffer effect without land acquisition, provided planning controls encourage appropriate land use. The Service should be party to any investigations into this matter.

In relation to Camp Kursa, the Service should continue to monitor the use of this area for lease compliance and for any impacts on the surrounding park. Effective liaison should be maintained with the lessees. This concession arrangement should be reviewed towards the end of the current lease period.

OBJECTIVE 8

To provide a walking trail system

BACKGROUND

Due to the unsupervised use of the reserve, there has been a proliferation

of tracks throughout the area (Figure 2). Persons entering the park from the adjoining camps, residential areas and commercial establishments have contributed to this problem, which has led to soil erosion and destruction of flora.

The Friends of Aldinga Scrub have expressed interest in establishing marked trails in the park. A suggested track system is outlined in Figure 4.

ACTIONS

- * Modify existing track layout by closing all tracks other than those designated in Figure 4, to form the basis of a formal trail system compatible with the fragile nature of this landform. Liaise with the Friends Group on this matter.
- * Establish trail heads on the perimeter of the reserve, with limited car parking facilities external to the Scrub and which include Interpretive/Educational/Directional signs.
- * Undertake suitable maintenance of the formal trail system. Tracks not included in this system to be closed and encouraged to regenerate.

OBJECTIVE 9

To develop education and information services

BACKGROUND

It is accepted that a major responsibility of the National Parks and Wildlife Service is to make people aware of conservation philosophy and the benefits to the community that result from a system of conservation

reserves. There have been divergent views expressed from time to time, by those, who on the one hand, see the Aldinga Scrub reserve as primarily an area for outdoor recreation and those, on the other, who perceive the main role of this reserve to be preservation of the natural environment.

Currently both these groups use the reserve and are (at the moment) in minor conflict with each other and to varying extent with the reserve's management philosophy. There is an obvious need to impart a positive conservation message to all who visit the park, and to demonstrate that conservation and appropriate outdoor recreation need not be incompatible. Some current recreational activities are clearly inappropriate in a conservation park, such as riding of horses and motor cycles. Other activities (such as off-trail walking) are slowly degrading the reserve (e.g. by trampling vegetation and creating new tracks) but only require positive direction to make them acceptable. In the example of off-trail walking, limiting foot access to defined routes would largely resolve the problem.

The Service lacks the staff and resources to provide an elaborate environmental education and information service. However, the Service recognises the urgent need to inform users of the special significance of the reserve and the fragile nature of this landform. This may be achieved by the Service in two possible ways; as a non-personal visitor service (e.g. signposting, static displays) or, as a personal visitor service with the assistance of friends groups, interested organizations or individuals who might be encouraged to implement special programmes that are largely self-funding. One example of the latter type might be the interpretation of Aboriginal heritage.

There is perceived to be a general need for a community education programme about the park, especially as it can be expected to be used by

greater numbers of people as the southern metropolitan area continues to grow. This highlights the need to identify target groups, for example those who utilize the park for education purposes. One specific example mentioned previously, was the need to inform the public of the importance of controlling dogs and cats.

ACTIONS

- * The Service will survey and assess the requirements for information and directional signs. Some signs are urgently required to help prevent further degradation of areas of scientific interest.
- * The reserve has areas of general interest that are suitable locations for interpretative signs and self-guiding trails. These sites need to be identified.
- * Brochures are considered to be a low priority at this time. Signs in areas of interest should be used to provide a non-personal visitor service that is appropriate for this reserve.
- * There are opportunities for personal visitor services to be conducted by interested organizations. Such services and programmes will need to be developed and co-ordinated with the Environmental Education and Interpretation Section of the National Parks and Wildlife Service, Sturt District Office.
- * The Service should utilize whatever resources State Government, Local Government and special interest groups may be prepared to provide, to disseminate information about the park.
- * The Service should develop a community education programme, based on perceived needs.

OBJECTIVE 10

To promote community involvement in the care and maintenance of the reserve

BACKGROUND

Because of budget limitations, the Service is only able to undertake a very basic care and maintenance role for Aldinga Scrub Conservation Park. The Service continues to rely on significant voluntary community support in the care and maintenance of reserves throughout the State. The importance of this reserve to South Australia and the local community has generated much interest and support in the past. Continued community assistance is essential for the protection of the natural features of this area. However, before any volunteer work is undertaken, union approval must be obtained.

ACTIONS

- * In conjunction with the Service, encourage members of friends groups, research and educational institutions, special interest groups and local community groups to participate in activities that will maintain and improve the reserve; including weed control, re-vegetation programmes, walking trail demarcation, maintenance and rehabilitation, guided walks and other special projects such as monitoring and research programmes.
- * Liaison should be maintained with those interested in the reserve in regard to any issues that may affect it.
- * As planning for the development of the southern suburbs proceeds, the Service should continue to liaise with the relevant planning bodies involved to ensure that the values of the Scrub are given due consideration.

ACTION SUMMARY

This section provides a summary of the key management proposals outlined in this plan.

Project	Priority	Duration
Protect fragile areas, rare plants by appropriate means	High	Short
Rationalise walking trail system and implement maintenance programme.	High	Ongoing
Liaise with neighbouring camp operators.	High	Ongoing
Liaise with educational institutions	High	Ongoing
Liaise with District Council of Willunga regarding surrounding developments.	High	Ongoing
Adopt and implement Fire Management Plan.	High	Ongoing
Survey natural regeneration of understorey species in degraded areas and monitor carefully.	High	Ongoing
Survey weed species; draw up and implement weed control/re-vegetation programmes.	High	Ongoing
Survey vermin fauna; draw up and implement control programmes where necessary.	High	Ongoing
Survey archaeological/historical sites; implement protection measures where necessary.	High	Ongoing
Liaise with Aboriginal people on issues affecting the reserve and ongoing management.	High	Ongoing
Assess the likely impact of any proposed developments in surrounding region; seek expert advice and take appropriate action to prevent/minimize adverse effects.	High	Short

Liaise with friends groups and local community on issues affecting the reserve and ongoing management.	High	Ongoing
Set up programmes to monitor the environmental "health" of the reserve.	High	Ongoing
Construct trail head car parks on reserve boundary external to Scrub.	Moderate	Short
Acquire/divest land as stated and conduct investigations to achieve a manageable boundary, maximum conservation status.	Moderate	Medium
Manage Camp Kursa lease.	Moderate	Ongoing
Identify need for signs; draw up and implement sign installation programme.	Moderate	Medium
Develop interpretation/personal visitor services.	Moderate	Ongoing

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