

CALPATANNA WATERHOLE CONSERVATION PARK

Eyre Peninsula SOUTH AUSTRALIA



MANAGEMENT PLAN

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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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**Cover Photographs
Top: Southern area of Calpatanna Waterhole
Conservation Park
Bottom: Old fence line along western boundary**

FOREWORD

Calpatanna Waterhole Conservation Park is one of only a few conservation parks on the western coast of Eyre Peninsula. It is an area which has been little disturbed, despite a long history of pastoral occupation and extensive development for agriculture in the region. The park is neither large nor popular, yet it is typical of many of the conservation parks held and managed by the South Australian National Parks and Wildlife Service. Parks of this kind are rarely visited and are often considered by the public to be monotonous and unattractive, yet they serve a vital purpose in preserving for future generations examples of the native environment which existed before European settlement only 150 years ago. In this context, these parks comprise a unique and irreplaceable part of the State's heritage. It is therefore the responsibility of the National Parks and Wildlife Service to manage these parks to ensure that their natural values are retained.

The Draft Management Plan for Calpatanna Waterhole Conservation park was released for public comment in 1985. Nine submissions were received, most of which gave general support for the proposals in the plan. As required by the National Parks and Wildlife Act 1972-81 the public submissions were referred to the Reserves Advisory Committee for consideration and advice.

This Management Plan for Calpatanna Waterhole Conservation Park provides background information on the park and sets out the philosophy of management, objectives to be achieved in managing the park, and the actions needed to fulfil these objectives. It is intended that this plan will provide the basis for managing the park for some considerable time.

D.J. HOPGOOD
MINISTER FOR ENVIRONMENT AND PLANNING

ACKNOWLEDGEMENTS

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INTRODUCTION

THE PLANNING PROCESS

Plans of management are documents prepared by the National Parks and Wildlife Service which contain a set of principles governing the future management of reserves. Such plans are required for all reserves administered by the Service. Section 38 of the National Parks and Wildlife Act, 1972-1981, states that plans of management shall set forth proposals in relation to the management and improvement of a reserve as well as indicate the means by which the objectives of the Act may be accomplished.

Section 37 of the Act lists nine matters which the Minister, Permanent Head, and Director shall have regard to in managing reserves:

- (a) the preservation and management of wildlife;
- (b) the preservation of historic sites, objects and structures of historic or scientific interest within reserves;
- (c) the preservation of features of geographical, natural or scenic interest;
- (d) the destruction of dangerous weeds and the eradication or control of noxious weeds and exotic plants;
- (e) the control of vermin and exotic animals;
- (f) the control and eradication of disease and injurious affection of animals and vegetation;
- (g) the prevention of bushfires and other hazards;
- (h) the encouragement of public use and enjoyment of reserves and education in, and a proper understanding and recognition of, their purpose and significance;
- (i) generally the promotion of the public interest.

Once a draft plan has been prepared, it must be announced in the Government Gazette and placed on public exhibition for at least one month. Any person may then make submissions and these must be 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 undertaken unless they are in accordance with the plan.

CALPATANNA WATERHOLE CONSERVATION PARK

Calpatanna Waterhole Conservation Park is a reserve of 3603 hectares, situated south-east of Streaky Bay. Only lightly grazed and cut over for timber until dedicated in February 1974, it conserves a variety of habitats typical of the western coast of Eyre Peninsula.

On the complex of low calcarenite ridges overlain with shallow skeletal soils, large patches of mallee (Eucalyptus dumosa, E. gracilis and E. yalagensis) open-scrub occur. Mixed-age stands of the scrubby cypress pine Callitris canescens are scattered throughout the open-scrub. Only a few examples of the once extensive drooping sheoak (Allocasuarina verticillata) low woodland remain, probably as a result of selective grazing pressure over many years. Instead, the apparently degraded areas support a series of vegetation types ranging from tall shrubland (dominated by dryland tea-tree (Melaleuca lanceolata) or mallee honey-myrtle (Melaleuca acuminata), broombush (Melaleuca uncinata) and cup fringe-myrtle (Calytrix involucrata) through tussock grassland of (Triodia sp.) and desert saw-sedge (Gahnia lanigera) to a grassland comprised mainly of introduced pasture species.

The western part of the park features one large salt lake (500 hectares) and several small salt lakes which are not vegetated except for a narrow zone of samphire shrubland around some margins. On the extensive network of adjacent, rarely inundated saline flats, an open-scrub of swamp paper-bark (Melaleuca halmaturorum) occurs.

The park is not popular for outdoor recreation activities and has, to date, attracted little attention from naturalists. Nevertheless, the area is an important conservation park of the western coast of Eyre Peninsula and, in addition to being one of the few relatively undisturbed remnants of bushland, it also provides a good representation of a variety of the environments which once existed in this region.

THE MANAGEMENT PLAN

It is the objective of this management plan to provide management guidelines for the long-term conservation of the natural environment as well as rationalise the proposed and established patterns of use with the conservation function of the reserve.

The document is divided into two principal parts. The first part contains background information on the park and its setting, including the physical environment, history and biology, as well as a brief description of current park usage and management. The second part comprises the management plan and begins with a statement on the management philosophy for the park and a list of the primary park management objectives. A detailed discussion of management issues follows, as well as those actions which are considered necessary in order to fulfil the primary park management objectives. The final section of the plan presents, in summary form, the management actions which are recommended for the park.

Part 1

Background Information

LOCATION AND PHYSICAL FEATURES

LOCATION AND ACCESS

Calpatanna Waterhole Conservation Park is located on the western coast of Eyre Peninsula (Figure 1). It is approximately 25 kilometres south of Streaky Bay, and can be approached from the Flinders Highway between Port Kenny and Streaky Bay. From the highway the park may be reached by either of two formed and well-maintained unsealed roads which form the eastern and southern park boundaries. The small settlement of Calca, which consists of an old post office, hall, church, tennis courts, and a partially developed oval, is at the intersection of these roads at the south-eastern corner of the park. Sceale Bay is approximately 10 kilometres to the west of the park, and Baird Bay immediately to the south. A water tank approximately two kilometres into the park on the northern boundary may be reached by conventional vehicles. Apart from this, access to the interior of the park and the northern and western boundaries is restricted.

The park covers an area of 3603 hectares, comprising Sections 121, 122, 128, 129, 144, 179, 180 and 189, Hundred of Wrenfordsley, County Robinson (Figure 2). It is not large compared with the major conservation parks of central and southern Eyre Peninsula, but it is an important reserve of the western coast of the peninsula.

CLIMATE

The western coast of Eyre Peninsula has a temperate climate with dry, warm summers, and cool, relatively wet winters.

Mean annual rainfall varies from about 500 millimetres in the extreme south of the region near Coffin Bay to about 350 millimetres in the north at Smoky Bay. Most of the rainfall occurs between April and October. Temperatures range from mild in summer to cool and cold in winter. Evaporation rates are high and exceed rainfall even during winter. Mean annual evaporation increases from about 1800 millimetres in the south of the region to about 2000 millimetres in the north. Winds tend to be stronger in the summer months and for most of the year are predominantly from the south or south-west, although northerly morning winds are not uncommon in winter. A maritime influence dominates the climate of the western coast, distinguishing it from the warmer, dryer inland climates of central and north-eastern Eyre Peninsula.

The nearest permanent weather station to the park is at Streaky Bay, about 25 kilometres to the north. The topographic uniformity of the area and a similar maritime aspect suggest that records at Streaky Bay represent climatic conditions at the park. Mean annual rainfall at Streaky Bay is approximately 375 millimetres, with a very pronounced winter maximum from May to August. Records, which have been kept continuously at Streaky Bay since 1877, indicate that rainfall is fairly reliable, with the highest annual fall recorded of 606 millimetres in 1968 and the lowest 194 millimetres in 1959. A summary of rainfall information with mean monthly maximum and minimum temperatures at Streaky Bay is provided in Figure 3.

LANDSCAPE

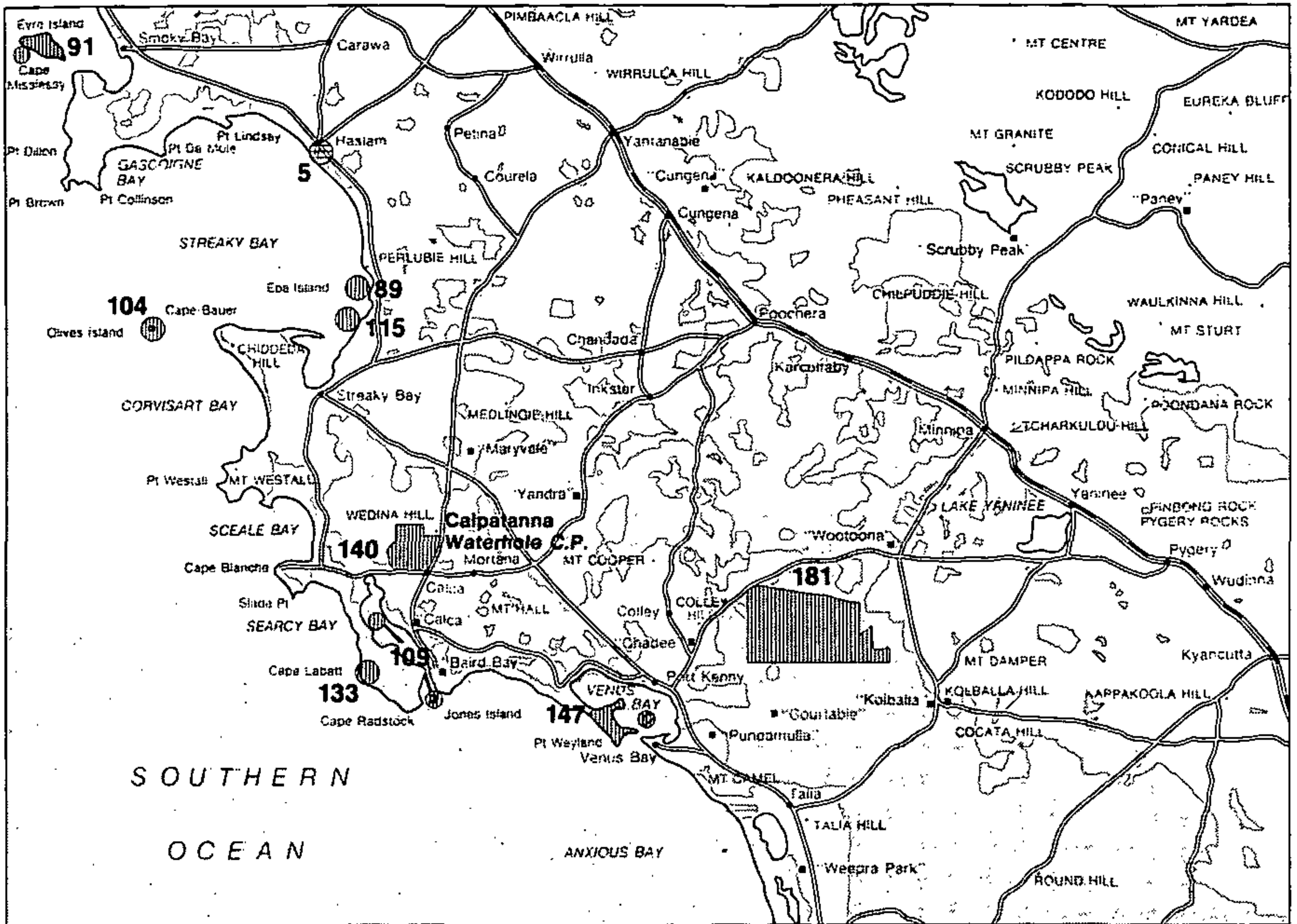
Calpatanna Waterhole Conservation Park is located within a 50 kilometre-wide calcareous sand plain which extends along the western coast of Eyre Peninsula between Streaky Bay and Coffin Bay. These sands are heavily indurated with lime, and lithify to aeolian calcarenite, a hard limestone which is a characteristic feature of the western coast landscape. Although this system is quite distinctive and has been distinguished as one of the four major environmental regions of Eyre Peninsula (Figure 4), it does share common origins with the siliceous dunes of central and north-western Eyre Peninsula as well as the dune system of the Great Victoria Desert. It has been suggested that the superficial differences which are apparent today are evidence of climatic change; evidence of a previously more arid period when there was less vegetation and the surface was prone to wind action. During this arid period, some 3000-6000 years ago, the sands of the western coast of the peninsula were deflated and redeposited in central and eastern Eyre Peninsula.

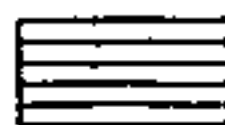

Despite its relatively small size, Calpatanna Waterhole Conservation Park is surprisingly representative of the landscapes of the western coast region of the peninsula. The country south and east of Streaky Bay is a gently rolling, sparsely vegetated landscape comprised of low calcarenite ridges capped with calcrete and occasional old fixed dunes. Small swamps, vegetated with dense tea-tree, fill many of the depressions formed between the ridges. There are no well-defined surface drainage channels or watercourses. Rain percolates down to the groundwater table through the highly jointed calcarenite, or remains for short periods in the low-lying flats. This landscape is characteristic of the eastern part of the reserve.

To the western side of the park, this system is replaced by irregularly shaped lakes occupying depressed areas, most of which are near sea-level. These lakes are representative of a complex of lakes and swamps which run in a coastal belt between Streaky Bay and Baird Bay, and further south along the coast. During the winter months of relatively high rainfall, the groundwater of the Robinson Freshwater Basin, which underlies the area, rises above the surface of the country in the vicinity of these swamps. The swamp margins overflow, creating an extensive sheet of water. As summer approaches and the groundwater table of the basin falls below the margin of the swamps, the water remaining on the surface is trapped and held by an impervious bed of calcitic clay.

It is believed that the annual evaporation of the water in some of these swamps has, over the years, resulted in a concentration of saline material and the formation of salt swamps (Segnit and Dridan 1938). In summer when the lakes are usually dry the wind may blow loose sediment into low banks and dunes up to 4 metres high. These deposits are prominent in the larger lake in the south-west of the park where they occur on the easterly and north-easterly margins of the lake bed.

Outside the park and immediately to the west, the coastline presents a varied picture. Active marine erosion along the coast has produced spectacular cliffs up to 70 metres high in the calcarenite flanking Corvisart Bay. These cliffs contrast to the steeply sloping beach of shell sand at Sceale Bay behind which are high dunes. At the northern end of the bay, shell sand has been carried more than three kilometres inland in a blowout, although when comparing Hundred survey plans of the 1880s with modern aerial photographs there is an indication that this blowout is fairly stable and has not expanded to any extent over the past century. A discontinuous belt of these coastal dunes, in association with lagoon and



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 **Uncleared vegetation**



Scale 1 : 1 000 000

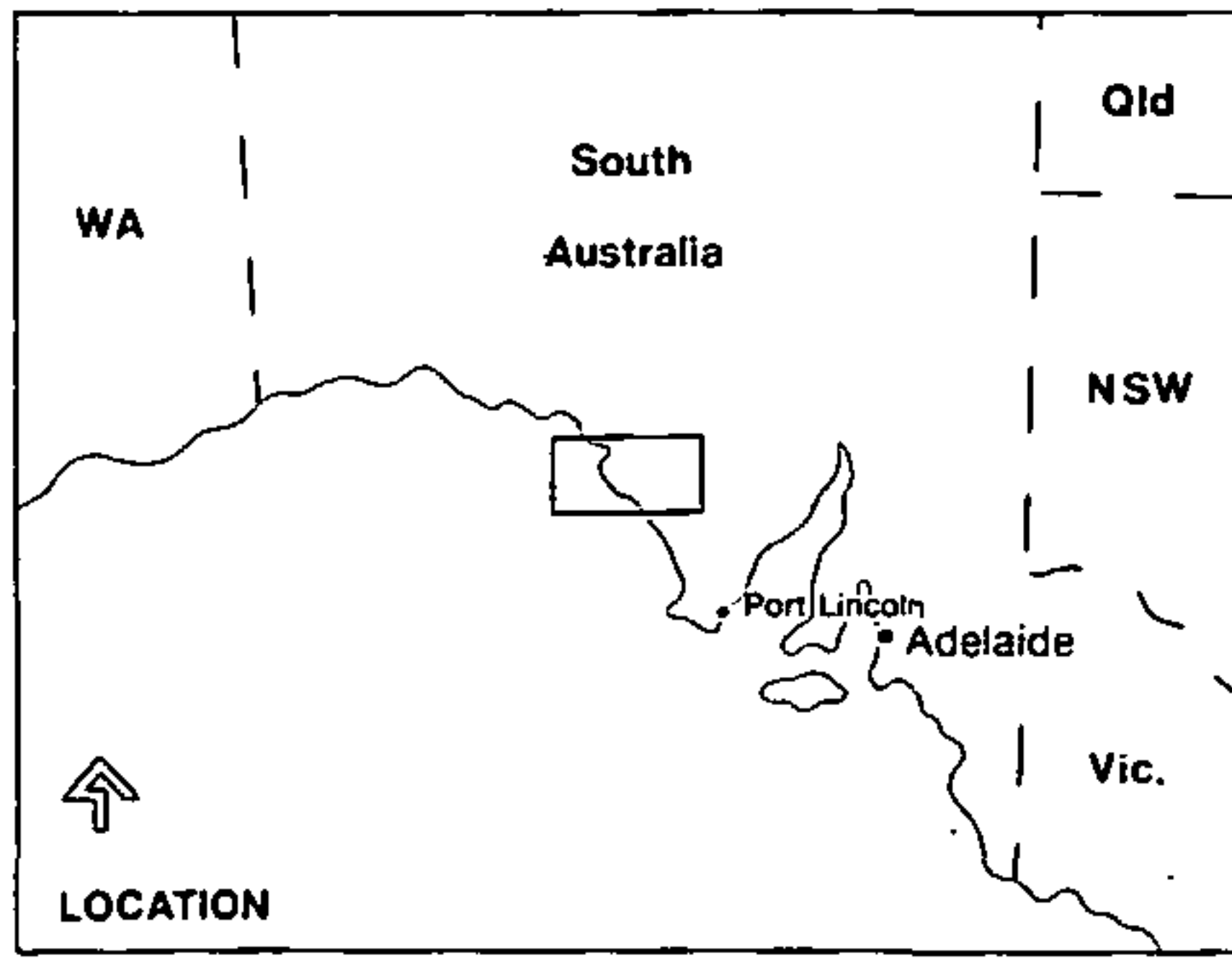
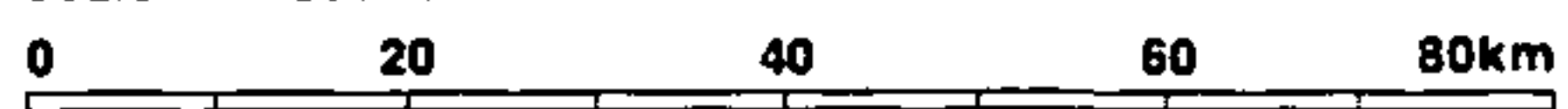


Figure 1
Park Locations and Areas of Native Vegetation

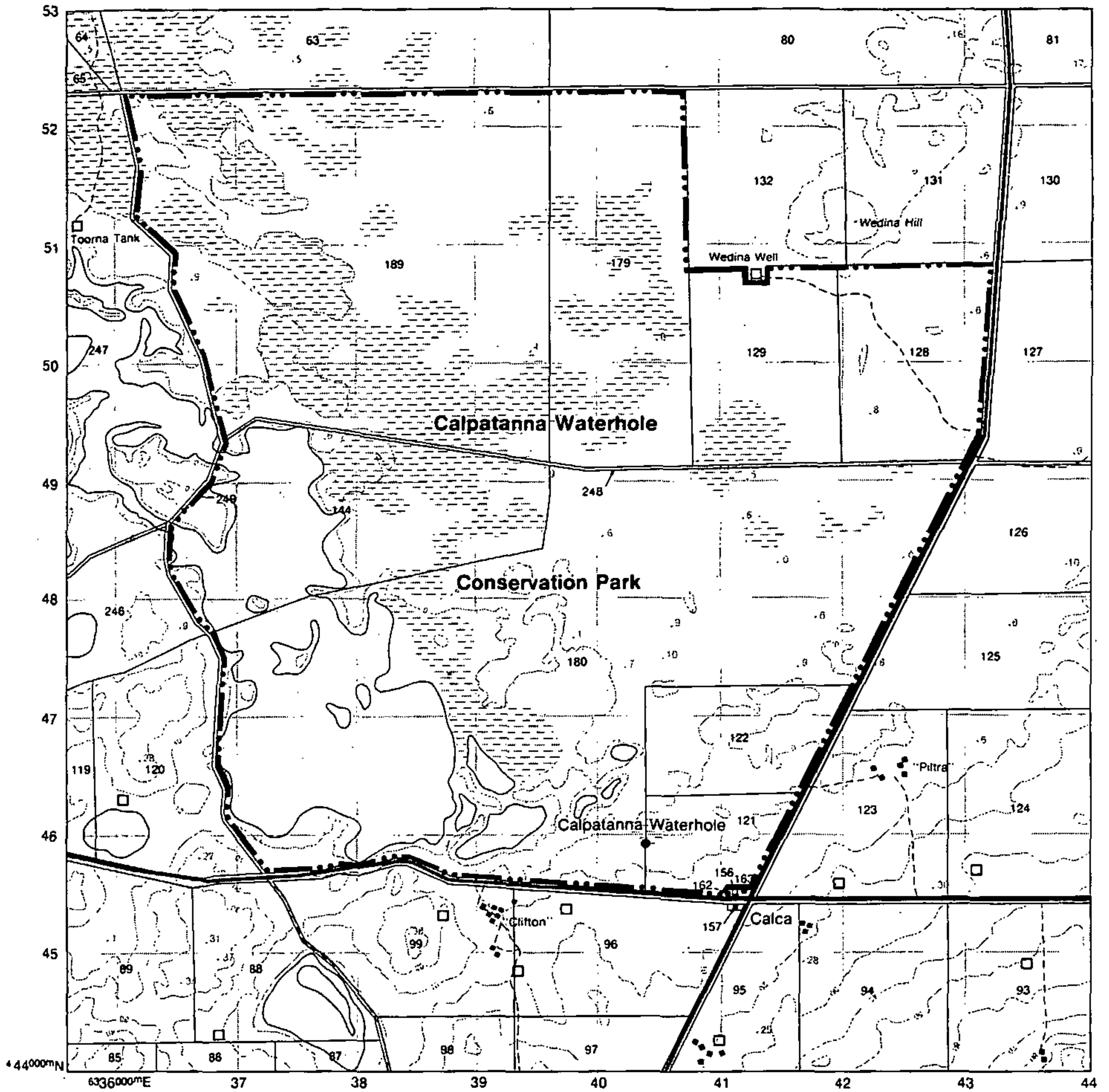
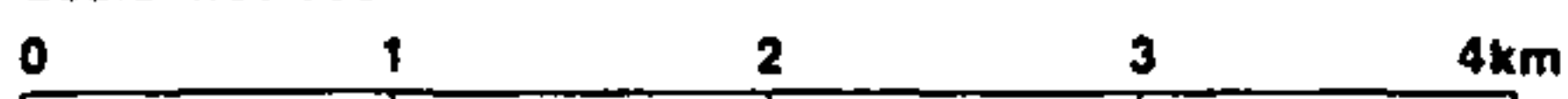


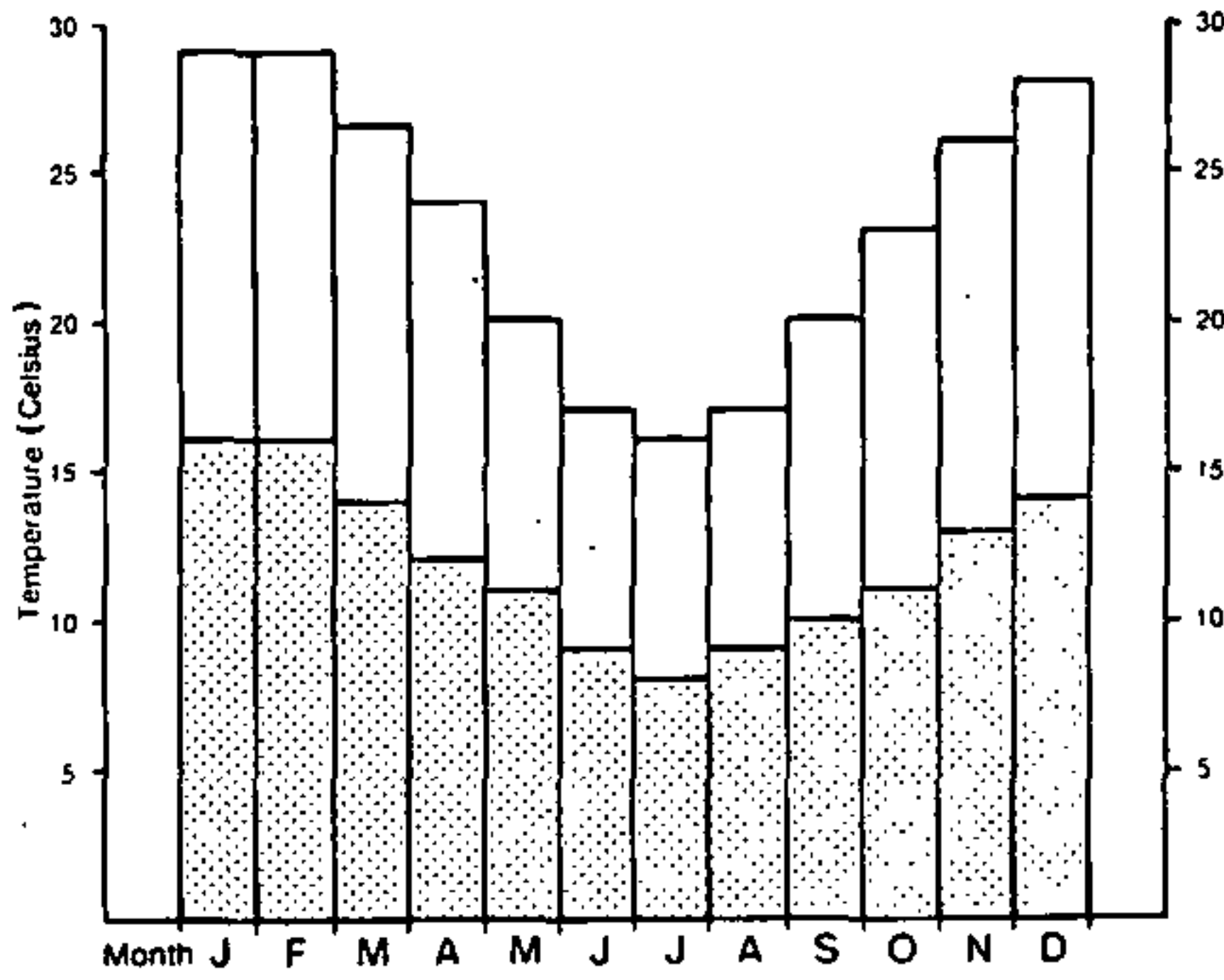
Figure 2

Cadastral Information and Topographic Features

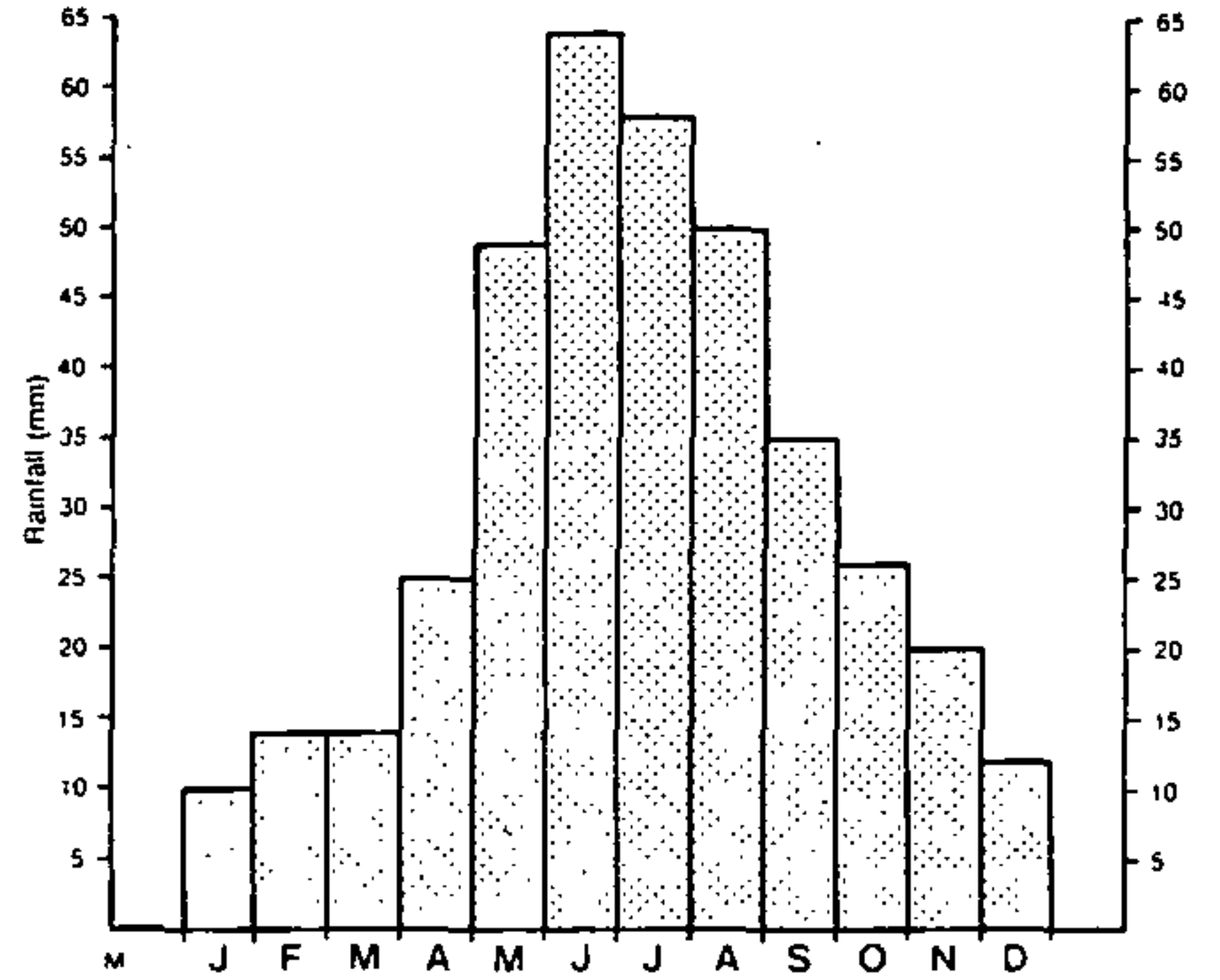
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**Mean Daily Maximum and Minimum Temperatures
Streaky Bay**



Mean Monthly Rainfall at Streaky Bay



Annual Rainfall 1880-1980 at Streaky Bay

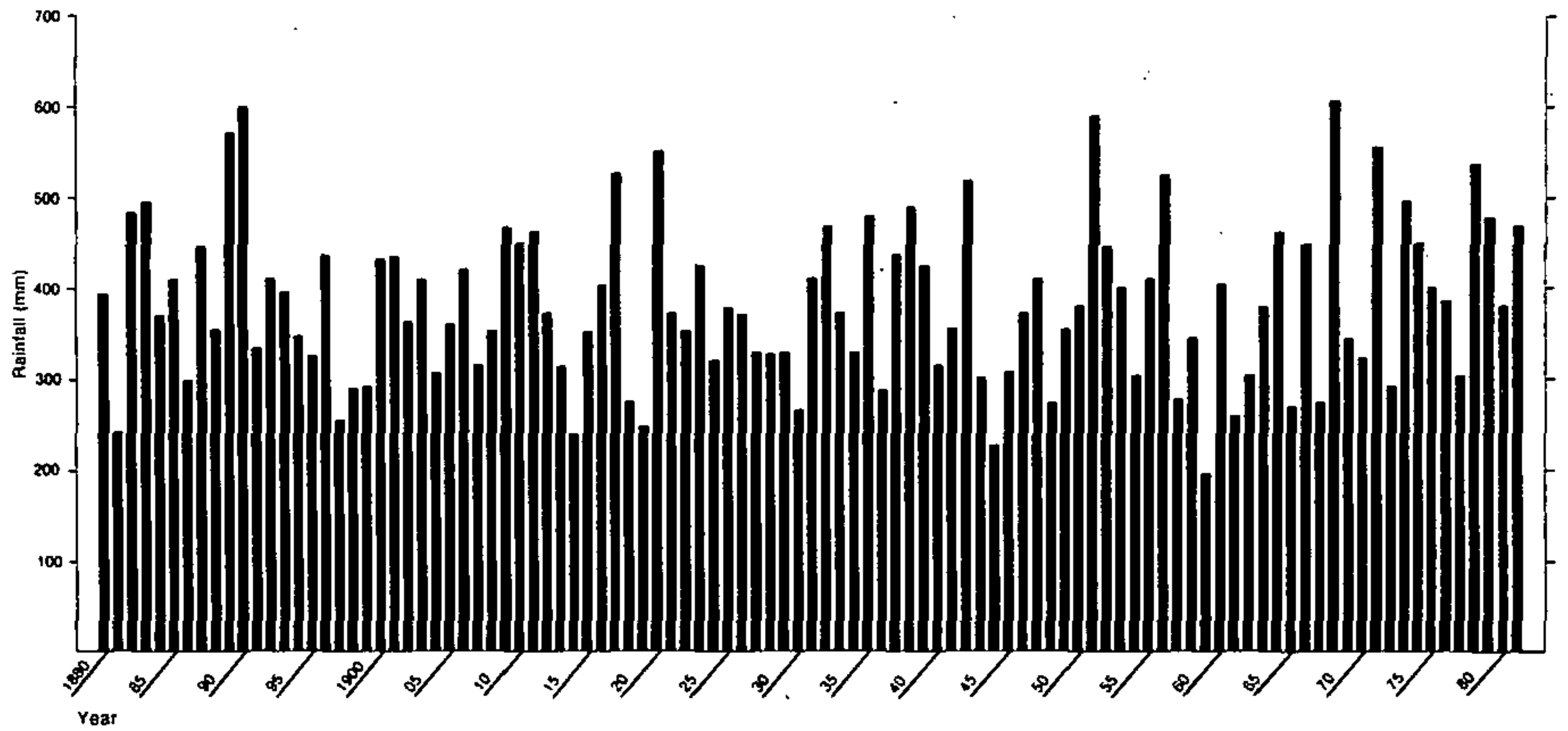
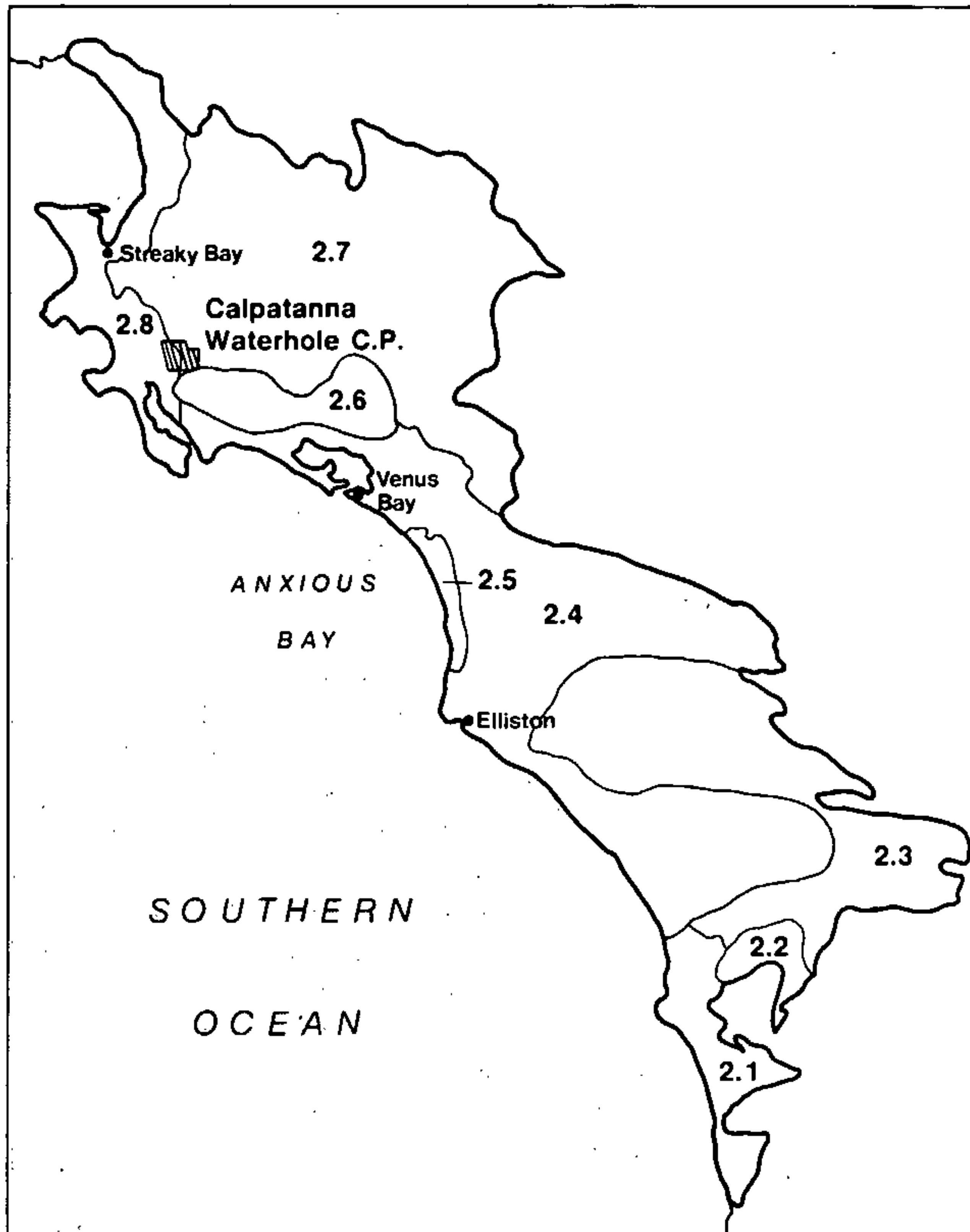


Figure 3

Meteorological Information—Streaky Bay
Source: Bureau of Meteorology



- 2.1 Drummond (470 km²). Undulating to hilly calcarenite plain with occasional steep quartzite hills. Parkland, mallee open scrub and low open forest.
- 2.2 Brimpton (160 km²). Gently undulating plain with saltflats and lakes. Sown pastures and cereal crops.
- 2.3 Kappawanta (1 840 km²). Undulating plain and low hills. Mallee open scrub and sown pastures.
- 2.4 Polda (2 960 km²). Extensive plain on calcreted sand with isolated hills, and coastal dunes, lakes and lagoons. Open parkland with sown pastures.
- 2.5 Newland (100 km²). High mobile dunes, swampy depressions and consolidated dunes. Heath, sown pastures and cereal crops.
- 2.6 Mt. Cooper (430 km²). Undulating calcreted plain with low hills and occasional dunes. Sown pastures and cereal crops.
- 2.7 Inkster (3 300 km²). Undulating calcreted plain with dunes and isolated granite hills. Open mallee scrub, tall shrubland, sown pastures and cereal crops.
- 2.8 Streaky Bay (800 km²). Undulating calcarenite plain with coastal cliffs, high dunes, lagoons and mangrove flats. Grassland and open parkland with sown pastures and cereal crops.



Scale 1:500 000

0 10 20 30km

Figure 4

West Coast Environmental Region and Associations

Source: Laut *et al.* 1977

- Environmental region boundary
- Environmental association boundary

lake systems, extends down the western coast. Isolated, low rounded granitic inselbergs and more steeply sided quartzite hills are also prominent features of the district but are not present in the park.

GEOLOGY

Knowledge of the geology of the park and its district has been acquired primarily from investigations into groundwater resources and gypsum deposits. Detailed discussions of the geology are provided by Segnit and Dridan (1938), Forbes (1960), Ashton and Moffitt (1961), Whiting (1970), and Parker, Fanning and Flint (1981). The surface geological features of the park are mapped in Figure 6.

In common with the greater part of Eyre Peninsula and the Gawler Ranges, there is a long geological history of the region of which Calpatanna Waterhole Conservation Park is a part. Situated on the Gawler Craton, which is a structural unit of the Western Australian Shield, the area is part of one of the most ancient and stable of the tectonic and physiographic regions of Australia. The basement rocks of the craton are believed to be Archaean in age, and comprise remnants of the original continental crust, examples of which are also found in the Pilbara and Yilgarn blocks of Western Australia (Ludbrook 1980).

Although not present within the park, outcrops of the ancient basement rocks are common throughout the district. Most of these outcrops take the form of smooth rounded granitic inselbergs of low relief, or as collections of tors. A number of interesting outcrops occur in the immediate locality of the park, extending from east to west in a fairly well defined band from the centre of the Hundred of Wrenfordsley, just to the south of the park, and continuing through the Hundreds of Rounsevell and Witera. Small outcrops also occur in the west near Point Westall to the north-east of the park, and at Cape Blanche near the township of Sceale Bay. Features of note include Mount Hall, Calca Hill and Calca Bluff, Mount Cooper, and Murphys Haystacks (Figure 5). The igneous rocks which occur in the general locality of the park consist principally of pink and red granites (for example, Mount Hall), granite porphyries (for example, Calca Hill), and porphyries which have been extensively intruded by diorites. Aplites are also a common intrusion. In addition to surface outcrops, these basement rocks have also been encountered in a number of wells sunk in the region. Metamorphic gneissic outcrops of preCambrian age have also been noted in the region.

The time when the formation of the basement structures of the region took place was followed by a long period of geological stability characterised by steady erosion. This episode is clearly indicated by the very considerable difference in age between the Proterozoic basement rocks and the much more recent Pleistocene aeolian calcarenites which form a relatively thick overlying blanket. Where they occur near the surface, as they do in the park, these calcarenites are generally capped by a superficial layer of calcrete up to three metres in thickness which follows the topographic undulations.

Formations of Recent origin are aeolian and marine and are primarily associated with the coastal system to the west of the park. The aeolian sediments are chiefly sand and small particles of shelly material and form the sand-dunes and ridges which border the coast. Some of the older dunes have drifted inland and have become fixed by vegetation. Sandy rises of Recent origin are present in the park. The marine sediments consist of unconsolidated fossiliferous sands and partly consolidated sandstone containing small shell fragments and fossil shells.

A feature of Recent sediments in the park and the area immediately to its west are the deposits of gypsum. These deposits are present in the lakes and swamps which occupy the depressed areas between Streaky Bay and Baird Bay and are comparable with the largest of the several economic deposits of gypsum on Eyre Peninsula. This gypsum is generally evident as pale grey flour gypsum on the lake surface, although at the margins of the larger lakes, vegetated banks and dunes of loose windblown gypsum sand are common. Platforms of gypsum also occur above the general level of the lake surfaces. Flour gypsum in the larger lakes overlies up to one metre of gypsum sand, which in turn gives way to loose gypsum crystals which may extend to a depth of over two metres before bottoming on calcite mud and Pleistocene calcarenite. The process of repeated flooding and evaporation described earlier probably explains the accumulation of gypsum and calcite in the lake system.

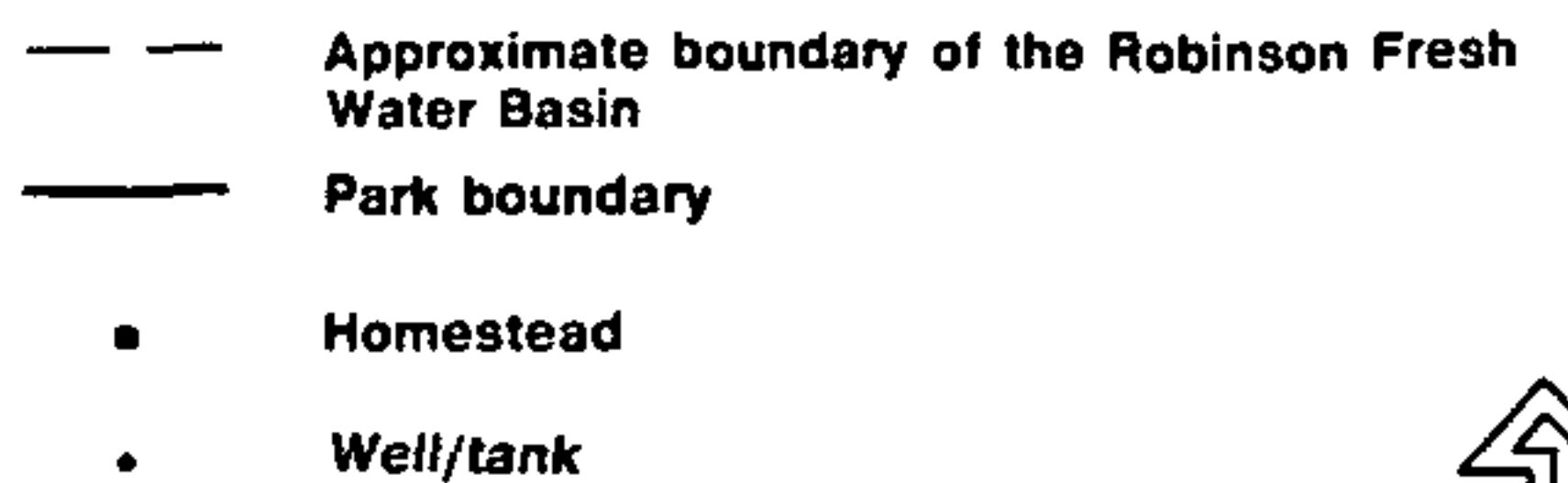
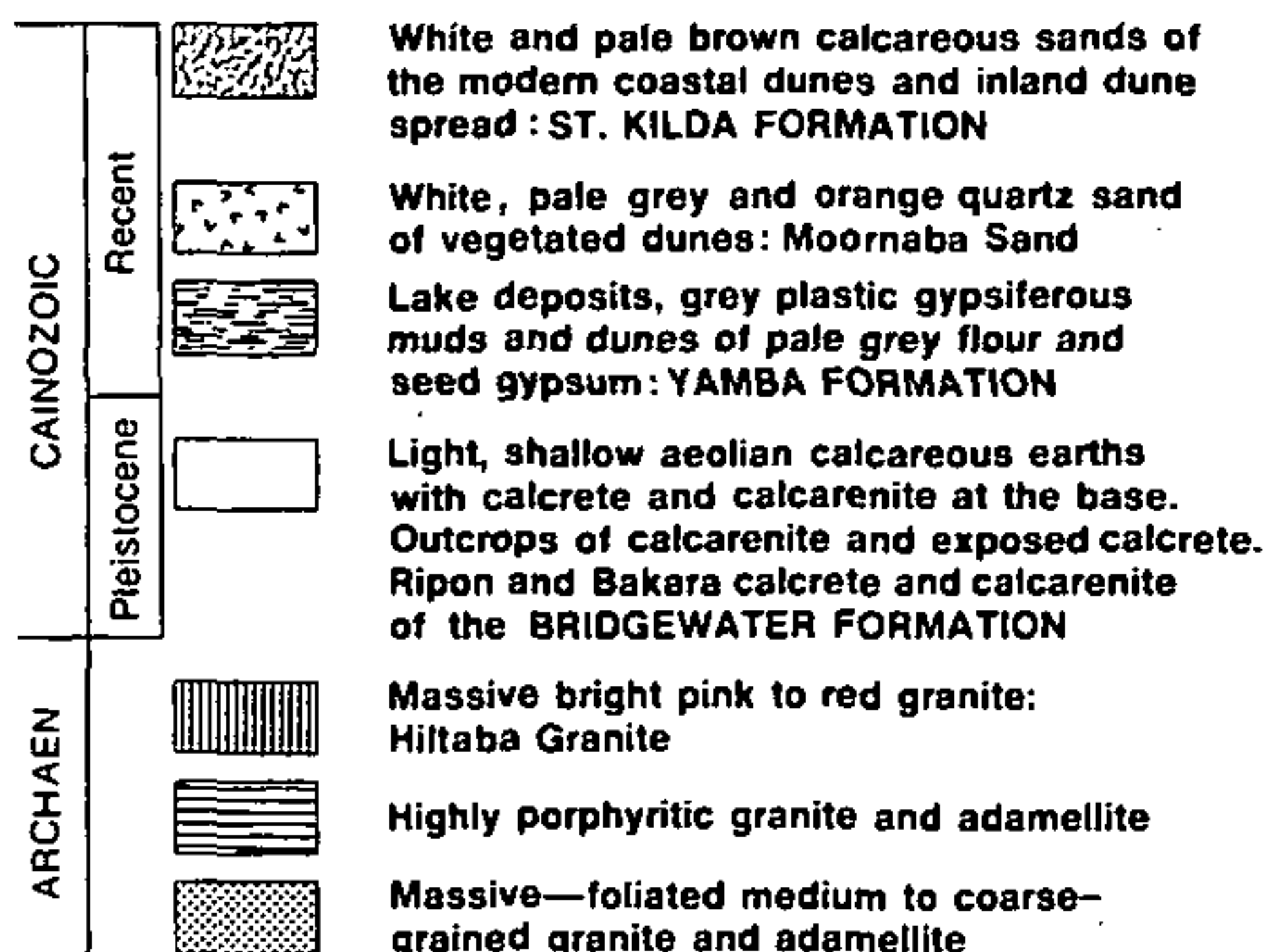
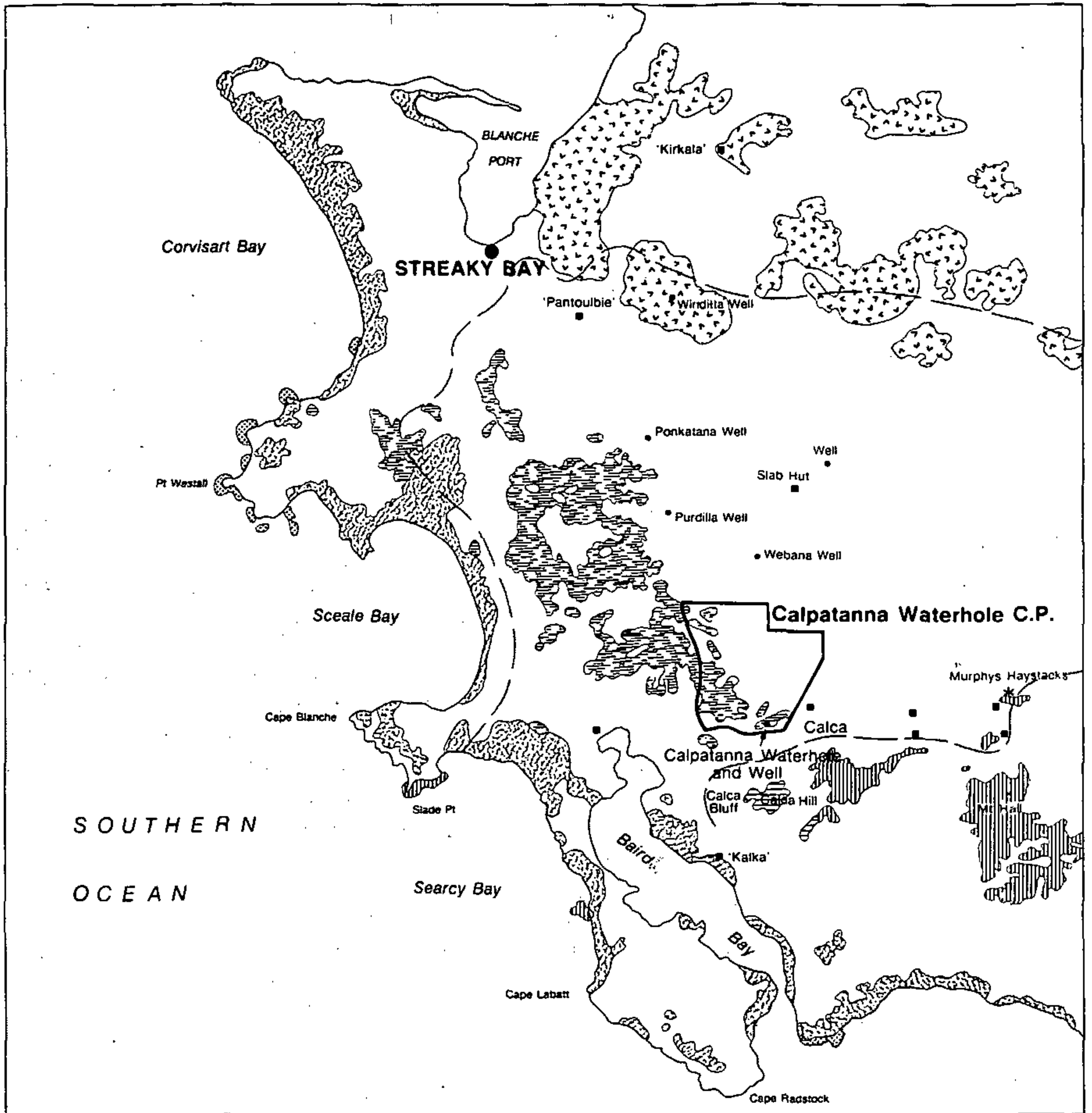
In 1959 a large part of the Hundreds of Wrenfordsley, Forrest and Ripon were investigated by the Mineral Resources Section of the then South Australian Department of Mines to determine the extent and quality of these gypsum deposits and their commercial prospects. The programme included the drilling of two sample cores within the present park. The survey revealed a particularly promising deposit in a lake system to the north-west of the park. In 1970 these investigations were followed up by exploration consultants acting for Elcor Australia Pty Ltd. The sampling they undertook focused on the prospective sites identified by the Department of Mines and confirmed that these gypsum deposits had commercial potential. Favourable market conditions for gypsum have resulted in renewed interest in these deposits. A new exploration licence has recently been issued over the area just outside the western boundary of the park. It has been suggested that it is only the lack of a protected deep water port with loading facilities on the nearby coast that has prevented commercial development of these deposits.

HYDROLOGY

Calpatanna Waterhole Conservation Park is within the area of the Robinson Freshwater Basin, a relatively small and shallow freshwater basin that is bounded to the north by the township of Streaky Bay and to the south by the basement outcrops of Calca Hill, Calca Bluff, and Mount Hall (Figure 5). It is a significant formation, not only because it provides fresh-water to Streaky Bay and surrounding agricultural and pastoral lands, but also because it has had a considerable influence on the morphology of the park landscape. The role of the groundwater basin in the processes which have led to the development of the lake and swamp system in the west of the park has been described earlier. Calpatanna Waterhole itself is a surface expression of the basin.

The basin is a saucer-shaped structure which is charged from intake beds that are situated on the higher country in the eastern part of the Hundred of Campbell and in the Hundred of Forrest, as well as from local rainfall over the basin. The fresh-water is a relatively shallow layer overlying saline water. Because of this, it is susceptible to disturbance, and the levels of salinity vary considerably in response to both the seasonal intake of fresh-water and the rates of extraction for stock, domestic, and other uses. There is concern that excessive removal of water from the basin could increase salinity to unacceptable levels.

To the west of the park, there are several sinkholes in calcarenite. For example, there is a collapsed sinkhole in calcarenite on the western side of the road from Streaky Bay to Sceale Bay, at the end of a channel which drains an extensive swampy area west of the park. The water table is

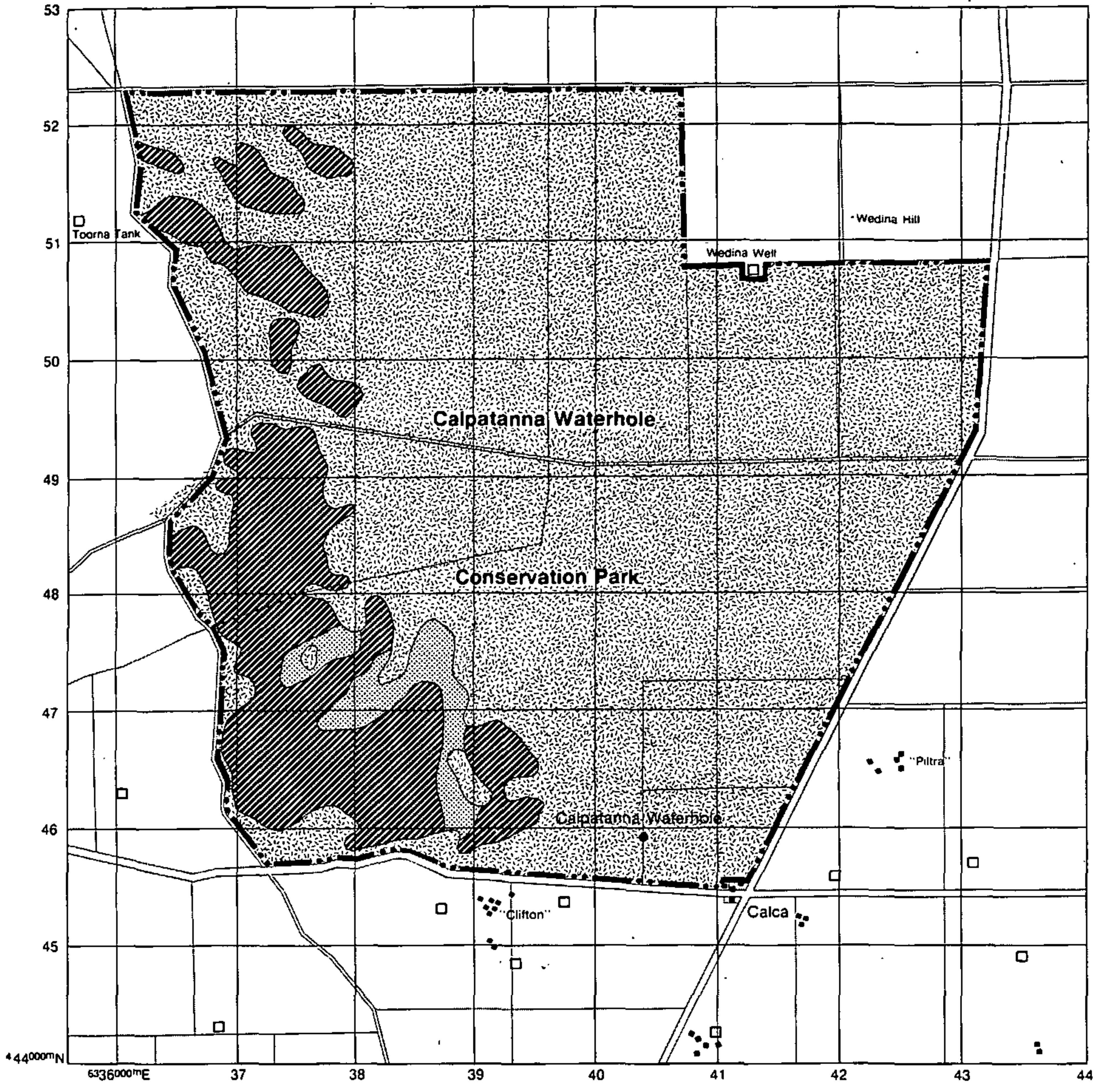





Source: Segnit and Dridan (1938) Prelim. Geol. Map. GSSA and Forbes (1960)



Figure 5

Geological and Hydrological Features, Calca District



- Park boundary
-  Soft aeolian Calcarenes, white cream and fawn, with marine shell beds. Soft white BAKARA CALCARETE and soils with hard RIPON CALCARETE.
-  Pale grey and grey lacustrine gypsum, plastic gypsiferous muds.
-  Low gypsum banks and dunes, pale grey flour and seed gypsum.



Scale 1:50 000



Figure 6

Surface Geology

Source: Barnes and Flint (1984) and Forbes (1960)

well exposed in the bottom of the waterhole. High salinity readings suggest that this waterhole is situated on the margin of the basin proper. Calpatanna Waterhole, just inside the southern boundary of the park, is not an example of this type of sinkhole formation. Rather, it appears to be a depression in the limestone surface in which groundwater surfaces as the water table rises during the wetter months. When the groundwater level subsides, water is not retained in the waterhole, due to the extreme porosity of the limestones.

Little is known of the origins of the well associated with Calpatanna Waterhole, although it is evident from historical records that it has been in existence since at the very least 1880. It is certainly one of the first wells to be sunk in the district. Because of the proximity of the water table to the surface, the well is fairly shallow. A survey of wells in 1938 (Segnit and Dridan 1938) shows the well to be 5 feet 6 inches (c. 1.7 metres) deep, containing water 3 feet (c. 1 metre) in depth. The water quality at that time was found to be good, in fact it was considerably better than the majority of the other 125 wells analysed in the district. The well dimensions and water quality assessments made at that time appear to correspond largely with the current condition of the well. Detailed descriptions of the hydrology of the district are provided by Segnit and Dridan (1938) and Hussin (1966).

SOILS

As indicated earlier, the majority of the park area comprises either lake and swamp country of lacustrine gypsum, calcitic clays and low gypsum banks and dunes, or to the west, a hard rubbly calcreted surface. Soils, where they occur, have been described as a light grey-brown calcareous 'mallee' type varying from light sands to sandy loams which invariably lie over rubble or sheet limestone. These are soils which are typical of the areas less favoured for agricultural development, and are also typical of the highly calcareous loamy earths which stretch across Eyre Peninsula and occupy most of the north of Yorke Peninsula, the Murray Mallee and the eastern fringes of Gulf St Vincent and Spencer Gulf. These sandy and shallow soils are not naturally fertile; they are deficient in phosphorus and low in organic matter. They are moderately susceptible to drift with native vegetation removed and under cultivation.

In the park these soils are generally thin, but in places, particularly in the north and north-east, low rises of thicker soils do occur. Department of Lands inspection reports suggest that these areas offer some potential for agricultural development, but because of their limited extent and isolation, this potential cannot be economically realised.

BIOLOGY

FLORA AND VEGETATION

The following description of the vegetation of Calpatanna Waterhole Conservation Park is based on a brief survey which was carried out in April 1984. At this time of year the annual plants are usually poorly represented and therefore the plant list (Appendix I) contains mainly perennial species, most of which are common in the park. The inadequacies of the list with respect to annual, uncommon and introduced species could easily be rectified by further collections; any such additions would be welcomed.

The vegetation map (Figure 7) was drawn from Department of Lands colour aerial photography (Survey 2371, dated 16 February 1979). Boundaries between the system of salt pans and the calcarenite ridges are generally abrupt, and correspondingly the vegetation patterns were often well defined. However, the boundaries are not always distinct between the two mapping units designated as open-scrub and the shrubland formations.

Salt Lakes

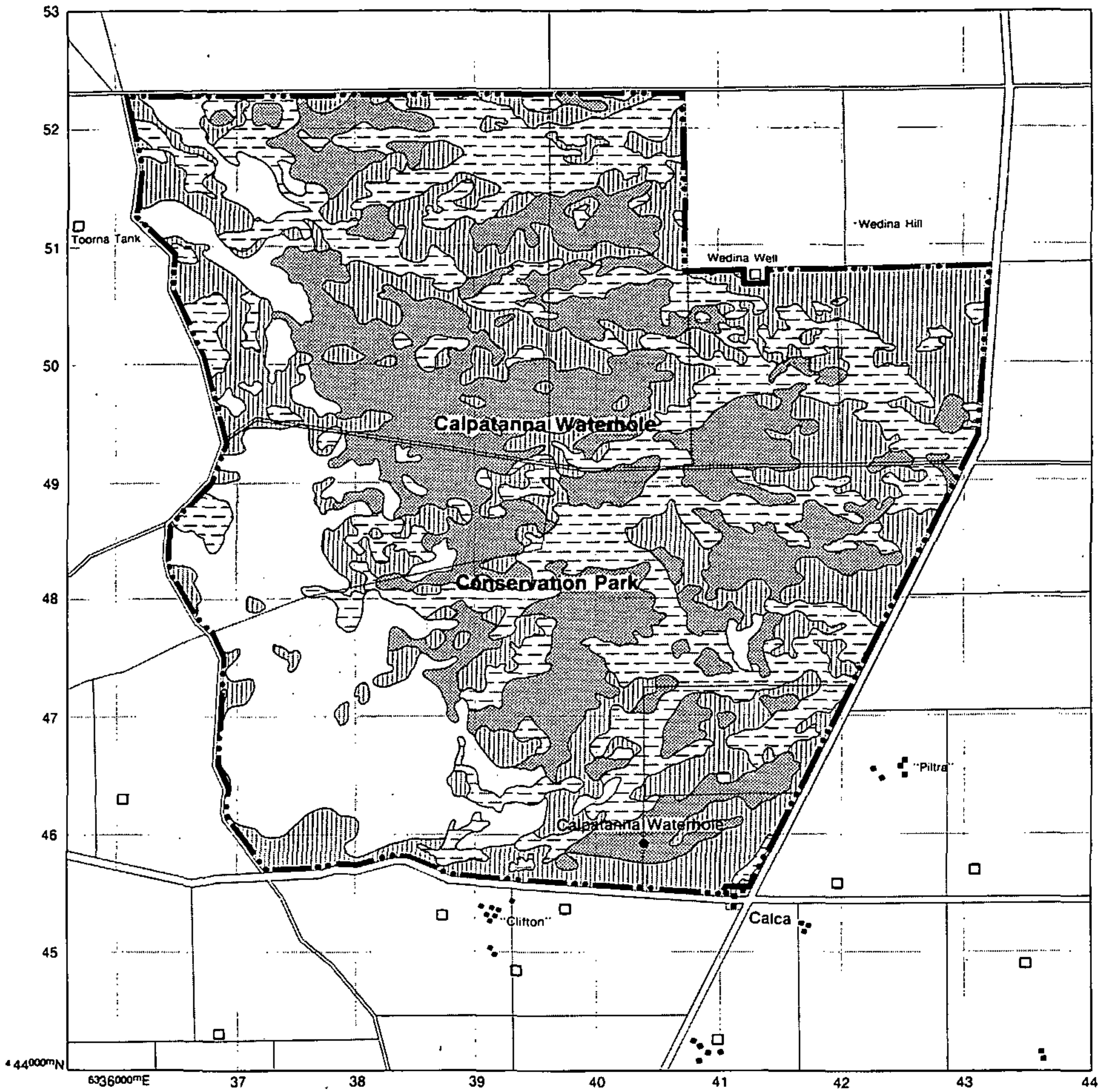
The 500 hectare claypan lagoon in the south-western quadrant of Calpatanna Waterhole Conservation Park and a complex of smaller lakes along the remainder of the western side cover approximately 18 per cent of the park's area. During winter these shallow lakes are filled by rainfall and the rising groundwater of the Robinson Freshwater Basin, but by summer the water has usually evaporated completely, leaving an encrustation of gypsum and salts. Summer winds blow some of the dry, loose sediment into banks along the east and north-east sides of the larger lakes.

The harsh environment of the lake beds cannot be tolerated by most plants, although some algae are known to occur in saturated salt lakes elsewhere in South Australia. However, on the damp margins of many of the lakes in Calpatanna Waterhole Conservation Park, a narrow zone of samphire low shrubland is found. Samphires are salt-tolerant semi-succulent chenopods. Representatives recorded in Calpatanna Waterhole Conservation Park include the low, procumbent Sarcocornia quinqueflora, the finer Halosarcia halocnemoides and the taller (45 centimetres) Maireana oppositifolia on the drier fringe. Here coast bonefruit (Threlkeldia diffusa), ruby saltbush (Enchylaena tomentosa), southern sea-heath (Frankenia pauciflora) and Frankenia sessilis, which occur as understorey species in the dryland formations adjacent to the lakes, are also found.

Swamp Paper-bark Flats

A complex system of low-lying but rarely inundated flats extends from the western salt lakes to the eastern boundary of Calpatanna Waterhole Conservation Park, covering approximately 26 per cent of the park's area. While still containing the accumulated salts and gypsum of the unvegetated lakes, the soil on these flats is better developed and forms a grey calcareous loam in places. However, the underlying impervious bed of calcitic clay hinders drainage, and the soil is often waterlogged in winter.

These flats support an open-scrub dominated by swamp paper-bark (Melaleuca halmaturorum) up to five metres in height. Although obviously of a mature age, most stands contain young individuals, particularly in clearings formed by natural senescence, fence-post cutting many years ago, or old vehicle tracks. The sparse shrub understorey nearly always consists of only leafless cherry (Exocarpos aphyllus) and notable wattle (Acacia notabilis), both about two metres tall, and 1 metre high shiny ground-berry

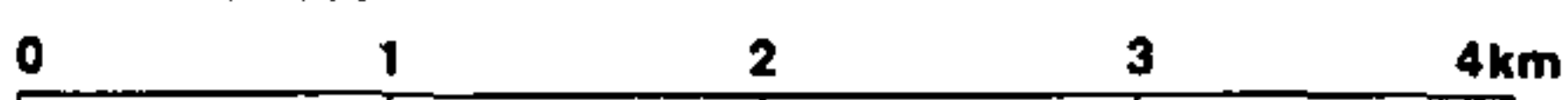


- Park boundary
- ▨ Regenerating grassland—shrubland 30%
- ▩ Salt paperbark open-scrub 26%
- ▤ Mallee open-scrub 26%
- Unvegetated salt-lake 18%
- Well/tank
- Building



Figure 7

Scale 1:50 000



Vegetation

Source: Dept. of Lands aerial photograph 1979

(Acrotriche patula) and eutaxia (Eutaxia microphylla). On the ground, patches of a small fine grass and dead moss (both unidentifiable) were recorded, but in many areas there are no groundcover or understorey shrubs. Samphire low shrubland may be found under swamp paper-bark open-scrub adjacent to the saline lagoons.

Calcarene Ridges

More than half of Calpatanna Waterhole Conservation Park consists of low (less than 10 metre) calcarene ridges overlain with skeletal soils ranging from red-brown loam to fine sandy soil. On these rises a variety of vegetation types, grading from mallee open-scrub (totalling 26 per cent of the park's area) to introduced grassland, probably represents a serial succession which has resulted from clearing and grazing of native vegetation before to dedication of the park. The present climax vegetation type is a mallee open-scrub with little understorey but a well developed litter layer. Such mature 4 to 6 metre high open-scrub dominated by white mallee (Eucalyptus dumosa) and Kingscote mallee (Eucalyptus rugosa) with some yorrell (Eucalyptus gracilis) and Yalata mallee (Eucalyptus yalatensis), can most easily be seen on sandy rises in the north-eastern part of the park. It is clear that this vegetation has not been burnt for a considerable period, possibly for the whole of this century.

Most of the mallee open-scrub in the park has a sparse understorey of dryland tea-tree (Melaleuca lanceolata), occasionally with mallee honey-myrtle (Melaleuca acuminata), kangaroo thorn (Acacia paradoxa) and notable wattle (Acacia notabilis), and a lower (one metre) understorey containing gold-dust wattle (Acacia acinacea), shiny ground-berry, cup fringed-myrtle (Calytrix involucrata) and common templetonia. In the southern parts of the park, adjacent to saline lakes and flats, the understorey more often consists of dryland tea-tree shrubland over scattered Rhagodia candolleana, Bower Spinach (Tetragonia implexicoma), coast bonefruit (Threlkeldia diffusa), ruby saltbush and, occasionally, the introduced African boxthorn (Lycium ferocissimum).

Several other tree species are scattered throughout the mallee open-scrub. Weeping pittosporum (Pittosporum phylliraeoides) individuals frequently occur here, and mixed-age stands of scrubby cypress pine (Callitris canescens) are common, especially at the fringes of mallee patches. Unfortunately the status of drooping sheoak (Allocasuarina verticillata) is not as satisfactory in Calpatanna Waterhole Conservation Park. Evidence of past extensive areas of drooping sheoak low woodland in the park still exists, but the stands are generally sparse, senescent and degraded, presumably as a result of grazing pressure during the long pastoral history of the area. Only in several patches in the road reserve and adjoining areas on the eastern boundary of the park is drooping sheoak regeneration occurring to a satisfactory degree. Here the young trees are 2 to 3 metres tall, quite dense and apparently healthy.

In areas which appear to be disturbed as a result of past grazing practices, the soil layer is often shallow with more calcrete exposed, and the tree stratum is extremely sparse. A total of 30 per cent of the park falls into this category. In many areas the tall shrub understorey of the mallee open-scrub, dominated by dryland tea-tree, occurs; other associated species include cup fringe-myrtle, Lasiopetalum discolor, Beyeria lechenaultii, Dodonaea baueri, black-anther flax-lily (Dianella revoluta), Cassia nemophila and Daviesi sp. In some central areas of the park, a distinctive association featuring mallee honey-myrtle (Melaleuca acuminata), cup fringe-myrtle (Calytrix involucrata) and broombush (Melaleuca uncinata) in an open-shrubland formation over Triodia sp. - desert saw-sedge (Gahnia lanigera) tussock grassland.

In moderately degraded areas a clear pattern of scrub regeneration is often seen. Bordering the mallee open-scrub is a zone of tall understorey shrubs (for example, dryland tea-tree and notable wattle) which grades into a low shrubland (often shiny ground-berry) - tussock grassland of Triodia sp. Further towards the centre of the clearing, desert saw-sedge dominates. In the centre of such clearings and in large areas around the southern and eastern boundaries, there occurs a grassland comprising mostly introduced grasses, legumes and composites. The introduced flora was not studied during the recent survey, but the presence of horehound (Marrubium vulgare), slender thistle (Carduus tenuiflorus), Lincoln weed (Diplotaxis tenuifolia) and African boxthorn (Lycium ferocissimum) was noted in some disturbed areas. The introduced species of most concern to park managers, creeping smilax or bridal creeper (Asparagus asparagoides), was recorded in the road reserve on the eastern boundary of the park. In 1985 boneseed (Chrysanthemoides monilifera) was discovered in the south-eastern corner of the park, having apparently spread from roadside areas.

VERTEBRATE FAUNA

Reptiles

Appendix II lists sixty reptiles which are known to occur in the coastal-subcoastal belt from Ceduna to Elliston, which has Calpatanna Waterhole Conservation Park approximately at its midpoint. Museum specimens are scarce for many species in this area, and although nearly 50 per cent of them are known from within 50 kilometres of Calca (that is, Poochera, Streaky Bay, Sceale Bay, Port Kenny or Venus Bay), very few have been recorded in the park itself. The full list is provided as a guide as to what might be expected to occur in the area. Any information on the reptile fauna of the park will be welcomed.

Birds

Bird species recorded in Calpatanna Waterhole Conservation Park are listed in Appendix III. On the salt lakes in the western part of the park, waders such as the banded stilt (Cladorhynchus leucocephalus) and red-necked avocet (Recurvirostra novaehollandiae) may be seen.

None of the birds of the park are specific to the swamp paper-bark open-scrub, but several species probably occur there as well as in the various dryland native vegetation types: examples are the black-faced cuckoo shrike (Coracina novaehollandiae), grey butcherbird (Cracticus torquatus), spiny-cheeked honeyeater (Acanthagenys rufogularis), grey shrike-thrush (Colluricincla harmonica), grey fantail (Rhipidura fuliginosa) and silvereye (Zosterops lateralis). The inland brown thornbill (Acanthiza apicalis) occurs in moderate numbers in the park, but is much less common on northern Eyre Peninsula than in other parts of its range, for example, the Murray Mallee region.

Species which are associated more closely with the mallee habitats within the park include the fan-tailed cuckoo (Cacomantis flabelliformis), weebill (Smicrornis brevirostris), Port Lincoln parrot (Barnardius zonarius zonarius), yellow-rumped pardalote (Pardalotus xanthopygus), striated pardalote (Pardalotus striatus) and the rufous whistler (Pachycephala rufiventris). Six members of the honeyeater family also occur here: the red wattlebird (Anthochaera carunculata), white-eared honeyeater (Meliphaga leucotis), yellow-plumed honeyeater (Meliphaga ornata), purple-gaped honeyeater (Meliphaga cratitia), brown-headed honeyeater (Melithreptus brevirostris) and white-fronted honeyeater (Phylidonyris albifrons).

Gilbert's whistler (Pachycephala inornata), which occurs in mallee open-scrub-shrubland in the park, is another species which is not common and is not adequately conserved in parks on northern Eyre Peninsula. Other birds which are often seen in shrubland or heathy habitats include the white-browed scrubwren (Sericornis frontalis) and white-browed babbler (Pomatostomus superciliosus).

The raptors (birds of prey) range over the entire park and surround in their search for food. The dusky woodswallow (Artamus cyanopterus), tree martin (Hirundo nigricans) and welcome swallow (Hirundo neoxena) are predominantly aerial species and may also be found over a variety of vegetation types.

Several birds such as the crested pigeon (Ocyphaps lophotes), common bronzewing (Phaps chalcoptera), southern whiteface (Aphelocephala leucopsis), willie wagtail (Rhipidura leucophrys) and red-capped robin (Petroica goodenovii), prefer more open habitats, and some have even benefited from the destruction of native vegetation in the region; examples are the galah (Cacatua roseicapilla), Australian magpie (Gymnorhina tibicen) and Richard's pipit (Anthus novaeseelandiae).

Two introduced species, the house sparrow (Passer domesticus) and common starling (Sturnus vulgaris), have been recorded in Calpatanna Waterhole Conservation Park but appear to occur only in small numbers.

Mammals

Calpatanna Waterhole Conservation Park, although relatively small, is extremely significant as the major conservation park along the west coast of Eyre Peninsula between Bascombe Well Conservation Park and Yumbarra Conservation Park, a distance of 250 kilometres. This region is biogeographically interesting as it appears to contain the western limit of the South Australian distribution of some mammals (for example, the Eyre Peninsula species of the Sminthopsis murina complex, the brush-tailed Phascogale (Phascogale tapoatafa) and the common brushtail possum (Trichosurus vulpecula) and the southern limit of others (red kangaroo (Macropus rufus) and, at least on Eyre Peninsula, the wallaroo (Macropus robustus)).

Despite its interest and value, information on the native mammal fauna of Calpatanna Waterhole Conservation Park is scarce, although several trapping programmes have been undertaken by National Parks and Wildlife Service staff. The list of species which are expected to occur in the park (Appendix IV) is therefore based on records from the surrounding district supplied by T. Dennis (pers. comm.).

Short-beaked echidnas (Tachyglossus aculeatus) occur throughout the area and their distinctive scratchings have been recorded in the park itself. The fat-tailed dunnart (Sminthopsis crassicaudata) is also likely to occur there as it has been recorded near Streaky Bay about 20 kilometres north of the park. However, the status of the newly recognised species of the Sminthopsis murina complex (Sminthopsis dolichura) in the park is not so certain as there are no local records.

The southern hairy-nosed Wombat (Lasiorhinus latifrons) is widespread in the limestone country of which Calpatanna Waterhole Conservation Park is a part, and colonies occur on a property 25 kilometres east of the park. Wandering individuals, probably young males seeking home warrens, are occasionally seen in the district and one such record was within 10 kilometres of the park. However no warrens have been located in the park.

Western pigmy-possums (Cercartetus concinnus) are likely to occur in the extensive mallee patches in Calpatanna Waterhole Conservation Park, as they have been recorded in similar habitat nearby. However, they are rarely seen, since they are very small, nocturnal, arboreal animals.

Moderate numbers of western grey kangaroos (Macropus fuliginosus) occur in the park, tending to feed in the open areas and shelter in the native vegetation. The wallaroo (Macropus robustus) has been recorded in the vicinity of Venus Bay, 25 kilometres south-east of the park, and within a similar distance to the east, but any which may be seen in the park are probably vagrants rather than a resident population. Similarly, vagrant red kangaroos (Macropus rufus) are occasionally recorded in the district, particularly in very dry years, and a core of individuals is known from a property about 40 kilometres east of the park.

Mitchell's hopping-mouse (Notomys mitchellii) is not uncommon in parts of Eyre Peninsula, and has been recorded as close as Port Kenny, 30 kilometres south-east of the park. It is most likely to occur on the mallee-vegetated sandy rises in the northern part of Calpatanna Waterhole Conservation Park.

Very little information exists on the bats of the area. However, the following species are widely distributed across at least southern Australia, and may be expected to occur in suitable habitat in the area: the white-striped Mastiff-bat (Tadarida australis), little mastiff-bat (Tadarida planiceps), Lesser long-eared bat (Nyctophilus geoffroyi), Gould's wattled bat (Chalinolobus gouldii), chocolate wattled bat (Chalinolobus morio) and little forest eptesicus (Eptesicus vulturinus).

A number of species which occurred in the area before European settlement are now believed to be extinct on the entire mainland: western barred bandicoot (Perameles bougainville), burrowing bettong (Bettongia lesueur) and greater stick-nest rat (Leporillus conditor) and, at least in this part of their former range, greater bilby (Macrotis lagotis) and brush-tailed bettong (Bettongia penicillata). (See Strahan 1983 for distribution maps and further information on the status of these species.)

Calpatanna Waterhole Conservation Park contains several introduced species of mammal. The most abundant is the house mouse (Mus domesticus) whose numbers rise and fall periodically, but during the 1984 survey were quite high. The European rabbit (Oryctolagus cuniculus) is well established throughout the area but is probably limited in the park by a lack of good soil in which to construct warrens. Black rats (Rattus rattus) occur in the district and probably also in the park. The exotic species of most concern are the carnivores: the fox (Vulpes vulpes) which preys on small native mammals as well as eating insects, carrion and, at times, berries; and the cat (Felis catus) which has proved a devastatingly efficient killer of native fauna. Although both species occur in the park in only small numbers, their impact on the indigenous fauna, particularly small mammals and sedentary birds, has probably been marked.

HISTORY

THE ABORIGINES

Little is known of Aboriginal life in the Streaky Bay district before occupation and settlement by European man. From the scanty information available it appears that Calpatanna Waterhole Conservation Park falls within a tribal boundary zone between the Wirangu and Nauo tribes (Tindale 1974). The Nauo occupied an area which included much of western and central Eyre Peninsula, their tribal boundaries extending from Sceale Bay north-east to the Gawler Ranges then south-easterly to Arno Bay, encompassing much of the peninsula proper.

The Wirangu people occupied territory to the north-west which extended from Streaky Bay and the Calpatanna area to Lake Everard, and along the coast to the west as far as the head of the Great Australian Bight. It seems, however, that both tribes were under pressure from the Kokata and other tribes to the north and that for sometime before the arrival of Europeans these tribal boundaries were being forced southward (Tindale 1974).

Research into Aboriginal routes on the far west coast and in the north-west of South Australia has revealed an extensive pattern of trackways which extend well into the arid interior and along the coast following natural waterholes and Aboriginal wells (Johnston 1941). Although no work of this type has been undertaken on the western coast of Eyre Peninsula south of Fowlers Bay, it is possible that the more northerly coastal routes extended down the coast of the peninsula, passing through the Streaky Bay district and the Calpatanna area. The role that Calpatanna Waterhole may have played in Aboriginal times can only be guessed at; however it is apparent from the first pastoral plans of the 1850s that the waterhole was known and identified as a landmark by its doubtlessly Aboriginal name of Calpatauna or Kelpetawn-na at the time of the earliest European occupation. The meaning of this name is not known.

What is known, however, is that early interactions between local Aborigines and pastoralists were usually sour and frequently bloody. Even the first European description of the local Aborigines was disparaging. John Hill, who was exploring the west coast of Eyre Peninsula with Samuel Stephens in the brig Rapid in 1839, described the natives he encountered at Streaky Bay as of a '... wretched and emaciated appearance. I never met with ... such a miserable, puny race' (Harris 1938). Violence followed permanent settlement and a number of massacres of Aborigines are said to have occurred. The local historian, Harris, commented, 'The blacks were fairly troublesome in those days, and executions for the murder of white people were fairly frequent.' (1938, p. 11). In the wake of the depredations of sealers and escapees from Tasmania which had occurred in earlier times, the Aborigines succumbed very quickly once pastoral occupation got under way during the 1840s and 1850s. The Nauo people were extinct in a short time, and the Wirangu retreated northwards, away from the Streaky Bay district.

EUROPEAN SETTLEMENT AND LAND USE

Probably the first European to see the landscape of Calpatanna Waterhole was Edward John Eyre as he travelled north from Port Lincoln to rendezvous with Baxter at Eyre's Waterhole, a few kilometres south of Streaky Bay. Soon after, it was from this point that Eyre commenced his famous journey across the Nullarbor Plain to Albany, Western Australia. On 2 November, 1840 he

climbed Mount Hall, a small peak about 10 kilometres to the south-east of the present park, and looking towards Streaky Bay and the coast described the view:

The... country was low, level, and barren, and densely covered with scrub, among which, to the north-west were seen many salt water lakes. At intervals a few elevations were seen amongst this low waste apparently similar to the hill we were now upon.

(Eyre 1845)

The lakes he described to the north-west were almost certainly the lakes and swamps of Calpatanna Waterhole Conservation Park. The next day he travelled on to his rendezvous with Baxter, passing close to the eastern boundary of the park (Figure 8).

Several other explorers travelled through or near the park in the years that followed. In 1857, Stephen Hack, returning from his explorations in the Gawler Ranges, passed to the east of the Calpatanna Lakes (Figure 8). Hack's instructions were to examine the north-western interior of the colony, and because of this his report throws little light on the Calpatanna area. John McDouall Stuart also approached this area in 1859 at the time of his first expedition into the interior. He retreated to Cooyanna Station at Eyre's Waterhole, after running out of food three days previously.

By this time the district had been under pastoral occupation for over a decade. The Streaky Bay environs were first described and assessed for agricultural and pastoral potential by Samuel Stephens and John Hill who, as mentioned earlier, explored the western coast of Eyre Peninsula from Cape Catastrophe to Denial Bay in 1839. Their reports of the land, in common with their descriptions of the Aboriginal inhabitants, were unfavourable:

... the country we passed over was of very inferior character, the soil, exceedingly shallow, of a light sandy nature, and thinly covered with the coarse wiry grass, and studded with she-oak, tea-tree and dwarf eucalyptus, in some parts intersected with small forests of Scrub

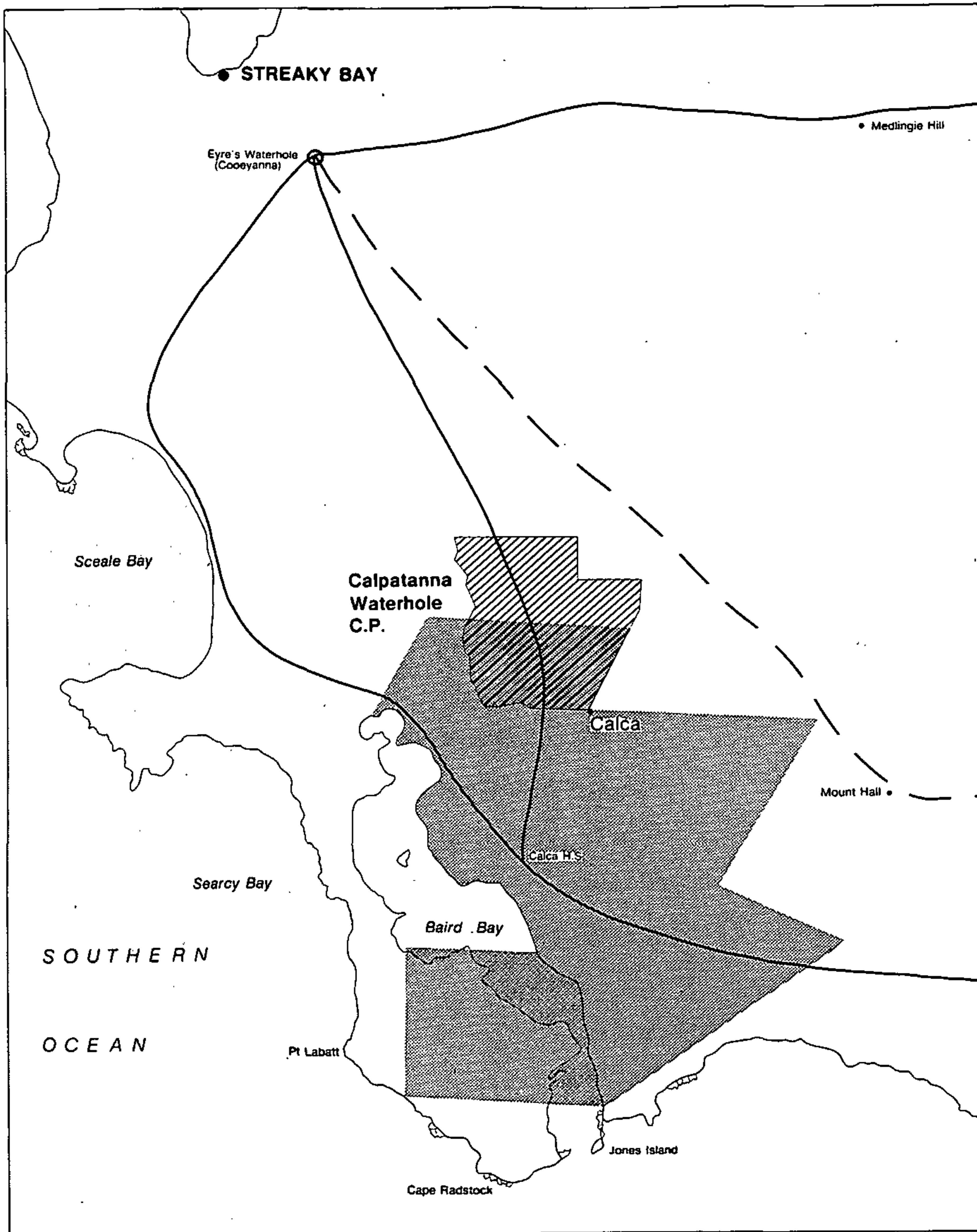
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(Harris 1938, p. 7)

Although this was a fairly accurate description of the country, Hill understandably failed to recognise the pastoral, and ultimately agricultural, potential of the district.

The first pioneer to run sheep in the Calca-Sceale Bay district was a Scotsman, James Baird. It is believed that, in 1848, Baird and another Scot named Sinclair decided to take their flocks of sheep overland from the settled districts on the eastern side of Spencer Gulf in search of new and unsurveyed lands towards Fowlers Bay (Martin Cash pers. comm.). In winter, they drove their flocks about 200 kilometres up to the head of Spencer Gulf, beyond Port Augusta. At this point a quarrel arose between the two men. Baird wanted to strike for the coast due west beyond Streaky Bay, and Sinclair wanted to take both flocks to the Port Lincoln area.

The two men counted off their respective numbers of sheep, parted and Baird headed into the unknown with about 300 sheep, two horses and a dog. Thick scrub forced Baird to veer south towards the coast, and a year after leaving the eastern districts, he finally drove his stock to Sceale Bay and settled there alone, his sheep grazing a large area south of Streaky Bay which included the present park. Soon after, in 1850, Baird was fatally speared by local Aborigines on a small saltpan at the head of Baird Bay only a short distance to the west of the park. The early settlers erected a small



- — — Edward John Eyre, 1840
- Stephen Hack, 1857
- Calca or Radstock Station (approximate area)

0 5 10 15 km



Figure 8

Historical Information, Calca District

fence around his grave in the centre of the saltpan which is still marked today by a small tablet erected by the late Pat Murphy, a farmer of the district.

After the killing of Baird, the local Aborigines are reported to have driven most of his sheep northwards towards Wirrulla. However, because they were accustomed to a nomadic way of life, the Aborigines soon tired of shepherding and broke a leg of each sheep so as to stop them wandering. Most of the flock soon died.

The first official lease over the area which now includes most of the conservation park appears to have been granted to Adam Borthwick. Borthwick, who arrived in South Australia from Scotland in 1839, was initially attracted to the Port Lincoln district and was one of the first pastoralists to occupy land in the region when he took up three leases near Sleaford Bay in 1842. After a period, his interests turned northward and fifteen years later in July 1854, he leased the Calca or Cape Radstock run. The lease covered 85 square miles (c. 22 000 hectares), most of which lay to the north-east of the Baird Bay shoreline. A large part of the present conservation park occupied a northern part of the run (Figure 8).

In spite of his eye for good grazing land, Borthwick's pastoral enterprise faced a major difficulty because of the absence of an assured market for his stock. Many of the wealthier pastoralists who held properties en route to the markets at Port Augusta could hold stock near the market until market prices were favourable. In contrast, Borthwick, whose station was remote from Port Augusta, was trapped once he had driven his stock over the peninsula to market. Because of this he was a victim to the market buyers, and frequently obtained poor prices. The economics of the marketplace finally defeated him and in 1863 he sold out and settled in New Zealand.

Calca Station, together with an area of land to the north (encompassing the remainder of the present park area), was subsequently taken up by the brothers William and J. Harris Browne in 1863. The brothers figured prominently in the early years of South Australian pastoralism, and were involved in agricultural and pastoral pursuits which extended over forty years and over much of the colony. Properties which they controlled at some time included Leigh Creek, Nilpena, Wilpena, Arkaba, Wonoka, Artipena, Mickera, Colpa, Koppio, Kapinka, Talia, Sleaford Bay and Waldegrave Point. At one time they held up to 600 square miles (c. 1600 square kilometres) on Eyre Peninsula. J. Harris Browne achieved some fame soon after he arrived in South Australia when he took part in Sturt's expedition of 1844 which attempted to reach the centre of the continent.

At this time pastoral runs were unfenced, and flocks of between 1000 and 2000 sheep were shepherded from huts and watering points at various locations on the run. Generally each hut had two shepherds plus a hut keeper to cook and assist in drawing water for stock. A large number of rouseabouts were also employed to make stockyards by felling sheoaks and dragging them into line with bullock teams. They also helped to build huts of pine logs, sink shallow wells, and carry water to the more distant huts. There were about five outstations in existence on Calca Station. It appears that one of these was at Calpatanna Waterhole, as it was during this time that the well at Calpatanna Waterhole was sunk and a hut constructed a short distance away (Figure 9).

As stations were progressively fenced it was no longer necessary to retain shepherds and maintain occupied outstations. By 1884 when the Hundred of Wrenfordsley was surveyed, the hut at Calpatanna Waterhole was in ruins. Now, over a century later, no trace of it can be found, although survey plans indicate it was sited just inside the present park boundary due south

of the well. Indeed by 1884 the present park area seems to have been fenced into part of three paddocks on Calca and Maryvale stations; Calpatanna Paddock, Toorna Paddock, and Wedina or Golpa Paddock. Much of the fencing was roughly constructed of brush of which none remains, but it appears that remnants of the original post and wire fencing which was also in place by that time are still in existence. Brush stockyards had also been constructed in the park area by this time, but no evidence of any structure now remains (Figure 9).

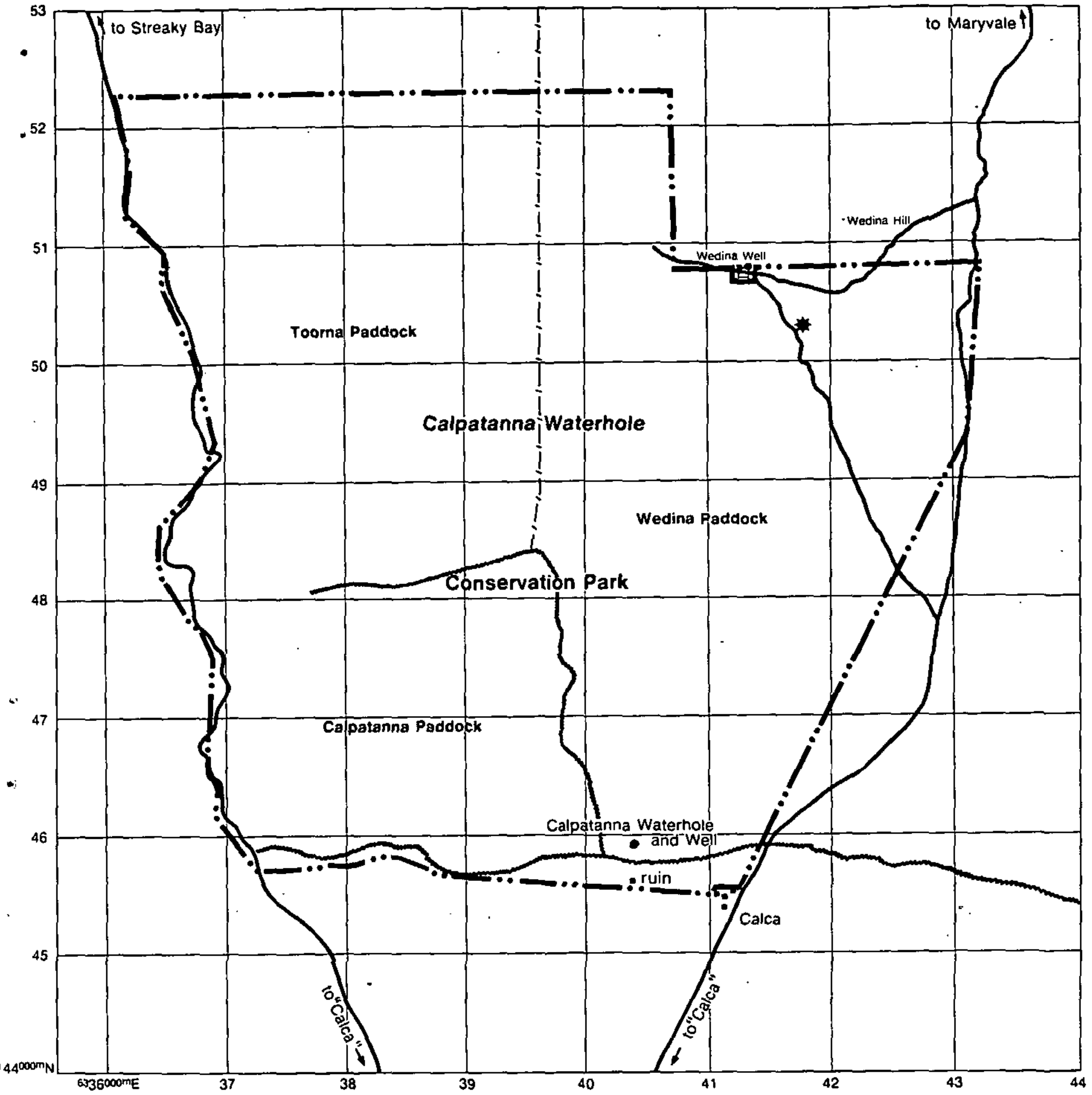
Over the years, the station was divided into smaller holdings and passed out of the hands of the Browne brothers. When the district was surveyed in 1884 the park area was a part of a smaller holding held by W. and A.G. Thompson and shortly after, in 1889, William Roberts took up a lease over the area. Control over the area now occupied by the present park, although part of successively smaller holdings, stayed with members of the Roberts family from this time until 1973 when, following the death of Aiden Roberts in 1970, the lease was acquired by the Crown and the land dedicated as a conservation park.

During the course of European settlement, the regional landscape underwent changes which were dramatic and almost certainly unforeseen by the early pastoralists. Wheat was first grown in the district in the early 1880s, and from that period development progressed steadily in spite of predicted failures due to the light nature of the soil. The pace of development quickened following the introduction of fertilisers, the opening of the railway line from Port Lincoln to Penong in 1915, and the development of machinery which enabled economic clearance of large areas of natural vegetation.

The rough limestone country, of which the park is representative, was spared development but increasingly the remaining native vegetation became fragmented and reduced in area. The mechanisation of stone handling in the 1960s and 1970s increased the momentum of development. Heavy ribbed rollers were used to crush the limestone and much of the rough, stony country which was previously considered suitable only for grazing succumbed to the plough. This rapid rate of development is illustrated by Michelmore (1965) who noted that in the decade between 1953 and 1962 more than 500 000 acres (c. 200 000 hectares) of native vegetation was cleared between Fowlers Bay and Elliston.

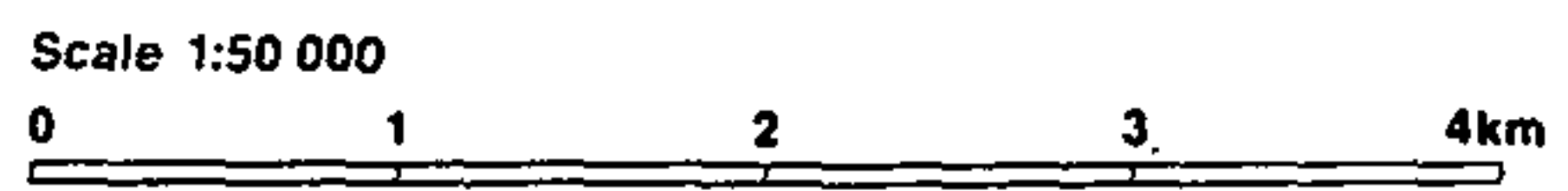
The park area has been used almost exclusively for sheep grazing and timber getting as it was an unattractive proposition for agricultural development. However, although the land is poor in appearance and of extremely limited agricultural potential, it has always been regarded as good grazing country capable of carrying between three and four hundred sheep. A large amount of timber has been removed from the area as the park contains three of the most useful species of timber known to the early settlers, the scrubby cypress pine (Callitris canescens), the dryland tea-tree (Melaleuca lanceolata), and the yorrell (Eucalyptus gracilis). The matured timber of the mallee was excellent for fence posts and keenly sought after by farmers. The dryland tea-tree and scrubby cypress pine were considered immune from white ant attack. The straight poles of the pine were often used when constructing the walls of huts, covered with clay, and then plastered with lime. These dwellings were known as 'pug and pine' houses (S. Jericho pers. comm.).

Long-term grazing and the removal of timber have certainly altered the biology of the park to a degree, and clear evidence of past grazing is evident in the senescent stands and rotting logs of drooping sheoak (Allocasuarina verticillata) which are commonly encountered in the eastern part of the park. However, in spite of this, the original character of the land has been retained. Indeed, for many years immediately before acquisition, the park area was grazed only lightly or not at all.



- Park boundary
- Track
- - - Post and wire fence
- Brush fencing
- * Brush yard
- Hut
- Well

Figure 9
Historical Information, Calpatanna Waterhole C.P. Area (1884)



PARK DEDICATION

Interest in the conservation of the Calpatanna Waterhole area surfaced in the period of heightened interest in park acquisition during the late 1960s and early 1970s. Soon after the death of the lessee Aiden Roberts in December 1970, an inspector for the Department of Lands assessed the holding and in his report noted that the area might be suitable as a nature reserve. He reported:

Mr. Roberts has recently passed away and there is no one in occupation of this land and it will probably be sold although land is very poor and only suitable for grazing. Some odd patches of good land is uneconomic to develop.

He went on to observe that the area:

... would be suitable for large National Park as plenty of native birds present although mallee is not of the very large type and is up to 10 feet.

This suggestion was discussed by the Policy Advisory Committee of the then National Parks Commission and the Land Board, and it was agreed that the area was worthy for consideration as a national park. It was noted that the land was in a part of the State where there were no existing parks and that aerial photographs revealed it contained a wide variety of land systems. The Land Board subsequently recommended that the trustees of the Roberts estate be advised that the government was interested in purchasing the land.

In April 1971 the National Parks Commission inspected the proposed reserve. The inspection report indicated that a small area of arable land (approximately 15 hectares) would need to be excluded from the reserve as the area had been cropped by an adjoining landowner and contained a tank which provided the only stock water on the adjacent section. The report stated that the land was most suitable for national park purposes and went on to 'recommend that action be taken to acquire the land when available.' In July 1972 it was agreed that the Crown purchase the lease for \$2500. By the end of 1973 the lease had been surrendered, Wedina Tank excised and other formalities completed. The park was finally constituted on 14 February 1974.

EVENTS SINCE DEDICATION

In the short time since its constitution, the park has had a colourful history, at times being the centre of rather bitter controversy.

In May 1975 a track, approximately 1.5 kilometres long, was bulldozed through the park as a traffic diversion while roadworks were undertaken on the road which forms the eastern boundary of the park. Although mistakenly constructed in the park, the track contravened a number of regulations of the National Parks and Wildlife Act, 1972-1981, and legal action was threatened against the District Council of Streaky Bay which was responsible for the works. Moves were set in train to rehabilitate the site, but it appears that the matter soon lapsed. Inspection of the site in 1984 and comparisons with photographs taken of the damage in 1975 reveal that no rehabilitative work was undertaken although some vegetation has re-established itself on the disturbed area.

The park was again the centre of controversy in 1976 when the District Council of Streaky Bay approached the National Parks and Wildlife Service seeking consent to have approximately 9.5 hectares of the park excised at Calca Corner and rededicated as a recreation reserve. The council proposed that an oval and other sporting facilities be developed on park land adjoining two existing tennis courts which were also on reserved land. The courts were constructed many years before acquisition on land which had been informally donated to the Calca community by the last lessee.

The District Council of Streaky Bay has continued to press its case for land to be made available for a sporting complex, and at the same time supporting the Calca Tennis Club in seeking secure tenure over the tennis courts and sufficient land for the construction of an additional court.

CURRENT USE AND MANAGEMENT

Perceptions of the value of the Calpatanna area have changed little since the days before reservation when it was regarded as a scrub block of generally inferior land suitable only for light grazing. In keeping with this view, the natural values of the area have been largely ignored by the public. The park has not been regarded with any special interest by naturalists or other nature conservation groups, and it is not a park which is visited by the public or generally considered to have significant recreational or heritage values. It is a statement of the public's perception of the park that the only interest in it has been as a site for the development of a sporting complex. The sole active use of the park since dedication is related to the tennis courts in the south-east of the park at Calca Corner.

Reflecting this low level of interest and use, management of the park has been essentially routine, focusing principally on the maintenance of conservation values. It has included the survey and fencing of park boundaries, the eradication of weeds, fire protection, monitoring stock incursions into the park, and kangaroo incursions on to surrounding farmlands.

A fencing programme for Calpatanna commenced in 1976 when a succession of good seasons, together with the removal of stock and cessation of shooting in the park, led to what local landholders considered to be excessive kangaroo numbers in the park. A number of complaints were received concerning the movement of kangaroos on to neighbouring properties, and the potential hazard they posed to traffic travelling on the roads adjacent to the eastern and southern park boundaries. Concern was also expressed by both Service staff and adjoining landholders over the straying of stock into the park. Fencing has now been constructed along the eastern, western and southern park boundaries. The northern boundary remains insecure, and the existing fence is in disrepair and incapable of preventing stock and kangaroo movements. The band of lakes in the west of the park restricts the movement of stock into the park along the unfenced section of the western boundary; however but stock regularly graze the fairly well-grassed north-eastern corner of the park.

The park does not present a high fire risk. Indeed, fire is not known to have occurred in the park within living memory. Nevertheless, the Service is obliged to inhibit the movement of fire from the park to adjoining lands as well as to protect the park from fires originating outside. A 5 metre perimeter management track has therefore been established along the western park boundary. It provide access for fire-fighting, fence maintenance, and other management purposes. In the north-east of the park, Wedina Tank, which existed before park dedication, serves a useful park management role as a water supply should it be required for fire-fighting purposes. The tank, while excluded from the park, abuts the northern boundary, and a pre-existing access track to the tank from the eastern park boundary is maintained for this and other management purposes.

Some attention has also been given to the control of weeds which principally occupy peripheral areas of the park, particularly the southern and eastern boundaries. In 1979 a survey of horehound infestations on road reserves in the Streaky Bay district was carried out by the Western Pest Plants Board. The survey revealed a moderate infestation along 4.4 kilometres of the southern boundary. An eradication programme, using 2-4-D, was subsequently carried out by the Western Pest Plants Board in conjunction with the National Parks and Wildlife Service. A cutting and swabbing programme of boxthorn infestations which occur at the western end of the southern boundary was also undertaken in 1979.

APPENDICES

APPENDIX I

PLANT SPECIES RECORDED IN CALPATANNA WATERHOLE CONSERVATION PARK

* introduced species

<u>AIZOACEAE</u>	<u>Tetragonia implexicoma</u>	bower spinach
<u>CASUARINACEAE</u>	<u>Allocasuarina verticillata</u>	drooping sheoak
<u>CHENOPODIACEAE</u>	<u>Enchylaena tomentosa</u>	ruby saltbush
	<u>Halosarcia sp. halocnemoides</u>	samphire
	<u>Maireana oppositifolia</u>	healthy bluebush
	<u>Rhagodia candolleana</u>	-
	<u>Rhagodia crassifolia</u>	fleshy saltbush
	<u>Salsola kali</u>	buckbush
	<u>Sarcocornia quinqueflora</u>	samphire
	<u>Threlkeldia diffusa</u>	coast bonefruit
<u>COMPOSITAE</u>	* <u>Carduus tenuiflorus</u>	slender thistle
	* <u>Chrysanthemoides monilifera</u>	boneseed
<u>CRUCIFERAE</u>	* <u>Diplotaxis tenuifolia</u>	Lincoln weed
<u>CUPRESSACEAE</u>	<u>Callitris canescens</u>	scrubby cypress pine
<u>CYPERACEAE</u>	<u>Gahnia lanigera</u>	desert saw-sedge
	<u>Lepidosperma concavum</u>	sand-hill saw-sedge
<u>EPACRIDACEAE</u>	<u>Acrotriche patula</u>	shiny ground-berry
<u>EUPHORBIACEAE</u>	<u>Beyeria lechenaultii</u>	felted wallaby-bush
<u>FRANKENIACEAE</u>	<u>Frankenia pauciflora</u>	southern sea-heath
	<u>Frankenia sessilis</u>	small-leaved sea-heath
<u>GRAMINEAE</u>	<u>Triodia sp.</u>	porcupine grass
<u>LABIATAE</u>	* <u>Marrubium vulgare</u>	horehound
<u>LEGUMINOSAE</u>	<u>Acacia acinacea</u>	gold-dust wattle
	<u>Acacia notabilis</u>	notable wattle
	<u>Acacia paradoxa</u>	kangaroo thorn
	<u>Cassia nemophila</u>	desert cassia
	<u>Daviesia sp.</u>	-
	<u>Eutaxia microphylla</u>	eutaxia
	<u>Templetonia retusa</u>	common templetonia
<u>LILIACEAE</u>	* <u>Asparagus asparagoides</u>	bridal creeper, creeping smilax
	<u>Dianella revoluta</u>	black-anther flax-lily
<u>MYRTACEAE</u>	<u>Calytrix involucrata</u>	cup fringe-myrtle
	<u>Eucalyptus dumosa</u>	white mallee
	<u>Eucalyptus gracilis</u>	yorrell
	<u>Eucalyptus porosa</u>	mallee box
	<u>Eucalyptus rugosa</u>	Kingscote mallee
	<u>Eucalyptus yalataensis</u>	Yalata mallee
	<u>Melaleuca acuminata</u>	mallee honey-myrtle

	<u>Melaleuca halmaturorum</u>	South Australian swamp paper-bark
	<u>Melaleuca lanceolata</u>	dryland tea-tree
	<u>Melaleuca uncinata</u>	broombush
<u>PITTOSPORACEAE</u>	<u>Pittosporum phylliraeoides</u>	weeping pittosporum
<u>SANTALACEAE</u>	<u>Exocarpos aphyllus</u>	leafless cherry
	<u>Exocarpos sparteus</u>	broom ballart
	<u>Exocarpos syrticola</u>	coast ballart
<u>SAPINDACEAE</u>	<u>Dodonaea baueri</u>	crinkled hop-bush
	<u>Dodonaea hexandra</u>	horned hop-bush
<u>SOLANACEAE</u>	* <u>Lycium ferocissimum</u>	African boxthorn
<u>STERCULIACEAE</u>	<u>Lasiopetalum discolor</u>	coast velvet-bush
<u>THYMELAEACEAE</u>	<u>Pimelea flava</u> ssp. <u>dichotoma</u>	yellow rice-flower

APPENDIX IIREPTILES POSSIBLY IN OR NEAR CALPATANNA WATERHOLE CONSERVATION PARK

- Records: 1 : recorded in Calpatanna Waterhole Conservation Park.
 2 : specimens in SA Museum from within a 50 kilometre radius-
 Poochera, Streaky Bay, Sceale Bay, Port Kenny, Venus Bay.
 3 : specimens in SA Museum from within a 100 kilometre radius-
 Denial Bay, Ceduna, Smoky Bay, Pygery, Elliston.

Note: only the closest record is indicated.

RECORDSAGAMIDAEDRAGON LIZARDS

<u>Ctenophorus cristatus</u>	crested dragon	3
<u>Ctenophorus fionni</u>	Peninsula dragon	1
<u>Ctenophorus fordi</u>	Mallee dragon	2
<u>Ctenophorus maculatus</u>	spotted dragon	3
<u>Ctenophorus pictus</u>	painted dragon	2
<u>Gemmatophora muricatus</u>	Jacky lizard	3
<u>Moloch horridus</u>	thorny devil	3
<u>Pogona barbatus</u>	bearded dragon	2
<u>Pogona minor</u>	dwarf bearded dragon	3
<u>Tympanocryptis adelaidensis</u>	-	2
<u>Tympanocryptis lineata</u>	-	2

BOIDAEPYTHONS

<u>Morelia spilota</u>	carpet python	2
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ELAPIDAEFRONT-FANGED SNAKES

<u>Acanthophis antarcticus</u>	common death adder	3
<u>Demansia psammophis</u>	yellow-faced whip snake	3
<u>Drysdalia mastersi</u>	masters snake	2
<u>Echiopsis curta</u>	bardick	2
<u>Pseudechis australis</u>	king brown snake	3
<u>Pseudonaja affinis</u>	dugite	2
<u>Pseudonaja nuchalis</u>	western brown snake	2
<u>Pseudonaja textilis</u>	eastern brown snake	2

<u>Simoselaps bertholdi</u>	desert banded snake	2
<u>Simoselaps semifasciatus</u>	half-girdled snake	3
<u>Unechis nigriceps</u>	-	3
<u>Unechis spectabilis</u>	-	3
<u>Vermicella annulata</u>	bandy-bandy	3
GEKKONIDAE	GECKOS	
<u>Diplodactylus intermedius</u>	eastern spiny-tailed gecko	-
<u>Diplodactylus vittatus</u>	wood gecko	1
<u>Gehyra variegata</u>	tree dtella	3
<u>Heteronotia binoei</u>	bynoe's gecko	3
<u>Nephrurus stellatus</u>	-	3
<u>Phyllodactylus marmoratus</u>	marbled gecko	2
<u>Underwoodisaurus milii</u>	thick-tailed gecko	1
PYGOPODIDAE	LEGLSS LIZARDS	
<u>Aprasia inaurita</u>	-	2
<u>Aprasia striolata</u>	-	-
<u>Delma australis</u>	-	2
<u>Lialis burtonis</u>	Burton's snake-lizard	3
<u>Pygopus lepidopodus</u>	common scaly-foot	2
SCINCIDAE	SKINKS	
<u>Cryptoblepharus virgatus</u>	-	3
<u>Ctenotus atlas</u>	-	3
<u>Ctenotus brooksi</u>	-	2
<u>Ctenotus schomburgkii</u>	-	3
<u>Ctenotus uber</u>	-	1
<u>Egernia inornata</u>	desert skink	3
<u>Egernia multiscutata</u>	-	3
<u>Eremiascincus richardsoni</u>	broad-banded sand swimmer	2
<u>Hemiergis peronii</u>	-	2
<u>Lerista frosti</u>	-	3
<u>Lerista microtis</u>	-	3
<u>Lerista picturata</u>	-	3
<u>Lerista terdigitata</u>	-	2
<u>Menetia greyii</u>	-	3
<u>Morethia adelaidensis</u>	-	3
<u>Morethia butleri</u>	-	3
<u>Morethia obscura</u>	-	1
<u>Tiliqua branchialis</u>	-	2
<u>Tiliqua scincoides</u>	eastern blue-tongued lizard	3
<u>Trachydosaurus rugosus</u>	shingle-back	1
TYPHLOPIDAE	BLIND SNAKES	
<u>Ramphotyphlops australis</u>	-	2
<u>Ramphotyphlops bituberculatus</u>	-	2
VARANIDAE	GOANNAS	
<u>Varanus gouldii</u>	Gould's goanna	-

Sources: South Australian Museum records: T. Schwaner (personal communication), S. Tremont (personal communication); nomenclature follows Cogger (1983).

APPENDIX III

BIRDS RECORDED IN CALPATANNA WATERHOLE CONSERVATION PARK

* introduced

ACCIPITRIDAE

Aquila audax

FALCONIDAE

Falco berigoraFalco cenchroides

RECURVIROSTRIDAE

Cladorhynchus leucocephalusRecurvirostra novaehollandiae

COLUMBIDAE

Phaps chalcopteraPhaps elegansOcyphaps lophotes

PSITTACIDAE

Cacatua roseicapillaBarnardius zonarius zonariusPsephotus varius

CUCULIDAE

Cacomantis flabelliformis

STRIGIDAE

Ninox novaeseelandiae

AEGOTHELIDAE

Aegotheles cristatus

ACANTHIZIDAE

Sericornis frontalisSmicronis brevirostrisAcanthiza apicalisAcanthiza chrysorrhoaAphelocephala leucopsisPardalotus xanthopygusPardalotus striatus

HIRUNDINIDAE

Hirundo neoxenaHirundo nigricans

PLOCEIDAE

Anthus novaeseelandiae*Passer domesticus

EOPSALTRIIDAE

Petroica goodenoviiEopsaltria griseogularisKITES, HAWKS, AND ALLIES
wedge-tailed eagle

FALCONS

brown falcon

nankeen kestrel

STILTS AND AVOCETS

banded stilt

red-necked avocet

PIGEONS AND DOVES

common bronzewing

brush bronzewing

crested pigeon

COCKATOOS, PARROTS AND ALLIES

galah

Port Lincoln parrot

mulga parrot

CUCKOOS

fan-tailed cuckoo

OWLS

southern boobook

OWLET-NIGHTJARS

owlet-nightjar

SCRUBWRENS, THORNBILLS

white-browed scrubwren

weebill

inland brown thornbill

yellow-tailed thornbill

southern whiteface

yellow-tailed pardalote

striated pardalote

SWALLOWS AND MARTINS

welcome swallow

tree martin

SPARROWS, WAXBILLS, PIPITS, WEAVERS
AND ALLIES

Richard's pipit

house sparrow

SITTELLAS AND
ALLIES

red-capped robin

western yellow robin

POMATOSTOMIDAEPomatostomus superciliosus**SYLVIIDAE**Cinclorhamphus cruralis**MELIPHAGIDAE**Anthochaera carunculataAcanthagenys rufogularisManorina flavigulaMeliphaga virescensMeliphaga leucotisMeliphaga cratitiaMeliphaga ornataMelithreptus brevirostrisPhylidonyris albifrons**NECTARINIIDAE**Dicaeum hirundinaceum**ZOSTEROPIDAE**Zosterops lateralis**STURNIDAE***Sturnus vulgaris**CORVIDAE**Corvus melloriArtamus cyanopterusCracticus torquatusGymnorhina tibicenStrepera versicolorPachycephala inornataPachycephala pectoralisPachycephala rufiventrisColluricincla harmonicaRhipidura fuliginosaRhipidura leucophrysCoracina novaehollandiaeSources: J. Needle, S. Tremont and G. White (unpublished lists, personal communication).**AUSTRALIAN BABBLERS**

white-browed babbler

WARBLERS

brown songlark

HONEYEATERS AND AUSTRALIAN CHATS

red wattlebird

spiny-cheeked honeyeater

yellow-throated miner

singing honeyeater

white-eared honeyeater

purple-gaped honeyeater

yellow-plumed honeyeater

brown-headed honeyeater

white-fronted honeyeater

SUNBIRDS AND ALLIES

mistletoe bird

WHITE-EYES

silvereye

STARLINGS

common starling

RAVENS, CROWS, WHISTLERS, MONARCHS, ORIOLES

little raven

dusky woodswallow

grey butcherbird

Australian magpie

grey currawong

Gilbert's whistler

golden whistler

rufous whistler

grey shrikethrush

grey fantail

willie wagtail

black-faced cuckooshrike

APPENDIX IV**TERRESTRIAL MAMMALS OF THE CALCA DISTRICT****NATIVE SPECIES**Cercartetus concinnusLasiorhinus latifronsMacropus fuliginosusMacropus robustusMacropus rufusNotomys mitchelliiSminthopsis murina complexSminthopsis crassicaudataTachyglossus aculeatusPhascogale topoatafaTrichosurus vulpecula

western pigmy-possum

hairy-nosed wombat

western grey kangaroo

common wallaroo (Euro)

red kangaroo

Mitchell's hopping-mouse

common dunnart

fat-tailed dunnart

short-beaked echidna

brush-tailed phascagole

common brush-tail possum

Perameles bougainville

western barred bandicoot

INTRODUCED SPECIES

Felis catus

cat

Mus domesticus

house mouse

Oryctolagus cuniculus

European rabbit

Rattus rattus

black rat

Vulpes vulpes

fox

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Part 2

The Management Plan

MANAGEMENT PHILOSOPHY

A long history of pastoral occupation and extensive clearance of native vegetation for agriculture has left the west coast strip of Eyre Peninsula with few remnants of the natural environment. Calpatanna Waterhole Conservation Park, as one of the more substantial of these remnants, has been set aside to preserve and protect an example of this pre-European landscape.

Not only is the park important as a representative example of the natural environment, it is also part of a discontinuous band of native vegetation which extends east from the coast at Sceale Bay through to more extensive areas in central Eyre Peninsula. As a core of reserved land integrating other, smaller remnant islands of habitat in the region, the park performs an important biogeographic function. In this way the dynamics of native communities within the district may be partially retained and conservation in the region generally strengthened.

The park area also has potential as an educational, and perhaps recreational resource, for the Streaky Bay district. Although not immediately attractive for either purpose, its proximity to Streaky Bay, and the variety and complexity of the park land systems, mean that the benefits which the park can provide are likely to be recognised and increasingly appreciated by the community. It is appropriate that a conservation park be used for these purposes, and park management should seek to realise this potential. However, it is essential that developments which may be proposed for the park do not close future options. The approach to park management should be conservative. It is much easier to provide new developments at a later date than it is to remove developments or park activities that a future generation may regard as inappropriate.

The direction which park management should take is also controlled by the National Parks and Wildlife Act, its regulations, and the Service's Policies Document. Each is explicit in emphasising the conservation objective. The Act specifies that a conservation park is ... protected or preserved for the purpose of conserving any wildlife and the natural or historic features of those lands ... 5.30(1)(a) and states that a principal objective of management shall be ... the preservation and management of wildlife ... 5.37(a). In addition, the provisions of the regulations under the Act restrict actions of the public which may be detrimental to wildlife and habitat. National Parks and Wildlife Service policy also states:

The Service's policy..... stems from the philosophy that there should not be undue restriction on access provided that such access does not jeopardise the integrity of park values, or conflict with the interests of other users. (NPWS n.d.)

In view of these considerations, the management of Calpatanna Waterhole Conservation Park should be directed to protecting the natural environment and maximising conservation values. Public enjoyment of the park should be encouraged, provided that this does not detract from, or threaten, this conservation objective.

MANAGEMENT OBJECTIVES

The primary objectives for the management of Calpatanna Waterhole Conservation Park are presented below. They are set down as specific goals towards which park management planning should be directed, and management actions undertaken. Together with the provisions of the National Parks and Wildlife Act, its regulations, and the Service's general management policies, these objectives serve as a framework within which park usage and development should occur. All park management operations and patterns of park usage should be constrained within the limits of these objectives.

CONSERVATION OF THE NATURAL ENVIRONMENT

Ensure the conservation, in perpetuity, of the natural environment and landscape of Calpatanna Waterhole Conservation Park.

EUROPEAN AND ABORIGINAL HERITAGE

Ensure the documentation and preservation of historic relics, features and information associated with the early European and Aboriginal history of Calpatanna Waterhole Conservation Park.

VISITOR SERVICES

Provide basic information for visitors and, in a manner compatible with the role and purpose of the park, enable park visitors and other members of the community to interpret and enjoy the natural and cultural features of the park.

FIRE CONTROL

Ensure that provisions are made for the control of wildfire within the park that are compatible with the role and purpose of the park.

ALIEN TENURES

Ensure that alien tenures within park boundaries are compatible with the role and purpose of the park.

ADDITIONAL LAND

Increase the conservation values of the park and the region by acquiring, or ensuring the conservation of, suitable land adjoining or near Calpatanna Waterhole Conservation Park.

MANAGEMENT CONSIDERATIONS

This section of the management plan discusses some of the background, and possible means of implementing, the management objectives for Calpatanna Waterhole Conservation Park.

CONSERVATION OF THE NATURAL ENVIRONMENT

ENSURE THE CONSERVATION, IN PERPETUITY, OF THE NATURAL ENVIRONMENT AND LANDSCAPE OF CALPATANNA WATERHOLE CONSERVATION PARK.

It is clear from previous discussion that this is the predominant objective for the management of Calpatanna Waterhole Conservation Park, as it is for most National Parks and Wildlife Service reserves. It is, however, an objective which is often difficult to achieve in practice. The Service is frequently faced with providing for established patterns of public use as well as satisfying management obligations which may directly compete with the conservation objective. Fortunately these are not difficulties which face Calpatanna Waterhole Conservation Park. With the notable exception of the two tennis courts located at Calca Corner (see Alien Tenures) there is virtually no recreational use made of the park. It is also unlikely that management actions which may be necessary for fire protection, the control of weeds and vermin, and fauna management, will conflict with the conservation objective. Because of this, management of the park for the purpose of conserving the natural environment can be virtually uncompromising.

Zoning

The concept of zoning for particular uses has become accepted as a basic tool of park management planning, as indeed it has with land use planning in general. It is specifically provided for in the National Parks and Wildlife Act, 1972-1981, and zones have been designated in management plans for many reserves in South Australia. A zoning strategy may be useful in rationalising and managing patterns of park use which are incompatible or which may threaten particular park values. This type of approach is often necessary in more popular parks which receive heavy and varied recreational demands or where features of special scientific interest are known to occur. Park zoning has never been systematised in South Australia. It has usually been tailored to needs and problems which are specific to individual parks.

While there is not a pressing need to designate zones within Calpatanna Waterhole Conservation Park, it is proposed that a simple system of zoning be introduced which will clearly indicate the conservation role of the park as well as identify preferred areas for development in the park. It is recommended that the great majority of the park be designated Conservation Zone with two Facilities Zones located at points which are appropriate for potential park development (Figure 10). Management and visitor developments should be restricted to the Facilities Zones at Calpatanna Waterhole and Wedina Tank, and members of the public who express an interest in visiting the park should be encouraged to visit either of these points. It is unlikely that in the foreseeable future there will be visitor or management demands which will require developments of any kind at other points within the interior of the park. Access for vehicles should be confined to designated tracks as shown in Figure 10, and excluded from the Conservation Zone except for emergency and other approved purposes. Visitors may reach the northern Facilities Zone by vehicle via the north-eastern public access

track, or the southern Facilities Zone by foot. Matters which are relevant to park zoning are discussed in detail in the following sections (see Visitor Services and Fire Control).

Control of Weeds and Feral Animals

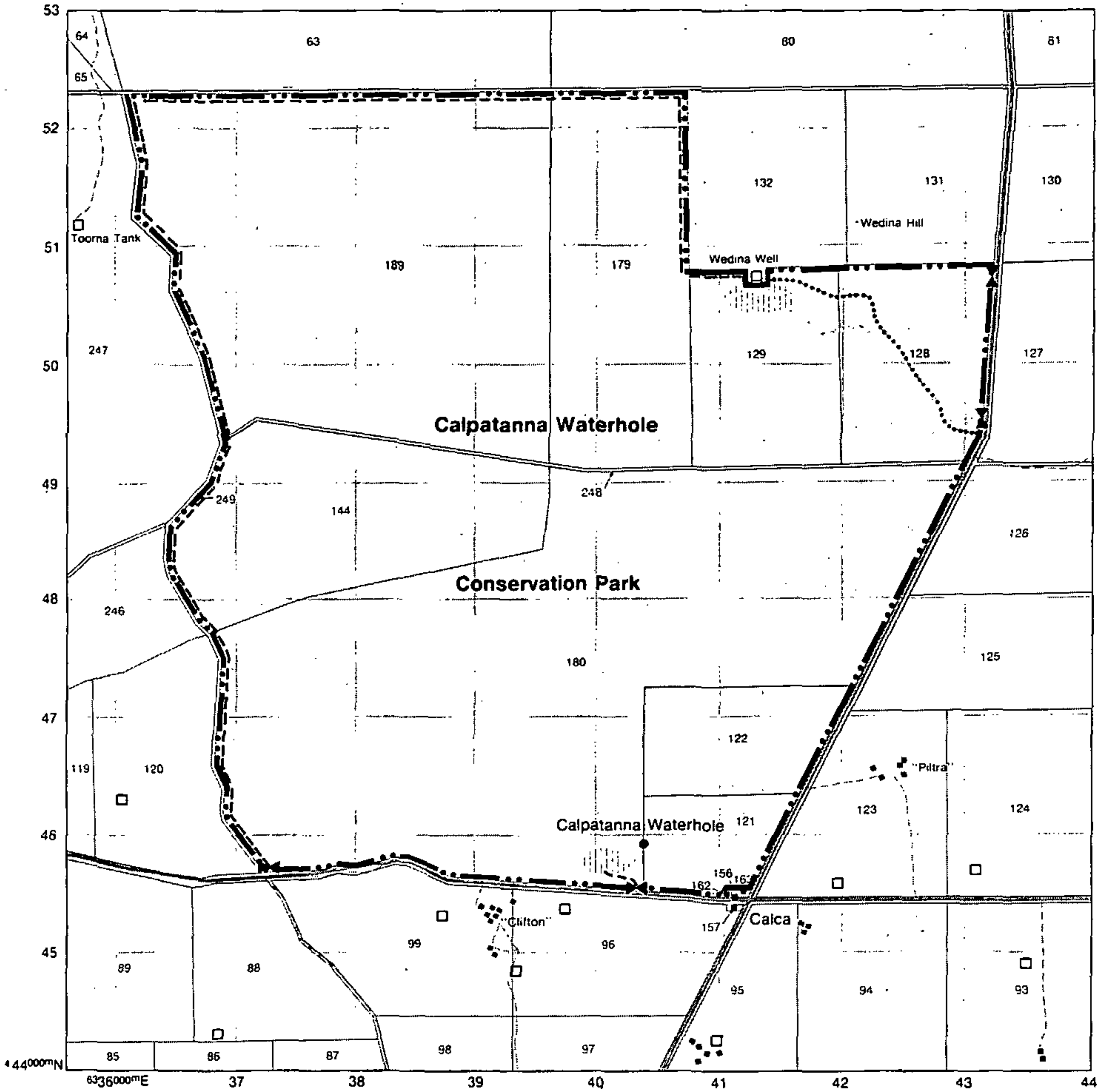
Invasion by pest plants and animals is a problem which is faced by park managers, to a greater or lesser degree, throughout the settled areas of Australia. The process of pest invasion is continuous and insidious, and if left unchecked, can eventually lead to drastic and irreversible changes to the native environment. Some changes must now be considered to be inevitable. Fortunately, the natural systems of Calpatanna Waterhole remain structurally intact, and the majority of the park is largely unaffected by plant and animal pests. If this is to remain the case, a continuing pest monitoring and control programme will be necessary, and indeed it is required under the Pest Plants Act, 1975, the Vertebrate Pests Control Act, 1975, as well as the National Parks and Wildlife Act.

The principal vertebrate pest that is present in the park is the European rabbit; however, the penetration that it has achieved has been limited by the adverse nature of much of the park terrain. The saline lake system in the west of the park and the rocky calcrete surface which covers much of the remainder inhibits the construction of warrens, and exercises a degree of natural control over population size. Nevertheless, European rabbits and their warrens have been noted in the sandy rises of the north-central interior. To date, no action has been taken to control numbers, and on the basis of information currently available, it does not appear that an active control programme is required. Feral animal numbers should be monitored to ensure they do not become a problem.

A number of alien plant species which are common throughout the district are known to be present in the park. Several are scheduled as pest plants under the Pest Plants Act, and are considered to be aggressive colonisers of native vegetation. Others do not pose such a threat to established vegetation, but invade areas which have been disturbed. Fortunately, neither type has been encountered to any extent in the interior of the park and they are presently restricted to the southern and eastern boundaries. These peripheral areas, particularly the southern boundary, are vulnerable to weed invasion. They are adjacent developed agricultural land; they have been disturbed by relatively high levels of grazing as well as fencing and other boundary operations; and they are close to passing road traffic which is well recognised as a vector of pest plants.

Weed suppression activities have been undertaken periodically since the park was dedicated in 1974. In 1979 a survey of horehound (Marrubium vulgare) along the roadside frontages of the park revealed moderate infestations along 4.4 kilometres of the southern boundary. A control programme using 2-4-D was completed in conjunction with the Western Pest Plants Board. The cutting and swabbing of African boxthorn (Lycium ferocissimum) which inhabits the western end of the southern boundary was also undertaken that year. These pest plants are still present in the area and will require periodic treatment. A pest plant species which has not yet received management attention, as it is only sparsely distributed near the road in the eastern part of the park, is creeping smilax or bridal creeper (Asparagus asparagoides). However, as it is known to invade areas of natural vegetation, and is able to spread rapidly by means of both bird-dispersed seed and underground rhizomes which makes control extremely difficult, its presence in the park should be carefully monitored.

In 1985 boneseed (Chrysanthemoides monilifera), a classified community pest plant, was discovered growing in the south-east corner of the park, having apparently spread into the park from specimens growing outside.



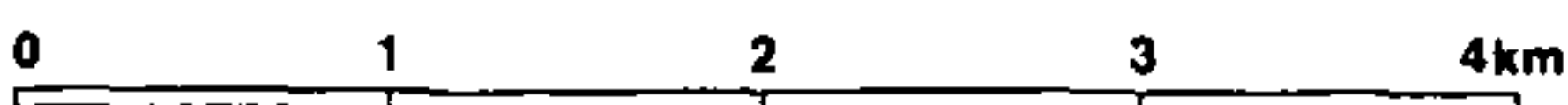
- Park boundary
- Unsealed road
- - -** Vehicular track
- - - -** Management track
- · · · ·** Public access track
- Conservation Zone
- ▨** Facilities Zone
- Well/tank

- Building
- ⋈** Gate



Figure 10

Scale 1:50 000



Park Zoning and Access

Boneseed is a vigorous pest species well known in areas of the Adelaide Hills and until recently not generally recognised as a serious problem on Eyre Peninsula and the West Coast. Control work in the south-east of the park has been undertaken, and follow-up and continuing monitoring need to be done as a high priority.

With only limited resources available to management, it is important that weed control in the park be oriented toward specific conservation objectives, rather than the eradication of obvious or visually prominent infestations. Resources should be directed toward preventing the spread of weed species into currently unaffected areas. This approach may mean that some infested areas which do not pose a threat to unaffected native vegetation receive a lower priority for action. It may also mean that commonly employed large-scale, non-selective control methods may not be appropriate, particularly in areas where alien species and native vegetation interact.

In developing and implementing a weed control programme for the park the following matters should be given consideration:

- . the threat that weed species pose to native vegetation, and the likelihood of invasion of unaffected areas;
- . the distribution of weeds in the park;
- . the level of park management resources available;
- . the effectiveness and appropriateness of alternative control methods in maximising the park's conservation values.

Close liaison should also be maintained with the Western Pest Plants Board, and the spread of weed species in the park routinely monitored.

Fencing

Fencing the boundary of a reserve serves a wide variety of conservation management purposes as well as fulfilling obligations to surrounding landholders. One important purpose is to prevent the entry of livestock into the park. For a number of years following acquisition, livestock from neighbouring properties had free access to Calpatanna Waterhole Conservation Park since all boundary fences were in a poor condition. Although most livestock remained on the semi-cleared peripheral areas of the park, notably in the north-eastern and south-western corners, grazing not only prevented the re-establishment of native vegetation, but encouraged the spread of weeds. The loss of livestock within the park was also of concern to the adjoining landowners.

Fences which have been recently installed along the park boundaries are adequate. However, the entire northern boundary is still without satisfactory fencing.

Although dense scrub restricts entry to the park along much of the northern boundary, livestock still has ready access to a large section of open country in the north-east of the park. The northern boundary road reserve should be closed, a new park boundary line surveyed and cleared, and a fencing agreement established with adjoining landholders as a matter of high priority. It is Service policy to share the costs of boundary fencing with neighbours where prior application is made, according to a scale and conditions set out by the Service in its pamphlet on boundary fencing.

Fauna Management

Calpatanna Waterhole Conservation Park harbours a large number of kangaroos, an animal which is considered by some of the local community to be both an agricultural pest and a traffic hazard. Kangaroos have an established pattern of moving from the refuge of the park to graze and water on surrounding agricultural land. Boundary fencing has limited this movement but it is still regarded as a problem during dry periods when feed and water are scarce. In cases where there appears to be conflict between the conservation of native species and community interests, it is the policy of the Service to co-operate with the community in clarifying the nature of the impact of the species, and to determine effective and appropriate control measures. It is also the responsibility of the Service to determine a realistic balance between fauna protection and the damage caused by native animals.

If required, under Section 53(d) of the National Parks and Wildlife Act, the Service may issue permits to surrounding landholders for the purpose of destroying protected animals such as kangaroos that are causing damage to crops, livestock, and other property on their lands. If the movement of kangaroos from the park to adjoining lands continues to be a problem, the Service will undertake appropriate actions to combat it. District staff will routinely monitor kangaroo movements within the park and along park boundaries, and will liaise with surrounding landholders to determine the extent of the problem and the necessity for further action.

Removal of Rubbish

In the period before acquisition, and for a short time after, some areas of Calpatanna Waterhole Conservation Park were used for dumping rubbish. Apparently some of this rubbish has been removed, but some is still present, particularly in the south-eastern corner of the park near an old gravel quarry. Action needs to be taken to progressively remove this rubbish, and to ensure that no further dumping takes place.

EUROPEAN AND ABORIGINAL HERITAGE

ENSURE THE DOCUMENTATION AND PRESERVATION OF HISTORIC RELICS, FEATURES AND INFORMATION ASSOCIATED WITH THE EARLY EUROPEAN AND ABORIGINAL HISTORY OF CALPATANNA WATERHOLE CONSERVATION PARK.

In spite of its isolation, the western coast of Eyre Peninsula has had a relatively long history of European occupation. A considerable amount of this history is known only from word of mouth and the personal recollections of older members of the community. It is also the case that many of the more tangible reminders of the history of the area are disappearing as development continues and the landscape changes. Knowledge of Aboriginal life in the region is particularly sketchy. Because of the early extinction of local tribes, the little information that does exist principally concerns the conflict which occurred with white settlers during the early years of European occupation.

Recording the known history and preserving those relics which remain are therefore of great importance. Because Calpatanna Waterhole Conservation Park has been touched by aspects of this regional history, park management should ensure that historic relics within the park are not damaged, and that relevant historical information is recorded. It is beyond the scope of this management plan to determine the heritage significance of historic relics within the park, but attention is drawn to several items within the park which, by virtue of their age, are of historical interest.

The Calpatanna waterhole and well are obvious features of interest. While the ruins of a mill which was constructed over the well dates from comparatively recent times, there is evidence that the well was one of the earliest to be sunk in the district, the presence of the waterhole clearly indicating a prospective well site. The well was certainly constructed before the 1880s, and comments by the surveyors of that time, together with evidence from early pastoral plans, suggest that the well may have been sunk early in the 1850s - at the time of the earliest pastoral occupation of the district. Nothing is presently known of the use of Calpatanna Waterhole, which adjoins the well, but it undoubtedly played a part in Aboriginal life before the arrival of Europeans. Management should ensure that the waterhole and well are retained in a good condition.

The Calpatanna waterhole and well area is an appropriate focal point for certain park developments and has been identified as a Facilities Zone in this management plan. It is important that any development of the well or the surrounding area for water reticulation, visitor use, or other purposes suggested in this plan should be effected in a way which is sensitive to the site.

Also of historical interest are a number of survey cairns constructed of limestone rubble which were set in place in 1884 during the original survey of the Hundred of Wrenfordsley. Examples of these survey cairns are occasionally encountered in scrub areas throughout the region, but frequently they are disturbed or destroyed during development operations, particularly fencing. Indeed, this is known to have occurred recently in the park. Good examples of these cairns are still present in several areas of the park, particularly along the western boundary. Sites where these cairns are known to occur should be recorded, and all efforts made to ensure that they are left undisturbed.

Of the other relics which remain in the park, the ruins of original post and wire fencing is worthy of mention. This fencing dates from the period during the 1860s and 1870s when the pastoral runs of the district were first subdivided into paddocks. Most of the paddock fencing of that period was constructed of brush which was prone to deterioration and has since disappeared. However, part of this fencing was of post and wire construction, a recent innovation at that time. It has been suggested that the remains of a fence which is evident in the large saline lake in the west of the park dates from this time. The known locations of this original fencing should be recorded, and park management should ensure that remains are not disturbed.

There are records of a number of other features of historic interest in the park which, although no longer present, should be noted by park management and considered for inclusion in any future park promotion and interpretation programmes. A hut, possibly a shepherd's hut, is known to have existed during the early years of pastoralism a short distance from Calpatanna waterhole and well. The hut was in ruins during the 1880s and dates from the period before the fencing of pastoral runs when flocks were shepherded out from watering points. At this time Calpatanna waterhole and well was an outstation of the Calca run. The hut was located very near the present boundary fence due south of the waterhole. It is also noteworthy that the original track from Calca Station to the township of Flinders (now Streaky Bay) followed the western park boundary. This route was used for many years until the construction of the present surveyed road system. Some features of historic interest within the park are illustrated in Figure 9.

VISITOR SERVICES

PROVIDE BASIC INFORMATION FOR VISITORS AND, IN A MANNER COMPATIBLE WITH THE ROLE AND PURPOSE OF THE PARK, ENABLE PARK VISITORS AND OTHER MEMBERS OF THE COMMUNITY TO INTERPRET AND ENJOY THE NATURAL AND CULTURAL FEATURES OF THE PARK.

To date no attempt has been made to promote or formally open up Calpatanna Waterhole Conservation Park for visitor use. This should not be simply regarded as a consequence of limited management resources. It is not necessarily appropriate for visitors to be encouraged to use a reserve of this type. To encourage, or artificially stimulate, visitation by promoting the park or providing visitor facilities may unnecessarily compromise the conservation values of the area.

In any event, the park is not particularly suitable as a recreation area and also its principal features of interest are largely inaccessible to the public. Most of the recreation opportunities that the park could provide are provided at present at a number of localities within easy reach of the Streaky Bay township.

Despite this, with judicious and conservative development, the park may fulfil a valuable role as an educational resource for the Streaky Bay district and encourage community interest and understanding of the natural environments of the region.

Self-guided Nature Trail

Interest in establishing a self-guided nature trail at Calpatanna Waterhole Conservation Park has already been expressed by members of the Streaky Bay community. Such a development is acceptable in a conservation park and should receive encouragement.

There are several areas in the park which could be suitable for the development of a self-guided nature trail. However, for a variety of reasons, an area surrounding the Calpatanna waterhole and well is favoured in this management plan.

Firstly, the area is easily accessible from the Calca-Sceale Bay road. Secondly, a representative sample of all land systems present in the park can be encountered on a short circuit from this point. Thirdly, the area of the waterhole and well is proposed as a site for a water tank for fire protection and other management purposes. This facility will serve a useful purpose if visitors are to make use of the park. Fourthly, this suggestion is consistent with the proposal made in this plan to restrict park developments to Facilities Zones, one of which is at Calpatanna Waterhole (see Conservation of the Natural Environment).

Details concerning the feasibility, siting, and establishment of the nature trail should be determined by the National Parks and Wildlife Service in liaison with the Streaky Bay Area School and other interested groups or individuals.

Interpretation

An important objective of the Service is to assist the public in understanding and appreciating the natural environment, and features of individual reserves in particular. The establishment of a nature trail in Calpatanna Waterhole Conservation Park will be of special benefit in this regard, and will contribute to a greater awareness and understanding of the natural environment in the Streaky Bay district. Additionally, the Service

should, in consultation with relevant individuals and organisations in Streaky Bay, and the Community Information Service of the Department of Environment and Planning, prepare a map and information leaflet on the park. This leaflet may include information which will guide park visitors through the nature trail.

Nature Study

Little is known of the biology of the park, particularly park fauna. A few naturalists have already visited the park and several individuals have expressed interest in undertaking further fauna survey work, perhaps in association with school groups. Any information obtained through these activities is valuable as it adds to the knowledge of the park. Because of this, the Service should encourage activities of this kind, and issue scientific permits to those individuals who wish to undertake appropriate research activities within the park. In particular, there is a need for a spring botanical survey of the park to supplement existing information on the park's flora.

Visitor Activities: General

Bushwalking, camping, orienteering and other extensive, low impact, recreational activities are considered to be acceptable activities within conservation parks and may be carried out in accordance with the regulations of the National Parks and Wildlife Act and the Field Management Policies of the Service. With the exception of bushwalkers, camping should be permitted only in the north-eastern corner of the park in areas immediately adjacent to the north-eastern public access track (see Visitor Access). Camping is permitted under permit issued by the ranger-in-charge at Streaky Bay.

Visitor Access

Visitor access to the park is quite limited. There are gates in the fence at several points along the eastern and southern park boundaries which can be easily reached from public roads, but the lack of formed vehicle tracks to and from these gates makes access difficult. The only point at which highway vehicles can enter the park easily is on the eastern park boundary where an unformed, but easily travelled track winds through open country in the north-east of the park to Wedina Tank, a water tank located on the northern park boundary. Vehicular access to the park for camping and other recreational activities should be restricted to this track (Figure 10).

The other points of access and the rough tracks which lead to the western and northern boundaries and Calpatanna Waterhole should be used only for management purposes. Use of these tracks would not add significantly to the appreciation and enjoyment of the park by the public and could threaten the conservation values of the park as well as create visitor management problems. In addition, the western boundary track at certain points near the saline lake margins can be treacherous in wet conditions. Use of these tracks by the public should be permitted in unusual circumstances and with the consent of the ranger-in-charge at Streaky Bay.

Off-road vehicle use in the park is not a serious problem, although there is some evidence that spotlighting and other similar activities have occurred periodically. If there is evidence of continuing off-road vehicle use, or indeed other illegal activities such as spotlighting in the park, then appropriate action should be taken. As a precautionary measure, consideration should be given to locking all gates in perimeter fences with the exception of the gate which gives entry to the north-eastern access track. Keys to locks should be retained by all legitimate users such as the Country Fire Service.

Public access to a possible future nature trail centering on Calpatanna waterhole and well should be on foot. The area is within easy walking distance from the southern boundary fence of the park. Provision of a roadside parking bay and boundary fence stile would enable visitors to reach the area with little effort. The construction of a track to the waterhole of a suitable standard for conventional vehicles would be an expensive undertaking due to outcropping calcrete in the area. It would also encourage off-road vehicle use in this part of the park. Vehicular access to the waterhole should be only for management purposes.

FIRE CONTROL

ENSURE THAT PROVISIONS ARE MADE FOR THE CONTROL OF WILDFIRE WITHIN THE PARK THAT ARE COMPATIBLE WITH THE ROLE AND PURPOSE OF THE PARK.

Fire exercises a considerable influence over the Australian environment, and a naturally high incidence, coupled with Aboriginal fire management practices of pre-European times, has meant that fire has played an integral role in the evolution of plant and animal communities. Since the arrival of Europeans, fire regimes have altered considerably, both in intensity, frequency, and extent.

It is difficult to determine how these regimes have changed, and what the effect on the environment has been. However, it is certain that on the western coast of Eyre Peninsula at least, fire frequency has increased significantly and in many areas the impact has been severe. It has been accepted grazing management practice to burn areas to stimulate fresh forage, to clear scrubby understorey and open up the country. Fire sensitive sheoak communities, once common throughout the area, have been particularly badly affected.

In contrast to this regional pattern it appears that fire has not been present in Calpatanna Waterhole Conservation Park for a considerable length of time; possibly a century or more. This apparent absence is unusual, and has provided a rather unique opportunity for plant and animal communities to develop free from its influence. Because of this the park may prove to be valuable, not only in preserving a remnant of climax communities, but also as a benchmark against which fire-induced changes may be assessed. For these reasons, and because the opportunities for the re-establishment of native communities following a complete burnout are restricted, it is important that adequate provisions are made for the prevention and control of wildfire in the park. The Service also has an obligation to surrounding landholders to prevent any fire originating within the park spreading to adjacent grazing and agricultural land.

Fortunately, the park is not subject to high fire risk because of its fire history, the open nature of much of the park terrain, and the maturity of the native vegetation. The roads which run adjacent to the eastern and southern park boundaries provide an effective fire break with adjacent agricultural lands, and provide ready access to the eastern and southern portions of the park perimeter. In addition, the extensive lake and swamp system in the west of the park, together with a western boundary management track, gives a good measure of protection from fire entering or leaving the park on the western side.

The principal threat of fire is from the north. Thick vegetation extends from within the park, across the northern park boundary and on to adjacent lands. This, coupled with the absence of a cleared northern boundary management track, means that fire might freely enter or leave the park, and that access for suppression action is highly restricted.

Detailed plans for the protection of the park from fire and for other emergency operations should be prepared. Consideration should be given to the following matters in preparing these plans.

Firstly, internal fire suppression and other management tracks are to be avoided. Internal tracks whether for management purposes or visitor access significantly threaten conservation values in parks by creating conditions which encourage the establishment of alien plants and plant pathogens within core areas of reserves, as well as create the potential for soil erosion and a variety of visitor management problems. Internal fire management tracks are particularly inappropriate in Calpatanna Waterhole Conservation Park as fire risk in the park is not high.

Secondly, it is Service policy to complete the construction of boundary access tracks of up to a minimum width of five metres for the purposes of fire protection, fence maintenance, and a variety of management purposes. The construction and maintenance of a northern boundary access track is therefore warranted. It should be completed as a part of the northern boundary fencing programme as discussed earlier (see Conservation of the Natural Environment).

Thirdly, a water tank which is situated on the northern park boundary provides a readily accessible supply of water for firefighting in the northern section of the park. It is easily reached from the eastern boundary via the established track which has been retained partly for this purpose. However, a water supply is not available to service southern sections of the park. If such a supply is required, a location near Calpatanna Waterhole should be considered. It is an appropriate location because of the ready supply of water, the proximity of a gate in the southern boundary fence, and the relative ease of access to the Sceale Bay road. The installation of a tank at this site is also consistent with the zoning principles set down in this plan. However, because of the historic and recreational demands on this site, any such tank should be discreetly located.

Fourthly, all fire protection measures and developments should be compatible with the conservation and heritage objectives discussed earlier. All developments must be implemented in a manner which is sensitive to these values.

ALIEN TENURES

ENSURE THAT ALIEN TENURES WITHIN PARK BOUNDARIES ARE COMPATIBLE WITH THE ROLE AND PURPOSE OF THE PARK.

There are, at present, no formally licenced alien tenures within Calpatanna Waterhole Conservation Park. However, two tennis courts lie partly on reserved land and are part of the collection of buildings at Calca at the south-eastern corner of the park.

The tennis courts, which are presently used by members of the Calca Tennis Club, were constructed about 25 years ago, preceding the establishment of the park by more than a decade. Aiden Roberts, the last lessee of the park area, informally donated the site to the Calca community for the construction of the courts. It has been a matter of some concern to the Calca Tennis Club that the tennis court area is not legally distinguished from the remainder of the park, and the club has for some time sought to obtain secure tenure over the courts area as well as sufficient land for the construction of an additional court. The issue of tenure over the tennis courts has never been resolved, largely as a result of becoming enmeshed in a wider controversy concerning the proposed development of a sporting complex on an adjacent area of the park.

The dispute concerning the sporting complex, as described earlier, first emerged in 1976 when the District Council of Streaky Bay sought to have 9.5 hectares of the conservation park rededicated as a recreation reserve under the control of the council. The council, in pressing this proposition, argued that revival of the township of Scaale Bay was imminent and that the Calca community was keen to provide sporting facilities to cater for this growth. The National Parks and Wildlife Service maintained that this was an inappropriate use for a conservation park but approved the issuing of a licence for the area occupied by the tennis courts. The District Council of Streaky Bay has since continued to press its case for the sporting complex, at the same time supporting the Calca Tennis Club in seeking secure tenure over the tennis courts and sufficient land for the construction of an additional court.

Areas of land which are reserved as conservation parks under the National Parks and Wildlife Act, 1972-1981, are set aside for the purpose of protecting and preserving the wildlife and natural and historic features of that land. It is a measure of the status of these reserves, and the importance of the conservation function they perform, that to excise or revoke any part requires the assent of both Houses of Parliament. It is therefore only under exceptional circumstances that the excision of any part of a conservation park should be considered.

The proposed alienation of 9.5 hectares of reserve land for the development of a sporting complex must be seen in this context. The site on which the proposed oval would be constructed presently contains a mature stand of mallee vegetation, some individual trees probably more than a century old. For the development to proceed this vegetation would need to be cleared. Much of the remainder of the area has been disturbed in the past by grazing and by the removal of topsoil for road-making purposes. However, since the dedication of the reserve, this area has undergone substantial regeneration.

It is clear that the development of sporting facilities on this site will not be in accordance with the general management aims of the reserve, namely the conservation of the natural environment. Moreover, neither the need for the sporting complex, nor the suitability of the site itself can be considered exceptional. Consequently, the National Parks and Wildlife Service will seek to ensure that no area within the park is made available for the development of an oval and associated sporting facilities. The Service will also encourage the District Council of Streaky Bay and other interested groups or individuals to investigate the feasibility of acquiring an alternative, partially developed site on private land on the eastern side of the road at Calca Corner.

The circumstances surrounding the tennis courts at Calca Corner are somewhat different. Indeed, the fact that the courts now lie partly within the reserve boundaries is an accident of history. As previously indicated, the courts predate the existence of the park by more than 10 years, and were constructed on land informally donated by the previous lessee. Before its formal constitution, an inspection of the proposed park was carried out by the then National Parks Commission. This inspection overlooked the fact that the tennis courts were sited, in part, on acquired land. Had this fact been revealed, the tennis courts and their immediate surrounds would have probably been excised in line with the boundary rationalisation procedures routinely carried out before park constitution.

In view of these circumstances, and because the existence of tennis courts in the park is inconsistent with the general purpose of the reserve, the Service will work with the District Council of Streaky Bay and the Calca Tennis Club to establish a long term lease over the area occupied by the tennis courts and which is already fenced off from the reserve. The tennis

courts area, which is currently fenced from the rest of the reserve, will provide sufficient land for the construction of an additional court without the necessity to remove any mature mallee vegetation (Figure 11).

It should also be noted that a length of the existing, recently constructed boundary fence passes through Section 162, Hundred of Wrenfordsley, a block of land adjacent to the Institute building at Calca. This land is privately owned, and the present fence should ultimately be realigned to conform with the boundary of the Section (Figure 11). An alternative approach which may be considered is that the Service arrange to purchase the area of land currently fenced within the park for formal addition to the park.

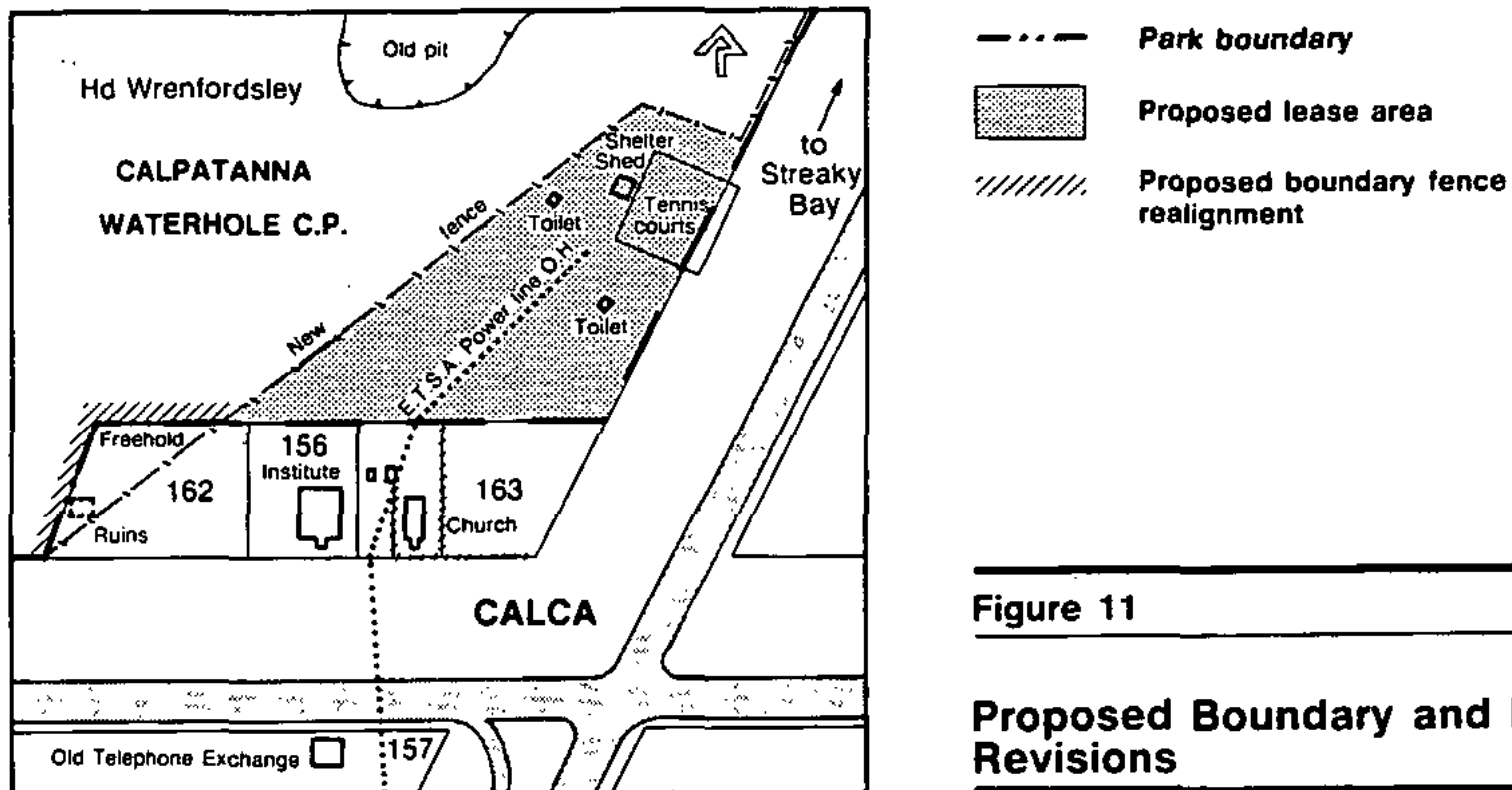


Figure 11

Proposed Boundary and Fencing Revisions

ADDITIONAL LAND

INCREASE THE CONSERVATION VALUES OF THE PARK AND THE REGION BY ACQUIRING, OR ENSURING THE CONSERVATION OF, SUITABLE LAND ADJOINING OR NEAR CALPATANNA WATERHOLE CONSERVATION PARK.

Substantial areas of native vegetation lie to the north and north-west of the park in the Hundreds of Forrest and Ripon. This vegetation, much of which appears to be in good condition, certainly contributes to the maintenance of plant and animal communities in the park. The conservation of these areas is therefore desirable in terms of enhancing the status of the reserve and ensuring that its conservation values are not diminished. However, it is most unlikely that these areas can be formally acquired as additions to the park. With the exception of relatively small areas which directly adjoin the northern park boundary, the most valuable areas occur within a mosaic of uncleared native vegetation and developed agricultural land which stretches westward to the coast.

This pattern is reflected, to a more limited extent, in the east where areas of native vegetation which have been degraded to varying degrees by grazing, extend in a discontinuous belt to the conservation parks of the central peninsula (Figure 1).

The majority of areas which have not been cleared in this region are of extremely limited agricultural potential due to the rocky nature of the terrain and are therefore unlikely to be considered for clearance for agriculture. Nevertheless, the role these areas play both in maintaining the viability of Calpatanna Waterhole Conservation Park and in contributing to the conservation of natural communities in the region needs to be recognised. Where appropriate, areas of native vegetation to the north, north-west, and to the east of the park should be retained.

MANAGEMENT ACTIONS

As a guide to the orderly application of the provisions of this plan, the actions required to implement the management proposals outlined in the previous section are summarised and ranked. This ranking indicates the relative priority of projects, and whether they are of a short-term or continuing nature. Those projects of a continuing nature will extend into the term of subsequent management plans for the park.

Project	Priority	Duration	Page
RESEARCH AND MONITORING			
. Record locations of survey cairns, original fencing, and other relics and sites of historic interest	Moderate	Continuing	59
. Undertake fauna survey of park	Moderate	Continuing	61
. Monitor the spread of pest plants (see Protection Management)	High	Continuing	57
. Investigate alternative methods for preventing the movement of kangaroos on to adjoining farm land	Low	Medium	58
. Monitor number of feral animals	Low	Continuing	54
. Monitor kangaroo numbers	Low	Continuing	58
. Monitor livestock incursions into park	Low	Continuing	57
. Monitor off-road vehicle use and shooting in park	Low	Continuing	61
. Undertake a spring botanical survey of the park	Moderate	Short	61
INFORMATION AND INTERPRETATION			
. Prepare a map and information leaflet for the park	Moderate	Short	61
PARK DEVELOPMENT			
. Investigate the feasibility of establishing a self-guided nature walk at Calpatanna waterhole and well (see also Access)	Moderate	Medium	61
. Remove rubbish from park	Moderate	Short	58
PROTECTION MANAGEMENT			
. Initiate the construction of a northern boundary fence and management track (see Land Tenures and Survey; Access)	High	Medium	57

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|--|----------|------------|----|
| . Install water tank near Calpatanna Well | Moderate | Short | 63 |
| . Maintain boundary fences | Moderate | Continuing | 57 |
| . Ensure that items of historic interest are not unnecessarily disturbed | Moderate | Continuing | 59 |
| . Prepare and implement weed control plan (see Research and Monitoring) | Moderate | Continuing | 57 |
| . Prepare and implement fire protection plan | Moderate | Short | 63 |

ACCESS

- | | | | |
|--|----------|------------|----|
| . Complete northern boundary park management access track (see Protection Management; Land Tenures and Survey) | High | Medium | 63 |
| . Maintain north-eastern access track to Wedina Tank for public use | Moderate | Continuing | 53 |
| . Maintain western perimeter access for management | Moderate | Continuing | 62 |
| . Investigate the feasibility of providing for pedestrian access to Calpatanna waterhole and well (see Park Development) | Moderate | Medium | 60 |
| . Close and rehabilitate internal vehicular tracks, and lock entry gates where necessary (see Research and Monitoring) | Low | Continuing | 61 |

LAND TENURES AND SURVEY

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|---|------|-------|----|
| . Initiate boundary survey and road reserve closures along northern park boundary (see Protection Management; Access) | High | Short | 57 |
| . Work with District Council of Streaky Bay and Calca Tennis Club to establish a long term lease over the tennis court area | High | Short | 64 |
| . Realign park boundary fence around Section 162 | Low | Short | 65 |