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GARDEN ESCAPES ON ROTTNEST ISLAND - AN ANNOTATED

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INTRODUCTION

Rottneest Island has a long history of European usage and settlement, and concurrent with this considerable changes have occurred to the flora of the island. Studies on the flora of Rottneest Island have concentrated on the native species; (a flora list by Storr, 1962; vegetation maps by Pen and Green 1983, White and Edmiston 1974, 1985). Only a brief report on declared or "troublesome" weeds (based on Storr's 1962 list) was given by Dean (1985) in the Management Plan for the island.

The Rottneest Island Terrestrial Management Workshop Proceedings (Rottneest Island Draft Management Plan, Vol. 2. page 5) recognised the need for further studies on the alien flora of Rottneest and recommended that an inventory of existing exotic species should be carried out and certain exotics removed.

Since the Department of Conservation and Land Management is to review the plan before the end of 1990, the author surveyed those exotics which are maintaining themselves outside the settlement but are not so widespread that control measures are impracticable. A list of shrubs, trees and other perennials in cultivation in the settlement area has been compiled and those species which have been previously noted (Keighery 1983) as capable of naturalising in Western Australia are considered in this report.

Dean (1985) considered 8 "weeds" in his report. One (*Orobanche australiana*) is a native parasitic herb. Three (*Asphodelus fistulosus*, *Trachyandra divaricata* and *Dittrichia graveolens*) are so widespread that control measures would be extremely expensive. Two (*Homeria miniata* and *Zantedeschia aethiopica*) are considered in this report. Two (*Oxalis pres-caprae* and *Carduus pycnocephalus*) have not been surveyed. The final species (*Gomphocarpus fruticosus*) was reported only from Pink Lake but the author found populations also at Sirius Lake, Garden Lake and Corio Swamp, suggesting that control measures should not be implemented before the full extent of this species is known.

MONOCOTYLEDONS

POACEAE

Cortaderia selloana (Schultes et Schultes) Asch. et Graeb. Pampas Grass is a serious weed of wetlands on the Swan Coastal Plain, the plant is present in several gardens in the

settlement, it should be removed and its future importation to the island banned before it can become established in similar areas on Rottneest.

Cynodon dactylon Pers. "Couch"

Common around the settlement, however, it is invading the succulent community bordering Government House Lake on the road to the airport.

Pennisetum clandestinum Hochst. "Kikuyu"

Common around the eastern end of Garden Lake, where it forms a "lawn".

Stenotaphum secundatum (Walt.) Kuntze "Buffalo Grass"

A aggressively spreading colony of this grass is found on the eastern side of Government House Lake beside the road to the Board's Maintenance Depot. This species has the capacity to smother native vegetation into which it is spreading, and should be removed as soon as possible. Both Kikuyu and Couch should be prevented from spreading until more active control measures can be instigated.

ARACEAE

Zantedeschia aethiopica (L.) Speng. "Arum Lily"

Clumps of this weed are growing in the overflow of the fountain on the eastern side of Garden Lake. It should be removed as the species is a declared noxious plant, and extremely poisonous.

AMARYLLIDACEAE

Leucojum aestivum L. "Snowdrops"

Clumps of this species are located at Garden Lake and Bathurst Point. The species is slow spreading and not invasive in nature.

Narcissus tazetta L. "Jonquils"

A large number of Jonquils are established in the cemetery and are spreading into the adjacent Tuart woodland. Initially the planning group considered removal of this bulbous weed, but the type of Jonquil naturalised there is an unusual 19th century cultivar (Keighery, 1983 and Keighery and Brighton 1982) probably dating from a grave planting. Hence this species has historical interest, and should not be removed, rather its rate of spread outside the cemetery needs to be monitored.

AGAVACEAE

Agave americana L. "Century Plant"

Two clumps of this species are established on the peninsula at the start of the causeway between Government House and Herschel Lakes and east of Government House Lake near the airport road.

Agave sp. (voucher G. Keighery 8137)

I currently cannot ascribe this population to any known species of *Agave*. It forms a large almost impenetrable colony between Garden and Hershel Lakes. A second clump is located in the settlement above Garden Lake.

Both *Agave* species are fire resistant and are spreading into bushland areas. The second species by its pungent hard leaves and location adjacent to the major access road between Longreach and Thompsons' Bay possess a threat to cyclists and pedestrians. Both should be removed and destroyed.

The existence of two distinct *Agave* species shows that several introductions of this succulent have occurred, the second never previously recorded as being naturalised in Western Australia.

IRIDACEAE

Homeria miniata Sweet. "Cape Tulip". Apparently decreasing around the settlement, but should be removed when located.

Ferraria undulata L.

A large population of this species exists at Bathurst Point, where it was also noted by Storr (1962). The spread of this bulbous weed should be monitored.

DICTYLEDONS

Fabaceae

Caesalpinia gilliesii (Hook.) Wall. ex Benth.
"Red-bird-of-paradise".

This ornamental species is commonly grown and is present in several Rottneest gardens. A large clump is established behind the Lighthouse Keepers' house at Bathurst Point, and seedlings are appearing in adjacent coastal heath. This species has become naturalised in semi arid regions of Eastern Australia, and should be removed from Bathurst Point.

EUPHORBIACEAE

Riccinus communis L. "Castor Oil Plant"

This extremely poisonous species is not mentioned by Storr (1962) but can be occasionally encountered on disturbed ground around the settlement. Currently the number of plants is increasing rapidly as the seed store increases. This species should be destroyed because of its toxic nature.

RHAMNACEAE

Rhamnus alaternus L.

Two plants of this species were found growing from dumped garden refuse on the eastern shore of Government house Lake behind the Board's Depot. This species is naturalised along the Harvey River and in Kings Park, where birds spread the species by transporting the fleshy fruits. Because of its known ability to naturalise use of this species as a garden subject should not be encouraged.

APOCYNACEAE

Nerium oleander "Oleander"

Commonly planted on access roads on the eastern margin of the island, there is little evidence of spread from the original plantings (probably as the species is already self sterile) except near the airport road. However the species is highly toxic to people and animals, and as noted in the Management Plan should be removed.

SOLANACEAE

Nicotiana glauca Grah. "Tree Tobacco"

This species is established within the settlement, and on the gold course, within this region it possesses little threat but it should not be allowed to spread beyond the settlement. Perhaps removal of all these plants should occur as the species has become widely naturalised on the mainland.

ASTERACEAE

Argyranthemum frutescens (L.) Schultz. Bip. in Webb. and Benth. "Shrubby Chrysanthemum"

This species is commonly grown in Rottnest Gardens. Several clumps were located on the cliffs near Bathurst Point and were removed. This species is naturalised on cliffs around the Swan River, and on the beachfront at Cottesloe. It is not an aggressive species, but should be removed where it is becoming established.

DISCUSSION

With over 200 species of shrubs and herbs cultivated within the settlement region on Rottnest, it is a tribute to the harsh environment of the island that so few garden escapes were recorded.

The areas most at risk are the margins of the fresh or brackish swamps, seepages and salt lakes where the effects of summer drought are lessened. Here any dumped garden refuse has a greater chance of establishing, especially grasses, succulents or bulbs. It is disturbing to note that garden refuse had been recently dumped on the northern margin of Government House Lake, along the track behind the Board workshop.

Three actions can limit the spread of weeds from the settlement area -

- 1) Prevention of dumping of garden rubbish in bushland areas, especially the sensitive areas mentioned previously.
- 2) Limiting soil removal from areas with infestations of bulbous weeds (eg Cemetery, Bathurst Point), as this is their major avenue of rapid spread.
- 3) Continual monitoring of the area of bushland adjacent to the settlement to ensure potential weeds can be removed at the initial establishment phase, before they become too numerous or widespread.

All of the above are not onerous in time or staff for the Department or the Board, compared to the cost in time and effort to remove or limit some of the species mentioned in this report at their current stage of spread from cultivation into the bushland.

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