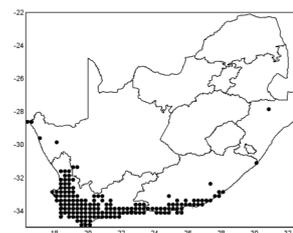


ARC-PPRI FACT SHEETS ON INVASIVE ALIEN PLANTS AND THEIR CONTROL IN SOUTH AFRICA

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PORT JACKSON is an evergreen willowy shrub or tree, which reaches up to ten metres high (i). Indigenous to South Western Australia, it was introduced into South Africa in 1848 to stabilise sand along roadsides and on dunes in a number of coastal areas. The tree does not have true leaves, but leaf-shaped stalks called phyllodes which are borne at an angle to the branch. The phyllodes are bluey-green, 1-5 cm wide and up to 20 cm long. Bright yellow globose flowers (ii), similar to South African acacias, are borne in bunches from August to November. These are followed by clusters of long, narrow, straight pods (iii). Each pod is 5 to 10 cm long and 5 to 6 mm wide, flat, with a constriction between the seeds, and about 20 seed per pod. Port Jackson is a category 2 declared weed in South Africa, and is only permitted in certain areas under controlled conditions.



THE PROBLEM

Since the bark of the tree is rich in tannin used for tanning leather, large plantations were planted on the Cape Flats in the Western Cape. However, when the tannins produced by the black wattle (*Acacia mearnsii* De Wild) proved to be superior, the Port Jackson plantations were neglected. It was also extensively planted in the Port Elizabeth area. This tree grows very rapidly and produces copious amounts of long lived seed. Since the plants have no natural enemies in this country, a large amount of seed remain dormant on the soil after burial by burrowing animals, or are washed down slopes or seasonal streams after rain. The trees are resistant to fire and felling - coppicing and regrowing rapidly afterwards - and fire actually stimulates germination of the seeds (iv), giving them an advantage over other plants. This results in dense thickets of Port Jackson which devalues the land and exclude almost all other plants, drastically reducing the biodiversity in the area.

THE SOLUTION

Mechanical and chemical control of Port Jackson is largely ineffective owing to the large seedbank that has accumulated over decades, as well as the tree's ability to coppice after fire or felling, unless well managed and with committed long term follow up operations. The only long-term, sustainable solution is biological control. The rust fungus, *Uromycladium tepperianum* (Sacc.) McAlpine, is extremely damaging to these trees in Australia, and was imported into quarantine in South Africa. After rigorous testing to ensure that the fungus was host-specific and would not affect any other plant, it was released on Port Jackson in 1987. Since then, the rust fungus has established successfully throughout the plant's range in South Africa, and is greatly limiting its spread. In addition a seed-feeding weevil, *Melanterius compactus* Lea, was released in 2001, and is being manually redistributed through the plant's range to reduce the amount of seed produced. The impact of biological control increases the effect and reduces the cost of mechanical and chemical clearing, provided these are correctly timed and that follow up operations are implemented over successive years. Restoration with perennial indigenous plants would suppress seed germination, and further aid control operations.



environmental affairs

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