Early intervention action on Canary Island St. Johns wort, *Hypericum canariense* L., in Victoria

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Summary  Canary Island St. Johns wort, *Hypericum canariense* L., has been assessed as a serious new environmental weed threat to Victoria. Overseas experience from similar Mediterranean climates shows the species to be a highly invasive weed. In Victoria, the two known incursion sites of this species have been treated and are being monitored. Feasibility of eradication is considered high. This paper will detail eradication strategies and site management.

Keywords  Canary Island St. Johns wort, *Hypericum canariense*, Weed Risk Assessment, eradication.

INTRODUCTION

*Hypericum canariense* L. (Clusiaceae), Canary Island St. John’s wort, is a multi-stemmed shrub between one and 5 m tall, with characteristic terminal clusters of bright yellow flowers. Flowering occurs from spring to early summer. Spread occurs via movement of seeds and via rhizomes. Seeds appear to have no particular adaptations for dispersal (Dlugosch 2003). Overseas reports on the impacts of *H. canariense* are disturbing. In California, it forms dense stands that displace virtually all lower storey species, including invasive species such as pampas grass, *Cortaderia jubata* (Lem.) Stapf, and native scrub vegetation such as *Baccharis* spp. and *Toxicodendron* spp. (Tu 2002). The rate of local spread is also cause for concern, as in California, infestations expand at a rate of 45 to 90 m a year (Tu 2002). In Hawaii, *H. canariense* is an emerging weed on Maui where it is considered a potential threat to Maui’s upland native vegetation (Starr et al. 2003).

DISCOVERY OF THE SPECIES IN VICTORIA

In August 2002, Michael Hansford of the then Department of Natural Resources and Environment (NRE) became aware of a small, naturalised population of *Hypericum canariense* in Victoria, as a result of liaison with the National Herbarium of Victoria. The location of the population was at Flinders on the Mornington Peninsula. At the time, the Flinders population was the only known record of the species in Victoria, apart from a specimen collected in 1947 from an apparent population, which has not been relocated since, in the Melbourne suburb of Black Rock (V. Stajsic pers. comm. 2004). Australia’s Virtual Herbarium (http://www.rbg.vic.gov.au/avh/) showed that elsewhere in Australia there were three records of occurrence of the species in southern Western Australia.

The invasive potential of the plant was assessed using the Victorian Pest Plant Prioritisation Process (VPPP) (Weiss and McLaren 2002). The VPPP is a Weed Risk Assessment (WRA) resulting in an ‘invasiveness score’. *Hypericum canariense* is considered ‘highly invasive’ (i.e. having a high rate of spread), according to the VPPP. It has the same invasiveness score as the noxious *Cynara cardunculus* L. (artichoke thistle), *Echium plantagineum* L. (Paterson’s curse) and *Senecio jacobaea* L. (ragwort). The second component of the VPPP involves predicting the plant’s potential distribution. The known locations of indigenous and naturalised infestations of *H. canariense* were overlayed on Victoria’s climatic regions using the CLIMATE® program. The resulting map (Figure 1) shows that the plant has the potential to invade significant parts of Victoria, with many coastal areas being particularly susceptible. Due to the above assessment results, action for eradication was immediately planned.

RESPONSE

An initial assessment of the Flinders infestation (on Crown Land) in September 2002 showed it consisted of mainly sparsely distributed *H. canariense* plants growing in about 5 ha of coastal native vegetation. The *H. canariense* plants varied in height from 0.5 to 3.5 m. The original source of the infestation was not apparent, as no plants could be seen growing outside the coastal reserve. The *H. canariense* plants appeared either as individuals or in ‘copses’ among the vegetation, sometimes emergent above other vegetation. Apart from a constructed walkway through the site, there appeared to be little human access because the site was mostly fenced, very steep, the vegetation very dense and virtually impenetrable in places. It was estimated that there were possibly about 4000 plants growing on the site. *Hypericum canariense* plants varied in height from 0.5 to 3.5 m. The original source of the infestation was not apparent, as no plants could be seen growing outside the coastal reserve. The infestation may have been present at the site for a long time and its spread from the site prevented by the inaccessible nature of the site.
The Committee of Management of the coastal reserve, the Mornington Peninsula Shire Council, was informed of the discovery of the incursion and that it was of statewide concern. It was then arranged that the incursion response would be coordinated by the Department of Primary Industries’ Weed Alert Rapid Response project.

**Treatment of the Flinders infestation** A treatment strategy was developed, based on limited available information on the control of this species. Two methods have apparently been used successfully. These were cut-stump herbicide treatment used in California (Tu 2002), and basal bark treatment used in Hawaii (P. Bily pers. comm. 2002). Foliar treatment was considered of limited use because many sparse-foliaged *H. canariense* plants were observed at the Flinders site, and there would be a risk of insufficient foliar uptake of herbicide. Therefore, cut-stump and basal bark were the methods chosen.

Contractors were engaged and required to undertake treatments in accordance with instructions. They were also required to wear disposable overalls and to clean their boots and equipment on departure from the site in order to reduce the risk of seed spread from the site. A search for outliers found only two plants that were growing outside the main infestation. These were promptly removed by cut-stump herbicide treatment and seed capsules on the plants were bagged and removed from the site for disposal.

The strategy for the main infestation was to treat the largest plants bearing seed capsules with cut-stump herbicide treatment, and collect and remove seed capsules from these plants. Remaining plants at the site were given basal-bark herbicide treatment and seed capsules were not collected. Seed was not collected from these plants because of the more difficult access to these plants, the labour intensive nature of seed collecting, and the fact that there would already be an existing seed bank, developed over many years, on the site. The management of the seed bank will be assisted by the strategic removal of seed from some plants on the site.

Future monitoring will result in treatment of any regrowth before it flowers and sets seed. Thus the existing seed bank will not receive new seed and will lose viability over time, leading to eradication of the species from the site. Critical to eventual eradication of the species from the Flinders area is that seed is not spread via soil from the site. To this end, it is important that there is continued communication with the Committee of Management of the coastal reserve to ensure that any activities on the site such as community revegetation or digging or disturbance of any kind are subject to strict hygiene protocols. These would include cleaning of any tools, boots, clothing, machinery and equipment before they are taken from the site.

**Surveillance** A ‘weed alert’ article featuring photographs of *H. canariense* was published in ‘Under
Control’ in December 2002 (Iaconis and Hansford 2002). The distribution of the photographs to ‘weeds-potters’ via the published article led to the discovery in January 2003 of a small infestation of *H. canariense* growing on a roadside at Drysdale on the Bellarine Peninsula. This discovery, consisting of approximately 20 plants of varying ages, represented the only other known naturalised occurrence of this species in Victoria. The Department of Primary Industries traced the source of the plants to a nearby garden planting and organised the removal of all the plants from the site and has continued to monitor the site for regrowth.

**Likely success of the eradication program in Victoria**  
No new infestations of this species have been discovered since the Flinders and Drysdale infestations. There still could be others to be found, but the lack of discovery so far is a hopeful sign that continued monitoring of the two known sites, undertaking any necessary action and maintaining site hygiene will lead to the successful eradication of naturalised populations of this species from Victoria.

However, new naturalised populations may result from unknown plants in cultivation or from plants being traded via the nursery industry. The species is apparently not commonly available from nurseries, but it is not declared under Victorian legislation. Therefore, trade and distribution of the species via the nursery industry is not prohibited, and may be occurring to a small extent. Any further distribution or planting of this species in Victoria will increase the risk of new infestations establishing and make complete eradication from Victoria more difficult.

**ACKNOWLEDGMENTS**

We thank Bill Mallinson (Mornington Peninsula Shire Council) for his interest and support of the eradication program, and Steve Smithyman (Swan Bay Integrated Catchment Committee) and Donna Smithyman (Department of Primary Industries) for finding and treating the Drysdale infestation. We also thank Sandy Lloyd and Rod Randall (Department of Agriculture Western Australia) for providing information on the species, Pat Bily (The Nature Conservancy of Hawaii) for information on control in Hawaii, and Val Stajsic (National Herbarium of Victoria) for advice on the 1947 collection of *Hypericum canariense.*

**REFERENCES**


