

POTENTIAL MOVEMENT OF GLYPHOSATE AND METSULFURON METHYL RESIDUES IN COASTAL SAND DUNES

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The herbicides Roundup® (glyphosate) and Brush-Off® (metsulfuron methyl) have been applied to test sites on coastal sand dunes in the Jervis Bay National Park since 1985 to control bitou bush (*Chrysanthmoides monilifera* subspecies *rotundata*). The experiments have shown that aerial applications of 1-2 L of Roundup® per hectare or 15-30 g of Brush-Off® per hectare are effective but test sites at Berwherre Beach were also treated by high pressure hand spraying at concentrations of up to ten times those applied from the air. There is concern that residues may leach towards the water table in permeable dunes.

We describe work in progress on a pilot scale to characterise and model seasonal variations in soil moisture at the test sites. Neutron probe measurements between November 1992 and March 1993 show that the profile from 10-150 cm depth has become uniformly drier, reflecting the generally uniform lithology of the dunes. Thin peat and clay layers at one site increase moisture retention. The rapid infiltration of water from a single rainstorm on 12 March 1993 has been followed with the probe.

The next phase of the study will incorporate modelling of the observed moisture profiles with the SWIM package. The soil profile will be sampled at the sites for the concentration of adsorbed herbicide and the risk of leaching in coastal dune systems assessed with SWIM and simple, one-dimensional transport models as an integral part of bitou bush control.

DISTRIBUTION OF BRIDAL CREEPER (*MYRSIPHYLLUM ASPARAGOIDES*) IN WESTERN AUSTRALIA

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Bridal Creeper (*Myrsiphyllum asparagoides*) is an environmental weed of significance in south-western Australia. The weed is spreading rapidly through important bushland of high conservation value on roadsides, farmland and public reserves. Surveys were started in 1990 to establish the extent of infestation. The plant is widespread and was found by the first author at over 90 localities, spread throughout the middle and lower south west. The Department of Conservation and Land Management has recorded bridal creeper for most coastal National Parks in south-western WA, from Yanchep, north of Perth to Israelite Bay east of Esperance. Historical records and current infestations are often isolated indicating colonisation of comparatively recent origin. Plant populations are often centred on towns indicating that humans are a major source of initial spread. Birds are considered important in spreading bridal creeper to isolated conservation areas. Control options being considered for bridal creeper include herbicide treatments and the introduction of biological control agents. The weed is being considered for proclamation as a noxious weed in south western WA.