

Using detection dogs to assist weed eradication in conservation areas

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Summary Eradication is a cost-effective management objective at the early stages of weed invasions. However, timely interventions that allow successful eradications can be challenging and resource intensive. Characteristics of the target species and the invaded environment can impact on the ability to delimit the infestation or to detect every plant within the infestation, both of which are critical for eradication. In New South Wales, Australia, we are attempting eradication of mouse ear (*Hieracium pilosella* L.) and Orange hawkweed (*Hieracium aurantiacum* L.). Invaded plant communities include tussock grasslands and heathlands, where hawkweed plants can be difficult to detect among dense vegetation. Additionally, small non-flowering hawkweed rosettes can be difficult for humans to distinguish visually. Thus, traditional human surveillance requires extensive time and resource allocation. To improve detection speed and accuracy, we are using scent detection dogs to complement

human surveillance. Over a two-year period, two spaniels were trained to successfully detect hawkweeds in field environments. One dog has also been trained to detect alligator weed (*Alternanthera philoxeroides*), and has successfully identified plant fragments in aquatic and streamside vegetation. This presentation outlines the use of these 'weed eradication detector dogs' and discusses: i) dog training procedures and field trials, including challenges related to biosecurity and presenting the correct target scent to dogs, ii) factors contributing to dog detection ability, including weather, terrain, and handler skills and ability, iii) the unexpected benefits of extensive media interest, and iv) the costs, benefits and challenges of implementing detector dog surveillance to improve weed eradication efforts.

Keywords Weed detection dog, eradication, hawkweed, alligator weed.