Recent advances in field releases of environmental weed biocontrol agents

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Summary The typical goals of biological control (biocontrol) programs for environmental weeds are to improve biodiversity and environmental benefits at site and landscape scales and reduce or eliminate the need and/or frequency of non-biocontrol weed management tactics. Since 2016, the NSW Environmental Trust ('The Trust') has supported an on-going research project for the biocontrol of environmental weeds that impact NSW. The project is overseen by a consortium of CSIRO (project lead), NSW Department of Primary Industries and NSW Department of Planning and Environment, and involves other research providers from Australia or overseas as required. The project has focused on previously identified, promising biocontrol agents for priority weeds, which have potential for use in Australia, but require additional research to demonstrate their safety before an application for their release in Australia can be submitted to the relevant authorities. In this poster, we present an update on the current subprojects that target environmental weeds for which biocontrol agents have recently been approved for release into the Australian environment: the smothering, shade-tolerant herb wandering trad (*Tradescantia fluminensis*) with a leaf-smut fungus (*Kordyana brasiliensis*); the coastal dune herb sea spurge (*Euphorbia paralias*; Euphorbiaceae) with a foliar blight fungus (*Venturia paralias*); the large, thorny shrub African boxthorn (*Lycium ferocissimum*; Solanaceae) with a rust fungus *Puccinia rapipes*; the invasive cactus Hudson pear (*Cylindropuntia pallida*; Cactaceae) with the cochineal insect agent *Dactylopius tomentosus* ('*californica* var. *parkeri'* lineage); and the emergent aquatic weed sagittaria (aka delta arrowhead, *Sagittaria platyphylla*, Alismataceae) with the fruit-feeding weevil *Listronotus appendiculatus*. The poster will summarise progress made to date with culturing and mass-releasing each agent into the Australian environment, and will be accompanied by leaflets with background information on biocontrol agent research and advice on how interested stakeholders can participate in release programs. Representatives from some of the subprojects will be in attendance to meet and greet with interested participants.

Keynotes Biological control, environmental weeds, prioritization, New South Wales