

## An integrated view of the invasive *Acacia longifolia* (Andrews) Willd. in Portugal: from impacts to biocontrol

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**Summary** More than ten species of Australian wattles are invasive in Portugal. Amongst them, Sydney golden wattle (*Acacia longifolia* (Andrews) Willd.) is one of the worst invasive plants in coastal areas. In these areas, *A. longifolia* drastically transforms dune ecosystems. Mechanical and chemical control methods in use are very expensive and frequently unsuccessful, due to the persistent, long-lived seed-bank accumulated in the soil. The biocontrol agent *Trichilogaster acaciaelongifoliae* Froggatt targets reduction of *A. longifolia* seeds and has been successfully used in South Africa. This agent presents a potentially good alternative option for the control of *A. longifolia* in Portugal. Specificity tests, using 40 non-target plant species, indicated that *T. acaciaelongifoliae* would be a safe biocontrol agent. Oviposition in non-choice

tests was detected in three non-target species but subsequent trials involving potted plants and surveys in the field (in Australia and South Africa) showed that galls only developed on *A. longifolia*. These promising results encouraged an application for its release in the wild in Portugal, back in 2011. Afterwards, the permit to release this agent was granted in July 2015 and in November 2015 the first insects were released in the wild. Impacts measured showed changes in native plant communities, alteration of soil ecology and impoverishment of interaction networks of plants and associated gall communities. The first results of biocontrol process will be also presented.

**Keywords** *Acacia longifolia*, impacts, biocontrol, Portugal, dune ecosystems, *Trichilogaster acaciaelongifoliae*.