Potential for the Biological Control of

*Crassula helmsii* in the U.K.

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Abstract

*Crassula helmsii* (Kirk) Cockayne, also known as Australian swamp stonecrop or New Zealand pigmyweed, is native to Australia and New Zealand as the common names suggest. Since being introduced to the UK in 1911 as an ‘oxygenating’ plant for garden ponds, it has been gradually increasing its range both in the UK and parts of Europe by escaping gardens and through incorrect disposal by aquarium and pond owners. It has now spread to at least 2000 sites in the UK, particularly threatening conservation sites that are home to rare and endangered organisms. With no dormant period and a high tolerance to a range of temperatures, it can dominate static and slow moving water bodies, as well as bank sides, growing in dense mats as an emergent, submerged or terrestrial form. Once established its impacts can be serious; affecting native biodiversity and impeding water flow. With limited possibilities for chemical control in the EU and the plant’s ability to re-grow from fragments as small as 1cm, this weed is particularly difficult to manage. An estimation of the cost of treating 2000 infested sites was estimated to be between €5.8 - 12 million. Little is known of the natural enemy complex on *C. helmsii* populations in the native range, so CABI and collaborators initiated scoping surveys in New Zealand and Australia in 2009. Despite the limited nature of the initial surveys, considerable pathogen and herbivore damage were observed, revealing an assortment of natural enemies associated with this weed. The discovery of two highly damaging stem-mining weevils that were previously unrecorded, suggests more species may be identified in the native range in following future surveys. The discovery of additional natural enemies, to those specified in the literature, bodes well for the future biological control of this species.