

Controlling New Zealand pygmyweed *Crassula helmsii* using hot foam, herbicide and by burying at Old Moor RSPB Reserve, South Yorkshire, England

Bridge T.

Royal Society for the Protection of Birds, The Lodge, Sandy, Bedfordshire SG19 2DL, UK

SUMMARY

Three methods of New Zealand pygmyweed *Crassula helmsii* control were undertaken: using 'Waipuna' hot foam, spraying with Glyphos bioactive, and by smothering and burying. Spraying with either 'Waipuna' or Glyphos killed 50% of the *Crassula* but did not eradicate it. Smothering and burying killed all plants (100% mortality) but proved very labour intensive and caused much disturbance.

BACKGROUND

In the UK, New Zealand pygmyweed *Crassula helmsii* is an introduced aquatic plant found inhabiting the margins and shallow waters of freshwater lakes and ponds. In some areas it is highly invasive and it out-competes many native plant species by forming dense smothering mats of vegetation.

When the Royal Society for the Protection of Birds (RSPB) became involved with the management of a newly acquired site in 2003, Old Moor in Yorkshire, northeast England, *Crassula* was already present and had probably been so for about 10 years. On the main part of the site it was found in every water body and was continuing to spread to the detriment of native plants and other wildlife. It was decided that action needed to be taken to control, and if possible, eradicate the *Crassula*.

ACTION

Site and commencement of control measures: Old Moor RSPB Reserve is one of the RSPB Dearne Valley reserves located in South Yorkshire, northeast England. It has a mix of habitats including open water, marsh, reedbeds and grassland. In March 2003, three methods to keep *Crassula* under control commenced in the most worst infected areas:

Spraying with 'Waipuna' hot foam:

Biodegradable Waipuna hot foam was sprayed three times about one month apart in September, October and November 2003. Waipuna is a biodegradable organic compound of coconut and corn sugars. Applied as a hot foam, the solution holds in the heat to break down the cellular structure of the plant. The foam dissipates within minutes and results can be observed within hours of treatment.

Spraying with Glyphos bioactive:

Exposed *Crassula helmsii* was sprayed on a 'wader scrape' in July and August 2004 with Glyphos bioactive at 5 L/ha. The weather was good (i.e. no rain to wash off the herbicide) during and after the treatment.

Smothering and burying:

In March 2003, black plastic was laid over areas of *Crassula* and topped with about a metre of soil.

CONSEQUENCES

Spraying with 'Waipuna' hot foam: This produced a 50% kill rate; killing the top layer of the plant. However, the *Crassula* was so dense that even with two or three treatments all that was achieved was stopping its spread rather than eradicating it.

Spraying with Glyphos bioactive: Spraying *Crassula* with Glyphos bioactive had a similar effect to spraying with 'Waipuna', with an

approximate kill of 50% over areas where it was applied.

Smothering and burying: This achieved a 100% kill rate but is not a feasible method to employ across the rest of the site as it is very labour intensive and causes much disturbance.

Conclusions: There were no detrimental effects noted upon non-target plant species resulting from spraying with foam or herbicide. However it should be noted that there was little or no vegetation present other than *Crassula* in sprayed areas prior to treatment. The advantage of the Waipuna system (see: www.waipuna.com) is that it is

not weather dependent and can be used in breezy conditions and light rain. Unlike herbicide treatments there is no requirement for special safety equipment. The foam can be applied with accuracy and without damage to adjacent plants. It is also non-toxic to mammals, birds, insects and other wildlife.

REFERENCES

Waipuna organic hot foam weed control system. www.waipuna.com