

Environmental Management at Copping Refuse Disposal Site

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Background

Since spring 2010 environmental weeds have been managed at the Copping Refuse Disposal Site annually. Within two years all known populations had primary control conducted and populations were reduced to regrowth and germinating seedlings. Weeds treated include gorse (*Ulex europaeus*), Spanish heath (*Erica lusitanica*), pampas grass (*Cortaderia selloana*), and serrated tussock (*Nassella trichotoma*). All environmental weed sites have since been visited annually and been re-treated.

In January 2013 the Copping Tip was burnt by a bushfire that affected the entire property.



Photo1: Main serrated tussock site after the bushfire. February 2013

Due to the diversity of weeds present on the property, and a lack of competition, conditions were ideal for environmental weeds. Management was adapted accordingly. A large serrated tussock population across a hillside had been a prime focus of management since environmental work commenced. The site is difficult to access, the population is a dense monoculture, and stretches over several acres.

Shortly after the bushfire, a competitive cover crop of rye corn was sown. Rye corn is an aggressive grass, producing sterile seed and provides competition to germinating serrated tussock seedlings as well as erosion control. Positive results were apparent.



Photo 2: Rye corn competition sown after the bushfire

2015 Site Management

Environmental Weeds

In 2015 all environmental weed sites were revisited and treated where necessary. In general, germination and number of plants has been the lowest since environmental management commenced.

Gorse

A substantial amount of gorse seedlings were treated, and several outlier plants were spotted and treated.

Spanish heath

A substantial amount of flowering Spanish heath plants were treated along the boundary fence of the tip face. The Spanish heath population in and around the old quarry behind the rifle range was minimal and very few plants had germinated and required treatment.

Pampas

No Pampas grass plants were found.

Serrated tussock

Serrated tussock germination was patchy and varying in density. Overall, population density has decreased remarkably. Areas of no or very few serrated tussock plants were more common than areas populated by germinated serrated tussock plants. There were no mature plants present at any sites. All infested sites were treated with Flupropanate.

The area of infestation of the main population has increased after the bush fire. Dense germination of silver wattle (*Acacia dealbata*) is providing competition and has created a border around the serrated tussock population inhibiting further extension of the population. The serrated tussock population will decrease naturally over coming years due to natural competition.



Photo 4: Acacia dealbata establishment 2014

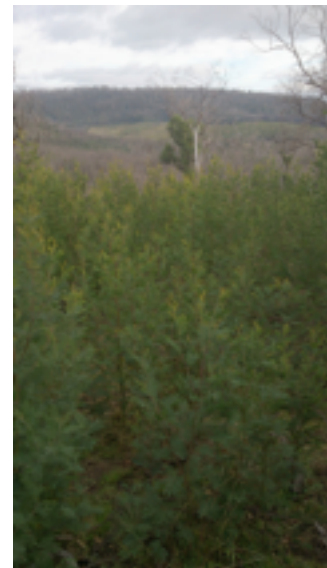


Photo 5: Acacia dealbata establishment 2015

Revegetation

3000 *Poa labillardieri*, and 80 *Allocasurina verticillata* were planted in June 2015. Planting of *Poa labillardieri* was concentrated across exposed bare areas, while *Allocasurina verticillata* was extended across the hill.



Photo 6: *Allocasurina verticillata* planting



Photo 7: Tree and shrub revegetation across the hillside



Photo 8: Establishing of native grasses on exposed areas



Photo 9: High success rate of the 2014 planting

Success rate of the 2014 planting was above 95%. Annual planting of native vegetation will provide competition in the future, and shade out and outcompete serrated tussock entirely in the long run.

Future Management Recommendations

Environmental management at Copping has been very successful. The effects of the bushfire on the weed population were largely unpredictable. However, concentrated management approach after the bushfire has accelerated success rates. The main serrated tussock population, that once was a dense monoculture, is now a revegetation site sparsely populated by serrated tussock.

Establishment of densely planted native vegetation provides good competition, and natural germination of *Acacia dealbata* provides a natural border, as well as competition. As rye corn has proven to be a good competition after the bushfire, a competitive cover crop will be sown in the spring of 2015.

2016 will require similar management as in 2015. Revegetation of the main serrated tussock site will require to be continued, and serrated tussock will require spot treatment with Flupropanate.

Some areas at Copping are populated by horehound (*Marrubium vulgare*), a common coexistence with serrated tussock at exposed hill sites. In past years, horehound has been left untreated to provide some competition, however serrated tussock numbers have decreased significantly, and horehound management may commence in 2016.

Several populations of Californian thistles (*Cirsium arvense*) were noticed in 2015. Californian thistle is an ever increasing environmental threat in Tasmania and spreads vegetatively, hence its less common name, creeping thistle. Control of Californian thistle may commence in the spring of 2016.

Further observations on granular Flupropanate were gathered during 2015, however further questions have been generated and there is no clear result on granular flupropanate use versus liquid flupropanate use. Further observations will be gathered by winter 2016, with the long term aim of a report comparing effectiveness of the two different application methods.