

Alligator Weed Control 2005/2006



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Table of Contents

1	Introduction	1
2	Alligator Weed Control 2005/2006	1
2.1	Waikato West Area	1
2.1.1	Waikato River delta (referred to as site 1 under resource consent 112000)	1
2.1.2	Albie Philips Reserve, Port Waikato (site 3)	3
2.1.3	Waikato River (site 2)	3
2.1.4	Kariotahi Beach (site 4)	4
2.1.5	Lake Whangape and Whangape Stream (sites 8 & 9)	4
2.1.6	Tuakau Oxidation ponds (site 6)	5
2.1.7	Ake Ake Drainage area (site 7)	5
2.1.8	Pukekawa	5
2.1.9	New Sites – Waikato West	5
2.1.10	Wattle Road, Te Kauwhata	5
2.2	Waipa/Waikato East Area	5
2.2.1	Te Rore (site 12)	5
2.2.2	Cambridge	7
2.2.3	Orongo	7
2.2.4	Te Aroha	7
2.2.5	Kihikihi	7
2.2.6	New sites – Waipa/Waikato East	7
2.3	Coromandel Area	9
2.3.1	Hikutaia	9
2.4	Hamilton Area	9
2.4.1	Restricted Places	9
2.4.2	New Sites - Hamilton	11
2.5	Surveillance	13
2.5.1	Monitoring	14
2.6	Alligator Weed Awareness	19
2.7	Resource Consent Notifications	19
2.8	Alligator Weed Control Programme 2006/2007	20
2.9	Alligator Weed Management	21

List of Figures

Figure 1:	Aquatic alligator weed at ‘the delta’	2
Figure 2:	‘The monitoring vessel’	2
Figure 3:	Early morning at the delta – often the best time for aerial spraying	3
Figure 4:	Large patch found during aerial survey	3
Figure 5:	Spraying a riverside site	4
Figure 6:	Lake Whangape infestation 2003	4
Figure 7:	Lake Whangape 2006 – small patches	5
Figure 8:	Alligator weed infestations mapped on the Lorimer property	6
Figure 9:	Alligator weed infestation on a Ohinewai farm	8
Figure 10:	Before and after control of alligator weed at Morrinsville	8
Figure 11:	Before treatment and after treatment of alligator weed at Hikutaia	9
Figure 12:	Somerset 2004 (top) and 2006 (bottom)	10
Figure 13:	Alligator weed discovered at Il Villaggio 2005	12
Figure 14:	Il Villaggio November 2006	12
Figure 15:	Restricted Place Kluesken’s, now HCC owned	13
Figure 16:	Frame used for measuring plots	18
Figure 17:	Alligator weed measurements on Hill property	19

List of Graphs

Graph 1: Alligator weed percentage cover	14
Graph 2: Alligator weed at Orongo	17

1 Introduction

Prior to 1990 there were two small infestations of alligator weed known in the Waikato Region, one on land at Orongo near Thames and the other a very small infestation in a small wetland area on the outskirts of Te Aroha. By 1990 the Orongo infestation was thought to be eradicated. In 1990 alligator weed was discovered on the lower Waikato River. Although control work began at this time, by 1999 it had spread further upriver and had also been discovered in Hamilton city. In 2003 it was discovered in Lake Whangape, and in 2003 in a wetland area and in paddocks on two dairy farms at Te Rore. Since 2004 several new infestations have been found throughout the region. See Environment Waikato Technical Report 2005/38.

A new Resource Consent allowing aquatic alligator weed to be controlled as needed at known sites using the herbicide metsulfuron was approved in March 2005. This has resulted in improved alligator weed control at many sites. As part of the reporting requirements of Resource Consent 112000 a report on the effectiveness of control is required annually. This report is to fulfil this requirement and also includes a summary of control at all other sites.

2 Alligator Weed Control 2005/2006

Past experience shows that to achieve significant sustained reductions in alligator weed several herbicide applications are required each year. Due to the large increase in the number of alligator weed sites in the last couple of years and the subsequent increase in work-load for BPPC's (Biosecurity Plant Pest Contractors), the Biosecurity group decided to contract some control work directly to a spray contractor. Turf Works Ltd have a short term contract to carry out direct control of most Hamilton city residential sites and smaller sites in the Waipa/Waikato East contract area.

2.1 Waikato West Area

The Waikato West plant pest contract area has ten alligator weed sites, both aquatic and terrestrial, including the Waikato River delta area, the Waikato River and Lake Whangape. Several of these sites involve a number of properties, e.g. several properties adjacent Lake Whangape and Whangape Stream have significant infestations.

2.1.1 Waikato River delta (referred to as site 1 under resource consent 112000)

The Waikato River delta alligator weed site is the largest site and one of the most difficult to manage due to site characteristics. Low tide exposes alligator weed which is inaccessible at high tide and dictates when much of the control work can be carried out. Gun and hose work is often dirty and difficult because of the wet muddy soils and silt of the islands. The Waikato River delta infestation consists of alligator weed scattered across an area of approximately 200 hectares with the weed present on islands, along the River banks and as floating vegetation in the water.

To ensure control has been effective and an efficient use of resources, the focus has been to concentrate on particular areas and carry out extensive control in these areas while 'holding' infestations in other areas to reduce further spread. Control has consisted of both aerial herbicide application and gun and hose application from an airboat. Aerial work was carried out in November 2005 and August 2006. Approximately 70 hectares have now been treated aurally, mainly in the reed bed areas, but also down as far as Maioro Bay in the south west. Handgun spraying from the airboat was used to treat small amounts of regrowth that occurred after aerial treatments. Handgun spraying was also carried out at the Narrow Island, Hoods

Landing, Main Island. Holmes Canal , Trig and the Elbow areas. Airboat treatment was carried out for a total 45 days for the 2005/2006 control season.

Phil Mabin carried out direct control of alligator weed on land adjacent the River. Most sites received one application of herbicide. To enable more intensive control of these sites, it is intended to contract a 'dedicated' spray contractor for the work in the 2006/2007 year.

Monitoring of the vegetation plots established the previous year continued in the 2005/2006 year. See monitoring section.



Figure 1: Aquatic alligator weed at 'the delta'



Figure 2: 'The monitoring vessel'



Figure 3: Early morning at the delta – often the best time for aerial spraying

2.1.2 Albie Philips Reserve, Port Waikato (site 3)

A relatively small infestation, alligator weed present in the Albie Philips drain and in adjacent grazed paddocks consists of small scattered patches. This area was sprayed using a hand gun application in March 2006.

2.1.3 Waikato River (site 2)

Scattered patches of alligator weed are present on the Waikato River between Ohinewai and the delta. In October 2005 a new infestation beside the River, adjacent to the Meremere speedway was found and treated. An aerial survey was carried out in November. Fifty alligator weed sites were found and treated along the River during March and April.



Figure 4: Large patch found during aerial survey



Figure 5: Spraying a riverside site

2.1.4 Kariotahi Beach (site 4)

Kariotahi Beach was monitored in April 2005. No new sites were found. Only small amounts of regrowth were found and these were treated with Escort.

2.1.5 Lake Whangape and Whangape Stream (sites 8 & 9)

Alligator weed at Lake Whangape has been reduced from large floating mats when first discovered, to small scattered patches in 2005/2006. Control work on the Lake is hampered for much of the year due to extremely high levels of toxic algae or high water levels. Monitoring and surveillance of Lake Whangape and surrounding land was carried out in November and March, followed by aerial spraying of the Lake and spot spraying of adjacent land, also in March.



Figure 6: Lake Whangape infestation 2003



Figure 7: Lake Whangape 2006 – small patches

Monitoring and spraying of alligator weed in Whangape Stream was carried out in March. More alligator weed was on adjacent land than has previously been found.

2.1.6 Tuakau Oxidation ponds (site 6)

Annual control has been carried out by Fulton Hogan contractors under the direction of Franklin District Council.

2.1.7 Ake Ake Drainage area (site 7)

Good control is being achieved by the drainage board's regular maintenance programme.

2.1.8 Pukekawa

No alligator weed was found in this site. Monitoring will continue to ensure any reappearance of alligator weed is controlled.

2.1.9 New Sites – Waikato West

2.1.10 Wattle Road, Te Kauwhata

Suspected alligator weed on a dairy farm at Te Kauwhata was reported in December 2005 and confirmed by Philip Mabin. The close proximity of this property to Whangamarino wetland is a concern, however, surveillance was carried out and the infestation found to be confined to a few small patches in one paddock with no alligator weed found in any drains or streams on the property. The infestation possibly established from maize bought onto the farm from a riverside property on Churchill Rd, however, no alligator weed has been found on the Churchill Rd property. EW's PPC has carried out direct control with good reductions in the weed achieved.

2.2 Waipa/Waikato East Area

The Waipa/Waikato east plant pest contract area has twenty alligator weed sites. Prior to 2004 there were two infestations in the area. Eleven new sites were found in the 2005/2006 year. Most infestations in the area are terrestrial but cover a range of property types, including urban, lifestyle residential, crop, drystock and dairy farm land. Two sites, Te Rore and Te Aroha, are wetland sites and control of alligator weed at the Te Rore site is carried out under resource consent. Excellent records of all activity related to these sites are maintained by the PPC's in the BIS database.

2.2.1 Te Rore (site 12)

The Te Rore wetland area was treated aerially with metsulfuron in October 2005 and April 2006. Areas around the wetland and on banks above the screen were also treated with metsulfuron in April. A comprehensive survey for terrestrial alligator weed was carried out over the Lorimer property in February 2006. Alligator weed was found to be scattered at mostly low density over large parts of the farm. It appears to have been

spread by a range of factors including flood and movement by cattle and machinery. Turfworks sprayed accessible terrestrial infestations with Tordon brushkiller in March and May 2006 using boom sprayer and handgun. Also in May, wetter paddocks where land-based treatment was impractical were aerially treated with Tordon brushkiller.

In addition to spray work, drainage work and clearance of willows was carried out in the wetland area using a digger in March 2006. Chris Hale spends a considerable amount of time on managing the Te Rore infestation including arranging aerial spraying, notification of neighbours, liaise with owners, sharemilker and Turfworks. All actions and visits are recorded by Chris Hale in EW's Biosecurity Information System (BIS).

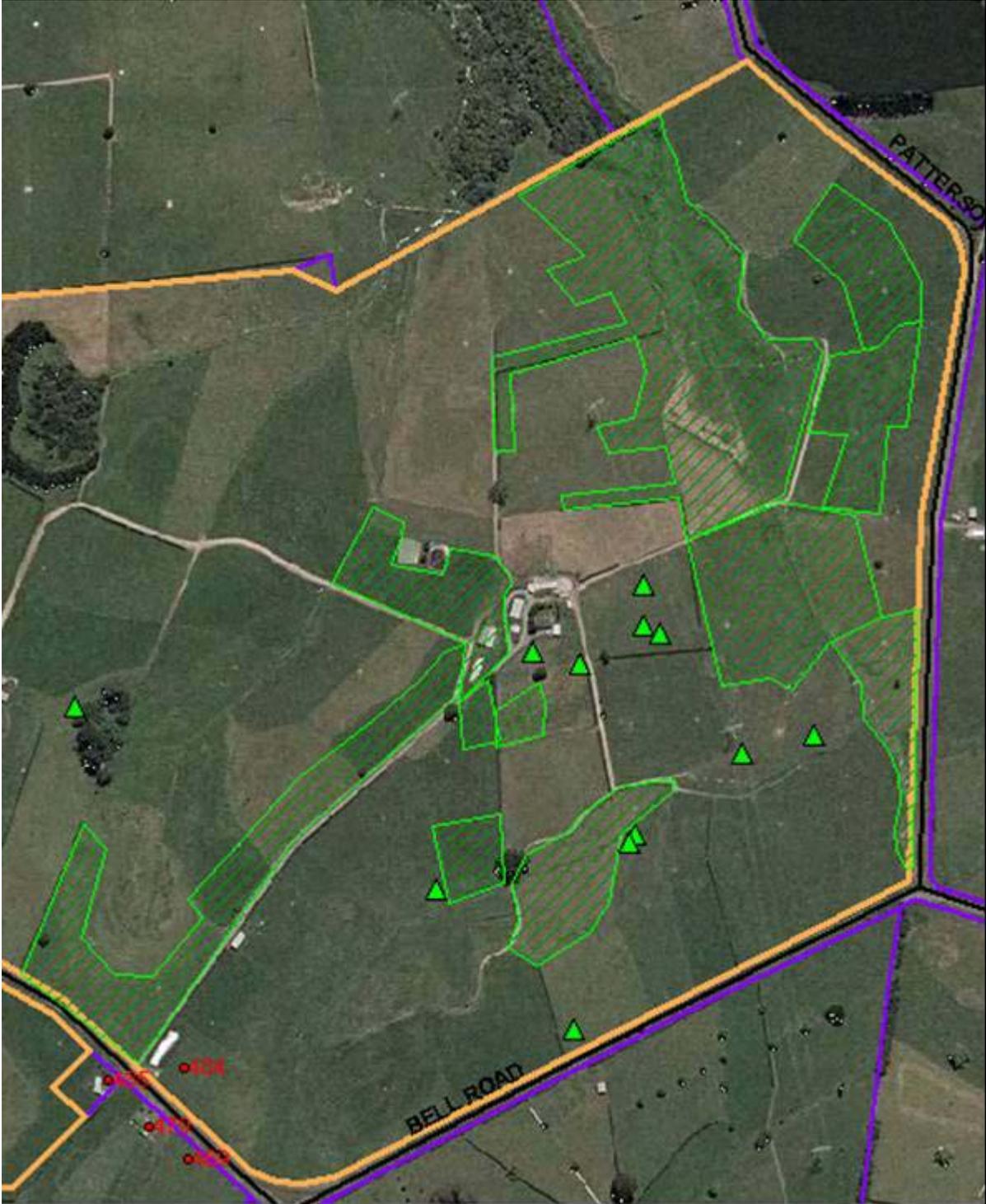


Figure 8: Alligator weed infestations mapped on the Lorimer property

2.2.2 Cambridge

Turfworks carried out broadcast spraying in October 2005, January and March 2006 using metsulfuron/glyphosate. Chris Hale followed up in April, spraying an area that was missed in March. Good control has been achieved.

This site is considered a high risk site and is a Restricted Place. The owners plan to develop as a subdivision. Initial works have been carried out on adjacent land and this site has been fenced to protect from inadvertent spread of the weed by machinery working adjacent.

Chris Hale and Heidi Pene set up monitoring plots at this site the previous year and carry out measuring and recording of results. See monitoring section.

2.2.3 Orongo

Monitoring plots were established at the Orongo site in 2003 and alligator weed has been measured at least twice each year since. See monitoring section.

Tordon brushkiller and metsulfuron have been used for comparison at the Orongo site. The site received three applications of herbicide over the control year and there has been a significant reduction in alligator weed since control work began.

2.2.4 Te Aroha

Control at this small site is being carried out by EW Te Aroha works staff and checked annually by BPPC. Checked in March 2006 and good control was noted.

2.2.5 Kihikihi

Sprayed twice by Turf Works. Very little alligator weed visible when checked in August 2006.

2.2.6 New sites – Waipa/Waikato East

New infestations of alligator weed in the Waipa/Waikato East area were confirmed as follows:

- Ohinewai – one infestation on two rural properties. Alligator weed is in paddocks and in a farm drain. A resource consent was obtained to enable metsulfuron to be used on aquatic alligator weed. This infestation may have established from a kumara planting in the paddock several years ago.
- Seven other infestations were confirmed over the summer of 2005/2006. Several were reported as a result of media coverage and advertising. The infestations are widely dispersed across the contract area and include sites at Morrinsville, Hinuera and Te Pahu. Most appear unrelated and it is not certain how they originated. Three were discovered after tracking soil movement related to a new reported site at Matangi. Hamilton infestations were also tracked from this soil movement. Some of the infestations have been established for several years and are expected to take several years to reduce to zero density. Good reductions have been achieved after initial control but regular follow-up is expected to be necessary. Infestations were controlled by Ben Parry, EW student and Turf Works.



Figure 9: Alligator weed infestation on a Ohinewai farm



Figure 10: Before and after control of alligator weed at Morrinsville