



sea-spurge-factsheet.pdf

Sea Spurge (*Euphorbia paralias*) Annual Operational Report 2014/15



Prepared by:

Darion Embling

Waikato Regional Council

Table of contents

1.1	Introduction	5
1.2	Aotea sea spurge control 2014/15	7
	Site Visit – Wednesday 17 September 2014	8
	Site Visit – Friday 16 January 2015.....	9
	Site Visit – 1 May 2015	12
1.3	Surveillance – Delimiting Survey.....	13
1.4	Additional Survey.....	18
	Te Motu Island, Kawhia boat survey	18
	Coastal aerial survey for alligator weed and sea spurge	19
1.5	Risks, issues and recommendations	19
	Risks and issues to operation success.....	19
	Recommendations	19
	Acknowledgments.....	20

Figures:

Figure 1:	Location of the sea spurge infestation at Aotea Harbour.....	6
Figure 2:	Showing flotsam and jetsam and debris at Aotea site – June 2012	7
Figure 3:	Sea Spurge Delimiting Survey 2014/15 – Aotea and Kawhia Harbours.....	16
Figure 4:	Sea Spurge Delimiting Survey 2015/15 - Ruapuke Beach and Schnackenberg Bay.....	17
Figure 5:	Te Motu Island, Kawhia	19

Photos:

Photo 1:	Site inspection 17 September 2014. Overgrown vegetation.....	8
Photo 2:	Site inspection 17 September 2014	9
Photo 3:	Grass covering the sea spurge site.....	10
Photo 4:	May site inspection showing debris through the site.....	12
Photo 5:	Schnackenberg Bay	14
Photo 6:	Te Motu Island from boat	18
Photo 7:	Searching Te Motu Island for sea spurge and alligator weed.....	18

Ministry for Primary Industries Contract for Services 16738 *Sea spurge (Euphorbia paralias)*
eradication response at Aotea, Waikato. September 2013

1.1 Introduction

Sea spurge (*Euphorbia paralias*) is an invasive coastal dune weed that originated from Europe. Sea spurge was probably introduced to Australia in ships' ballast water about 75 years ago. The plant first appeared in Western Australia, and is now found throughout south-eastern Australia, including Tasmania and the islands of Bass Strait. In the past 20 years, it has colonised beaches along the NSW South Coast and is progressively working its way north.

Sea spurge is a dune shrub that forms dense stands in foredune and backdune. It poses a serious threat to New Zealand's dune systems.

Sea spurge has a seed that can float on the ocean currents, and it is thought this is how it arrived in New Zealand. In February 2012, sea spurge was discovered on the north side of Aotea Harbour entrance about 3km down the ocean beach. The actual infestation is in a very remote location on private land. This is the only known site in New Zealand.

Since its discovery, the Ministry for Primary Industries (MPI) as the lead agency set up a working group incorporating the Department of Conservation (DOC) and Waikato Regional Council (WRC). This group has been working collaboratively to manage the surveillance and eradication of this pest.

The working group's management option is to maintain the infected site at zero population density, to prevent further seed production until the seed bank is exhausted. However, since the discovery of sea spurge at Aotea there has been a number of uncharacteristically high sea surge events that have eroded some of the sand from the infested site. As a result of this, approximately 15km either side of the infestation is under active surveillance.

This document reports on the third year of the sea spurge eradication programme and associated surveillance activities at Aotea Heads, Waikato. Operational activities were undertaken by Waikato Regional Council on behalf of MPI.

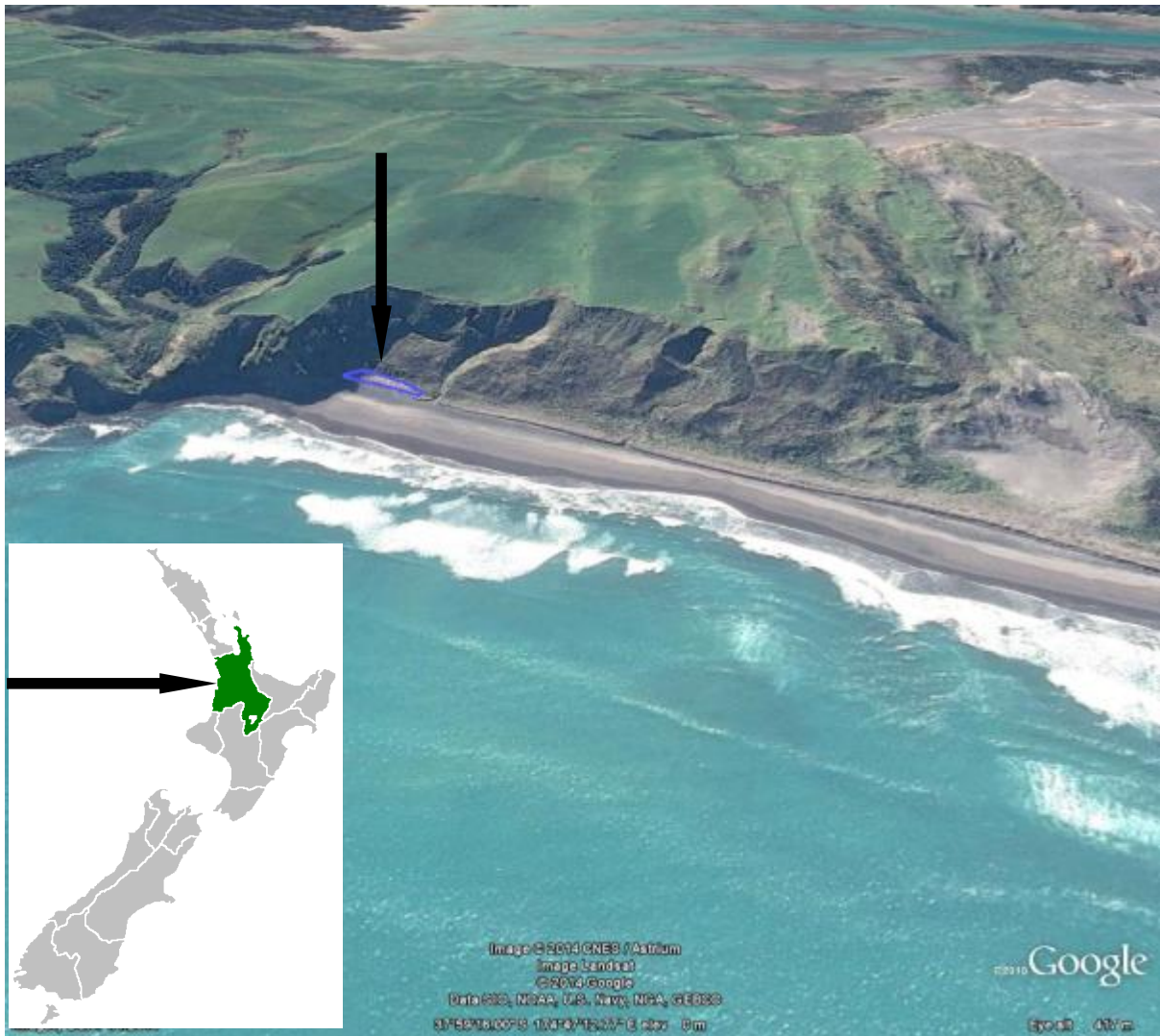


Figure 1: Location of the sea spurge infestation at Aotea Harbour

The original infestation was ~8x10 meters plus an individual outlier. Over the past three years most of the plants were found in the north end of the infestation area, with a few new plants scattered throughout the rest of the site (from the slip north). The area that is intensively searched is approximately 100 metres long and covers an area of approximately 0.1ha.

1.2 Aotea sea spurge control 2014/15

Three site visits were carried out over the last 12 months. The visits were timed so as not to allow any plants to flower and produce seed. The control method at each visit was to physically remove any seedlings and take them off site.

There are two main infestation areas that had seeding plants from the original 2012 discovery. The main infestation area (200 plus plants found) and the outlier area (one flowering plant found) (Figure 2).

The site was systematically searched, from the slip to the cliff (Figure 2), until satisfied every area had been checked and that there was no chance of a seedling being left. This meant the site was walked over nine or ten times per visit, at times searching on hands and knees checking through flotsam and jetsam and debris. To date no plants have been left to flower at this site since April 2012.



Figure 2: Showing flotsam and jetsam and debris at Aotea site – June 2012

Summary of site visits

Wednesday 17 September
2014

Friday 16 January 2015

Friday 1 May 2015

Summary of Surveillance

Ruapuke (north) Tuesday 20 January 2015

Kawhia-Aotea Wednesday 28 January 2015

Ruapuke (south) and Schnackenberg Bay Friday 1 May 2015

Site Visit – Wednesday 17 September 2014

- No plants found

General comments:

No sea spurge plants were found. The site appeared to have had no change from the last visit. However, the site is becoming very overgrown with grasses and large pampas bushes through the site (Photo 1).

It was proposed that at the January 2015 inspection these grasses would get sprayed. This proposal went to the working group. Their main concerns were the effect herbicide may have on the sea spurge seed bank, and landowner/iwi concerns with using herbicide in this area.

The herbicide that would be used is glyphosate which is non-residual and would be less likely to suppress any sea spurge growth. With regard to the iwi, the land where the sea spurge has infested is on private land and is not part of the conservation estate, so would not be a concern to them. The landowner, David Peacock, has used herbicide down there in the past to manage pampas and alligator weed so he would not mind its use.



Photo 1: Site inspection 17 September 2014. Overgrown vegetation



Photo 2: Site inspection 17 September 2014

Site Visit – Friday 16 January 2015

- Two plants were found and destroyed by physical removal and taken off site.
- No flowering plants were found.

Number	Height (cm)	Flowering	Multiple stems
1	6		✓
2	9		

General comments:

The infestation site looked intact with no sign of sea surge or overland run off. The two plants found were in the centre of the original infestation zone. The site was overgrown with vegetation.

The site was sprayed with glyphosate to destroy the large pampas grasses that are encroaching through the site, reduce the vegetation mass and encourage sea spurge germination.



Photo 3: Grass covering the sea spurge site



Photos of infestation site at Aotea (16 January 2015)

Site Visit – 1 May 2015

- No plants found

General comments:

The site looked quite different from previous visits. There was a lot of debris spread across the site, possibly from swell surges. The glyphosate spray from the January inspection had worked, with fewer grasses on the site and the large pampas bushes dying off.

The site was grid searched from the slip to the cliff by walking and on hands and knees searching under logs and vegetation.

This site was visited by Pest Plant Contractors Ben Elliot and Rick Lane.



Photo 4: May site inspection showing debris through the site

1.3 Surveillance – Delimiting Survey

The same process was followed as the previous year. Three areas were searched as part of the annual delimiting survey. No new infestations were found, and the sea spurge signage was still in place at the key beach access points.

The Aotea-Kawhia and Ruapuke Beach surveillance area was surveyed by quad bike and walking. Some sites were searched by foot where access by quad was difficult, or where a site may have needed a more thorough search.

Ruapuke Beach has a number of areas with a lot of debris and small 'hooks' that could capture any sea spurge seed (for example, Schnackenberg Bay at the southern end of Ruapuke beach). These areas were checked by walking over the site. Due to weather and access difficulties, these areas were surveyed over a number of weeks.

The area of beach from the infestation site to the Aotea Harbour entrance was surveyed on foot by four DOC staff. It has also been subsequently walked by a number of DOC staff on previous occasions (passively searched).

Dates of delimiting survey:

- Ruapuke (north) – Tuesday 20 January 2015
- Kawhia-Aotea – Wednesday 28 January 2015
- Ruapuke (south) and Schnackenberg Bay – Friday 1 May 2015



Photo 5: Schnackenberg Bay



Sea Spurge (*Euphorbia Paralias*)
 Delimiting Survey 2014 - 2015
Aotea and Kawhia Harbours

Created by: HCE
 Projection: NZTM
 Date: 12th May 2015

Status: Final
 Request No.: 29965
 File name:

© Crown copyright / CC BY 3.0 NZ
 2015, Sea Spurge 2015

For Waikato Regional Council staff only



A3

© Waikato Regional Aerial Photography Service (WRAPS) 2012. Imagery sourced from Waikato Regional Council. Licensed under CC BY 3.0 NZ.



DISCLAIMER: While Waikato Regional Council has exercised all reasonable skills and care in compiling the contents of this information, Waikato Regional Council accepts no liability in contract, tort or otherwise for loss, damage, injury or expense (whether direct, indirect or consequential) arising out of the provision of the information or its use by you.

Figure 3: Sea Spurge Delimiting Survey 2014/15 – Aotea and Kawhia Harbours

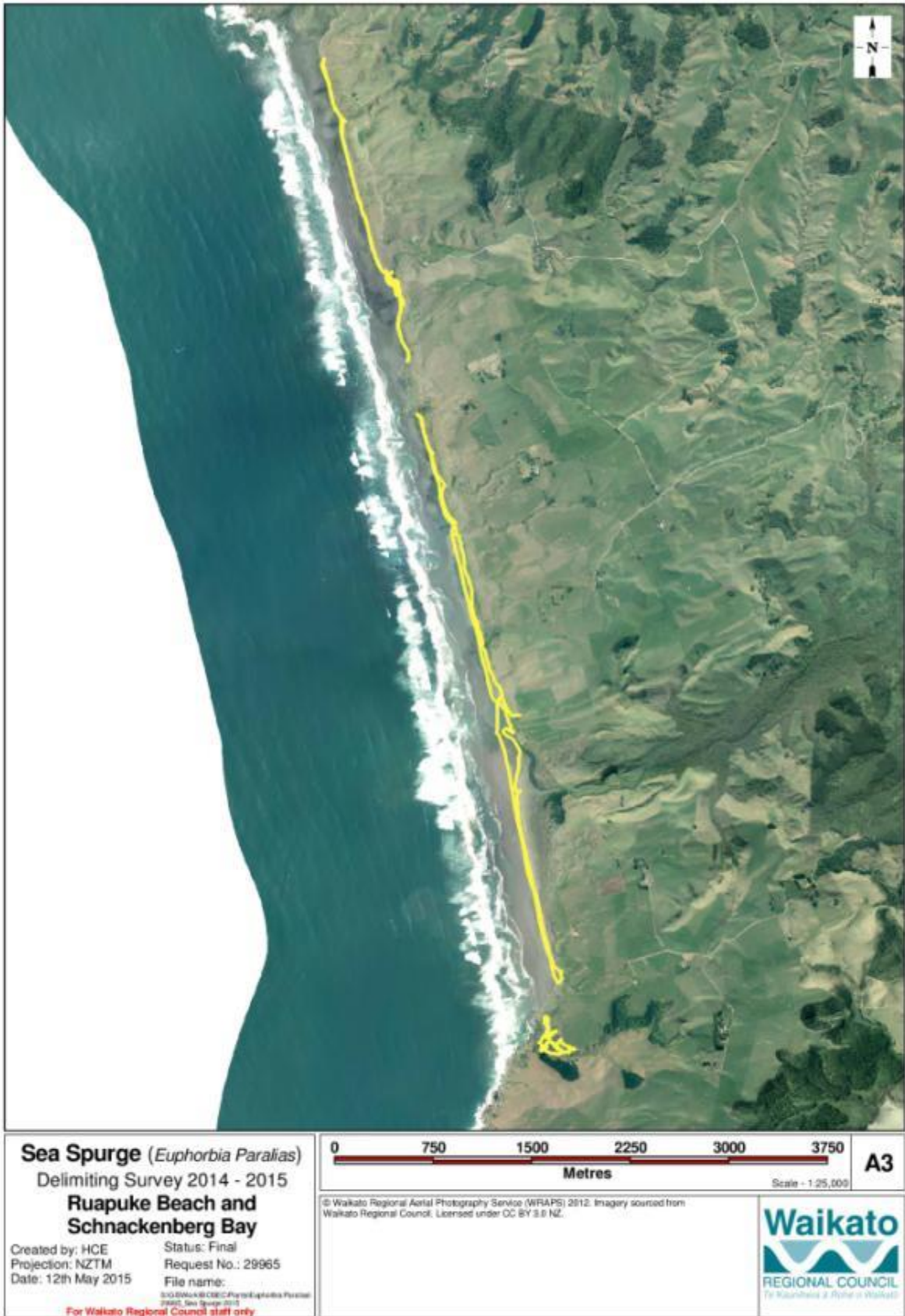


Figure 4: Sea Spurge Delimiting Survey 2015/15 - Ruapuke Beach and Schnackenberg Bay

1.4 Additional Survey

Te Motu Island, Kawhia boat survey

Council received an enquiry about a plant that looked like sea spurge on Te Motu Island, a small island in the middle of Kawhia Harbour. There had also been a reported alligator weed find within the harbour. On 20 February 2015, an inspection of the island took place searching for sea spurge and alligator weed. No plants of either species were found.



Photo 6: Te Motu Island from boat



Photo 7: Searching Te Motu Island for sea spurge and alligator weed



Figure 5: Te Motu Island, Kawhia

Coastal aerial survey for alligator weed and sea spurge

Council surveyed the west coast from Albatross Point up to the Auckland Council boundary. No sea spurge was found. However, there was a number of new alligator weed sites spotted that have subsequently been followed up.

1.5 Risks, issues and recommendations

Risks and issues to operation success

- Finding plants can be difficult due to –
 - Debris – there is a large amount of debris on the site. This debris makes finding new small seedlings difficult. The risk is missing plants that could mature before detection.
 - Vegetation can make finding sea spurge plants difficult as sea spurge can ‘creep’ under these plants and possibly be unseen until the next visit. However, not finding plants has not been a problem so far.
- Swell surges and wind can bring more sand onto the site. This sand deposition can trigger dormancy in sea spurge seed. The risk is an increase in the life of the eradication programme and an increased chance of dormant seed leaving the site through erosion.

Recommendations

- Continue current eradication and surveillance programme as it is working well.
- Continue to treat the large pampas bushes and smaller grasses with glyphosate herbicide to provide fewer habitats for sea spurge to ‘hide’ in.
- Continue to promote awareness in surrounding regions.

Acknowledgments

A risk to the success of this eradication is access to the site. The support from David Peacock for allowing access across his farm to manage the site is very much appreciated. Without this support, the ability to manage this site and carry out the eradication would be very difficult.