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Invasive weed management and revegetation at Ocean Beach, Whangarei Heads, Northland

Five year Strategic Plan - 2013-2018 - Bream Head Restoration Committee

Introduction

Ocean Beach surf beach[1] (referred to hereon as Ocean Beach), is seriously compromised by invasive weeds, as is the case with many beaches throughout Northland and indeed New Zealand.

This report focuses on weed management and the revegetation of the main stream that outflows onto the beach[2].

Our main aim or outcome for weed management is to facilitate the natural recovery of indigenous species. For the main stream, the aim is to plant suitable indigenous riparian species after weeds have been removed and to allow for natural recovery where possible.

The intent is for this work to be managed by The Bream Head Restoration Committee (BHRC) [3] in collaboration with the local community, Friends of Bream Head, Whangarei District Council and Northland Regional Council.

To date the BHRC has held three public weeding events at Ocean Beach (April and September 2012 and May 2013), targeting exotic ice-plant removal on the foredunes and backdunes.

Exotic ice-plant was targeted because it was seriously comprising the backdunes and it is relatively easy to hand pull. In turn, this initiative provided a practical opportunity to engage the local community and raise awareness about conservation issues at Ocean Beach.

These events were well attended by locals and Friends of Bream Head.

September 2013 ice-plant removal

[1] Ocean Beach referred to in this report is the surf beach, accessed from the carpark at Ranui Road or at the end Ocean Beach Road. 10.96 ha of this beach is administered by the Whangarei District Council.
[2] This stream flows from Bream Head and through open pasture before it hits Ocean Beach.
[3] The Bream Head Restoration Committee are a subcommittee of the Bream Head Conservation Trust

Building on the success of public weeding events, the BHRC decided to extend efforts at Ocean Beach by looking at other opportunities to help restore the beach.

Sara Brill (Biosecurity Officer, Northland Regional Council) was asked to undertake a site weed assessment at Ocean Beach[4] and to provide specific advice on weed management and chemical control requirements.

Stuart Jackson (Parks Technical Officer) from the Whangarei District Council and Laura Shaft (Coastcare Coordinator) from the Northland Regional Council were then consulted about this project and they offered their support and technical advice.

Site Description

Ocean Beach is a very popular surf beach in the Whangarei area at the end of Ocean Beach Road, about a 40 minute drive from Whangarei city.

The immediate community comprises around 50 permanent households as well as bach owners. Many residents have a long inter-generational association with the area.

This report focuses on Ocean Beach surf beach, which has been delineated in this report as being from the top of the northern sand-dune to the top of the southern sand-dune and landward to the edge of the edge of the plantation pine block behind the surf club (see Map on the last page of this document).

The plantation pine block at Ocean Beach, is a 10.96 ha parcel of land administered by the Whangarei District to the mean high water mark.

Bream Head Scenic Reserve (592 ha) adjoins the southern boundary of the beach. The Reserve is administered by the Department of Conservation and since 2002 the Bream Head Conservation Trust has cooperatively managed the Reserve in partnership with DOC and other key agencies including the Northland Regional Council and Whangarei District Council.

A Queen Elizabeth II National Trust Open Space Covenant protects 12.74 ha at the northern end of the beach encompassing the northern sand dune and extending out to include the small rocky headland.

[4] This occurred on 23 March 2013

Ocean Beach Weed Management Zones

For purposes of management, Ocean Beach has been divided up into four distinct zones; Foredunes, Backdunes, Main Stream and the Pine Forest zone.

The aim is to execute a thorough and systematic weed management programme that will result in the natural recovery of indigenous species once weeds are removed.

Zone 1: Foredunes

Goal: The goal for this zone is to maintain the existing dominant cover of spinifex and pingao.

Main weeds: The main weed affecting this zone is exotic iceplant. Exotic iceplant has already been controlled from the top of the northern dune to the top of the southern dune by hand-pulling and with some large areas sprayed.

Actions required:
• Undertake yearly checks to ensure that exotic iceplant is not returning and that no other environmental weeds are establishing. NB: there are some existing weeds in this zone like dandelion and hawksbeard - these weeds will not dominate or adversely affect foredune dynamics and are therefore are seen as a low priority.
• Monitoring: a) Record outcomes of yearly checks; b) Set up photopoints

<u>Weed Control and notes in foredune zone</u>

Exotic iceplant

Handpull small infestations and remove from the site. Larger areas use Glyphosate at label rates with wetting agent or Triclopyr at 6%. Dunes Restoration Trust of NZ recommends glyphosate without wetting agent is very effective even at lower than label rates. Care needs to be taken to avoid spraying spinifex or pingao on the foredune; although spinifex is fairly tolerant of glyphosate particularly at less than label rates.

Zone 2: Backdunes

Goal: The goal of this zone is to eliminate environmental weeds and allow natural regeneration. The most practical way to do this is to work systematically from area to area, tracking progress and documenting change.

Main weeds: The main weeds affecting this zone are: buffalo grass, kikuyu, freesia, blue morning glory, sweet pea and harestail. Other exotics present include smilax[5], the odd 'wilding' pine tree, gorse, Norfolk pine, *Aristea* and *Rhaphiolepsis*.

[5] There are large areas of smilax growing on the backdunes of Proctors Beach (Proctors is a local name for the beach extending from the northern sand dune at Ocean Beach surf beach. Smilax in this area has been affected by the biocontrol rust which seems to be knocking back the infestation but not eliminating it.

Actions required:
• Conduct first round of spraying in Spring 2013-Autumn 2014 within a buffalo/kikuyu grass pohuehue zone. Take a systematic approach. Map spray effort and record methodology and results. Regular inspections will be necessary. The NZ Dunes Trust of New Zealand recommends that within 3 months conduct follow-up spot spraying for occasional exotic grasses that were missed during the initial treatment. Also haloxyfop will not control herbaceous/dicot weeds, so if present these will require spot-spraying or hand-pulling.
• Focus on conducting 1) Spray trial in the Freesia–sweetpea-buffalo grass/kikuyu-pohuehue sites as per Sara Brills recommendations. Record results by photographing the site and a few individual plants or groups of plants before and after at regular intervals.
• Monitoring: Use the results from this first year to plan future effort ie how effective was the spraying effort; what could we do differently. Consult with Sara Brill

Weed Control and notes in backdune zone

Buffalo/and or kikuyu grass-pohuehue sites

Use 60ml haloxyfop (eg Gallant) and 50ml uptake oil per 10 litres where there is only grasses among pohuehue. Haloxyfob has no negative impact on pohuehue. If there are invasive weeds growing in this zone other than grasses spot spray with glyphosate. Glyphosate may not kill pohuehue outright but does have a severe impact on it and it will take a long time to recover.

Blue Morning Glory-kikuyu-pohuehue sites

Use glyphosate 100mls/10L plus 20mls penetrant. This will kill both buffalo and kikuyu grasses and blue morning glory. Follow-up treatment will probably be needed
Glyphosate won't kill pohuehue – however it does have a serious impact on it and takes a long time to recover. Plants might de-leaf plants but they will recover (BOP-Greg Jenks recommendations).

Freesia–sweet-pea-buffalo grass/kikuyu-pohuehue sites

Conduct a 10L trial – fence off with warratahs and electric fence tape, signage etc. Use 75mls haloxyfop (eg gallant) and 120mls clopyralid (eg Versatill) and 50mls uptake oil per 10 litres water. Spray in Spring. Versatill doesn't kill natives only daisy family and pea family. Also consider trying weed-wiping freesias by hand with neat glyphosate and monitor results.

Exotic ice-plant

Handpull small infestations and remove from the site. Larger areas use Glyphosate at label rates with wetting agent or Triclopyr at 6%. Dunes Restoration Trust of NZ recommends glyphosate without wetting agent is very effective even at lower than label rates. Care needs to be taken to avoid spraying spinifex or pingao on the foredune; although spinifex is fairly tolerant of glyphosate particularly at less than label rates.

Gorse and *Rhaphiolepsis*

Cut and stump spray with 25% glyphosate; 75% water; and 1ml per litre penetrant. Spray within 10 mins of cutting. Can be done all year round.

Pampas

Spray in spring as more effective. Spraying in rain has proved to be effective[6]. Use glyphosate 100mls/10L and 20mls penetrant. Alternatively haloxyfop (Gallant) at 150ml plus 50ml uptake oil per 10 litres.

Aristea
Hand remove regularly in that area or:-
Weed wipe (spring-autumn): 1g metsulfuron-methyl 600g/kg + 150ml glyphosate + 10ml penetrant /L.
Spray (spring-autumn): 3g metsulfuron-methyl 600g/kg + 150ml glyphosate + 10 ml penetrant /10L

Zone 3: Main Stream

Goal: The goal for this zone is to eliminate target weeds and to restore an indigenous riparian zone along the stream. The establishment of a riparian zone would be achieved in stages. Suitable native species for planting would be harakeke, manuka, whau, and kowhai, ngaio, oioi and sea rush.

Encourage existing *Bulboschoenus fluviatilis* along stream. – spraying kikuyu with haloxyfop should not affect *Bulboschoenus* which is a sedge.

Encourage the existing indigenous sedge *Carex pumila* and any other naturally occurring natives.

Main weeds: The main weeds affecting the stream riparian zone are poplar, bamboo, yucca, and flame trees. Other weeds present are nasturtium, German ivy, pampas, woolly nightshade, mignonette vine, inkweed, macrocarpa, ladder fern, exotic ice-plant, and some Cape honeyflower and elephants ear.

Actions required:
• Wendy to prioritise weed control in consultation with Sara Brill.
• Target flame trees as soon as possible to support the effort already gone into eliminating these trees from this zone.
• Control weeds over spring/summer then plant in winter. Only tackle an area you feel you can follow-up on. Some plants can be controlled on a species basis – eg all low incidence species such as Cape Honeyflower, Aristea, Raphiolepsis and drilling all tree species.
• Investigat using XTree Basal herbicide as recommended by Jo Ritchie and Treescape.
• Discuss with Stuart Jackson how the District Council can contribute to this effort.

[6] Advice from Sara Brill

Weed Control and notes in main stream zone

Poplar

Drill larger trees with 10mm diameter holes at a downward angle to a depth of 50mm beyond the inner bark and at 200mm spacing around the trunk circumference; then filling each hole with 25mls of undiluted glyphosate (e.g. Roundup).

Overspray any suckers with 5g metsulfuron-methyl (eg Escort) with 10mls penetrant in 10 litres water. This mix will do Madeira (mignonette) vine also

Mignonette vine

Spray with 5g metsulfuron-methyl (eg Escort) with 10mls penetrant in 10 litres water. Can be hand removed when site is reduced sufficiently.

Yucca

Recommended method is neat triclopyr on stump (cut the stem about 50-75mm above) or overspray with 60ml triclopyr/10l water plus penetrant. Spray whorls with 12% triclopyr/diesel Mix 120ml triclopyr (600g/l eg Grazon) per 1 litre diesel or vegetable oil. Can be done all year round.

Flame Trees

Drill & fill: drill 1 hole to 150 mm stem diam and inject 3 g metsulfuron hole, (50g per litre water) or 20ml Tordon BK/hole.
Cut & squirt: 1 cut /100 mm stem diam, 2 g metsulfuron/cut or 15ml Tordon BK/cut.
frilling: ensure complete frill achieved. Paint frills thoroughly with metsulfuron 5 g /L + penetrant or 200ml/1L Tordon BK.

Bamboo

80ml Haloxyfop (eg Gallant) and 50 ml uptake oil per 10 litres water. Or cut 1 stem per 400mm and fill tube with neat glyphosate

Cape Honeyflower

Single plants can be dug out or cut and paint with 5g metsulfuron-methyl (eg Escort) with 1mls penetrant in 1 litres water. Larger infestations - overspray with 5g metsulfuron-methyl (eg Escort) with 10mls penetrant in 10 litres water.

Wandering willie and Convulvulous

60ml triclopyr (eg Grazon) plus 10ml penetrant per 10 litres water. Check regularly and follow-up as needed.
Wandering willie can be hand removed when site is reduced sufficiently.

German Ivy

1. Hand pull small plants, or dig out roots (all year round). Leave on site to rot down.
2. Stump swab (all year round): glyphosate (100ml/L) or metsulfuron-methyl 600g/kg (1g/L). Leave on site to rot down.

3. Cut stems below waist height, spray below this point (spring-summer to actively growing plants): glyphosate (10ml/L knapsack) or (2L/100L spraygun) or metsulfuron-methyl 600g/kg (2g/10L knapsack) or (20g/100L spraygun) or Tordon Brushkiller (60ml/10L) or Banvine (12ml/L) or Yates Woody Weedkiller (24ml/L) or amitrole (150ml/15L knapsack) or (2L/100L spraygun). Add penetrant to all mixes**.**
(from Weedbusters website)

Ladder fern

1. Pull out, Leave on site to rot down. Dispose of tubers and runners at a refuse transfer station, burn or bury.
2. Spray: metsulfuron-methyl 600g/kg (1g/10L). Leave sprayed sites 3-4 months to allow herbicide to translocate to tubers before clearing or replanting.
(from Weedbusters website)

Zone 4: WDC Pine Forest Area

There are several weeds found growing in the pine forest area including lantana, German ivy, smilax etc.

Actions required:
• Undertake a survey in this area and target the most troublesome weeds first ie lantana, German ivy. Hopefully smilax will be controlled by the biocontrol rust.
• Target all low incidence weeds early before they 'establish'.

<u>Weed Control and notes in foredune zone</u>

Lantana

Remove small infestations firts. Spray (best in Nov-Dec): glyphosate (100ml/10L + penetrant) or Tordon Gold (10ml/L). Or cut down and paint stump all year around using glyphosate 200ml/L (from Weedbusters website).

German Ivy

1. Hand pull small plants, or dig out roots (all year round). Leave on site to rot down.
2. Stump swab (all year round): glyphosate (100ml/L) or metsulfuron-methyl 600g/kg (1g/L). Leave on site to rot down.
3. Cut stems below waist height, spray below this point (spring-summer to actively growing plants): glyphosate (10ml/L knapsack) or (2L/100L spraygun) or metsulfuron-methyl 600g/kg (2g/10L knapsack) or (20g/100L spraygun) or Tordon Brushkiller (60ml/10L) or Banvine (12ml/L) or Yates Woody Weedkiller (24ml/L) or amitrole (150ml/15L knapsack) or (2L/100L spraygun). Add penetrant to all mixes**.**

Planning for spraying

Spraying notices

On site notices are required to inform beach users that spraying is being undertaken. Site notices need to include the following:

- a title Spraying or Exotic Vegetation Control.
- the date
- the chemical used,
- when (time and date) the area is safe for the public to enter (this is when the spray has dried)
- the name of a contact person and cell phone number.

Signs will need to placed at the front and back of the area being sprayed.

Target undertaking spraying when the area is not in high public use – ie in the Spring and Autumn months, out of the busy summer period.

Anticipate spraying programme to commence in March 2014.

Actions required
• Wendy Holland will undergo Growsafe training – **Completed** July 2013.
• Wendy to design spray notice signs with Sara Brill (recommend using 'Weedbuster' signs with a printed A3 sign attached with the relevant info). –
• Wendy to design Heath and Safety plans with Sara Brill
• BHRC to consult with the local community about this project (mail drop, website).
• Talk to WDC – Stuart Jackson about including our spraying programme with WDC advertising in the paper with other reserves spraying.

AERIAL PHOTO SHOWING OCEAN BEACH SURF BEACH
(as well as the pine forest block (bottom middle) and the QEII covenant hillslope block in the top left-hand corner)