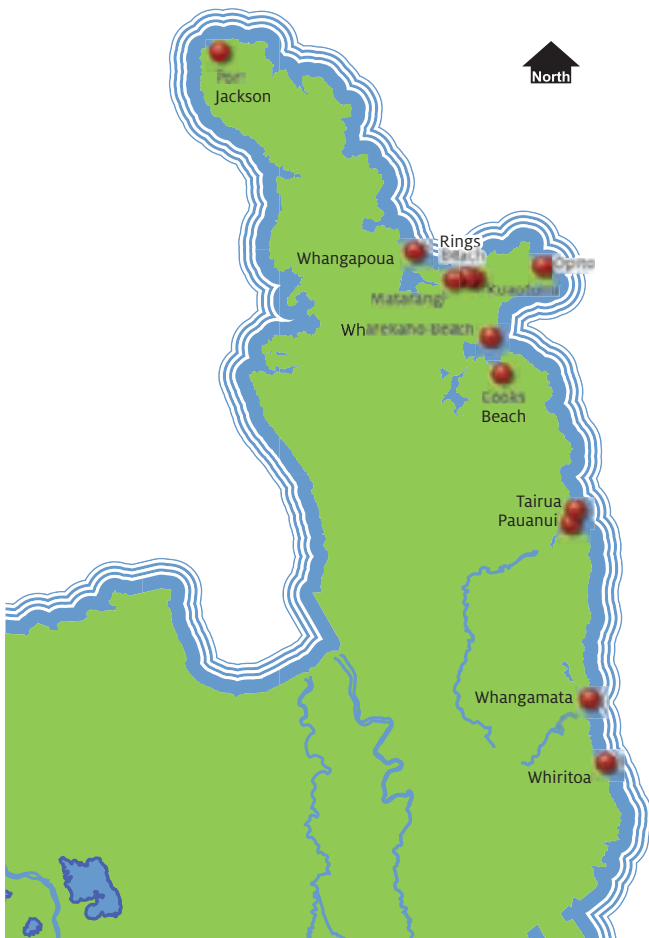


Beachcare groups

in the Waikato region - Coromandel



Whangamata

The focus for Whangamata in 2011 was a large dune restoration demonstration area along part of the seaward frontage of Seaview Road. The purpose of the demonstration area is to provide the local community and beach users with an example of a native dune sequence over the width of the frontal dune. This encourages further restoration and discourages practices that degrade these areas. The demonstration area is also part of a nationwide project developing guidelines for restoration of these areas.

Prior to restoration, the area was dominated by exotic dune species typical of many areas of the Whangamata dune immediately landward of the spinifex zone.

Meetings and discussions about design were held in 2010 and early 2011, and a plan was developed. Approximately 5000 plants were planted over three separate working bees from early autumn (April) through to mid-winter (July). Weed control was undertaken in the following spring to assist the establishment of the native planting.

The work proved very successful in restoring a native dune sequence over most of the width of the protective dune buffer fronting private properties.

The focus in 2012 will be on establishing and expanding the demonstration area, meanwhile, work will also begin in the badly-damaged dune area seaward of the surf lifesaving club.



The area was dominated by exotic vegetation prior to work on the demonstration area.



Planting of the demonstration area during one of three 2011 working bees (August).



The demonstration area following the final planting working bee in 2011. Further work is planned for 2012.

Whiritoa

Meetings and site inspections were held at Whiritoa to discuss restoration and management of the degraded dune area to the immediate south of the surf life saving club. Access to and from the beach in this area is difficult and people tended to use the low area by the stormwater outlet, which further aggravated damage to the dunes in this area. The native sand trapping vegetation critical to natural dune building and repair is also largely absent, with the area dominated by exotic vegetation. In places, clay-fill limits restoration of appropriate native dune vegetation. Periodic scour around the stormwater outlet also affects access and native vegetation.



The area at Whiritoa in 2011 before reshaping and planting work commenced.

Meetings culminated in preparation of a plan for this area to be implemented in stages in the period 2011-2013. The work commenced in late 2011, with spraying of the exotic vegetation followed by earthworks to remove the vegetation and restore an appropriate dune slope. The area was then planted with 1400 spinifex, 500 knobby club rush and small numbers of native spinach.

Further work in this area, including clearance of exotic vegetation, reshaping and planting, is proposed for 2012.



Whiritoa working bee (November 2011).

Onemana

Major plantings at this site were completed in 2010 and work is now limited to maintenance and repair of any future damage, as well as weed control.

An inspection conducted in February 2011 with local convener Barry Turk identified the need for ongoing weed control along the landward edge of the plantings, which was undertaken. Management of run off and associated dune erosion at the south end of the beach was also discussed and appropriate interim action agreed. Planting was generally in good condition and so no further planting was undertaken in 2011.



This general view of Onemana plantings in February 2011 shows dense spinifex cover, with a narrow width of wīwī along the landward boundary. The wīwī adds some biodiversity to the dune planting and also helps manage invasive exotic perennial grasses from the landward grassed reserve, allowing grass specific herbicides to be used.

Work in 2012 will focus on the run off and associated dune management issues at the south end of the beach, as well as ongoing management of invasive exotic grasses along the landward edge of the plantings.



An area of pōhuehue and wīwī established at the southern end of the beach by earlier plantings continues to thrive and expand. An invasion of exotic grasses along the landward margin is being managed by ongoing spraying.

Tairua

The focus of work in 2011 was the restoration of sand-binding grasses on the severely degraded dune towards the southern end of the beach. The work involved extensive excavation and reshaping to remove significant volumes of rock and clay debris and to restore a natural dune slope. The area was then planted. Spraying was also conducted during the year to maintain weed clearance in the areas between the surf club and the southern end that had been restored in previous years.

The southern end of the beach, south of the surf life saving club, will remain the focus for 2012, with emphasis on expansion and maintenance of plantings in this area.



Dune area prior to works (April 2011).



During earthworks to reshape the dune and remove rock and clay.



Dune area being planted following reshaping (August 2011).



The Tairua dune area following reshaping and planting (August 2011).

Pauanui

Inspections were conducted in February, May and July 2011 with Thames-Coromandel District Council staff. Works in 2011 were limited to access ways due to ongoing erosion.

Work in 2012 will depend on the state of the ongoing erosion. Once this erosion has ceased, dunes in the area worst affected will be reshaped to widen the spinifex zone landward sufficiently to accommodate storm cut erosion.



Storm cut erosion towards the southern end of Pauanui Beach. In this area, the erosion has damaged access ways and, in places, has narrowed the spinifex zone markedly. Work will be conducted in future years to restore a width of spinifex sufficient to accommodate the worst likely storm erosion.

Mercury Bay - Cooks Beach

As in 2010, the main focus of work for the Mercury Bay area in 2011 was at Cooks Beach, continuing work on the demonstration area towards the eastern end of the beach.

Work undertaken during the year included a planning meeting, spraying of exotic vegetation, earthworks, planting of just over 4000 plants and maintenance spraying of exotic vegetation. Thames-Coromandel District Council (TCDC) provided the funding for the earthworks, Beachcare provided the plants and advice, and the works were undertaken by adjacent property owners.

The partnership with TCDC was also reflected in work at other sites along the coast, including Whangamata, Pauanui, Tairua and Kuaotunu.

The works in 2010 and 2011 successfully restored the demonstration area over the full width of the frontal dune. The work at Cooks Beach reflects a 'whole of frontal dune' approach to restoration and demonstrates its strength. The success of the work has also resulted in a planned open day for the wider community in mid-2012.

The success of the work has attracted attention from adjacent landowners and it is planned to expand the restoration work alongshore in 2012. As with the work at Whangamata, the project at Cooks Beach has now also been adopted as a demonstration area project within a national project overseen by the Dunes Trust, which is developing national guidelines for dune restoration.



This is one year after the weeds were removed and native species such as wīwī, carex testacea, harakake, and NZ spinach were planted by local community members – a big improvement to the natural character and biodiversity values of the area.



The view to the west of the restoration demonstration site showing garden escapee weeds such as agapanthus and kikuyu grass dominating the back-dune area. This is what the restoration site looked like before the exotic vegetation was cleared and planted with appropriate native species.

Mercury Bay - other sites

Liaison was established with locals at Front Beach (Maramaratotara) in the early part of 2011 and site inspections and meetings conducted to discuss and plan dune plantings at this site. A working bee was held over Easter, with plants supplied by Thames-Coromandel District Council (TCDC). Ongoing liaison will be maintained at this site in 2012, though Beachcare involvement is likely to remain primarily advisory.

The plantings undertaken at Wharekaho in 2010 were inspected early in the year. The spinifex plantings have done well, but the back-dune plantings were struggling. It was decided to monitor this work a little longer before undertaking any further plantings, with work limited to spraying to protect the spinifex from invasion by exotic grasses to

landward. A second inspection was also conducted in October. Further monitoring inspections will be conducted in 2012, though no further planting is likely at this stage.

Ongoing dune erosion and discussions around management of coastal erosion mean that dune restoration has not yet commenced at Buffalo Beach. However, the dunes were monitored and photographed several times during the year. The situation will continue to be monitored in 2012, with restoration only beginning once it is clear the present dune erosion phase, which has dominated at this beach since the early-mid 1990s, has ceased.

Whangapoua

Work in 2011 to restore areas damaged by erosion, largely focused on continued planting of spinifex and other native sand-trapping vegetation over the dune along the southern half of the beach.

The plantings were conducted by various beachfront landowners, with coordination from local Beachcare group coordinator Jenny Villiger. In addition, monitoring of the planting and recent erosion was conducted during the year.



A view of restored dunes taken during Easter in 2011. Compare this with the photo of the same area taken in October 2011 to see the level of erosion. This poses no threat to property, but has narrowed the spinifex zone considerably. Together with the seaward spread of exotic vegetation narrowing the spinifex zone from landward, this indicates the need for a 'whole of frontal dune' approach to restoration at this site.

Work in 2012 will continue this emphasis, but will also look at opportunities for a 'whole of frontal dune' demonstration area. The spinifex zone at this beach is presently very narrow due to past human alteration and invasion of weeds from landward side, giving rise to increased maintenance requirements.



An October 2011 view looking south along the restored dune and plantings, which are now well-established. However, note the recent erosion near this area, which has completely removed the spinifex zone over short lengths of the beach.



A view of restored dunes and planting showing erosion embayments formed over the last 12-18 months. The erosion is relatively minor and the native vegetation will self-repair the dunes in the absence of further events. Note also the invasive exotic vegetation beginning to advance down into the new plantings, indicating the need for a 'whole of frontal dune' approach to restoration at this site in the medium term. It is hoped to do a demonstration area utilising this approach in 2012.

Hotwater Beach

Usage at Hotwater Beach is gradually bringing increasing pressure on this dune system, one of the most natural still left on the Coromandel Peninsula.

During 2011, Beachcare supplied 1500 plants to a local group to help restore dune damage adjacent to a main access way. Involvement at this site is likely to steadily increase in 2012 and beyond.



Hotwater Beach has an impressive natural dune system with a thick cloak of the native spinifex grass. Note the gentle slope and wide buffer created by the native vegetation.



The dune area planted by community members in 2011 is looking healthy after six months' growth. These new plantings are still vulnerable, so they are protected by fencing to prevent damage by pedestrians.

Matarangi

Work in 2011 continued to focus on the dune restoration demonstration area fronting Kenwood Drive that commenced in the previous year. A further 2000 plants were put into this area to thicken up the plantings. The planting was largely undertaken by adjacent property owners in small, independent working bees. Ongoing spraying was also conducted along the landward margin of this area and where earlier restoration work was carried out fronting the Kenwood Drive car park.



Before and after comparison showing how the dune in front of the Kenwood Drive carpark looked before the exotic plants were removed in 2009 (left) with the current view (right) showing a healthy cover of the native spinifex following the dune restoration.

The success of the demonstration area is now evident and community consultation is planned for 2012 with regard to continued expansion of this work. It is hoped this further work can also begin in 2012.



Current view of the restoration demonstration site area fronting properties along Kenwood Drive. Given the success of the earlier plantings, further planting was conducted to thicken the vegetation up. It is hoped to expand this area further alongshore in 2012, subject to the outcome of planned community consultation.



View looking south alongshore towards the spinifex area restored in 2009 and 2010. This vegetation is now well-established and has built the dune seaward some distance. The seaward extent of the native dune vegetation is marked relative to the dunes dominated by exotic vegetation in the immediate foreground, providing a good indication of the superior sand-trapping ability of the native dune vegetation.

Kuaotunu

Inspections were conducted at both Kuaotunu East and West during 2011 to monitor extensive earlier plantings conducted in 2009 and 2010. This planting has continued to perform well and establish, with only maintenance spraying required. Further planting was limited during 2011 to small numbers of spinifex due to demands at other sites.

In 2012, limited work may be conducted at Kuaotunu West. A major dune restoration effort planned to commence in 2012 will no longer occur due to concerns over views and related issues. However, it is planned to continue to expand the dune restoration work commenced in 2009 and 2010 at Kuaotunu East.



Succulents are invading a dune area partly restored at Kuaotunu East in 2010. This invasive pest will need to be removed prior to completion of the dune restoration in this area.



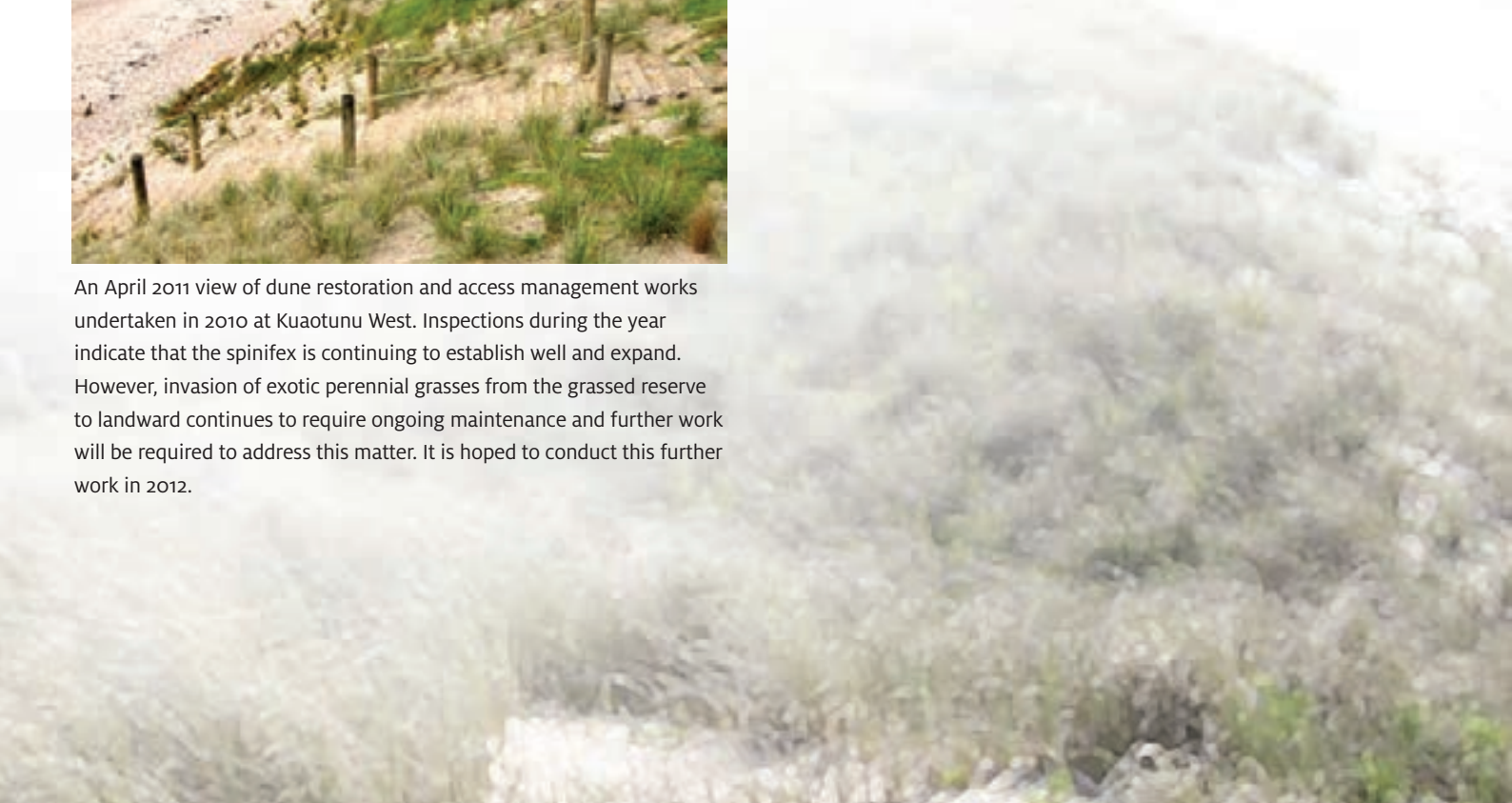
An April 2011 view of dune restoration and access management works undertaken in 2010 at Kuaotunu West. Inspections during the year indicate that the spinifex is continuing to establish well and expand. However, invasion of exotic perennial grasses from the grassed reserve to landward continues to require ongoing maintenance and further work will be required to address this matter. It is hoped to conduct this further work in 2012.



An October 2011 view over the dune area reshaped and restored in 2009 and 2010. The planting is now well-established. Invasion of exotic perennial grasses is still evident in places, but this continues to be addressed with spraying.



A dense clump of knobby club rush is now well-established, and is part of a larger area restored in 2009 and 2010.



Rings Beach

Beach inspections and planning were conducted early in 2011, followed by a working bee over Queen's Birthday weekend. The work focused on planting native sand-trapping species (spinifex and pīngao) on the seaward dune face in areas dominated by exotic perennial grasses, with 1000 further plants established. The exotic grasses were sprayed prior to planting. In addition, 500 knobby club rush and smaller numbers of sand coprosma were also planted.

It is hoped to continue work on removal of exotic perennial grasses and other weed species from the seaward dune face in 2012, replacing this vegetation with spinifex and pīngao. This work is now well advanced, with native sand binders (particularly spinifex) restored along much of the length of the dune.

Maintenance spraying will be conducted until the spinifex is well established and the grasses have largely been eliminated.

This site continues to experience issues with invasion by the serious dune pest, woody asparagus. This species has now started to appear in adjacent dune areas at Kuaotunu East and Matarangi.

Opito Bay — dotterel update

The dotterel is losing the battle at Opito Bay. The New Zealand dotterel/ tūturiwhatu is an endangered species found only in this country. It was once widespread and common, but there are only about 1700 birds left. This serious decline in numbers is due to a combination of habitat loss, predation by introduced mammals and disturbance during breeding.

This year on Opito Bay Beach, 26 NZ dotterel nests were identified. Because of the unseasonably bad summer weather, some nests were moved up to six times to be clear of the high water mark.

While signage is very clear on all entry points to the beach, dogs not on leashes have accounted for up to 50 per cent of eggs being eaten, in some cases just days before the eggs were due to hatch. Over Christmas Day and Boxing Day, dogs ate 14 eggs.

Brian Thompson has been the honorary dotterel protector in Opito Bay for the last 10 years, contributing over 3000 hours in that time. However, eradicating stoats, wild cats and rats is taking up more of Brian's time and he will no longer be able to dedicate time to dotterel protection. So, we ask visitors and people who live in Opito Bay to be more aware of where their dogs are over the dotterel-breeding season. So far, breeding and fledgling efforts have been, with Brian's help, very successful.

By Chris Severne, taken from the Waikato Biodiversity Forum Newsletter.



A working bee during 2011. Rings Beach community members are slowly transforming their dunes from being dominated by exotic species such as south African ice-plant, to a cover of native species that are better suited to the harsh environment and which allow natural dune recovery following erosion.



The endangered New Zealand dotterel.

Photo: DoC

Port Jackson

Work during 2011 focused on further extension of the successful dune restoration in 2009 and 2010.

A useful width of spinifex zone has now been restored along most of the seaward frontage of the camping ground. This area can be extended further landward over time if future erosion indicates this is necessary. However, in the interim, future spinifex planting will focus largely on maintenance.



View of the area of dune restoration undertaken in 2008 shows the ongoing success of this work.



Another November 2011 view of the 2010 restoration area shows active seaward growth of the spinifex following erosion in late 2010.



Another view of the area restored in 2010 showing the planting now well established. In the absence of serious erosion requiring the spinifex zone to be widened landward, future work here will largely focus on maintenance.



November 2011 view of area restored in 2009 shows the wide and dense spinifex zone that has now established.



View of the area restored in 2009 and 2010 showing dense spinifex vegetation now established and actively extending seaward. The planting was extended further westward in 2011 and a spinifex dune now exists along most relevant areas of the foreshore fronting the camping ground.

Beachcare groups

in the Waikato region - west coast



The dunes at Wainamu had been highly modified in the past and were eroding badly without a cover of native dune species to trap wind-blown sand.



The restored dune at Wainamu one year after the first stage of reshaping and planting. A strip of wīwī has been planted between the spinifex and grassed reserve to prevent kikuyu grass encroaching into the dune area. Note the amount of accretion in just one year, with the spinifex growing seaward by up to two metres through the fencing at the bottom of the dune.



Another view of the accretion from the beach. Local community member Tex Rickard (pictured) has been an integral part of all the dune restoration that has occurred in Whāingaroa over the last eight years.



Students from Hamilton's Diocesan School helping to plant the second stage of the Wainamu dune restoration in 2011.

Whāingaroa Beachcare

There were some big changes to the beaches and dunes at Whāingaroa during 2011.

Large seas combined with big tides a number of times throughout the year, resulting in erosive waves and storm surges extending high up the beach and into the dunes. These conditions resulted in large quantities of sand being taken from the Ocean Beach area, lowering the beach height and severely eroding the dunes.

The last episode of erosion this severe occurred in 2003/04 when there was almost no dune buffer and houses were threatened. The large dune buffer created by the spinifex planted by Beachcare members over the last seven years made the difference this time. The dune was able to absorb the erosion and still have enough remaining width to allow natural dune recovery over time.

Beachcare will continue to monitor this area and work to protect the dune to allow the natural recovery to take place.

Other working bees included a further 50 metre stretch of dune reshaping and planting at Wainamu, adjacent to the area restored in 2010. The reshaped area was planted by students from Waikato Diocesan School for Girls as part of their school camp held in Raglan. The restored area is now looking great, with 2-3 metres of accretion already occurring and an impressive increase in the natural character of the area. The new beach access way installed by Waikato District Council is also helping to reduce pedestrian damage to the fragile dune.

In 2011 dune restoration work began at Te Kōpua within the Whāingaroa Harbour. This area is sheltered from the large ocean waves but still can be affected by wind erosion and

storm surges during bad weather. There are patches of the original dune system, however, the majority of the dunes are overrun with exotic plant species and affected by pedestrian use. A 50 metre section was identified as being the focus for the next 2 years' work, with the first plantings in late 2011.

Students from 'Te Kōpua House' at Raglan Area School assisted by planting spinifex and pīngao on Te Kōpua frontal dunes and wīwī, toetoe, and pōhuehue in the back dune areas. To help protect the plantings, Waikato District Council installed two new beach access ways to reduce any further damage to the dune vegetation by pedestrians. Work on this area will continue in 2012 with plans to begin removing the old poplars from the back-dune and to replace these with appropriate native tree species such as taupata, karo and pōhutukawa.

Port Waikato

The focus of Beachcare activities at Port Waikato for 2011 was originally on managing pest plants and introducing a wider variety of native coastal species. However, that quickly changed when Sunset Beach bore the full impact of the large storm that hit the west coast in July, sending Beachcare into recovery mode.

The large July swells coincided with some of the biggest tides of the year, resulting in approximately four metres of the fore-dune being lost to the sea and a significant lowering of the beach. The erosion washed away beach access ways and exposed historic fill and debris that had previously been added to the dunes.

The new local authority for this area, the Waikato District Council, reinstated access ways and undertook earthworks to remove debris that was limiting the ability of plants to become established in this area, and re-contoured the dune to natural shape. These works were followed by the planting of spinifex, pīngao, and wīwī by students from the local Te Kura Kaupapa o Te Puaha o Waikato to reinstate a natural dune.

In 2012 restored dune and access ways will be monitored, pest plants controlled, and additional native plant species added to the Sunset Beach car park area.

Ruapuke

Ruapuke Beachcare held three well attended planting days in 2011, with many new members joining in for the first time. It was great to see the wider community getting involved and helping to restore their spectacular coastline.

The first working bee focused on planting a range of native coastal tree and shrub species on an area behind the north end carpark. Beachcare members planted pōhutukawa, karo, akeake, cabbage trees and harakeke in a sheltered valley to begin restoring the coastal forest zone that would have made up an important part of the original coastal vegetation sequence and would have supported a range of birdlife and native fauna.

To help protect the dune vegetation at Ruapuke Beach, Waikato District Council upgraded a number of the beach access ways at the northern end to encourage beach users to use the same path to the beach, reducing the impact on the fragile dunes.

Beachcare members followed the access way construction with a working bee to plant the disturbed area with a range of back-dune species, such as pōhuehue, wīwī and native sand tussocks. This helped to stabilise the area, while also providing important habitat for the local native fauna, such as skinks and the rare copper butterfly that makes its home in the pōhuehue.



The large storm that hit the west coast in July 2011 had a big impact on the Port Waikato beach and dunes. The erosion was more dramatic and obvious at Sunset Beach where the dunes have been highly modified in the past to allow for the existing carpark areas. This modification has resulted in a narrowed dune width when compared with the dunes further north up the beach that can easily absorb these type of erosion events and recover naturally.



Students from the local Te Kura Kaupapa o Te Puaha o Waikato school helping to plant native dune plants at Sunset Beach to improve the natural character and biodiversity of the highly modified dunes.



A back-dune planting day at the north end of Ruapuke Beach. Once established, these areas of native trees will provide shade and will help attract native birds which will in turn spread the seeds naturally throughout the landscape.

Kāwhia

Kāwhia's Ocean Beach is one of the most exposed and dynamic beaches in the Waikato region, creating a very challenging environment for dune restoration.

Since their first year of dune planting in 2011, members of Kāwhia Beachcare have encountered many obstacles, including vehicles being driven through a newly planted area, extensive rabbit browsing, extreme erosion events, and visitors removing pīngao plants presumably for weaving.

The large and prolonged storm that battered the west coast in July 2011 had a significant impact on Kāwhia's Ocean Beach, resulting in a large escarpment in front of the dune restoration area. While this may appear extreme, it is part of the natural beach erosion and accretion cycle and gives Beachcare members good insight into how far up the beach erosive waves will reach in extreme storm conditions, helping to guide future planting efforts.



A working bee to fill in the gaps in the blowout area Kāwhia Beachcare members are trying to fill with the sand-trapping plants spinifex and pīngao.

Akeake and karo shrubs showing good growth after one year at one of the trial plots.

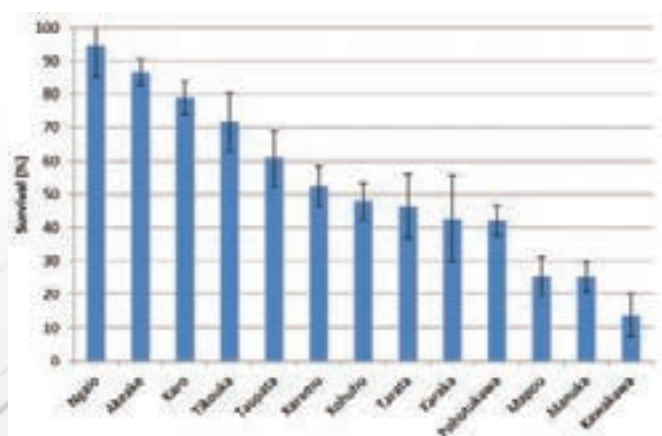


Figure 1: Results from Kāwhia planting trial.

Kāwhia Harbour margin planting trial results

A series of four planting trials were established in October 2010 to evaluate the early performance of a range of coastal native plants along the harbour margin near the Maketu Marae, Kāwhia, on the west coast of the North Island.

Thirty-five plots were established across the four trial sites, with up to 30 native seedlings planted 1 metre apart within cleared gaps. A mixture of 13 native shrub and tree species was planted within each gap and randomly allocated within each group. The trial was assessed in mid-June 2011, approximately 9 months after the trials were established.

Six of the plants had a survival rate of over 50 per cent (Figure 1). Ngaio, akeake, taupata and karamū were the most successful nine months after planting on the exposed harbour margin sites. In contrast, several species, including kawakawa, mānuka, māpou and the two Pittosporum species, tarata and kohuhu, performed poorly.

Reference:

Native Species Planting Trial, Maketu Marae, Kāwhia Harbour First Year Assessment D.O. Bergin and M.J. Bergin. Environmental Restoration Ltd. Rotorua. 2011.

Aotea

Aotea Beachcare was formed in 2011 after members of the Aotea community began to hear about the dune restoration efforts taking place over the hill in Kāwhia. A meeting was held between Aotea community members and Beachcare staff to discuss local issues and to inspect the beach and dunes. A group was quickly formed and in their first year held two well-attended working bees.

In the first planting day in July, 45 volunteers planted 2,000 spinifex, pīngao and wīwī in a damaged area of the dunes where a blowout was starting to form. This was followed by a second planting a month later in August that was attended by 40 volunteers who planted a further 1500 back-dune species in an area near the beach access that was over-run with exotic plants including agapanthus, blackberry and gorse.

The group is aiming to have a continuous spinifex dominated dune along the length of the beach that can naturally recover following any storm erosion events. The group also is working to improve the natural character of the area by returning native tree and shrub species to the area helping to support native wildlife and biodiversity. Public access ways are also being managed to help reduce pedestrian and vehicle damage to the dune vegetation including the installation of a 1.6 km walkway through the back-dune area constructed by Beachcare members (see page 3 for more information on the Aotea Beach walkway).



Aotea - a back-dune planting trial will help identify the native species that do the best in the exposed conditions at Aotea.



The inaugural working bee for Aotea Beachcare had a great turn out, with 45 local volunteers taking part. A big thank you to the Peakes for hosting everyone after the planting session for a great lunch and well-deserved cuppa!

Marokopa

After 7 years of planting native sand-trapping plants to rebuild the dune buffer and reduce the flooding risk to the Marokopa township, 2011 saw Marokopa Beachcare members turn their attention to biodiversity. Through a number of working bees held during 2011, Beachcare members planted over 1000 native tree and shrub species including pōhutukawa, karo, akaeake and tauhinu, in 4 fenced off areas that will become “biodiversity islands”.

Department of Conservation staff have been monitoring the birdlife on the site and are pleased with increasing numbers of the endangered New Zealand dotterel making regular visits and breeding on the spit. Shorebirds are recognised universally as excellent bio-indicators of the state of the health of coastal ecosystems, so the increased bird sightings are an encouraging sign.

As well as having important ecological values, the Marokopa spit is also a site of importance for Tāngata Whenua, with the area having many urupa (ancient burial grounds) and ancient midden sites from past occupation of the area. Re-establishing the native vegetation on the spit will help prevent the area from wind erosion and helping to protect the important cultural values the spit holds.



The Marokopa spit now has a cloak of native dune plants that have built a protective dune buffer between the sea and the community.



The last gap in the frontal dune being planted during a working bee in 2011.



Pīngao is now naturally re-generating on the Marokopa Spit.

Mokau

Dune reshaping and planting at the Seaview Holiday Park in Mokau that commenced in 2010 continued in 2011. A further 30 metres of weed infested dune had exotic species, including kikuyu grass and South African iceplant among others, removed by machinery. The area was then reshaped to a natural contour followed by the planting of 1500 spinifex in the frontal dune backed by 250 wīwī and 100 pōhuehue in a back-dune strip between the dune and camp sites.

In addition to supplying the planting labour, local camp site staff and residents have also upgraded the pedestrian and vehicle access way to help improve access while also reducing any impact beach users may have on the fragile dune vegetation.

The beach and dunes located in front of the campground was another part of the coast that was badly affected by the large storm in July 2011. The storm surge from the waves ran up over the dunes in places, including the 30 metre section that had been reshaped and planted earlier in the year. While there was some erosion to the dune face, the recently established native vegetation was able to survive the inundation of saltwater and is already starting to show signs of growth seaward, allowing natural dune recovery to occur. However, where the dunes were dominated by exotic species, the vegetation was not as tolerant of the saltwater and have since begun to die off, exposing the dune to wind erosion. This is how many dune blowouts form in areas where the native vegetation has been lost and exotic species have taken their place.



The area where the first stage of reshaping and planting took place had previously been dominated by exotic grasses and pest plants, such as box thorn, that prevent natural dune building from occurring.



The same area 1.5 years later shows a healthy cover of native spinifex grass that is allowing the dunes to build seaward, increasing the dune buffer between the sea and campground.



The access way contracted by local campers and campground management is helping to protect the new plantings from pedestrian damage.



Wave run-up from the July storm left behind knee depth foam. The foam actually provides nutrients for the dune plants and growth spurts are often observed from the plants following events such as this.



Local campers helping plant the second stage of the dune restoration.

Kiriterehere

In November 2011, the Department of Conservation assisted a group of 10 community members in a dune restoration working bee. In 2 hours the group planted 200 pīngao in the frontal dune and 400 trees and shrubs including taupata, karo, tī kōuka (cabbage tree), and pōhuehue in the back-dune area. This was the first dune planting at this site in a number of years, helping to build on the group's past efforts that successfully re-established pīngao in the Kiritihere dune system.