

FROM THE CHAIR

In the last issue we acknowledged the outstanding work of three retiring trustees and welcomed three new members. The new trustees have now been aboard for several meetings and are already contributing very positively to our work. It is business as usual.

It's been a busy six months, forming new relationships within DOC and talking with them about ways to work more closely for the benefit of Hauturu. In June, we had a strategy session to plot our path for the next three years and determine how we can further contribute to the protection of Hauturu's special habitat.

Fundraising to support the Island is always an important activity and we are in discussion with several funding organisations who are interested in helping. Among the many important activities we support is weed eradication, and we acknowledge with thanks the Chisholm Whitney Family Charitable Trust Board for their recent grant to assist with pampas control, a high-priority programme.

There have been some interesting events on the island too. Among the more notable was Heather the kakapo's hatching of two chicks. While they needed to be taken off the island to ensure their survival, both will be released to the wild elsewhere and, being females, their arrival is an important boost to the kakapo population recovery. Credit must go to the DOC and recovery programme staff for their roles in this successful breeding experiment. We have also seen the first recorded hatching of the recently rediscovered New Zealand storm petrel, which, it seems, was under our noses all the time!

In February, Hauturu was visited by a film crew from BBC America's series *Wild Things* to shoot a documentary. Trustee Lyn Wade accompanied them to impart her knowledge of the natural and human history of the Island.

Against the backdrop of all these and other positive happenings, the Trust is looking forward, with the help of all our supporters, to a very active and productive period.

Warren Gibb – Chairman

MEET OUR NEW TRUSTEES

Two new trustees, Mary Binney and David Stone, joined LBIST last year upon the retirement of David McGregor, John Hagen and Judy Hanbury. Here's a little bit about each of them. Mary Binney has a professional background in public governance and currently works as a local board advisor at Auckland Council. She previously worked in central government and holds a Masters in Public Policy from the University of Auckland. She is also a musician and composer in her spare time, has held a number of voluntary roles in the creative sector, and is a current committee member of the Composers Association of New Zealand. Mary is a keen conservation volunteer and has visited Hauturu several times for working weekends. As daughter of the Trust's founding patron, the late Don Binney, Mary has grown up with a strong understanding of the importance of Hauturu as a nature reserve of national and international significance. She says she is "very excited to have the opportunity to make an ongoing contribution to the work of the Trust and I am looking forward to putting my skills to work for the long-term benefit of Hauturu."

David Stone has had an involvement in conservation since his university days and has taken on a number of roles in conservation organisations in the last 10 years, including the Tawharanui Open Sanctuary Society and the Omaha Shorebird Protection Trust. A keen outdoors person, who enjoys tramping, kayaking, sailing, and fly fishing, David is a lawyer. He has applied his legal skills, particularly in the area of trusts, to a number of community and conservation organisations and used his business management and advocacy skills in liaising with central and local government organisations in support of conservation activities and environmental issues. Now in his early 60s, he is wishing to put more time (personal and professional) giving back to the community through conservation projects and organisations.



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LIGHTING UP NEW ZEALAND STORM PETRELS ON HAUTURU



Te Papa curator Alan Tennyson and I race across the grass, spotlights shining up into the darkness, focused on our prey, which is descending in spirals ending with a soft landing in bracken. Tennyson, with some rather unscrupulous behaviour, beats me to the prize: a New Zealand storm petrel. It's a species thought extinct, until re-sighted at sea in the Hauraki Gulf in 2003, and finally tracked back to a breeding site on Te Hauturu o Toi / Little Barrier Island, in February 2013. This year we were back on Hauturu in an attempt to find out more about these diminutive little seabirds. In particular, we were trialing a technique called spotlighting to see if it is possible to catch New Zealand storm petrel over land to aid in research of the poorly-known species.

Many seabirds have a strong attraction to bright lights shone up into the sky at night. It's most likely a by-product of their ability to use the moon and stars for navigation. For example, every year in Auckland in March and April dozens of fledgling Cook's petrel from Hauturu are picked up from the base of the Sky Tower and other large buildings. It's a fatal attraction. Misty nights, when the light is diffused, seem to be particularly attractive and confusing for the birds.

Wet and misty nights are also common on the Chatham Islands, where the technique of using spotlights shone into the sky to capture birds was developed through the conservation programme for another critically endangered New Zealand seabird, the Chatham Island taiko. In the case of the Chatham's seabird work, the technique was vitally important as it allowed birds to be tracked back to unknown breeding burrows using radio tags attached to their tails. Also importantly, banding every captured bird allows an assessment of population size over time by comparing the ratio of banded to unbanded birds recaptured. Naturally, finding breeding burrows and assessing population size are two key objectives of the New Zealand storm petrel project. Thus on February 17 this year, our team arrived on Hauturu to conduct a trial of spotlighting under the guidance of DOC seabird guru, Graeme Taylor.

So how do you spotlight a New Zealand storm petrel? A simple recipe really: take one rather large and open grass area near to the mouth of the Waipawa stream; position a powerful floodlight mounted on a pole in the centre of the open ground, and find a site for the generator at a sufficient distance away to minimise annoyance over long periods. (Brilliant, dedicated rangers in the form of Richard Walle and Pete Mitchell are excellent for this sort of work, and went amazingly overboard constructing a generator shelter for us.) Next, set up four mist nets surrounding the mounted light to capture any low-flying

birds and add one tablespoon of a super-enthusiastic team armed with powerful hand-held spotlights.

This is where we found ourselves at dusk on the night of February 18, happy with our set-up but unsure whether we would even see a New Zealand storm petrel. Darkness fell, a male kiwi's plaintive cry sounded from close by, to be answered by a female soon after. A morepork called, answered by two nearly-fledged chicks in the big puriri tree close by. That could be a problem if morepork like New Zealand storm petrels, we thought. Cook's petrel in their thousands began to call as they winged their way towards their breeding sites inland on the island. Over a million of these beautiful seabirds call Hauturu home, and their outlines were all white against the night sky when lit below by the spotlights.

More waiting, and then a real treat: a black petrel appears. These stunning animals breed only on Hauturu and Aotea (Great Barrier Island) and are in trouble, with populations declining as a result of introduced predators and – of more concern – the loss of birds killed during interaction with fishing boats. At over three times the size of a Cook's petrel, the black petrel looks like a giant black B52 bomber circling the light before moving off.

Again we wait and then, at 21:38, a small swallow-shaped bird flies into the light beam, undersides streaked with white but its all-black head giving it the appearance of a headless bird.



"NZSP!" the cry goes up, our adrenaline levels surging as hand-held spotlights fix on the rather surprised target. "Stay on it!" yells Graeme, as multiple hand-held spotlight beams fix on the target, overwhelming its night vision. It counters, swooping left and right, dodging and seeking to escape the light from below. But then it becomes disorientated and begins its circling descent to the ground and capture. It's processed: banded, examined for moult, and blood and feather samples taken before being released in darkness at the coast.

Over the next three weeks in February the spotlighting trial is a stunning success, with 25 New Zealand storm petrel captured at the site. Seven birds, whose brood patch (the place on the belly where birds lose down to warm their eggs) indicate that they are in breeding condition, have small radio tags attached to them in an attempt to track them back to breeding burrows.

Although tags are detected flying around in the darkness, unfortunately no new burrows are found. Meanwhile, up in the forest, we monitor the four known breeding burrows found in the 2013 season, and on February 22 we extract the first New Zealand storm petrel egg ever seen from one of the burrows. An exciting find!

Equally exciting is that using audio recorders installed outside several of the burrows in December 2013, and after many, many hours trawling through the masses of audio data, we manage to isolate a call unlike any that our team has heard on Little Barrier before. It's a high-pitched chiming whistle and one we believe to be the call of a New Zealand storm petrel attracting a mate to the entrance of its burrow. Why is it so important to have ►

Page two, clockwise from top: Neil Fitzgerald from Landcare Research inspects a New Zealand storm petrel caught using spotlight. (Photo: Neil Fitzgerald); Graeme Taylor inspects the wing of a New Zealand storm petrel. (Photo: Alan Tennyson); A floodlight beams into the night sky on Hauturu with a researcher nicely positioned to spot any birds. (Photo: Chris Gaskin). Page 3: Matt Rayner inspects the first New Zealand storm petrel egg ever seen. (Photo: Alan Tennyson)

► a recording of the call of this elusive little creature, you might ask? Well, studying the breeding biology of seabirds such as the New Zealand storm petrel requires finding their nest sites, which in the case of this species is a notoriously difficult thing to do. One common method is to move through an area where you believe birds to be breeding in underground burrows and play their taped calls, to which birds respond, so giving away their location.

Another possible use for calls is to try to get the birds to breed where you want them to breed, maximising efficiency and minimising the impact of walking all over pristine habitat. For example, in the recovery programme of the critically-endangered Chatham petrel on South East Island, audio playback was used to attract birds to a group of artificial nest boxes known as “Swamp City”, and this is one idea being explored for work with New Zealand storm petrel.

To support our conclusion that we had a New Zealand storm petrel call on tape, we attempted to use playback of the call to attract birds to ground at locations close to known breeding sites as well as further afield. How successful this technique proved to be was demonstrated one night in late March, when Chris Gaskin and two Karens (Karen Baird and Karen Bourgeois) were on the island continuing the monitoring programme. They were running a bit late for spotlighting so decided to set up the New Zealand storm petrel call playback on the lawn in front of the bunkhouse as a novelty for volunteers also sharing the bunkhouse. Amazingly,

when Karen (Baird) opened the door to check (she had her headlamp on) a New Zealand storm petrel fluttered down and landed at her feet! The dinner dishes were rapidly moved aside and the bird (dubbed the ‘Bunkhouse New Zealand storm petrel’) was duly ‘processed’.

This is unbelievable, given that just a year-and-a-half ago we had no idea New Zealand storm petrel bred on Hauturu and that no birds had ever been sighted or captured on the island. It also reaffirms how secretive some species can be to human eyes, particularly the night time fauna, a point often made by Ruud, the Little Barrier Island Supporters Trust’s patron and resident “Bugman”.

Overall, the field season was a stunning success and we now know we have various reliable methods for catching New Zealand storm petrel on land. The number of birds caught was a surprise and suggests that the population of this species may be expanding rapidly following the removal of kiore (the Pacific rat) from Hauturu in 2004. New Zealand storm petrels are one of the faster breeding tube-nosed seabirds; they can breed within two years of hatching, unlike their larger cousins (petrels, shearwaters and albatrosses), which can take five to fifteen years before they manage to breed at their colonies for the first time.

However, many, many questions remain. Next season’s field work will focus on using spotlight observations, in combination

WORKING WEEKEND

A report from Helen McNeil, who was a member of the working weekend group that went out to the Island in November last year, led by LBIST trustee Evan Hamlet and Trust scientific advisor Sandra Anderson.

Thirteen of us scrambled out of the little rubber boat into the waves and on to the boulders of Hauturu on a bright spring day. It was West Landing for us, the wind making the main landing too rough. Richard, Leigh, and Emily helped haul us all up on the boulders and welcomed us to the Island. Anyone who has visited Hauturu will know about the shaking out of sleeping bags, combing socks, scrubbing boots, all to find those renegade seeds that may have caught a ride. Hopefully, we didn’t take in any more and the work of the weeding crew up in the forest will not be increased.

On the walk across to the bunkhouse, we saw bellbirds (korimako). Very beautiful they are, the deep green of their plumage in direct contrast to the golden yellow of the head. There’s tui like that, too. They’ve had their heads in the flax flowers, the golden yellow pollen sticking to their heads as they move from one flower to the other. Then there were the flocks of kereru, not just swooping across from one tree to the other, but also stumbling around on the low-growing muehlenbeckia.

They say the past is a different country. When you visit Hauturu, it is like going into the past, like visiting our country when the forest was alive with birds, the kiwi poked around at night, and the tuatara sat as still as stone (until dinner came along). A country without dogs, cats, stoats, rats – the list is longer.

This sense of being out of time is very real as we start clearing in the tuatarium, or sieving for bugs and grubs to feed the tuatara.

We’re in with the breeding-aged tuatara – Kowhai with her beautiful yellow ringed eyes is my favourite. Soon she will burrow to bury her leathery eggs, so the ground needs to be cleared and loosened. We watch her crunch up a locust (imported from the mainland). In winter she only needs one a week, in summer one every two days.

It’s an extraordinary experience to stroke the sun-warmed belly of a tuatara and to think that this species was around when dinosaurs lived, 220 million years ago. It has survived all those ice ages. It’s heartening when we’re facing climate change in the future. And up in the tree is a wetapunga. It’s just a small one; even so, it would fill my palm were I brave enough to hold it.

As the evening draws in, I tiptoe past the bellbird nest underneath the ranger’s deck to watch the sunset. A brown teal duck (pateke) shares the deck with me. I’m looking for bats. I’m hoping that I’ll see that elusive flick out of my peripheral vision. No luck, but later there is one, apparently. That’s the thing – the wildlife is so prolific you have to be quick to see some things.

The barbecue is sumptuous. As we finish dinner a kiwi calls, a female, and a male answers, just over in the flax bushes. We’re hopeful, and with torches in hand we look for that round body and long beak. The kiwi hunt that night sees some encounters at the distance. It doesn’t matter. Seeing a kiwi in the wild is magic, especially when you are under a sky so bright with stars.

Early the next morning is noisy. Birdsong brings you out of sleep. There’s a tiny dark bird coming out of the bracken. Out come the books, and the discussion starts. Is it a spotless crane, or a banded rail? No decision. A little walk in the sunshine and there’s a flock of bright green kakariki coming up from the grass, half-a-dozen tieke (saddleback) are in the puriri tree, and an elusive kokako calls just behind the bunkhouse. The photographers amongst us are on the hunt but kokako has moved on.

with playback, at multiple locations to ascertain whether New Zealand storm petrel are distributed right around the island or concentrated near the valley where we have discovered so much activity.

We are hugely grateful to DOC staff on and off the island for supporting this conservation work, with particular thanks to island staff Richard Walle, Pete Mitchell, Leigh Joyce, and Cathy Mitchell, along with naturalists extraordinaire Mahina and Liam. Acknowledgement also goes to team members and volunteers not mentioned above, including Neil Fitzgerald (Landcare Research), Dr Stefanie Ismar (Hemholtz Centre for Ocean Research, Germany), and Lucy Bridgeman, Andy Farrant, Megan Young, Ian Southey, Steph Borrelle, and Jo Sim and her dogs Maddi and Rua. We are extremely grateful to funding from the Little Barrier Island Hauturu Supporters Trust and Forest and Bird, without which this year's field work would not have been possible. We also acknowledge Ngati Manuhiri for their on-going partnership in this work as kaitiaki of Hauturu.

Matt Rayner
Curator of Land Vertebrates, Auckland Museum
LBIST Trustee

STATE OF OUR STREAMS

Lyn Wade, one of our trustees, has just completed a project surveying several of the streams on Hauturu for her BSc. Appl. This entailed capturing and identifying both adult and larval stages of aquatic invertebrates (insects such as mayflies and caddisflies) as well as native fish. Sixteen new records of aquatic insects were added to the 50-year-old inventory for Hauturu created by Professor Mike Winterbourn in 1964. The presence of banded kokopu and longfin eel was confirmed.

Hauturu's intermittent streams are unusual, changing from raging torrents to pools in a matter of days. The species that can survive on Hauturu have strategies in place to cope with these conditions. However the healthy state of Hauturu's streams stands in vast contrast to the poor state of the majority of New Zealand's lowland streams. Intensive farming practices and local and national regulations that no longer protect the environment mean that most of our freshwater systems are in such poor health that our native freshwater species, many of which are endemic (only found in New Zealand) are no longer able to survive. Dr Mike Joy, recipient of the Charles Fleming Royal Society Lectureship 2013, spoke recently at Auckland Museum on the drastic state of New Zealand's freshwaters. Lyn attended the lecture where Mike Joy made it clear that we all need to think what we can do to help if we wish our children and grandchildren to have clean life-giving water flowing in our streams.



The March working group. From left: Dave from DOC, Stella Friedlander, Nicky Carter, Chris Sealey, Jenny Barclay, Gabriela and Chris Drew, John and Jayne Boesley, Jo McCarthy and Lyn Wade in the foreground.

Evan and Sandra organise us for a long, slow walk up the Thumb Track, stopping to find the robin (toutouwai), the fantail (piwakawaka), the whitehead (popokotea), and the grey warbler (riroriro), those tiny birds that flick in the bushes and give the background to the music of the forest. There's a shriek of the long-tailed cuckoo (koekoea) but we can't see it. It's too well camouflaged. The kaka are a different story. Loud and visible, they fly overhead scolding. There are horizontal lines on tree trunks; it seems this is where kaka has fed. The little hihi (stitchbird) flits, the tieke (saddleback) rustles in the undergrowth, tui become less plentiful as we move into the thicker forest. I learn the difference between the female and male bellbirds (korimako), that the hebe on Hauturu has a larger flower and is pollinated by bats, and how elusive the kokako is. Its haunting call has us hoping it will be just over the next ridge. We find a burrow that may just be from the Cook's petrel (titi). We heard them coming home to their burrows high on the ridges late the night before.

Back at the hut, there are more walks to be had (I got very close to a kaka tearing at a kanuka until it heard me and shrieked as



The April weekend group plus members of the New Zealand storm petrel team and Phred Dobbins, the son of a previous Hauturu ranger, and members of his family.

it left), skins to be found basking on the rocks, pukeko that actually get to fly quite a long way.

The sea is softer for our departure. Richard loads our big plastic containers up on the tractor trailer, then on to the small boat for the trip out to meet Dave and Lyn, anchored in a calm sea. We're going back to a place where there are more people than birds. There are still seabirds to watch – gannets (takapu), Cook's petrel (titi), and others I don't know.

So much to learn. Thanks to Lyn for organising us, to Dave and Lyn for getting us there and back, to Evan and Sandra for sharing their knowledge, and to Richard, Leigh, Mahina and Liam for keeping the place so beautiful. And many thanks to those who make it possible for people like me to visit, for the depth of knowledge that this wonderful place provides, and for the deep sense of being a New Zealander that comes from close proximity with our heritage.

Helen McNeil

RUUD'S RAVINGS No 16: RECONNECTING WITH NATURE

It's been a while since Hauturu has featured a piece by the LBIST Patron Ruud Kleinpaste. We welcome him back to its pages.

Over the past years it has become increasingly obvious that our environmental future lies in the hands and minds of our kids. Yes, it sounds like the biggest cliché in the world and it is often presented at education hui around Aotearoa as the way 'going forward'. Yet we all seem to forget that from around 2008 more people on the planet live in cities than outside cities, and that figure is growing by the minute.

There's no doubt that in Europe and America we have just delivered the very first human generation that has largely grown up without much Nature contact; this generation is now ready to deliver the next lot, largely disconnected from the origins of Life on Earth.

Richard Louv (*Last Child in the Woods*) elegantly describes the phenomenon of 'Nature Deficit Disorder', a condition that pin-points the most important disconnect on the planet. It is by no means a recognised medical condition, but it surely is a recognised environmental phrase, because everybody even slightly involved in restoration work or conservation volunteer activities will know exactly what it stands for, especially if you are over, say, 40 years of age.

That early connection with Nature is probably the most important thing that can happen to a child. And the more intense that connection is, the better it'll be for that kid's future. Most of us remember clearly what brought us outside, what we did, what we saw and where our favourite haunts were. More importantly, we can also often name the person who was influential in awakening our interest in natural history, be it gardening, bird watching, geology, or hiking.

It may not come as a surprise that this early contact with Nature is now showing to be beneficial in reducing attention deficit disorder, as well as mental and physical fatigue. It is hugely positive for mental health, better productivity, cognitive ability, creativity, learning and the retention of information, social and cultural well-being, and the cooperative skills in society. Of course, it is also beneficial to Nature itself, via increased respect and restoration activities. I probably could write another 500 words on all the benefits, but my editor will no doubt use her red pen!

So, what's the strategy? Do we go into the high schools and aim at the clever-clogs from age 13 upwards and immerse them in science, climate disruption, extinction and ecosystem failures? Do we put some urgency behind getting them off their bums and away from their smart devices and planting some native seedlings instead? Do we take them tramping in national parks and reserves in the rain and mud and out of wifi contact?

Somehow, I don't think that's the answer, really. I have been involved across New Zealand in many environmental education programmes based on biodiversity restoration and embedded in parts of the curriculum. My observations are increasingly echoed by research results that show that if you want to be effective, your target groups should really be a lot younger. My favourite 'market

segment' is eight to eleven-year-olds; they love listening to the biodiversity stories! But judging from what I recently learned in Te Anau about the Kids Restore the Kepler programme, we may even have to start aiming for much younger kids to set them up for life on planet Earth.

It also takes an inspirational teacher, or a volunteer, who can show them the way and tell stories. School work has to have the 'work' component hidden among cool experiments and fun; they won't know they're learning! Biodiversity work can also easily be chucked into all components of the curriculum, from economics (fund-raising) and social studies to art, creative writing, physics, maths, statistics and chemistry. Let's call it Full Immersion, shall we?

'Why is all this relevant to Hauturu?' you may well ask. There are many levels and many examples, one of which is our weed problem. When weeds are seen as the clever botanical things they really are, local and coastal school kids can measure these seeds' airworthiness, air speeds, and floatability quotients to understand how they get to the Island on a regular basis. They can draw the design of those seeds or write about what it may feel like, floating over a huge stretch of water. They can predict the months of greatest seed production, based on the preceding weather patterns. There is an immediate connection between the students and the target: Nature doing what Nature does best, no matter whether you are dealing with weeds or native trees.

The Nature contact experience does not require a national park or a scientific reserve; the patch of bush at the end of the road, a group of trees on the water's edge, or the weedy pond in the neighbourhood are just as valuable to a playing kid.

We must never forget that the new generation is exposed to messages about extinction, demise of bees, over-population and ecosystem failures. On their hand-held devices they see images of *Blade Runner* and *Gattaca*, and as Richard Louv points out, this is not a great picture of what lies ahead.

If we are to portray the future, it simply has to be a future we *want* to live in. And that's exactly where Hauturu comes into view, don't you think?



Students from Mararoa school doing their curriculum-immersion work on the Kepler Track. What a classroom!



A BIRD NAMED HEATHER 1



The excitement about mating and the hatching of kakapo chicks dominated activity on the island in the first few months of the year. Here's a report from the island's resident scientist Leigh Joyce, who went beyond the call of duty to make sure that one tiny, and initially fragile, kakapo got a good start in life. LBIST is hugely grateful to Leigh for her massive commitment.

As part of the kakapo programme, I set up a long-term phenology study in September 2013, monitoring the flowering and fruiting of 30 kauri and 20 beech trees at different altitudes along the Thumb Track (monitoring some of the same trees used in Zoe Stone's Master's thesis). Binoculars were used to look into the canopy in October and January, and seed trays (using funnels and stockings to collect beech seed) were set up in January 2014. The aim of the phenology study is to predict kakapo breeding (using kauri and beech instead of rimu trees, which are used to predict potential breeding seasons on Codfish Island). It takes two years for kauri cones to ripen, and although there was a beech mast seeding on Hauturu this summer, only a few kauri cones were recorded (possibly due to the drought last year). However, a lot of other kakapo food plants were flowering, with abundant seed and fruit observed on species such as *Gahnia* and *Astelia*.

We monitored the birds during the breeding season and walked along the summit ridgeline to check for track and bowls and look for breeding sign. Dobbie, who only arrived on the island in October 2013, was the first male to build a track and bowl (a 60-80cm diameter depression dug in the ground, used for "booming" to attract female kakapo). He made two track and bowls (one on the summit and another near the old Track Seven junction further along the ridge). On New Year's Eve, Richard, Mahina, Liam and I sat up at Mt Herekohu / The Thumb and heard some booming over the Cook's petrel calls from the summit of Mt Hauturu. A magic way to start the year! Merty and Ox also started booming in January and made several track and bowls at different high points between the summit and Mt Orau. The other males, Tiwai, Jester, and Doc, also moved up higher but did not boom. I put small sticks in the ground to check whether the bowls were being used regularly.

The six male kakapo on Hauturu are fitted with "checkmate" transmitters, which transmit a special sequence, giving information on whether they've mated, when they mated,

who they mated with, how long they mated for, and a mating "score" based on intensity! (There is no privacy!). The females are fitted with "nest minder" transmitters (similar to the ones used on kiwi), which indicate if a female is nesting, based on a reduced activity rate. Thanks to this amazing technology, we picked up that Dobbie had mated with Heather on three separate occasions (which increases the likelihood of fertile eggs). I also found mating sign, with several down and pin feathers around a small depression in the ground not far from Dobbie's bowl. It's interesting that all the kakapo who showed mating activity (Dobbie, Merty, Ox and Heather) had all been on Hauturu before. Dobbie was a chick who hatched on the island in 1991, so it's appropriate that the first time he ever mated was on Hauturu.

Heather was tracked to a nest located in a cavity under the base of a tree on February 17. Nest monitoring equipment was set up and a remote camera and motion sensor were installed at the burrow entrance. The three eggs were candled and all were fertile, but unfortunately the middle egg was an early dead embryo. This egg was removed from the nest once we were absolutely certain it had died and was not developing. As there were several days between the estimated hatch dates of the two remaining fertile eggs, the kakapo team was concerned this could reduce the chance of survival of the younger chick, due to its older dominant sibling getting most of the food. It was therefore decided to transfer the youngest egg, when it was 21 days old, to Whenua Hou / Codfish Island to be raised by another female kakapo. Heather 2 was incubated on Codfish Island and hatched on 15 March 2014, before being fostered to Rakiura. She was taken to the hut for hand-rearing due to respiratory problems on March 30, but returned to Rakiura's nest on April 8. Heather 2 fledged on May 17. Rakiura is still feeding her and she weighs about 1.5kg and is doing well in the wild.

Heather's nest was monitored during the incubation period of approximately 28 days (using a camera with a monitor screen set up at a tent on the ridgeline). Heather 1 hatched on Te Hauturu o Toi / Little Barrier Island on 12 March 2014 at 7pm in the nest with Heather. She seemed fit and well for the first two days, but on March 15 Cyclone Lusi arrived, making it impossible for nest minders to get up to the nest for two nights due to 50-70 knot winds and heavy rain. It is possible that Heather 1 got chilled during the storm and she was not gaining enough weight. When she was 10 days old, she was underweight and started having ►

► trouble breathing. A decision was made to remove her from the nest, given the concerns about her condition.

Bethany Jackson, a vet from Auckland Zoo, and I carried her down the hill and transferred her to the NZ Centre of Conservation Management veterinary clinic at Auckland Zoo for medical care. I helped hand-raise Heather 1 at the NZCCM vet clinic, together with the zoo staff, for almost two months. During this time the chick came off medication and gained weight, increasing in size from 43g to over 1kg, and it was a real privilege to see her grow and improve so much, taking a curious interest in everything around her!

We tube-fed her at set times throughout the day and night and put natural vegetation and food in her pen, such as coprosma and red matipo. Having Heather 1 at Auckland Zoo also provided an opportunity for the public to see a kakapo chick. People were very excited to see her and this helped raise awareness of kakapo, conservation in general, and the benefits of predator-free islands, such as Hauturu.

I took Heather 1 to Invercargill on 15 May 2014 so she could be raised with two other male chicks (Lisa 1 and Rakiura 2) to reduce imprinting. It was fantastic seeing her in the pen with the two other chicks as she was very interested in her new environment. She went up to Rakiura 2 straight away and touched him lightly with her beak. She also loved climbing over logs and feeding on bark and the different variety of food and berries, such as kahikatea fruit (which Heather had fed her in the nest).

The three hand-reared chicks went out to Whenua Hou / Codfish Island on June 4 to a larger outdoor pen. They are in the process of weaning from hand-rearing, learning to feed on natural foods, and adapting to life outdoors in a Southland winter! Heather 1 has been doing really well and she is growing more confident every day. Her climbing skills are very impressive and she is still very happy to come out and say hello whenever staff go in to feed her. Her health is great and there have been no concerns with her since her return to Invercargill. Her weight is also good, currently 1.42kg. She is a very sweet natured kakapo and at times mischievous. The plan is to release her on July 10 from the pen into the wild on Codfish Island and to continue supplementary feeding as required. It'll be interesting to see if she bumps into her younger sister, Heather 2!

Although both chicks were removed from Hauturu, it was a successful breeding season in the sense that three of the males developed track and bowls and boomed, Heather mated and laid three fertile eggs, and there are two new female chicks added to the kakapo population. Across New Zealand, only six kakapo chicks were produced this year and the other four chicks from Codfish Island are all males. We've also learnt that Heather bred during a season when there wasn't a lot of kauri seed available, without supplementary food, and that she predominantly fed the chick unripe kahikatea fruit. Considering that the birds have only just arrived back on the island, we can hopefully look forward to more successful breeding seasons in the future.

The annual transmitter change and health check of the birds on Hauturu was completed in June (as well as taking blood, feather, and faecal samples for standard disease screening) and all nine kakapo are looking healthy and well. The birds were spread out over the whole Island and some birds were easier to catch than others, with several requiring good bush-bashing and tree climbing skills!

Leigh Joyce

WORKING WEEKEND SPRING 2014

Two working weekends are planned for late Spring 2014.

Target dates (weather permitting):

November 1/2 (back-up dates 8/9 November 2014)

November 29/30 (back-up dates 6/7 December 2014)

There can only be eight participants for each of these weekends because the weed team is on the Island and therefore bunkhouse capacity is limited.

All participants need to be reasonably fit and agile and prepared to cope, if necessary, with a wet and difficult landing over large and slippery boulders. We will do a variety of jobs for the rangers plus there will be time for walking, bird-watching, and botanising.

For further details and to register your interest in either of these weekends, please ring Sandra Jones ph 09 817 2788, or email info@littlebarrierisland.org.nz

Closing date for enquiries: Sunday 7 September 2014.

Hauturu Supporters Trust

The Trust was established in 1997 to help support conservation and research activities on Te Hauturu-o-Toi / Little Barrier Island. Membership of the Trust is by subscription and donations are also welcome. All donations and subscriptions are directed towards activities of benefit to Hauturu.

Your subscription ensures that you receive *Hauturu*, the Trust newsletter, twice a year, bringing you up-to-date news from and about the island. Copies of past issues are available on request.

If you wish to become a supporter, make a donation or offer help in some other way, please contact the Trust secretary Sandra Jones, phone: 09 817 2788.

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