



Waikato Biodiversity Forum

Ngā Kaihāpai Rerenga Rauropi o Waikato

Autumn Newsletter 2019 Number 65

Kia ora tātou,

An update on some of the work undertaken over the past three months:

- Edited, published and gathered articles for Autumn edition of the Forum Newsletter
- Chaired and took minutes for Forum Focus group meetings
- Authored and published report on the WBF & Waikato River Trails Field Day
- Sent bio-forum emails, and updated website and facebook page
- Responded to 17 enquiries from email and 0800 bio div service

IMPORTANT NOTICE: WAIKATO BIODIVERSITY FORUM – COVID-19 UPDATE

We have been fielding some enquiries from community groups regarding COVID-19 Level 4 restrictions and how this affects the work of community groups doing ecological restoration.

Sanctuaries of New Zealand Inc. have defined essential work within ecological sanctuaries as the work that directly impacts animal welfare and active threatened species programmes that cannot be deferred can be considered essential work, including pest proof fence checking and breach management, wildlife supplementary feeding and critical animal pest control functions. See here how [Sanctuary Mountain Maungatautari](#) is handling this situation.

For community groups that are not managing large sanctuaries, restrictions are different. Click [here](#) to see a useful article from the NZ Mountain Safety Council about activities in the bush during Alert Level 4. A few summary points are below:

- Don't drive anywhere to go for a walk, check traps, plant trees etc.
- You can get out for fresh air or exercise like a walk or run in your neighbourhood. But these must all start and end at your home with no driving required and you must always keep your distance (minimum of 2 metres) from all others at all times (except for people in your household/bubble). Please avoid touching gates or other hardware too.
- If your trap or bait line/planting/weeding areas are on your property, then we encourage you to maintain these (whilst ensuring social distancing requirements). This will make a real difference to the habitat of native species that are close to your home and will make the job of restoration a little less onerous when things return to normal. It's also good for keeping your spirits up!
- If your trap or bait line is in on public conservation land or other public land – please leave it alone for as long as Alert Level 4 or any other restrictions remain in place. Why? Because this takes more time than a simple walk and it is best to minimise the time you spend in these areas to reduce the likelihood of coming into

contact with other people, and also the likelihood of injury which would require other people to help you.

See what the [Department of Conservation](#) are doing about their operations during this time.

Government/local government agency offices are shut at this time but staff are still working and normal communication channels remain open (0800 numbers, email, websites etc.).

We are fortunate that this time of year the risk to our bird-life is reduced as the breeding season has concluded for most of our species. We hope each of you are safe and well among the current challenges COVID-19 has brought, and we recognise your passion and willingness to continue to support our native taonga and places. We encourage you to continue to connect with others online during this time, including us!

Unite against COVID-19

Pirongia Te Aroaro o Kahu Restoration Society

Over the summer, it has been all on for our volunteers with monitoring kōkako nesting, clearing bait stations, and checking on dactylanthus flowering. Four kōkako pairs nested on Mt Pirongia, achieving 100% fledging success but no repeat nesting occurred, probably due to the dry conditions. Kōkako have been regularly seen by the public with some amazing photos and video taken. Large teams of enthusiastic volunteers at Mt Pirongia and at Okahukura, Northern Pureora Forest were clearing uneaten baits from our bait station grids. We also

put in Ditrac on Mt Pirongia to extend protection for kōkako through to April. Our sincere thanks to all our volunteers especially Waikato University students and the Waikato Tramping Club members. What a bunch of legends!

The start of February saw a small team head up to the hut on Mt Pirongia for dactylanthus monitoring, supported by Alister and his helicopter from Waikato Heliworx. New plants found last year were caged so possums can't ravage the flowers and prevent pollination. This year, most of the plants had old flowers so human intervention wasn't required. Also, a German wasp enjoying the nectar of one of the flowers indicates wasps might be playing a part in pollination services. Two of our committee members have undergone some LUV training, funded by the Department of Conservation. Well done team and thanks go to DoC for their generous contribution. Their new skills will be put to great use at our Pureora pest control project.



Pair of kōkako at Grey Rd carpark, Mt Pirongia. Photo: Bernie Krippner

Covid19 and the Karioi Maunga Project

Like conservation work around the country, the Karioi Project's biodiversity work has come to a grinding halt. Usually at this time of year, we monitor Oi/Grey Faced Petrels as they come back to land

to breed. This year, the first of the returning Oi will be unobserved, as our camera monitoring will be on hold. It's a loss, especially as the vital predator control that protects them will also cease - we just hope that everything that has been done to date, will be enough to keep them safe as they find their life long mate and breed. The Oi won't return until June/July to lay their eggs - let's hope the Karioi team will be back doing the work that is needed to see chicks hatch!

With the closure of schools, our educational work is also on hold, both after school and in school programs. We hope to offer the Manaaki Ao / Earthcare program at Raglan Area School through online delivery in Term 2.

As a result of the suspension of all educational and field activities, we have been working hard to support our team to minimise the impact on them. This includes using the government wage subsidy (we have 15 staff), and prioritising work loads to the employees that can work from home on specific tasks.

However, disappointing and challenging this has been, we realise this is also a chance to take time to prepare, reflect and re-assess. There is much we hoped to achieve with our small team, and our goals are ambitious. And we want to invite you to be a part of this journey. Please keep encouraging each other as we work to restore and care for this amazing world we live in!



Winter sunset, Ngarunui Beach, Whaingaroa.

Pūkoro-koro Miranda Shorebird Centre - Red Knot Deaths In The Firth of Thames

Over recent years during late summer there has been an almost annual outbreak of botulism around the southern Firth of Thames. The lower Piako river and nearby drains appear to be the main areas affected. This year Fish and Game staff reported over 3000 dead ducks, with hundreds of eels also dying in stagnant drains.

However, along the Pūkoro-koro Miranda coast quite a different event was unfolding. In late January Pūkoro-koro Miranda Shorebird Centre staff began noticing shorebirds that were unable to fly. Over 90 per cent of affected birds were red knots, a small migrant that breeds on the high tundra of Far Eastern Russia. During the next month over 80 knots were recovered, with most sent to bird rescue operations in Auckland, Hamilton and Thames. All but 18 subsequently recovered and were released.

While predominantly impacting ducks, botulism can affect a wide range of species. That almost all affected birds in this event were of one species, strongly indicated something other than botulism was involved. Knots are among the most highly specialized of shorebirds, their diet being almost exclusively bivalve molluscs, which they crush in the gizzard. A toxic algal bloom was suspected to be responsible, with toxin concentrated in tiny filter feeders, then being ingested by knots. Not only did the knots show no respiratory distress - a key symptom of botulism, they displayed symptoms not consistent with botulism. Mortality events of red knots previously have been reported in South America; toxins have been suspected to be involved, but not proven. Algal toxins are known to affect a variety of coastal birds including oystercatchers.

What was going on? Advice from Cawthron Institute and other Environmental Agencies was to collect

samples from shellfish the birds are feeding on along the southern end of the Firth of Thames, to test for marine algal toxins. In mid-March DOC staff and PMNT began organizing to do this. Knots begin departing on northward migration during March so there was only a narrow window of opportunity to gather meaningful data before the birds were gone. An aerial survey of the firth at low tide would try and locate where knots were feeding. Benthic samples would then be taken for analysis. Cawthron had offered to analyse samples free of charge. As it happened, the aerial survey took place on the eve of the Covid-19 national lockdown and that was far as things went for this season.

This event is clearly a wakeup call about the health of the Firth of Thames, one of New Zealand's six Ramsar wetlands of international importance, and one of our three sites in the East Asian Australasian Flyway Site Network. In New Zealand red knots are classified as Nationally Vulnerable, but their populations in the East Asian Australasian region have been declining sharply in recent years. The main driver of this is habitat loss at migration stopover sites in East Asia but we need to ensure that this country is not contributing to the decline. It is estimated that, as of mid-March 2020, some 10% of the Red Knots that were roosting at Pūkoro Mirānda had been affected. The 80 birds recovered on the Pūkoro Mirānda are likely not the full picture. How many birds succumbed to the event unseen elsewhere around the mangrove fringed bay? Throughout the event we found regular evidence of incapacitated birds taken by predators. Clearly it was a serious situation.

The problem with trying to establish what may be happening on the Firth, is that we know very little about densities and distribution of benthic fauna, nor foraging distribution of birds. Between January and March there may be 20,000 shorebirds of different species spread

over 8500 ha of tidal flats. Given the large area and the treacherously soft nature of much of the tidal flats, benthic surveys will be highly challenging. However, it is essential that such monitoring is started.

Comprehensive aerial surveys to cover seasonal change as well as variations within the tidal cycle will be required to map bird distribution. Survey transects would be plotted based on these data and a sampling regime developed. Techniques for sampling benthos from shallow boats have proved effective overseas and would eliminate a major obstacle for this site. In short, what is required is a multi-year, multi-agency programme to effectively monitor what is happening on the Firth.

We have a responsibility to ensure viable shorebird habitats are maintained at our end of the flyway, to ensure these migrants can continue their remarkable migration cycle. Keith Woodley



Red Knots. Photo: Ian Southy

The Forest for The Trees

Like many Kiwi kids growing up on farms, my uncle had a brief flirtation with taxidermy.

He enrolled in a correspondence course at the Northwestern School of Taxidermy in Omaha, Nebraska, and, as part of the

course, stuffed a pheasant. Instead of placing it on the mantelpiece for the family to admire, he planted the pheasant in the paddock just within shotgun range of the garden fence. Over lunch, my grandad spied the pheasant and, without a word, made for the back door. As his right hand extracted two home loads from his cartridge belt hanging on its nail on the door, his left hand closed around the barrels of his prized Webley & Scott side-by-side shotgun standing in its usual place by the door. Grandad crept silently down the path and, screened by the dunny, checked to see if the magnificent cock bird was still there.

Now, the rules of engagement for pheasant shooting require the bird to be in flight before it is shot, but my grandad had lived through a depression and two world wars. He was more pragmatist than purist. Grandad released first the right barrel, then the left. Feathers flew, exposing not only the wire and wood-wool armature but the deception as well. As the feathers floated to the ground, he slowly lowered the gun. Grandad swore till the day he died that he saw the bird jump just before he fired. Grandad was convinced it was a live cock pheasant, but it was just an illusion.

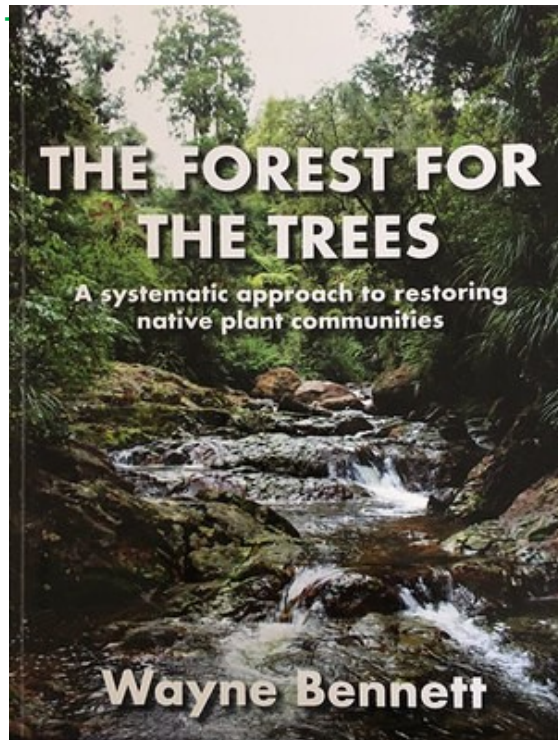
There are certain parallels between taxidermy and restoring ecosystems, or at least in the way that people have tried to restore them. Because an ecosystem must not just look like one, it must function like one as well. A taxidermist can faithfully reconstruct the form and appearance of a live pheasant, but nobody can reassemble the live bird one organ, tissue or cell at a time. To live and function as a live bird, every part of its structure must work simultaneously. In the same way, a community of plants is not static, but is continually renewing itself. There are processes going on all of the time that give a natural system the ability to adapt to changing conditions and the resilience to cope with threats.

Think of the stuffed pheasant that maintains the appearance of a live bird if it is maintained and is kept dry and dusted, but which cannot grow new feathers when the old ones fade, cannot fly to avoid a predator and cannot reproduce to populate a favourable area. Even the cells that make up every part of a live bird have a short life and are constantly being recycled. In the same way, ecological restoration is about restoring the unseen processes that make an ecosystem work and that sustain it, not just creating the illusion of a forest. It takes a little more care to set up but reinstating natural processes and faithfully following natural patterns results in a more authentic, resilient and self-sustaining ecosystem.

Because ecosystems are dynamic and continually changing, ecological restoration doesn't aim at a particular end point, but rather aims to reinstate natural patterns and restores natural processes so that an ecosystem can continue to develop and adapt.



Book Review - THE FOREST FOR THE



I was delighted when Wayne asked me to review his recently completed new book. Wayne and I both work in the field of ecological restoration and I consider it fantastic that this publication has been produced. The first impression of this publication is the large easy to read font, and generous spacing of the text layout, and over 200 relevant images, all taken by the author. Immediately you are given the impression that this book is practical and usable. The title is also very well chosen as it reverses the old saying “can’t see the forest for the trees”, usually meaning to lose the big picture by being stuck on the details. This book is the details you need to see the big picture, brilliant! This publication takes the reader on a journey to understand the steps required to do your best work when engaging in ecological restoration.

In the Introduction of Forest for the trees, we learn some background about the author and his reasons for entering the world of ecological restoration. This is immediately followed by an outline of the purpose of this book.

In Homo- sapiens – The ultimate ecosystem engineer, we are briefly given the reasons for how we in New Zealand and the world have found ourselves in this contemporary scenario.

A reference ecosystem begins by cleverly comparing the similarities between the off -shore and on-shore island plant communities and the effects within those populations that may occur. This chapter re-enforces the importance of having a local model on which to base your project so that you will make the best possible attempt at creating a healthy realistic plant community over time. The author clearly explains the best methods for establishing the list of plants you should consider for your area.

As the chapter title suggests, in Weeds – unfair competition, we are given good examples and reasons for why introduced plants do so well in an environment far from their natural range. A range of options are suggested as to how to deal with weeds when planning a project.

A community of plants, explains to the reader the mechanism and ability by which our flora survives, thrives and disperses, so that the reader/user can understand the importance of which species to use and where. Excellent examples of particular species’ survival and dispersal methods are given, as well as particular methods that may be used to assist the result you desire. The different types of plant habits are explained thoroughly in this chapter. The importance of Eco-sourcing is explained, including the practical application. Propagation method is briefly covered. Then finally the importance of the below ground ecology relevant to your site depending on its start point.

The “A plan of attack” chapter is self-explanatory, and carefully and thoroughly details the strategies, activities and tools you should consider for achieving an excellent outcome for a project. Beginning with what you are

trying to achieve then assessment of your site, all bases are explained and covered so that the reader has a methodology for success. Preparation, planting and maintenance are explained in detail along with suggesting recording your efforts and progress to see how you do, for reference and success monitoring. This is a very valuable chapter for the 'doing' part of a project.

In Examples of restoration projects, four examples of restoration projects are given along with helpful tables and pictures. The beauty of this chapter is to show the reader that one method may not suit all sites, using examples of different sites shows limitations and natural advantages that may be encountered on any particular site. Using helpful headings and sub-headings each example site is outlined and detailed so that each site's reality and approach can be explained to the reader clearly and succinctly.

Clearing the slate: The weeds encountered, is a reference chapter for each commonly met weed species and the possible methods used to control them. This chapter also highlights within each species the importance/priority of control regarding what the damage each particular species may be, or is, doing on site.

Native species: It a jungle out there, is a chapter of informed and interesting practical information about many of the species to be considered when undertaking a restoration project. Using the Titles of Colonisers; Canopy Trees; Understorey; Climbers and Epiphytes; Wetland plants; and Ground herbs, 65 species of plant are detailed, all of which were the species used for the four projects highlighted in the Examples of restoration projects chapter.

Wayne's Conclusion is concise and direct, a summary we should all consider. This is followed by suggestions of further reading (observing mother nature) and a couple of appendices with yet more

valuable information, an excellent finish to an important tool. Wayne continually re-enforces the need to observe the natural spaces like yours (in aspect and substrate) which are nearby so that in your effort to create a successful project you understand the components of your recipe to get the best result.

Each chapter gives good sound reason to the methodology and techniques one might use if you are to restore an ecosystem and not just plant a simple plot of *Pittosporum* sp. or such like. This approach is that used by an ecologist who will charge a small fortune, therefore making this publication a must for any serious landowner, ecological restoration contractor, restoration group or council staffer wishing to give a member of the public restoration advice. From someone who knows the need for accurate, considered and measured efforts in the restoration of our degraded land this is a publication of value and importance. Well done Wayne! Kia kahate hakituri. Matt Ward - NZPCN Secretary (mattdavidward@gmail.com)

To purchase, contact Wayne directly as he is publishing this book. Book available for \$ 45.00 (incl GST & postage), invoice also available. Contact details wayne@forestflora.co.nz

Superlure Snags Wetland Weasels!

The National Wetland Trust has caught two weasels that somehow made their way inside the predator exclusion fence at Lake Rotopiko.

After detecting weasel footprints on their tracking cards last November, the Trust volunteers put out about 30 traps to try and catch the wily pest. Catching the weasel was crucial to the Trust, who are developing a haven for native wetland birds inside the Rotopiko fence.

After almost four months with no catches, the Trust changed tack and tried something novel. Says Trust

Executive Officer Karen Denyer “We tried every type of food lure we could think of, but what finally worked was the scent of a larger predator!”

Within a week they caught not one, but two weasels. Volunteer Dan Howie found the weasels, which were collected the next day by another volunteer, Brian Gordon. An autopsy performed by Dr Kim King of Waikato University revealed that one was a male, one a female (not pregnant), and both about 6 months old. The Trust is hoping to get DNA tests done to see if they are related, which might indicate they were born from a single pregnant female that got into the reserve. If that's the case, there may yet be more to catch.

The superlure, currently being developed by Manaaki Whenua Landcare Research, is based on the scent of a larger predator, such as a cat or ferret. While it's not yet known exactly why the weasels would be drawn by the scent of a bigger predator, it may be a case of “the devil you know” – finding out who else is out there that may compete with or even prey on them. Contact: Karen Denyer 021 031 2716

Your Help Is Needed To Stop The Spread of Golden Dodder.

Golden Dodder (*cuscuta campestris*) has been found in places it has never been seen before. So the Department of Conservation is asking for help to locate

and contain this vile parasitic weed, which is toxic to stock and kills duckweed and other plants that ducks like to feed on.

Golden dodder is known to exist in only two sites in New Zealand, Whangamarino wetland and Lake Whangape, both in the Waikato region. DOC is concerned because it is spreading down a Whangamarino access route and along the banks of the Reao Stream.

You can help to control this weed:

- Report any new sightings of golden dodder to DOC or the Waikato Regional Council. The recent discovery of golden dodder below the weir was a chance sighting by DOC staff. If you are out in wetlands, keep your eyes open for golden dodder
- Clean your gear: Hunters, farmers and recreational users, check vehicles, dogs, boots, boats, clothes and equipment before you leave the area. Any of these could spread plant fragments or seed to other duck hunting or wetland areas in the Waikato or beyond.
- Keep the Whangamarino wetland access gate closed so stock can't move along the causeway and banks of the stream, spreading the weed as they go. Keep stock out of infested sites.

What to Look For:

Look for golden dodder in summer when host plants become abundant after the wetland water level drops. This parasitic plant appears in early summer with yellow to orange leafless, threadlike, stems that resemble spaghetti. The stem produces tendrils that coil around other plants. When the tendrils contact a suitable host, they develop root-like structures (haustoria) that suck nutrients and water from the host plant.

It grows fast - up to 5 metres in two months, smothering surrounding plants.



The lure is the white fabric in the centre

Numerous small white or greenish flowers are arranged in compact clusters. A single golden dodder plant can produce up to 16,000 seeds and form a long-lived (ten year) seed bank.

Once established, golden dodder can spread through vegetative fragments or seeds carried by water, vehicles, equipment, clothing or animals, or by seeds ingested and dispersed by birds.

Several hundred crop and weed species have been reported as hosts. Golden dodder parasitises an extremely wide range of herbaceous hosts found in both pasture and wetland vegetation, including several exotic and a few native species.

If left unchecked at Whangamarino wetland and Lake Whangape, the golden dodder infestations are expected to increase and potentially spread into surrounding farmlands and other wetland sites by human activities, water birds and water movement.

DOC is working to control it. Work includes annual ground and aerial control, surveillance and monitoring of golden dodder within the infestation area and a buffer surrounding it timed to prevent plants from seeding.

The good news is that, with your help, we have a real opportunity to contain this weed, because it has only been found at two locations in New Zealand.



Golden Dodder (*Cuscuta campestris*)

Maungatautari Sanctuary Mountain Species Update - Takahe

It was the biggest day of the year for our takahe families on the 12th March, when all of them were captured for annual health checks and chick banding and vaccination. Thankfully, all four babies have been growing well and are now starting to look more and more like their parents, with blue-green adult feathers coming through and that dark beak slowly burnishing to orange. We were happy that the Tautari Wetland chicks were in good body condition on capture, lively and well – it seems our pre-emptive increase in their feeding helped them get through those hot dry summer conditions.

Frustratingly, the Coopers chicks were underweight this year. Last year at the same time we had no problems at all with our Coopers family, but it seems the drought conditions have reduced the quality of feed in our large Coopers enclosure – despite there being ample grasslands! The adults were all fine and the chicks had done well until the past few weeks, so we think the combined energy requirement of adult feather growth at the time of poorest grass growth is why the chicks lost condition. We have responded by increasing their supplementary feeding and will check their weights again (once our bubbles are allowed to burst!) in the next month. Thankfully there has been more rain and good grass growth so we are not expecting further issues.

On the whole all nine of our resident takahe are going strong, the chicks are getting used to their new jewellery, and we look forward to naming them in the near future. This year the honour goes to Maungatautari mana whenua, with each iwi/ hapu of the Maungatautari rohe selecting a name for one chick each. We will post the new chick's names and individual photos in the coming months.