KAPITI-MANA
Forest and Bird Society

Next Club Meeting

Speaker Kevin Hague

"Giving Nature a Fighting Chance"

7.30pm Wednesday 22 August 2018
Library Meeting Room,
Iver Trask Place, Paraparaumu.

26th September-Colin Miskelly at Waikanae

August Issue 2018

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Dear Forest and Bird Members

I hope some of you were able to come to the June monthly meeting where the speaker talked about climate change and the proposed Carbon Zero Bill. Other members will have read about it and have seen some of the effects of climate change both here on the coast, elsewhere in NZ and around the world. This is only the start and I feel for our members in Paekakariki, Raumati South and elsewhere on the coast where the effects are becoming apparent.

Greater Wellington accepts the situation and has a policy of "managed retreat" where the sea meets Queen Elizabeth Park. They will relocate their facilities further inland. The Kapiti Mayor realizes that the increased intensity of storms will affect council costs. Forest and Bird is concerned because climate change will negatively affect our flora and fauna by damaging and reducing habitats, increasing weeds, pests and diseases. The combined effect could push our vulnerable species to extinction.

Climate change needs to be tackled in two ways:

1. The infrastructure needs to be strengthened to protect our assets and way of life- adaptation.
2. And climate change itself also needs to be tackled- mitigation.

I was dismayed when I read Greater Wellington's and the Kapiti's Long Term plans. I expected to see climate change mitigation as a feature. While there was plenty on the effects of climate change and what they would do about it, they seem to accept that reducing green house gasses (GHG) was not their responsibility. On the other hand, I saw that GW supported the purchase of electric buses by Wellington City Council.

The government's Carbon Zero Bill will put GHG emission reductions into law. It will set up a commission to decide on those reductions and made it independent of the party in power. Then central and local government will have to work out how to meet those reductions. This has worked overseas so lets hope we can make it work as well.

As to methods of reducing GHG's, there are plenty of solutions that involve all sectors of the economy (cities and buildings, food, transport, land use, energy, materials and waste) and probably will create jobs. I recommend a book called "Drawdown". It may be a glimpse into the future.

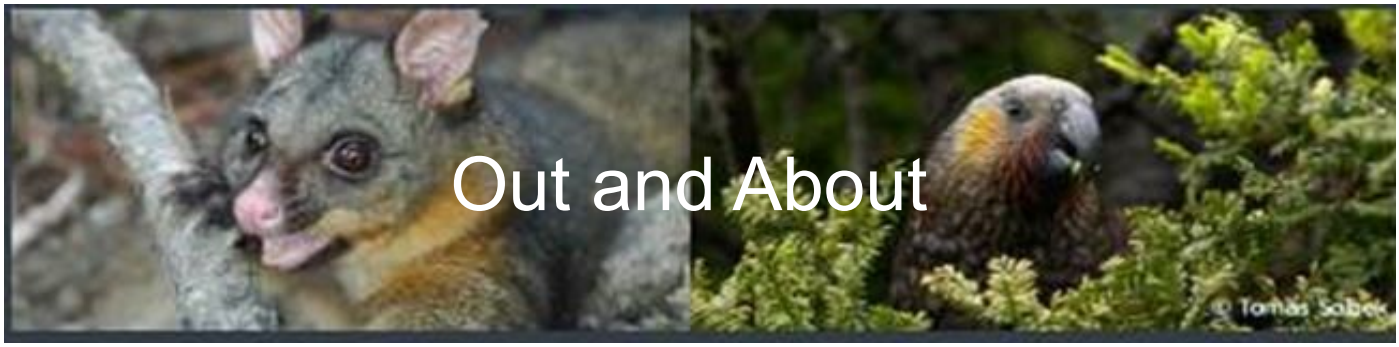
For Forest and Birders, actions to reduce the effects of climate change will not benefit the world's flora and fauna. Only those actions that reduce climate change itself can save our wildlife.

Hoping to see you at our August meetings

Regards *Russell*

russelljamesbell@gmail.com

We got to save the world. Someone's children may want use it



Restoring fish passage

Barriers for fish, like roads and culverts, can keep them from breeding, feeding, and living a healthy lifecycle upstream, downstream, and out to sea.

Last month, the Minister for Conservation launched guidelines for councils to fix this problem. All new roads and bridges should allow fish to travel safely on either side of that structure. Ask your regional council to formerly adopt the new fish passage guidelines.

Biodiversity Collaborative Group

Forest & Bird is a stakeholder on a group developing a National Policy Statement for Indigenous Biodiversity. The Policy Statement is created under the Resource Management Act, and directs councils on managing biodiversity in their planning documents. This is an important piece of the puzzle to improve outcomes for native plants and animals. The stakeholder group is due to provide recommendations to Ministers in September 2018. You can read about the group's work here

Plastic in Antarctica

Over the past few months we have been thinking about the effect of waste plastic in our seas but we were not fully aware that plastic would work its way down to the Antarctica. Now a new discovery suggests Antarctica won't be immune from plastics entering the world's ecosystems for much longer.
Kelp has mapped the drift of thousands of kilometres to the frozen continent. In fact, scientists have identified kelp as drifting 20,000 kilometres from islands in the Southern Indian Ocean to the world's southernmost polar region.

"Even Antarctica is going to be affected. The species such as the penguins, the whales, etc, that live down there now are not immune from the plastics that are entering the world's ecosystem at a really alarming rate," Prof Waters told Newshub.
He says kelp drifting so far from the Southern Indian Ocean defies the theory of polar fronts acting as a barrier.Professor Jon Waters says the kelp is passing through barriers previously thought impenetrable. He says storms and ocean warming will see more material and new species arrive there.

"Under climate change, we're expecting more storm activity. So I think, whereas we thought Antarctica was isolated, we're going to find more and more that this [plastic] is going to make it down there."

A New Type of Photosynthesis found - how will it affect us?

The discovery of a new way that bacteria can absorb infrared light and turn it into energy has transformed scientific understanding of life on Earth and could change the way humans hunt for alien life.
Plants use a process called photosynthesis to generate sugars from carbon dioxide and water, which they use as fuel. Until now, this was thought to be driven only by red light, but a team of researchers at Imperial College London discovered a type of photosynthesis that uses light from the infrared spectrum. As you know, plants use a process called photosynthesis to generate sugars from carbon dioxide and water, which they use as fuel. The new form of photosynthesis has made us rethink what we thought was possible," said biochemist Bill Rutherford, a co-author of the study, which was published in the journal Science. "It also changes how we understand the key events at the heart of standard photosynthesis. This is textbook changing stuff."

This type of photosynthesis was detected in blue-green algae found in shady areas in Yellowstone National Park in the U.S. and growing deep into beach rock in Australia in 2010 but its significance was not recognized immediately. Normal photosynthesis is largely carried out by the green pigment chlorophyll-a, which gives plants their coloring. All plants and photosynthetic bacteria have chlorophyll-a and scientists have long thought that there was a "red limit" on photosynthesis. Astrobiologists have even used the "red limit" to assess whether complex life could have developed on far away planets outside of our solar system, but it looks like the researchers have disproven this. They found, that under the right conditions, another pigment called **chlorophyll-f** could also perform photosynthesis, even without the red light that normally helps the organisms produce energy.

The scientists then tested these abilities by putting cyanobacteria inside cupboards under infrared lights.
"Finding a type of photosynthesis that works beyond the red limit has changed our understanding of the energy requirements of photosynthesis," said Andrea Fantuzzi, co-author of the study. "Aside from expanding the search for alien life, this research could help with genetically engineering crops that can live in lower light conditions".
"It is amazing what is still out there in nature waiting to be discovered," said another co-author of the study, Dennis Nürnberg, a life sciences professor at Imperial College London.

Kauri dieback

"Threats like kauri dieback, browsed by possums, goats, rabbits and other animals, and changes in land use, in the eastern South Island, have caused the observed decline of 61 plant species, which are now in a worse state than five years ago. For the first time, kauri has been classed as threatened due to the unabated spread of kauri dieback. All species of myrtle plants, such as as pōhutukawa, mānuka, rātā and ramarama, were now classed as threatened as a precaution due to the spread of myrtle rust.

The mighty kauri tree has been officially reclassified as a threatened species for the 1st time. Pōhutukawa, mānuka, and rātā have also been classed as threatened as a precaution, due to the spread of myrtle rust disease.
DOC director of terrestrial ecosystems Matt Barnett said the spread of dieback disease led to the reclassification of kauri, one of the world's largest and longest-living tree species.

Northland's forests are in crisis. The white skeletons of giant kauri are visible from the road - reminders of the spread of the kauri dieback, which kills almost every tree it infects.

Why are Landcare annual surveys of birds in the home garden important?

Item and photographs by Alan Froggatt

It is widely believed among the scientific community that birds can tell us a lot about the what is happening to the health of the environment in which we live. For example, endemic threatened Blue Ducks (which are much rarer than Kiwi) are regarded as an indicator species as they are only found on clean fast flowing rivers while Kereru are regarded as a keystone species because a significant reduction in the population would have a hugely negative impact on the regeneration of our native forests.

Scientists are becoming increasing concerned about what the latest Home Garden Survey might be telling us.
This survey began in 2007 and has been running for ten years. (The 2018 survey will end in July) simply looking at the survey results for Kapiti over that period shows slight decline in Dunnock, Song Thrush, House Sparrows and Common Chaffinch but a 51% decline in Goldfinch, 42% decline in Starlings and a 56% decline in Silvereyes.
On the credit side there has been an 86% increase in Green Finch, 61% in Kereru, 35% in Bellbird and 18% increase in Myna. (Though I'm not convinced that increase is Myna is good news)
In a nutshell we should be listening to what the environment is telling us.

Silvereye (Tauhou) is a native migrant.

These little birds arrived in New Zealand in the 1830's, the Maori name means 'stranger' or 'new arrival.'
Orchardists might well regard the decline in this species as good news for they love fruit and will feed on a wide range of it.

New Zealand Garden Bird Surveys

The decline in small garden birds in Kapiti as reported in Alan's Article, has occurred in all regions of New Zealand where previous winter temperatures were warmer. It is possible that more food was available in the surrounding countryside so the birds did not come into the gardens to find food.

It might be tempting to dismiss these declines as unimportant, however, these birds act as indicators for the health of the environment that we live in. They all feed on ground-dwelling invertebrates suggesting changes in our urban landscapes are impacting these birds and their food.
Dr Eric Spurr says however, the increase of tuis is encouraging as it provides some early indications that habitat restoration efforts, such as predator control and re-planting native vegetation, in our urban and rural landscapes are starting to payoff. It also highlights the value of participating in the NZ Garden Bird Survey. The more people that take place the richer the picture we will be able to build about the health of the environment we live in.

Report on trapping in Queen Elizabeth Park by Michael Stace

Catch (Most traps checked twice – April in previous years' figures in brackets starting with 2017)

stoats 0 (0, 0, 0, 0); weasels 5 (8, 7, 6, 1); rats 26 (19, 17, 19 15)
mice 59 (49, 54, 47, 11); hedgehogs 8 (9, 6, 10, 15); possums 0 (0, 1, 0, 0)
other 1 bird (0, 1, 0, 0)
A24 hits 4 (7)

The good news

The rat numbers were down for the first two weeks – then an article in the paper about about the increased number of rats – which was reflected in week 3. In week 4, the previously low mice numbers increased substantially. I checked 50 DOC200s on the 30th (each containing a domestic mouse trap) and there were 18 dead mice.

Now the grumble. There were 21 self-resetting A24 GoodNature rat traps in QEP put in place in March 2016. There are now 19. One in the car park at the end of the Esplanade vanished in the first month. The second vanished in April. While there are a considerable number of people using the car park, the one just gone was well away from the track and meant walking past a DOC200 and Timms possum trap to reach it. Nevertheless, it looks as if someone has who knows about traps has taken it apart and unscrewed it from a tree. The Predator Free newsletter gives the price of the A24 plus lure, counter etc at $209. I hope it is being put to use. I am not totally convinced that A24s are the best traps to use where manpower is available to check them at least monthly. As well as the monthly check on hits, I check each trap quarterly as to the quality/quantity of the lure and gas in the canister. It is the vibration of the trap firing that activates the counter attached to each trap. I check the adequacy of the gas by using a stick to fire the trap. During the check of the gas in all 19 (remaining) traps at the end of April, firing the trap failed to register on the counter three times. Using other monitoring methods over time, I believe, is a more reliable method of measuring the effectiveness of A24s.

Rainfall

125.1 ml (162.2, 61.1, 159, 124) As is apparent in the wetlands given the amount of rain this year, the water table is high.

Erosion

For the first time in some months, I recently walked the beach from Wainui Stream to Whareroa Stream The sand dunes – with thanks to Simon and Garfunkel – are slip sliding away.

Ferret Scented Lures

Attached is the report I prepared on the use of these lures in the past four months. In summary, the lures did not make any difference to the mustelid catch during this time.

What tracks are these? http://www.rotokare.org.nz/uploaded_images/Education/Identifying-animal-tracks.pdf

Ferret Scented Lure -a Landcare Trial -reported by Michael Stace

Most mammals have a highly developed sense of smell. For this reason and despite some downsides (other abundant food sources and degradation of the lure), trapping makes frequent use of food lures. However, research in New Zealand has shown that stoats are attracted to predator pheromones, particularly to the scent of another predator – ferret – and the downsides of food lures noted above are not relevant. Field trials had found that stoat detections increased three-fold by adding ferret odour to monitoring sites. Hedgehogs and rats were also attracted.

After reading of this work, Shane Cave (trapping commandant for the Whareroa Guardians) contacted Dr Patrick Garvey (Manaaki Whenua) to explore the possibility of using ferret scented lure in the traps managed by the Kapiti Biodiversity Project (KBP).

A total of 4x120 ferret scented lures were made available to KBP to be used between December 2017 and March 2018. A total of 4x58 were assigned to QEP. Trap lines were selected on the basis of past mustelid catches and ferret scented lures were placed in alternate DOC200 traps on the selected trap lines. Dehydrated rabbit lure – the standard lure – was used in all the other DOC200 traps. A domestic mouse trap is put in all DOC200s in QEP. The mouse traps were removed from the DOPC200s baited with ferret scented lure.

As there are 180 DOC200s in QEP, nearly one in three was used for the trial. A ferret scented lure was placed in each of these 58 traps during the first two weeks of December 2017 and replaced during

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January, February and March 2018. The traps were checked mostly two weekly during the trial and in no case less often than monthly.

Results

Mustelid catches in all DOC200s: mid January – mid April 2018: stoats 4 weasels 14.
Number caught in traps lines with ferret scented lure: stoats 3, weasels 13
Number caught in traps with ferret scented lure: stoats 2, weasels 8
Other pest animal catches in traps with ferret scented lure - mid January –mid April 2018
rats 11 hedgehogs 22 mouse 1
Mustelid catches December - March in previous years (April figures for 2018 not yet available)
2016 – 17 stoats 3 weasels 13
2015 – 16 stoats 12 weasels 24
2014 – 15 stoats 11 weasels 11
Michael Stace 22 April 2018


Dysoxylum spectabile
Photo by Russell

Kohekohe

Kohekohe is a medium-sized tree native to New Zealand. It is found in lowland and coastal forests throughout most of North Island and also occurs in the Marlborough Sounds in the north of the South Island. Unlike many other trees, Kohekohe flowers sprout from the trunk and branches. This feature is known as **cauliflory** and it's believed to be an adaptation to pollination and seed dispersal by animals that can't fly or insects living at the ground level.


Photo by Lore

Kohekohe trees do not flower every year. Blooming generally occurs during early winter and after pollination of the flowers has occurred fruits will take up to 15 months to ripen. Thus, you will not see flowers on trees that are currently fruiting or vice versa.

Although individual flowers don't seem to have a strong smell, a forest of Kohekohe is strongly scented. Recently, in Porirua Scenic Reserve there were so many flowers under the canopy that the scent was rich and heady.
Kohekohe trees in gardens often blanket the ground with a snow drift of white petals during the flowering season.




Autumn is the season for fungi. We are surrounded by them. We consume them directly as mushrooms or in blue cheese, or we consume the products of their metabolism such as bread, beer and wine. In turn they consume or decay the wood used in framing of our houses or turn our curtains black with mildew. Fungi even try to rot us by growing under our skin or in our hair as ringworm and athlete's foot.

Fungi differ from both Plants and Animals and are classified in a biological kingdom of their own, the Kingdom of Fungi. Fungi cannot capture energy directly from the sun through the process of photosynthesis in the manner that plants do. Neither can they eat and internally digest other organisms like animals because they do not have either a mouth of a stomach. If you dig a fungi gently out of the ground you will see some white thread-like strands coming out of the base. These are called hyphae are the body of the fungus while the part that grows above ground is the reproductive part. These come in all sorts of shape and sizes. The one we are most familiar with is the mushroom.

Mushrooms are found in all sorts of places such as the edges of forests, under trees, and in manure and humus used in gardening. Fungi can be found in just about any habitat or environment around even in seawater and freshwater while many are symbionts with plants.


scarlet flycap Amanita muscaria


Shaggy parasol

Traditionally, the larger fungi are classified into a number of groups based on the form and texture of the fruiting body. This creates a number of anomalies with closely related species being placed in different groups while quite unrelated species are lumped together. Despite this, it is a very convenient method of quickly identifying fungi. People who chose to use this method should remember however, that it is not based on scientific reality.

Groups based on fruit-body structure

- Mushrooms - are soft, fleshy fungi that usually have a distinct cap and stem like the Scarlet flycap and Shaggy parsol shown above.(they are also called toadstools or agarics). The underside of the cap is lined with gills that radiate out from the stem.
- Boletes - they differ from mushrooms in possessing a layer of pores rather than gills on the underside of the cap. These pores are the openings of cylindrical tubes and it is on the inner surface of the tubes that spores are produces. When the spores are mature they fall down the vertical tubes, out through the pores to be carried away by the wind.

- Pouches - Pouches are another distinctive group that usually consist of a globular head or cap that covers a sponge like material in which spores are formed. Many species are subterranean and often referred to as truffle-like. Pouches were once thought to be a separate group but recent scientific studies has shown that this form has evolved many times from different groups of mushrooms and boletes.

. Purple potato Gallacea scleroderma

- Puffballs - Puffballs may be simple spherical fruit-bodies or may have an outer layer that peels back to give a star-like appearance. Many others develop a small hole in the top through which their spores are puffed into the air.

Also included in this group are the Birdnests which are a very evolved form of puffball in which the top falls away to leave a cup containing a number of 'eggs'. The eggs form from the consolidation of the spores and are splashed from the cap by raindrops.

- Stinkhorns - are fungi in which the tissue that produces the spores breaks down to form a slimy coat.

The slime is often foul smelling and attracts flies and other insects that eat slimy spore-containing mass. The insects become covered with the slime as they eat and then fly away taking spores with them to disperse elsewhere.

In New Zealand the three most common shapes of Stinkhorn are a penis shaped one, sea-anemone-like one with tentacles and the spherical basket-like fruit body.

Bisporella citrinia -(Lemon-drop button).A small cup to begin with but flattens out when it ages.usually found in large numbers on decaying logs of broadleaf species.

Jelly fungi - very small, 3-5mm body living in cracks in wood. Usually found on broadleaf and conifer logs. The handrail of some outdoor steps at my house becomes covered with this fungi and will have to be replaced soon as it is rooting and will be unsafe to use.
Dacryopinax spathularius.

There several more groups of fungi could be described such as bracket fungi, cup fungi, corals, clubs and slime moulds but information about these sorts is hard to find. Please send any info to your committee.
This article was written by Margaret Latimer and the photos were supplied by committee members who visit the parks and reserves in our region regularly. Fungi that are named may not be the correct names. Fungi are very difficult to name as some differences between them are small and hard to observe in the field.

Committee Members and Contact Details

CHAIRPERSON: RUSSELL BELL
Phone: 04 972 5081 Mobile phone 0212266047
Email: russelljamesbell@gmail.com

SECRETARY: IRENE THOMAS
Phone: 04 293 6490, mob: 021 180 2545
Email: thomasi@xtra.co.nz

TREASURER: PETER KENTISH
Phone:04 298 1255
Email: PK2003_595@hotmail.com

MARGARET LATIMER : Newsletter Editor
Phone:04 293 2913
Email: emailmlatimer@gmail.com

LORE LESEBERG Membership Officer and Trips
Phone: 04 904-1232
Email: neuland39@gmail.com

TONY WARD **Public** Meeting Venue Set-up/Pack down Phone: 04 293- 7203
Email: kotareg@xtra.co.nz

JOHN McLACHLAN Annual Sales Diary and Calendars Phone: 04 904-0027
Email: johnmclachlan85@gmail.com

GRAHAME JOYCE
Phone: 04 298- 9926
Email: gfjoyce@xtra.co.nz

SUE BOYDE
Phone: 04 902 0858 Cell: 021 119 0858
Email: sm.boyde@gmail.com

KCC LEADER/COORDINATOR: SHARYN GUNN
Phone: 04-232 5231 Cell: 021 1804 309
Email: kcckapiti@gmail.com

ALLAN FROGGATT
Phone: 04 293 6366
Email: a.rfroggatt@xtra.co.nz

KAITAWA RESERVE CO-ORDINATOR
JOHN MCLACHLAN
Phone: 04 904 0027
Email: johnmclachlan85@gmail.com

List of some of the organisations concerned with Conservation in our region .

- Greater Wellington Council Biodiversity Strategy Group
- Kapiti Restoration Group
- Guardians of the Kapiti Marine Reserve https://www.facebook.com/groups/161934010888715/

- **Wellington Regional Native Plant guide pdf**
- http://www.nzta.govt.nz/assets/resources/guidelines-highway-landscaping/docs/highway-landscaping-appendix-5.pdf
- http://www.kapiticoast.govt.nz/contentassets/81cf8e07395c466da729ff9337412620/best-practice-subdivision-and-development-guide.pdf how whole sub divisions are planned and planted.
- http://www.rnzih.org.nz/pages/2003_conference_proceedings_pdfs/13_john_sawyer.pdf
- http://kapitiindependentnews.net.nz/cinema/ good info about Kapiti
-
- How to Put Nature into Our Neighbourhoods
- LRSS35 nature_neighbourhoods.pdf
- http://www.forestandbird.org.nz/get-involved/backyard-projects/backyard-biodiversity/create-coastal-garden Good ref for home projects.
-
- **WAIKANAE ESTUARY CARE GROUP**
  Pam Stapleton 04 9046845 Email poes@clear.net.nz
- **Forest & Bird [online=forestandbird.org.nz@mail211.atl221.rsgsv.net]**
- **Save our sea lions**

- **Department of Conservation [whatsup@doc.govt.nz]**