THE ORNITHOLOGICAL SOCIETY OF NEW ZEALAND (Inc)



OSNZ — Birds New Zealand

<u>birdsnz.org.nz</u> and <u>birdsnz.org.nz/society-publications/notornis/</u>

September 2024

Kia ora koutou,

Well, the last 4 months have rocketed along, not that I'm complaining, I am happy to be approaching the warmer side of the year once more! We have had another cohort of

excellent speakers and interesting topics! There have been interesting bird sightings for the region, including the pair of Cirl Buntings down at Moa Point which are by now probably the more photographed pair in New Zealand! On the subject of interesting bird sightings, there is a bird currently causing excitement down in Rakiura (Stewart Island) — a dusky woodswallow. There is a blogging website dedicated to New Zealand birding,



and on this blog a specific page for interesting sightings: <u>Bird Sightings and Alerts - BirdingNZ.net</u>. The BirdingNZ.net community is supportive, and welcoming. With the days warming up and most of us more likely to be out and about, this is a reminder to always keep your eyes (and ears) open, as you never know what you'll come across. We look forward to hearing about any interesting sightings at the monthly meeting, which may be of interest to other members.

Of the 4550 spoonbills counted nationally during the winter census, we contributed 17! I am looking forward to the summer nesting census. I encourage everyone to consider when you have observed Spoonbill nesting over the last few breeding seasons, as we will soon begin planning for the summer nesting census. This census should be a bit more specific to location, and (if there is interest) it could be a good opportunity to include the nest count as part of a Wellington BirdsNZ daytrip to Kāpiti Island.

Keep up the awesome birding.

Nāku noa, nā

Annemieke Hamilton, Wellington Regional Representative

Wellington Birds New Zealand Monthly Meetings

Our next meeting will be on **Monday the 7th October** during which Adrian Riegen will present a talk about "Engraved Leg Flags on Wader and what they tell us". At least 2,500 white engraved flags have been put on godwits, knots and turnstones in NZ since 2005 with the intention of trying to understand more about movements of these birds within NZ at a local and national level and identify staging sites during migration. Engraved flags should also help understand more about wader longevity.

As usual, this will be a hybrid meeting, you can join the meeting on **Monday the 7th of October from 7.30 pm** in two ways: In person at the Te Papa Collections Building, 169 Tory Street.

1. Online via the Zoom Meeting via the following link: https://us06web.zoom.us/j/86364235955?pwd=btzmwdpyO7VRS36CIFCzUwiWbkltAs.1

The meeting will start at 7.45pm.

Recent Meetings

Monday 1st July, Wendy Ambury from the LOVE BITTERN! Project,

Wendy's talk summarised the work of **Love Bittern** which is a project dedicated to helping species-led conservation of Australasian bittern | Matuku-hūrepo (*Botaurus poiciloptilus*) in Aotearoa, New Zealand. The Australasian bittern / Matuku-hurepo is Nationally Critical and Bittern numbers in New Zealand declined greatly following destruction of 90% of their wetland habitat to create farmland and towns. An important part of the Love Bittern Project is collecting information of the numbers and distribution of bitterns. They are organising the Great Matuku Muster, a co-ordinated census. The counts are three days each month around and including 14th September, 19th October and 16th of November. Counts to be carried out at dusk, 30 minutes before and after sunset. Contact Love Bittern to register your interest lovebittern@gmail.com. Love Bittern website, https://lovebittern.com/

Monday 5th August, Jonathan Rutter, PhD Student, Oxford University. Seabirds interactions – detection in data-limited systems.

"Many oceanic seabird species are threatened by bycatch in fisheries. Bycatch risk assessments benefit from quantifying individual seabird interactions with fishing vessels, including their frequency, duration, and impacts on seabird behaviour."

https://www.biology.ox.ac.uk/article/seabirds-can-follow-fishing-boats-for-hours-now-we-can-better-estimate-how-long

A probabilistic time geographic approach to quantifying seabird-vessel interactions, JD Rutter et al., 2024. Animal Conservation, https://zslpublications.onlinelibrary.wiley.com/doi/10.1111/acv.12961

Monday the 2nd of September Colin Miskelly, "Every Last Bird – Birds of Te Araroa Trail ". Counting and interpreting every bird seen and heard over 3,200 km between Cape Reinga and Bluff. This talk was notable for attracting the largest number of Zoom connections (62) and being one of the longest talks given to the Wellington branch of Birds New Zealand. There was also a sizable live audience at Te Papa. While Colin was counting birds on the trail, his older brother Gordon, who also walked the entire route, was in charge of navigation. Much of the talk was devoted to non-bird topics – the meticulous planning, the diet, overnight camp sites/huts, and the writing of the weekly Te Papa blog. Colin wrote these blogs in long hand in the very early hours of the morning. They were photographed and sent to his wife Kate McAlpine who entered them onto a computer file. The final part of this process was the finishing and posting of them by the Te Papa editorial team. These blogs make fascinating reading and can be found on the Te Papa website https://blog.tepapa.govt.nz/2024/03/15/birds-of-te-araroa-19-te-anau-highway-to-bluff/

Details of the ornithological aspects of the talk can be found in the blogs and further information will be contained in a paper which has been submitted to Notornis.

Wellington Korora / Little Penguins

Forest & Bird - Places for Penguins is with <u>Department of Conservation</u> and Forest & Bird. 9th September, 2024 - Facebook

"11 confirmed deaths due to dog attacks in 9 months. That's the number this most recent death brings us up to in Te Whanganui a Tara in 2024. And this incident could result in the loss of 2 more lives - the dead kororā is part of a breeding pair at Moa Point that has already laid their clutch of 2 eggs and unfortunately it is impossible for a single parent to raise chicks. To see how close this kororā was to home, family, and safety before it was killed by a dog is unbearably heartbreaking.

As we mark the end of conservation week and the middle of the Bird of the Year campaign this tragedy is another stark reminder that advocacy and education only works if people are willing to listen. This species continues to decline in population around the country, calls to action continue to be made, and yet kororā continue to die in completely preventable incidents. We cannot stress enough how important it is to keep your dog on a lead and under control at ALL times while on the coast. Your dog is not the exception to the rule. These birds deserve to be able to live safely in their home and it is our responsibility to make that happen.

As always if you have spotted a sick, injured, or deceased kororā, please call DOC at 0800 362 468. They might direct you to take the penguin to The Nest Te Kōhanga at Wellington Zoo for expert care or to see what happened. You can find more information on how to help our Pōneke kororā at https://wellington.govt.nz/.../how-to-look-after-korora"

Wellington Harbour Developments

The walkway constructions and Matiu / Somes Island wharf construction have consents that include mitigation activities to lessen potential adverse effects on Korora.

Bird Protection Areas, Tupua Horo Nuku

Bird Protection Areas are being established at Whiorau Reserve, Bishop Park, HW Shortt Park and a small area of rock in Sorrento Bay as part of the consent conditions for the Tupua Horo Nuku project. These areas provide nesting opportunities for kororā (little penguins) and protect the nesting sites of tōrea pango (variable oystercatchers) and other native seabirds that may be displaced due to construction.

Hutt City Council - Changes to dog access

"We've made changes under the Dog Control Bylaw which include prohibiting dogs from Bird Protection Areas (BPAs) at Sorrento Bay, Whiorau Reserve, CL Bishop Park and HW Shortt Park. They also include prohibiting dog access at Sorrento Bay and the beach adjacent to CL Bishop Park, and removing the daylight-saving dog restriction at Whiorau Reserve. Dog access at HW Shortt Park outside of the BPA remains unchanged. Dog owners can still exercise their dogs off-leash on the beach south of Rona Bay wharf from Rata Street to Miro Street. Dogs can also be off-leash at Days Bay north of Days Bay wharf from 1 April to 30 November and between 7pm -10am from 1 December to 31 March."

hutt.city/birdrotection

Matiu / Somes Island – Wharf Construction

The old wharf has been demolished and the new replacement is nearing completion. The island has been closed to visitors while the wharf has been replaced. However, as part of this project there have been fortnightly surveys of penguin nest boxes in the area potentially affected by the construction







project. The breeding season is now well underway with 175 eggs and five chicks being recorded at the last survey on the 18th of September. This survey covers about half the nest boxes on the island and at this stage in the breeding season the number of eggs and chicks is comparable to previous years.

Little penguins normally lay 1-2 eggs. During the last survey two adjacent nest boxes approximately 1.5m apart each contained a bird minding 3 eggs (pictured). The most likely explanation is that the six eggs come from three females. The question arises as to whether all eggs will hatch and produce live chicks.





New wharf nearing completion – 18th September, 2024.

The Spoonbill breeding census:

Great work to everyone who participated in the non-breeding Spoonbill Census. There were over 300 members involved. This year's 2024 count there were 4550 compared with 2361 in 2012. Mary will be putting an article with further detail in the next BirdsNZ magazine.

For some Regions this up-coming summer royal spoonbill colony and nest count may be even more exciting than the winter survey! It has been named the Peter Schweigman Memorial Survey in honour of Peter who was a champion of the Royal Spoonbills, and was the main instigator for studying the increase in their numbers and expansion of nesting colonies in New Zealand since the early 1980's.

For this survey it is our intention to locate as many of the spoonbill colonies as possible, and visit them at least once during late November through January, and record the active nests and number of adults in attendance.

Our region has the colony on Kapiti Island (it may be worthwhile investigating drone operators, and drone permitting to assist in this location's count). There was a report in Birding NZ that a possible nest site is in macrocarpas at Otaki River estuary. Please consider any Spoonbill nesting sites you are aware of in the Wellington region to add to our survey site list.

Annemieke Hamilton

Banded Dotterels

The new breeding season is well underway with the first nest occurring on the Eastbourne beach on the 20th of August. By the end of August banded dotterel nests had been found at Lake Kohangatera, Baring Head and Moa Point. The first chicks for the season were observed on the 11th of September (photo taken on 19th) at Lake Kohangatera. As part of the MIRO-led project Moa Point is being included for the first time in the sites being monitored weekly for breeding in banded dotterels. Movement of birds between the various sites has been demonstrated through the marking of birds with a unique 3-letter flag. For example, PHH was banded/flagged as a juvenile in 2021 on Eastbourne beach. In August 2024 PHH has been seen at Lake Kohangapiripiri but also on a number of occasions at Moa Point at the southern end of Wellington Airport.

The first bird banded/flagged as part of the MIRO project was DVT which was marked as a juvenile on the 22nd of November, 2016 on the Eastbourne beach. DVT moved to the beach at Lake Kohangatera where it has become a permanent resident. She is currently nesting at Lake Kohangatera.

The most famous banded dotterel from the MIRO project is PAP which spent 4 winters in New Caledonia. Unfortunately, PAP was not seen in New Caledonia this winter, nor has it been seen back on Eastbourne beach this breeding season.

There are concerns that the number of banded dotterels in the study area appear to be declining. The greatest concern is at the Eastbourne Beach

Moa Point

Lake Kohangapiripiri

Lake Kohangatera

Baring Head



coastal area by the outlet of Lake Kohangapiripiri where the number of nests has declined as has the area where the nests are found. The reasons for the decline are not known. This is an area where there is an extensive pest control programme. The number of birds and nests on the Eastbourne beach has not declined even though there is an ongoing problem at this site with predation from domestic cats.

Members who would like to join this MIRO project are most welcome and should contact Parker Jones, the Project Leader at parker_jones@xtra.co.nz for details on how they can help.

Congratulations to MIRO (Mainland Island Restoration Operation) who were the Supreme Award winner for the Hutt City – 2024 Wellington Airport Community Awards.

Bird Snippets

Cirl buntings, Moa Point

Hamish Johnston » Sun Aug 11, 2024

I saw a male and a female cirl bunting at Moa point this morning, foraging along the grass and gravel track to the seaward side of the road. I followed them for about 40 minutes before they flew up the hill.

Note, cirl buntings have rarely been reported in the Wellington Region but have been reported on a number of occasions at Baring Head. BirdingNZ.net

Black shag colony at Lake Kohangatera

Shane Cotter » Thu Aug 22, 2024

On 7 August 2024, I visited Lake Kohangatera at Parangarahu (Pencarrow) Lakes, to see if the black shag colony was still there. It has been nearly 100 years since the first published record of its existence was noted during a visit by Bob Stidolph in June 1925.

Climbing up the hill to get above the trees shags had been seen in, I looked down and see them sitting on nests. There were about 10 shags present and I saw three nests but I suspect there were a couple more I could not see. Two shags were sitting tight on their nests and in the third nest I could see 2 eggs. I couldn't see or hear any chicks. The colony is in a group of three large Karaka trees that look very healthy. Any guano is on the uphill side of the trees.

This small colony has been studied over the years by Falla and Stokell in the 1930-40s and by Powlesland and Reese in 1990's. BirdingNZ.net

First time sighting Whitehead | Pōpokotea, Maungaraki, Lower Hutt

Charlotte » Thu Aug 15, 2024

About 15 mins ago I was watching the birdlife in our backyard and I heard and saw Whitehead | Popokotea (at

least two) flying around our section in the established trees. We've lived here for 17 years and this is the first time we've ever seen them. No photos sadly, but easily identifiable through binoculars. BirdingNZ.net



MAP, eBird sightings, whitehead, 2024

Allan Munro, 14 Onehuka Road, Melling Wed 31 Jul 2024

eBird, 2 whitehead, "Feeding in kowhai tree. The first seen at this location since records were begun in 1988."

Harrier, Mount Cook, Wellington

Colin Miskelly » Wed Sep 04, 2024

A harrier over the CBD was a rare sight this morning (we see about one per annum from our home in Mt Cook suburb). The falcon attacking it was not such a rare sight - this is the 60th day this year that we have seen or heard at least one falcon from home (I was away until mid March walking Te Araroa, but Kate keeps a record). BirdingNZ.net

Little black shags - Wellington

Little black shags do not breed in the Wellington Region but they are regular winter visitors. A characteristic of little black shags is they feed in flocks that herd shoals of fish.

Flocks of little black shags recorded in eBird, 2024. Point Howard 11/7/24, 38 Dallas Bishop/Geoff de Lisle (photo).



Pencarrow Coast Rd, 7/8/24, 41 Ian Armitage Porirua Harbour, 7/5/24, 19, Ian Armitage Pauatahanui, 6/7/24, 43 Pam Watson Pukerua Bay, 31/05/24 34 Jan keast Waikanae Estuary, 31/3/24 35 Alan Tennyson 11/05/24 38 Pamela Stephenson

Cirl Buning, Queen Elizabeth Park

Jan Keast » Tue Sep 17, 2024

Saw a male cirl bunting at the north end of Queen Elizabeth Park this morning at 9:17, just before the southerly arrived.

It was seen clearly, perched on a shrub about 150 metres from the Raumati Esplanade entrance. More specifically, on the ridge just south of the track that goes inland from the carpark to the main path from Paekakariki to Raumati (Te Ara o Whareroa Trail).

Cirl buntings have been seen about a kilometre south of here at the same time of year in 2020 and 2021 but no ebird records since. Almost all the ebird records in the Wellington area are in winter and spring. Could at least some of these individuals have flown from the South Island to avoid bad weather or been blown here and then return, since they're not being seen as much at other times of the year? BirdingNZ.net

Cirl Bunting, Mana Island

Michael Szabo » Sat Sep 21, 2024

I saw a pair of Cirl Buntings on Mana Island today at about 12.30pm. BirdingNZ.net

Kiwi spreading from Remutaka Ranges to Upper Hutt

"Two plucky kiwi have wandered from their home in the Remutaka Ranges all the way to the outskirts of Upper Hutt, to the delight of local conservationists. Susan Ellis, project lead for kiwi monitoring with the Remutaka Conservation Trust, told Midday Report the pair were tracked as part of the trust's annual acoustic survey. "Based on preliminary results from this year's survey, kiwi have spread over a considerable area of the Remutaka Ranges near Wellington." Kiwi have reached the outskirts of Wainuiomata (Hine Road and Sunny Grove), the Wainuiomata Coast Road (Boys Brigade area), and they have crossed the Orongorongo River."

 $\underline{https://www.rnz.co.nz/news/national/522282/watch-kiwi-spreading-from-remutaka-ranges-to-upper-hutt}:\ 16\ July\ 2024$

Remutaka Trust report, "We run this survey about every 3 years in order to (1) make sure that no holes have opened up in the existing kiwi zone (that might indicate a problem e.g., a pair that were once there are no longer there); and (2) monitor the spread of our kiwi through the park and surroundings. We leave the recorders out for 2-3 weeks at each site (programmed to switch on at 6pm every night and record for 8 hours). The recordings are then scored to tally the number of male and female kiwi calls."

Spring issue of the Remutaka Conservation Trust newsletter

- https://www.remutaka.nz/downloads/newsletters/Remutalker Spring 2024.pdf .

Regional Representative, Annemieke Hamilton,

Regional Recorder: Peter Hodge peter.hodge@gmail.com

Matiu / Somes Island survey, Shane Cotter, heather.shane@xtra.co.nz

Newsletter, Geoff de Lisle, <u>osnzwelly@gmail.com</u>

Cook Strait pelagic trip - 14 July

The Birds New Zealand Wellington branch pelagic trip from Seaview Marina out to Nicholson Canyon was notable for the large pod of common dolphins (100+), approximately 10 dusky dolphins and stunning rainbows displayed on the return to the Seaview marina. The dusky dolphins provided some spectacular aerial displays, including somersaults. There was also a good selection of birds attracted to the boat with a good supply of chum. Many thanks to Jono Delhich, skipper and Tane Renata, crew from Seafarer II for the roast chicken lunch and hosting the trip and to Michael Szabo / Annemieke Hamilton for organising it. Further Cook Strait pelagic are planned with details provided at a later date.



Little Penguin (10) - seen in the harbour Southern Royal Albatross (2) Northern Royal Albatross (17) White-capped Albatross (32) Salvin's Albatross (45) Black-browed Albatross (45) Southern Giant Petrel (5) Northern Giant Petrel (20) Westland Petrel (5) Cape Petrel (80) Fluttering Shearwater (5) Fairy Prion (c30) Common Diving Petrel (1) Australasian Gannet (1) Black-fronted Tern (5) White-fronted Tern (3)

Southern Black-backed Gull (100+)

Northern (L) and southern (R) albatross

At sea the southern can be distinguished from the northern by its white upper wings with black edges and tips, whereas the upper wings of the northern are completely black.

Red-billed Gull (20+) Pied Shag (3) Little Pied Shag (2) Spotted Shag (16) - mostly in a small



breeding colony observed when we paused at Makaro/Ward Island Variable Oystercatcher (3)

Marine mammals: Dusky Dolphin (10) Short-beaked Common Dolphin (100+) NZ Fur Seal (6)



Southern (L) and northern (R) giant petrel

The southern giant petrel have a pale green tip to the bill compared to the red-brown tip of the northern giant petrel.

Shining Cuckoo are back

By the beginning of August there were a number of reports of shining cuckoo, mostly from the North Island. Shane Cotter heard a shining cuckoo at Lake Kohangatera (Pencarrow/Parangahu) on the 28th of August. This appears to be an early arrival date for shining cuckoo and contrasts with the first seasonal records from Mrs A.K. Wilkinson while on Kapiti Island*

1928	October 4	1933	October 2	1938	September 29
1929	October 3	1934	October 5	1939	September 22
1930	Away	1935	September 29	1942	October 10
1931	October 3	1936	October 1		
1932	October 7	1937	September 29		

^{*}Wilkinson A.K. 1957. Kapiti Diary Masterton Printing Co. Ltd., Masterton.

As of 24th September, no long-tailed cuckoo have been reported this spring in eBird in the Wellington region. "Long-tailed cuckoo are usually first seen or heard in September or October when they rapidly spread to forested areas throughout the country." NZBirdsOnline.

Zealandia Te Māra a Tāne Ecosanctuary

Yesterday our solid sanctuary biosecurity systems put in place by our conservation team were put to the test, with a weasel discovered dead in a DOC200 trap at the southern end of the sanctuary. The good news is our safe-guarding systems are working. This week the world celebrated World Ranger Day, and this discovery is a reminder of the critical role our rangers play every day in protecting the vulnerable species that call Te Māra a Tane home. These rare native species haven't evolved with introduced predators like weasels, so we are pleased we have trapped this animal. Incursions don't happen often, but when they do our rangers put their other work on hold and focus on carrying out a well-honed response. Our rangers and their volunteer ranger assistants are out today checking the fence on this rainy, windy Wellington Day.

Fortunately, introduced predators infiltrating our fence isn't a common occurrence. The Zealandia fence is very effective at keeping species like weasels out, but very occasionally they get in and we need to respond. Responding to events like this is expensive, and we are thankful to all the staff and volunteers who make it happen. We need your help to keep doing this work.

More information can be found here: https://bit.ly/4cfEuiS

The Capital Kiwi Project

rdtSepnoso6P29A834au 01ug21 5g66 51:u9ct2m374 4t0t3Mms4alm5c · Brown kiwi wins green gold! Last night at The Embassy, Capital Kiwi won the Green Gold category of the 2024 Wellington Gold Awards. The Gold Awards are our city's annual celebration of business success.

Are kiwi and moa recent immigrants from Australia? Neither fossils nor genetic evidence support the story

Nic Rawlence, Associate Professor in Ancient DNA, University of Otago Alan Tennyson, Curator of Vertebrates, Museum of New Zealand Te Papa Tongarewa Pascale Lubbe, Postdoctoral Research Fellow in Molecular Ecology, University of Otago

Published: September 17, 2024 Aotearoa New Zealand is a land of birds, from the smallest of <u>wrens</u> to the mightiest of <u>moa</u>. The ancestors of some species have been here for <u>tens of millions of years</u>, while others <u>arrived only a few million years ago</u>. So a recent suggestion that moa and <u>kiwi</u> are recent immigrants from Australia, while wrens and <u>kākāpō</u> are New Zealand's truly ancient birds, was sure to ignite controversy. The <u>contentious report</u> was based on a <u>scientific review of fossils</u> found at <u>St Bathans in Central Otago</u>. However, putting dates on arrivals requires a combination of both physical fossil evidence in deposits of a known age and <u>genetic dating techniques</u> that determine when the birds we know today diverged from their closest relatives. https://theconversation.com/are-kiwi-and-moa-recent-immigrants-from-australia-neither-fossils-nor-genetic-evidence-support-the-story-238577

[·] August 2nd, 2024

Avian Influenza (Bird flu) has reached Antarctica – a warning for New Zealand.

Avian influenza (also known as bird flu) is a viral disease of birds that is found across the globe. Avian influenza virus strains are described as low pathogenicity (LPAI) or high pathogenicity (HPAI). New Zealand has never had a case of HPAI. https://www.sway-cdn.com/Content/printtoweb/1.0.2104.91501/content/previewFrame.svg

Since 2021, a highly pathogenicity strain of avian influenza known as HPAI H5N1 clade 2.3.4.4b has caused significant outbreaks, decimating wild birds in the UK, Europe, South African and the Americas, and pinnipeds in South America. Since this outbreak began, millions of seabirds and tens of thousands of pinnipeds have died globally due to the disease. Many seabird colonies have experienced significant loses with up to 50-60% mortality rates (e.g., Great skua and Gannets). The Scientific Committee on Antarctic Research (SCAR).

In September a paper was published in Nature Communications announcing the discovery of high pathogenicity avian influenza in brown skua, kelp gulls, Antarctic terns, South Georgia shags, Antarctic fur seals, southern sea elephants, black browed albatross and Antarctic fulmar from the Falkland Islands and South Georgia. Link to paper, Detection and spread of high pathogenicity avian influenza virus H5N1 in the Antarctic Region | Nature Communications



More recent surveys found avian influenza on the

Antarctic Peninsula and are published on the SCAR website. https://scar.org/library-data/avian-flu (Above map). These findings are a major concern as they include seabird species, such as brown skua which have a wide distribution and are a potential source of introduction of avian influenza to New Zealand.

https://www.doc.govt.nz/globalassets/documents/our-work/wildlife-health/mpi-report-avian-influenza-hpai-factsheet.pdf

If you see three or more sick or dead wild birds in a group, report it immediately to Biosecurity New Zealand's Exotic Pest and Disease Hotline on 0800 80 99 66. Provide as much detail to Biosecurity New Zealand as you can, including:

a GPS reading or other precise location

information photographs and/or videos of sick and dead birds

species identity and estimate of numbers affected note how many are sick or freshly dead, and the total number present.

Biosecurity New Zealand will take details and an incursion investigator will be in contact with you. Follow any instructions from Biosecurity New Zealand for handling of sick or dead birds.

Do not handle sick or dead birds if you suspect HPAI. https://www.doc.govt.nz/our-work/wildlife-health/avian-influenza/

Nigel French, Professor of Infectious Disease Epidemiology and Public Health, Massey University in September presented a talk on Avian Influenza to the Wellington Branch of the Royal Society. His Powerpoint presentation is an excellent introduction to avian influenza / bird flu and can be found at the following link https://static1.squarespace.com/static/617f8fb6541e552969da02d0/t/66d95d62801fda2a614e3e44/1725521266667/French_Nigel_RSNZ.pdf