



BORDER HEALTH NEWSLETTER – OCTOBER 2020

WELCOME!

Kia Ora Koutou,

It was great meeting many of you during the "Medical Vectors Surveillance Workshop" in Auckland. We hope the attendees enjoyed the workshop as much as we did. We also hope attendees are using some of the new skills learned and are sharing the latest updates with their colleagues.

We congratulate Health Protection Officer Aaron Guanlao for winning the mozzie-picture of the month, with the picture he took during the Medical Vectors surveillance workshop. Scroll down to see what makes a great mozzie picture.

In the news this month, Te Papa is calling for citizen scientists to collect mosquitoes from around the country to help understand their distribution and spread. RNZ Critter of the Week with Jesse Mulligan aired an interview with Doc's Nicola Toki featuring *Culex rotoruae*, the Hot Pool Mosquito. The CDC recommends the continuation of mosquito control surveillance during non-mosquito related public health emergencies and natural disasters in the USA. NSW health pathology warns Australians about a wetter summer this year and the likely increase in mosquito numbers. WHO takes a position on genetically modified mosquitoes. Scroll down to read about these stories and more!

SURVEILLANCE

During September 951 samples were collected by staff from 11 DHBs (Figure 1). As mentioned in the previous month Waikato DHB has suspended surveillance at the airport due to the lack of international flights reaching the area. The samples included 77 positive larval samples and 14 positive adult samples, leading to a total of 17 adults and 4569 larvae identified over the past month (Table 1). The dominant larval species this month, this year and last year is *Aedes notoscriptus*.

Compared to this same month last year, the total number of larvae has shown an increase (19%) while the total number of adults has shown a 35% decrease (Table 1).

In total, five mosquito species have been collected this month (Table 1), that is the same number as last month.

Compared to last month, mosquito larval and adult numbers have shown an increase (130% and 325% respectively (Table 1).

Table 1. Adult and larvae sampled by the New Zealand surveillance program during October 2019 & 2020

Species (common name)	Adults		Larvae	
	Oct 20	Oct 19	Oct 20	Oct 19
<i>Aedes notoscriptus</i> (striped mosquito)	1	-	2214	2799
<i>Ae antipodeus</i> (Winter mosquito)	8	7	-	1
<i>Ae subalbrostris</i> (no common name)	-	-	-	7
<i>Culex pervigilans</i> (vigilant mosquito)	4	8	1655	630
<i>Cx quinquefasciatus</i> (southern house mosquito)	3	6	685	216
<i>Culex sp.</i>	1	2	-	-
<i>Opifex fuscus</i> (rock pool mosquito)	-	-	15	32
Total	17	23	4569	3685

The highest number of larvae sampled this month was obtained in Northland DHB (4020 larvae) followed by Nelson Marlborough DHB (183 larvae) (Figure 1).

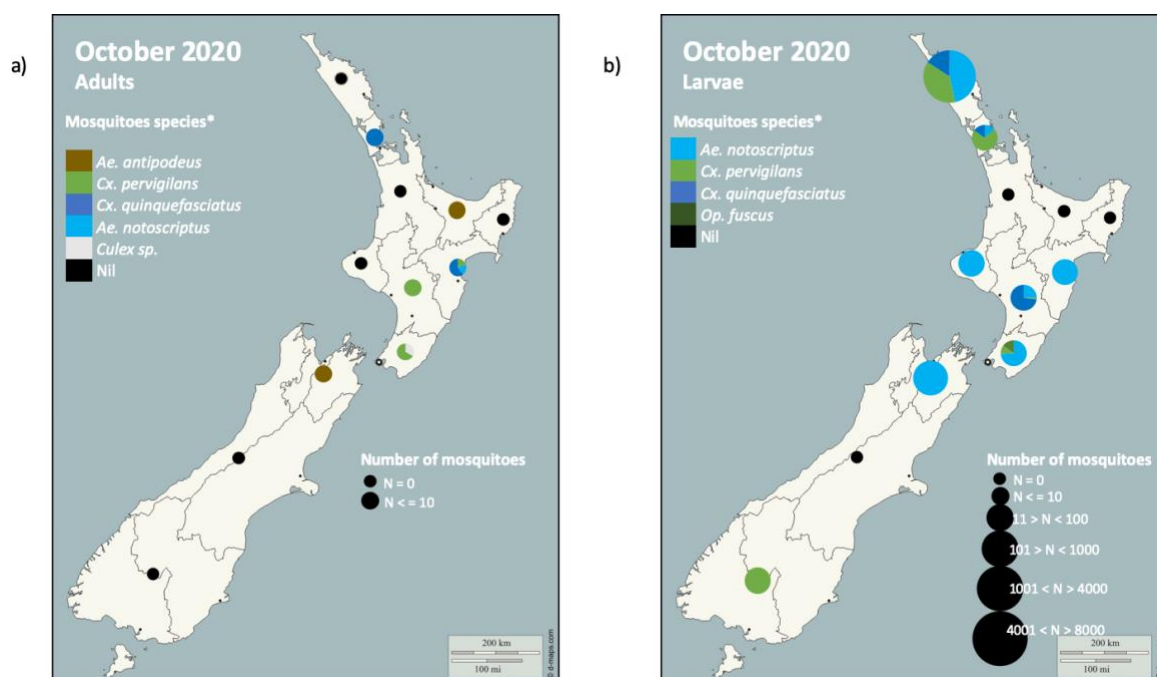


Figure 1. Total mosquito adults (a) and larvae (b) sampled in New Zealand during the October 2020 surveillance period.

* The mosquito species are listed in order from the most abundant to the least abundant.

Please note that the markers represent the DHBs and not the specific sites where the samples have been taken.

Culex quinquefasciatus larval numbers have shown a decrease in Nelson Marlborough DHB from this same month last year and an increase in three DHBs. *Culex quinquefasciatus* has not been found this month in Public Health South (Figure 2).

Aedes notoscriptus larval numbers have shown a decrease in three DHBs from this same month last year and an increase in five DHBs (Figure 2). As expected *Aedes notoscriptus* has not been recorded this month, this year or last year in Public Health South (Figure 2).

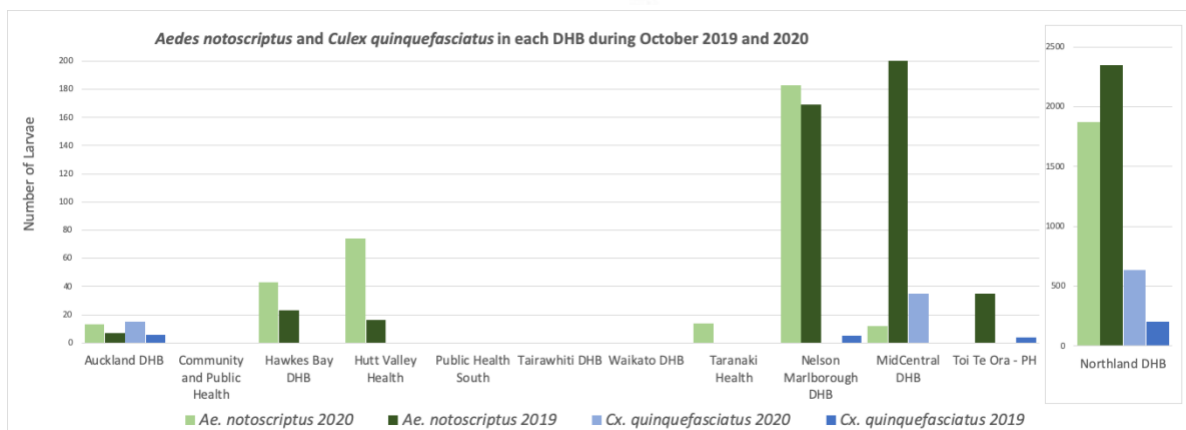


Figure 2. Comparison between introduced mosquitoes sampled in each DHB New Zealand during October 2019 and 2020. *Please note the different scale for the number of larvae present in Northland DHB in comparison to the other DHBs.

Disclaimer: Note that all comparisons made have not been statistically tested and can be due to sampling effort.

INCURSIONS AND INTERCEPTIONS

During October five suspected interception have been recorded, including the detection of sixteen exotic mosquitoes, containing one in the unwanted list highlighted in red (Table 2).

Table 2. Suspected interceptions during October 2020.

Date	Species	Location	Circumstances
3.10.2020	Sample number ASH296: 1 Female <i>Culex pipiens</i> 1 Male <i>Culiseta longiareolata</i> 1 non biting midge Sample number ASH297: 3 Female <i>Culex pipiens</i> 4 Male <i>Culex pipiens</i> 1 Female <i>Aedes albopictus</i> 1 Female <i>Culiseta longiareolata</i> 3 Male <i>Culiseta longiareolata</i> 1 march fly 1 robber fly Sample number GB140 3 Female <i>Culex pipiens</i> 1 Female <i>Culex torrentium</i> 1 F <i>Culex torrentium /pipiens</i> 2 non mosquitoes (Chironomidae)	Taranaki Port	Found dead by MPI while inspecting a shipment of wind turbines from Italy. Found inside the wind turbines blades.
9.10.2020	1 non mosquito (Cranefly)	Ports of Auckland	Found dead during routine inspection of imported vehicles from Japan.
16.10.2020	1 Female <i>Culex pipiens</i> complex (likely a hybrid between <i>Cx pallens</i> and <i>Cx molestus</i>)	39 Randwick Road, Morea, Lower Hutt	Found dead trapped in spider/mite web in a container of steel which was inside a plywood box, loaded in Shanghai, China. The spiders and mite were found alive.
16.10.2020	1 Female <i>Culex vishnui</i>	15 Sheffield Cres, Christchurch	Found dead, wrapped in plastic in a consignment of cardboard cones from Malaysia.
20.10.2020	1 non mosquito (Chironomidae)	65 Tidal Road, Mangere, Auckland	Found dead by MPI in a refrigerated consignment of ginger from Thailand.



NEWS ARTICLES FROM AROUND THE WORLD

New Zealand Mosquito Census Te Tatauranga Waeroa o Aotearoa



Saltpool mosquito *Opifex fuscus*. Photo by Jean-Claude Stahl. Te Papa

Citizen scientists! We need your help tracking New Zealand's native and introduced *waeroa* species so we can get a better understanding of which species live where and how they are spreading. Simply catch it, freeze it, and send it. [Read more.](#)

Critter of the Week Hot Pools Mosquito



In New Zealand we have plenty of things to celebrate, from the kiwi to pavlovas, but did you know we can also boast that we have the only species of hot pool mosquito in the world? Not only can these critters survive in extreme conditions, but they might also be the key to better understanding autoimmune reactions and other illnesses, says Doc's Nicola Toki. [Listen to Nicola Toki talking with Jesse Mulligan.](#)

WHO takes a position on genetically modified mosquitoes

Recognizing the urgent need for new tools to combat VBDs, and in the spirit of fostering innovation, WHO supports the investigation of all potentially beneficial technologies, including genetically modified mosquitoes (GMMs). A [new position statement](#), launched today in a WHO seminar, clarifies WHO's stance on the evaluation and use of GMMs for the control of vector-borne diseases. [Read more.](#)



Female mosquitoes can detect a combination of four different substances in blood

Researchers are learning what humans taste like to mosquitoes, down to the individual neurons that sense blood's distinctive, delectable flavour. Female mosquitoes have a sense of taste that is specially tuned to detect a combination of at least four different substances in blood. [Read more.](#) [Access abstract for original article.](#)

La Niña will give Australia a wet summer. That's great weather for mozzies



The return of the [La Niña](#) weather pattern will see a wetter spring and summer in many parts of Australia. We know mosquitoes need water to complete their life cycle. Does this mean Australia can expect a bumper mozzie season? How about a rise in mosquito-borne disease? While we've seen more mosquitoes during past La Niña events, and we may well see more mosquitoes this year, this doesn't necessarily mean we'll see more related disease. This depends on a range of other factors, including local wildlife, essential to the life cycle of disease-transmitting mosquitoes. [Read more.](#)

Midges and mosquitoes unlikely to spread SARS-CoV-2



The current COVID-19 pandemic is caused by the betacoronavirus severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), an enveloped single-stranded RNA virus with a large genome of ~30 kb length. It is known to infect both humans and animal species. Another recent study by researchers at the Kansas State University, and the United States



Department of Agriculture and published on the preprint server bioRxiv in September 2020 looked to see if biting insects pose a risk for transmission of SARS-CoV-2 to humans or animals following a SARS-CoV-2 infected blood meal. [Read more.](#)

Continuation of Mosquito Surveillance and Control During Public Health Emergencies and Natural Disasters

Mosquito control and public health agency efforts in mosquito surveillance and abatement are critical for preventing mosquito borne diseases and protecting public health including during public health emergencies and responses to natural disasters. Initiating or continuing the delivery of mosquito control and public health organization services are essential for protecting public health and mitigating mosquito borne diseases. This includes the safe, timely, and judicious use of pesticides against adult mosquitoes (adulticides) and larval mosquitoes (larvicides), according to their EPA labels, as part of a comprehensive integrated control effort. [Read more.](#)

THE BEST MOZZIE PICTURE OF THE MONTH



About the photographer: Aaron Guanlao is a Health Protection Officer/ Technical Officer working for the Auckland Regional Public Health Service.

Characteristics of a good Mozzie picture:

- Picture is in focus
- The light allows the viewer to interpret the different colours.
- All body parts are distinguishable.



DISEASE OUTBREAKS

To find out where the latest disease outbreaks have occurred visit:

[Epidemic and emerging disease alerts in the Pacific region](#) - Produced by the Pacific Community (SPC) for the Pacific Public Health Surveillance Network (PPHSN).

[Disease Outbreak News](#) - World Health Organization.

[Public Health Surveillance](#) - Institute of Environmental Science and Research (ESR) - Information for New Zealand Public Health Action.

[Communicable disease threats report](#) - European Centre for Disease Prevention and Control

RISK MAPS

[Dengue Map](#) – Centres for Disease Control and Prevention

[Zika Map](#) – Centres for Disease Control and Prevention

[Malaria](#) – Centres for Disease Control and Prevention
