



BORDER HEALTH NEWSLETTER – APRIL 2021

WELCOME!

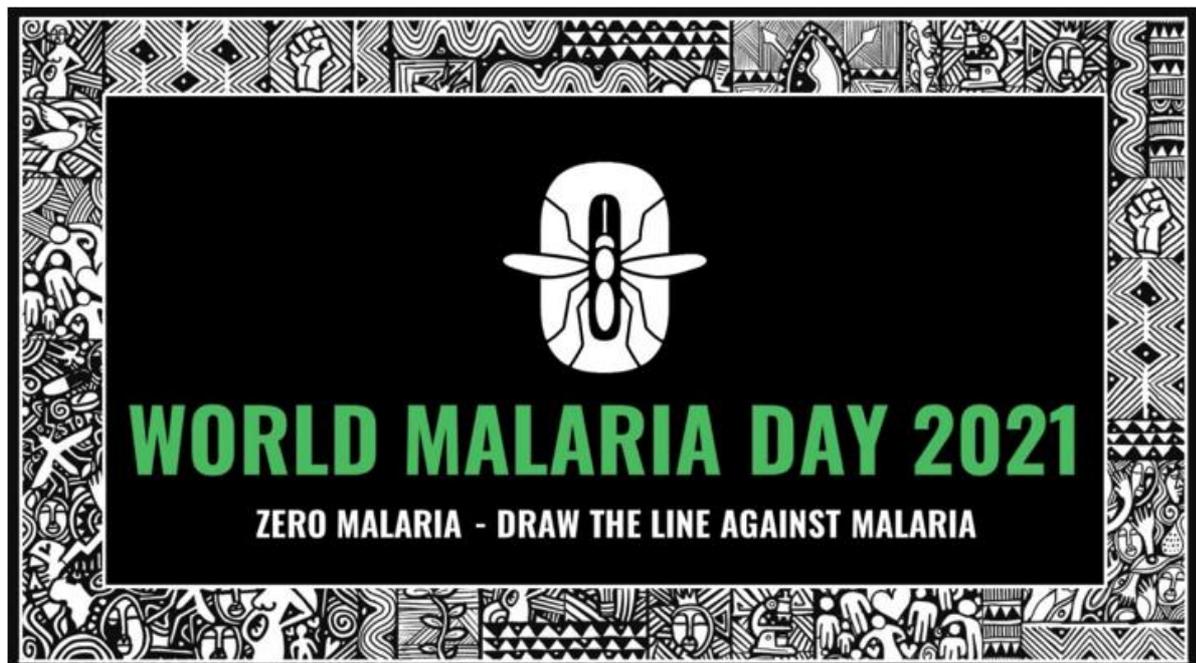
Kia Ora Koutou,

Some of you may have already known that Roz is leaving NZBEL. We will miss such a great colleague and best friend. We wish her the best of luck in her new adventure! Farewell Roz!

In the news this month, Malaria Day was observed on the 25th of April. This year there are more countries than ever before on the verge of zero malaria! By the end of 2020, WHO informed that 24 countries had reported interrupting malaria transmission for three years or more; of these, 11 were certified malaria-free! Also, on the bright side, researchers are studying new ways to fight malaria by modifying mosquito gut genes and fighting dengue releasing genetically modified *Aedes aegypti* in the Florida Keys. Lastly, learn about the dengue outbreak in the Cook Islands.

This month we are featuring a crossword for you to test your knowledge about mosquito biology and surveillance.

Scroll down and enjoy!



SURVEILLANCE

During April 742 samples were collected by staff from 11 DHBs (Figure 1). The samples included 129 positive larval samples and 51 positive adult samples, leading to a total of 390 adults and 6473 larvae identified over the past month (Table 1). The dominant larval species this month and last month is *Culex quinquefasciatus*.

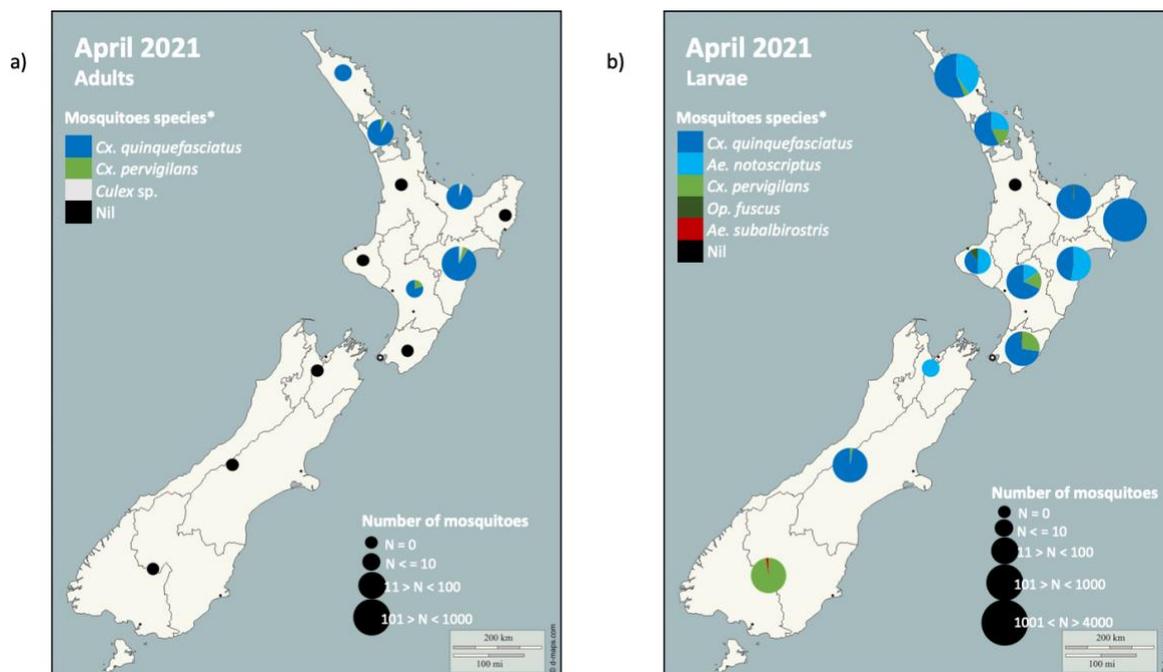


Figure 1. Total mosquito adults (a) and larvae (b) sampled in New Zealand during the April 2021 surveillance period.

* 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.

Compared to this same month last year, the total number of larvae has shown a 3% increase and the adults a 65% decrease (Table 1).

Table 1. Adult and larvae sampled by the New Zealand surveillance program during April 2020 & 2021

Species (common name)	Adults		Larvae	
	April 21	April 20	April 21	April 20
<i>Aedes notoscriptus</i> (striped mosquito)	-	22	1072	1803
<i>Ae. antipodeus</i> (winter mosquito)	-	1	-	-
<i>Ae. subalbirostris</i> (no common name)	-	-	4	6
<i>Cx. pervigilans</i> (vigilant mosquito)	17	45	584	463
<i>Cx. quinquefasciatus</i> (southern house mosquito)	358	312	4778	3960
<i>Culex</i> sp.	15	32	-	-
<i>Opifex fuscus</i> (rock pool mosquito)	-	-	35	18
Total	390	412	6473	6250

Compared to last month, mosquito larval numbers and adult numbers have shown a decrease (77% and 69% respectively), (Table 1).

In total, five mosquito species have been collected this month (Table 1), that is four less than last month. This difference is due to the fact that Northland HPOs have ceased sampling in areas of native forest where routine surveillance does not commonly occur.

The highest number of larvae sampled this month was obtained in Northland DHB (1992 larvae) followed by Tairawhiti DHB (1151 larvae) (Figure 1).

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

Aedes notoscriptus larval numbers have shown an increase in four DHBs from this same month last year and a decrease 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).

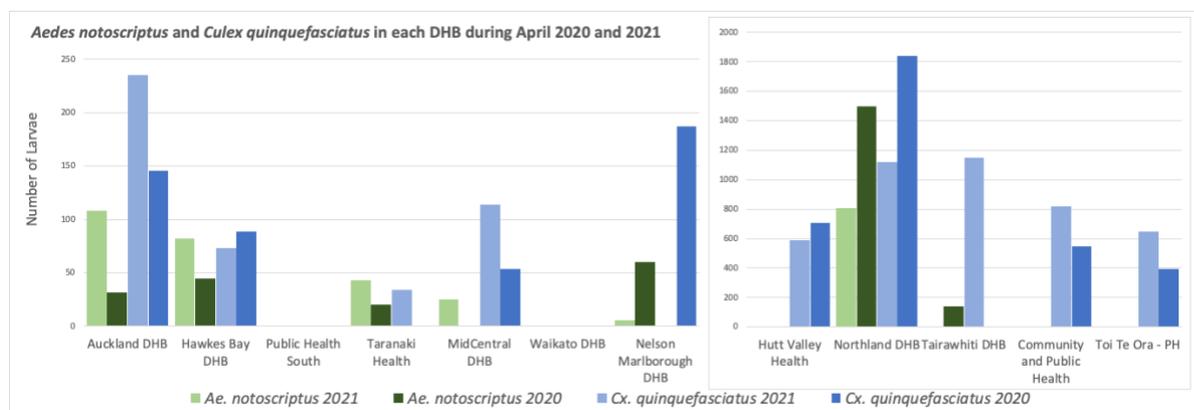


Figure 2. Comparison between introduced mosquitoes sampled in each DHB during February 2020 and 2021.

*Please note the different scale for the number of larvae present in Hutt Valley Health, Northland DHB, Tairawhiti DHB, Community and Public Health and Toi Te Ora – PH 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 April, HPOs responded to five suspected interceptions (Table 2).

Table 2. Suspected interceptions during April 2021.

Date	Species	Location	Circumstances
14.04.2021	1 Female <i>Culex quinquefasciatus</i>	Auckland International Airport, Auckland	Found alive outside MPI Ops room. Specimen is likely of local origin.
14.04.2021	1 Female <i>Culex quinquefasciatus</i>	Bridgestone, 7 Falcon Drive Manukau, Auckland	Found alive during the final check after devanning a container of new tyres.
16.04.2021	3 non mosquito adults	9 Tokomaru Place, Stoke, Nelson	Suspected larvae found by MPI in water pooled in a plastic cover sheet on a container of glass.
27.04.2021	1 Male <i>Culex quinquefasciatus</i>	Wellington International Airport	Mosquito found alive by MPI officer at WIAL outside MPI room in international terminal.
29.04.2021	1 <i>Culex</i> sp.	Sorted Logistics, Hornby, Christchurch	Found dead in the back of a container of fabric goods.



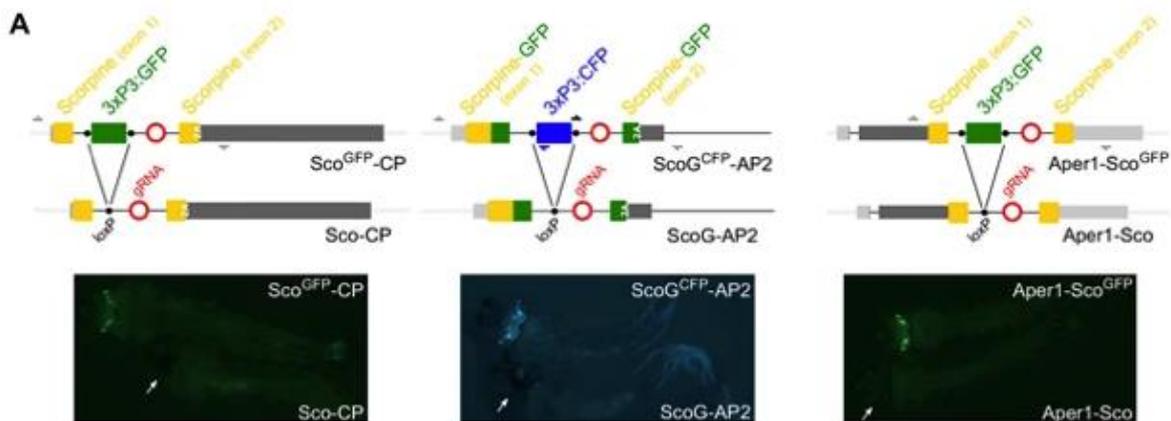
NEWS ARTICLES FROM AROUND THE WORLD

World Malaria Day: WHO launches effort to stamp out malaria in 25 more countries by 2025



WHO congratulates the growing number of countries that are approaching, and achieving, zero cases of malaria. A new initiative launched on the 25th April aims to halt transmission of the disease in 25 more countries by 2025. Of the 87 countries with malaria, 46 reported fewer than 10 000 cases of the disease in 2019 compared to 26 countries in 2000. By the end of 2020, 24 countries had reported interrupting malaria transmission for 3 years or more. Of these, 11 were certified malaria-free by WHO. [Read more.](#)

Simple genetic modification aims to stop mosquitoes spreading malaria



Altering a mosquito's gut genes to make them spread antimalarial genes to the next generation of their species shows promise for curbing malaria. Senior researcher Professor George Christophides, from the Department of Life Sciences at Imperial, said: "To finally eradicate malaria, we need to explore many new approaches, and this could be one of them. Reducing the ability of mosquitoes to pass on the parasite responsible for the disease could have a significant impact. "We would of course need to rigorously test the safety and effectiveness of the technique before releasing any genetically modified mosquitoes into an area in the wild." [Read more.](#) [Access original article.](#)

World Malaria Day 2021: An interview with Sir Brian Greenwood



In observation of World Malaria Day 2021, News-Medical interviews Sir Brian Greenwood Professor of Clinical Tropical Medicine in the London School of Hygiene & Tropical Medicine, about raising awareness for malaria in the times of the COVID-19 pandemic and how we can achieve elimination of the disease. [Read more.](#)

First genetically modified mosquitoes released in the United States

After a decade of fighting for regulatory approval and public acceptance, a biotechnology firm has released genetically engineered mosquitoes into the open air in the United States for the first time. The experiment, launched this week in the Florida Keys — over the objections of some local critics — tests a method for suppressing populations of wild *Aedes aegypti* mosquitoes, which can carry diseases such as Zika, dengue, chikungunya and yellow fever. [Read more.](#)

Dengue cases in the Cook Islands on the increase



The dengue fever outbreak in the Cook Islands shows no signs of abating with the total number of suspected, probable and confirmed cases of type-2 dengue sitting at 317. *Cook Islands news* online reports the total number of cases have increased 44% since the beginning of the month. Cases have been steadily climbing since the outbreak was declared by Te Marae Ora Ministry of Health in early February this year. [Read more.](#)



CROSSWORDS

DOWN

1. Sample labels are filled out in _____
2. GAT stands for Gravid _____ Trap
3. A _____ survey is completed following the interception of an exotic mosquito
4. *Aedes albopictus* mosquitoes are a species of _____ breeders
5. If there are mosquitoes in a trap, then the sample is _____
6. Only the _____ mosquitoes bite
7. Tyre traps should have _____ dip in the online database

ACROSS

1. _____ is the term for female mosquitoes looking to lay eggs
2. When traps are set up after an interception it is called _____ surveillance
3. A BG is a trap designed to specifically catch _____
4. The common name for the endemic species *Opifex fuscus* is the _____ mosquito
5. A GAT is a trap to catch _____ mosquitoes
6. _____ mosquitos carry malaria
7. Male mosquitoes feed on _____

Illustration by Ana Kova

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

[Malaria](#) – World Health Organisation