



BORDER HEALTH NEWSLETTER

AUGUST 2023

NAU MAI, HAERE MAI - WELCOME!

Kia ora koutou katoa,

This month we had the great pleasure of meeting with another group of HPOs during the Border Health & Ship Sanitation Certificate Course here in Wellington. We hope you all learned something new and enjoyed the course as much as we did!



On August 20th, World Mosquito Day is commemorated. The day acknowledges the importance of mosquitoes as disease vectors of parasites and a long list of viruses that affect humans, pets and farm animals. It also raises awareness of the importance of trying to prevent mosquito bites. This day was selected WMD in commemoration of the discovery made by [Sir Ronald Ross in 1897](#). Ross was the first person to confirm that Anopheles mosquitoes transmitted the malaria parasite; he made this discovery while dissecting the stomach tissue of an Anopheline mosquito.

20th AUGUST

WORLD
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DAY

Biosecurity Specialists



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In the news this month, read about how the warming climate has allowed *Culex modestus*, a mosquito associated with tropical climates, to establish in Finland, about the increase in dengue cases in the Americas, how experts believe about half of the world's population is now at risk of Dengue, and also how warmer temperatures, change in rainfall, and human activity have led to locally transmitted cases of malaria in Florida and Texas. Read that experts are urging an increase in surveillance of Anopheles mosquitoes, in USA, due to its ninth locally transmitted case of malaria. Finally, look at how the rapid growth of an invasive tree in the central-western portion of Kenya's Great Rift Valley is increasing the risk of malaria in the area.

This month for the best mozzie photo section, we share techniques on how make your mozzie photos even better. So, if you want to get that perfect mozzie snap, check it out below. Also, scroll down to learn all about *Culex sitiens* in the know your mozzie section.

Happy reading!

SURVEILLANCE

During August 919 routine samples were collected by staff from 11 PHUs (Figure 1). The samples included 45 positive larval samples and 12 positive adult samples, leading to a total of 1747 larvae and 17 adults identified over the past month (Table 1). *Aedes notoscriptus* is the dominant larval species this month, which is the same as last month and this month last year (Table 1).

In total, four mosquito species have been collected this month (Table 1), two less than collected last month.

Compared to this same month last year, the total number of larvae has shown an increase (177%) and adults have shown a decrease (78%) (Table 1).

Compared to the previous month, mosquito larval and adult numbers have shown an increase (57%) and (30%) respectively.

Table 1. Adult and larvae sampled by the New Zealand surveillance program during August 2022 & 2023

Species (common name)	Adults		Larvae	
	Aug 23	Aug 22	Aug 23	Aug 22
<i>Aedes antipodeus</i> (winter mosquito)	1	40	-	-
<i>Ae notoscriptus</i> (striped mosquito)	-	1	853	573
<i>Cx pervigilans</i> (vigilant mosquito)	2	16	529	47
<i>Cx quinquefasciatus</i> (southern house mosquito)	13	19	365	10
<i>Culex</i> sp.	1	2	-	-
<i>Opifex fuscus</i> (rock pool mosquito)	-	-	-	1
Total	17	78	1747	631



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The highest number of larvae sampled this month was obtained in Northland (1718 larvae) followed by Auckland and Nelson-Marlborough (8 larvae) (Figure 1).

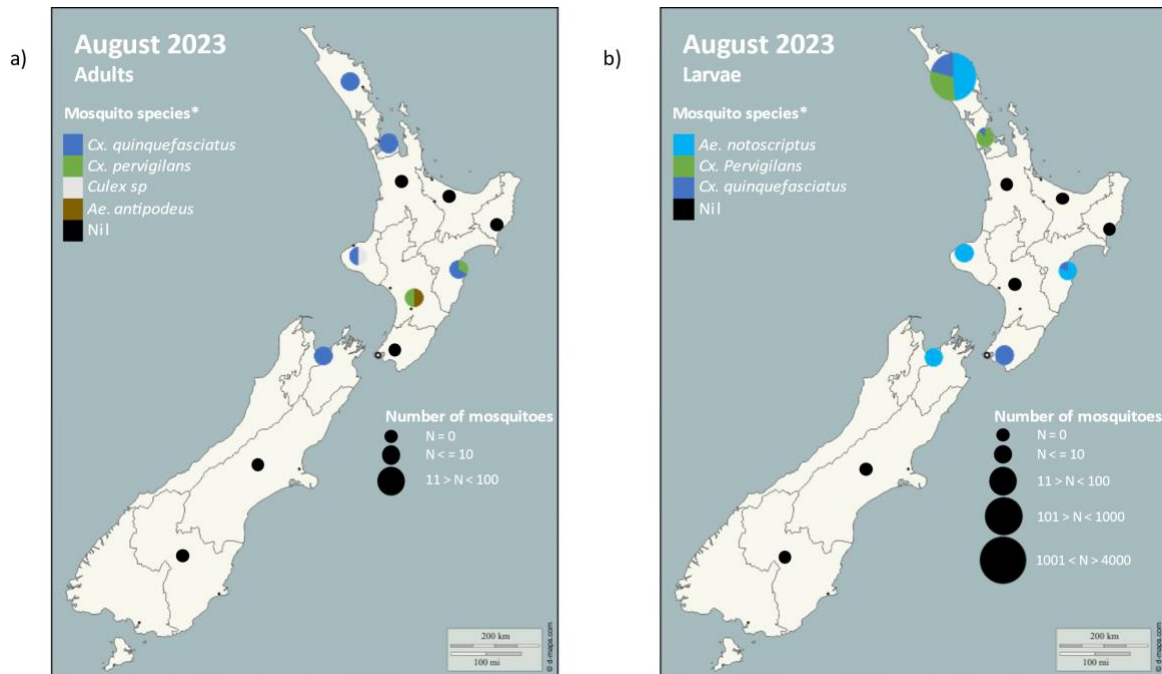


Figure 1. Total mosquito adults (a) and larvae (b) sampled in New Zealand during August 2023 surveillance period. Please note that the markers represent the PHUs and not the specific sites where the samples have been taken.
* The mosquito species are listed in order from the most abundant to the least abundant.

Aedes notoscriptus larval numbers have shown an increase in three PHUs and a decrease in four PHUs from this same month last year (Figure 2).

As expected, *Aedes notoscriptus* has not been recorded this month, this year, or last year in Southland (Figure 2).

Culex quinquefasciatus larval numbers have shown an increase in four PHUs from this same month last year (Figure 2).

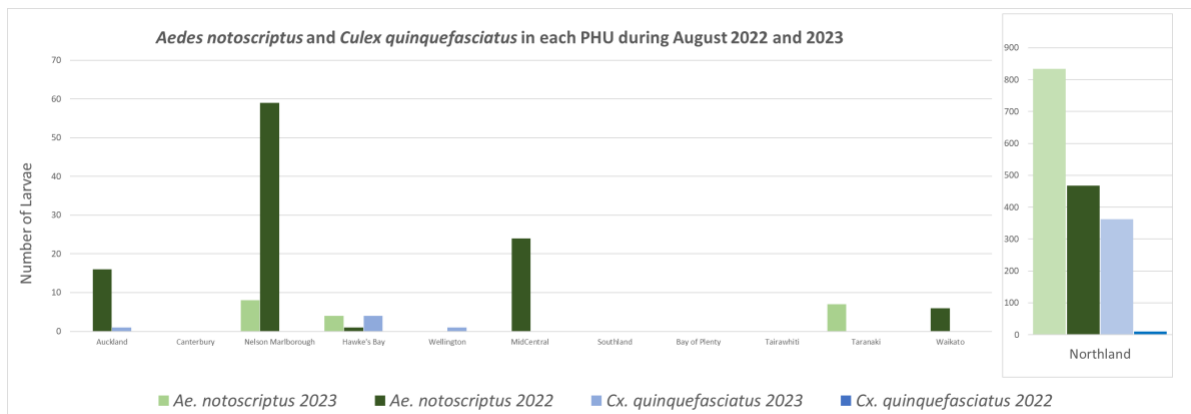


Figure 2. Comparison between introduced mosquito species sampled in each PHU during August 2022 and 2023.
*Please note the different scale for the number of larvae present in Northland in comparison to the other PHUs.



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INCURSIONS AND INTERCEPTIONS

During August, HPOs responded to one suspected interception (Table 2).

Table 2. Suspected interception during August 2023

Date	Species	Location	Circumstances
22.08.2023	1 Non-mosquito (Window gnat)	Barkers Clothing Limited, Avondale, Auckland	Found flying inside a container of boxes of clothing from Shanghai, China.

NEWS ARTICLES FROM AROUND THE WORLD

What is all the buzz about mosquitoes?



With climate change impacting mosquito populations in the UK and Europe attention is turning to the increased risk of new diseases becoming established in the European mosquito populations. APHA's Vector-Borne Diseases Workgroup from the Arbovirus Research Team reveal more. [Read more here.](#)

Virus-carrying tropical mosquitos found in Finland as climate heats

While the heatwaves, wildfires and floods are the most dramatic examples of the way burning fossil fuels is altering our climate, there are less obvious dangers. Research into the number of mosquito species resident in Finland has just added number 44: *Culex modestus*. This is a surprise because it is a tropical species and a known carrier of the West Nile virus, which causes an illness that used to be associated mainly with central Africa. [Read more about this discovery here.](#) [Access the full scientific article here.](#)

As dengue cases increase globally, vector control, community engagement key to prevent spread of the disease





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In the Americas, dengue is transmitted primarily by the *Aedes aegypti* mosquito and the disease is endemic to many countries. Outbreaks tend to be cyclical every 3 to 5 years, following seasonal patterns corresponding to the warm, rainy months, when mosquitos breed. In 2023, however, the Americas have seen a sharp increase in dengue cases. Over 3 million new infections have been recorded so far, surpassing figures for 2019 – the year with the highest recorded incidence of the disease in the region, with 3.1 million cases, including 28,203 severe cases and 1,823 deaths. [Read more about this here.](#)

EPI-WIN Webinar: Managing Dengue: a rapidly expanding epidemic

Dengue (also known as bone-break fever) is a viral infection caused by the dengue virus (DENV), transmitted to humans through the bite of infected mosquitoes. The incidence of dengue has grown dramatically around the world in recent decades. Dengue is endemic in more than 100 countries in the WHO Regions of Africa, the Americas, the Eastern Mediterranean, South-East Asia and the Western Pacific. Dengue is spreading to new areas, including Europe, and explosive outbreaks are occurring. About half of the world's population is now at risk of dengue with an estimated 100–400 million infections occurring each year. [Click here to watch experts talking about the current dengue situation.](#)

Experts discuss how environmental changes are altering the risk for mosquito-borne diseases



The changing climate is dramatically altering the landscape of mosquito-borne diseases. Warmer temperatures, changes in rainfall, and human activity are enabling their spread to new places often unprepared to deal with them. This year, locally transmitted malaria cases cropped up in Florida and Texas for the first time in 20 years. But dengue fever has dominated global headlines, with outbreaks unprecedented in their locations, severity, and duration. With deadly outbreaks from Bangladesh to Peru and record numbers of cases in Europe, the World Health Organization officials this July warned that climate change could push dengue cases to near-record numbers. [Read more here.](#)



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The mesquite and the mosquito: Malaria threat spreads in Kenya's Rift Valley



Baringo County, in the central-western portion of Kenya's Great Rift Valley, is classed as a semi-arid landscape. Though seasonal rivers traverse the region's rocky valleys, and wetlands dot the plains, the landscape is dominated by savannahs. But even here, the risk of malaria, an infectious disease commonly associated with wet places, persists. Around those scattered marshy areas, teeming mosquitoes are not only a nuisance, but a menace to public health. And their threat has worsened in recent years because of the encroachment of one thorny invasive tree. [Access the article to learn more.](#)

BEST MOZZIE PHOTOS OF THE MONTH

How to take even better mozzie photos

Out of focus?
Keep your phone steady, use the timer function to prevent your phone from shaking after pressing the capture button.

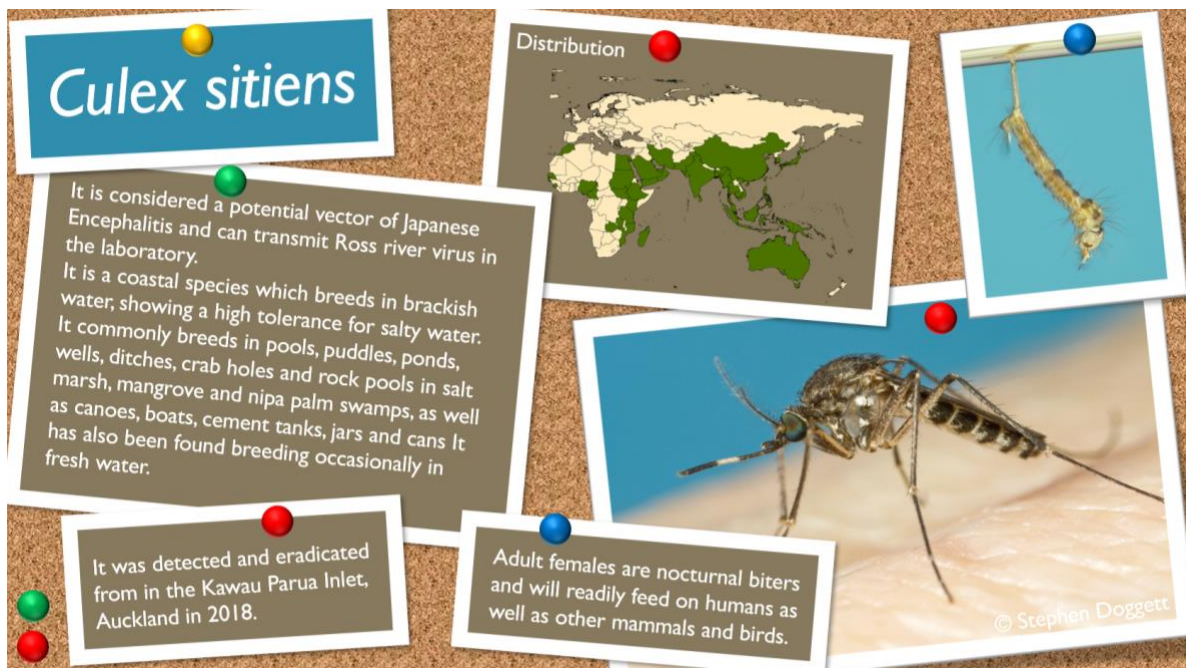
Contrasting shadows?
Use a diffuser or a reflector to soften the light.
Avoid the use of flash.

Lack of definition or contrast? Dark or opaque photo?
Enhance the artificial light by projecting an additional light against white paper or use a reflector.



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KNOW YOUR MOZZIE



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

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