



# BORDER HEALTH NEWSLETTER

**JULY 2023**

## NAU MAI, HAERE MAI - WELCOME!

Kia ora koutou katoa,

As the cold weather is still here, the mosquito numbers are low, and as you will notice in the Surveillance section below, the numbers are lower than this month last year and last month! In any case, it is still a perfect time to prepare all your equipment for summer. So, if you haven't sent your Light Traps or Regulators to be checked this year, fear not! You still have time to contact us and have it done ([taxonomy@nzbiosecure.net.nz](mailto:taxonomy@nzbiosecure.net.nz)).

In the news this month, read about how the weather conditions across the globe are having an impact on the mosquito and tick numbers and the diseases that they transmit, including locally acquired cases of malaria in Florida and Texas, a surge in the number of cases of chikungunya in Mumbai, new cases of Murray Valley encephalitis in Kimberly and the detection of West Nile virus-infected mosquitoes in Toronto. Also, learn about the past overlapped dengue and COVID-19 outbreaks in Florida in 2020 and the lessons learned from that time. Finally, in a brighter light, look at how a chance discovery might change the future fight against malaria.

This month for the bite of information section, we have prepared a quick reference guide on how to enter the different traps used in surveillance into the online database. So, if you have ever wondered about the required information regarding traps, now is your chance to check it out. Also, scroll down to find out what makes a non-mosquito photo a great one, this time we are featuring a couple of good non-mozzie photos taken by Gurpreet Bains, showing why photographing live and dead insects are helpful for entomologist when providing a preliminary ID. Finally, check the bite of humour section to have a good laugh and get your endorphins levels higher!

Happy reading!

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## SURVEILLANCE

During July 882 routine samples were collected by staff from 12 PHUs (Figure 1). The samples included 48 positive larval samples and 7 positive adult samples, leading to a total of 1114 larvae and 13 adults identified over the past month (Table 1). *Aedes notoscriptus* is the dominant larval species this month, which is different to last month, but the same as this month last year (Table 1).

In total, six mosquito species have been collected this month (Table 1), one more than collected last month.

Compared to this same month last year, the total number of larvae and adults have shown a decrease (23%) and (68%) respectively (Table 1).

Biosecurity Specialists



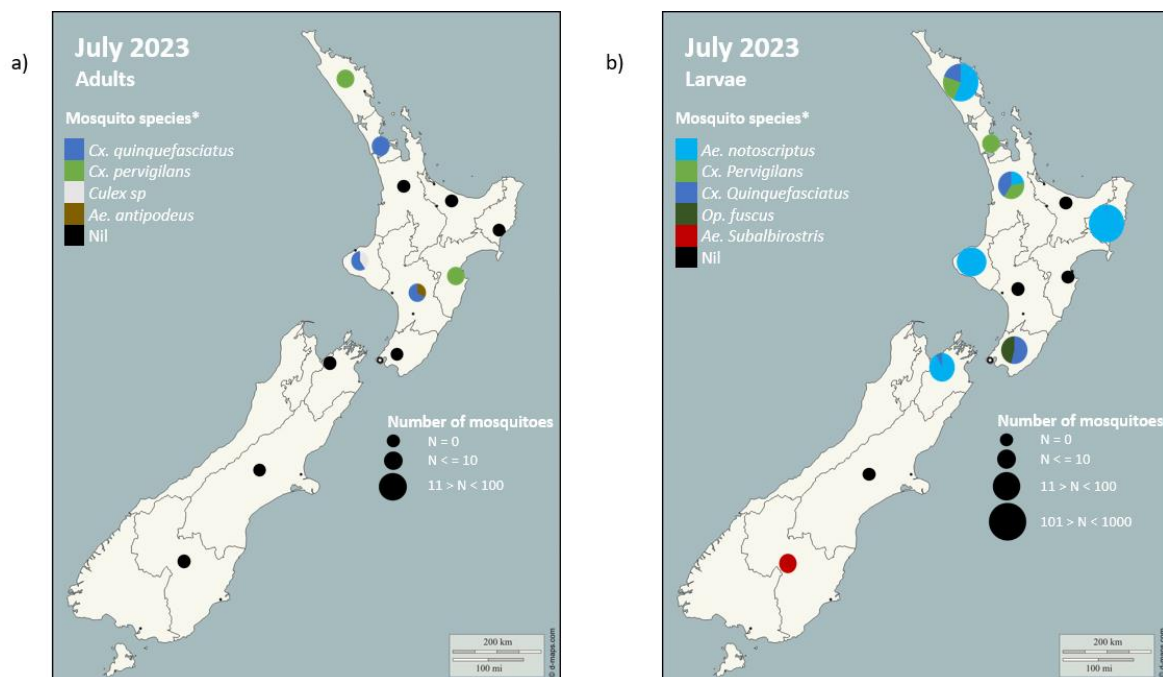
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Compared to the previous month, mosquito larval and adult numbers have shown a decrease (85%) and (79%) respectively.

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

Species (common name)	Adults		Larvae	
	July 23	July 22	July 23	July 22
<i>Aedes antipodeus</i> (winter mosquito)	1	-	-	-
<i>Ae notoscriptus</i> (striped mosquito)	-	-	742	1250
<i>Ae subalbirostris</i>	-	-	1	-
<i>Cx pervigilans</i> (vigilant mosquito)	3	3	174	71
<i>Cx quinquefasciatus</i> (southern house mosquito)	7	33	174	113
<i>Culex</i> sp.	2	4	-	-
<i>Opifex fuscus</i> (rock pool mosquito)	-	-	23	10
<b>Total</b>	<b>13</b>	<b>40</b>	<b>1114</b>	<b>1444</b>

The highest number of larvae sampled this month was obtained in Northland (663 larvae) followed by Tairāwhiti (277 larvae) (Figure 1).



**Figure 1.** Total mosquito adults (a) and larvae (b) sampled in New Zealand during July 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 four PHUs and a decrease in two 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).



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*Culex quinquefasciatus* larval numbers have shown an increase in five PHUs and a decrease in two from this same month last year (Figure 2).

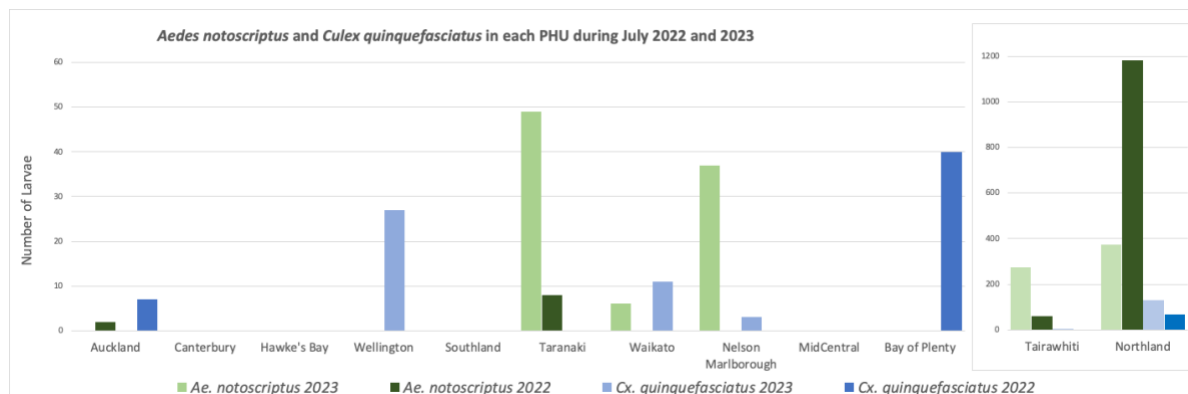


Figure 2. Comparison between introduced mosquito species sampled in each PHU during July 2022 and 2023.

\*Please note the different scale for the number of larvae present in Tairāwhiti & Northland in comparison to the other PHUs.

## INCURSIONS AND INTERCEPTIONS

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

Table 2. Suspected interception during July 2023

Date	Species	Location	Circumstances
04.07.2023	1 Non-mosquito (Crane fly)	CoolDrive Auto Parts NZ - Hamilton. 3 Tasman Road, Avalon, Hamilton 3200	Found alive in container of new automotive parts (wrapped pallets) from Melbourne, Australia.

## NEWS ARTICLES FROM AROUND THE WORLD

### Toronto Public Health confirms first mosquitos to test positive for West Nile virus in 2023

Toronto Public Health (TPH) has received confirmation of one batch of mosquitoes that tested positive for West Nile Virus (WNV). These mosquitoes were collected from a northwest Scarborough location and are the first to test positive for WNV – an infection transmitted to people through the bite of an infected mosquito – in Toronto this year. TPH conducts mosquito surveillance from mid-June until mid-September every year. Once a week, 22 mosquito traps are set across the city to collect mosquitoes that are then submitted to a laboratory for identification and grouped by the lab into pools to test for WNV. In 2022, a total of 14 positive mosquito pools were reported. [Read more here.](#) More information about WNV and ways to reduce the risk of WNV is available on the City's [West Nile Virus webpage.](#)

### Tick and mosquito season is already shaping up to be severe this year

Summer is peak tick and mosquito season, and the insects may pose a particularly acute threat this year, experts say. The Centers for Disease Control and Prevention has recently [issued an alert](#) about the first locally acquired cases of malaria in the U.S. in 20



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years, detected in Florida and Texas. Tick season, meanwhile, is typically worst from late May to early July. Experts say they have observed tick populations expanding beyond rural areas and into cities over the last several years. [Read more about the mosquito and tick threats here.](#)

### Dengue outbreak overlapped COVID-19 crisis in Key Largo, Florida in 2020: Call for enhanced disease testing protocols



The need to raise physician understanding of dengue virus (DENV) testing protocols has been highlighted in a recent study. Researchers have reported a dengue epidemic among Key Largo residents, between February and August 2020, which coincided with the early months of the coronavirus disease 2019 (COVID-19). [Read more here.](#)

### Chance discovery helps fight against malaria



Scientists have found a naturally occurring strain of bacteria which can help stop the transmission of malaria from mosquitoes to humans. They found it by chance, after a colony of mosquitoes in one experiment did not develop the malaria parasite. The researchers say the bacteria could be a new tool for fighting one of the world's oldest diseases, which kills 600,000 people every year. [Read more about this discovery here.](#)

### Mumbai sees surge in mosquito-borne diseases in July due to monsoon

The number of cases of leptospirosis and chikungunya reported in Mumbai during the first 16 days of July has surpassed the total reported in June, according to a report compiled by city's civic body Brihanmumbai Municipal Corporation (BMC). From July 1 to 16, Mumbai reported 104 cases of leptospirosis and 10 cases of chikungunya, compared to 97 cases of





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leptospirosis and 8 cases of chikungunya detected in June. The report also highlighted the prevalence of other monsoon-related diseases in the city. The highest number of cases, 932, were related to gastroenteritis (gastro), followed by 355 cases of malaria, 264 cases of dengue, 76 cases of hepatitis, 52 cases of H1N1 (swine flu), and 10 cases of chikungunya, till July 16. [Red more about the mosquito situation in Mumbai here.](#)





## New Murray Valley encephalitis case prompts mosquito warning for the Kimberley

A traveller is in a metropolitan hospital after being infected with Murray Valley encephalitis, as WA records its worst season for the virus in 12 years. The Department of Health is urging residents and travellers in the Kimberley region to take extra precautions to prevent mosquito bites following unseasonal rainfall and ongoing human cases of the mosquito-borne Murray Valley encephalitis (MVE) in the region. The warning follows the deaths of two people from Murray Valley encephalitis earlier this year. Four other people have also been infected in the Kimberley region in the last 12 months, with the most recent case in late June. [Read more about the MVE situation in Kimberly here.](#)

## A BITE OF INFORMATION

### Did someone say data?!


#### How to enter traps into the online database!

 <ul style="list-style-type: none"> <li>↖ Name: Gravid Aedes Trap</li> <li>↖ Name in Database: GAT Trap - Adult</li> <li>↖ Sample Type: Adult</li> <li>↖ Attractants: Water and Lucerne</li> <li>↖ Treatment: S-Methoprene</li> <li>↖ Habitat Category: Trap Option</li> <li>↖ Number of Dips: Nil (dips are not entered for adult traps)</li> </ul>	 <ul style="list-style-type: none"> <li>↖ Name: CO2 Baited Light Trap</li> <li>↖ Name in Database: CO2 Baited Light Trap</li> <li>↖ Sample Type: Adult</li> <li>↖ Attractants: Octenol &amp; CO2 &amp; Light</li> <li>↖ Treatment: None</li> <li>↖ Habitat Category: Trap Option</li> <li>↖ Number of Dips: Nil (dips are not entered for adult traps)</li> </ul>
 <ul style="list-style-type: none"> <li>↖ Name: Tyre Trap</li> <li>↖ Name in Database: Tyre Trap</li> <li>↖ Sample Type: Larvae and/or Pupae</li> <li>↖ Attractants: Water and Lucerne</li> <li>↖ Treatment: S-Methoprene</li> <li>↖ Habitat Category: Trap Option</li> <li>↖ Number of Dips: 1 (enter this as a number, NOT words)</li> </ul>	 <ul style="list-style-type: none"> <li>↖ Name: BG Sentinel II Trap</li> <li>↖ Name in Database: BG Trap - Adult</li> <li>↖ Sample Type: Adult</li> <li>↖ Attractants: BG Lure</li> <li>↖ Treatment: None</li> <li>↖ Habitat Category: Trap Option</li> <li>↖ Number of Dips: Nil (dips are not entered for adult traps)</li> </ul>

### Bonus trap!

#### How to enter a sticky board from a UV trap

You may find these at an Airport or Seaport



- ↖ Name: UV Sticky Board Trap
- ↖ Name in Database: UV Sticky Trap - Adult
- ↖ Sample Type: Adult
- ↖ Attractants: UV Light
- ↖ Treatment: None
- ↖ Habitat Category: Trap Option
- ↖ Number of Dips: Nil (dips are not entered for adult traps)

Request that these are passed on if there are suspected mosquitoes on them



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## BEST (NON) MOZZIE PHOTOS OF THE MONTH

**Non-mosquito photo of the month:**  
why live and dead photos are useful

Legs are short

Wings are not scaled (don't look fuzzy)

Wings are shorter than abdomen

Colour is good, especially in the live photo

No proboscis

Back legs are short

While the Lab can tell that this is not a mosquito from the photo with the insect alive, the photo once the insect is dead (which was sent as extra practice) shows different features/angles. This can be very helpful when the insect is a mosquito. Sometimes features that may be hard to photograph while the insect is alive, are easier to photograph once the insect is dead.

Taken with minimal zoom meaning it can be zoomed in more later to see more detail

Photos by Gurpreet Bains - Te Whatu Ora Waikato as part of enhanced surveillance

## A BITE OF HUMOUR



## 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



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### 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

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