

BORDER HEALTH NEWSLETTER – JULY 2019

WELCOME!

Kia Ora Koutou

As winter is here the mosquito numbers are still low, but, as you may have noticed, higher than last year this month and last month. In any case it is a very good time to prepare all your equipment for summer. So, if your Light trap has not been checked this year then now is the perfect moment to contact us and have it done (taxonomy@nzbiosecure.net.nz).

In the news this month Australian scientists have found out that *Aedes* mosquitoes mostly enter Australia from Southeast Asia, and enter New Zealand from the Pacific Islands. In Africa, mosquitoes are shifting their behaviour to ensure their blood meal. In the Philippines the deaths caused by dengue reaches more than 600 people this year. Also read about how mosquitoes integrate olfactory and visual cues to detect hosts. Then finally read how mosquitoes have shaped human history.

SURVEILLANCE

During July, 828 samples were collected by staff from 12 DHBs with 52 positive samples. This included 7 adult samples and 45 larval samples, leading to a total of 8 adults and 1303 larvae identified over the past month (Table 1). The dominant larval species this month, and this month last year was *Aedes notoscriptus*.

Compared to this same month last year the total number of larvae have shown an increase and the total number of adults a decrease (18% and 88% respectively) (Table 1).

In total six mosquito species have been collected this month (Table 1), that is one more than last month. Auckland DHB, Northland DHB and Public Health South detected the highest number of mosquito species which was 3 (Figure 1).

Table 1. Adult and larvae sampled by the New Zealand surveillance program during July 2018 & 2019

Species (common name)	Adults		Larvae	
	Jul 19	Jul 18	Jul 19	Jul 18
<i>Aedes notoscriptus</i> (striped mosquito)	-	-	1015	938
<i>Aedes antipodeus</i> (winter mosquito)	-	1	-	-
<i>Aedes subalbirostris</i> (no common name)	-	-	5	-
<i>Culex pervigilans</i> (vigilant mosquito)	1	3	116	61
<i>Cx. quinquefasciatus</i> (southern house mosquito)	6	10	137	38
<i>Culex sp.</i> (likely to be <i>quinquefasciatus</i> / <i>pervigilans</i>)	1	1	-	-
<i>Culiseta novaesealandiae</i> (no common name)	-	-	4	-
<i>Opifex fuscus</i> (rock pool mosquito)	-	-	26	35
Total	8	15	1303	1072

Compared to last month larvae have shown an increase (29%) while adult mosquito numbers have shown a 67% decrease.

Northland DHB had the highest number of larvae this month (1115), followed by Taranaki Health (98) (Figure 1).

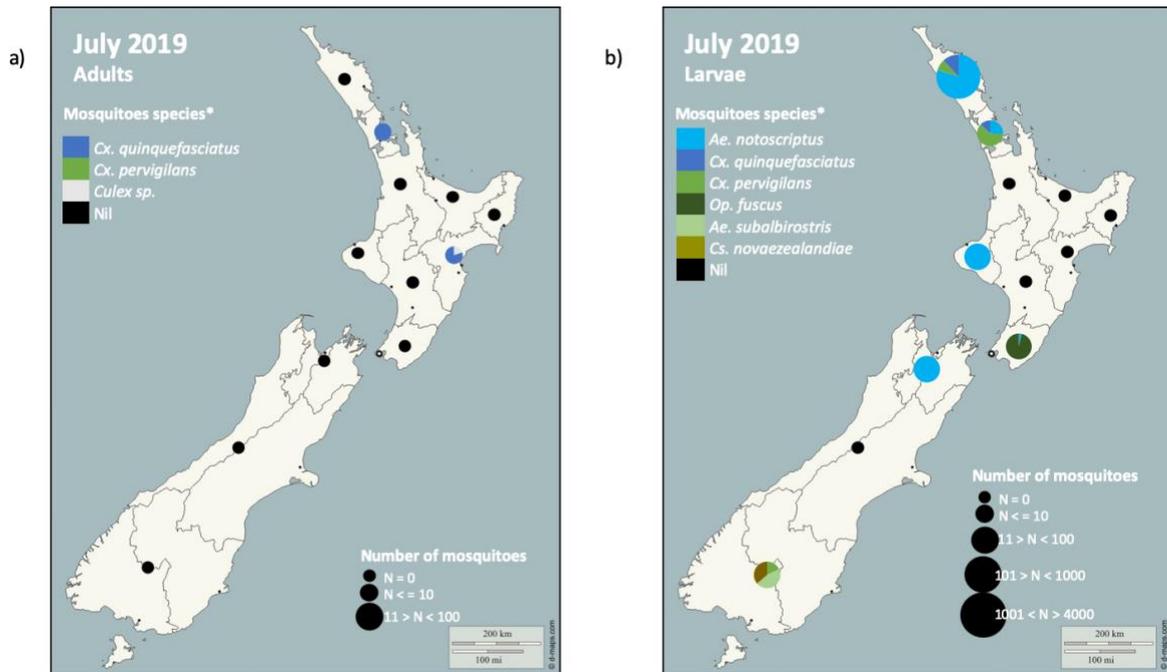


Figure 1. Total mosquito adults (a) and larvae (b) sampled in New Zealand during the July 2019 surveillance period.

* 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.

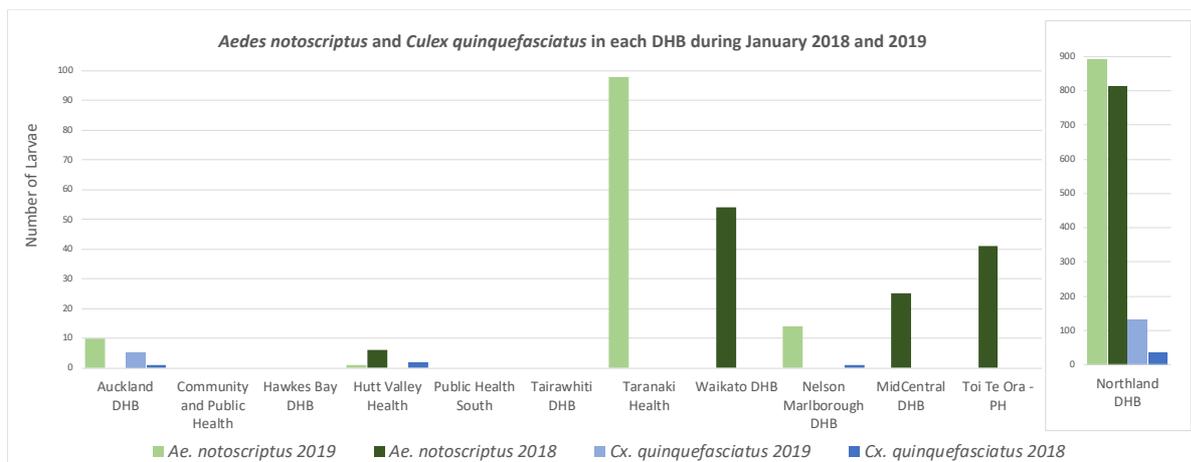


Figure 2. Comparison between introduced mosquitoes sampled in each DHB New Zealand during July 2018 and 2019. *Please note the different scale for the number of larvae present in Northland, Auckland, Mid Central and Toi Te Ora – PH, in comparison to the other DHBs.

As expected *Aedes notoscriptus* has not been recorded this month, this year or last year in

Public Health South (Figure 2).

Aedes notoscriptus larval numbers have shown an increase in Northland DHB and Auckland DHB from this same month last year and a decrease in Hutt Valley Health (Figure 2).

Culex quinquefasciatus larval numbers have shown an increase in Northland DHB from this same month last year and is now absent from Hutt Valley Health decrease and Nelson Marlborough DHB (Figure 2).

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

INCURSIONS AND INTERCEPTIONS

During July one interception has been recorded (Table 2).

Table 2. Suspected interceptions during July 2019

Date	Species	Location	Circumstances
18-07-2019	1 Female <i>Aedes stimulans</i>	Approved TF services, Otahuhu AKL	Found dead inside a car from Philadelphia, USA.

NEWS ARTICLES FROM AROUND THE WORLD

Stowaway mozzies enter Australia from Asian holiday spots – and they’re resistant to insecticides



Planning a trip to the tropics? You might end up bringing home more than just a tan and a towel. Our [latest research](#) looked at mosquitoes that travel as secret stowaways on flights returning to Australia and New Zealand from popular holiday destinations.

We found mosquito stowaways mostly enter Australia from Southeast Asia, and enter New Zealand from the Pacific Islands. Worse still, most of these stowaways are resistant to a wide range of insecticides, and could spread disease and be difficult to control in their new homes.

[Read more.](#)

Mosquitoes change their hunting routines in response to host cues

Mosquitoes are smarter than people think. Scientists have found that mosquitoes are changing their hunting routines in response to host cues. For example, in Africa, mosquitoes



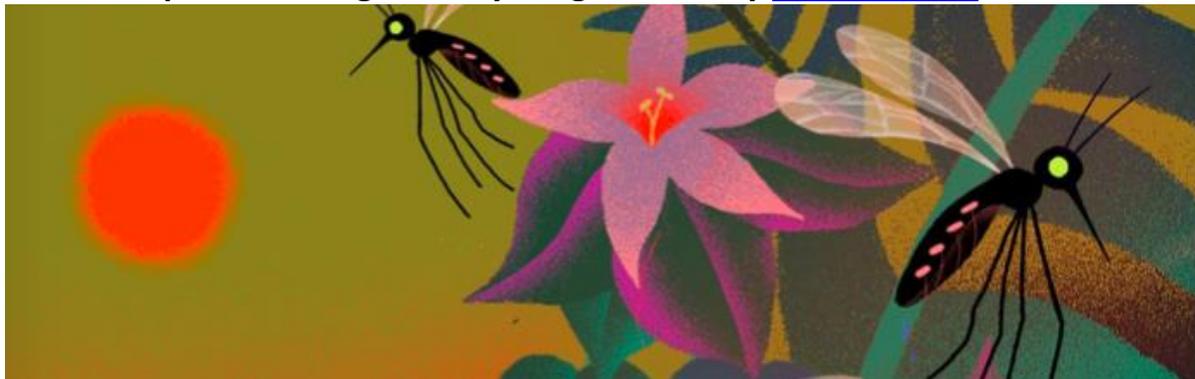
now recognize when people emerge from bednets in the morning and have begun hunting more often during the day than at night. [Read more.](#)

Philippines declares national epidemic after 622 dengue deaths



The Philippine government has declared the country's outbreak of dengue a national epidemic following the death of at least 622 patients since January. [Read more.](#) [And more.](#)

How Mosquitoes Changed Everything. A book by [Brooke Jarvis](#)



They slaughtered our ancestors and derailed our history. And they're not finished with us yet. [Read more.](#)

Scientists discover how mosquito brains integrate diverse sensory cues to find a host

A team has discovered how the female mosquito brain integrates visual and olfactory signals to identify, track and hone in on a potential host for her next blood meal. They discovered that, after the mosquito's olfactory system detects certain chemical cues, the mosquito uses her visual system to scan her surroundings for certain shapes and fly toward them, presumably associating those shapes with potential hosts. [Read more.](#)



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

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).

[World Health Organization](#) – 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