



## BORDER HEALTH NEWSLETTER - OCTOBER 2017

### WELCOME!

Kia Ora Koutou, It was great to meet many of you in the Auckland course this month. It is fantastic to put faces to the names of the people you work with every day!



Please remember that all of you are very welcome to come to the lab for a “mizzie clinic”. Here we can show you how we identify larvae and adult mozzies, practice setting up adult traps and discuss your surveillance program including sampling sites and equipment needs. If you have any questions, please contact the lab.

### SURVEILLANCE

During October 1047 samples were collected by staff from the 12 DHBs with 149 positive samples. This included 36 adult samples and 113 larval samples, leading to a total of 420 Adults and 3274 larvae identified over the past month (Table 1).

Larvae numbers have shown a slight increase compared to this same month last year, while there has been a strong decrease in adult numbers in October this year compared to this same month last year (Table 1).

**Table 1.** Adults and larvae numbers found by the surveillance program during October of last year and this year.

Species (common name)	Adults		Larvae	
	Oct. 17	Oct. 16	Oct. 17	Oct. 16
<i>Aedes notoscriptus</i> (striped mosquito)	262	224	1955	1711
<i>Ae. antipodeus</i> (winter mosquito)	22	50	0	0
<i>Ae. australis</i> (saltwater mosquito)	0	1	0	0
<i>Culex pervigilans</i> (vigilant mosquito)	88	461	1282	825
<i>Cx. quinquefasciatus</i> (southern house mosquito)	45	84	4	93
<i>Coquillettidia iracunda</i>	3	3	0	0
<i>Opifex fuscus</i> (rockpool mosquito)	0	0	33	40
<b>Total</b>	<b>420</b>	<b>823</b>	<b>3274</b>	<b>2670</b>

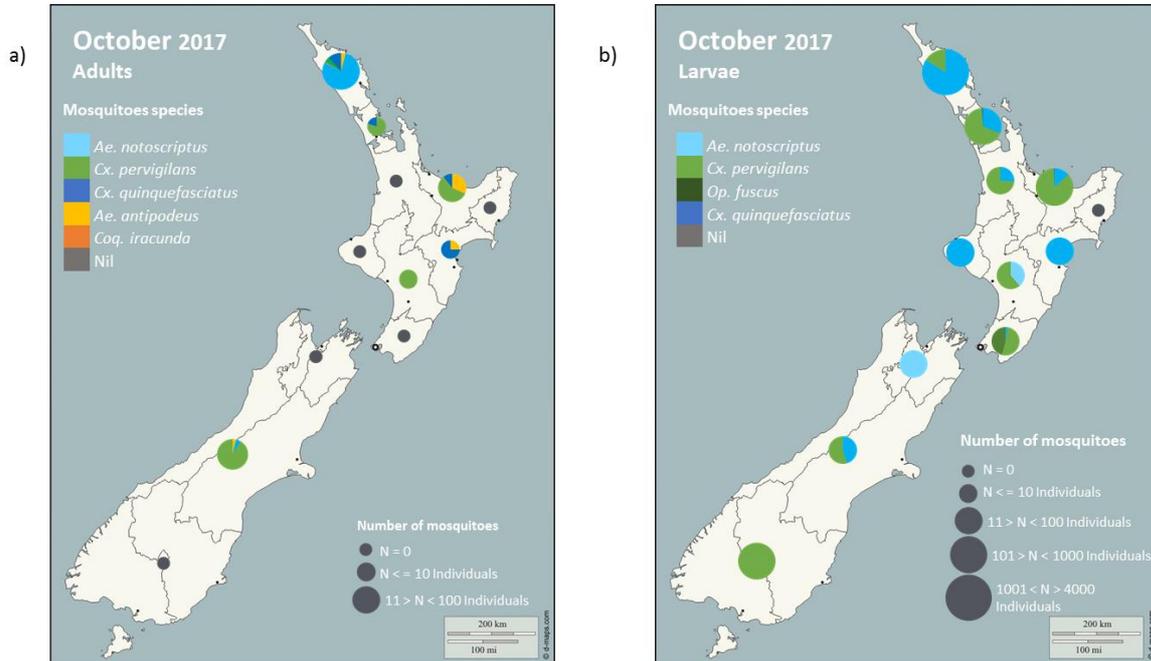
The endemic species this month are represented by *Culex pervigilans*, *Opifex fuscus*, *Aedes antipodeus* and *Coquillettidia iracunda*. Endemic larvae have shown a decrease in October this year compared to last year (Table 1) and have shown a significant increase in comparison to the number in the previous month (September) of this year.

The introduced species for October are represented by *Aedes notoscriptus* and *Culex quinquefasciatus*, nil *Aedes australis* have been captured this year in comparison with this month last year.

Larvae numbers for both *Aedes notoscriptus* and *Culex quinquefasciatus* have also shown an increase this month compared to last month (Table 1).

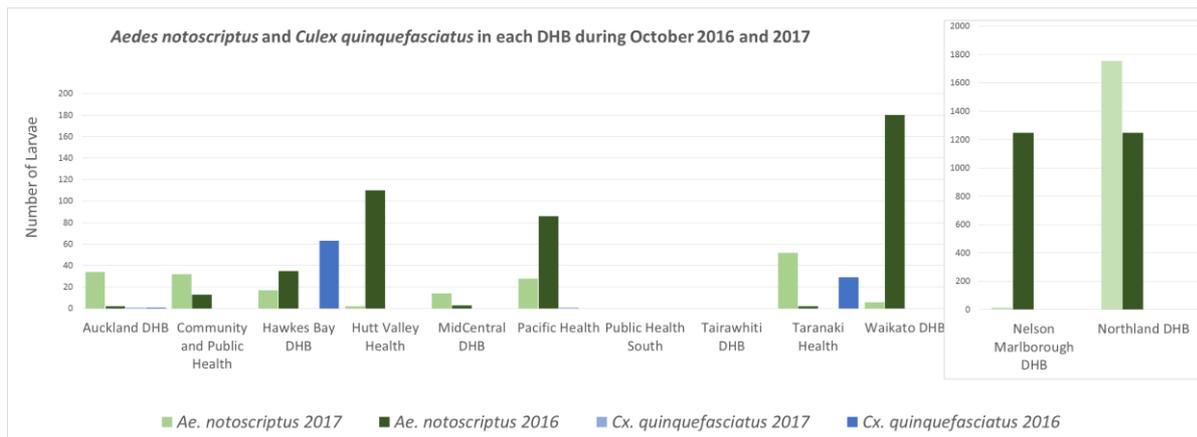
In total 6 mosquito species have been found this month. Northland DHB was the most specious DHB this month with 5 mosquito species, followed by Pacific Health with 4. In contrast, Tairāwhiti DHB has not detected any mosquito this month (Figure 1). Northland is also the DHB with the highest numbers of larvae (2093) and adults (328), followed by Public Health South for larvae numbers (579) and for Community and Public Health for the adult numbers (56) (Figure 1).

*Aedes notoscriptus* larval numbers have shown a decrease in 5 DHBs from this same month last year (Hawkes Bay DHB, Hutt Valley Health, Pacific Health, Waikato DHB and Nelson Marlborough DHB), and shown an increase in other 5 DHBs (Community and Public Health, and Auckland DHB, MidCentral DHB, Taranaki Health and Northland DHB, Figure 2).



**Figure 1.** Mosquitoes adults (a) and larvae (b) sampled during the October 2017 surveillance period.  
 \* Please note that the markers represent the DHBs and not the specific sites where the samples have been taken.

*Ae. notoscriptus* has not been recorded this month this year and last year in Public Health South and Tairāwhiti DHB (Figure 2). *Culex quinquefasciatus* was absent in samples in 8 DHB's this month and was found in Pacific Health and Northland DHB where was absent last year this month (Figure 2).



**Figure 2.** Comparison between introduced mosquitoes sampled in each DHB during October 2016 and October 2017.  
 \* Please note the different scale for the number of larvae present in Nelson Marlborough DHB and Northland DHB in comparison to the other DHBs.

## INCURSIONS AND INTERCEPTIONS

During October, 2 suspected interceptions have been recorded (Table 2).

Table 2. Suspected interceptions during October 2017			
Date	Species	Location	Circumstances
20	1 male Unidentifiable	Mangere, Auckland	Found dead in a box of goods from Fiji.
27	1 male <i>Culex quinquefasciatus</i>	Auckland	Found dead in a container carrying carpets and wood packaging from Singapore.

## NEWS ARTICLES FROM AROUND THE WORLD

### Tracking mosquitoes with your cellphone



Cellphone recording the high-pitched sing of a mosquito.

It's a sound that can keep even the weariest among us from falling asleep: the high-pitched whine of a mosquito. This irritating buzz already makes us run, slap and slather on repellent. But if Stanford University researchers have their way, it may also prompt us to take out our cell phones and do a little science. [Read more.](#)



## Natural resistance to malaria linked to variation in human red blood cell receptors



A new study shows that large structural variants in human glycoporphin genes, which are unusually common in Africa, are protective against malarial disease.

Researchers have discovered that protection from the most severe form of malaria is linked to natural variation in human red blood cell genes. A study has identified a genetic rearrangement of red blood cell glycoporphin receptors that confers a 40 percent reduced risk from severe malaria. This opens a new avenue of research for malarial therapeutics.

[Read more.](#)

## Battle against mosquitoes begins in South Florida after Hurricane Irma



The battle against mosquitoes has begun in South Florida following Hurricane Irma.

The battle against mosquitoes has begun in South Florida following Hurricane Irma. Broward County crews are out in full force, not only fogging to kill adult mosquitoes, but spraying to kill the larvae. "All the debris that is lying in people's yards out front tend to collect a lot of mosquitoes," [Broward County Mosquito Control Section director Anh Ton](#) said. [Read more.](#)



## Smart mosquito trap could prevent spread of deadly diseases



A smart mosquito trap developed by Microsoft only catches disease-spreading mosquitos by sensing their wing length and wing beats per second.

Doctors hope a mosquito trap will prevent the spread of disease. The trap is smart enough to know what type of mosquito it's trapping. The smart trap senses the wing length and wing beats to detect what type of mosquito has entered the chamber. It also records important information about when the mosquito was trapped, like the temperature, atmospheric pressure, and humidity. [Read more.](#)

## Mosquito-Borne Diseases found In U.S. Athletes and Staff at Rio Olympics



Health workers spray insecticide to combat Zika-carrying mosquitoes under the bleachers of the Sambódrome in Rio de Janeiro in January 2016.

In the spring of 2016, there was a frenzy over the threat of Zika virus at Brazil's Olympic Games. But a group of researchers with the University of Utah and the United States Olympic Committee announced Saturday that they weren't able to find any evidence that U.S. Olympians, Paralympians or staff got Zika virus at all. [Read more.](#)



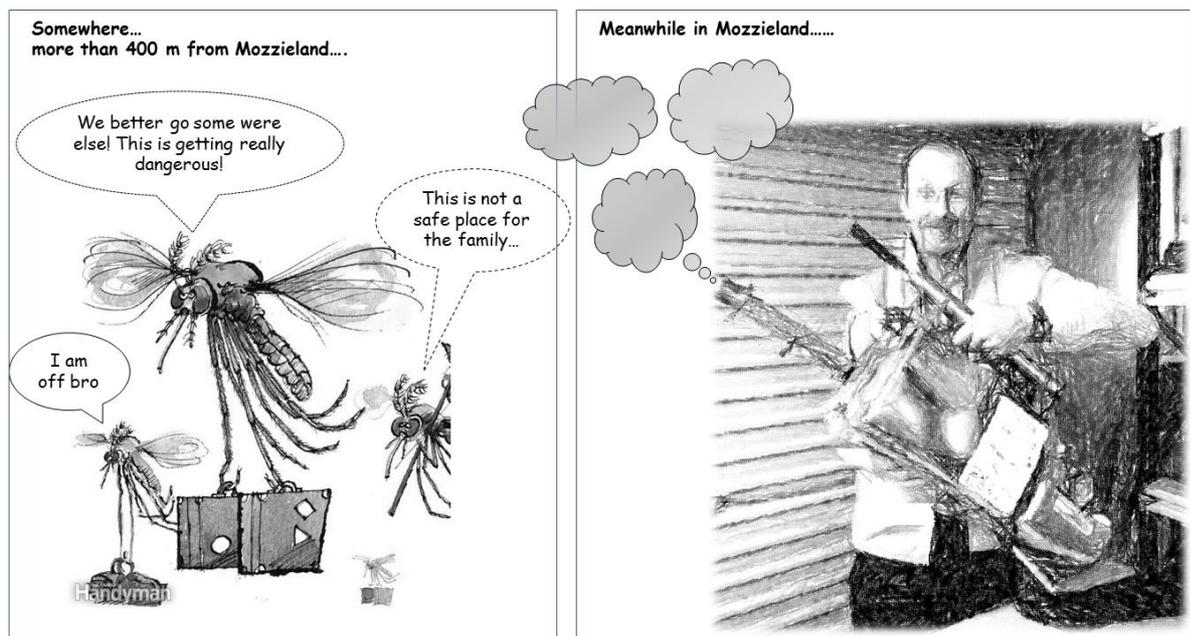
## Mosquitoes may meet their end thanks to Marlon Brando



The white bands on this adult male's legs and body reveal why *Aedes polynesiensis* is known as the Polynesian tiger mosquito.

An innovative program has nearly eradicated the insects on the late actor's private island, no pesticides or genetic engineering needed. It's a simple process: Introduce certain male mosquitoes that will mate with and sterilize the wild females in a particular locale, rendering their eggs nonviable. After a few rounds of such treatment, the population is unable to reproduce itself and collapses. [Read more.](#)

## A BITE OF HUMOUR



The mosquitoes cartoon has been taken from <https://www.familyhandyman.com/pest-control/7-mosquito-repellent-tips/view-all/>

We would like to thank Andrew Watt (the exterminator model) for his great sense of humour.



NEW ZEALAND BioSECURE



## RISK MAPS

[Dengue Map](#)

[Zika Map](#)

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## DISEASE OUTBREAKS

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

[World Health Organization](#)

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

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