

BORDER HEALTH NEWSLETTER – July 2017

WELCOME!

Hi all, was great to meet some of you at the course here in Wellington. Our mosquito's numbers have decreased as expected with the low temperatures. We had just two interceptions this month. It is a very good time to prepare all your equipment for next summer. So, if your regulator has not been checked this year then now is the perfect moment to contact us and have it done (taxonomy@nzbiosecure.net.nz).



<https://www.pinterest.co.uk/explore/minnesota-humor/>

SURVEILLANCE RESULTS

During July 681 samples were collected by staff from the 12 DHBs with 47 positives, which is a significant decrease from last month. Just 5 adults have been found this month, that is 93% less than last year! But it is probably related to the lack of adult traps over the winter period in

Northland this year as high numbers were caught last year. This month *Aedes australis* and *Culex asteliae* larvae are absent as well as the rest of the native species except for *Culex pervalans* and *Opifex fuscus*. The number of *Aedes notoscriptus* and *Cx. pervalans* larvae have dropped compared to last year (38% and 53% respectively; Table 1) but increased compared to last month (32% and 8% respectively).

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

Species (common name)	Adults		Larvae	
	July 17	July 16	July 17	July 16
<i>Aedes antipodeus</i> (winter mosquito)	Nil	2	Nil	Nil
<i>Ae. australis</i> (saltwater mosquito)	Nil	Nil	Nil	1
<i>Ae. notoscriptus</i> (striped mosquito)	Nil	62	847	1362
<i>Ae. subalbirostris</i>	Nil	Nil	Nil	76
<i>Culex asteliae</i>	Nil	Nil	Nil	19
<i>Cx. pervalans</i> (vigilant mosquito)	2	3	66	139
<i>Cx. quinquefasciatus</i> (southern house mosquito)	3	3	218	59
<i>Opifex fuscus</i> (rockpool mosquito)	Nil	Nil	18	23
Total	5	70	1150	1679

The number of *Culex quinquefasciatus* larvae increased 73% compared to last year, however it has shown a decrease compared with the previous month (61%). Meanwhile *Culex pervalans* larvae numbers have decreased 53% compared to last year and increased 8% compared to last month. The number of *Opifex fuscus* larvae showed a 22% decrease in relation to last year and 47% increase in relation to last month.

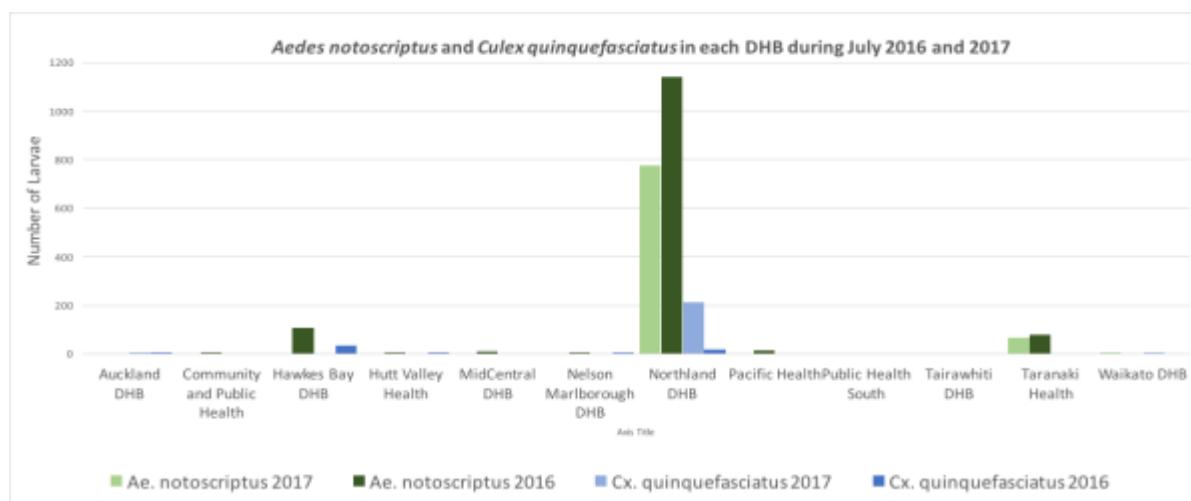


Figure 1. Comparison between introduced mosquitoes sampled in each DHB during July 2016 and July 2017.

In comparison with this time last year the numbers of *Cx. quinquefasciatus* have shown an increase in Northland and Waikato, while in the rest of the DHB's there were no *Cx. quinquefasciatus* samples. Numbers remained the same in Auckland for this species compared to this time last year (Figure 1).

Aedes notoscriptus larvae were not recorded in 6 DHBs where they were present last year, while in Northland and Taranaki the number decreased. In contrast, this year *Ae. notoscriptus* larvae were recorded at Waikato, where they were absent last year (Figure 1).

INCURSIONS AND INTERCEPTIONS

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

Table 2. Suspected interceptions during June 2017

Date	Species	Location	Circumstances
07	1 non-mosquito Chronomid	Airbridge 8, ITB, AIAL	Alive at the Airbridge 8.
05	1 Female <i>Culex quinquefasciatus</i>	TF Auckland – DHL Supply Chain,30 Airpark Drive, Airport Oak.	Alive in container of sanitary products from Australia.

NEWS ARTICLES FROM AROUND THE WORLD

Entomologists discuss discovery's "Mosquito" documentary: a live – tweet recap

As an attempt to explore what was factual and clearing up any potential fear-mongering or error, a group of mosquito researchers got together and live tweeted the event. Participants brought different perspectives to the event, and based on their interests in mosquitoes brought lively discussion to the topic. [Read more.](#)



The Discovery documentary Mosquito. Image courtesy of Discovery.

Why Mosquitoes should not be eliminated

A team of scientist working on a new insecticide argue that mosquitoes should not simply be made extinct due to their role in various ecosystems. A professor of entomology and her team are developing an insecticide that will suppress mosquitoes' ability to transmit diseases without killing the insect or interfering with other life forms. [Read more.](#)

Forensic Scientists recover human DNA from Mosquitoes

Nagoya University research team shows that human blood extracted from mosquitoes remains viable for DNA analysis up to two days after feeding. This technique can help police work out who was at a crime scene and in the future, might provide evidence that can be used to convict offenders. [Read more.](#)



The upper and lower images respectively show *Culex pipiens pallens* and *Aedes albopictus* at different stages of digesting human blood meal. Credit: Toshimich Yamamoto.

Why we are fighting mosquito-borne diseases with more mosquitoes

Mosquito-borne diseases are a global Plague, now two new related approaches that use clever biology to attack this problem are being tested. The Debug Fresno program is releasing 20 million mosquitoes infected with a specific bacterium, which will be used to control medically important mosquito's species, releasing lots of male mosquitoes which do not bite. The other group is trying a different approach but with the same bacteria. The strategy is not to eliminate mosquitoes, but remove their ability to carry disease. [Read more.](#)

Can Florida mosquitoes transmit new strains of painful chikungunya virus?

University of Florida scientist are starting to better understand the ability of two Florida mosquito species to transmit two strains of chikungunya virus that have caused outbreak of human disease around the world. The UF Institute of Food and Agricultural Sciences, led a team of researchers that measured mosquito infection and transmission of the emergent strains of chikungunya – Asian and Indian Ocean – in *Aedes aegypti* and *Aedes albopictus* mosquitoes. [Read more.](#)



Aedes aegypti. Credit: UF/IFAS photo.

What does warming planet mean for Mosquito-Borne diseases?

As temperatures rise with climate change, mosquito season extends past the summer months in many parts of the world. Stanford researchers modelled how rising temperatures might influence mosquito behaviour and disease risk around the world. The researchers also calibrated their model with field data on human infections of mosquito-borne diseases. [Read more.](#)



Workers in Ecuador spray insecticide to kill *Aedes aegypti* mosquitoes, which spread dengue, chikungunya and Zika diseases. Credit: Dany Krom



RISK MAPS

[Dengue Map](#)

[Zika Map](#)

DISEASE OUTBREAKS

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

[World Health Organization](#)

[Public Health Surveillance](#)- Information for New Zealand Public Health Action
