



## BORDER HEALTH NEWSLETTER – JANUARY 2021

### WELCOME!

Kia Ora Koutou,

This month we have prepared a varied newsletter for you. In case you don't quite remember, last month we asked: Have you been finding it easy or hard to assign your sample to a particular Reason for Sampling in the Online database? Well let's see.....scroll down to check the results for the Mix and Match Sampling Quiz. We congratulate Fiona Humpheson for taking the best series of non-mozzie pictures of the month! Check the section Know Your Mosquito - Breeding Sites to remind yourself of some things that can hold water in your garden and breed mosquitoes, which you definitely don't want! We are also sharing a piece of information from the MoH circular letter to keep you up to date on mosquito surveillance.

In the news this month read about the diseases you could get from Australian mosquitoes. Learn what the Ross River virus is and what symptoms it causes in humans. Also, find out what is the effect of the Dengue outbreak on the NZ-Cook Island bubble. Furthermore, learn about the mechanism the Zika virus uses to transmit from mother to baby vertically. Finally, in case you missed it, read about the new unwanted guest in Guantanamo.

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### FROM THE MoH CIRCULAR LETTER

**Mosquito Surveillance:** Below is a reminder of the update on the mosquito surveillance provided in the October 2020 circular letter.

Routine mosquito surveillance should now have commenced at international points of entry (ports and airports). Weekly surveillance must be undertaken for fresh water and container-breeding mosquitoes within a minimum of 400m around points of entry (POE) with arriving international first port of call craft. This includes yacht marinas. Routine surveillance must use a combination of tyre, CO<sub>2</sub> baited light, BG and GAT traps. Traps must be checked at least weekly.

Routine surveillance includes checking traps, environmental checks and treating or mitigating identified habitat or advising the point of entry of any mitigation required. Regular engagement with the port and airport company staff is important. Public health units must work with the port and airport management to ensure the POE pest management plan is being implemented and regular environmental checks are being undertaken.

Currently the number of international aircraft arrivals (passenger and freight) are significantly reduced. The advice regarding mosquito trapping at airports is as follows:

- IHR designated international airports currently receiving international flights: mosquito trapping using tyre and adult traps must continue as per the current programme. Reconfiguring trap sites may be required if the location of arriving craft has changed. Regular environmental habitat surveillance and management continues. Mega survey to be undertaken annually.
- IHR designated international airports not currently receiving international flights due to COVID-19 eg, Dunedin: trapping to continue but can be reduced to tyre traps only with the adult traps to be reintroduced when international flights recommence. Engagement with the airport company must occur and regular environmental habitat surveillance must be undertaken.
- Place of first arrival international airports not currently receiving flights but where unscheduled flights were common eg, Napier, Nelson: trapping to continue but can be reduced to tyre traps. Engagement with the airport company must occur and regular environmental habitat surveillance must be undertaken.
- Place of first arrival international airports that have not received international flights for months even before COVID-19 eg, Invercargill: routine trapping not required BUT will need to be established and carried out for 3 weeks if an aircraft arrival is notified. Engagement with the airport company must occur and regular environmental habitat surveillance must be undertaken.

## SURVEILLANCE

During January 1108 samples were collected by staff from 11 DHBs (Figure 1). The samples included 237 positive larval samples and 89 positive adult samples, leading to a total of 25644 adults and 6515 larvae identified over the past month (Table 1). The dominant larval species this month and last month is *Culex quinquefasciatus*.

Compared to this same month last year, the total number of larvae and adults has shown an increase (35% and 91% respectively) (Table 1).

Table 1. Adult and larvae sampled by the New Zealand surveillance program during January 2020 & 2021

Species (common name)	Adults		Larvae	
	Jan 21	Jan 20	Jan 21	Jan 20
<i>Aedes notoscriptus</i> (striped mosquito)	422	79	4100	2807
<i>Ae antipodeus</i> (winter mosquito)	4	12	-	-
<i>Ae australis</i> (saltwater mosquito)	-	-	-	4
<i>Coquillettidia iracunda</i> (no common name)	20	3	-	-
<i>Culex asteliae</i> (no common name)	-	1	-	-
<i>Cx pervigilans</i> (vigilant mosquito)	576	35	3691	3157
<i>Cx quinquefasciatus</i> (southern house mosquito)	5447	444	17706	10596
<i>Culex sp.</i>	46	15	-	-
<i>Opifex fuscus</i> (rock pool mosquito)	-	-	147	146
<b>Total</b>	<b>6515</b>	<b>589</b>	<b>25644</b>	<b>16710</b>

In total, six mosquito species have been collected this month (Table 1), that is same number as last month.

Compared to last month, mosquito larval and adult numbers have shown a remarkable increase (317% and 487% respectively) (Table 1).

The highest number of larvae sampled this month was obtained in Community and Public Health DHB (7175 larvae) followed by Toi Te Ora - PH (6920 larvae) (Figure 1).

*Culex quinquefasciatus* larval numbers have shown a decrease in five DHBs from this same month last year and an increase in five DHBs. *Culex quinquefasciatus* has not been found this month in Public Health South (Figure 2).

*Aedes notoscriptus* larval numbers have shown a decrease in two DHBs from this same month last year and an increase in eight DHBs (Figure 2). As expected *Aedes notoscriptus* has not been recorded this month, this year or last year in Public Health South (Figure 2).

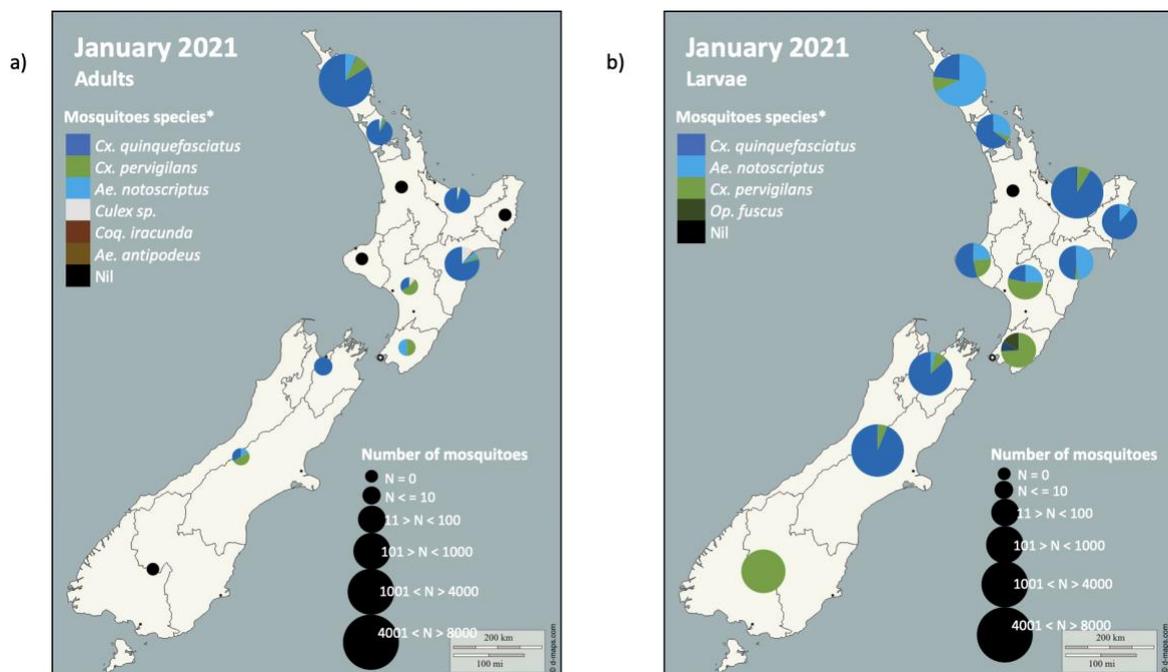


Figure 1. Total mosquito adults (a) and larvae (b) sampled in New Zealand during the January 2021 surveillance period.

\* 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.

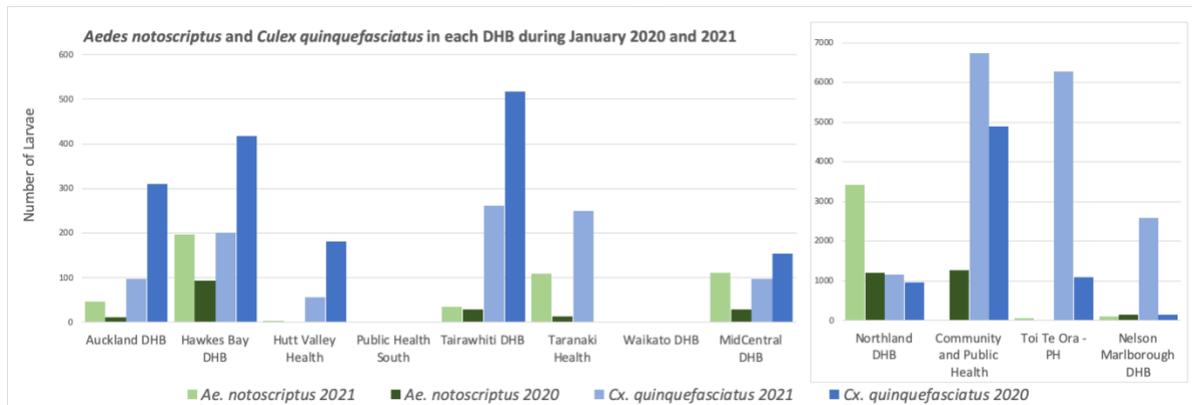


Figure 2. Comparison between introduced mosquitoes sampled in each DHB New Zealand during January 2020 and 2021. \*Please note the different scale for the number of larvae present in Northland DHB, Community and Public Health, Toi Te Ora – PH, Nelson Marlborough DHB in comparison to the other DHBs.

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

## INCURSIONS AND INTERCEPTIONS

During January there was only one suspected interception (Table 2).

Table 2. Suspected interceptions during January 2021.

Date	Species	Location	Circumstances
25.01.2021	1 Non-mosquito (Chironomidae)	Sorted Logistics, Hornby, Christchurch	Found alive in a container of toys from China.

## NEWS ARTICLES FROM AROUND THE WORLD

### What diseases can you catch from a mozzie bite in Australia?



Living on a rural property in outer Perth, Megan Newman has had her fair share of mozzie bites. In fact, the southern suburb of Karnup where she lives is notorious for its plagues of mosquitos that come and go, tormenting locals as they breed cycle after cycle on vacant lots and in the nearby Serpentine River. But what Ms Newman didn't know was how debilitating a bite from the wrong mozzie could be. Then, in March last year, just as the coronavirus crisis was gripping the world, she suddenly fell ill. [Read more.](#)



## What is Ross River virus?



Click on the picture to learn more about the Ross River virus.

## The discovery of a novel mosquito on Guantanamo Bay reveals how globalisation is threatening to unleash the next pandemic.



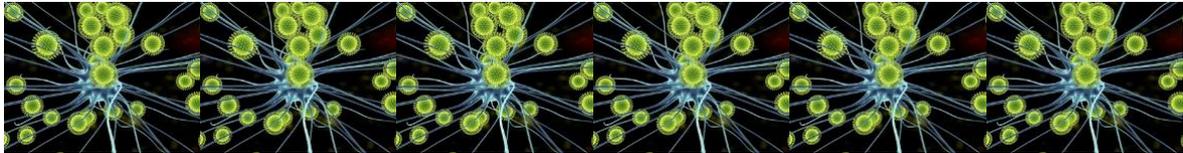
During the night of 18 June 2019, on the US naval base in Guantanamo Bay, Cuba, an intruder was caught in a trap. Soldiers are accustomed to prisoners wishing to break *out* of Guantanamo. The base is best known as the place where the US indefinitely confines suspects in its “war on terror”, without due process or trial. For an intruder to make her way in was unusual. Even stranger, no one had ever seen anything like her on this side of the world. The first witnesses to get a close look described the interloper this way: "Proboscis dark with median spattering of pale yellowish scales." "Wing: Scales mainly dark and narrow on all veins." "And most striking of all: "Abdomen... with large median white spot." [Read more.](#) [Access the original article.](#)



## Dengue fever outbreak in Cook Islands

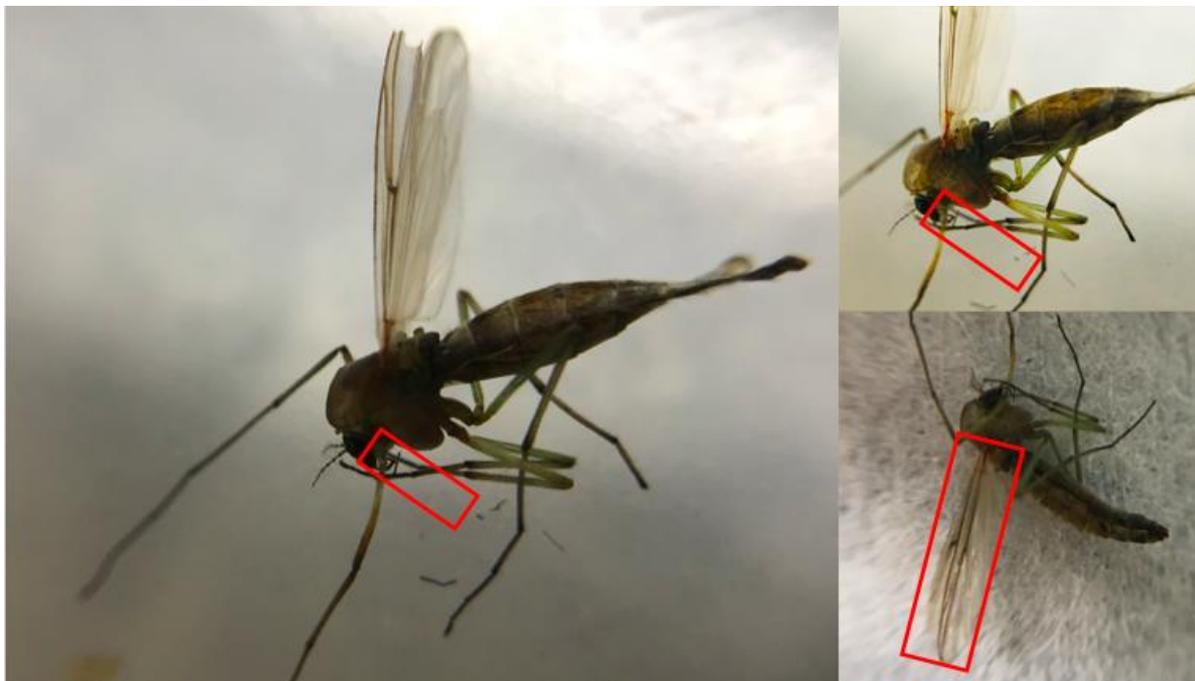
The Cook Islands has declared an outbreak of Dengue fever in the community. At midday yesterday NZDT, Cook Islands prime minister Mark Brown said there had been eight confirmed cases of the mosquito-borne disease. The prime minister said there would be an "island wide operation" to clear out mosquito breeding sites, following the return of results from New Zealand LabPlus. Te Marae Ora the Cook Islands Ministry of Health, estimated there had been around 60 cases since the beginning of 2021, a frightening pace of transmission. Last year there were just over 140 presumed cases. [Read more.](#)

## Preclinical study uncovers how Zika virus passes from mother to fetus during pregnancy



A preclinical study by a University of South Florida Health Morsani College of Medicine research team has discovered a new mechanism for how Zika virus can pass from mothers to their children during pregnancy - a process known as vertical transmission. [Read more.](#)

## THE BEST NON-MOZZIE PICTURE OF THE MONTH



Non-mosquito: Chironomidae

**About the photographer:** Fiona Humpheson is a Health Protection Officer/ Drinking Water Assessor working for Community and Public Health



**About the pictures:** these pictures were taken while Fiona responded to a suspected interception at Sorted Logistics in Hornby, Christchurch. These pictures clearly show the absence of the main features for identifying a mosquito: a proboscis (mouthparts adapted to piercing and sucking), a pair of long fringed feathery looking wings (longer than the insect body) and very long legs.

**Characteristics of a good series of Mozzie picture:**

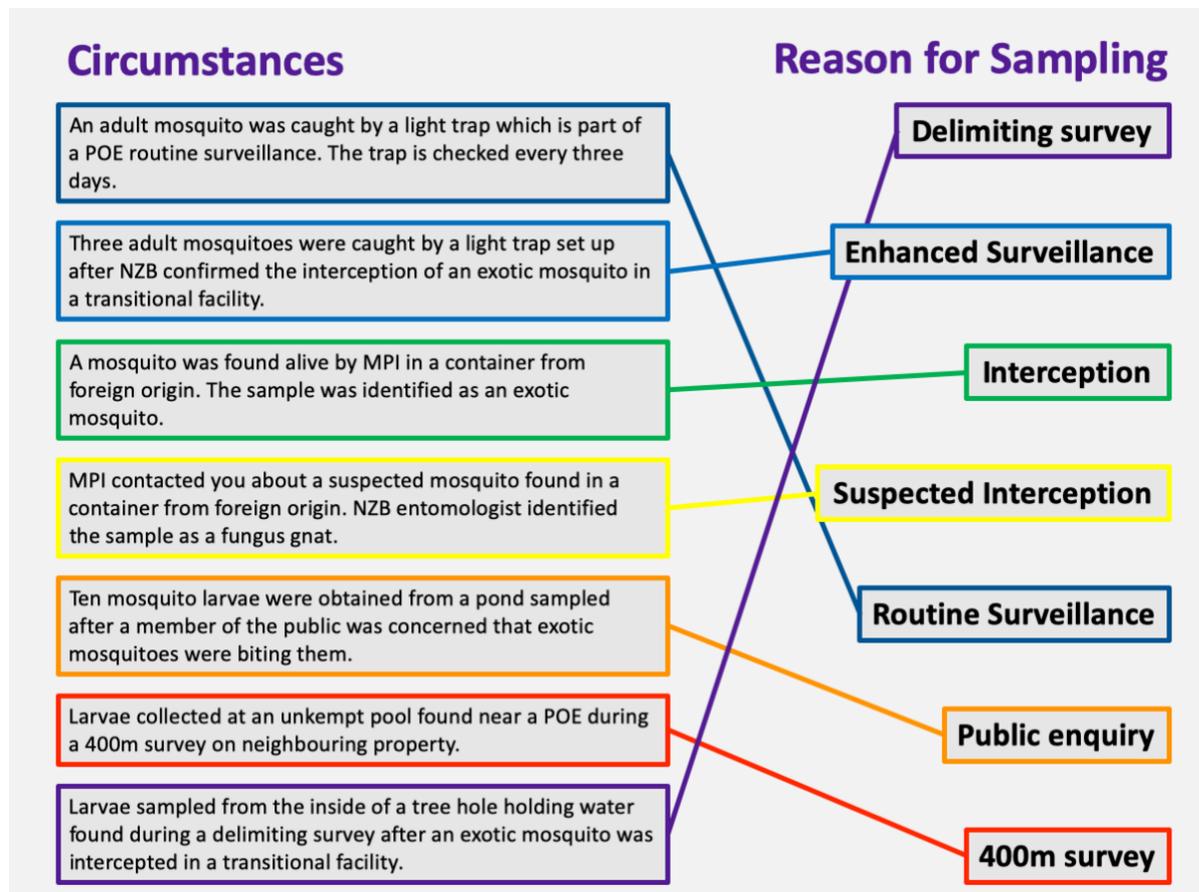
- Different pictures are in focus in different mosquito/non-mosquito body parts.
- The light allows the viewer to interpret different colours.
- All body parts are distinguishable.

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## MIX AND MATCH SAMPLING QUIZ

Last month we have asked you the following question: Have you been finding it easy or hard to assign your sample to a particular Reason for Sampling in the Online database?

Here we matched the circumstances with the correct Reason for Sampling to be entered into the Online Database. We hope you got them all right 😊





## KNOW YOUR MOSQUITO - BREEDING SITES

www.santacruzsentinel.com  
www.reddit.com  
www.leafilter.com  
www.moneymfarm.wordpress.com  
Hometowndemolitioncontractors.com

### Are you breeding mozzies in your garden?

**Some things to keep on top of in your own Backyard...**

- Keep swimming pools well chlorinated and filtered
- Empty and clean out pet drinking water frequently
- Check your gutters and drains are free of leaves that may create blockages
- Remove rubbish such as tins, jars, bottles, plastic bags and other items that can collect water
- Leave items that can collect water such as buckets, wheelbarrows and kids swimming pools empty and upside down when not in use
- Seal and cover rain water tanks
- Fill pot plant saucers with sand

## 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

## 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