New Zealand BioSecure

BORDER HEALTH NEWSLETTER

September 2026

NAU MAI, HAERE MAI - WELCOME!

Kia ora koutou katoa,

Spring has officially sprung, bringing longer days, warmer temperatures, and the return of flowers, birdsong, and of course, mosquitoes! As the weather warms up, mosquito activity is beginning to ramp up, and we're starting to see a corresponding increase in the number of samples coming into the lab for identification. It looks like mosquito season is well and truly getting underway!



In the news this month, discover how mosquito excrement could be used as a new surveillance tool to detect viruses and parasites circulating in mosquito populations. Then, learn how mosquito control in Melbourne has reduced the risk of Buruli ulcer, providing the first direct evidence that reducing mosquito numbers can help prevent infections. We also look at the continued rise in yellow fever cases across the Americas. Read on for these stories and other interesting updates from the world of mosquitoes and mosquito-borne disease.

Put your mosquito knowledge to the test with this month's mini crossword! See if you can work your way through the clues and uncover all the mosquito-themed words hiding in the grid.

Happy reading!

SURVEILLANCE

During September a total of 1089 routine and enhanced surveillance, and various survey samples were collected by staff from 12 PHUs (Figure 1). The samples included 65 positive larval samples and 16 positive adult samples, leading to a total of 1020 larvae and 18 adults identified over the past month (Table 1).

Aedes notoscriptus was the dominant larval species both last month (1094 specimens) and this month (921 specimens) and in September 2025 (1952 specimens). For adults, *Aedes antipodeus* was the dominant species this month (9 specimens) and *Culex quinquefasciatus*



was the dominant species last month (6 specimens), while in September 2026 *Culex pervigilans* was the dominate species (20 specimens) (Table 1).

In total, six mosquito species have been collected this month (Table 1), which is the same as last month. Please note that *Culex* sp., *Culex* sp. showing mixed features and *Culex pipiens* complex sp. are not included in this count as they are not considered species *per se*.

Table 1. Adult and larvae sampled by the New Zealand surveillance program during September 2025 & 2026

Species (common name)	Adults		Larvae	
	Sep 26	Sep 25	Sep 26	Sep 25
Aedes antipodeus (Winter mosquito)	9	4	-	-
Aedes notoscriptus (Striped mosquito)	-	-	921	1952
Culex sp.	1	2	-	-
Culex pervigilans (Vigilant mosquito)	1	20	94	259
Culex pipiens sp. (Common house mosquito)	2	-	1	33
Culex pipiens complex sp.	-	-	1	-
Culex quinquefasciatus (Southern house mosquito)	4	4	1	43
Opifex fuscus (Rock pool mosquito)	1	-	2	14
TOTAL	**18**	**30**	**1020**	**2301**

Compared to the previous month, the total numbers of larvae have shown an 8% decrease, and the adults have shown a 50% increase.

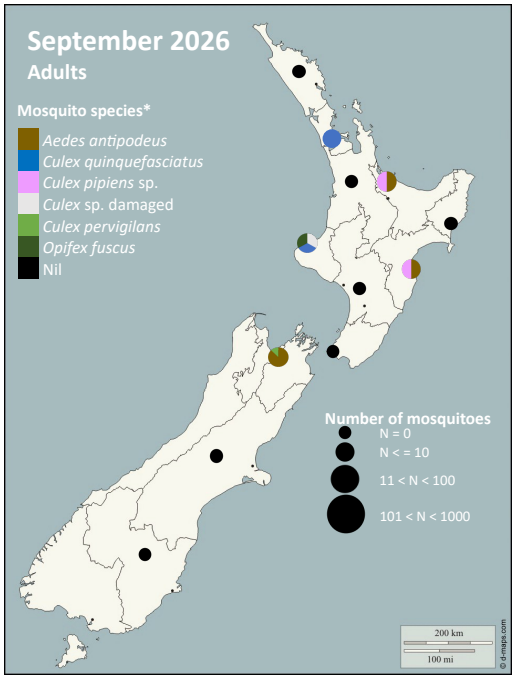
Compared to this same month last year, the total numbers of larvae and adults have shown a decrease (56% and 70% respectively) (Table 1).

The highest number of larvae sampled this month (all instars included) was obtained in Northland (781 larvae) followed by Taranaki (78 larvae). Considering only third and fourth instars, the highest number of larvae sampled this month was obtained by Northland (475 larvae) followed by Tairawhiti (34 larvae) (Figure 1).

Nil *Culex quinquefasciatus*, a member of the *Culex pipiens* complex, have been recorded for September in 2025 and 2026 in Southland (Figures 1 and 2). In September 2025 and 2026 nil *Aedes notoscriptus* larvae or adults were collected in Southland.



a)



b)

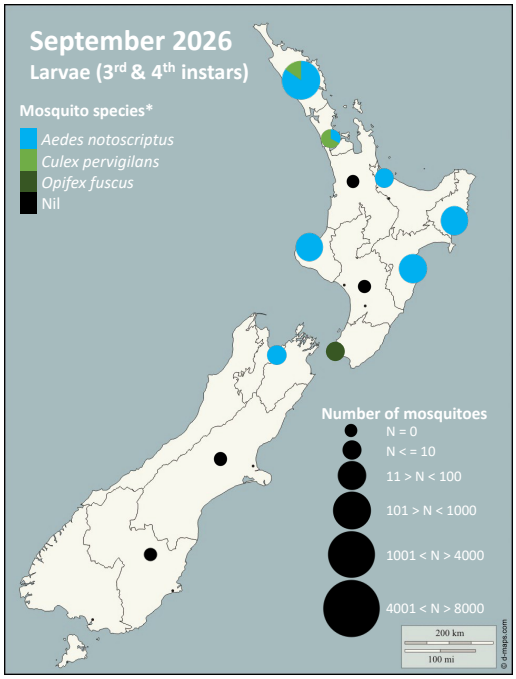


Figure 1. Total mosquito adults (a) and 3rd and 4th instar larvae (b) sampled in New Zealand during September 2026 surveillance period.
Please note that the markers represent the PHUs and not the specific sites where the samples have been taken.
* The mosquito species are listed in order from the most abundant to the least abundant. *Culex* sp. refers to adult or larvae that are damaged or cannot be identified to the species level.

Figure 2 shows the current month 2025-2026 evolution of adult and larval specimens of introduced species collected including *Aedes notoscriptus*, *Aedes australis* and members of the *Culex pipiens* complex.

The largest increase for *Culex quinquefasciatus* adults was seen in Auckland with an increase of 2 specimens. The largest decrease was seen in Northland and Canterbury, both with a decrease of 1 adult specimens. For third and fourth-instar *Culex quinquefasciatus* larvae, there were none being collected by any PHU other than Northland and Nelson-Marlborough this year or last year. Both, Nelson-Marlborough and Northland had a decrease (4 and 3 specimens respectively) compared to September 2025.

There were two *Culex pipiens* sp. adults collected, one in Bay of Plenty and one in Hawke's Bay, with none collected in any location last year. There were no *Culex pipiens* sp. third and fourth-instar larvae collected either this year or last year, and neither were there *Culex* sp. showing mixed features or *Culex pipiens* complex sp. larvae collected.

There were no *Aedes notoscriptus* adults collected this month and the same month last year. For *Aedes notoscriptus* larvae the largest increase was in Tairawhiti (43 specimens), followed by Canterbury (29 specimens). The largest decrease was in Northland (1071 specimens), followed by MidCentral (27 specimens).

This year and last year nil *Aedes australis* have been collected in Southland.

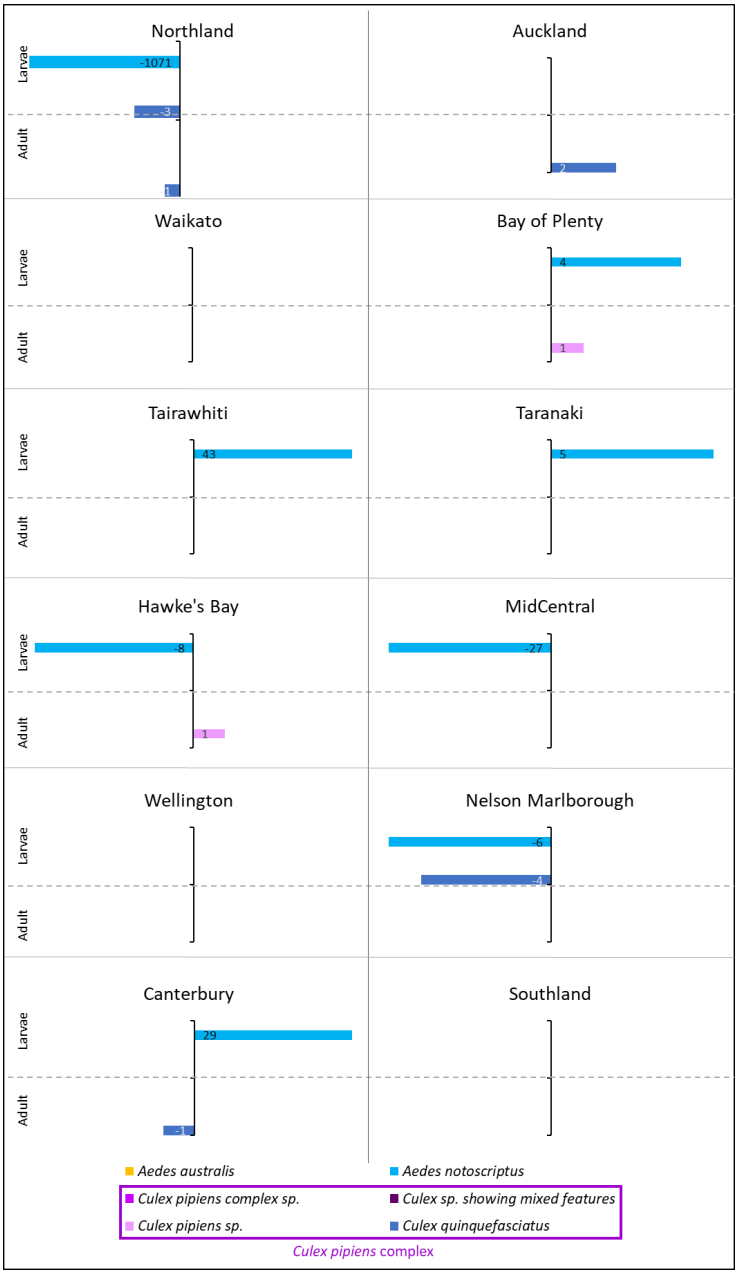


Figure 2. Comparison between the number of introduced mosquito species sampled in each PHU during September 2025 and 2026.
*Please note the different scale is different for each PHU. Species in the purple box are all members of the *Culex pipiens* complex. Larval ID is based on third and fourth instar only for species in the *Culex pipiens* complex while *Aedes notoscriptus* and *Aedes australis* are all larval stages.

Disclaimer: Please note that the identification and reporting processes for adult male and female mosquitoes, as well as first and second-instar larvae of *Culex* species found in New Zealand, were adjusted since the start of 2026. To identify males of the *Culex pipiens* complex to species level, the genitalia must be processed — a technique that is highly time-consuming. For this reason, the NZB laboratory identified only a sub-sample of male mosquitoes from each collection to species level. The remaining males in each sample were identified using the palps and classified as either *Culex pipiens* complex sp. or any other endemic *Culex* species (*Culex pervigilans, Culex asteliae* or *Culex rotoruae*). Females were placed in the *Culex pipiens* complex when one or more key identification features were missing (for example a wing, abdominal scales, or the abdomen itself). *Culex* larvae in the first or second instar are not always identifiable to species level; when this happens, these are reported as *Culex* sp. The term *Culex* sp. is also used when specimens are too damaged to be identified beyond the genus level.

INCURSIONS AND INTERCEPTIONS

During September, HPOs responded to two suspected interceptions (Table 2). This included one locally occurring mosquito and one non-mosquito.

Table 2. Suspected interceptions during September 2026

Date	Species	Location	Circumstances
01.09.2026	1x Female *Culex quinquefasciatus*	Simple Freight, Auckland (Transitional Facility)	Found flying around in inspection room during the opening of cartons of fruit from Thailand. Cargo was kept in a refrigerated room since arrival on 31st Aug. found in the transitional facility.
08.09.2026	1x non-mosquito (Tipulomorpha)	Fix and Fogg Limited, Lower Hutt (Transitional Facility)	Found dead at the entrance of door of container containing blanched ground up kernel, roasted split peanuts and wooden pallets. The container was treated at departure with aluminium phosphate 136g.

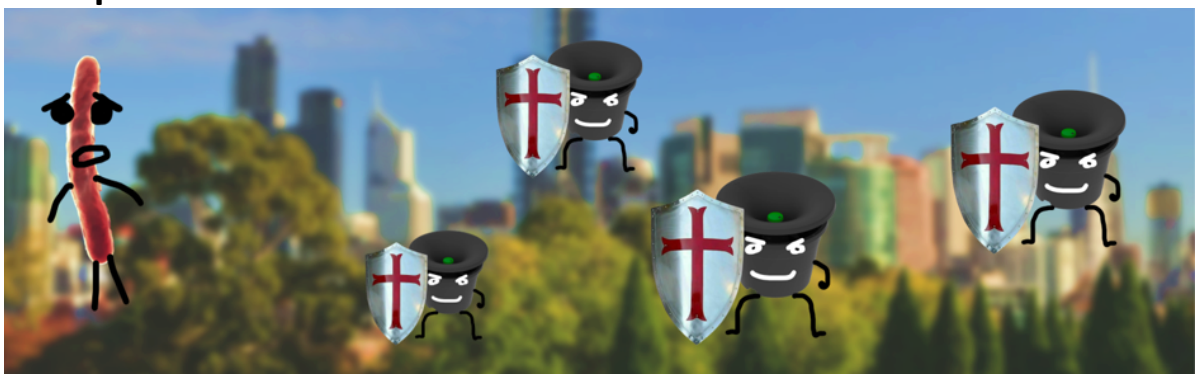
NEWS ARTICLES FROM AROUND THE WORLD

Mosquito excrement offers new surveillance tool



Researchers have developed a new method for detecting viruses by analysing genetic material in mosquito waste. The technique detected West Nile virus, a Hedwig-like virus not previously reported in the Americas, and several potentially new viruses and parasites. The approach could provide a broader way to monitor pathogens circulating in mosquito populations. Read more about this here.

Mosquito control cuts Buruli Ulcer risk



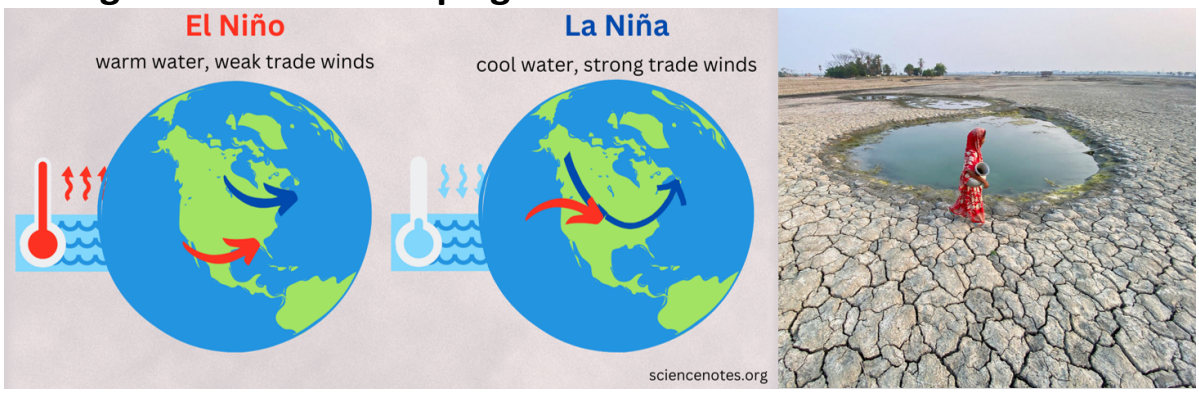
A Melbourne study has found that reducing mosquito populations can significantly lower the risk of Buruli ulcer, with an 83% reduction in infections in areas where mosquito numbers were reduced by around 70%. The trial used autodissemination stations targeting *Aedes*

notoscriptus, a mosquito involved in transmitting *Mycobacterium ulcerans*. The findings provide the first direct evidence that mosquito control can reduce Buruli ulcer infections in people. Read more about this study here. Access the full scientific article here.

Yellow Fever cases rise in the Americas

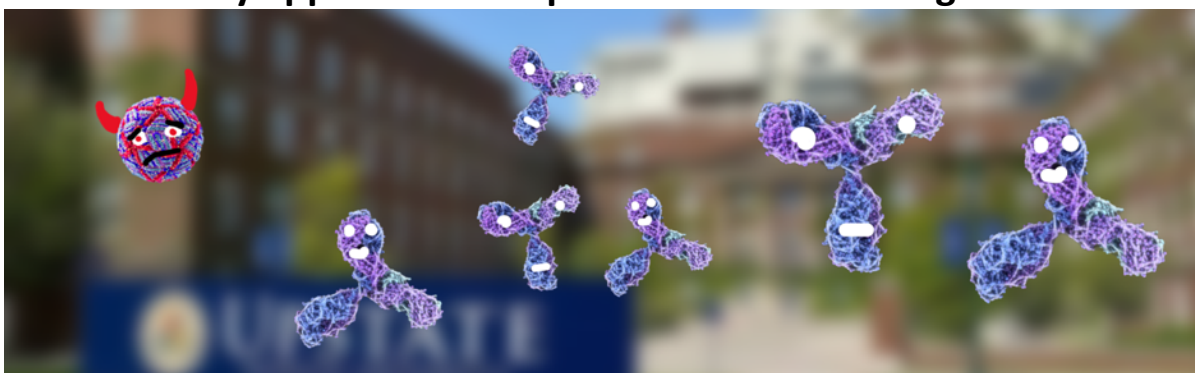
Yellow fever cases are continuing to increase across the Americas, with 503 cases and 220 deaths reported across seven countries between 2024 and 18 August 2026, according to the WHO. Colombia has reported the highest number of cases, while transmission has also continued in parts of Africa. Most recent cases have been linked to sylvatic transmission, with unvaccinated people entering forested areas at risk of infection. WHO highlights vaccination, surveillance and vector control as key measures for preventing further spread. Read more about this here.

Strong El Niño set to shape global weather



A strong El Niño is intensifying in the Pacific and is expected to influence global climate patterns through the end of 2026 and into early 2027, according to the WMO. The event is likely to bring above-normal temperatures across much of the world and significant shifts in rainfall, with some regions facing increased flooding while others experience drought. El Niño can also influence conditions favourable to mosquito-borne disease, making continued climate and disease surveillance important. Read more here.

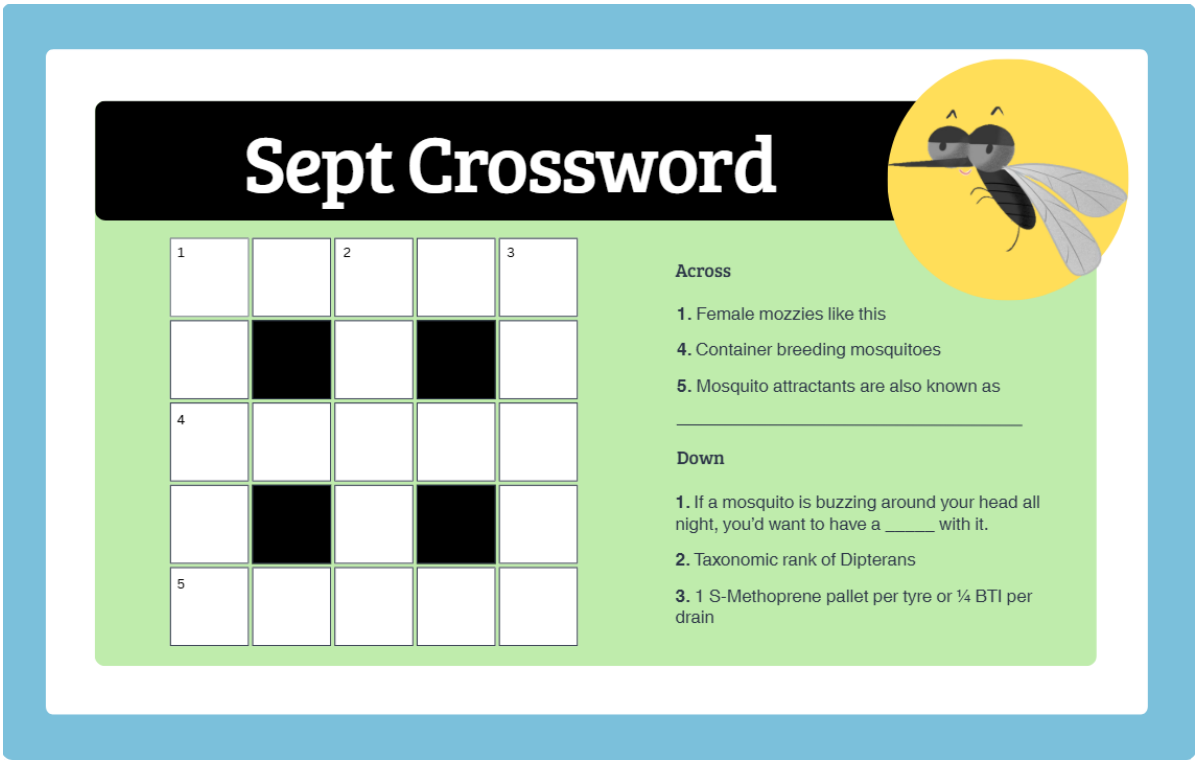
New antibody approach could prevent and treat dengue



Researchers at Upstate Medical University are developing an IgA monoclonal antibody designed to prevent and treat dengue without triggering antibody-dependent enhancement (ADE), a complication associated with some antibody responses to the virus. The treatment could provide immediate protection for people who have not previously been infected and potentially reduce the risk of severe disease in those with existing immunity. Potential

applications include travellers, military personnel and people living in dengue-endemic regions. Read more here.

A BITE-SIZED CROSSWORD



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

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.

Communicable disease Dashboards - The New Zealand Institute for Public Health and Forensic Science (PHF Science) - formerly named the Institute of Environmental Science and Research (ESR).

Communicable disease threats report - European Centre for Disease Prevention and Control