New Zealand BioSecure

BORDER HEALTH NEWSLETTER

DECEMBER 2025

NAU MAI, HAERE MAI - WELCOME!

Kia ora koutou katoa,

We hope everyone had a safe and relaxing holiday period! With the warmer weather, mozzie numbers are increasing by the minute — so be sure to protect yourself from mosquito bites.

This month we recorded a noticeable increase in adult mosquito numbers, largely due to a single BG trap located at Auckland International Airport. Take a look at the surveillance numbers below to see how this month compares with November. You can also check out the mosquito numbers for 2025 and find out which month recorded the highest number of specimens collected!

In the news this month, read about Sri Lanka reporting an unusually early surge in dengue cases, with more than 2,000 infections recorded in early January and high-risk alerts issued across dozens of health divisions. You can also explore how climate change is intensifying food insecurity, pest outbreaks, and infectious disease risks across Africa, as shifting weather patterns expand mosquito habitats and strain fragile health systems. In Brazil, health authorities have approved Butantan-DV, the world's first single-dose vaccine effective against all four dengue strains — a major advance for disease control, especially in remote regions. Finally, new research from the U.S. offers reassurance on "sloth fever," showing that common mosquitoes in the south-eastern states are unlikely to spread the Oropouche virus, keeping the risk of local outbreaks very low.

Have you ever received a report from a member of the public saying they have found an Asian tiger mosquito? If your answer is yes, scroll down to the **Know Your Mosquito** section to learn how to distinguish the invasive *Aedes albopictus* from the locally occurring *Aedes notoscriptus*. And finally, in our **A Bite of Humour** section, we have a little joke for you — just for a giggle.

Happy reading!

SURVEILLANCE

During December, 1,519 samples were collected by staff from 12 NPHUs (Figure 1). These included **198** positive larval samples and **111** positive adult samples, resulting in a total of 12,166 larvae and 1,031 adults identified over the past month (Table 1).

Please note that the identification and reporting processes for male and female mosquitoes, as well as first and second-instar larvae of *Culex* species found in New Zealand, **were adjusted for this month's processing**. 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 this month.** The remaining males in each sample were identified using the palps and classified as either *Culex pipiens* complex or *Culex pervigilans*. 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; therefore, these were reported as *Culex* sp. The term *Culex* sp. is also used when specimens are too damaged to be identified beyond the genus level.

Starting this month, some yearly and monthly comparisons will be made using only **third- and fourth-instar larvae**.

Considering only third and fourth-instar larvae, *Aedes notoscriptus* was the dominant larval species this month and in December last year, and it was also the dominant species last month (Table 1).

In total, eight mosquito species have been collected this month (Table 1), which is two more than last month.

Compared with the same month last year, the total number of larvae **decreased by 16%**, while adult numbers **increased by 344%** (Table 1).

Table 1. Adult and larvae sampled by the New Zealand surveillance program during December 2024 & 2025

Species (common name)	Adults		Larvae	
	Dec 25	Dec 24	Dec 25	Dec 24
Aedes antipodeus (winter mosquito)	3	2	-	-
Ae notoscriptus (striped mosquito)	15	15	4767	3299
Coquillettidia iracunda (no common name)	2	-	-	-
Culex asteliae (no common name)	-	-	181	-
Cx pervigilans (vigilant mosquito)	58	24	584	3434
Cx quinquefasciatus (southern house mosquito)	462	176	618	11082
Culex sp. (damaged or not ID'd below genus level)	392	15	5942	-
Cx pipiens spp. (including mixed features)	98	-	28	-
Opifex fuscus (rock pool mosquito)	1	-	46	32
Total	**1031**	**232**	**12166**	**17847**

Compared with the previous month, both larval and adult mosquito numbers increased (**48%** and **1,239%**, respectively).

The large increase in adults collected this month, compared with December 2024 and November 2025, is due to a very productive adult trap deployed as part of enhanced surveillance at **Auckland International Airport**.

The highest number of larvae collected this month was in **Northland** (6,918 larvae), followed by **Bay of Plenty** (1,646 larvae) (Figure 1).

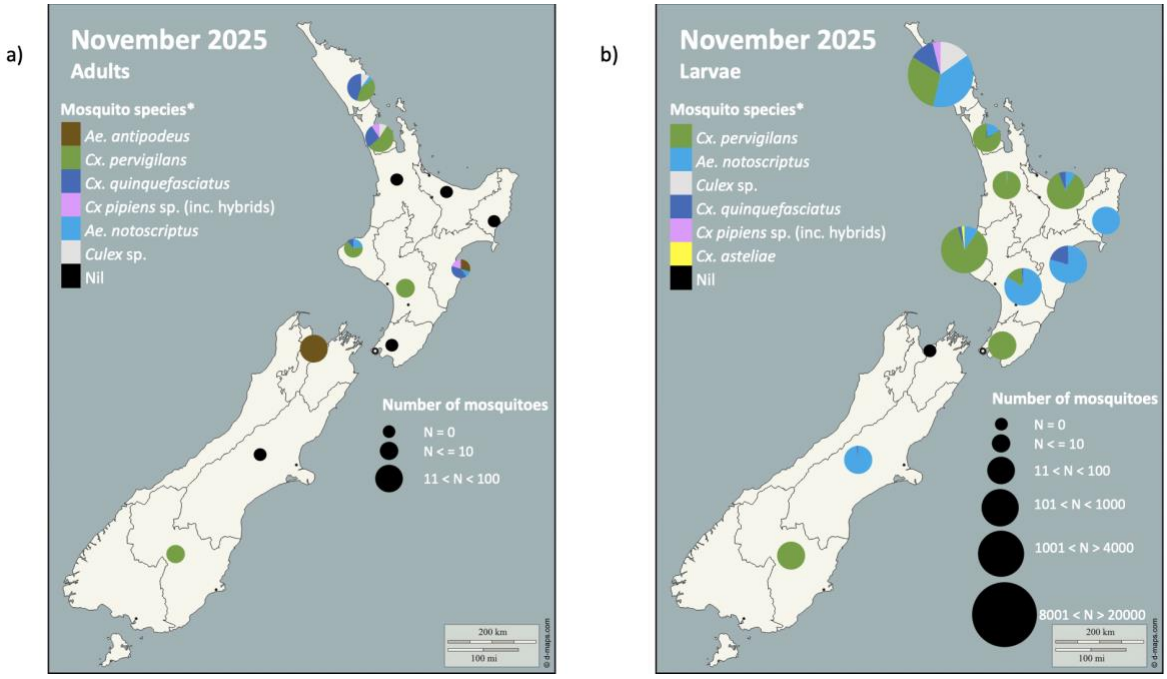


Figure 1. Total mosquito adults (a) and larvae (b) sampled in New Zealand during the December 2025 surveillance period. Please note that the markers represent the NPHUs and not the specific sites where the samples have been taken.
* The mosquito species are listed in order from the most abundant to the least abundant.
Culex sp. refers to adult mosquitoes that are damaged and cannot be identified to the species level or larvae that are not developed enough to be identified to species level (first and second instars).

Aedes notoscriptus larval numbers have shown an increase in seven NPHUs, a decrease in three NPHUs and remain absent in two NPHUs compared to December last year (Figure 2).

Aedes notoscriptus were not found in Southland in December this year or last year (Figure 2).

Starting next month, the monitoring of the New Zealand introduced species, including *Culex quinquefasciatus*, *Culex pipiens* spp. *Aedes notoscriptus* and *Aedes australis* will be displayed in a different way. Watch this space.

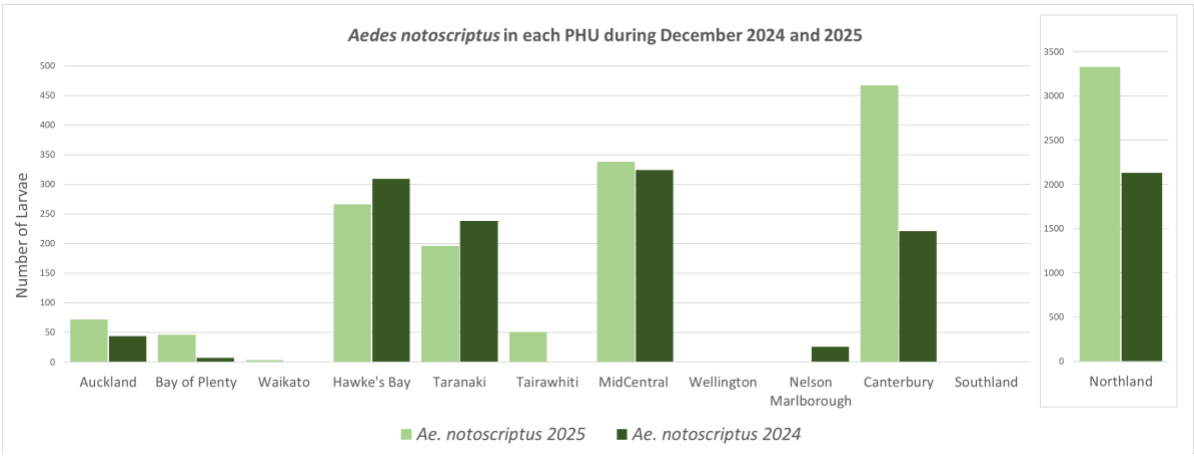


Figure 2. Comparison between *Aedes notoscriptus* sampled in each NPHU during December 2024 and 2025.
*Please note the different scale for the number of larvae present in Northland in comparison to the other NPHUs.

MOZZIE NUMBERS FOR THE YEAR 2025

During 2025, a total of 86,846 larvae (Figure 3) and 4,363 adults (Figure 4) were collected by the 12 National Public Health Units and identified in the NZ BioSecure Entomology Laboratory, that is 29% less larvae and 71% less adults than last year.

A total of 9 locally occurring species of mosquitoes were collected this year (1 more than last year, since *Culex pipiens* spp. are now considered a locally occurring species). *Culex quinquefasciatus* was the best represented with 40% of the larvae, followed by *Aedes notoscriptus* with 35%, and *Culex pervigilans* with 14% of the larvae. The least represented larva was the endemic species *Aedes subalbirostris* with 1 larva collected (Figure 3).

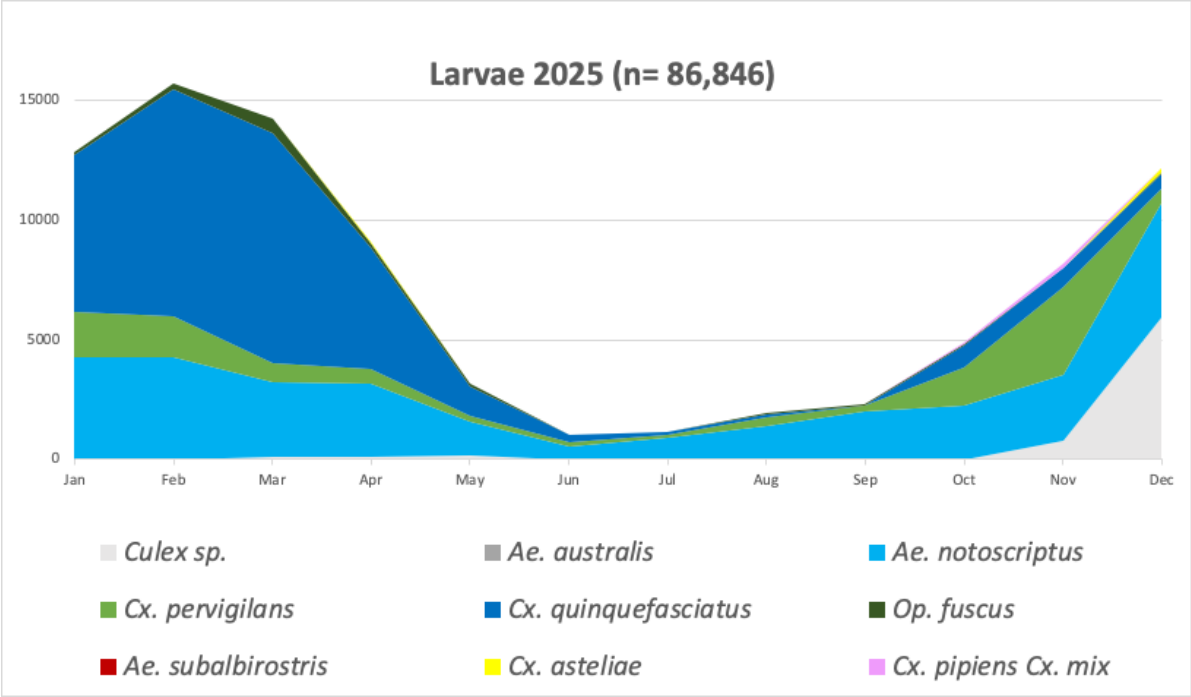


Figure 3. Variation in total mosquito larvae numbers throughout 2025.

The adult mosquitoes were dominated by *Culex quinquefasciatus* with 70%, followed by *Culex pervigilans* with 15% of the adults. The least represented adult mosquitoes were the endemic species *Opifex fuscus* with 1 adult collected and *Coquillettidia tenuipalpis* with 1 adult only (Figure 4).

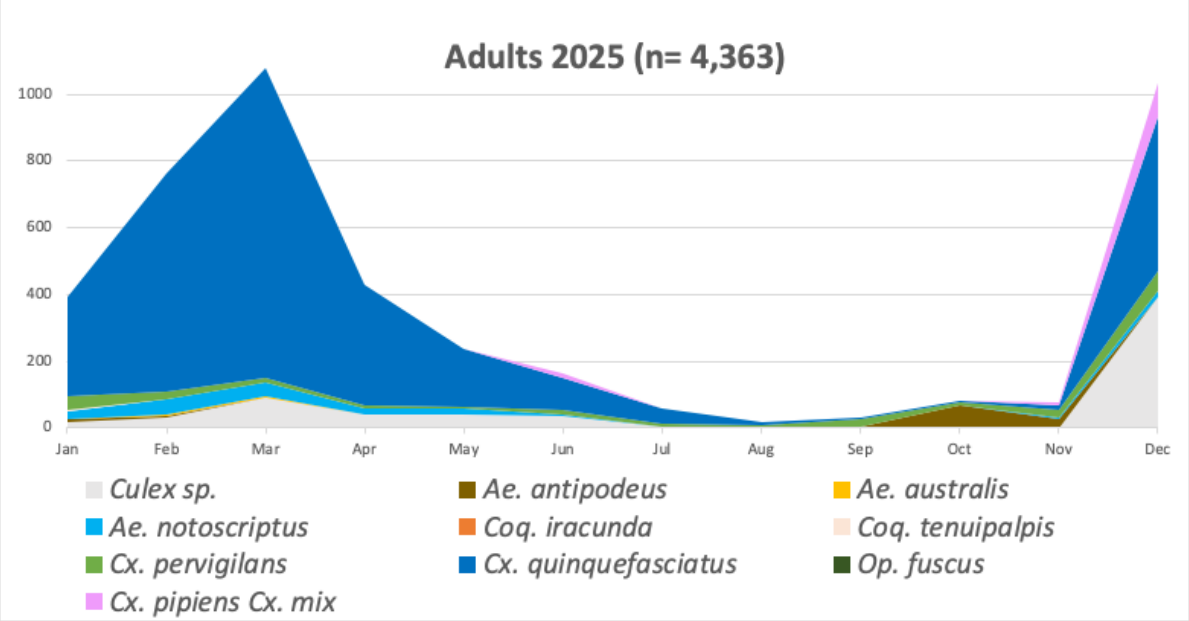


Figure 4. Variation in total mosquito adult numbers throughout 2025.

The highest number of mosquitoes collected (larvae plus adults) in 2025 was in February (16,479) followed by March (15,339) while in 2024 was in March (40,362) followed by January (24,273). During 2025 the highest number of species was recorded in January (8 species) and the least was recorded in the months of June, July, August, September and November (5 species).

INCURSIONS AND INTERCEPTIONS

During December, HPOs responded to two suspected interceptions (Table 2), one involving a species in the unwanted list (in red).

Table 2. Suspected interceptions during December 2025

Date	Species	Location	Circumstances
05.12.2025	5x 4th instar and 2x 3rd instar *Aedes aegypti* larvae 2x 4th instar *Culex pervigilans* larvae	Auckland International Airport	Found alive in a routine surveillance trap.
17.12.2025	1 Chironomidae indet. (non-biting midge)	Ports of Auckland	Found dead in plastic bags of grapes. Container was from Peru. However, the vessel or last port of call is unknown. Lacewing eggs were also found in the container.

CULEX PIPIENS AND MIXED FEATURES UPDATES

During December, multiple larvae and adult mosquitoes *Culex pipiens* sp. and *Culex* sp. showing mixed features were collected in five NPHUs (Table 3).

Table 3. *Culex pipiens* sp. and *Culex* sp showing mixed features collected during December 2025

November 2025	*Culex* sp. showing mixed features			*Culex pipiens* sp.			Total
	Larvae	Male	Female	Larvae	Male	Female	
Northland							
Marsden Point		17			6	7	**30**
Whangaroa Harbour	2						**2**
Auckland							
Auckland International Airport	1	30	1		8	5	**45**
Hawke's Bay							
Hawke's Bay Airport	10						**10**
Napier Port	3	1	5			3	**12**
MidCentral							
RNZAF Ohakea				9			**9**
Bay of Plenty							
Tauranga Port		4					**4**
Grand Total	**16**	**52**	**6**	**9**	**14**	**15**	**112**

NEWS ARTICLES FROM AROUND THE WORLD

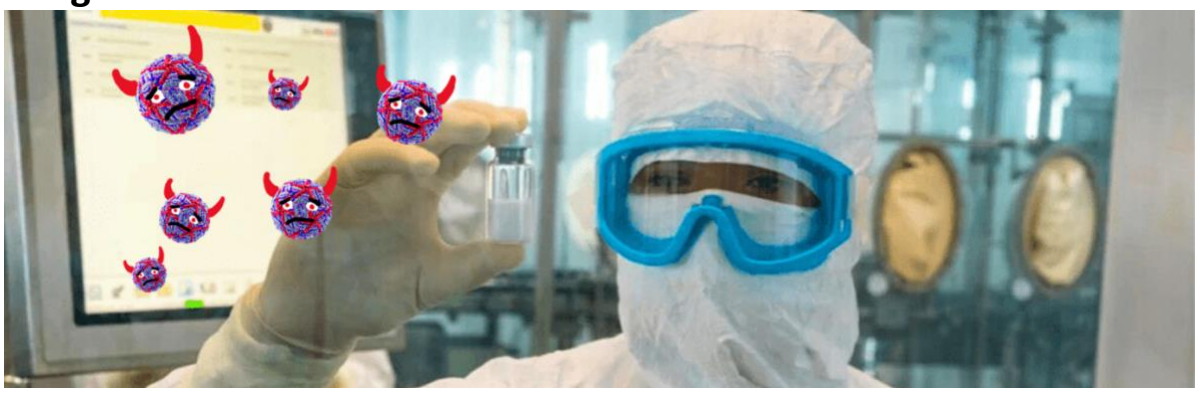
Sri Lanka reports early surge in dengue cases in 2026

Sri Lanka has recorded an unusually early rise in dengue fever cases, with 2,170 infections reported in the first nine days of January 2026, prompting health authorities to declare a high-risk situation across 41 health divisions. The Western Province has been most affected, including major cities such as Colombo and Gampaha, following a difficult 2025 that saw around 50,000 cases nationwide. Dengue is endemic in Sri Lanka and typically peaks during monsoon seasons, when mosquito breeding increases. While no dengue vaccine is currently recommended for all travellers, health authorities and the WHO advise strict mosquito control and bite-prevention measures, particularly as travellers may also face risks from other mosquito-borne diseases such as chikungunya. Read more on this topic here.

Climate change is fuelling food insecurity, pest outbreaks and rising disease risks across Africa

Flooding and changing vegetation are creating new habitats for mosquitoes and other vectors, raising the risk of malaria, cholera and other infections in areas that previously had little exposure. Scientists warn that climate-driven shifts are also enabling the spread of new mosquito species, urban malaria, and zoonotic diseases such as Rift Valley fever, while fragile health systems struggle to cope with rising demand and damaged infrastructure. Experts argue that these interconnected challenges highlight the need for a One Health approach that links human, animal and environmental health. Without stronger investment in resilient health systems, surveillance, infrastructure and climate adaptation, Africa faces growing risks from disease outbreaks intensified by a warming and increasingly unpredictable climate. Read more on this topic here and here.

Brazil launches innovative single-dose vaccine against all four dengue strains



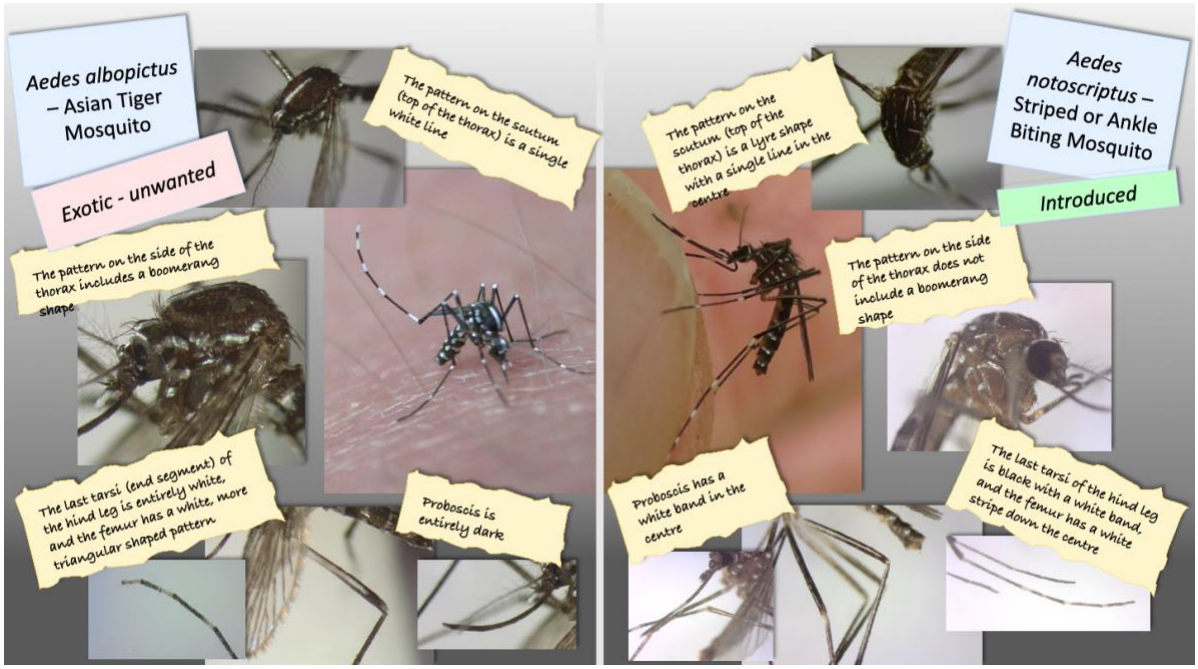
Brazil has approved Butantan-DV, the world's first single-dose dengue vaccine effective against all four virus serotypes, for people aged 12–59. Developed by the Butantan Institute after nearly a decade of trials involving 16,000 volunteers, the vaccine showed 74.7% overall efficacy and 91.6% against severe disease, with 100% protection against hospitalizations. The single-dose format makes it especially suitable for remote and hard-to-reach areas like the Amazon, where multi-dose vaccines are logistically challenging. Brazil plans to incorporate Butantan-DV into its national immunization program in early 2026, with over 1 million doses ready for distribution and 60 million doses planned over the next two years in partnership with WuXi Vaccines. While the vaccine represents a major advance, experts stress that mosquito control, surveillance, and vector management remain essential to combat dengue

and other Aedes-borne diseases like chikungunya and yellow fever. Read more on this topic here.

Sloth fever unlikely to spread via mosquitoes in Southeastern US

In 2024, travel-related cases of Oropouche virus, nicknamed “sloth fever,” raised concerns in the U.S., particularly Florida, due to its potential to cause fever, rash, joint pain, and serious birth defects in pregnant women. About 105 cases were reported in the U.S., almost all linked to recent travel to Cuba. Researchers at the University of Florida tested the region’s most common disease-spreading mosquitoes, Aedes aegypti and Culex quinquefasciatus, and found they are largely ineffective at transmitting the virus, suggesting it is unlikely to establish local transmission. While this offers reassurance, scientists note further research is needed to assess the role of biting midges (no-see-ums) in spreading Oropouche virus and whether mosquitoes can pass it to their offspring. Overall, current evidence indicates the risk of a U.S. outbreak is very low despite the serious health risks associated with the disease. Read more on this topic here.

KNOW YOUR MOSQUITO



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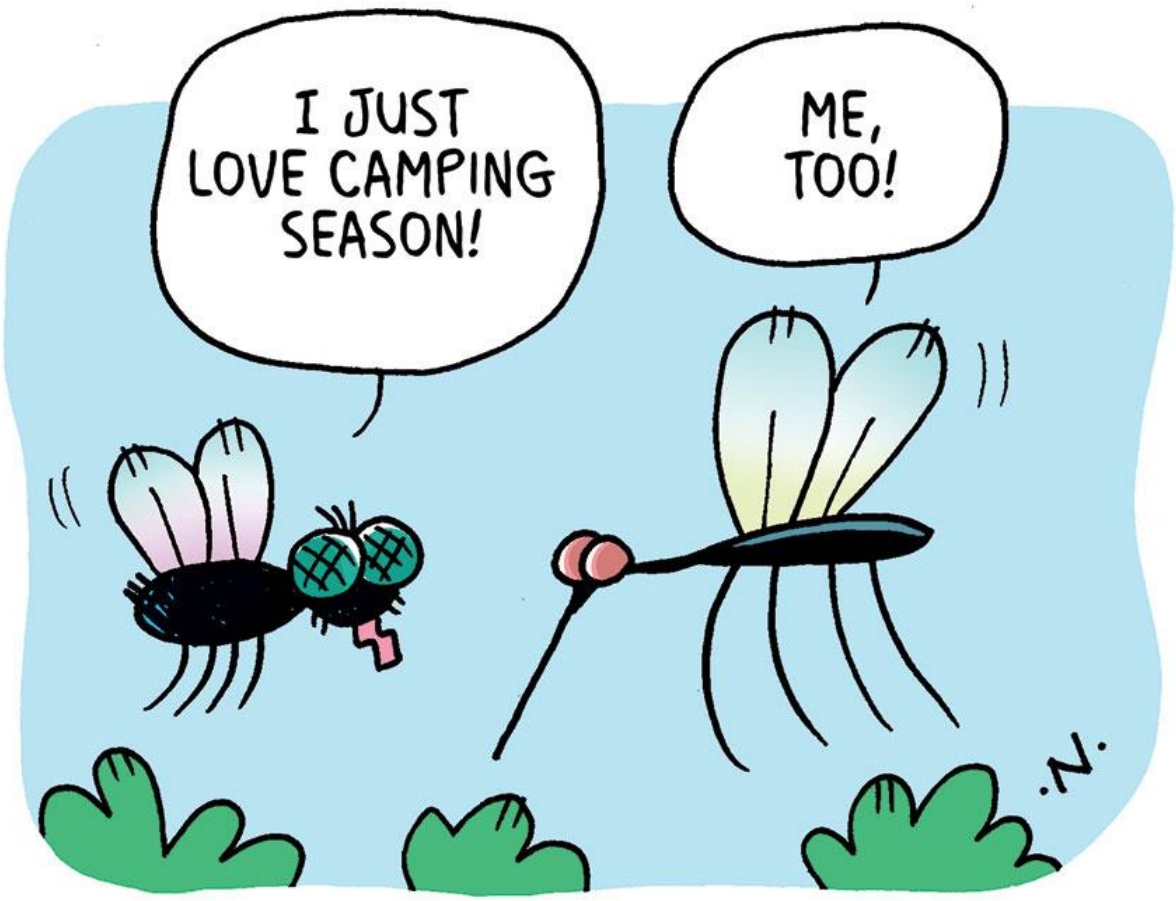
A BITE OF HUMOR



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 threats report - European Centre for Disease Prevention and Control