Water turns to a nasty whine

As floodwaters recede, the risk of mosquito-borne disease is rising

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GRAZIER Wayne O’Malley knows that although the damage from recent floods in NSW and central Australia has been devastating, the risk of infectious disease may present bigger problems.

O’Malley, a former mayor of Bourke, lives near the junction of the Culgoa and Darling rivers, a stone’s throw from the flood-affected areas. He fears mosquito-borne diseases, particularly Ross River fever, may pose a serious threat in coming months.

“Ross River fever has been prevalent here during past floods,” he says. “It pays to be vigilant and, where possible, cover up and put some mosquito repellent on. I’m expecting the situation to get a lot worse as the water recedes.”

Virologist Suresh Mahalingam claims O’Malley is right to be concerned. That’s so, he says, as Ross River fever is the most common mosquito-borne disease in Australia. It’s generally spread to humans by mosquitoes that have fed on kangaroos and wallabies. But the University of Canberra professor stresses there’s a particularly high risk of infection in the wake of floods.

“Outbreaks of diseases such as Ross River and dengue fever are common when you have an increase in water deposits, high flooding, and high temperatures causing higher humidity.

“These factors combine to make an excellent breeding ground for mosquitoes.”

Because of the time that has elapsed since the last such flood, mosquito numbers have been low. As a result, immunity to Ross River fever has dropped, in human and animal populations.

Stephen Doggett, an entomologist at Westmead Hospital in Sydney, observes mosquito numbers are already well above the levels of previous years. He notes the risk of a large outbreak depends on several factors, among them the amount of future rainfall, along with the length of time water levels hold before drying up.

“It also depends on humidity, which is very important for mosquito survival. If all these factors are present, there could be quite a severe outbreak,” Doggett warns.

While 75 per cent of people infected with Ross River display no symptoms, others develop rashes, fevers and polyarthritis, the latter characterised by pain in joints such as knees and wrists. Symptoms may be acute, lasting less than a month, or chronic, lasting months or even years.

Diagnosis of mosquito-borne diseases can be confirmed only with blood tests.

Ross River fever is one of several diseases in Australia that are transmitted by contact with mosquitoes.

While malaria is no longer endemic here, dengue fever, found in northern Australia, is potentially life-threatening. Unlike many mosquito-borne diseases, it occurs in urban environments and there have been outbreaks in Townsville and Cairns.

An Australian research team discovered recently that dengue-carrying mosquitoes injected with the Wolbachia bacteria become more resistant to the virus. This follows closely on the heels of their findings that Wolbachia cuts the life span of the same mosquitoes in half, reducing their possibility of infecting someone by 50 per cent.

The group is now conducting contained field testing in north Queensland. If all goes well, the researchers hope to move towards full implementation of a Wolbachia program in about two years. Team member and University of Queensland biologist Scott O’Neill suggests the findings could help in the fight against various other diseases.

“We’re very mindful it could be
used against diseases like malaria and other insect-transmitted viruses,” he adds. “But they’re a lower priority for us at the moment, as we’re focusing all our attention on dengue.”

A disease closely resembling dengue is chikungunya, which the World Health Organisation describes as re-emerging in Asia. While usually not fatal, the symptoms, including fever, rash and arthritis, can be highly unpleasant.

Chikungunya is usually carried by Asian tiger mosquitoes not native to Australia. But the virus can also be carried by two species of mosquito found along most of Australia’s coastline.

In 2005 the disease killed more than 200 people on Reunion Island in the Indian Ocean and since then has spread to parts of Europe, including Italy and France.

Another very serious disease is Murray Valley encephalitis. It’s transmitted by mosquitoes, which contract it from infected water birds. While some human sufferers develop only a mild fever, others contract a potentially lethal brain infection.

That is why Doggett emphasises the serious risk it poses: “About 30 per cent of those who contract it will die, and of those that survive about half will have lifelong neurological disabilities.”

The mosquito carrying this virus is most common around the Murray-Darling river basin. The only method of prevention is to avoid being bitten by infected mosquitoes.

Although Murray Valley encephalitis is a potential risk in the wake of the recent floods, it’s Ross River fever that is likely to be the main concern.

As O’Mallely suggests, prevention is better than cure. Proper insect repellents should be used, and long-sleeved shirts and trousers worn. That also means avoiding areas known to be mosquito-infested, especially close to sunrise and sunset.

For those who do get bitten, Mahalingam points out that Ross River affects different people in different ways. “Just because someone doesn’t have any symptoms doesn’t mean they shouldn’t get checked out,” he says. “Even if they have only a mild illness, they should still get it examined, because infection can lead to long-term pain and complications.”

Grazier Wayne O’Malley on his flooded property 60km from Bourke, near the Darling River in NSW

JAMES CROUCHER