



Mosquitoes around the Georges River

Natural nuisance

Mosquitoes can form large swarms at certain times of the year in the suburbs around the Georges River. They are as much a component of natural ecosystems as any other native wildlife, but when there are lots of them they are a nuisance for people. Itchy bites are annoying, but worse still some mosquitoes carry disease-causing pathogens.

Lifecycle

Mosquitoes have short but complex life cycles, with the abundance of mosquitoes depending on factors such as the availability of water and the temperature. Mosquitoes hatch into water from eggs and undergo early development from 'wrigglers' to pupae before emerging and flying off as adults. They can be found in a range of habitats, from polluted puddles and pot plant saucers to pristine forested streams and mangrove forests. In the Georges River region, coastal mosquitoes are most common and they're reliant on large tides to inundate saltmarshes and mangrove forests. More of their offspring are likely to reach adulthood in dry summers, when fish and other mosquito predators are less abundant. Intense rain (> 50 mm in a week) can also stimulate mosquito breeding. Around the Georges River, peaks in mosquitoes occur in warmer months, between October and April.

What attracts mosquitoes?

Mosquitoes are able to follow trails of exhaled carbon dioxide to find mammals on whom they feed. Scientists studying mosquitoes also use carbon dioxide to lure them into traps with the information gained assisting local health authorities determine local pest and public health risks.

Did you know?

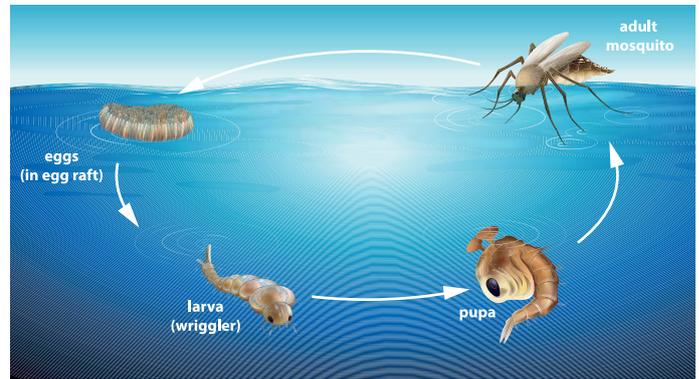
Only female mosquitoes bite, as the protein from blood is used to fuel egg development. Male mosquitoes don't bite.

Disease

Whilst piercing the skin and blood vessels for their food, female mosquitoes can also transmit viruses that cause disease. Fortunately, in Australia there are extremely few cases of the fatal mosquito-transmitted diseases that may be found in other parts of the world. But, across the nation there are approximately 5,000 cases of human illness owing to Ross River virus each year. Ross River virus occurs in Australia and other islands of the south Pacific. It is non-lethal, but can be seriously debilitating. Symptoms usually include rash, inflammation and pain in joints, fatigue and muscle aches. The time between being infected and noticing symptoms can be from a few days to a few weeks. The fatigue and joint pain can last many weeks or months.

Did you know?

Mosquitoes have evolved for over 200 million years. There are now more than 40 species in the Georges River region.



Ross River virus is picked up by mosquitoes that bite infected wildlife, usually kangaroos or wallabies. The region around Georges River has just the right mix of appropriate breeding habitat and abundance of mosquitoes to facilitate Ross River virus periodically becoming a problem (information about this is available on the NSW Health website). There is no treatment for Ross River virus, so the best strategy is to avoid being bitten.

Avoiding mosquitoes

When there are lots of mosquitoes about in the warmer months of the year it is best to either avoid or deter them. Flyscreens should be kept in good order to keep mosquitoes outside. For those that do get inside homes, smokeless plug-in units that heat and disperse a reservoir of pyrethrum insecticide work well at repelling mosquitoes from bedrooms and are harmless to people. But, like mosquitoes, people like to be active in the outdoors during the warmer months. When outside and unable to avoid the company of mosquitoes, cover skin and use repellants.

Mosquitoes are most active around wetlands or bushland at dawn and dusk, so those areas should be avoided when there are lots of mosquitoes about. To cover exposed skin, wear long-sleeved shirts and long pants, which should be loose-fitting to prevent mosquitoes from biting through material. For those areas of skin that can't be covered with clothing, sprays containing diethyltoluamide (DEET) or picaridin are effective. High dose repellants do the same job as low dose repellants, but repel for longer, i.e. many hours, compared to about two hours for low dose repellants. Botanical repellants that contain citronella, tea-tree, eucalyptus, lavender and/or catmint oils may work for a short period of time. Mosquito coils and sticks that work by burning like incense, with

plant-based repellents, generally reduce the number of biting mosquitoes but don't provide complete protection. They shouldn't be used indoors owing to concentration of the particulates that may be inhaled. Whilst they are a nice idea, wristbands advertised as having the ability to repel mosquitoes unfortunately provide very little protection.

Can we eradicate mosquitoes?

Some people would like to see mosquitoes eradicated, including calling for their saltmarsh and mangrove nurseries to be destroyed. Humans actually did destroy most of these ecosystems around Sydney, before they realised the critical roles that they perform, including providing food and habitat for fish. Mosquitoes survived the destruction of these habitats far better than many other valuable animals and plants. So, destruction of these critical habitats as a mosquito eradication strategy is neither desirable or effective. Even if it were possible to selectively remove all mosquitoes from the landscape, it may not actually be desirable, as they provide food for waterbugs, fish, frogs, lizard, birds and bats, plus they play a role in pollination of plants.

Mosquitoes are a natural part of the Georges River environment. Sometimes they're annoying, but if care is taken to choose some appropriate personal protection measures, it will be much easier to live with these little beasts.

Thank you to Dr. Cameron Webb for providing mosquito images and expert advice used to inform this factsheet.

For more information:

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