

Mosquitoes in Brisbane

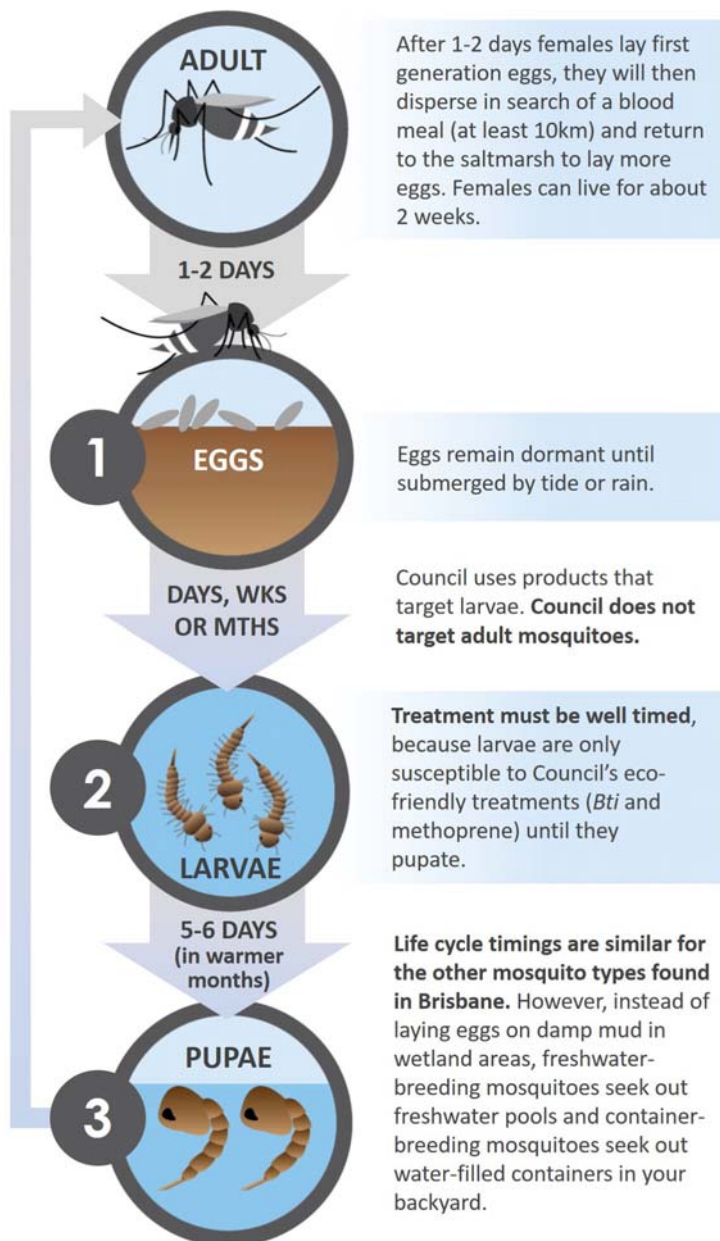
Brisbane City Council's mosquito control program is aimed at protecting our unique Brisbane lifestyle, so residents and visitors can enjoy outdoor activities no matter what the season.

Council's mosquito control program targets mosquitoes that breed in coastal saltmarshes, known as saltmarsh mosquitoes (*Aedes vigilax*) and also those that breed in temporary ground pools, known as freshwater-breeding mosquitoes (*Culex annulirostris*).

A third type, found in Brisbane's backyards, is the container-breeding mosquito (*Aedes notoscriptus*). Control of this species requires householders to be aware of breeding sites and remove or manage them.

The life cycle of the saltmarsh mosquito, the major target species of Council's program, is detailed below.

Saltmarsh mosquito life cycle



The saltmarsh mosquito lives only for a few weeks. However, during that time, they go through four significant life cycle stages: **[1]** Mosquito eggs are laid in the wetlands on the damp mud. **[2]** When inundated by water, the eggs hatch into larvae commonly known as wrigglers. **[3]** Wrigglers turn into pupae. **[4]** The pupae then develop into adult mosquitoes which can disperse at least 10 kilometres to feed, with females returning to the wetlands to lay her eggs – and the cycle continues.

Warmer months = warmer water = more mosquitoes

During the warmer months, the water temperature rises and this rapidly increases the speed at which larvae grow, resulting in an egg becoming an adult mosquito in just five-to-six days. With each mosquito capable of laying hundreds of eggs at a time, adult numbers can escalate quickly.

During especially hot, dry periods, multiple generations of saltmarsh mosquito eggs can lay dormant on wetland shores for months. Sudden, heavy rains or a significant high tide that submerges these eggs, can then trigger a mass hatching (of eggs to larvae stage).

Council only targets mosquito larvae using larvicide products. Larvae are only susceptible to these products for a few days, before they pupate. This means any treatment must be well-timed.

What does Council do about mosquitoes?

Council has one of the largest mosquito control programs in Australia although most residents may not often see Council officers carrying out mosquito control activities. This is because most of Council's mosquito control efforts are focused on our wetland areas.

Council's approach for controlling saltmarsh and freshwater-breeding mosquitoes

Council currently manages more than 20,000 hectares of coastal, saltmarsh mosquito breeding areas and 2500 known freshwater mosquito breeding sites across the city.

- 1) All-year-round, Council officers on all-terrain vehicles (ATVs), driving treatment trucks and on foot visit tidal wetland areas and known freshwater pooling areas. They check for larvae and if found, treat wetland and freshwater sites.
- 2) During a saltmarsh mosquito hatch, Council ramps up efforts by aerial treatments of known wetland mosquito breeding sites via helicopter. Aerial treatments are only targeted at larvae (using a larvicide product) and are often planned a few days after a significant high tide or heavy rain event to kill mosquitoes while still in their larvae (or wriggler) stage.
- 3) Our entomologists monitor mosquito activity weekly using mosquito traps and monitor wetland water levels via remote water level sensors (to identify when saltmarsh mosquito eggs have been submerged).
- 4) Council collaborates with councils across South East Queensland, as well as the Department of Health to coordinate mosquito control throughout the region.
- 5) The program includes keeping residents informed by providing notifications through Council's website (visit brisbane.qld.gov.au and search 'mosquitoes') and social media networks.

Products Council uses to treat mosquitoes



Council uses approved products, Bti and methoprene, which target mosquito larvae and are not harmful to people, pets and the general environment. Larviciding is industry best practice, because it's more effective to treat the larvae while they are confined to the wetlands rather than waiting until adult mosquitoes disperse into suburbia. Council does not target adult mosquitoes.

Why does mosquito activity fluctuate?

From time-to-time, you will notice more mosquitoes than usual. During the ideal mosquito breeding times – around the warmer months and only after significant tidal or rain events – saltmarsh mosquitoes can hatch in mass numbers and will create bursts of mosquito activity.

Regular rain can also create groundwater pools providing the freshwater-breeding mosquito with perfect habitats across Brisbane.

Research has found mosquito elimination is impossible, so it seems mosquitoes will remain a part of Brisbane's ecosystem. However, we can limit the number of mosquitoes in an area to reduce the risk of being bitten.

Council's experts constantly monitor mosquito activity and ensure scientific, industry best practice is adopted into our control program to reduce mosquitoes across Brisbane.

We all have a shared role in reducing the mosquito's impact on our lifestyle and there are also things residents and visitors can do to protect their household and pets (with dogs and cats at risk of contracting heartworm from mosquitoes).

Bringing the fight to your own backyard

Container-breeding mosquitoes (*Aedes notoscriptus*) are another source of mosquito activity across Brisbane. This mosquito is found in our backyards and is the hardest to combat. Control of this species requires householders to be aware of breeding sites and remove or manage them.

Container-breeding mosquitoes can lay eggs around your home in small amounts of stagnant water. Potential breeding sites include bird baths, pot plant saucers, tyres and even vegetation (inside the stems of some plants can hold enough water to become a breeding site).

Both the dengue mosquito (*Aedes aegypti*) and the Asian tiger mosquito (*Aedes albopictus*) are a species of container-breeding mosquitoes that do not currently occur in Brisbane.

Scientific reports have suggested unmaintained rainwater tanks may be the means for the dengue mosquito re-establishing in Brisbane.

Rainwater tanks that are not properly sealed and screened can provide ideal conditions for these types of mosquitoes to breed all year round. Remember, a gap the size of a matchstick head is enough to let mosquitoes into your tank to lay eggs.



Improperly sealed rainwater tanks can become breeding sites for mosquitoes

Residents can help reduce mosquito activity in Brisbane by properly sealing and maintaining rainwater tanks.

Ways you can protect yourself and your household:



Avoid going out at dusk/dawn when mosquitoes are more active



Wear loose-fitting, light-coloured protective clothes



Use insect repellent and mosquito coils



Stay in a place with air conditioning and window screens



Remove standing water at home