



City of Rockingham **Mosquito Control in Karnup**



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Why are the mosquitoes bad in Karnup?

Karnup borders the Serpentine River, where there are large tracts of saltmarsh providing a habitat that is ideal for mosquito breeding. This, as well as a number of other factors, can result in residents experiencing high and more persistent mosquito activity. Saltmarsh mosquitoes are known for being carriers of Ross River Virus and Barmah Forest Virus, and can impact the lifestyle of residents and visitors to the Karnup area when conditions promote mosquito breeding.

Mosquitoes breed in water and in the saltmarsh area around Karnup. This water comes mainly from tidal water movement from the Peel Harvey estuary, and to a lesser extent rainfall. Mosquitoes will lay their eggs in the protected areas fringing the waterbody. When the water levels rise and cover these eggs, the mosquitoes will hatch. Mosquito numbers can increase rapidly under optimum conditions, and mosquitoes will disperse from the saltmarsh throughout Karnup due to their ability to fly many kilometres from the breeding sites.

There is generally a spike in mosquito activity under La Nina weather patterns. Tides can rise rapidly due to low pressure systems, northerly winds and local climatic events. When the tides rise and fall quickly and frequently, the eggs hatch at higher numbers and cause high numbers of mosquitoes to emerge.

In normal summer conditions the saltmarsh remains relatively dry. In normal winter conditions the saltmarsh remains generally underwater. Both water patterns will restrict mosquito breeding. When there is continual tide movement there will be more mosquito breeding. You can see the difference in Karnup water levels in the aerial photos below.

Karnup - normal dry summer pattern



Karnup - normal wet winter pattern



Karnup - intermediate water levels with mosquito breeding





Where else could the mosquitoes be coming from?

Other species of mosquito will breed in fresh and brackish water bodies and pose disease and nuisance problems in and around residential properties.

Pooling water from rainfall, irrigation, leaking taps and even poorly maintained swimming pools can provide perfect conditions for mosquito breeding.

Items such as listed below need to be emptied and cleaned every few days to restrict mosquito breeding:

- Rainwater tanks
- Bird baths
- Buckets
- Unused fish ponds
- Any type of container that holds water
- Blocked gutters
- Water features
- Pet water bowls
- Pot plants bases that hold water.

The City does not carry out treatments on private property, however if you have a potential breeding source (a stagnant body of water) on your or a neighbouring property, you can contact the City and request a site inspection. Property owners are responsible for complying with local laws to prevent mosquito breeding.

What is the City of Rockingham doing to help control mosquitoes in Karnup?

The City allocates \$50,000 towards mosquito control each year, with the majority of this resourcing targeting the saltmarsh mosquito breeding areas in Karnup.

The City has been an active member of the Peel Mosquito Management Group since 1996 in conjunction with the City of Mandurah, the Shire of Murray, the Shire of Waroona and the Department of Health. The Group is seen as an industry leader in mosquito control, and applies a variety of mosquito specific chemical to Serpentine River saltmarsh as well as the entire Peel Harvey estuary via a specialised helicopter.

In addition to assisting with the aerial treatments, the City's Officers do on ground surveys in Karnup to determine mosquito breeding areas, and any additional locations that need aerial spraying. Officers will also apply the chemical directly to the hard to reach areas that the helicopter may struggle to effectively treat - such as areas where there are overhanging vegetation that might prevent the chemicals reaching the water.

Mosquito trapping

The City set a number of mosquito traps in defined areas throughout the year. These traps use carbon dioxide and light to attract mosquitoes, so Officers can capture adult mosquitoes to see the type of mosquito and the numbers in the area. This is important to know if there are increases in certain areas and whether they are mosquitoes that breed in the salt marsh or fresh water.

The Department of Health also does mosquito trapping, and they can also analyse to see if the mosquitoes are carrying disease. This will determine whether they need to put a media alert to warn the community.

Mosquito trapping is conducted in Karnup fortnightly in spring/summer and monthly in autumn/winter. Multiple traps are set in residential Karnup and in the breeding areas. The City also has additional traps that can be set in addition to the regular ones, should there be an increase in complaints in a particular area.



Mosquito treatments

The City's mosquito control program uses larvicides to treat mosquitoes. Larvicides kill or disrupt the development of mosquito larvae, resulting in death before the adult can emerge and pose a potential health or nuisance risk. The larvicide chemicals that are used have been heavily researched and are the best for the environmentally sensitive areas in Karnup and the Peel Harvey estuary. These larvicides are target-specific, which means they target only the mosquito larvae, without risk to the other animals in the water bodies.

Officers will do a pre-treatment survey prior, which determines where and when the chemical application is required.

There are different larvicides used in the City's program, depending on the weather conditions at the time of the treatment. The tide and weather will impact on the efficiency of the chemical, so the larvicide used during a treatment will be selected to ensure there is the best chance for the highest mosquito kill rate.

A successful kill rate is deemed when at least 80% of the mosquito larvae have died. Unfortunately, even with a highly successful kill rate, potentially millions of adults can still emerge during ideal mosquito breeding conditions.

Even with our proactive program total eradication is not possible or environmentally desirable. This means mosquitoes are always around, however their numbers and activity levels will constantly change.

Why won't the City undertake fogging?

Many people associate mosquito management with fogging. In our conditions, fogging has proven ineffective and does not specifically target mosquitoes. Targeting mosquitoes while they are in their larval stage is a far more efficient method of managing mosquitoes in our environment.

Fogging can also impact a broad range of other organisms, which can be problematic in environmentally sensitive areas.

Fogging



What can residents do?

Personal insect repellents can be applied to the body in the form of an aerosol, lotion, gel or wipe, or worn as a wearable device such as a band, patch or sticker. Care must be taken when choosing a personal insect repellent, as product efficacy varies greatly.

Based on rigorous scientific evidence, the Department of Health recommends personal repellents in the form of a lotion, spray or gel that contain either diethyltoluamide (DEET) or Picaridin as an active constituent.

The City also recommends the following:

- Avoid peak mosquito activity times, one to three hours after dawn and prior to dusk.
- Cover up and wear loose fitting and preferably light coloured clothing that reduces skin exposure.
- Apply mosquito repellents containing DEET or Picaridin when outdoors if mosquitoes are active.
- Secure doors and windows with mosquito proof mesh.
- Assess your property for potential mosquito breeding habitats.

Further information

The Peel Mosquito Management Group has commissioned a number of short videos on various aspects of the mosquito control program, including the aerial treatments, larvicides and repellent. These videos are accessible on the City's website www.rockingham.wa.gov.au

Search for these under Your Services / Services in your Street / Pest Control.

For any further information on mosquito control please contact the City's Health Services on **9528 0333** or via email at customer@rockingham.wa.gov.au and an Environmental Health Officer will be happy to assist you.



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