

★ ★ **MOSQUITO** ★ ★
MANAGEMENT
IN THE EAST SWAN RIVER REGION

★ **FIGHT** *the* **BITE** ★



**PROTECT
YOURSELF**



against

**DISEASE-CARRYING
MOSQUITOES**



★ **COVER UP. REPEL. CLEAN UP.** ★



★ MOSQUITOES IN THE ENVIRONMENT ★

Mosquitoes can affect many areas, particularly those near waterways and other water sources.

They have the potential to cause nuisance and transmit diseases. The risk and nuisance levels they pose can change depending on environmental conditions and the type of mosquito.

The continued development of areas in close proximity to mosquito habitat has also compounded the problem.

Mosquito numbers can vary significantly from year to year. Different climatic factors such as temperature, high tides and rainfall can greatly influence growth cycles.

★ YOUR COUNCIL WORKING IN PARTNERSHIP WITH ITS NEIGHBOURS ★

Mosquitoes do not recognise local government boundaries. Breeding in one area may affect residents in another. The Cities of Bayswater, Belmont and Swan and the Towns of Bassendean and Victoria Park are working in partnership to address this problem.

This partnership ensures information and resources are shared and that issues are addressed regardless of boundaries. Funding is sourced directly from the Department of Health, thereby minimising the financial burden on residents.

★ YOUR COUNCIL'S MOSQUITO CONTROL PROGRAM ★

Your council has a mosquito control program that runs throughout the year. These programs are made up of four primary measures:

1. **Source reduction**
2. **Monitoring and investigation**
3. **Management**
4. **Education**



★ SOURCE REDUCTION ★

Source reduction strategies are intended to eliminate mosquito breeding sites.

They attempt to ensure water does not accumulate and allow mosquitoes to breed. Examples include improved stormwater design and maintenance, filling depressions, removing disused material such as old tyres and ensuring structures such as swimming pools and gutters are properly maintained.

★ MOSQUITO MONITORING ★

Each council regularly monitors known breeding sites within their district.

Monitoring is usually conducted by setting adult traps and inspecting water bodies for mosquito larvae. Public complaints or reports of an infectious disease such as Ross River virus may lead to an investigation being undertaken.

Adult mosquitoes are trapped, counted and identified to species. This helps determine where they may be breeding and if the numbers are higher than normal.

Treatment will be undertaken where breeding is identified. During the warmer months treatments are ongoing.

If the breeding occurs on private land the local government can require the owner to take action to eliminate these breeding sites, such as disused pool, gutters, car tyres etc.



Adult mosquito trap

★ MANAGEMENT ★

Control options include chemical, physical and biological techniques. A range of factors including the severity of the mosquito problem, environmental conditions and impacts on the environment are considered when deciding the best control measures to be implemented.

Larvicides are commonly used as they are highly effective at killing mosquito larvae, preventing the emergence of adult mosquitoes. Importantly, they are target specific and do not affect other organisms in the environment when applied appropriately.

The traditional method of 'fogging' is no longer used in the metropolitan area due to its harmful effect on other organisms, such as bees.



Larvicide application

★ EDUCATION ★

Despite best efforts, mosquito problems may arise from time to time, particularly following higher than average rainfall or tides.

Education strategies are designed to inform and empower the community to take their own actions to minimise the effects of mosquitoes. They can include warnings at known problem areas or general information and advice.

★ WHAT CAN YOU DO? ★

You can help reduce mosquitoes by taking some simple steps to remove mosquito breeding habitats around your home.



Dispose of all containers that hold water.



Stock ornamental points with mosquito larvae eating native fish such as Western Pygmy Perch. Keep vegetation away from the water's edge.



Keep swimming pools well chlorinated, filtered and free of dead leaves.



Level or drain depressions in the ground that hold water.



Fit mosquito-proof covers to vent pipes on septic tank systems. Seal all gaps around the lid and ensure leach drains are completely covered.



Screen rainwater tanks with insect-proof mesh, including inlet, overflow and inspection ports. Ensure guttering is not blocked and does not hold water.



Empty pot plant drip trays once a week or fill with sand. Empty and clean animal and pet drinking water bowls once a week.



Some plants (especially bromeliads) hold water in their leaf axils. These should also be emptied weekly.

Residual chemical sprays can be used to further reduce mosquitoes. This should not, however, replace the removal and prevention of backyard breeding sites which is a more effective control method.

RAINWATER TANK ★ CHECKLIST ★

Rainwater tanks, if not installed correctly can produce large numbers of mosquitoes. Use this checklist to ensure you are not breeding mosquitoes.

Is there a seal between the roof and main body of the tank?



Is there a mesh cover on the inlet pipe?



Is there a mesh cover on the overflow pipe?



Is the man-hole lid adequately sealed?



If you answered **NO** to any of the above questions, then your tank has the potential to breed mosquitoes.

WHAT TYPE OF MOSQUITO ★ IS ANNOYING YOU? ★

There are almost 100 different species of mosquito in WA. The four main disease carrying mosquitoes found in the East Swan River Region are described below. Can you identify the mosquito biting you?

Southern Saltmarsh Mosquito: *Aedes camptorhynchus*

This species is prevalent in areas near the Swan River in winter and spring and is able to breed in both fresh and salt water. This mosquito can disperse over long distances especially through bushland or along creek lines.



Summer Saltmarsh Mosquito: *Aedes vigilax*

Is very abundant at times in areas near the Swan River during summer and into autumn. It breeds in salt water especially that which is left behind after spring tides and storm surge. An aggressive day time biter and will repeatedly try to feed on hosts. This mosquito is known to disperse over very long distances from its breeding site.



Domestic Container Mosquito: *Aedes notoscriptus*

This mosquito prefers relatively clean fresh water. It naturally breeds in tree and rock holes filled by rain but is also often found around the home breeding in receptacles like buckets, tyres, pot plant bases, bird baths and plants like bromeliads which hold water after watering. It mostly bites around dusk and does not disperse over long distances.



Common Banded Mosquito: *Culex annulirostris*

This mosquito likes to breed in warm fresh water that may be permanent or temporary. It breeds over much of the year but particularly after heavy summer rain. It mainly bites in the evening after sunset and can disperse long distances from freshwater wetlands.



★ AVOID BEING BITTEN ★

Prevention of mosquito bites is your first line of defence against mosquito-borne disease.

★ COVER UP. REPEL. CLEAN UP. ★

Many mosquitoes are at their biting best around dusk and dawn, but some will bite day and night.



COVER UP

Wear long, loose-fitting, light coloured clothing to cover exposed skin.



REPEL

Apply insect repellent containing DEET (diethyltoluamide) or picaridin evenly to all areas of exposed skin.



CLEAN UP

Stop mosquitoes breeding around your home by removing, emptying or covering water holding containers.



★ GENERAL REPELLENT GUIDELINES ★

Insect repellent containing diethyltoluamide (DEET) or picaridin are the most effective. As a general rule, the greater the percentage of DEET or picaridin, the longer the product will remain effective.

- ★ Always follow instructions on the label.
- ★ Choose a repellent with an appropriate concentration of DEET or picaridin to match the length of time you are outdoors.
- ★ Apply directly to skin (except face) and spread evenly with hands.
- ★ For face application, apply first to hands and then spread evenly on face, avoiding mouth and eyes.
- ★ Repellents will not be as effective if applied sparingly to the skin.
- ★ Reapply repellent according to the label.

★ PROTECT YOUR BABY OR TODDLER ★

Where possible, avoid exposing your baby or child to mosquitoes. Consider staying indoors, using pram netting or dressing them in loose, long-sleeved clothing, socks and shoes.

Mosquito repellents for children

- ★ **Under 12 months** - repellents containing DEET or picaridin are not recommended.
- ★ **From 12 months** – repellents containing up to 10% DEET or picaridin can be used.

Application guidelines for children

- ★ Do not allow children to apply repellent.
- ★ Apply repellent firstly to the hands of the carer and then spread evenly to exposed skin of child.
- ★ Avoid applying repellents to hands, near the eyes or mouth.
- ★ Do not apply repellent under clothing.

★ AVOID BEING BITTEN ★

There are a number of other things you can do to help avoid being affected by mosquitoes:

- ★ Recognise and avoid areas of mosquito activity e.g. swamps, salt marshes, billabongs and river floodplains particularly around sunrise and sunset.
- ★ Plan outdoor activities. If you are hosting an outdoor BBQ have repellent available for your guests. They may not have thought ahead and you want to make sure your function is remembered for the right reasons.
- ★ Screen all doors and windows on your house and make sure there are no holes or tears.
- ★ Consider using residual surface sprays on structures particularly in shaded and sheltered areas. Use as per the label instructions.

★ WHAT IF I AM BITTEN? ★

The main mosquito-borne disease risks to people in the East Swan River Region are Ross River virus and Barmah Forest virus.

The only way to confirm if you have a mosquito-borne disease is to visit your doctor for a specific blood test. There is currently no cure and no vaccine for any of these diseases. The only way to prevent infection is to avoid being bitten by mosquitoes.

Common symptoms of Ross River & Barmah Forest viruses include:

- ★ skin rashes
- ★ painful or swollen joints
- ★ sore muscles
- ★ flu-like symptoms (fever, chills, headache)
- ★ tiredness or weakness.

Symptoms can last for several weeks to months, and in some cases, years. See your doctor if you are experiencing symptoms.

★ WHAT ABOUT MY PETS? ★

In addition to transmitting diseases to people, mosquitoes are also responsible for the transmission of heartworm in pets. Heartworm can affect dogs and cats, although infection is more common in dogs. Symptoms include coughing, fatigue, weightloss, listlessness and a rough hair coat. In severe cases, heartworm can be fatal.

The risk of heartworm infection can be lowered by reducing mosquitoes around your property. There are also a variety of products available for heartworm prevention. Be sure to consult your veterinarian before starting a preventative medication or if your pet is unwell.



★ FURTHER INFORMATION ★

If you have any questions or wish to report suspected mosquito breeding sites please contact an Environmental Health Officer at your local authority.

Alternatively, you can visit:

healthywa.wa.gov.au/FighttheBite