Mosqutio Management Plan

MOUNT BARKER
DISTRICT COUNCIL

Contents

1. Introduction

Mount Barker District Council is located between 20 and 45 kilometers south-east of Adelaide CBD.
Being one of the fastest growing Councils in Australia, the population forecast for 2023 is 41,526 residents. Expected growth in population is double that of Greater Adelaide with a forecast of 55,606 residents by 2036. The population density is 69.10 persons per square km within 594.7 square km total area.

The district is surrounded by wetlands, trees, wildlife habitat, parks and open spaces. Traditionally a farming area with many areas replaced with new subdivisions in recent times. As a fast growing district, one of our challenges is to manage public health issues such as mosquito management in areas of high population/development. The area has seen a steady rise in climate temperatures with the mean maximum temperature of 20.5°C and mean minimum temperature of 8.8°C.

This management plan provides direction for mosquito management in the Mount Barker District Council to reduce the number of human arbovirus cases in high-risk locations. The plan also addresses local government responsibilities under the South Australia Public Health Act 2011 in line with the varying levels of risk for each season.

The plan incorporates an action plan through identifying high-risk sites, dominant mosquito species from recent investigations and the appropriate response required during low, medium and high-risk seasons.

Developing a Mosquito Management Plan will greatly assist Council with determining an appropriate response for each mosquito season, offer guidance and direction to future Council employees and provide a consistent process and transparency to the community and SA Health. It will also provide guidance around budget and resourcing requirements for each respective season.

2. Objective

The purpose of this plan is to provide guidance on a coordinated approach for the MBDC to manage mosquito numbers in potential breeding grounds, and includes surveillance, control and health promotion.

This plan aims to:

Protect the public health of community members

Detail surveillance and control strategies based on low, medium and high risk seasons in an easily accessible document for staff

Minimise the impact of mosquito-borne illnesses on the community

Work under the guidance of SA Health and alongside other Councils across the State in a coordinated response to mosquito management

Educate internal and external stakeholders

3. Legislative Overview

Section 37 of the South Australian Public Health Act 2011 details the responsibility of Councils in regards to public health within their region (refer to Figure 1). It is Council's responsibility to identify public health risks and protect their residents from these identified risks. Mosquitoes are identified as a public health risk and as such, this plan has been developed to outline how the Council is protecting its community and meets the Regional Public Health Plan's Objective 2.5 and 4.1:

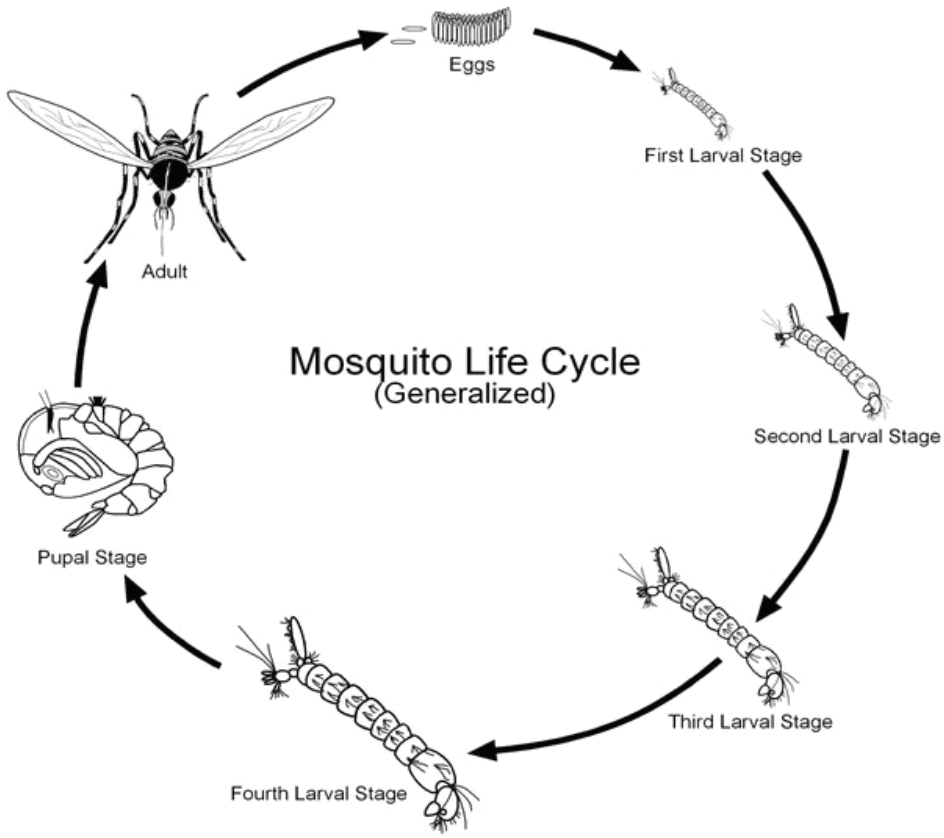
2.5 – Support health and wellbeing through education, awareness raising and appropriate responses to public health issues and risks, including climate change.

4.1 – Build a community and facilitate connection and partnerships with government and non-government organisations to achieve real and long-lasting improvements in safety and wellbeing.

4. Mosquito Biology and Ecology

In the space of public health, mosquitoes are generally classified as nuisance or a vector of infectious disease. Nuisance species are exactly that- those annoying and pestering mosquitoes that typically leave behind itchy welts after biting. The mosquitoes that bite are the females. The females are blood-feeders and the males feed generally on flower nectar. These nuisance species, although annoying, are typically not considered a risk to public health due to not being known vectors, or carriers of mosquito-borne disease. Mosquito-borne disease, as the name suggests, is disease transmitted to humans via infected adult female mosquitoes. Mosquitoes capable of transmitting mosquito-borne disease are vector species.

The life cycle of the mosquito generally takes between 7-10 days, as shown in Figure 1 below:



Source: www.mosquitoes.org/LifeCycle.html

Table 1: Sample of mosquito species in MBDC including vector status and breeding habits (Fricker, SR and Williams, CR 2019)

SPECIES	DISTRIBUTION	BREEDING SITES	PERIOD OF ACTIVITY	DISEASE TRANSMISSION
Ades notoscriptus	Domestic distribution but also in forested areas with tree-holes and/or rock pools; regional distribution in the Murray Valley and South East.	Tree-holes and rock pools in creek line environments, artificial containers in domestic environments.	Readily attack by day in shaded areas but will also bite during early morning, evening and night.	Major domestic pest species, known laboratory vector of Murray Valley Encephalitis (MVE) and Ross River virus (RRV) and important vector of dog heartworm.
Culex annulirostris	Widespread; regional distribution in the Murray valley.	Typically in freshwater swamps, lagoons, transient grassy pools and occasionally in large containers.	Most active from sunset for around 2 hours and again at dawn but to a lesser extent.	Laboratory vector of MVE, Kunjin virus (KUN), RRV, Japanese Encephalitis virus (JEV) and dog heartworm.
Culex molestus	Widespread; regional distribution in the Murray Valley.	Typically suburban sewage ponds, septic tanks, foul ground and container water and drainage pits.	Attack readily at night.	Can be a serious domestic pest, laboratory vector of MVE.
Culex quinquefasciatus	Widespread in urban areas; regional distribution in the Murray Valley and South East.	Near human habitation in man-made containers such as septic tanks, water tanks, wells, tyres, gutters and discarded containers.	Tend to bite more towards the middle of the night	Can be a serious domestic pest, laboratory vector of MVE although appears to be a poor vector of arboviruses and heartworm in general.
Coquillettidia linealis	Upper and lower Murray Valley.	Thought to attach to marginal reeds of vegetated permanent water bodies.	Attack readily at all times.	Can be a nuisance pest in some coastal and inland locations, laboratory vector of RRV.
Cx.globocoxitus	North Western Adelaide, along River Murray and rural saltmarsh areas.	Salinity and short emergent vegetation and bare substrate.	Continuous insect development not affected by Winter.	Can sustain MVE in the lab, RRV and Barmah Forest virus (BFV) are not epidemiologically important vectors.

Mosquito-borne diseases common in South Australia include Ross River Virus (most common) and Barmah Forest virus (SA Health, 2020, Ross River Virus Infection). Although debilitating to an extent, Ross River and Barmah Forest are not considered serious diseases. Symptoms commonly experienced if one succumbs to Ross River Virus for example include, amongst others:

- Rash
- Flu-like symptoms
- Joint and muscle pain, swelling or stiffness
- Tiredness or weakness
- Feeling unwell

These viruses have an incubation period (time between becoming infected and developing symptoms) of usually 1-2 weeks and symptoms tend to disappear within 6 weeks (SA Health, 2020, Ross River Virus Infection).

Ross River virus (RRV) infection is commonly reported along the Murray River and Lakes, the Eyre Peninsula, the Flinders Ranges and Outback and coastal mangrove area (including occasional cases from the Adelaide area). RRV lifecycle is maintained by a mosquito-mammal cycle (e.g. kangaroos, wallabies and possums).

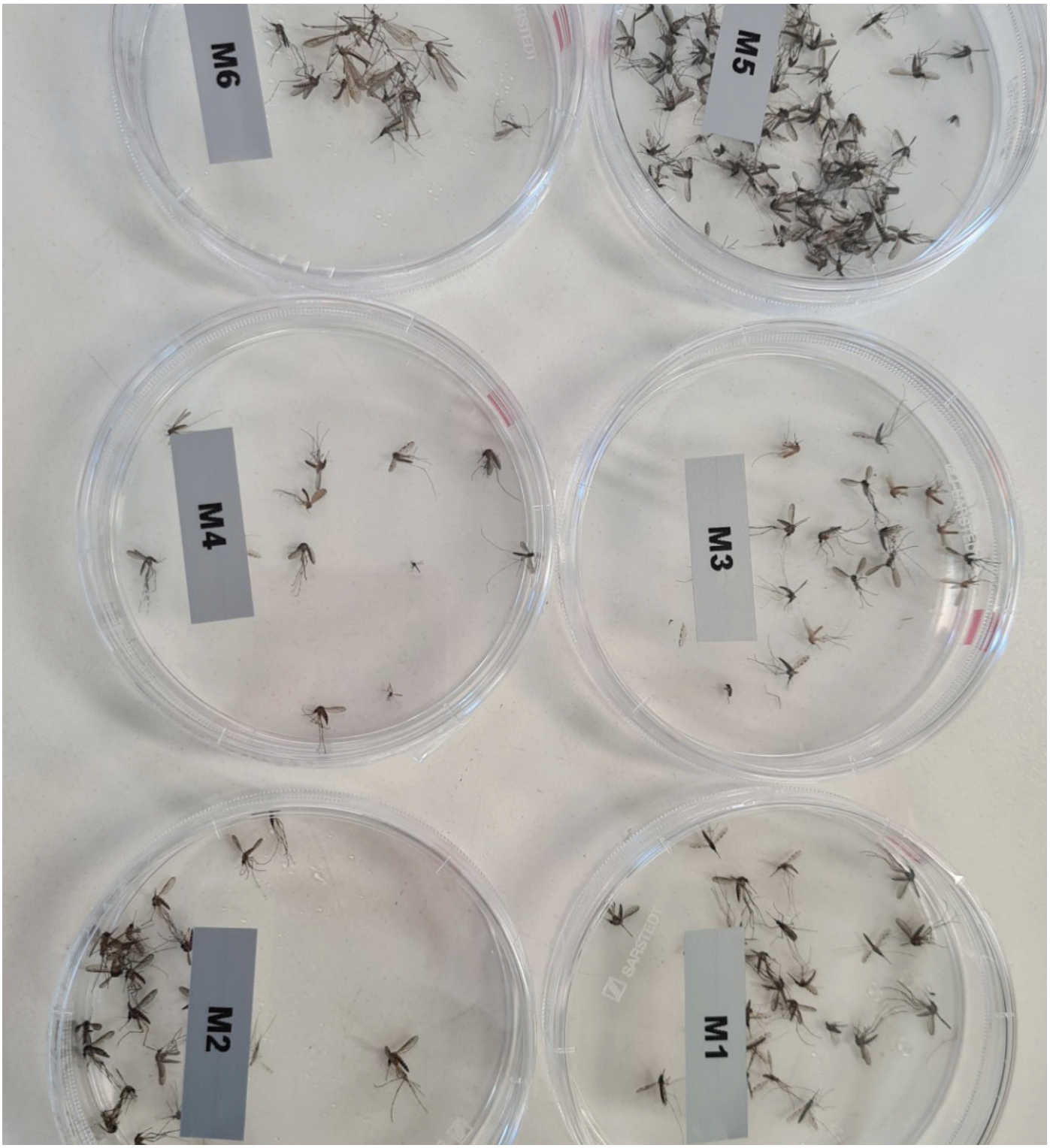
Barmah Forest virus (BFV) incidence of infection appears to have increased in recent years. Little is known about the reservoirs or amplifying hosts of BFV although antibodies have been detected in a variety of species, including cattle, horses, sheep and kangaroos.

Murray Valley Encephalitis virus (MVEV) and Kunjin virus (KV) - variant of the West Nile virus, are both rare and can cause fatality in about 20% of severe cases and permanent neurological damage in about 40% of cases (SA Health, 2020, Murray Valley Encephalitis).

Water birds are recognized as the primary hosts for MVEV and KV.

Japanese Encephalitis virus (JEV) can cause a rare but potentially serious infection of the brain. South Australia recorded its first case in February 2022. In response, SA Health raised the threat level as 5 confirmed and 4 probable cases were identified during February and March.

The normal lifecycle of JEV is between water birds and mosquitoes, which may then accidently spill over to pigs and horses. With transmission occurring when mosquitoes bite an infected animal and then bites a human.



5. Domestic Breeding Sites

Mosquitoes are capable of breeding in various locations within back yards and front yards of private property, providing these sites have the ability to hold water. Commonly found domestic breeding “hot spots” include:

- Pot plant bases/drip
- Cans
- Bird baths
- Old rubber tyres
- Buckets
- Ornamental ponds
- Rainwater tanks and drain sumps
- Gutters
- Wading pools and unused/abandoned swimming pools

The lack of circulation and effective drainage enables these bodies of water to become an ideal

environment for mosquito breeding especially following heavy rain. . Man-made stormwater infrastructure

such as stormwater sumps, drains and swales also provide ideal breeding environments following rain events.

Domestic breeding sites are of a concern for council as much as non-domestic sites.

Known breeding sites on council land have been documented as part of the surveillance activities during the 2022/23 mosquito season.

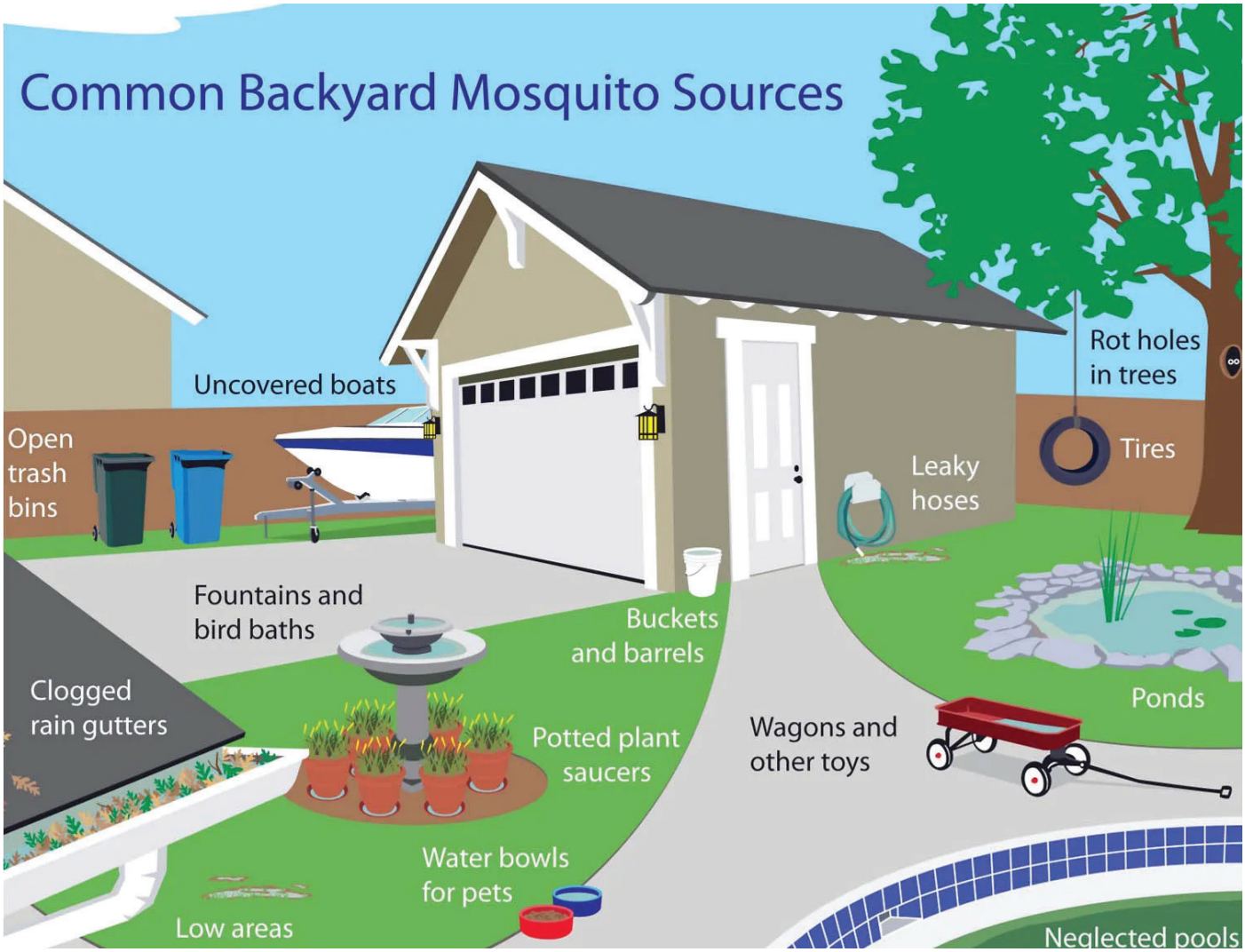


Figure 2: Resident’s Guide to Common Backyard Mosquito Sources
Source: Metropolitan Mosquito Control District

Some sites originated from community complaints and are scheduled in for routine chemical control during the warmer months. Table 2: Surveillance sites for 2022/23 season below:

Location and Details	Aerial Image	Observations/ comments
Springlake, Mt Barker		Natural predators present
Newenham, Mt Barker		Stagnant water, monitor for BTI application
Flaxley, Mt Barker		Stagnant water, monitor for BTI application

6. Nuisance and Disease Risk

SA Health increased their mosquito response to level 3 and declared the JEV disease of national significance when a cluster of acute 9 human cases (5 confirmed and four probable) of JEV were notified in SA in February 2022. This presented a significant threat to MBDC due to the passing of one probable case within the District.

The cluster coincided with the detection of JEV in pigs in various loctaions in south east Australia including South Australia. Pigs are a known amplifer of JEV (see figure 3)

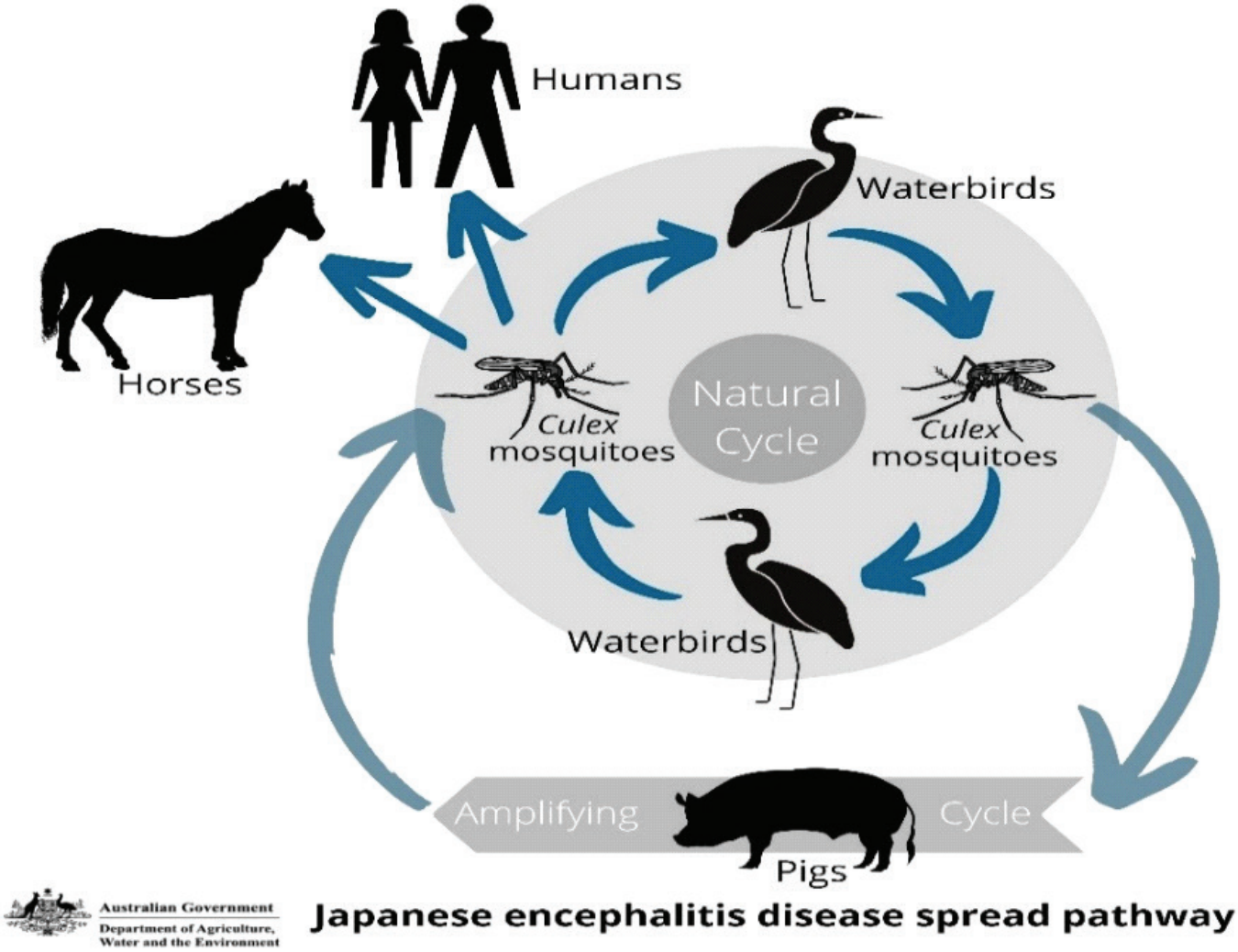


Figure 3 Japanese encephalitis disease spread pathway. Source: Department of Primary Industries and Regions, SA (2022)

Horses and humans are dead end hosts, they cannot directly transmit the virus to humans but can act as reservoirs.

7. Mosquito Management Strategies

A combination of strategies can be employed to control mosquitoes leading up to the breeding season. Actions are guided by the South Australian Integrated Mosquito Management Strategy (SAIMMS) and may include a combination of:

Public Education and Awareness

- Inform the public of their responsibilities; reduce breeding sites around their own properties.
- Use of personal protection measures to protect against nuisance and disease transmitting mosquitoes

Physical Control

- Maintenance of open stormwater drains to remove silt and weeds to ensure water is not held for more than five days
- Reduction of emergent vegetation in known breeding sites
- Slashing of vegetation which provides harbourage for adult mosquitoes
- Cleaning up yards to remove water collecting containers
- Ensuring rainwater tanks are sealed or openings covered with mosquito proof screens
- Ensuring septic tanks are sealed and vents fitted with mosquito proof screens

Biological Control

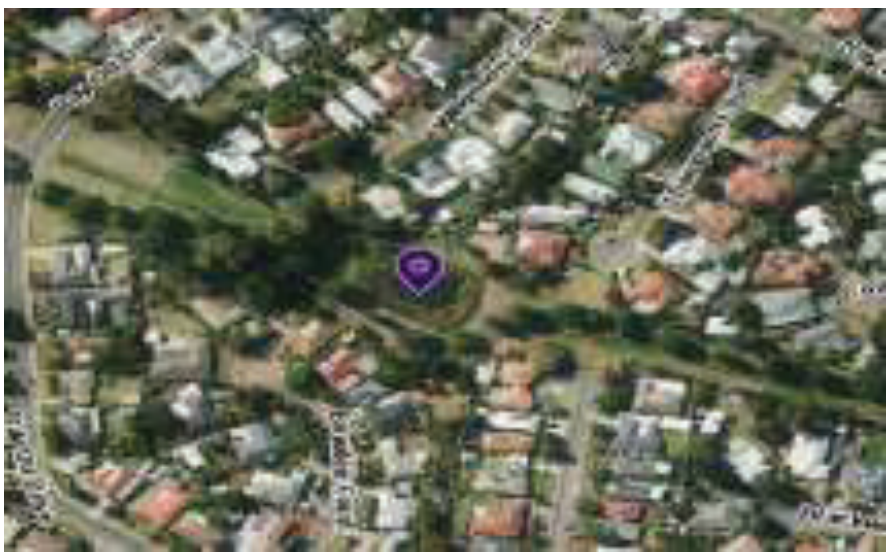
- Mosquito larvae are a food source to predatory aquatic life in natural and artificial lakes/ponds/ creeks/dams.

Chemical Control

- Larvicides (e.g. (S)-Methoprene) and BTI applied by Environmental Health Officers (EHOs) into breeding sites to reduce the number of adult mosquitoes. (S)-Methoprene is not a direct toxin; it does not harm mammals, waterfowl or beneficial predatory insects.
- Adulticide surface spray to treat ceiling and corners, under and around fixtures where mosquitoes are likely to roost in public toilet building.

Table 3: Treatment sites for 2022/23 season below:

Location and details	Aerial Image	Treatment Chemical
Fidler Lane, Mt Barker		BTI Liquid Spray
Sports Summit Recreation Park, Mt Barker		BTI Liquid Spray
Quarter Lane, Mt Barker		BTI Liquid Spray

Heyer Lane, Nairne		**S-Methoprene Briquets**
Harwood Ave, Mt Barker		**S-Methoprene Briquets**
Cotterdale Ave, Mt Barker		**S-Methoprene Briquets**
Ray Orr Drive, Mt Barker		**S- Methoprene Briquets**

8. Existing Data

Mosquito surveillance plays an integral role in mosquito management and is undertaken to monitor mosquito populations in a given area. Surveillance allows pest and vector mosquito species to be identified and provides a means to monitor abundance and fluctuations in populations over time. Arbovirus presence and activity can be monitored through viral analysis of mosquito samples, providing an early warning system for virus presence and the need for the protection of public health.

In December 2021, MBDC started undertaking mosquito surveillance in the form of trapping. Traps are baited with dry ice which emits carbon dioxide into the surrounding atmosphere and fitted with a small battery operated fan. Mosquitoes are attracted to the carbon dioxide and consequently fly towards the trap. The suction of the fan draws the mosquitoes into a catch container fitted with a net, which they are unable to fly out of. Traps are generally set late afternoon and collected early morning from pre-determined locations. The trapped mosquitoes are then placed in the freezer for a short period of time to enable temporary paralysis shock before packing for transportation to the lab for species identification, enumeration and viral screening.

Initially, traps were set monthly at five pre-determined sites across the Council. These sites were identified from customer requests to investigate mosquito related issues and changed depending on results. In response to the heightened risk level mosquito surveillance frequency was increased during March and April 2022. A further seven trap locations were added to the surveillance program.

In September 2022, MBDC continued to undertake mosquito surveillance in the form of trapping until April 2023. Traps were set at 15 locations depending on surveillance results, complaint notification and advice from SA Health. Council conducted larvae surveillance at 49 sites around the district and treated 16 sites identified with larvae. Some sites required follow up surveillance. A total of 95 visits were undertaken and a total of 280 hours spent on surveillance and control activities.
Overall, a total of 13 different mosquito species were identified from our traps.

See figure 5 for core trap locations.

Trap Code	Trap Name	Location	Latitude/Longitude
M1	ESC	Mount Barker	-35.068/138.871
M2	Lilac Parade	Mount Barker	-35.090/138.843
M3	Kennebec Court (Laver Rd)	Mount Barker	-35.086/138.866
M4	Rainbird Drive	Mount Barker	-35.081/138.846
M5	Parkview Drive	Mount Barker	-35.071/138.882
M6	Rayson Way	Mount Barker	-35.085/138.882
M7	Rule Court	Littlehampton	-35.085/138.882
M8	Crystal Lake	Macclesfield	-35.041/138.864
M9	River Road	Hahndorf	-35.181/138.837
M10	Aston Hills	Mount Barker	-35.077/138.882

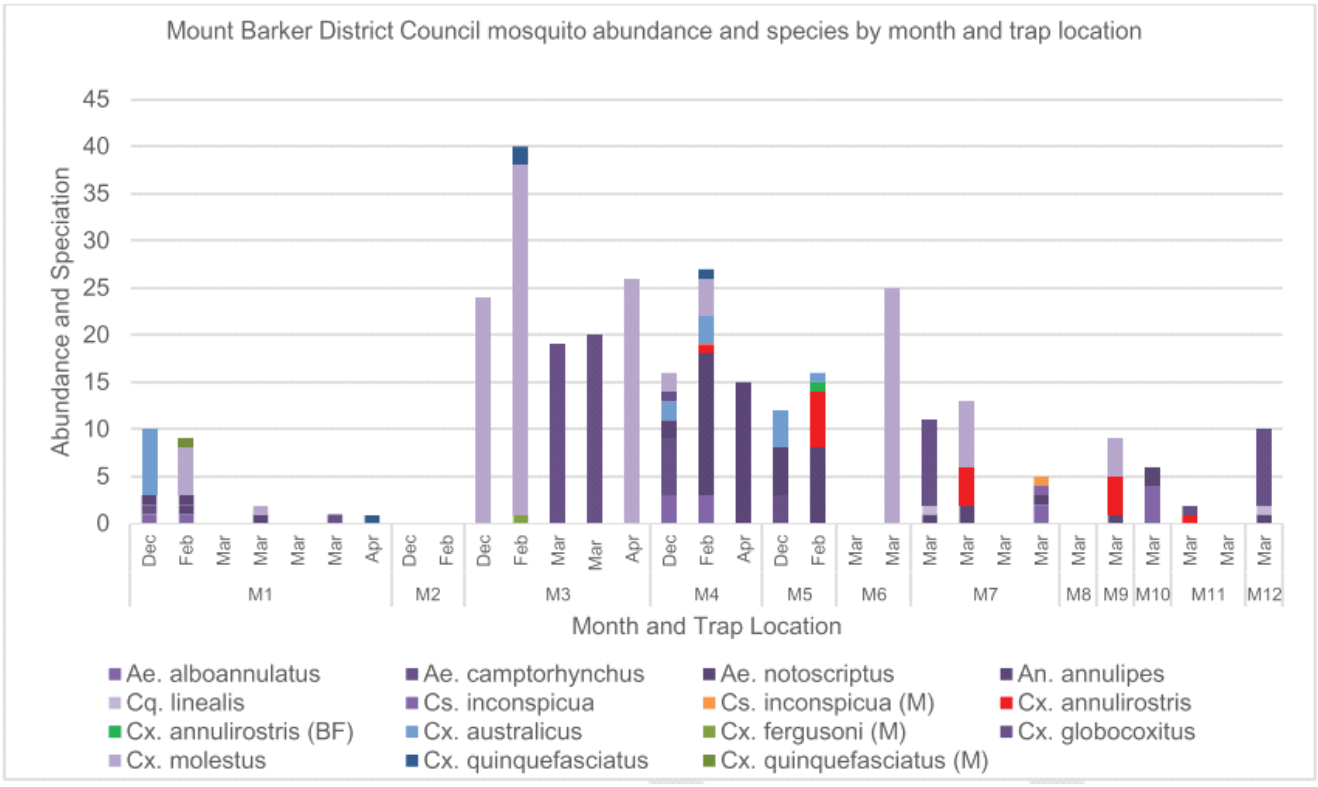


Figure 4 Mount Barker District Council mosquito abundance and species by month and trap location. Source: SA Health

Surveillance data results from 2021/22 mosquito season presented nuisance species at the specific trapping sites. A total number of 319 mosquitoes were trapped at the 12 sites. Further breakdown of results showed 15 different species, with the most abundant species (42%) trapped being Culex molestus, followed by Culex globocoxitus (18%) and Aedes notoscriptus (11%) of total season catch.

Throughout the mosquito season, Council may receive complaints relating to high mosquito numbers. The main aim will be for Council's EHO's to educate the community and promote SA Health's 'Fight the Bite' campaign. In cases where enforcement action is required, steps can be taken under the South Australian Public Health Act 2011. Refer to the flow chart in Figure 5 below for a suggested response to complaints of this nature.

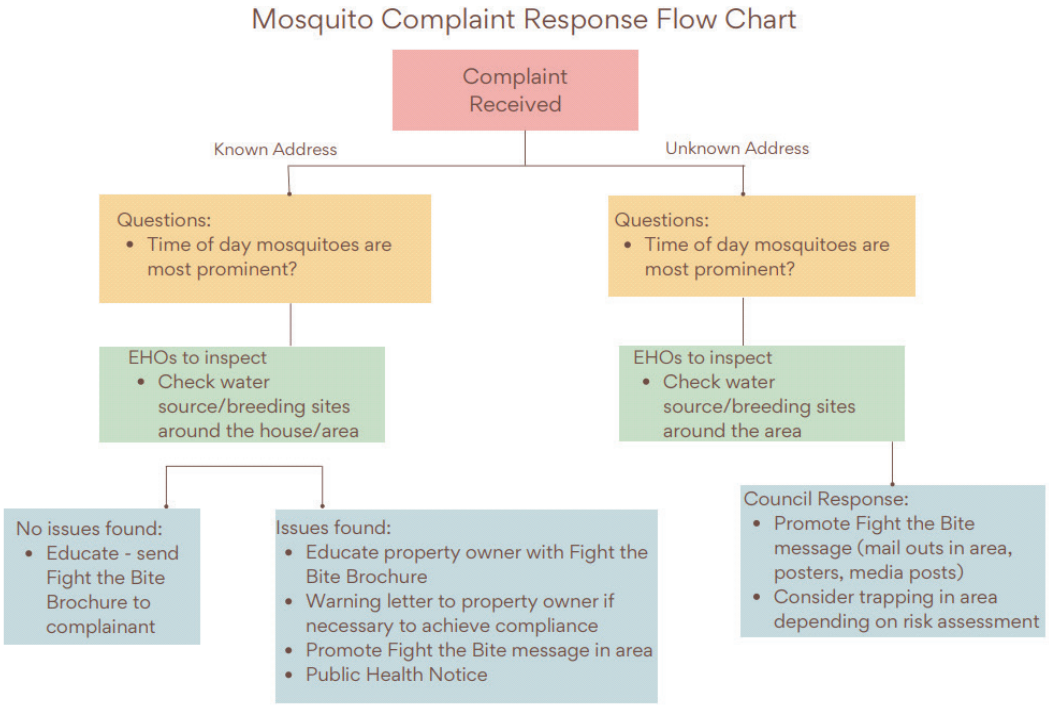


Figure 5

Mosquito numbers are influenced by rainfall and temperature during the peak period for mosquito breeding which usually spans the months of September through to April.

A La Nina event during the 2020-21 and 2021-22 season and above average rainfall during spring/summer of 2020-21 and 2021-22 and above average RRV/BFV case notifications increased the risk of transmission of flaviviruses during mosquito season, which resulted in increased responses in accordance with the Hierarchy of Response (outlined in the SA Arbovirus Coordinated Control and Operations Plan).

La Nina event extended throughout the early 2022-23 season an above average spring and summer rainfall in northern and eastern Australia. SA Health increased the mosquito borne disease threat to level 3 (high) during this time.

9. Ongoing Monitoring and Surveillance

Once management strategies have been implemented, ongoing monitoring and surveillance begins. Data results from 2021/2022 surveillance program are referred to, to outline the plan for future mosquito monitoring and surveillance sites.

For example, the greatest single catch of the previous season was in February 2022 at Kennebec Court (M3) trap site of which 37 were Culex molestus.

Telescopic larval surveillance initiated in August assists with selecting potential trapping sites. With the aim to start trapping in September through to April of the following year.

For 2022/23 season, Environmental Health Officers selected six permanent trap locations (Figure 6) for ongoing monitoring and surveillance. This will enable:

- Timely decisions and actions to potential risks
- Development of effectiveness of management strategies
- Increased baseline investigations and information of known risk areas
- Identification of potential new breeding sites

All the information collected throughout the season is collated and related back to the specific objectives from the beginning of the season to inform the baseline data investigation for the next season's program. Data such as:

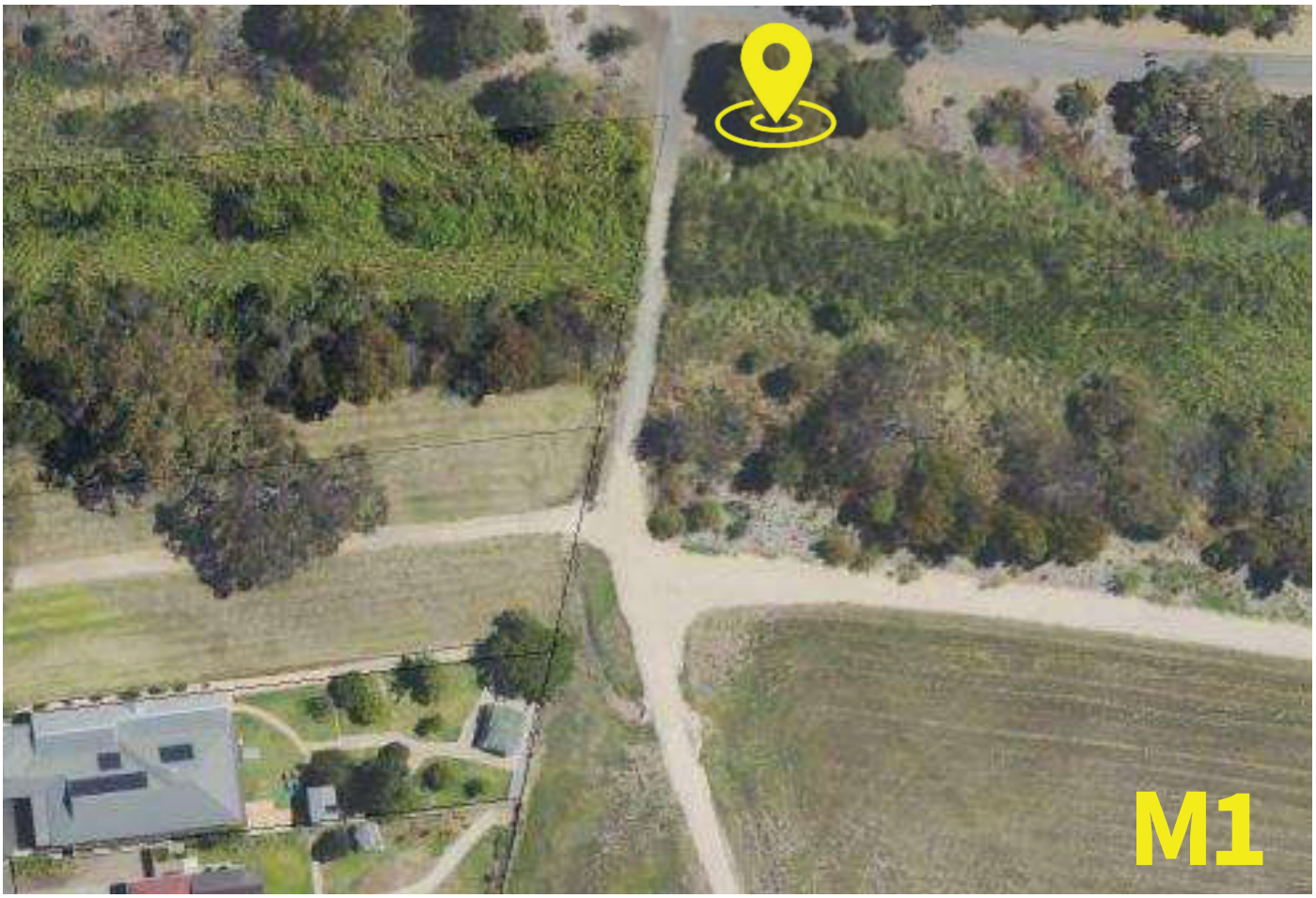
- Climatic and weather forecasts
- Adult mosquito trapping and viral screening results
- Larvae surveillance
- Tracking of reservoir species migratory patterns
- Notifiable human disease data

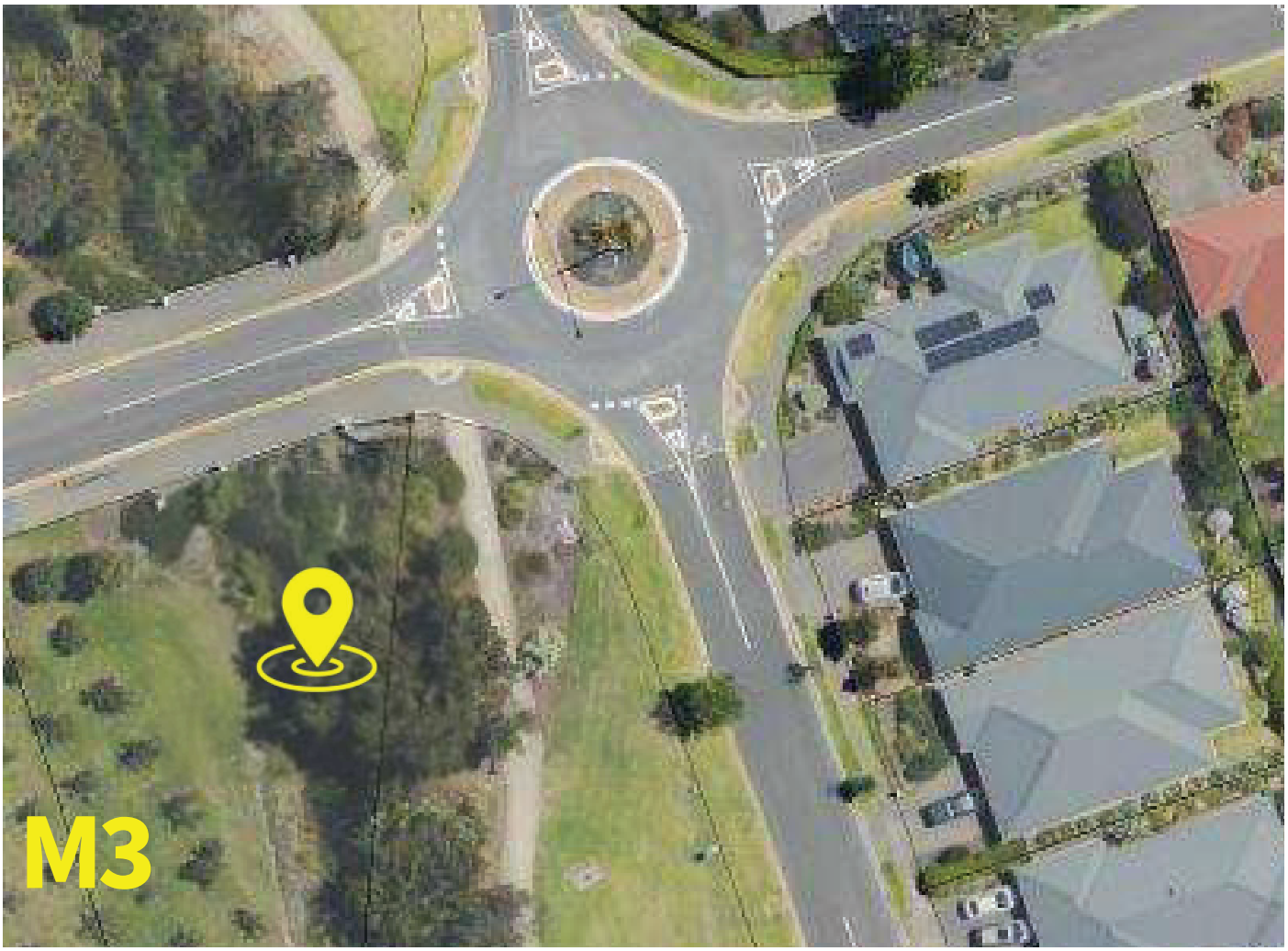
On 30th August 2023, SA Health lowered the mosquito-borne disease threat level to 2 (medium) in South Australia. This was because long range BOM forecasts predict below medium rainfall and above medium maximum temperatures in South Australian for September to November 2023. These conditions usually correspond with reduced mosquito and arbovirus activity.

For the 2023/24 season, EHOs identified 5 high risk locations to conduct fortnightly surveillance trapping. Reduced number of locations compared to the previous year due to the reduced mosquito-borne disease threat level. Trapping frequencies may change in the near future depending on the graded response in accordance with the SA Arbovirus Coordinated Control and Operations Plan hierarchy of response.

See figure 6 below for core locations.

Trap Code	Trap Name	Location	Latitude/Longitude
M1	ESC	Mount Barker	-35.068/138.87
M3	Kennebec	Mount Barker	-35.086/138.865
M5	Parkview Drive (1)	Mount Barker	-35.071/138.882
M7	Parkview Drive (2)	Mount Barker	-35.072/138.880
M16	Rule Court	Littlehampton	-35.041/138.865


M1


M3


Parkview Drive
98
M5


Parkview Drive
M7


M16

10. Public Education

The mitigation of risk associated with mosquito-borne disease is a case of “prevention is better than cure” and being proactive rather than reactive. There is currently no vaccine for Ross River, Barmah Forest, Murray Valley Encephalitis or Kunjin virus. The most effective strategies in the fight against mosquito-borne disease are following the “Fight The Bite” principles as follows in this brochure

The communications section will be pivotal in helping to get the message out there for our health promotion activities, especially with approving and posting information on Social Media.

Public Health Promotion options:

- Social Media posts (weekly)
- ‘Fight the Bite’ promotion, including display of posters in businesses and public toilets
- Write up in Council website
- Radio interviews or advertisements in the local newspaper
- Send out pamphlets with Council rates notices for predicted high risk seasons
- Education resources or presentations for schools

11. Stakeholders

Environmental Health Officers will co-ordinate the majority of actions in this mosquito management plan, as details in Table 4. Other internal departments also play a role in the successful implementation of this Mosquito Management Plan and future planning and future development of the plan.

Planning Department:
Planning officers should be consulting with the Environmental Health Department regarding any developments that are proposed near known breeding sites or have the potential to create new breeding sites.

Assets, Infrastructure and Engineering:
Consideration into the development of areas that are near known breeding site or have the potential to harbor water should be considered in long-term development plans.

Events Team:
A number of Council run events occur throughout the mosquito season. Consultation needs to occur with the Environmental Health Team to provide any technical advice or health promotion materials.

SA Health as the lead agency in South Australia for human disease epidemics, including outbreaks of serious human arboviral disease. Working collaboratively with local councils to support arbovirus prevention and mosquito surveillance and control programs.

12. New Developments

Population growth over the next 20 years will see the town of Mount Barker expand into a small city, the second biggest in South Australia. It is Council's goal to attract $2.8 billion in housing and major project investment over the next two decades to keep up with the increasing demand.

As part of the development approval of stormwater infrastructure process, discussions around mosquito mitigation breeding can be worked through with our engineering department and environmental health team. Taking into consideration the location of new developments to close proximity of natural mosquito breeding habitat, or if the development itself will create additional mosquito problems through the introduction of constructed water bodies and other water holding infrastructure. To reduce the potential impact of mosquitoes on new residents.

13. Record Keeping

The collection of correct and complete long-term data will allow for comparison and modelling of future trends and risks. Data results are summarised in an annual report including current and changing knowledge in relation to the mosquito activity and management.

14. Budget and Resource Requirements

Council applied for Mosquito Management Subsidy Funding with SA Health. This program allows Council to seek 50% re-imbursement of expenses claimed throughout the mosquito season.

Total expenditure for the 2021/22 monitoring season was $4894.02 of which Health Protection Programs reimbursed 50% ($2447.01)

Federal funding for 2022/23 monitoring season allows Council to seek 100% reimbursement up to pre-approved limit of $30,000.

Updated pre-approved federal funding for 2023/24 monitoring season is $10,000.

Ongoing mosquito surveillance and control subsidy funding supports MBDC to undertake necessary activities

15. Training and Staff Development

For successful and ongoing implementation of Council's Management Plan, staff must be provided with comprehensive training that provides necessary skills and knowledge to undertake their role. Training of staff members is essential to ensure mosquito control or surveillance can be undertaken smoothly. This also highlights the importance of ensuring that Council is appropriately resourced to supply vital public health services.

The main training areas that staff members require skills and knowledge in include:

- Basic mosquito entomology
- Collection of mosquito samples, including the set-up and collection at trap sites
- Identification of larvae breeding sites
- Treatment and monitoring larvae sites
- Work Health & Safety (WHS) knowledge for the handling and application of chemicals and the appropriate use of Personal Protective Equipment (PPE)

SA Health offer free training (day course) to relevant staff with site visits to demonstrate sample collection.

Information and training videos on how to undertake adult trapping and larval dipping can be found on the SA Health website.

16. Review

Annual reviews of this plan are to be undertaken to assist in the effective implementation of Council's proposed Mosquito Management Response. Updates and changes will allow for continued growth and improvement to achieve Council's aims and objectives in this vital public health service.

Ensuring that there is an appropriate budget and resourcing provisions is essential in providing this service, especially with the changing dynamics of each season.

South Australian River Murray Mosquito and Arbovirus Surveillance

Standard Operating Procedure

Report and request form (iApply)

This standard operating procedure provides instruction for submission of report and request forms using the iApply webpage. Submission of the original paper report and request forms will no longer be accepted.

Submission of the report and request form is an essential component when submitting mosquito samples to the laboratory, Agriculture Victoria.

Completing the form:

1. Access the form from this link here.
2. Fill in all the details in the form.

***Note: All councils have pre-written trap codes – see appendix 1. Please only use these trap codes for all fixed trap locations.**

3. For these fixed trap locations, **only enter trap code** in the 'trap details' section.
4. For new trap locations, enter all components in the 'trap details' section.
5. Select the overnight weather conditions including minimum and maximum temperature.
6. Select the Morphological ID check box if you want the trapped mosquitoes speciated
7. Select the qPCR screening checkbox if you want the lab to analyse the mosquitoes for viruses.
8. Enter the Australia Post tracking number.
9. Enter sender details.
10. Click next

Government of South Australia
SA Health

South Australian River Murray Surveillance Mosquito and Arbovirus

Standard Operating Procedure Mosquito packaging and delivery

This standard operating procedure (SOP) provides information for packaging and shipment of trapped mosquitoes to AgriBio for identification and virus detection.

If required, HPP can provide on-site training for staff in relation to setting and collecting traps and the process of shipping trapped mosquitoes to the laboratory for analysis.

Shipping for analysis

1. Remove the trap buckets from esky or cool bag.
2. Place trap bucket and net into freezer for 30 minutes or until mosquitoes are no longer active
3. Transfer each catch into separate petri dishes and label with the provided sticker. If there are too may mosquitoes for one petri dish, package across multiple petri dishes, ensuring all are labelled.

4. Secure the petri dish lid with tape.

Note trap failures: It is important to differentiate a trap failure from a zero trap catch. Record trap failures as "T/F"; and zero trap catches as "NIL" on the report and request form.

5. Place sealed petri dishes into a cooler bag with a minimum of 3 x 350 ml (medium) **or** 2 x 500 ml (large) ice bricks see example Figure 1 (to keep the samples cool and limit heat desiccation). **Samples sent with inadequate ice bricks will not be processed**.
6. Package the petri dishes in bubble wrap to prevent damage during transport (Figure 2). Double check to ensure the petri dishes are labelled correctly.
7. Place the cooler bag into a 5kg Australia Post Express satchel.
8. Seal the satchel and remove the barcode to allow for parcel tracking. Deliver the satchel to Australia Post in time to ensure overnight delivery to AgriBio, Bundoora.

Government of South Australia
SA Health

Reporting and forms

1. The report and request form process can be found in the iApply SOP.
2. Complete and submit the **Local council subsidy reporting** spreadsheet to HPP monthly from September to April.
3. Ensure reports are submitted according to the specified dates in the **Local council subsidy reporting** spreadsheet.

Additional Comments:

1. Mosquitoes are ideally sent to AgriBio, Bundoora on the day of collection.
2. If the delivery of the mosquitoes is unavoidably delayed, the samples must be stored cool until delivery can be arranged; ideally mosquitoes are to be kept in the freezer (-20°C). Samples stored at room temperature will rapidly deteriorate and may be of little value for identification or virus detection.
3. Traps which have collected less than 10 mosquitoes are not to be sent into the lab for analysis.
4. The cooler bag and ice bricks will be returned via standard mail once a month.

It is CRITICAL that mosquitoes are transported cold.

Mosquito delivery

Send all mosquito samples to:

AgriBio-Specimen Reception

Attention: Arbovirology,

5 Ring Road

La Trobe University

Bundoora

Victoria 3083

Figure 1. Premium ice bricks are required to keep samples cold (e.g., 4°C) during transport. Please use 3 x 350ml (medium) **or** 2 x 500ml (large).

Figure 2. Wrap petri dishes in bubble wrap and pack into a cooler bag with ice bricks.

For more information on:

- Mosquito delivery requirements or
- Sample packaging

Please contact Specimen Reception on 0390327515

For more information

Health Protection Programs
Health Protection and Regulation
Department for Health and Wellbeing
PO Box 6
RUNDLE MALL SA 5000
Email: mosquito@sa.gov.au
Telephone: 08 8226 7100

www.sahealth.sa.gov.au

18. Acknowledgements

Special thanks to:

- Health Regulation and Protection Division of SA Health
- Government of Western Australia, Department of Health, Public Health and Clinical Services
- South Australian Murraylands and Riverland Local Public Health Authorities: Berri Barmera Council, District Council of Loxton Waikerie, Renmark Paringa Council Coorong District Council, Mid Murray Council & Rural City of Murray Bridge

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