Adapting to the increasing risk of mosquito-borne disease

Overview

Tackling Mozzies Together is an important public health and adaptive capacity building initiative that has improved regional resilience to the climate change driven threat of increased mosquito-borne disease in the Northern Rivers region of NSW.

Northern Rivers comprises seven local government councils who all successfully collaborated to implement a range of learning and adaption actions, including the establishment of an effective rapid response network, two-day mock exercise and citizen science survey.

Background

The Northern Rivers is vulnerable to mosquito, also known as vector, disease with the incidence of Ross River and Barmah Forest viruses already high. Increased temperatures, tidal and rain events potentially resulting from climate change will increase vector numbers and the likelihood of disease exposure.

To address increased vector and other public health risks, a network that could work closely together was built.

Staging a mock outbreak, supported by extensive community engagement, helped ensure the region was better equipped to understand the enablers and barriers to acting quickly and in advance of a potential threat.

Implementation

The network built resilience by implementing a range of adaptive actions, including the:

- development of a comprehensive Northern Rivers Exotic Mosquito Response Plan to mitigate current and emerging vector risks
- establishment of a regional rapid response network that can be called upon to effectively respond to any future mosquito and other public health risks enhanced by the effects of climate change
- design of an education strategy with a focus on behaviour change and the key social challenges for mosquito-borne disease programs
- rollout of a mock outbreak scenario over two days surveying more than 300 backyards in Pottsville and Tweed Heads West in December 2017, with 11 stakeholder groups represented and the assistance of 20 local government and NSW Health staff
- trialling of the effectiveness of mosquito traps for surveillance
- conducting of a citizen science survey with 647 respondents collecting information on backyard containers in which mosquitoes can breed
- completion of an additional 710 surveys which provided valuable data about attitudes to council intervention during mosquito threats.
Key to the success of the project was collaboration between local government organisations - Ballina, Byron, Clarence Valley, Kyogle, Lismore City, Richmond Valley and Tweed Shire councils – and the Northern NSW Local Health District. The project was supported by Dr Cameron Webb from the University of Sydney and Dr Angela Dean, University of Queensland.

Outcomes

Tackling Mozzies Together created the following outcomes:

- improving the effectiveness of community education to emerging vectors to reduce the spread of disease via channels such as an online survey, social media and advertising and editorial coverage in local newspapers
- finding almost 4000 water holding containers, most commonly roof gutters, pot plants, bromeliads and buckets. The citizen science survey found 11.6 per cent of properties were positive for mosquito larvae.
- improving management of emerging vector threats by delivering regional capacity through the development of a rapid response network, adaptive incursion strategies and a community education program
- determining the likely extent of further increased risks of mosquito-borne disease in the region as a result of information captured by the two-day outbreak exercise, which also provided valuable insights into the operational aspects of the trial response, potential habitats for exotic container-inhabiting mosquitoes, and informed the development of the regional response plan.

To date there has been limited opportunity for a full review of the outputs by regional stakeholders. This is still planned to be undertaken and Tackling Mozzies Together will be added as a standing item to the quarterly Northern Rivers Environmental Health Forum.

Key learnings

Project learnings were included in a technical report which provides an overview of social factors involved in the success of vector control programs, identifies community knowledge and practices, and opportunities to support behavioural change. The report also summarises key actions that can be applied to manage future risks from exotic mosquitoes through community engagement, and will continue to be a vital resource that also benefits other environmental health initiatives.

Conducting research within a limited timeframe combined with seasonal weather variations, highlights a challenge of climate adaptation projects. Data collection was restricted to the 2017-18 summer mosquito season, putting pressure on deliverables.

Embedding this issue into the health forum will help ensure project outcomes continue to be improved to provide long lasting resilience to any future environmental health risk.

Contact

Name: Kelly Piazza  
Position: Environmental Health Officer  
Phone: (02) 6670 2699  
Email: kpiazza@tweed.nsw.gov.au