final report

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National Arbovirus Monitoring Program

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Executive summary

The NAMP project P.PSH.0711, 1 December 2014 to 31 October 2017, successfully met its three milestones and concludes with this report (fourth milestone).

Animal Health Australia (AHA) reported to stakeholders annually on vector or virus distribution and maintained a public facing, current Australian bluetongue zone map. In additional distributions of Akabane and Bovine ephemeral fever virus were mapped and published annually in the NAMP Report. The NAMP Report was published as a stand-alone document and incorporated into Animal Health in Australia report annually.

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1 Background

Australia's economy benefits from the export of ruminant livestock and their genetic material (semen and embryos). This trade depends upon a shared confidence between Australia and its trading partners that risks to the animal health status of the importing country can be accurately assessed and properly managed.

The National Arbovirus Monitoring Program (NAMP) provides credible data on the nature and distribution of important specific arbovirus infections in Australian (including bluetongue virus) for use by the Australian Government and livestock exporters. NAMP underpins Australian Government export certification that Australian ruminants are sourced from areas that are free from transmission of these specified arboviruses. In addition, NAMP data are available for other countries when negotiating the import health conditions for Australian livestock and their genetic material. NAMP data are gathered by serological monitoring of eligible cattle and trapping of insect vectors.

NAMP is jointly funded by its primary beneficiaries: the cattle, sheep and goat industries (57%); the livestock export industry (13%); and the state, territory (5%) and Australian governments (25%). This project constitutes MDC funding of the grass-fed beef and sheep meat components of the industrv contributions.

NAMP is managed by AHA in consultation with a Steering Committee representing all funding parties and a nationally representative Technical Committee of only government agencies (virologists, entomologists, and veterinary and biosecurity officers).

NAMP has three specific objectives:

- **market access**—to facilitate the export of live cattle, sheep and goats, and ruminant genetic material, to countries with concerns about bluetongue, Akabane and bovine ephemeral fever (BEF) viruses
- **bluetongue early warning**—to detect incursions of exotic strains of bluetongue virus (BTV) and vectors (*Culicoides* species biting midges) into Australia by surveillance of the northern BTV endemic area
- **risk management**—to detect changes in the seasonal distribution in Australia of endemic bluetongue, Akabane and BEF viruses and their vectors, to support livestock exporters and producers.

2 Project objectives and results

The following objectives were achieved during the project period 01 December 2014 to 31 October 2017.

2.1 Reported to stakeholders annually on unusual geographic or temporal variation in vector or virus distribution.

Animal Health Australia reported to stakeholders annually in September/October by papers presented to the NAMP Steering Committee. A detailed Management Report was prepared (2015,2016 and

2017) including information on monitoring activities and program performance, vector and virus distribution, budgets and expenditure and any changes required to the program.

For example, maps showing NAMP virology and entomology for the 2016-17 arbovirus season are shown in 4.1. During the period, no new serotypes of BTV were detected however two known serotypes were detected in regions previously not know to occur:

- Serotype BTV15 as detected in Innisfail.
- Serotype BTV16 was detected in three sentinel herds in SE Queensland and three sentinel herds in the Hunter Valley region of NSW. Retrospective testing also identified that BTV16 occurred on the far north coast of NSW during 2015-16.

2.2 Updated annually the Australian bluetongue zone map, and distributions of Aka bane and Bovine ephemeral fever.

A curerent BTV zone map was maintained throughout the project period and publically available at https://namp.animalhealthaustralia.com.au.

For example, four changes were made to the BTV zone map in the 2016-17 arbovirus season, in response to changes to serological evidence of BTV transmission. The virus zone expanded:

i. Following evidence of BTV infection detected in a sentinel herd at Coolatai in the North West slopes region of NSW (proposed August 2017).

ii. Following evidence of BTV infection detected in a serosurvey herd at Kurundi, NT (proposed June 2017).

iii. Following evidence of BTV infection detected in a sentinel herd near Armidale on the Northern Tablelands of NSW, a sentinel herd near Merriwa in the Hunter Valley region of NSW and in a sentinel herd near Nowra on the Southern Coast of NSW (proposed May 2017).

iv. Following evidence of bluetongue virus infection detected in a serosurvey herd at Birrindudu, southern Victoria River District of the NT (proposed September 2016). This change was minor and administrative only as it only affected non-working land.

2.3 Provided an annual report for independent distribution.

The NAMP Report was published annually in January (2015, 2016 and 2017) and is publically available here.

2.4 Provided biannual (second and fourth quarter) reports in Animal Health Surveillance quarterly report.

For editorial reasons a biannual NAMP report ceased to be published in Animal Health Surveillance Quarterly in 2016.

2.5 Provided an annual report as a section of Chapter 3 (Terrestrial Animal Disease Surveillance and Monitoring), Animal Health in Australia'.

The NAMP Report was published annually in Animal Health in Australia. The publication is available here.

2.6 Advised on maintaining the currency of the bluetongue AUSVETPLAN strategy manual and policies relating to wildlife, public health and epidemiological modelling.

The NAMP has not been required to provide advice on AUSVETPLAN during the project period.

2.7 Prepared publications for the scientific literature and presentations for conferences, seminars and meetinas as appropriate.

No scienfitic publications or presentations were made by or on behalf of the NAMP during the project period.

3 Conclusions and recommendations

The NAMP is a successful, ongoing AHA program with a high degree of collaboration between governments and livestock industries. The NAMP met the project objectives (P.PSH.0711) during the period.

There are no specific, technical recommendations for MLA arising from this project.

4 Appendix

4.1 NAMP virology and entomology test results 2016-17

Figure 1 BLU virus testing results September 2016-August 2017

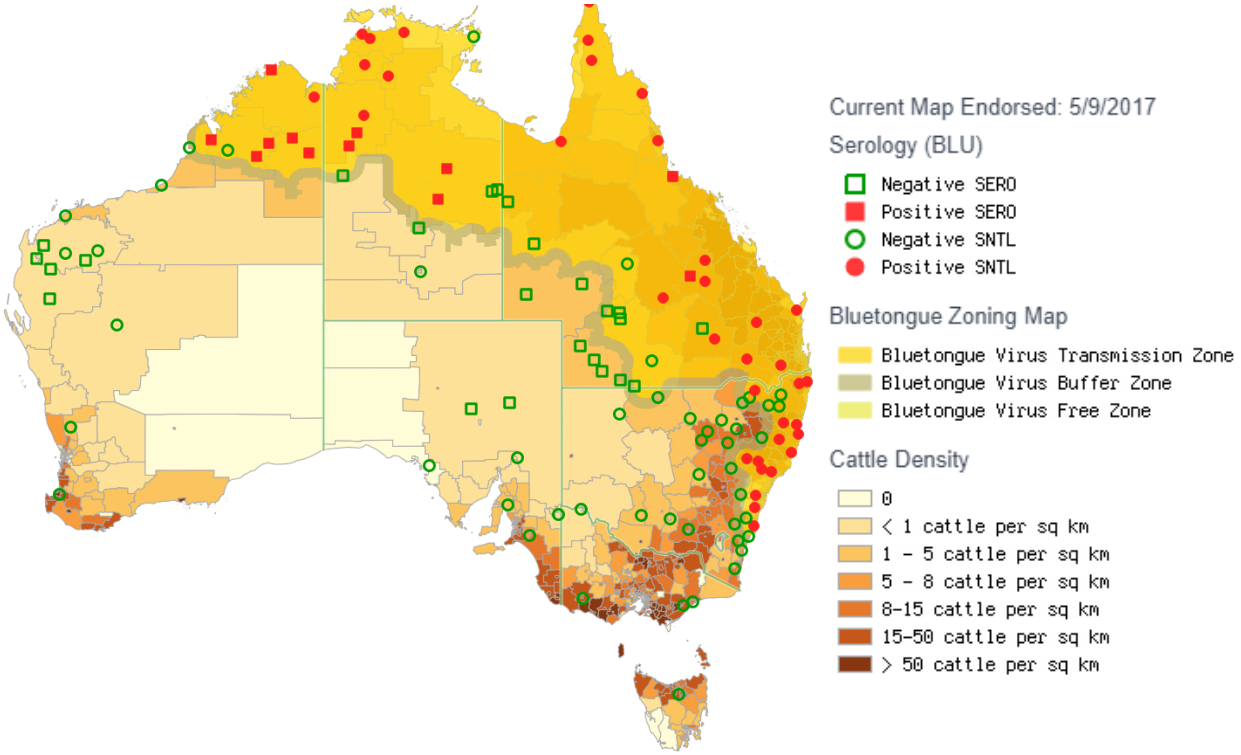


Figure 2 BTV16 monitoring results September 2016-August 2017

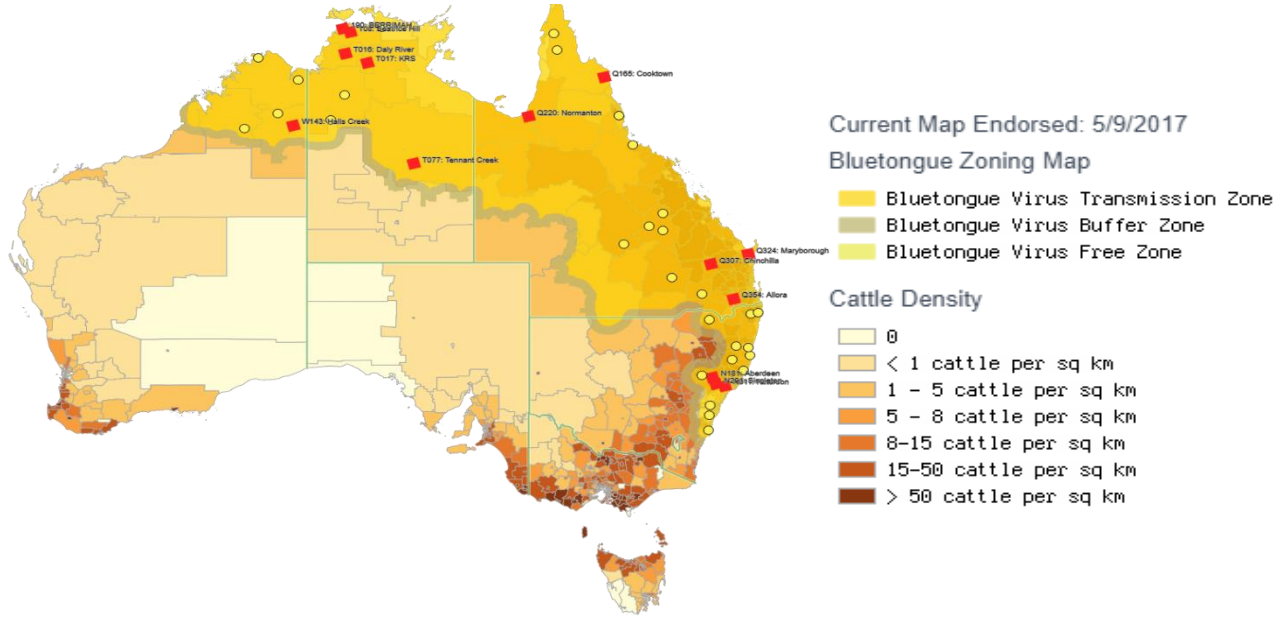


Figure 3 AKA virus testing results September 2016-August 2017

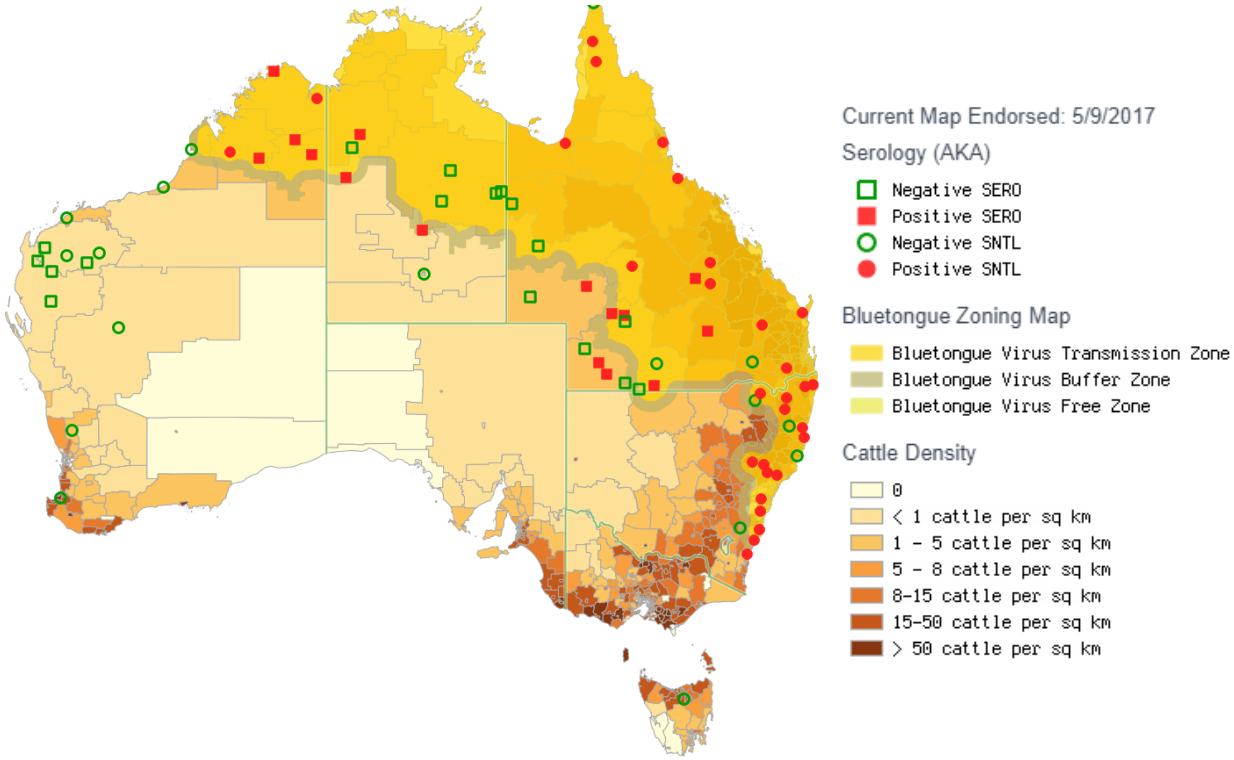


Figure 4 Simbu virus testing results September 2016-August 2017

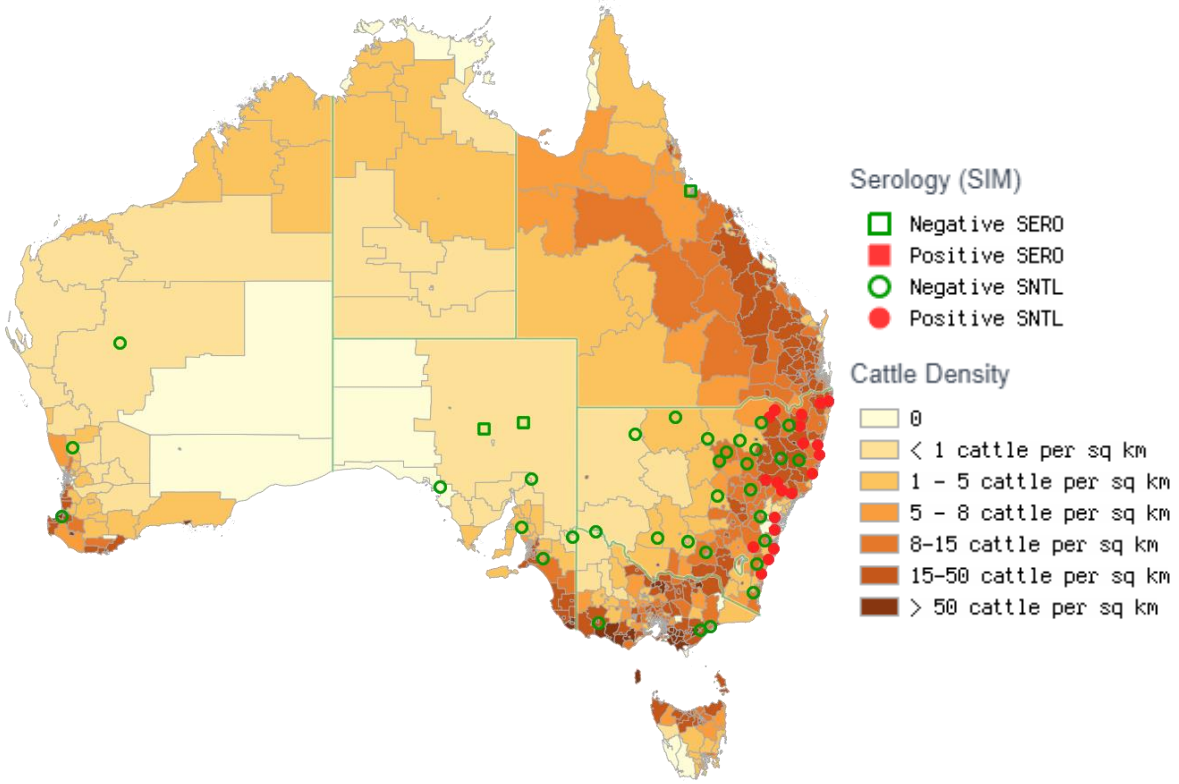


Figure 5 BEF virus testing results September 2016-August 2017

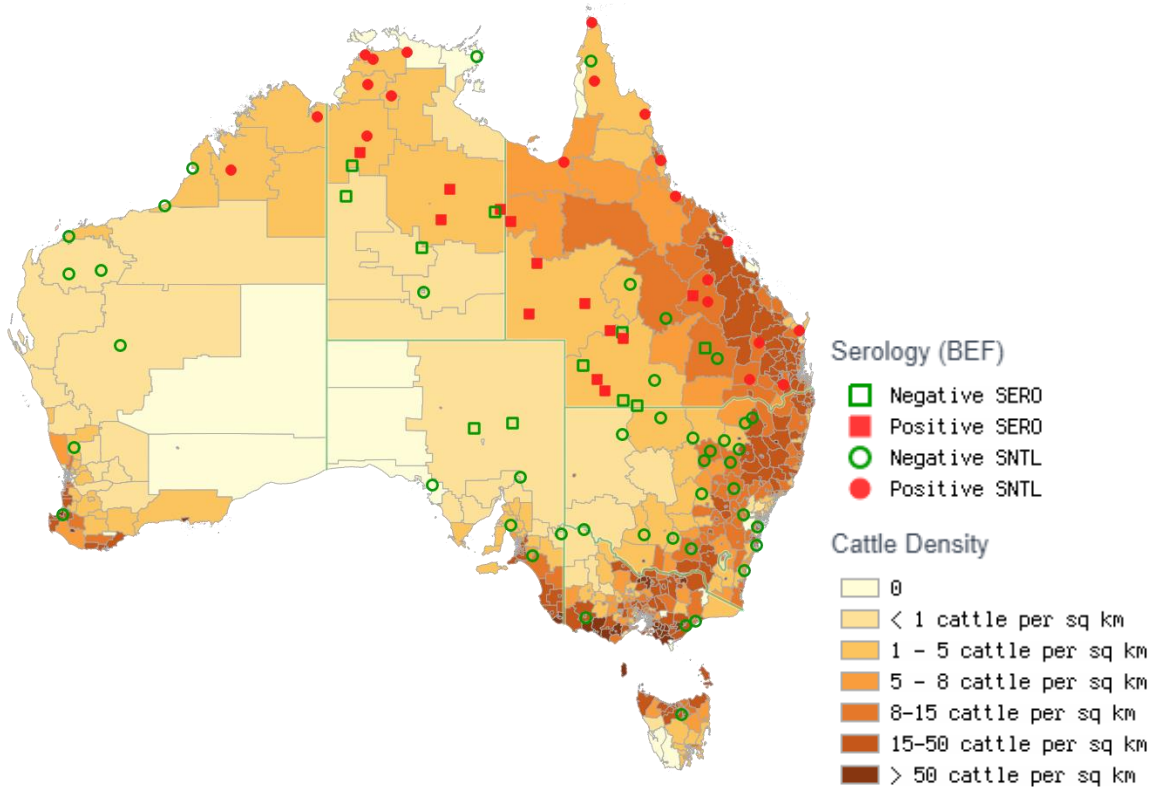
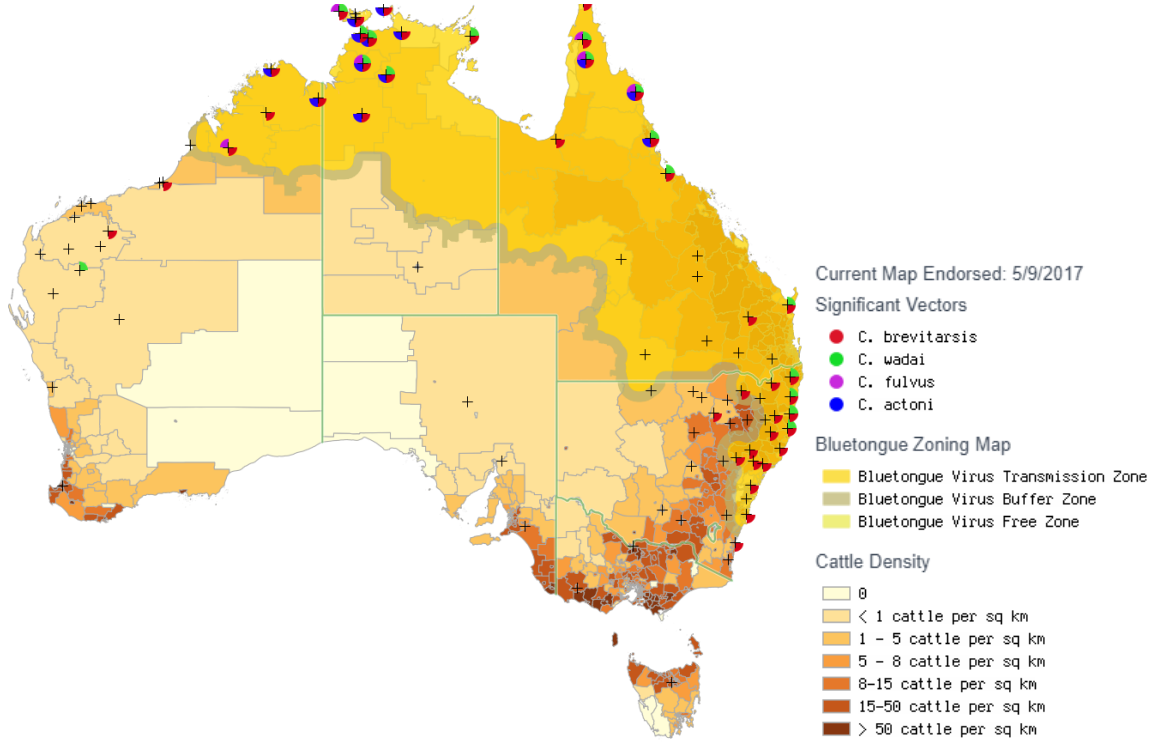


Figure 6 Vector monitoring results September 2016-August 2017



4.2 Current BTV Zone Map

Figure 7 Current BTV Zone Map