National
Four Tropical Weeds Eradication Program

Mareeba Shire Council
Annual Report
July 2016 – June 2017

Australian Government
Department of Agriculture and Water Resources

Queensland Government

Department of Agriculture and Food
GOVERNMENT OF WESTERN AUSTRALIA

NSW GOVERNMENT Department of Primary Industries

Northern Territory Government

Miconia *(Miconia calvescens)*

Background

Miconia calvescens is a small rainforest tree (up to 15 m high), belonging to the Melastomataceae family. Native to tropical America, this species has large leaves (up to 70 cm long) with iridescent purple undersides. The seed longevity is approximately 14-16 years (overseas research), which means that infestations need to be revisited annually to check for recruitment for up to 16 years.

M. calvescens is a serious weed in Tahiti and Hawaii, where it forms dense thickets in rainforests and displaces native flora and fauna. *M. calvescens* was initially brought into Australia via botanic gardens, and was sold in some nurseries and markets between 1978 and the mid-1990s. Dispersal to new locations has been mainly via cultivation – gardeners and plant collectors. Fruit eating birds are then the primary mechanism of dispersal into surrounding forests and gardens.

History

Miconia calvescens was first discovered in Mareeba Shire Council in 1996 at Kuranda.

Work conducted (1 July 2016 – 30 June 2017)

1144 hectares were surveyed for *Miconia calvescens* during 2016-17:

- **Biosecurity Qld**: 616 person days contributed in survey and control operations.
- **QPWS**: 34 person days contributed in survey and control operations.
- **Mareeba SC**: 2 weeks in non-collaborative operations.

Current status

- There are 3 known historical and current occurrences of *Miconia calvescens* in the Council area (Figure 1, Table 1).
- The Kuranda infestation is the largest occurrence of Miconia in the Council area and continues to need significant annual resources for search and control operations. Over 1063 hectares of surveillance was completed at Kuranda during 2016-17 with **no mature plants detected** (Table 1).

- Miconia has been recorded as occurring at 122 management areas (one ha grids) in the MSC area. Of these, **57% did not have seedling germination during the past year.**
- **No seedlings were recorded at Julatten**, 15 years after the last reproductive plant was removed.

Location	Discovery date	Plant count since 2004 +(reproductive)*	Plant count 2016-17 +(reproductive)*	Last reproductive record
Kuranda	**Oct 1997**	**4866 (15)**	**973 (0)**	**Jan 2016**
Julatten	Aug 2001	221 (0)	0 (0)	Aug 2001
Mareeba	June 2009	(1)	0 (0)	June 2009

Table 1: *Miconia calvescens - discovery, population and reproductive plant occurrence details.*
* Plant counts are from 2004 onwards, reproductive plants recorded include flowering and seeding observed and some plants considered large enough to flower.

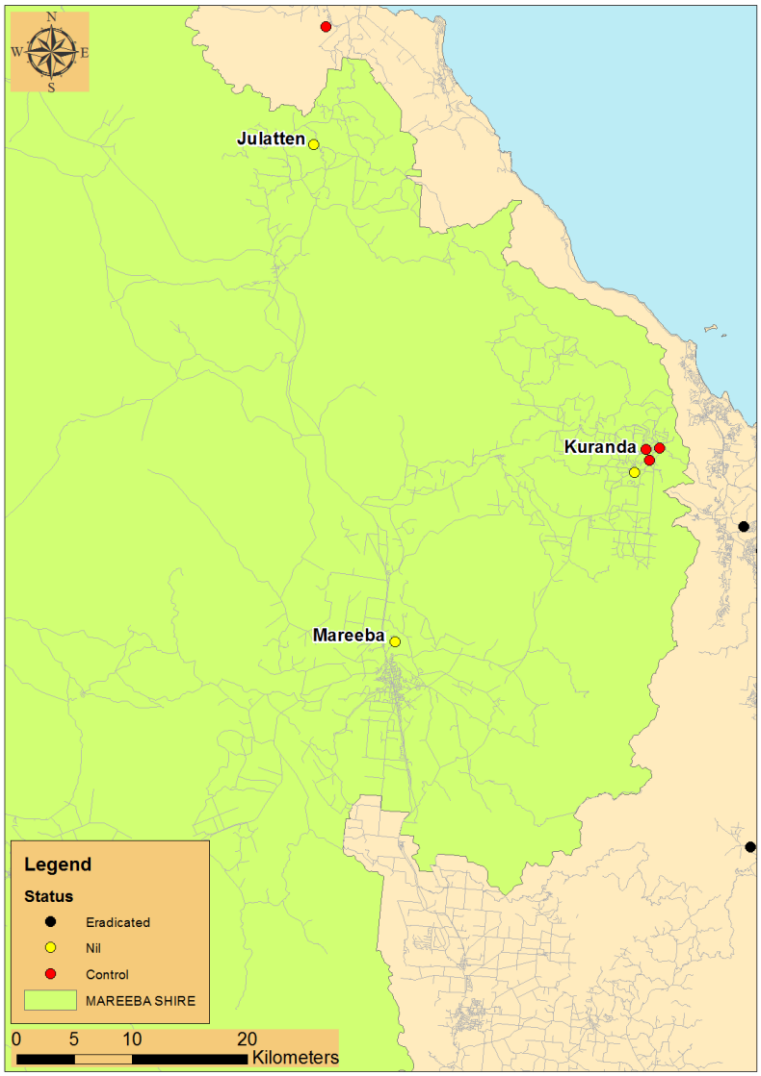


Figure 1*: Miconia calvescens locations and status as of July 2017 in the Mareeba Shire Council area.*

Current work plan (1 July 2017 – 30 June 2018)

Under the current Eradication Response Plan, *Miconia calvescens* locations need to be surveyed three times within a four year period to ensure no plants reach maturity and set seed. In the Mareeba Shire Council area that requires over 980 hectares to be surveyed annually.

- **Biosecurity Qld**: 600 person days expected in survey and control operations.
- **Mareeba Shire Council**: 20 person days requested for survey and control operations.

Miconia racemosa

History

Miconia racemosa was first recorded in Australia in 2002 at Kuranda.

Work conducted (1 July 2016 – 30 June 2017)

As the distribution of *Miconia racemosa* overlaps with *Miconia calvescens* at Kuranda, surveillance and control operations were conducted in conjunction with this target species.

Current status

- There is only one infestation in Australia (Kuranda), with scattered plants over an infestation area of 285 hectares (this includes all suitable habitat within a 500m dispersal buffer area) (Figure 2).
- During 2016-17, 287 ha were searched within the 500m dispersal buffer. A further 163 ha of surveillance occurred between the 500m and 1km dispersal buffer.
- Two fruiting, one flowering and one vegetative mature plant were detected by Biosecurity Queensland staff during 2016-17.
- There are 46 management areas (one hectare grid cells) which have recorded a presence of *M.racemosa*. No seedling germination was recorded in 27 of these areas (59%) during 2016-17.

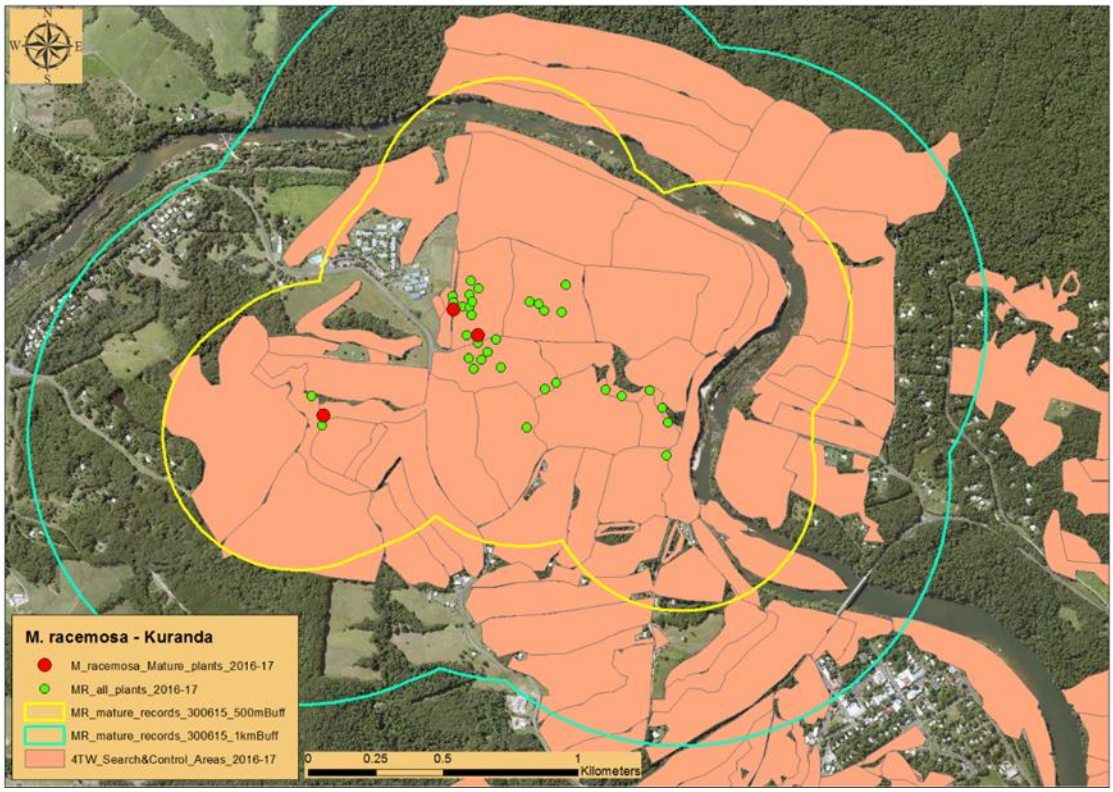


***Figure 2**: Infestation of* M. racemosa *at Kuranda showing all detections of juvenile plants (green dots) in 2016-17, core surveillance area at July 2016 (yellow line - where a 500 m dispersal buffer is generated around recorded mature plants), one kilometre extended surveillance buffer (blue line) and areas that were surveyed by field teams during 2016-17 (brown polygons).*

Current work plan (1 July 2017 – 30 June 2018)

- **Biosecurity Queensland:**
    - Surveillance of all suitable habitat within the 285 hectare core area.
    - Six-monthly survey of all management areas with prior detections of plants.
- **Mareeba Shire Council**: contribution included in *Miconia calvescens* section.

(Note: these works will be conducted in conjunction with *Miconia calvescens* survey and control operations where their distributions overlap).

Limnocharis *(Limnocharis flava)*

Background

Limnocharis flava is an anchored, clump-forming, aquatic plant. It is native to South America. The species is identified as a weed in Asia, where it infests rice paddies, irrigation and drainage lines. It is also a threat to wetlands, having already invaded significant wetlands in Sri Lanka and India. The seed longevity is at least thirteen years (from research site data – Feluga), with plants reaching reproductive maturity in 58 days. Thus infestations must be monitored every 3 -4 weeks to stop all seeding events. Dispersal to new locations has been mainly via cultivation – gardeners and plant collectors. Local movement is via water dispersal of seed or vegetative plantlets

History

Limnocharis was first discovered in the Mareeba Shire Council area in 2001, at Kuranda. A second site was detected at Speewah in 2013, over twelve years since the previous detection in Kuranda.

Work conducted (1 July 2016 – 30 June 2017)

- **Biosecurity Qld**: 5 person days contributed in survey and control operations.

Current status

- A total of two *Limnocharis flava* infestations have been recorded in the Mareeba Shire Council area (Table 2).
- The Kuranda infestation is classified as **eradicated**.
- The Speewah infestation is still being actively controlled with seedlings germinating this year.

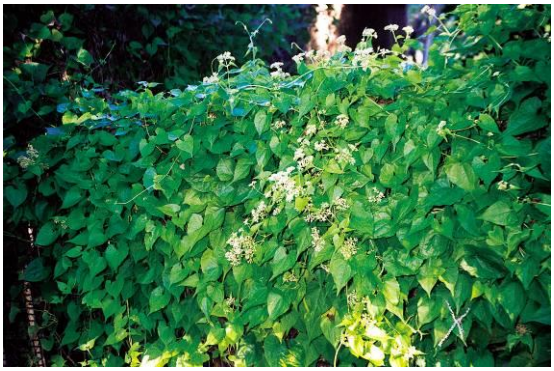
Location	Contained pond (C) or Natural water system (N)	Date Discovered	Current Status
Kuranda	C	May 2001	Eradicated
Speewah	N	May 2013	Control

***Table 2**: Summary of Limnocharis flava infestations.*

Current work plan (1 July 2017– 30 June 2018)

- **Biosecurity Qld**: four person days for surveillance at Speewah.
- **Mareeba Shire Council**: vigilance only.

Mikania Vine *(Mikania micrantha)*



Background

Mikania vine is considered one of the world's worst weeds, particularly in the Pacific Islands, South-East Asia, Indonesia and New Guinea, where it smothers agricultural plants and displaces native flora and fauna.

Seed longevity is at least 7 years (from overseas literature), with seeding occurring more than once per year. Mikania vine also reproduces vegetatively (stem fragments). Machinery has been the main vector of spread within known areas, but wind dispersal of seed would also be a significant potential dispersal mechanism.

History

Mikania micrantha was found at a nursery in Speewah in 2001, with entry via contaminated nursery packaging.

Work conducted (1 July 2016 – 30 June 2017)

54 hectares were surveyed for Mikania vine in 2016-17:

- **Biosecurity Qld**: 29 person days for survey operations.

Current status

- No seedling emergence was recorded during 2016-17.

Current work plan (1 July 2017 – 30 June 2018)

- **Biosecurity Qld**: 15 person days for surveillance of 30 hectares.
- **Mareeba Shire Council:** monitoring of infestation as time allows.