



National Four Tropical Weeds Eradication Program

Mareeba Shire Council Annual Report July 2017 – June 2018



Australian Government
Department of Agriculture
and Water Resources



**Queensland
Government**



**Department of
Agriculture and Food**



**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 2017 – 30 June 2018)

1154 hectares were surveyed for *Miconia calvescens* during 2017-18:

- **Biosecurity Qld:** 620 person days contributed in survey and control operations.
- **QPWS:** 11 person days contributed in survey and control 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. 1042 hectares of surveillance was completed at Kuranda during 2017-18 with **no mature plants detected** (Table 1).

- Miconia has been recorded as occurring at 128 management areas (one ha grids) in the MSC area. Of these, **58% did not have seedling germination during the past year.**
- **Seedlings were recorded at Julatten, 16 years after the last reproductive plant was removed.** This is the first evidence in Australia of this species having a seed life of 16 years.

Location	Discovery date	Plant count since 2004 +(reproductive)*	Plant count 2017-18 +(reproductive)*	Last reproductive record
Kuranda	Oct 1997	5171 (15)	305 (0)	Jan 2016
Julatten	Aug 2001	223 (0)	2 (0)	Aug 2001
Mareeba	June 2009	(1)	0 (0)	June 2009

Table 1: *Miconia calvenscens* - 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 calvenscens* locations and status as of July 2018 in the Mareeba Shire Council area.

Current work plan (1 July 2018 – 30 June 2019)

Under the current Eradication Response Plan, *Miconia calvescens* locations need to be surveyed every 18 months to ensure no plants reach maturity and set seed. In the Mareeba Shire Council area that requires over 1100 hectares to be surveyed annually.

- **Biosecurity Qld:** 700 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 2017 – 30 June 2018)

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 2017-18, 400 ha were searched within the 500m dispersal buffer (an increase of 123 ha). A further 43 ha of surveillance occurred between the 500m and 1km dispersal buffer.
- Only one fruiting plant was detected by Biosecurity Queensland staff during 2017-18.
- There are 48 management areas (one hectare grid cells) which have recorded a presence of *M.racemosa*. No seedling germination was recorded in 26 of these areas (54%) during 2017-18.

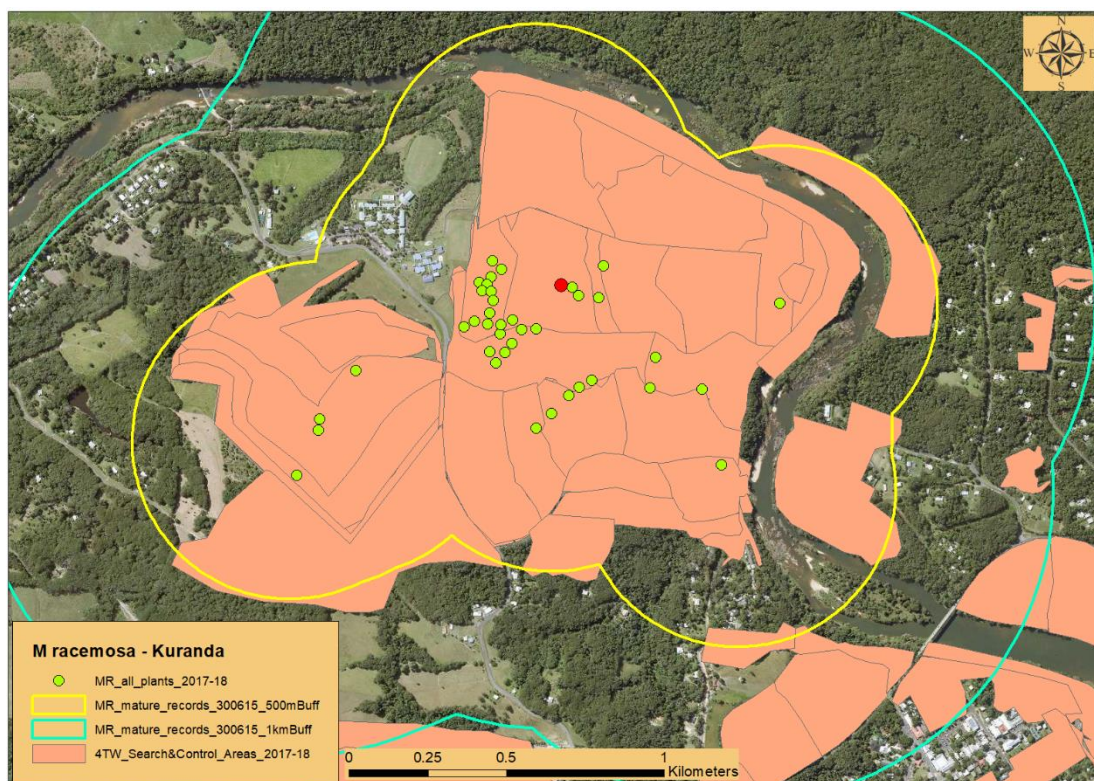


Figure 2: Infestation of *M. racemosa* at Kuranda showing all detections of juvenile plants (green dots) in 2017-18, core surveillance area at July 2017 (yellow line - where a 500 m dispersal buffer is generated around recorded mature plants), one kilometre extended surveillance buffer (blue line) and areas that were surveyed by field teams during 2017-18 (brown polygons).

Current work plan (1 July 2018 – 30 June 2019)

- **Biosecurity Queensland:**
 - Six-monthly survey of all management areas within the 500m buffer to ensure all plants are detected before reaching maturity.
- **Mareeba Shire Council:** contribution included in *Miconia calvenscens* section.

(Note: these works will be conducted in conjunction with *Miconia calvenscens* 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 fourteen 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 2017 – 30 June 2018)

- **Biosecurity Qld:** 4 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 had no seedling germination this year.

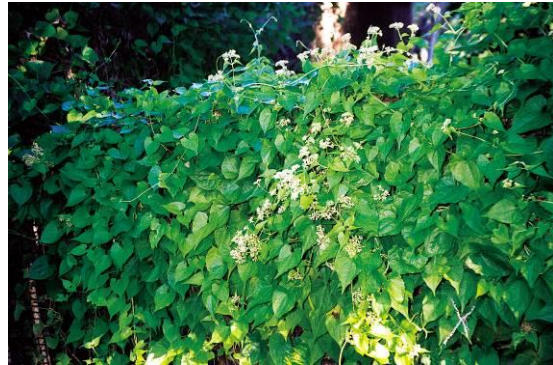
Location	Contained pond (C) or Natural water system (N)	Date Discovered	Current Status
Kuranda	C	May 2001	Eradicated
Speewah	N	May 2013	Nil

Table 2: Summary of *Limnocharis flava* infestations.

Current work plan (1 July 2018– 30 June 2019)

- **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 2017 – 30 June 2018)

86 hectares were surveyed for Mikania vine in 2017-18:

- **Biosecurity Qld:** 30 person days for survey operations.

Current status

- No seedling emergence was recorded during 2017-18.

Current work plan (1 July 2018 – 30 June 2019)

- **Biosecurity Qld:** 15 person days for surveillance of 20 hectares.
- **Mareeba Shire Council:** monitoring of infestation as time allows.