

Weed Management Plan Review - Summary Document

Chinee Apple (*Ziziphus mauritiana*) 2021 Review



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The Weed Management Branch acknowledges the time invested by land managers, landholders and key stakeholders to inform and guide this review.

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1. Executive Summary

This report presents the findings of the review undertaken of the Northern Territory Government (NTG) Weed Management Plan for Chinese Apple (*Ziziphus mauritiana*). The review of this plan has been undertaken in accordance with the requirements of the *Weeds Management Act 2001* (the Act). Under the Act, the Minister is to review a weed management plan every 3 years after it is approved and thereafter at intervals not longer than 3 years.

On 7 March 2012 the first Chinese apple weed management plan was approved by the Minister, to remain in force for a period of 10 years. The first review of this plan was conducted in 2015. This is the second review of the Chinese apple plan.

To inform the review process, a public notification period was held in 2019. Further consultation was subsequently undertaken in 2020 and 2021 with the Katherine Regional Weed Reference Group. Based on the review undertaken, the Weed Management Plan for Chinese Apple (*Ziziphus mauritiana*) 2015 has been amended. This document outlines a summary of changes made to the revised weed management plan for Chinese apple.

2. Introduction

The review of the weed management plan for Chinese apple (*Ziziphus mauritiana*) has been undertaken in accordance with the requirements of the *Weeds Management Act 2001* (the Act) administered by the Weed Management Branch of the Department of Environment, Parks and Water Security. Under the Act, the Minister must review a weed management plan not later than 3 years after it is approved and thereafter at intervals not longer than 3 years. This is the second review of the plan.

Chinese apple (*Ziziphus mauritiana*) may be confused with some other species which are outlined further below.

2.1. Other species of *Ziziphus* in the Northern Territory

The following *Ziziphus* species found in the Northern Territory may be confused with Chinese apple (*Ziziphus mauritiana*); they are not a declared weed.

2.1.1. Chinese jujube

Note that there are plants under cultivation in Australia (including in the Northern Territory) that go by the common name of 'Chinese jujube', *Ziziphus jujuba* Mill. (Johnstone and Shan 2016). Chinese jujube plants can be distinguished from the wild 'Chinese Apple' *Ziziphus mauritiana* by the lack of densely and closely greyish fine hairs on the underside of the leaves and usually by their larger fruit (Zao 2007; pers. comm. Ian Cowie, NT Herbarium). In the Northern Territory, Chinese jujube (*Z. jujuba*) has not been recorded outside of cultivated areas.

2.1.2. Native species

There are also two native *Ziziphus* species, *Z. oenopolia* and *Z. quadriloculare* which may be confused. Both lack the white-hairy leaf under the surface. *Z. quadriloculare* occurs mostly in the Victoria River District and Roper River area and is distinguished by the straight stipular spines (especially on the juvenile growth), rusty hairs on the new growth and lower leaf surface, relatively large fruit 10-20 mm diameter and arborescent growth habit. *Z. oenopolia* is a sprawling shrub or scrambler in dry vine thickets, with 1 spine of each pair recurved and the other straight, the leaves are green below and the fruit are less than 10 mm in diameter.

3. The review process

This review commenced with the release of the discussion paper, "Discussion Paper Review of the 2015 Weed Management Plan for: Chinese Apple (*Ziziphus mauritiana*); Mesquite (*Prosopis spp.*) and Prickly Acacia (*Vachellia nilotica*)¹." The review has considered progress against targets in the plan, which is outlined further below in Section 3.1. Stakeholder engagement was then conducted to inform the review process which is explained in more detail in section 3.2. Following this process, an amended plan was produced and provided to the Minister for Environment for

¹ Note the review of the prickly acacia and mesquite weed management plans were finalised in May 2020.

approval. It is noted the aim, objectives and required actions within the amended plan reflects the final actions to be achieved as set out in the original 2012 plan.

3.1. Progress against previous plan targets

The original weed management plan for chinee apple commenced in 2012. The aim of this plan was to, “negate the damage caused by chinee apple to the natural environment and the Northern Territory economy”. Objectives of the plan were to eradicate all existing infestations and prevent further establishment of chinee apple in the Northern Territory and to apply an adaptive approach to weed management. The 2012 plan included timeframes over a period of 1 to 10 years to meet the outlined management requirements.

Key targets of the 2012 plan included:

- The number and size of infestations of chinee apple in the Northern Territory is reduced (with a completion timeframe of years 1 to 10)
- Property weed management plans are developed for all properties with chinee apple infestations (with a completion timeframe of years 3 to 5)
- All chinee apple infestations in the Northern Territory are under active eradication programs (with a completion timeframe of years 5 to 10).

The overall aim and objectives of the 2015 plan remained the same. However management requirements were broken up for different landholder groups, to be met over a 1 to 3 year period. Most landholder groups included targets for the development and implementation of eradication programs, tree replacement programs and a weed spread prevention program to be implemented within 3 years.

The main objective of the 2012 and 2015 chinee apple plan is still in progress as chinee apple is still present in the landscape.

3.2. Stakeholder engagement input

Stakeholder consultation has been undertaken to inform the review of the Plan. Stakeholder consultation consisted of public notification in the Katherine Times, Tennant and District Times and NT News in April 2019 with a 4 week comment submission period. Targeted consultation held around Katherine and public forums held in Mataranka and Top Springs. Stakeholder consultation was undertaken at the same time for prickly acacia, mesquite and neem. A full summary of the public stakeholder consultation forum survey results is shown in **Appendix A**.

In addition to the consultation above the proposed draft of the revised plan was distributed to the Katherine Regional Weed Reference Group in March 2020. Consideration was given to making this plan specific to just the Katherine Regional Weed Management Area. After consideration of the feedback it was decided to keep the plan relevant to the entire Northern Territory as chinee apple remains a declared weed across all of the Northern Territory.

After March 2020 this review was put on hold to finalise other priorities. After this, the Plan was again updated to include the learnings from other weed management plan reviews and was again distributed to the Katherine Regional Weed Reference Group for their review. Minor comments were received.

A wide range of feedback was received from staff of the Weed Management Branch; the main points provided are summarised below:

- the ecology of the plant needs to be considered including germination of seeds
- to include a definition of eradication due to the varying opinions on where eradication is possible
- consideration of what are reasonable expectations for landholders
- keeping the plans simple by simplifying requirements
- remove requirements that are not practical
- clear advice should be provided to appease confusion surrounding the chinee apple *Ziziphus mauritiana* species with the *Ziziphus jujube*

All feedback received has been taken into consideration during the review of this plan.

4. Summary of changes to the weed management plan

4.1. Summary of changes to management requirements

Table 1 summarises the changes made to the landholder management requirements in the plan.

Revised requirement	Current 2016 requirement	Reason for change
1.1 All chinee apple amenity plantings must have a permit to be retained. A permit can be applied for, from the Weed Management Branch. The permit holder must comply with all conditions of the permit.	p.10 An owner or occupier of land can therefore apply for a permit to retain deliberate amenity plantings of chinee apple, such as those found around communities, when they present a very low risk of spread.	This requirement was moved into Table 1 to be captured as a key landholder management requirement for chinee apple management.
1.2 Isolated chinee apple plants must be destroyed immediately, unless under permit (*see definition below). *For the purposes of this plan, isolated chinee apple plants are away from and not continuous with a larger established chinee apple infestation.	The Chinee Apple Management Guide outlines that your plan should achieve the following management requirements: Eradication of isolated plants and outbreaks – design and implement a survey and eradication program for chinee apple. p.4 Management objectives of the plan - to eradicate all existing infestations and prevent further establishment of chinee apple in the Northern Territory: a) eradicating all isolated plants (including deliberately planted trees and outbreaks). p.15 The sparse and low density infestations of chinee apple which are found in the Northern Territory require immediate and more aggressive control methods to ensure eradication.	This requirement was moved to Table 1 to be captured as a key landholder management requirement for chinee apple.
1.3 Monitoring must be undertaken to check for the regrowth of chinee apple after isolated chinee apple plants have been destroyed. All regrowth must be destroyed.	Updated as a follow up to the requirement above.	This is a follow up requirement to control the regrowth of isolated chinee apple plants. Areas controlled must be checked for regrowth and any regrowth of these areas controlled.
1.4 A property weed management plan must be documented and implemented on request by the Weed Management Branch in accordance with section 6 below.	p.8 Multi tenure and core infestations: Document and implement the strategic eradication program on your property using control methods detailed in section 6. p.8 Market gardeners and farmers: For commercial or buffer plantings, design, document and implement an eradication program and replacement crop program to minimise production losses. p.9. Transport and service corridors:	To reflect standard terminology around property weed management planning in line with property weed management plans guidelines . The property weed management plan can be used to map out the property's eradication plan. The property weed management plan should also include the property's weed spread prevention program and include a plan for regularly monitoring / surveying land, including previously treated areas.

Revised requirement	Current 2016 requirement	Reason for change
	<p>Design, document and implement an eradication program using control methods detailed in section 6.</p> <p>p.9. Regularly monitor/survey land for new infestations or regrowth. Do this at least annually prior to fruiting (generally January to August) to allow for control work to be undertaken prior to fruit production. (Reproductive events may vary depending on the environment and rainfall).</p>	<p>Many of the landholder requirements in the current plan (e.g. regular monitor / survey and implementing a weed spread prevention program) have been removed as they are requirements of the chinee apple management guide and need to be addressed by the landholder in the property weed management plan developed and implemented in accordance with this guideline.</p>
<p>1.5 The property weed management plan required by requirement 1.4 must be provided to the Weed Management Branch on request.</p>	<p>Not stated.</p>	<p>The WMB may request the property weed management plan if required so the management of chinee apple on a property can be assessed.</p>

4.2. Summary of changes made

Changes made to the revised chinee apple weed management plan are:

- The chinee apple plan has been retitled a 2012 – 2022 plan. The aim, objectives and required actions within the 2012 – 2022 plan (2021 Revision) still reflect targets of the earlier plans.
- Simplifying the management requirements to be met for the remaining life of the plan for land owners and occupiers and not separating the requirements out for different stakeholders.
- Information duplicated in other Weed Management Branch resources has been removed, for example control methods that are outlined in the [Northern Territory Weed Management Handbook](#).
- Performance indicators to measure the success of the implementation of the plan have been updated.
- The addition of a glossary that defines key terms such as mature plant, amenity planting and eradication.

5. Summary

Based on the review process undertaken the weed management plan for chinee apple has been amended. The amended plan has been simplified as outlined in this document to focus on the remaining actions to be achieved since the commencement of the 2012 chinee apple plan.

Appendix A – Community Consultation Survey Results

Survey results which relate to Chinese Apple, Mesquite and Prickly Acacia and Neem² Surveys

A total of 19 surveys were completed which are summarised below.

Awareness of Statutory Plans and Legal Requirements

Based on the information received 79% of survey participants stated that they know there are statutory weed management plans for all four weeds currently under review. 11% of participants said they are aware of some statutory plans, 5% of participants were not aware of any plans and 5% did not respond.

79% of all participants knew they were legally required to fulfil the requirements of these plans. 5% did not know they had to fulfil the requirements of the plans and 16% did not answer.

Awareness of the Impacts of Weeds on the Environment

95% of participants understood the effects weeds can have on the Territory's environment, economy and production if left untreated. Impacts of weeds that were reported included:

- fire
- affecting land productivity, environmental function and value
- loss of production and increasing costs of mustering
- continuous control equals time and money for the landowner
- decreasing stocking rates
- taking over waterways and native / national parks and damaging river corridors

42% of participants stated they are seeing weeds expand in the landscape. Areas where weeds are expanding were reported to include:

- Roper River
- Katherine Area - neem
- all over Mataranka
- around creeks and through the bush
- Elsey National Park and Mangarri Aboriginal Land Trust – neem
- on participants property and neighbouring properties

Weed Control

95% of participants stated that they do have a property weed control plan. Actions that landowners undertake in relation to their property weed control plan include:

- controlling weeds as they are found (58% of participants)
- controlling weeds during dedicated weed control periods during the year (74% of participants)
- recording the work that is done either electronically or on paper (95% of participants)
- assessing control work results and amending accordingly if controls are not working (47% of participants)
- including hygiene protocols or weed spread prevention measures in their plan and in practice (74% of participants)

² Note the review of the prickly acacia and mesquite weed management plans have been finalised. The neem weed management plan review is still to be finalised.

- isolating stock from interstate or weed infested areas into quarantine paddocks before moving them into clean areas on the property (26% participants)
- trying to work with neighbours when doing control so both efforts align (32% of participants).

Of the survey participants that reported having a property weed control plan:

- 43% stated they have found new infestations of neem on their property in the last 3 years
- 5% stated they have found prickly acacia on their property in the last 3 years.

Participants also noted that they have seen reductions in weed infestations on their properties as follows:

- 31.6% have seen a reduction of 0-10%
- 31.6% have seen a reduction of 10 – 25%
- 10.5% have seen a reduction of 25 – 50%
- 10.5% have seen a reduction of greater than 50%
- 15.8% did not answer.

Participants were asked what factors limit them from doing weed control. Figure 1 shows that budget, time and staffing were the main factors affecting people’s ability to conduct weed control.

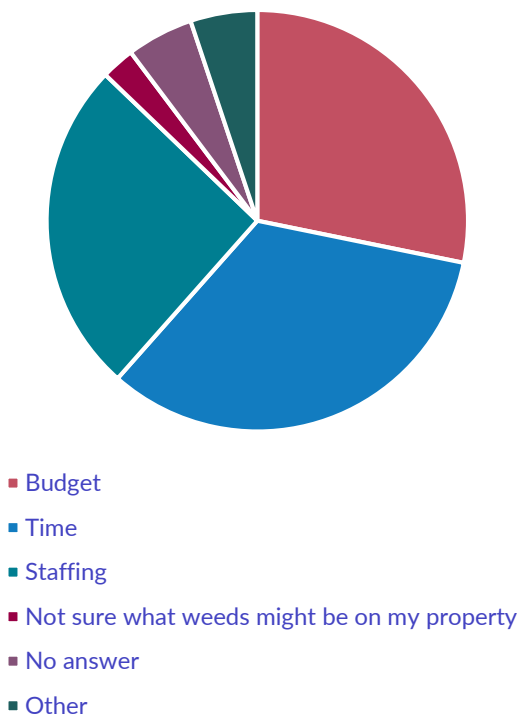


Figure 1 – Factors affecting participant’s ability to control weeds on their property

Enforcement

In relation to whether enforcement of plans would encourage land managers to undertake control work more regularly:

- 32% of participants stated that enforcement would encourage them to undertake control work more regularly
- 53% of participants stated that enforcement would not encourage them to undertake control work more regularly
- 16% of participants did not answer

In relation to whether control works are affected by their neighbours:

- 42% of participants stated that their control works are being negatively affected by their neighbours
- 37% stated their control works are not being affected by their neighbours
- 21% did not respond

90% of survey participants stated that they do think legislative requirements to control weeds along property boundaries would help protect their property from infestation from neighbours. 5% stated they did not think legislation requirements to control weeds along property boundaries would help protect their property from infestation from neighbours and 5% did not answer.

79% of participants stated that they knew these requirements already exist for neighbours. 5% said they did not know this and 16% of participants did not answer.

6. References

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