

DEPARTMENT OF LAND RESOURCE MANAGEMENT

# The mimosa flea beetle is ready to travel

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[www.lrm.nt.gov.au/weeds](http://www.lrm.nt.gov.au/weeds)



DEPARTMENT OF LAND RESOURCE MANAGEMENT

# *Mimosa pigra*

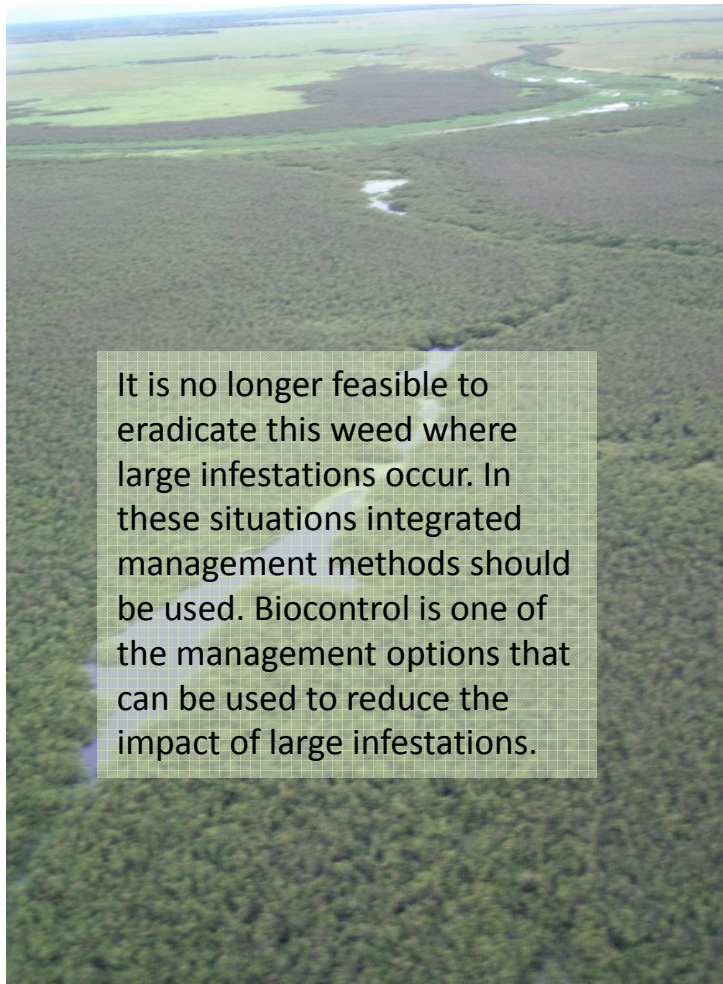


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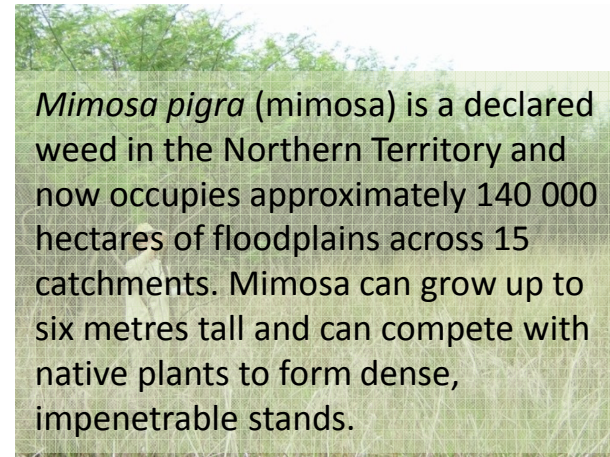




# *Mimosa pigra*



It is no longer feasible to eradicate this weed where large infestations occur. In these situations integrated management methods should be used. Biocontrol is one of the management options that can be used to reduce the impact of large infestations.



*Mimosa pigra* (mimosa) is a declared weed in the Northern Territory and now occupies approximately 140 000 hectares of floodplains across 15 catchments. Mimosa can grow up to six metres tall and can compete with native plants to form dense, impenetrable stands.



In its native range, mimosa is less competitive with other vegetation because of continual attacks from its natural enemies. It assumes a lower, less impressive growth form as a result.

# Mimosa biocontrol

- Since 1989
- 13 insects released - 10 established
- 2 pathogens released - 1 established





# Mimosa biocontrol

The Weed Management Branch of the Department of Land Resource Management implements, monitors and evaluates the Mimosa Biocontrol Program. The Program has been going since 1989 releasing a total of 15 agent species.

Six of these established agents are considered to inflict significant damage. The damage is seen through reduction in soil seed bank (>70%), reduction in spread of infestations, reduced seed output and reduced canopy.

Biocontrol agents are strictly tested in quarantine and must be approved by the Australian Quarantine and Inspection Service and possibly the Australian Government Department of the Environment before each species is allowed to be released. If there are doubts about any of the testing process, the organisation applying for release must do extra work to respond to these questions before approval is given.

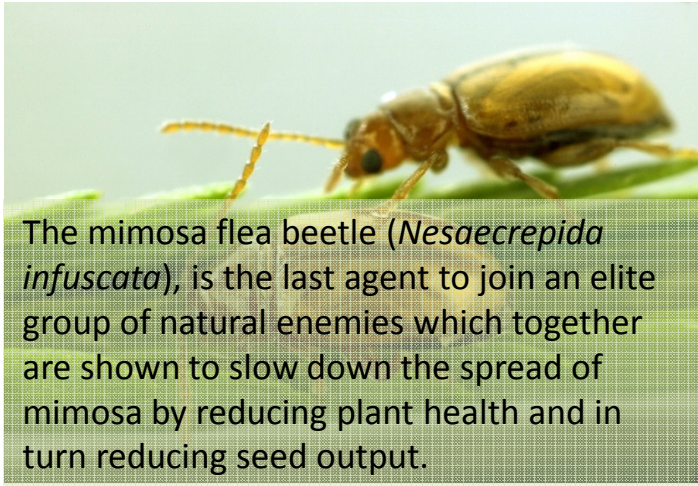
Biocontrol agents are selected for their specificity to the particular species of weed, so the agent populations will die-off when their food source declines.



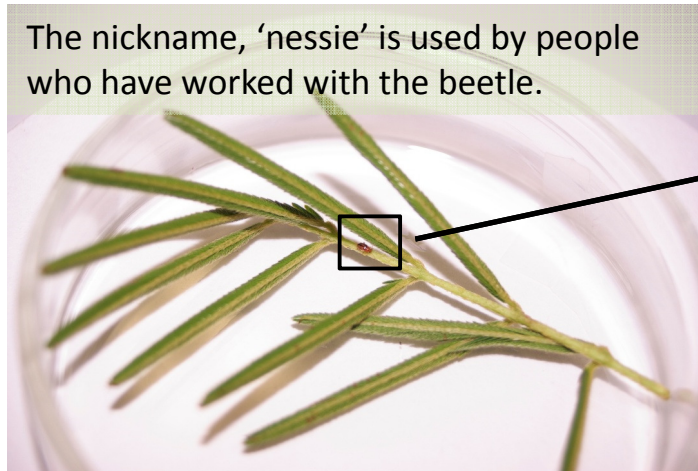


## Mimosa flea beetle (*Nesaecrepida infuscata*)





## Mimosa flea beetle (*Nesaecrepida infuscata*)



Biocontrol will not eradicate a weed infestation, it will only ever assist in management and reduce the costs for other control methods in the overall management of the problem. Biocontrol programs are generally initiated only for weeds which are widespread, damaging and where eradication is no longer an option.



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# Mimosa flea beetle

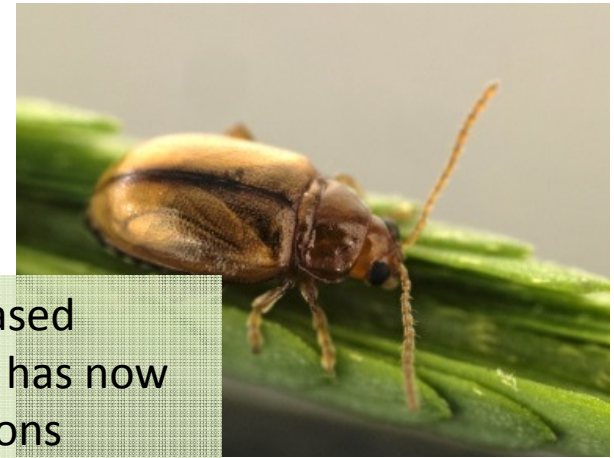


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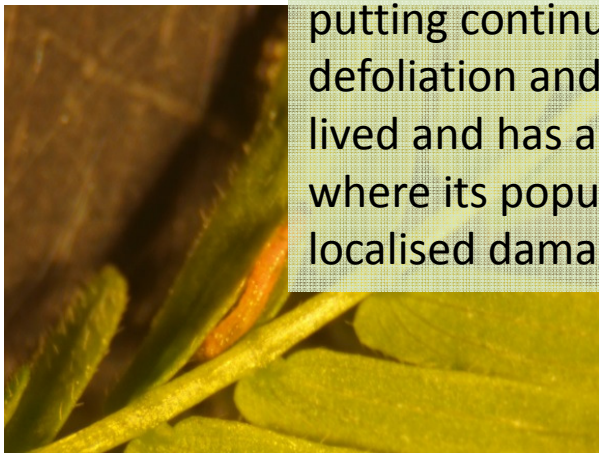




## Mimosa flea beetle



The mimosa flea beetle was produced and released across the Top End between 2007 and 2012 and has now established and flourished at a number of locations putting continued pressure on mimosa through defoliation and root damage. The beetle is relatively long lived and has a tendency to stay close to the release site where its population increases causing significant localised damage.





# What you can do

## Collection





# What you can do



## Collection

Given that the mimosa flea beetle is naturally slow to disperse, an opportunity exists for land managers to harvest wild beetles and speed up the spread of this effective agent.

Collecting the beetles from the field is an easy task, with the right equipment. Where beetles are in high numbers they can be knocked off the mimosa branch with a gloved hand and then funnelled into a jar. At a good site 1000 beetles can be caught in an hour. To transport the beetles the jar needs to be kept cool but not cold.





# DIY

## Redistribute





# DIY

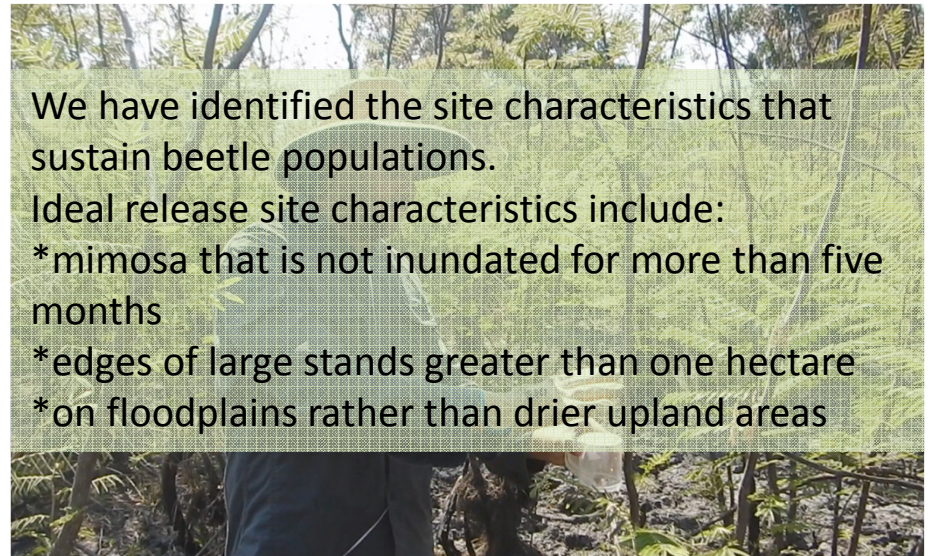
## Redistribute

The beetles are easy to release, just tip the beetles from the jar onto a mimosa leaf at the new site.

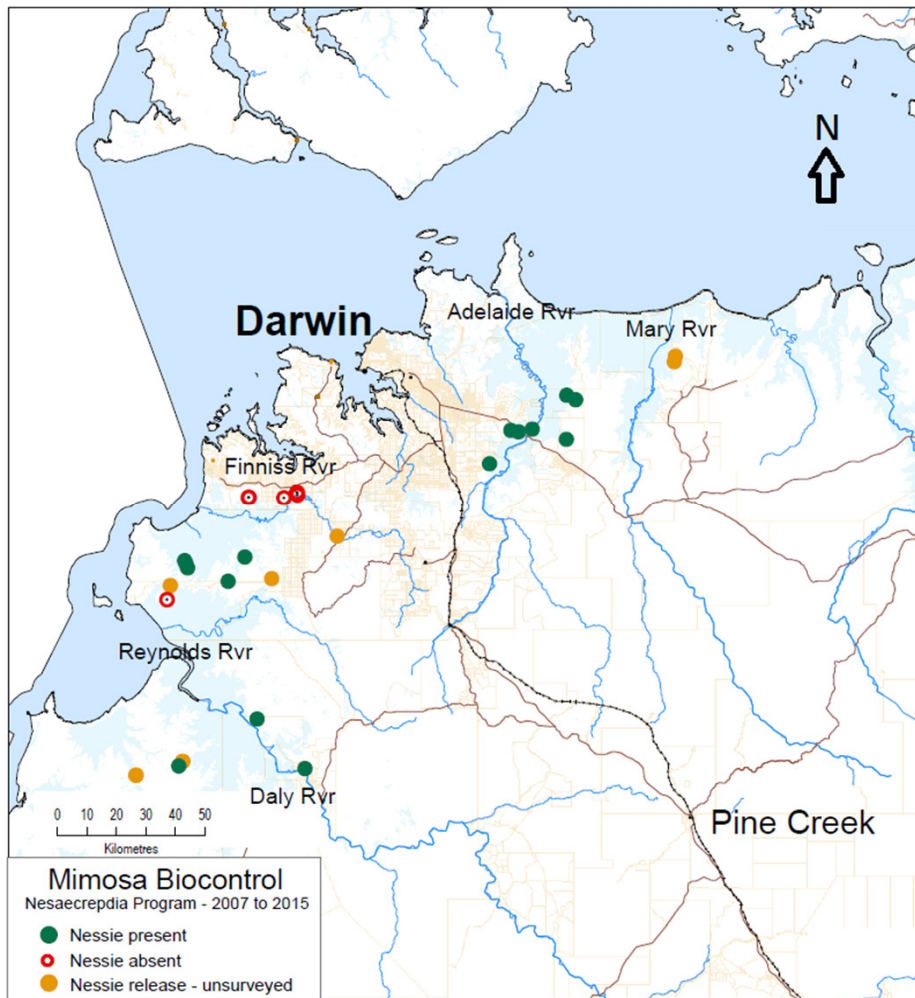


We have identified the site characteristics that sustain beetle populations. Ideal release site characteristics include:

- \*mimosa that is not inundated for more than five months
- \*edges of large stands greater than one hectare
- \*on floodplains rather than drier upland areas

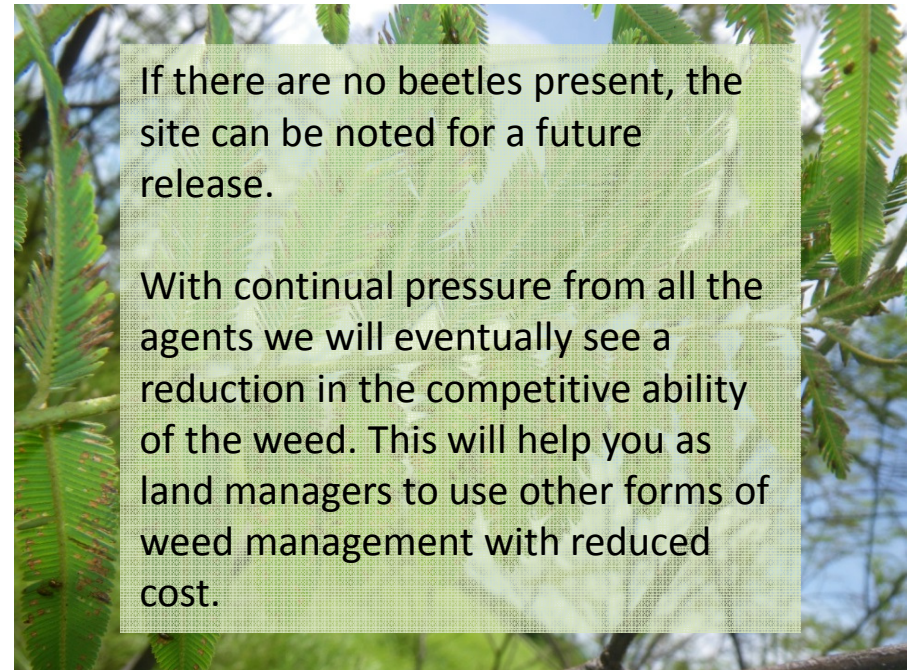
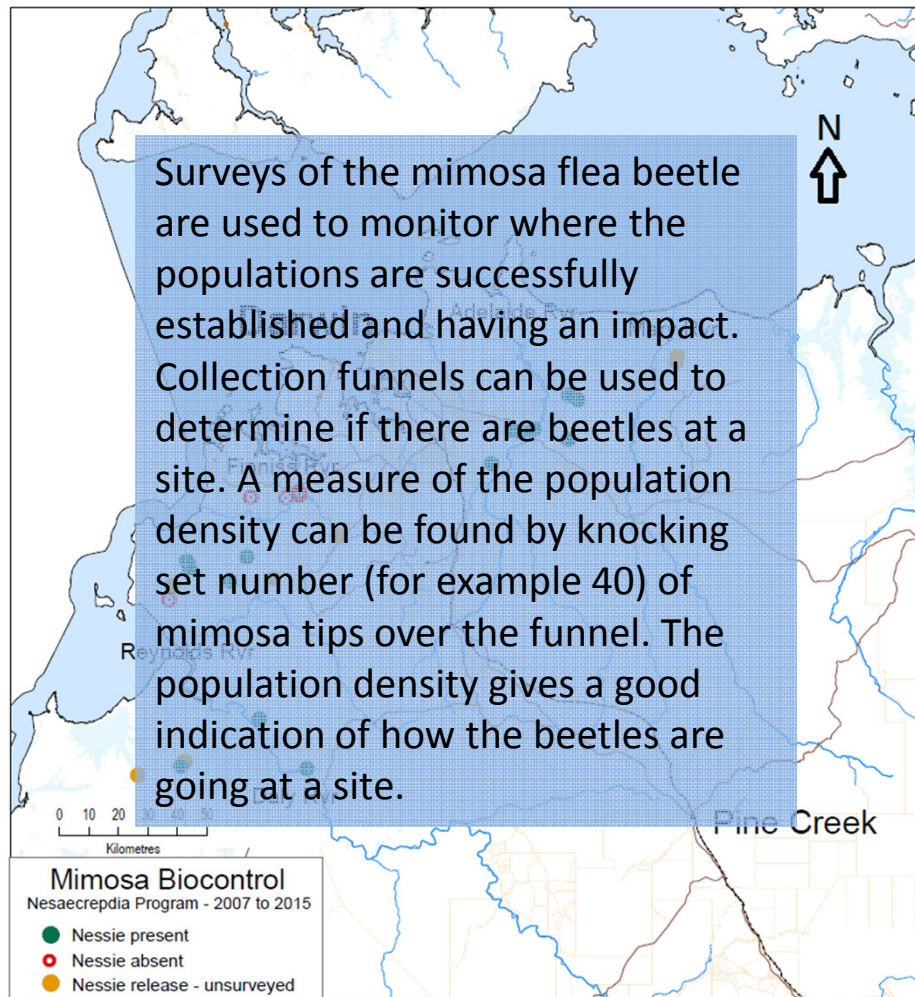


# Monitoring





# Monitoring





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# Acknowledgements

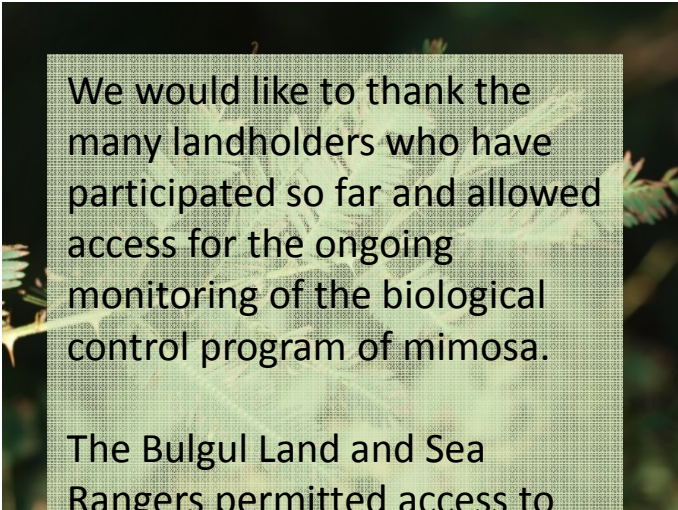


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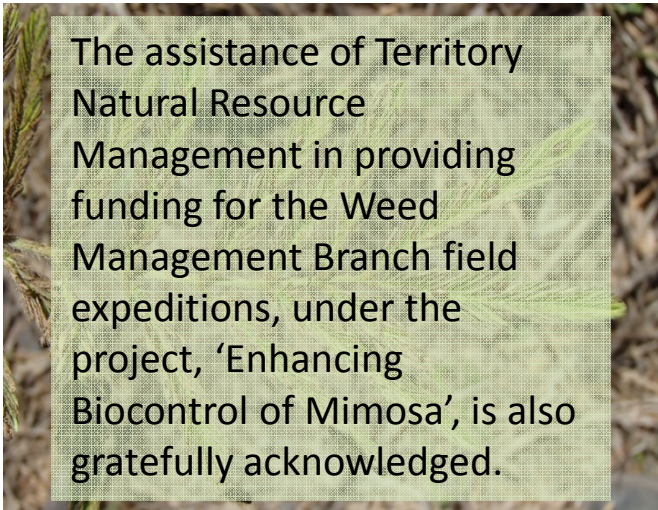
# Acknowledgements



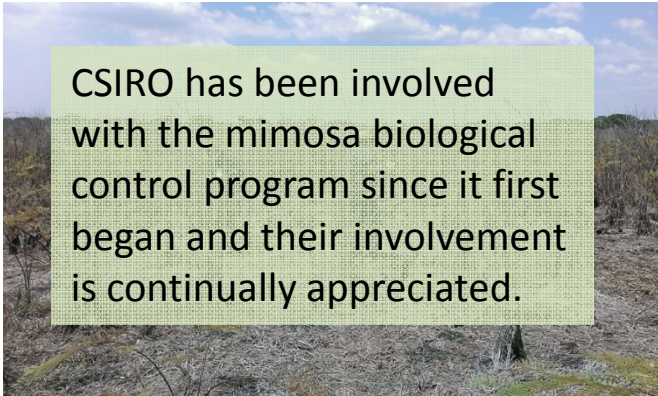
We would like to thank the many landholders who have participated so far and allowed access for the ongoing monitoring of the biological control program of mimosa.

The Bulgul Land and Sea Rangers permitted access to land and assisted with field surveys on the Finniss River coastal floodplain.

The Yantjarrwu Rangers and Malak Malak Rangers permitted access to the Daly River sites.



The assistance of Territory Natural Resource Management in providing funding for the Weed Management Branch field expeditions, under the project, 'Enhancing Biocontrol of Mimosa', is also gratefully acknowledged.



CSIRO has been involved with the mimosa biological control program since it first began and their involvement is continually appreciated.