

# Weeds of the Burdekin Rangelands: Managing lantana

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**Table 1 Preventing new weeds from establishing**

*Summary of key processes: what do we know?*

What are the key bio-physical processes and at what scale do they operate?	What factors regulate them, in order of importance? Are they 'manageable'?	Do we have enough data to set benchmarks? Do these vary with landtypes and/or seasons?
<b>Seed production</b>	Biological control agents—28 insects released in Australia, among them a seed feeding fly that reduces seed production and makes fruit less attractive to birds; effectiveness of agents cannot be managed.  Soil moisture and temperature—determine the timing of flowering and fruiting; these processes cannot be managed.	Impact of biocontrol agents is variable and has not been quantified; generally inadequate to stop spread.
<b>Dispersal</b>	Birds—the major dispersal agents; this process cannot be managed.  Vegetative growth—plants can spread by rooting from prostrate stems; process cannot be managed.	It is thought that most fruits are moved only short distances but a proportion may be transported up to 1 km.
<b>Germination</b>	Ingestion and passage through bird digestive tract—this increases germination percentage; process cannot be managed.	
<b>Plant survival</b>	Drought—may kill some plants; cannot be managed.  Biocontrol agents—some of the many biocontrol agents probably reduce plant vigour; cannot be managed beyond releasing agents.  Competition—healthy herbaceous stratum may reduce establishment success.  Fire—will reduce biomass of lantana, and perhaps reduce rate of vegetative spread; can be managed.	Effects of biocontrol agents are highly variable depending on the biotype of lantana present, climatic conditions.  The importance of this factor has not been established.  Little quantitative data on the effects of fire.



**Table 2 Key processes for management**

<i>Management Options</i>		
Based on current scientific understanding, what management options are available to achieve the objective? How can we monitor their effectiveness?	What confidence do we currently have in these options?	Do the options conflict or interact with other management objectives? Will trade-offs be needed?
Monitor to detect new infestations—riparian zones within the Burdekin Rangelands are prone to invasion by lantana and should be monitored.	Plants are relatively easy to detect where there is access.	When restricted, new infestations are discovered, they should be treated as soon as practicable. Monitoring can be done in conjunction with other management activities.
Continue biological control program.	Biocontrol of lantana is complicated by the variability of the species; there have been some successes.	Selection, introduction, testing and release of biocontrol agents is expensive and time-consuming, but compatible with other control options.
Implement chemical control program.	Registered herbicides are available; should select herbicides appropriate to biotypes present.	Time-consuming and expensive; target outlying infestations, small infestations, and infestations in key areas of a property or conservation reserve etc.
Implement mechanical control program.	This must involve stick-raking, ploughing, or grubbing individual plants and follow up is essential.	Expensive; most easily justified where pasture species can be sown afterwards.
Impose prescribed burning regime.	This will reduce the number of plants and the rate of spread.	Burning will impose some restrictions in terms of land use, preparatory actions and post-fire management.

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