



lippia
case study

Main Roads: making inroads

Management technique:
identification of impacts and trial
of various methods

background and distribution

Road reserves are corridors utilised for a range of purposes – roads, utilities (gas, electricity water and sewage), telecommunications, and floriculture, quarrying and so on. A particularly important application relates to road reserves being used as stock routes when the need arises. They also adjoin land that is used for multi purpose applications – agriculture (traditional and organic), industry, nature conservation, residential and community use. Consequently, these corridors have economic, environmental and social benefits and costs that are not easily measured by individuals or the community.



Photographed by Michael Farinham, Main Roads

Main Roads is responsible for the control of declared pest plants in state controlled road reserves. Over the past few years Main Roads has become increasingly concerned about the environmental weed Lippia (*Phyla canescans*) which occurs at different densities in road reserves around South West Queensland. Nevertheless, it is most prolific in the road reserves around Warwick, Clifton, Dalby, Millmerran, Inglewood and St. George.

Although the distribution of Lippia in road reserves does not have any common environmental attributes (e.g. soil type, slope, aspect and so on) it has been observed that its density increases with moist, alkaline soils. However this is not proven and is the subject of a current investigation due to be completed in March 2005.

issues

Lippia is of concern to Main Roads because there is anecdotal evidence that it causes increased deformation, rutting and cracking of road pavements and surfaces. There are also concerns that it makes the surface underneath culvert structures more unstable and this may lead to problems with the structures cracking or moving. It is also important to note that lippia has an impact on the species diversity of road reserves, some of which are of national environmental importance.



Above: a heavy Lippia infestation along a road side. Note the small white flowers dominating.



Funded by:



action
Salinity & Water
AUSTRALIA



Natural
Heritage
Trust



Australian Government
Department of Agriculture,
Fisheries and Forestry
National Landcare Programme



Queensland
Government



"The Eastern Downs Bluegrass Grasslands have been the focus of much national and state investigation over the past few years. We know that not many remnants remain and some of the best examples are in the state controlled road reserves. These bluegrass remnants are also the home of both rare and threatened plants and animals, such as native corn thistle (*Stemcantha australis*) and Worm Skink (*Anomopolous makayi*). The colonisation of these areas with a weed like Lippia, which eventually chokes out the grassland species, may mean that in the long term there may be little or no grassland habitat. This is also a concern for the grazing industry as the fodder resource in stock routes will be reduced and one of the most valuable seed sources for Queensland bluegrass will not be viable. I guess it proves that weeds like Lippia don't just have environmental consequences, but also economic consequences for a range of industries." Peter Sparshott, Local Environmental Officer, Main Roads.

challenges

Main Roads faces many challenges with respect to its management of Lippia. It is not known at present how Lippia spreads, where it occurs and at what densities, the significance of the impacts on infrastructure and, most importantly, how it is best controlled in road reserves. To try and resolve some of these unknowns Main Roads currently has a research project that is determining the extent and density of Lippia in road reserves in southern Queensland. Once this data is obtained, it will be analysed in conjunction with road condition data to determine if any correlation exists between road condition and the presence and/or density of Lippia.

Main Roads and its contractors have trialled a number of methods to control Lippia, but control in road reserves is not as easy as on agricultural land for the following reasons:

Mechanical

Road embankments cannot be ploughed because of the slope and sensitivity of the pavement material to disturbance. Road reserves also carry utilities like telecommunications and gas, and ploughing may affect the actual utility or the ability of the utility provider to maintain infrastructure.

Chemical (Herbicide)

Road reserves are often used as stock routes and some of the herbicides used to control Lippia are not suitably applied in stock routes because of the stock withholding period. Dairy herds crossing the road reserve daily also risk herbicide residues in milk. The few herbicides that are registered for use in the road reserves have not been overly successful in controlling Lippia.

alternative approaches

Biological

No biological control method currently exists; it is believed that it may be one of the key ways to control Lippia in road reserves.

Pressurised steam and soil additives

These have not yet been trialled; we are looking forward to using them to determine if they are effective in either eradicating Lippia or reducing its density.