

Developing weed management best practice amongst lifestyle farmers

MJ Coleman¹ and BM Sindel²

¹Institute for Rural Futures, University of New England, Armidale, NSW, 2351.

²School of Environmental and Rural Science, University of New England, Armidale, NSW, 2351.

Email: michael.coleman@une.edu.au

Abstract. Lifestyle farmers have been identified as a poorly performing landholder segment with regard to weed management in Australia. However, despite their often non-economic land management goals, and the range of impediments they face, many lifestyle farmers are keen to improve their weed management skills. Our goal was therefore to produce and distribute a booklet on weed detection and control using best practice methods to lifestyle farmers, using information developed in recently completed University of New England research projects. An evaluation of literature and advice from weeds extension professionals across Australia guided the booklet design. Distribution of the booklet took place through existing extension networks. Nearly 10,000 printed copies were distributed free of charge during 2010, while a further 7,000 had been sold to weed extension organisations at the time of writing. This approach proved an efficient and cost-effective way to extend best practice weed detection and control to a difficult to reach audience.

Keywords. Lifestyle farmer, weed detection, weed control, extension booklet.

Background

Small farm owners (or 'lifestyle farmers') are responsible for the management of a large proportion of land in highly productive regions of rural Australia (Hollier et al. 2003). However, as recent research has shown (Sindel et al. 2008), Australian farmers and weeds inspectors alike consider lifestyle farmers of various types (hobbyists, absentee landholders and landholders with off-farm employment) to be less likely than professional farmers to inspect their land for weeds, and less likely to undertake effective weed control.

Lifestyle farmers are often relative newcomers to the land, and are considered to have inadequate knowledge of farm and environmental management and biosecurity issues, posing a potential risk to neighbouring commercial farms (Bowling 2007). Many professional landholders believe that neighbouring lifestyle farmers adopt 'bizarre' farming practices, some of which have negative environmental consequences or encourage weeds and pests. Different management practices and philosophies can create tension between professional landholders and their lifestyle-oriented neighbours (Hollier et al. 2004; Hollier and Reid 2007).

While all landholders face impediments to effective weed control, lifestyle farmers may be constrained by a number of specific factors (Low Choy and Harding 2008; Sindel et al. 2008). These include:

- lack of knowledge regarding weed identification and management practice
- belief that somebody else (such as a government department) is responsible for weed control on their land
- lack of time and labour due to off-farm employment
- different land management values to production landholders
- not appreciating the importance of weed control
- lack of appropriate equipment
- old age or ill health.

Weed management can have significant financial benefits for landholders. However, many lifestyle farmers are relatively unconcerned about farm profitability, given high off-farm income and the small area their land covers. Instead they tend to focus on the lifestyle benefits of rural living, and on other non-profit oriented goals such as habitat restoration, self-sufficiency, increasing land value or further subdivision, and participation in small-scale or niche agricultural production as a hobby (Hollier et al. 2004; Low Choy and Harding 2008). The lifestyle farming sector includes a diversity of land management practices, many of which are contrary to those used by farmers for whom the land is their livelihood. Weed management extension must address the needs of lifestyle farmers and professional farmers alike (Vanclay 2004).

The relatively poor weed control performance of lifestyle farmers as a group is a result of their particular constraints and priorities. However, Low Choy and Harding (2008) identified considerable potential for lifestyle farmers to improve their knowledge of weed spread, detection and control, as well as a latent desire to do so. In a survey of lifestyle farmers in NSW, they found that:

- many lifestyle farmers are committed to natural resource management (NRM) and participate in Landcare and other similar groups
- many had improved their knowledge of NRM, either through self-education or talking to others
- the most sought-after NRM information by lifestyle farmers was in relation to weed control
- most wanted to be able to do more to control weeds on their land.

Considerable information and assistance is available to all landholders on weed control, much of it free of charge. In addition to the numerous weed identification sources available in published form and online, Federal, State/Territory and local government, and local weeds inspection authorities, offer weed control fact sheets and brochures, or personal assistance.

While weed identification resources are useful for all landholders, much of this assistance is tailored to the needs of professional landholders. Few weed detection and control resources have been targeted specifically at lifestyle farmers and new landholders. We therefore decided to produce a booklet on weed management tailored to the needs of lifestyle farmers, including information on weed detection 'best practice', and simple to implement weed control methods. This booklet, 'Weed Detection and Control on Small Farms', was published in 2010 (Sindel and Coleman 2010).

Extending best practice weed management to lifestyle farmers

A literature review was conducted to guide the content and design of the booklet, and to identify possible avenues of distribution to lifestyle farmers. Based on the review (summarised above), we concluded that the booklet needed to emphasise effective weed control as a prerequisite to lifestyle farming goals such as habitat restoration, scenic preservation, niche industry production, and indeed acceptance in the local community. That is, weed control should not only be considered important for its economic benefits for producers.

It was also evident that certain integrated weed management approaches, involving diverse weed control methods, are more appropriate to professional farmers who have the necessary background and equipment to employ a complex strategy, and are able to do so on a large scale. The relative lack of land management experience of lifestyle farmers, and their time and resource limitations, meant the booklet needed to highlight *diligence* in checking for weeds and in controlling outbreaks using simple control methods. Where large weed outbreaks occur, owners of small blocks need to work with their neighbours to control the weed at a district level. By detecting and controlling weeds before they have had a chance to spread, lifestyle farmers can save time, labour and money in the longer term, allowing them to focus on the enjoyable aspects of living in rural Australia.

Lifestyle farmers have reported a general lack of farm management information specific to their needs, and many also believe that their educational requirements are considered secondary to those of professional farmers (Hollier and Reid 2007). Despite this, locally relevant information and support (particularly from weeds inspectors) is available for lifestyle farmers who want to find out more about weed control. Therefore, the booklet needed to highlight existing sources of information on local weed threats, for example who to speak to locally for advice, and where to obtain information on specific species. It was considered particularly important to emphasise the role that local weeds inspectors can play. Lifestyle farmers should consider inspectors as an important resource, rather than a 'threatening' figure with the power to prosecute poor weed management.

Preferred sources of farm management information for lifestyle farmers are varied, and include free booklets and fact sheets, magazines and newspapers, neighbours and local Landcare groups, and rural-oriented organisations and businesses such as government agencies and extension practitioners, stock and station agents, and rural merchandise stores (Hollier and Reid 2007; Low Choy and Harding 2008). Like the farming community more broadly, extension will be most effective in reaching lifestyle farmers if a range of methods are adopted (Vanclay 2004). Although a best practice weed detection booklet is only one way in which weed management practice amongst the lifestyle farming sector may be improved, we believed its effectiveness and potential reach could be broadened by distribution through existing extension networks likely to reach lifestyle farmers.

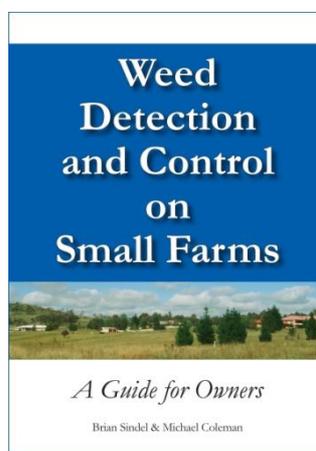
We therefore considered a range of potential distribution avenues for the booklet (which was provided free of charge). This included providing copies of the booklet, or advising its availability, to organisations and individuals likely to come into regular contact with lifestyle farmers, including weeds inspectors and local government, district agronomists, natural resource management organisations and Landcare groups, and rural merchandise outlets. The

booklet could also be promoted through mainstream rural media or targeted small farming magazines, as well as on the internet. Small farm field days are also an important way to reach lifestyle farmers, though this option was outside the scope of our project budget.

Booklet content

The booklet was written to provide a general introduction to weed detection and control responsibilities and methods suitable to lifestyle farm owners, as well as some issues to be considered in relation to weed control. Input was sought from several weeds experts across Australia, to ensure the booklet offered practical advice suitable to inexperienced lifestyle farm owners who may be having difficulty with weed management.

Plate 1. Front cover of 'Weed Detection and Control on Small Farms'



'Weed Detection and Control on Small Farms' begins by outlining the impact of weeds on Australian agriculture and the benefits of weed control for lifestyle farmers, defines weeds, and explains how they spread. The booklet then explains some of the 'best practice' principles for weed detection on Australian farms. Much of this information on weed detection best practice was developed from a recent LWA-funded project (Sindel et al. 2008), in which we sought to identify best practice weed detection methods used on Australian farms by surveying weeds inspectors and landholders. These best practice principles include where (e.g. vulnerable or high-risk areas on the farm) and when (e.g. time of year) to look for weeds, how to identify an unknown plant, and what to do when finding a new weed outbreak.

The booklet also discusses aspects of weed control on small farms, including the weed control responsibilities of owners, guidelines for responsible use of herbicides and chemical accreditation, personal and financial assistance available to owners, and how to control large-scale and cross-boundary weed outbreaks. Specific weed control and spread minimisation methods are discussed, including good farm hygiene, digging and pulling weeds out, slashing and mowing, promoting desirable plants to out-compete weeds, grazing techniques, mulching, and using selective and non-selective herbicides.

Where more specific localised information is required, the booklet suggests that lifestyle farmers contact their local weeds inspector in the first instance. State/Territory-level contact details are provided, and a range of references and useful weed identification resources listed. Many of these resources are freely available to all landholders. The varied geographic and climatic circumstances of Australian lifestyle farms, variety of weed species, and legislative differences across Australia, made it impractical to include specific localised details in a small publication.

Distribution

Ten thousand copies of the booklet were printed initially. Distribution involved sending a single copy to participants in two recently completed University of New England weed research projects. Recipients included landholders, weeds inspectors and extension officers, those involved in weed research, and employees of natural resource management bodies and various State and Territory departments of primary industry (or similar).

Recipients were encouraged to request additional booklets to distribute to lifestyle farmers, and to advise colleagues who may be interested in obtaining copies. Relevant organisations and professional bodies, including natural resource management organisations, Landcare, various state-level weeds societies, and State/Territory departments with a role in weed management, were also advised either by email or telephone of the booklet's availability, and encouraged to order and distribute copies to landholders. The booklet was promoted to weeds professionals in

NSW through the Weeds Extranet and email news service operated by Industry & Investment NSW. Several organisations took it upon themselves to promote the booklet's availability in their member newsletters, or on their web sites. A free downloadable PDF copy was made available through the University of New England web site.

Using this approach, nearly all of the 10,000 copies had been distributed within three months of the booklet's publication, and all had been distributed by late 2010. As a result, we decided it was not necessary to pursue other possible extension avenues, such as rural media, stock and station agencies, and rural merchandise stores.

Further requests meant that a reprint was carried out in 2011. Due to lack of project funds, reprinted booklets were offered at a small cost per booklet to cover printing and postage. In addition to additional requests, an email was sent to those who had earlier requested and received free copies of the booklet, advising them that booklets were once more available. At the time of writing, nearly 7,000 additional copies of the booklet had been sold to extension agencies and organisations.

The distribution method proved to be a cost-effective way to extend weed detection and control best practice to lifestyle farmers, a landholder segment that can be difficult to identify, particularly on a national scale. In most cases, bulk orders were sent out to individuals in direct regular contact with lifestyle farmers. Booklets were distributed to landholders during routine weeds inspection work, placed on display, distributed as part of information kits for new landholders, distributed at workshops and short courses, and handed out to agricultural and small farm field day attendees.

Discussion

Recent research has identified a need for lifestyle farmers in Australia to improve their weed management practices. While weeds inspectors and landholders alike (including lifestyle farmers themselves) consider this group to be relatively poor weed managers, there is a desire amongst many lifestyle farmers to improve their knowledge of weeds and weed management. Lifestyle farming is becoming increasingly popular in peri-urban, high growth and many highly productive regions in rural Australia, and so it is important to ensure that owners are well equipped to manage weeds on their land.

Despite this, much of the freely available information on weed management has been targeted at professional farmers, both in terms of content and extension approach. It was therefore decided to summarise best practice weed detection strategies identified in our research, as well as simple to use weed control methods, into a booklet targeted specifically at the small farm owner. Using existing extension networks, we promoted and distributed approximately 10,000 copies of the booklet, ensuring that copies were channelled through to the target landholder group to encourage adoption of best practice weed management.

Weeds professionals who requested and received copies of the booklet were generally positive about the content. Many were already trying to do more to educate lifestyle farmers about their weed control responsibilities, and saw the booklet as a useful resource in their efforts. A new publication designed to reach a group of landholders who were considered poor performing weed managers was welcomed, and weeds professionals were happy to distribute the booklet on our behalf. This method, through which the large majority of booklets were distributed, proved efficient and cost-effective. It was also a good way to extend best practice methodology to an otherwise difficult to reach landholder segment, often at a moment when landholders are discussing weed management with an expert (for example, at a workshop, or during an on-farm visit or one-to-one extension activity).

We acknowledge that a guide booklet on weed management aimed at lifestyle farmers is not enough on its own to improve practices, given the diverse land management goals and social contexts of lifestyle farming in Australia. Distribution of this booklet needs to be coupled with other extension methods such as media promotion, farm visits and field days (Vanclay 2004). Nonetheless, our experience during this project suggests that extension workers may need to consider the following when trying to reach the lifestyle farmer segment with printed or online information on farm management:

- Extension documents need to account for the variety of lifestyle farming practices, and their divergent goals (many of which are non-economic in nature), and to emphasise how changes in practice will help achieve these goals.
- The information needs to be distinguishable from that designed to meet the needs of professional farmers, and tap into the desire of many lifestyle farmers to educate themselves on farm management approaches appropriate to their scale and priorities.

- Lifestyle farmers can be difficult to reach for extension purposes, particularly when the goal is to educate farmers at a state or national scale.
- The most effective way to reach lifestyle farmers is through existing extension networks that may have a role in educating this landholder segment at a local level (in our case this included weeds inspectors, Landcare and NRM groups and government agencies, but appropriate networks may vary depending on the type of farm management information being promoted).

While not used directly in this project due to budget constraints, small farm and general rural field days are another important avenue of extension to lifestyle farmers. Some weeds professionals did request booklets to distribute at field days. In NSW alone, a number of such field days are readily identifiable, including Ag Quip in Gunnedah, the Tocal Field Days, the Mudgee Small Farm Field Days, and the Farming Small Areas Expo in outer western Sydney.

Although the hard copy booklet has proven very popular (both as a free product in the first print run, and at a small cost to extension agencies and organisations upon reprint), a freely downloadable version of the booklet will remain available on the internet once all hard copies have been distributed.

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