Public climate of environmental weed management

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Abstract  Environmental weed management is both complex and diverse. It requires decisions based on best available practice in an urban environment, which is often dominated by a corporate approach characterised by pragmatics and a political penchant for ‘quick-fix’ solutions. Land care groups, whose very essence is ‘grass-roots’ and whose objectives are long-term, often experience great difficulty in sourcing high quality data on weed management methodology and practical applications. In some instances, such data doesn’t exist. Often, aesthetic approaches towards weed management, based on idealised views of how the land should look and not on ecological function, play a pivotal and uninformed role. One of the barriers to a more informed and systematic approach is a general lack of understanding of ecological function of natural systems. Education and common language usage could provide a useful solution towards redressing the balance between landscape aesthetic preferences and natural system functionality. The cost of weed management is escalating as research into weed control identifies solutions, which emphasise broad-scale control of weed population dynamics. On the basis that effective weed management strategies are both long-term and labour intensive and are likely to require a large component of lay labour, it is suggested that multi-disciplinary approaches and multi-functional interests should be fostered. Intrinsic interest needs to be generated in better weed management if we are to achieve regular public participation in long-term achievable goals.

Keywords  Multi-functional, weed management, land care.

INTRODUCTION
Weed management initiatives in the Australian environment often start by establishing targets and intentions (Hitchmough 1994), which are usually proportional to the quality of vegetation being retained or restored (Urban Forest Biodiversity Program 1997). A wide range of intricate and diverse skills is required to efficiently and effectively manage large quantities of environmental weeds. Generic expertise required would include prevention of spread, treatment variations, social expectations, weed characteristics and physiology, site disturbance ecology, and quality of publications or data produced.

Methodological approaches to many larger scale weed treatment managerial strategies are in the experimental phase and are subject to changes in knowledge and management approach. While most broad scale weed treatment mainly relies on herbicide rather than more integrated practices (Zoschke and Quadranti 2002), treatment methods are often influenced by unknown factors. Site history, land suitability and quality, soil seed banks, vegetation quality and the question of who should manage the individual project in the changing paradigm of newer technology and education, all influence the decision-making process. In this context, decisions range from the uninformed to the educated and varied levels of practical experience apply (Hitchmough 1994).

APPLICATIONS
Concise data is needed to assist better weed management practices. Information on flora and fauna, pest animals, weed and land usage, as well as an overview of environmental and social expectations is essential to achieve effective weed management. Sadly this data is often difficult to source and subject to variations in content and quality. In addition, much of the literature does not relate to Australian conditions. Most community groups do not keep accurate, long-term weed management records due to limitations of time, resources and personnel and time delay between activities. On this basis, reported results are often estimated and actual data quality may suffer or be meaningless. In 2003/04 key personnel of some of Victoria’s regional environmental groups in the Frankston and Kingston districts were interviewed about weeding event impacts and follow up strategies. Over 90% of the groups had no specific management data and were of the view that it should be the responsibility of the local land management authority to establish and maintain such records. The interviews indicated that the majority of groups felt that their resources and expertise were inadequate to undertake the additional task of collecting and correlating weed data.

In addition, very few management plans include follow-up strategies to determine rates of success of behavioural modification and land improvement projects. One factor influencing this lack of follow-up documentation could be the perception of failure and a general desire to obtain the ‘right results’ rather than
post strategy outcomes that could be used for comprehensive improvement (Nickerson 2003).

In terms of the strategic planning of weed management, questions such as the level of intervention that is required arise. From desk top to the field, the systematic and free interchange of ideas between field staff and management is essential to optimise expertise borne of long practical experience in the context of innovative change management practices (Hitchmough 1994). A Code of Practice could be devised that incorporates the documentation and analysis of field data in a more theoretical framework. This would assist in determining priorities and levels of intervention. Management agreements could then integrate a variety of stakeholder and land use data based on extensive consultation. Stewardship and ownership roles could be re-configured to promote conservation values and public interest. Such codes of practice, which are often determined by best practice principles, should also be subject to review of quality and sustainability outcomes.

In terms of weed management agreements, there exists a widespread lack of conformity between Australian states regarding financial input, policies and approach. Given that ecological systems pay little heed to political boundaries, it would seem inevitable that, to be effective, corrective solutions should be regarded as regional rather than local and specific rather than generic. However, the rigid imposition of rules and regulations can be overly deterministic and a balance should be sought between instrumental approaches and individual differences (Kaplan et al. 1998).

Finally, the strategic questions of cost sharing, duty of care and value for money need to be posited? In short, we need good ambassadors who are skilled in both people and weed management practices, who can participate in general debate and raise complex issues and who can integrate diverse best management approaches.

APPEARANCES

Aesthetics is the most obvious aspect of land or revegetation management, and often misguides opinion about how the landscape should be effectively managed by respective communities. The look of the land is not indicative of ecological health (Nassauer 1995). Negative aesthetic experiences in nature are often deemed unworthy of representation and lacking appeal (Yuriko 1998). In terms of aesthetic appeal, many people have judged the look of the land to be an indicator of how it should function but Nassauer (1992) points out that this is not always the case. Weeds are by no means consistently aesthetically appealing across ecological systems. In fact their floral capacity may be the only means by which they are judged by the uninformed practitioner. In addition, there is a danger, associated with pure aesthetics, that uninformed communities embrace the wrong type of environmental behaviour associated with ‘the look’ of the land. Using a coastal example, clear fell views to the sea often perpetuate unimpeded weed invasions and dune system erosion.

What does ecological quality look like? Questions such as this highlight the need for further investigation into environmental perception characteristics and human behavioural inclinations. In particular, understandings of landscape amelioration techniques and strategies and related relevant human values could provide a valuable basis for the development of better weed management strategies.

In terms of collating weed management data, the melding of aesthetic and ecological site values into a state of balance is the biggest challenge (Nassauer, 1995). Balancing restoration variables should reflect many important ecosystem characteristics to assist successful future management directions (Ruiz-Jaen and Mitchell Aide 2006). Management plan outcome studies have indicated that multidisciplinary approaches have yielded far more positive results and less rework. The single practitioner is grossly insufficient (Kaplan et al. 1998) and Cole (1998) advocates the employment of a cohesive management team – the ecologist, horticulturist, landscape architect and resource manager. The team could include a social scientist where there is a complex intermix of stakeholder expectations for land usage and outcomes.

COMMUNICATIONS

How do we motivate people towards positive environmental action? Research into the guidance of responsible public environmental actions is still very young (Kaplan et al. 1998) and functional solutions are not always easily or immediately identifiable. Current triple bottom line reporting (economic, social and environmental outcomes) for most projects means that much of our valuable time as land managers is spent on human resources. Many hours are spent communicating with the local community and stakeholders. Therefore, it is important that we all speak the same language from the early management planning stage, in order to prevent costly misunderstandings. Good communications also assist in building a common understanding of belief and values between science and community (Robertson and Hull 2003).

Language usage needs to be simple and concise to convey useful meaning about weed problems before the interest of the layperson is lost. An example of the type of overly abstruse language often employed in land management domains would be to say ‘use a
lithospheric excavational resource management tool to remove the weeds’ instead of just saying ‘use a spade to dig them out’. Schroeder (1996) suggests a language diversity approach, which could open up a dialogue of mutual understanding between the way people view or experience nature. An example of this would be to employ the terms ‘co-operating’ or ‘participating’ with the ecosystem instead of the more instrumentally based term, ‘managing’. A glossary of terminology would be an invaluable management resource and could resemble the format of a Memorandum of Understanding (MOU). Finally, language terminology may change over time, so regular checks on effective communication need to be devised and incorporated into weed management approaches.

Merely educating the general public is insufficient in itself. It is the public’s insights, opinions and local knowledge that need to be sought out. Specific area interpretive information and a carefully designed educational agenda provide an invaluable resource towards the public presentation of land function and aesthetic understandings. Communities that are well informed, and made aware about the impact of behavioural and cultural practices on weed threat and the costs in natural, monetary and cultural terms, are more inclined to be supportive of management strategies.

Different pathways involving the acquisition of knowledge provide beneficial insight towards quality management and assist in reducing overall costs (Cole 1998). It is evident that effective solutions towards weed management need to be based on the principle underpinnings of integration, collaboration and instruction and guidance from respective weed management industries (Zoshcke and Quadranti 2002). Early project planning needs to clearly identify common property resources and an adequate time commitment is required to demonstrate a co-operative approach in which learning about mutual interests and obligation towards the conservation of public land is a principle objective. Joint responsibility of common property resources is paramount. Currently, all stakeholder groups with interdependence on common property resources need collective collaboration to continue over time. Therefore, land managers require a reasonable degree of flexibility to work with communities cooperatively to achieve a constructive economic outcome.

ACHIEVABLE

Australian investment in weed control is increasing and environmental site re-treatments are costly in labour (Australian Bureau of Statistics 2004). The principle objective of weed management is to remove out of place plants, thus allowing re-growth and recruitment of native species to a level of natural sustainability with minimal intervention (Environment Australia 1997, Blood 2002). The setting of achievable goals and treatment options and the modelling of ecological processes provide assistance with managing a dynamic weed population.

In terms of managing spatial dynamics, the neighbour effect is critical. With some weed management systems, curbing the population to a controllable level is achievable given the right resources but eradication is not. Selfish environmental interests, defined here as personal beneficial gain regardless of external consequences, need to be addressed, especially within private property and in response to the ‘not in my backyard’ syndrome of environmental behaviour (Mazmanian and Morell 1990). What is required is a dynamic shift of public information that demonstrates that it does concern your backyard. ‘What do the neighbours have?’ becomes a major issue for achieving objectives in the integrated management of weed populations.

CONCLUSIONS

Fostering or nurturing people’s interest is paramount, rather than the alternative imposition of rigid thinking on local communities without researching their value systems (Schroeder 1996). As land managers and motivators, we need their attention. Environmental participation must be meaningful and enjoyable. The environment is filled with information, each facet of which has a story to tell (Kaplan et al. 1998) and provides a forum of experience which can assist with focusing community attention towards positive action. All practitioners of environmental management need to be making decisions and producing results that can be shared and which are pertinent to other settings (Kaplan et al. 1998). Evaluation of weed treatment programs, both managerial and practical, requires follow up reporting of both failures and successes. Failure should not be interpreted as final but, rather, a pathway towards improvement.

Integration helps land managers to optimise the pool of various skills in their local community – artistry, advertising, speaking or writing, good cooking or just imagination. We all have our roles to play in a well functioning cohesive industry. Human resource skills are paramount for various group leaders in order to maintain, or ‘hang on to’, various community interests (Cole 1998). As future land managers we need to be continually nurturing ongoing public interest to ensure the participation of local communities in long term weeding activities. Therefore, above all, weeding activities must be fun and socially enjoyable for all ages.
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REFERENCES