



Australian Government

**Rural Industries Research and
Development Corporation**

Environmental Management on Horse Properties

**A Prototype Environmental
Management System for the
Horse Keeping Community -
Implementation, Auditing and
Monitoring**

**A report for the Rural Industries Research and
Development Corporation**

by Jacqueline Frizenschaf

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Prototype Environmental Management System for the Horse Keeping Community

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Foreword

Australia's horse industry contributes significantly to the Australian economy and way of life. Over the past decade, horse keepers have been under increasing scrutiny to demonstrate sound management of their horse properties. This scrutiny has been prompted by new natural resources management legislation being drafted in different states.

The Rural Industries Research and Development Corporation (RIRDC) invests in extensive research into the value of environmental management systems for the rural industries. The value of a well-managed horse property and good horse health has long been recognised among the horse keeping community in Australia. As a result, RIRDC has invested in this project through their Equine Subprogram to produce some practical guides for horse property managers.

Sustainable horse keeping presents an increasing challenge to horse property managers in Australia. Many of the issues surrounding natural resource management and the use of appropriate tools (such as environmental management systems) are underpinned by research and development. However, the success of applied management approaches is often limited by the lack of suitable implementation and outreach strategies. This report provides some solutions to help address this challenge.

This report provides tangible environmental tools for horse property managers in the Action Planner and management guidelines, and an overview of the engagement strategies applied throughout the project.

This project was funded by the RIRDC Horse Research and Development (R&D) Program, which was matched by funds provided by South Australian Government agencies and Horse SA. In addition, supplementary funding was attracted from the National Water Initiative (Greening Australia), the Natural Heritage Trust (Envirofund) and SA Water.

This report, an addition to RIRDC's diverse range of over 1600 research publications, forms part of our Horse R&D Program, which aims to assist in developing the Australian horse industry and enhancing its export potential.

Most of our publications are available for viewing, downloading or purchasing online through our website:

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Peter O'Brien

Managing Director

Rural Industries Research and Development Corporation

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- Horse SA and Julie Fiedler as executive officer and the instigator of the project, without whom the work wouldn't have started
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- Porter Novelli SA Pty Ltd: Liz Kellaway and Lee Welsh, for sharing their expertise in rural stakeholder engagement and for developing the adoption and outreach strategy document; and Richard Campbell for editing and production services to publish the Action Planner
- Gwyn Morfey for developing the website which will host the Action Planner and associated guidelines.

Abbreviations

AMLR NRM	Adelaide and Mount Lofty Ranges Natural Resources Management Board
CoP	Community-of-Practice: ‘To build an effective network which shares knowledge, ideas, expertise and experience regarding content management so as to achieve better practice, improve awareness and understanding, and facilitate successful outcomes (for government)’ (Australian Department of Finance and Administration); often implemented through online learning and exchange forums
EMS	environmental management system
EPA WPO	Environment Protection Authority Watershed Protection Office
GIS	Geographic information system: creates spatial displays of different landscape themes (e.g. rainfall, topography, slope, landuse, properties)
KASA	knowledge, attitudes, skills and aspirations
NRM	natural resources management
PIRSA	Primary Industries and Resources SA
SEE	social, economic, and environmental
TOP	Targeting Outcomes of Programs

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Executive summary

What the report is about?

Prototype Environmental Management System (EMS) for the Horse Keeping Community – Implementation, Auditing and Monitoring, was a three-year RIRDC-funded research project that explored the value of an environmental partnership approach between South Australian horse industry representatives and government to achieve environmental improvements on horse properties on a voluntary basis.

Aims/Objectives

Project deliverables were to:

- produce a practical prototype EMS framework for the horse keeping community as a prerequisite and a point of reference for performance-based auditing and developmental approval (*Phase 1*)
- develop and test a self audit kit for horse keepers through close collaboration between the Environment Protection Authority (EPA) and the horse keeping communities in different states (*Phase 2*)
- develop an awareness raising and EMS adoption program to reach out to the greater horse keeping community particularly in the Mount Lofty Ranges, and to include an interstate component (*Phase 3*).

Methods used

The project methodology included a step-by-step design towards the final outcomes, especially the development of a self-audit kit to be promoted to the horse keeping community using a targeted outreach approach. The applied framework used throughout the project was modelled according to the basic elements of ISO 14001 EMS methodology. This provided a systematic approach to capture the potential risks of horse management activities to the environment; to prioritise actions for avoiding or mitigating these risks; and to monitor the success of the on-property action(s) with the implied option of continually improving on-property land management.

The overall methodology was strongly based on a partnership and consultative approach during each project phase. Participatory development principles were used to ensure that the project products were endorsed by all parties potentially affected or involved in the future use of the products. A pilot group, comprising a cross-section of the horse industry sector in SA was tasked to assist in developing, testing and reviewing the products. Environmental land management principles (to be promoted by the products) were reviewed by scientific and government experts (to ensure a sound scientific basis), and tested by the pilot group (to ensure their likely adoption).

Additional, underpinning tools used as part of the project included: the use of workshop and review sessions; field days; monitoring performance and evaluation for the desired project outcomes and the actual environmental improvements on the ground. Qualitative and semi-quantitative evaluation tools used were pilot participant surveys at the beginning and end of the project; feedback surveys at the end of workshops and field days; participant reports / presentations on their on farm improvements; mid-term project review with project team.

Throughout the three years of research, the project made extensive use of promotional opportunities such as media releases, and presentations at national and international conferences and local events.

Results

The results of the project are listed below.

- **Phase 1—Prototype EMS developed as a basis for developing a self-assessment tool for horse keepers.** For the first time in Australia, a comprehensive list was compiled including main horse keeping activities and their potential environmental impacts. This provided a valuable basis for a focused approach in Phase 2 and a mutual understanding of the fundamental environmental issues potentially caused by horse keeping activities.

Additional products. During Phase 1 workshops and field days a significant knowledge gap of the pilot group (and hence, the larger horse keeping community) became apparent. There was a lack of understanding about how to take the natural conditions of a horse property into account when managing the property. As a result, a *Step-by-step guide for land capability assessment* was devised for the pilot group to guide the user through the process of assessing the natural conditions of the property and recommend environmentally sustainable stocking rates, appropriate locations for structures and property maintenance requirements.

- **Phase 2—Self-assessment tool (now called ‘Action Planner’) developed.** The Action Planner was developed based on a series of workshops and review sessions identifying a pragmatic and user-friendly structure for the document and its scientific content. It was created to enable the horse keeping community to conduct a quick (about 20-minute long) assessment of how their property management fares. It has been tested interstate and received enthusiastic responses.

Additional products. While drafting the Action Planner, it became evident that enticing horse owners to adopt sound environmental practices would be greatly enhanced if a ‘how to’ guide was added to the package. Hence, the Management Guidelines were developed to accompany the Action Planner.

- **Phase 3—Adoption and outreach strategy developed.** A well thought-through adoption and outreach strategy would allow Horse SA, the custodian of future activities on environmental management by horse keepers, to target its efforts strategically with the goal of ultimately raising the (environmental) performance of the horse keeping community. The strategy was devised based on substantial consultation with government and the horse keeping community. It now contains a prioritised sequence of strategic actions with the highest potential for on-ground environmental improvement results.

Additional products. The project team soon realised that the development of an adoption and outreach strategy would benefit from expert input. Additional Natural Heritage Trust (Envirofund) funding enabled the team to engage Porter Novelli Pty Ltd in the development of the strategy. Porter Novelli used tools such as workshops and surveys to identify different target groups for an outreach program using the principles of community-based social marketing of Dr Doug McKenzie-Mohr.

All initially specified project objectives and desired products were achieved, but overall project success lies in the application of the participatory development and management approaches used throughout the project.

Implications for relevant stakeholders

Environmental management for horse keepers won’t wind down after this project. The project has laid a solid foundation to carry out works into the future such as the community-of-practice forum; adoption and outreach monitoring; and expansion of training and research into other ‘lifestyle’ rural land managers, who often manage horses on their properties (see: www.horseslandandwater.com).

Recommendations

- **Industry reporting**—To value self-assessment and guideline tools as true instigators for environmental behaviour change, third party verification is essential. There could be opportunities to use the tools in developing an industry sector-based, collective, reporting tools as to what degree environmental improvements are achieved by industry members. Such reporting mechanisms could be modelled according to existing efforts in other parts of the world, where industry reporting is now used in the NRM decision making framework by government.
- **Adoption and outreach**—The success of the outreach program can (and needs to be) monitored and evaluated over time. Horse SA can take the lead in this effort and liaise with government (e.g. EPA) on the promotion of the results.
- **Extension**—Adaptation of the tools to other areas of Australia can be initiated if desired. Horse SA has already indicated that they will be seeking ways to adapt these tools to other regions in Australia.
- **Promotion of tools nation wide**—This can occur through a media extension effort, led by Horse SA.

1. Introduction

1.1 The issue

Over the past decade, horse property managers have increasingly faced pressure to demonstrate environmentally sound land management practices. Government and non-government organisations, as well as community groups, are now expecting horse property managers (similar to other rural horticultural or animal husbandry land uses) to have a certain awareness of appropriate management of sensitive natural resources (water, soil, flora and fauna) and to practise responsible land management.

With new natural resources management (NRM) legislation being drafted nation wide and at a state level (e.g. *Natural Resources Management Act 2004* in South Australia), different horse industry sectors often find themselves lacking the time to keep track of emerging environmental issues or new legislative requirements, let alone having the management capability to actively manage these issues effectively.

Therefore, a peak, not-for-profit body for the South Australian horse keeping community, Horse SA, was established in 1999, with a key priority of facilitating increased land management knowledge and accountability for horse property managers.

The significant number of horse keeping activities in the Mount Lofty Ranges watershed (a drinking water supply area for metropolitan Adelaide) led Horse SA to collaborate with the Environment Protection Authority's Watershed Protection Office (EPA WPO) on acceptable land management practices for improving water quality. The collaborative working relationship was also motivated by the fact that horse keeping above a certain threshold limit of horses per area was considered a 'non-complying development' in the watershed and needed development approval by councils. This situation changed on 8 December 2005, when new policies were introduced into development plans covering the watershed. Horse keeping is now no longer non-complying provided certain conditions are satisfied relating to location of associated buildings (stables, shelters and exercise yards), slope of land, rainfall and setback of buildings, structures and exercise yards from watercourses. In general, however, horse property managers have not applied for development approval when needed, and the under-resourced regulator (often with limited natural resources information) cannot enforce compliance. Such situations are common in diffuse source pollution contexts, especially when reinforced by the public perception that 'there is no real environmental problem'.

A Prototype Environmental Management System (EMS) for the Horse Keeping Community—Implementation, Auditing and Monitoring, a three-year RIRDC-funded research project (referred to as 'Horse EMS project' in this report) is the means and result of the collaboration.

1.2 The approach

As part of the general approach to addressing these issues the horse keeping community was engaged in a systematic (environmental) management approach, and a government-industry partnership initiated.

1.2.1 Environmental management systems

The concept of environmental management systems (EMS) is based on International Standards Organisation (ISO) 14001 (Standards Australia 1996). It is a tool that helps organisations (in this case horse properties) achieve their environmental obligations and broaden environmental performance goals. The ultimate motivator for the use of such a system is to reduce any potential impacts on the environment.

The EMS methodology was used as a basic framework to engage horse owners in a systematic approach to implement environmental improvements on their properties.

The systematic approach uses the components of planning, actioning improvements, checking whether improvements have worked as expected, and reviewing the success to refine future actions. The EMS components appeared useful tools for raising the awareness of the horse property managers by:

- **Planning/risk assessment**—compilation of horse management activities and their potential risks to the environment
- **Improvement actions**—drafting and trialling of action plans for improvement actions on horse properties
- **Checking**—provision of monitoring tools to track the success of the improvement actions
- **Reviewing**—refinement of the action plans into the future.

The Horse EMS project in the Mount Lofty Ranges watershed in South Australia (Figure 1) took a regional approach that allowed an in-depth analysis of the environmental issues and potential solutions for them, and provided a good understanding about how horse property managers responded to these issues. The fact that horse keeping in the watershed had previously been considered a ‘non-complying’ development that required development approval and the support of the EPA, indicated that the watershed was a valid choice for the trial area. It was considered to be a test case for sound environmental management in an environmentally sensitive, yet multi-use, area.

1.2.2 Environmental partnership

The environmental partnership approach of the EPA and Horse SA is based on using a voluntary, participatory management approach. Such schemes are common tools for a regulator (such as the EPA) to address diffuse source pollution issues. Environmental partnerships, in particular, have their place when regulatory (compliance enforcement) measures lead to limited results or are administratively under-resourced. They can also prompt the collaborative and empathetic compliance behaviours needed to gain complex or dispersed environmental on-ground outcomes.

Horse property managers have also been facing increasing scrutiny of their environmental management performance from external parties who wish to see horses being kept with minimal adverse impact to the environment.

The horse industry was willing to embark on a voluntary environmental management scheme and work with government, and the industry–government partnership was created. The industry had the benefits to look forward to, of contributing to the horse keeping community’s environmental awareness, demonstrating their increasingly sound land management practices, and helping to protect and potentially improve natural resources.

2. Project objectives

- Produce a practical prototype EMS framework for the horse keeping community as a prerequisite and a point of reference for performance-based auditing and development approvals (*Phase 1, 2003–4*)
- Develop and test a self audit kit for horse keepers through close collaboration between the EPA and the horse keeping communities in different states (*Phase 2, 2004–5*)
- Develop an awareness raising and EMS adoption program to reach out to the greater horse keeping community in the Mount Lofty Ranges watershed, including an interstate component (*Phase 3, 2005–6*)

3. Methodology

The overall methodology made use of theoretical knowledge and practical applications in:

- natural resource management
- community and industry engagement and capacity building
- project evaluation techniques.

The project was designed to facilitate a collaborative working environment and encourage a straightforward approach to achieving project outcomes and outputs. Project design included an underpinning environmental partnership approach, transparent project governance structure and project staging, as well as project monitoring and evaluation techniques.

3.1. Environmental partnership approach

The historic relationship between the horse industry in SA and the EPA can be described as challenging, especially in relation to horse property development approval processes and the previous ‘non-complying’ status of this activity. To break down perceived and actual barriers, the project aimed to build trust and common values, based on capacity building, through an environmental partnership approach, consistent with ‘good practice’ project management principles.

Gunningham and Sinclair (2002) describe an environmental partnership as:

a cooperative agreement between, on the one hand, business, and, on the other hand, one or more second parties (government) and/or third parties (e.g. environmental organisations or commercial entities, including other parts of the supply chain), whereby business voluntarily undertakes to achieve certain environmental improvements in exchange for some benefit provided by other partnership participants.

Gunningham and Sinclair (2002) further describe likely benefits for landscape-based enterprises (such as horse property management):

- **Commercial benefit**—Environmental partnerships may provide opportunities for greater on-farm productivity, while others, most notably with environmental groups and/or which use environmental labelling, may facilitate a greater market share, access to new markets, the ability to charge a price premium, or significantly, continued market access.
- **Political/social benefit**—Environmental partnerships may provide farmers with greater environmental credibility in promoting their position in range of policy forums. Necessarily, as a condition of entering such partnerships, agricultural sectors will have to take demonstrable action to improve their environmental performance.
- **Industry flexibility and credibility**—Finally, the broader attraction of environmental partnerships in agriculture lies in their ability to combine industry flexibility and ownership on one hand, with the credibility of external, third party engagement on the other hand, even where that third party is not a regulatory agency.

One of the most common forms of environmental partnership entails some form of agreement between an industry sector (or enterprise) and a government agency. The Horse EMS project represents such a partnership. Generally, the partnering entities negotiate an agreement but less formal arrangements have also been popular worldwide. Two types of government–industry partnership models seem to prevail (Gunningham and Sinclair 2002):

- **Public voluntary partnerships**—devised by an environmental agency and individual enterprises are invited to participate; industry participation is purely optional. Industry ‘challenge programs (e.g. the Greenhouse Challenge) are perhaps the best known.

This Horse EMS project was modelled on this approach.

- **Negotiated agreements**—specific commitments to environmental protection bargained between industry and a public authority, most commonly entered into by an industry association and government against a backdrop of threatened legislation. Sometimes government agencies (at least those with regulatory powers) may be able to offer some form of ‘regulatory relief’ to encourage voluntary improvements in environmental performance.

The Horse EMS project included elements of such a bargaining attempt, although they represented motivational drivers rather than formalised agreements. There is an apprehension that current legislation of non-compliance of horse property developments in the environmentally sensitive water supply catchment of Adelaide could lead to non-approvals of new horse properties in this area. By engaging in a project of an environmental nature, the horse industry strives to convince government regulators to address environmental concerns through promotion (and potential auditing) of appropriate land management practices rather than a definitive refusal of the actual landuse.

Environmental partnerships can use any form of voluntary environmental management arrangements (Mech and Young 2001), including EMS, for the purposes of enhancing environmental management. Different voluntary arrangements can incorporate various types of standards or design features, depending on their ultimately desired objectives. For example, environmental, marketplace (economic) and community (social) drivers will influence the type of voluntary engagement of a group or organisation in environmental management. Table 1 illustrates potential drivers as identified for the horse keeping community.

Table 1. Potential motivational drivers for land management improvements by horse property managers

<i>Environmental objectives</i>	<i>Marketplace/economic objectives</i>	<i>Community/social objectives</i>
<ul style="list-style-type: none"> • improve environmental conditions for the purpose of maintained horse health • decrease environmental (regulatory) liability • continuously improve environmental impact management • achieve specific environmental outcomes 	<ul style="list-style-type: none"> • increase asset value by property improvement (e.g. receiving or maintaining access to premium prices) • increase income through well-maintained property (e.g. bed & breakfast establishments) • gain access to existing or niche markets (e.g. tourism-related) 	<ul style="list-style-type: none"> • replace regulatory sanctions with quality management • establish good neighbourhood relationships • raise awareness of environmental issues and promote cultural change in land management • increase horse industry community esteem through good environmental stewardship

3.2 Environmental management systems

The increased scrutiny of environmental management performance and awareness of the relationship between environmentally conscious land management and better horse health, has not, as yet, generally transferred to good land management by the wider horse keeping community.

The EMS methodology was used as a basic framework to engage horse property managers in a systematic approach to implement environmental improvements on their properties. An EMS consists of a set of processes and practices that enable an organisation to reduce its environmental impacts and increase its operating efficiency. An EMS, based on ISO 14001, helps organisations achieve their environmental obligations and broaden environmental performance goals.

An EMS is a voluntary, enterprise (or property)-based, non-regulatory management tool, which can be used by businesses to manifest their commitment to environmental management, often by receiving third-party certification. It is mainly designed to provide a systematic approach to management improvement, based on a (business) risk assessment, monitoring and continuous improvement process. In essence, the intent has been to enable integration of an EMS with other

business management processes and records, so it becomes a useful additional (environmental) management tool. The EMS promotes the use of a continuous (management) improvement cycle, using the PLAN–DO–CHECK–REVIEW process (Figure 2). Organisations are often using the basic concepts of EMS but not many have modelled their EMS strictly on ISO 14001.

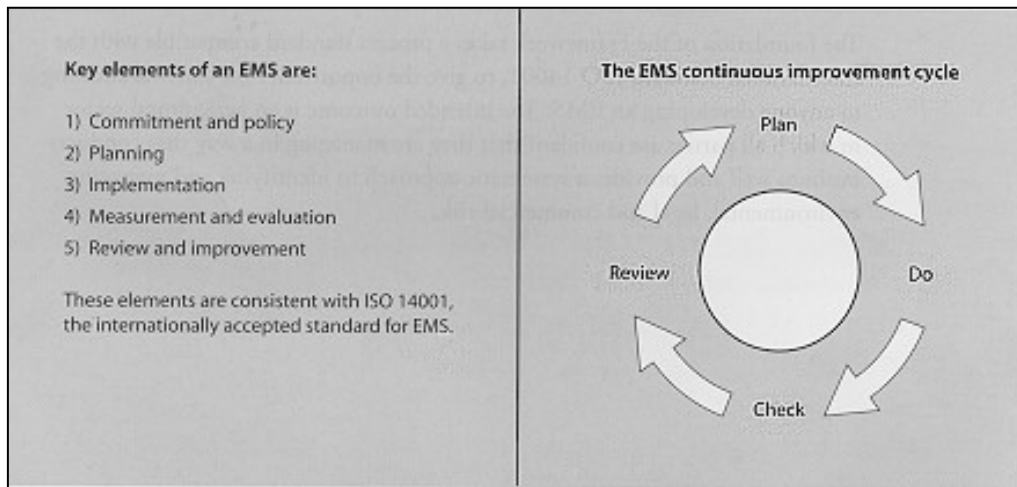


Figure 2. EMS cycle

This Horse EMS project has adhered to the five main EMS elements in its project plan (Figure 2).

1. Commitment and policy—A business or property commits to improving their environmental management in a certain manner, and often supports the commitment with a one page ‘policy statement’ which provides details of how it will improve its operations over a set period of time.

Horse EMS: The property owner (e.g. a family) makes a commitment to improve their property in a certain manner over a specified time period. Such a commitment is best endorsed by all involved in the planned improvements.

2. Planning—A feasible and practical plan is the final product in a string of efforts which include an assessment of: the business (or property) activities that could pose a potential environmental risk; how to best prevent such a risk (e.g. what improvement action to take); when to take action it (e.g. based on family and budget requirements); and how and when to monitor its success.

Horse EMS: The property owner(s) assess the potential risks of their current management activities on natural resources (e.g. water, soil, pasture, air, wildlife, native vegetation). They then plan on how to best address these risks based on their financial situation and time commitments (e.g. through an ‘action plan’).

3. Implementation—The ‘DO’ part in the EMS cycle implements the action plan. Often, businesses choose to institute their improvements step-by-step, according to financial and other considerations.

Horse EMS: The property owner(s) implement the changes on their property, paddock or intensive horse keeping management areas.

4. Measurement and evaluation—A crucial part of any action plan is the inbuilt measurement scheme. If success is not measured, there is no record of whether the improvement goal has been achieved or, if not, what the impediments to achieving it were. Monitoring is usually being conducted using checklists to track accomplishments of subtasks, or in the case of landscape improvements, photopoints or biophysical measurement data.

Horse EMS: Based on available observational, visual, or biophysical measurement tools, the owners keep track of their improvements and determine whether their efforts were successful or whether adjustments need to be made. Several simple measurement tools can be made

available for horse property managers, who generally have another primary occupation and enjoy horse keeping as a hobby.

5. Review and improvement—Reviewing the action plan and the success (or failure) of the actions is the cornerstone of the ‘continuous improvement’ cycle. With an appropriate monitoring system in place, the review process is set out to provide either closure of improvement actions, a basis for evaluating the potential causes for failure to achieve a task, or the incorporation of a change in the regulatory or other context for future actions.

Horse EMS: Success (or need for adjustment) can be assessed by a review of the (mostly observational) monitoring data and through networking with other horse keepers.

Since 2000, Australia has embraced the notion of EMS for agricultural and other rural businesses, and aimed to test the application and usefulness of EMS in this context. The *Australia’s National Framework for Environmental Management Systems in Agriculture* (Natural Resource Management Ministerial Council 2002) promotes a method to continuously observe, improve, monitor and review the changes in land management to ultimately lead to enhanced landscape management. Similar to the goals in the manufacturing industries, the systems approach aims to being readily integrated with other on-property management processes and records that landholders may already maintain as part of their day-to-day business. For example, in the case of animal husbandry enterprises (e.g. thoroughbred racehorse breeding, racecourse maintenance, bed and breakfast or tourism attractions using horses), these records could include financial accounts, veterinary bills and incidences, pasture maintenance records, occupational health and safety reports.

EMS is designed as a process standard, specifying a formal step-by-step process without setting performance standards that adhere to targets or benchmarks. It answers the questions ‘what to improve’ but not necessarily ‘how to improve’. Hence, while an EMS provide a suitable framework for identifying relevant legislative and other natural resources management requirements (e.g. catchment targets), it works best in conjunction with more specific performance guidelines, codes of practice, benchmarks or relevant technical information tailored to the specific industry or enterprise in question. In the context of increased expectation of rural land managers to meet environmental requirements according to regional natural resources management strategies, EMS has been progressively more used to assist in the management task. It is often further supported by industry-specific management practice guidelines.

The use of an EMS approach for the horse keeping community was an obvious choice for a model, especially as it provides a holistic view of a property and its potential impacts on natural resources rather than an isolated focus on a certain NRM problem. In addition, it allows for a management response that considers all aspects of a property (family) life, including appropriate scheduling of different improvement tasks over a longer period, and in a family’s (enterprise’s) financial and social context.

3.3 Regional approach

The Horse EMS project used a regional approach to implement project objectives and test the validity and application of the guiding documents produced during the project. The advantage of this approach was to enable in-depth analysis and product development. It especially allowed project participants to develop a sense of the relevance of the topics to their immediate local issues. At the same time, the project management team gained a greater understanding of the systematic themes of issues and the context in which they could be addressed, so that a similar approach could be applied elsewhere.

The area of interest was the drinking water supply catchment for the city of Adelaide in South Australia. The Mount Lofty Ranges watershed (Figure 1) represents one of the most biodiverse regions in South Australia and provides 100% of Adelaide’s drinking water supply (60% through runoff in the watershed itself, 40% through Murray River water pumped to and discharging through the watershed). It is also a primary location for lifestyle landholders (rural and urban dwellers), small

rural businesses (including horse agistment properties, thoroughbred studs), recreational facilities and a variety of agricultural activity in general. The complex demands on the watershed's resources require an active approach by stakeholders (including horse keepers) to ensure long term business and environmental sustainability.

The fact that horse keeping in the watershed has previously been considered a 'non-complying' development, which required development approval and the support of the EPA, the watershed seemed a valid choice to pilot the project. It represented a test case for sound environmental management in an environmentally sensitive, yet multi-use, area.

3.4 Project governance structure

The successful execution of a project is often reliant upon a robust and transparent governance structure. All 'players' in the Horse EMS project had a good understanding of the governance hierarchy which was used as a basis for managing the project. Project terms of reference were endorsed by the steering and project management committees and ensured that all committee members knew their responsibilities and reporting mechanisms. The inter-agency steering committee consisted of agency members in the NRM field and was led by an elected, independent chair. It provided strategic directions for the project. The project management team was responsible for day-to-day project management tasks. This team had two executive officers, representing the primary project partners (Jacqueline Frizenschaf (EPA) and Julie Fiedler (Horse SA)), who were assisted by additional staff within their respective organisations.

Two additional groups of project participants, critical for the overall project success, were the pilot project group and the expert reference panel.

The pilot participant group

A pilot group, comprising representatives across the horse industry sector in SA, was tasked to assist in the development, testing and review of the products. Pilot group participants were selected based on the following criteria:

- located in the Mount Lofty Ranges watershed
- represented a cross-section of the entirety of horse keeping activities, including:
 - ✓ stabling, partial yarding, full yarding
 - ✓ a variety of commercial endeavours
 - ✓ different areas and density of horses
 - ✓ different knowledge of environmental management
 - ✓ enthusiasm to participate over the course of three years.

A total of 12 primary project participants and an additional 14 interested horse owners were initially selected for the three-year project. They brought different background knowledge and perspectives to the group and covered the following areas of interest:

- private (lifestyle horse owners)
- thoroughbred and horse studs agistments
- bed and breakfast /riding facilities.

The expert reference panel

The environmental land management principles (promoted in the products) were reviewed by an expert panel, including scientific, government and community specialists. In addition, a selected group of thoroughbred and harness breeders were engaged to review the project's approach and products. The comprehensive review process ensured scientifically sound NRM improvement claims, and that the products were practical and user-friendly.

3.5 Project delivery

The project was divided into three distinct phases, each with specific project outcomes and outputs. Adequate timeframes were set to establish a positive working relationship between the project partners to foster the delivery of project outcomes beyond the life of the project. The scope enabled the establishment of a sound (mutual) learning environment where both entities (the horse industry and government) could mutually recognise their knowledge and expertise. A 'milestone achievement schedule' presented the project's 'living' workplan document. The workplan informed the project team of the status and direction of the project. It also provided a basis for discussing the merit of including value-adding opportunities within the project schedules. The workplan also provided a framework for annual reports to RIRDC.

3.6 Project monitoring and evaluation tools

Monitoring and evaluation was conducted at two distinct levels:

- evaluation of overall project success according to project objectives
- evaluation of project outputs.

3.6.1 Tools and concepts

To facilitate the evaluation of the overall project success, a model was adopted that described a planned evaluation methodology from the start of the project and allowed for adequate evaluation of the results. Selected elements of several models were incorporated into the final evaluation effort. The most prevalent concepts are described below.

Targeting outcomes of programs

To enable a broad understanding of the social, environmental and economic implications of the project, an evaluation method was conceptually adapted according to the principles of the Targeting Outcomes of Programs (TOP) methodology (Bennett and Rockwell 1995).

TOP focuses on outcomes in planning, implementing, and evaluating (primarily extension) programs. It is based on a hierarchy that integrates program evaluation within the program development process. It uses a framework that follows specific outcomes in program development and assesses the degree to which these outcomes are reached. The strength of this methodology is that it is designed to show the linkages between program development and overall program performance. More specifically, TOP is based on the assumption that most information, education, and training programs can be represented by the two-sided, seven-level hierarchy (Figure 3). A program is developed starting at the top end on the left hand side of the model. Program performance is evaluated using the right hand side indicators illustrated in the model. The program development process (left hand side of the diagram) is underpinned by the identification of social, economic, and environmental (SEE) conditions that are targeted or need improving. Through a partnership approach and mutual learning experience, the **Knowledge, Attitudes, Skills and Aspirations (KASA)** of the participants change over time and the targeted outcomes are achieved (see Attachment 1 for further information).

In the first instance, the social, economic and environmental behaviours to be changed through the horse environmental management project included:

- improved environmental management (of water, soil, pasture, air)
- increased social acceptability (by community and regulators)
- economic viability in an environmentally sensitive area (e.g. the watershed).

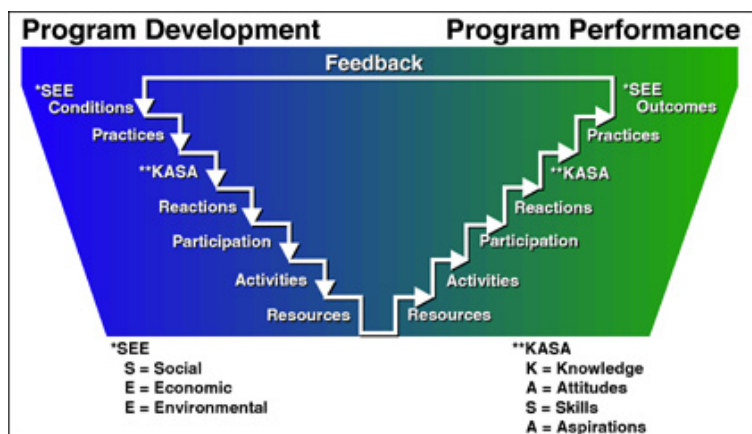


Figure 3. Targeting outcomes of programs
Source: TOP website 2006

Table 2 provides an overview of how this project included information on these topics and the overall evaluation tools used.

Table 2. Desired Horse EMS project outcomes and evaluation tools

TOP hierarchies	Desired outcomes	Evaluation tools
SEE conditions/ outcomes	<i>Social:</i> capacity building/networking, neighbourhood issues <i>Environmental:</i> increased awareness and management improvement of a range of NRM issues (water, soil, air) <i>Economic:</i> viability (sustainability) of horse keeping; expenditure during pilot project and for future property management improvements	Workshops, field days, research tasks, expert advice, anecdotal information, surveys, site visits
Practices	Existing vs desired changed land management practices	Prototype EMS, risk assessment, surveys, site visits
KASA	<i>Knowledge</i> —on NRM topics <i>Attitude</i> —positive towards NRM improvement requirements <i>Skills</i> —ability/tools for environmental management <i>Aspirations</i> —willingness to improve	Workshops, site visits, discussion forums, EMS tools of the Plan-Act-Do-Review cycle
Reactions	<i>Positive/negative</i> interest in workshops etc.	Surveys, feedback, site visits, on-property improvements
Participation Activities	<i>High/low</i> turnout to workshops, field days, etc. Participation in project activities On-property improvements	Surveys, turnout, feedback Workshops, field days, 'homework', on-property improvements
Resources	Flagging resource gaps such as education / best practice guidelines, extension services, etc.	<ul style="list-style-type: none"> • Prototype EMS • Action Planner • Management guidelines • Step-by-step guide for land capability assessment • Adoption and outreach strategy • Community-of-practice website

Underpinning project principles

In addition to the overarching project development and evaluation approach, the Horse EMS project was underpinned by the following guiding management principles, which are consistent with literature recommendations on 'facilitative project evaluation approaches' (Ashton 1998).

- **Partnership**—Team approach to design and implementation, treating those to be evaluated as equal partners even though they each bring different expertise and will perform different functions in the evaluation process. It also allows for the design of a culturally feasible ‘model’ for the targeted group.
- **Inclusion and participatory project development and execution**—Identification of as many interested parties as needed to have project outputs and outcomes endorsed. Their participation in the design and development of the project itself and project evaluation builds ownership in the process and outcome.
- **Demystification**—The evaluation should be of service to all participating parties, and thus be framed in understandable formats without jargon.
- **Qualitative and quantitative balance**—Blending traditional qualitative and quantitative models of research and evaluation that will lead to the design and practice of more holistic methods that are reliable *and* culturally competent.
- **Building relationships and trust**—Positive, trusting working relationships follow as a result of these principles.

Those principles were incorporated as a general ‘value’ system for the steering and project management committees. The work with the pilot group participants was supported by agreed terms of collaborative behaviours (‘ground rules’), as well as a practical working relationship where participant input is valued and notably (for the participants) incorporated into the project results.

Capacity building evaluation

The increase of ‘capacity’ for horse property managers to engage in NRM activities was one of the underlying goals of the project. RIRDC defined capacity building in an NRM context as part of the *National NRM Capacity Building Framework*:

Capacity building relates to a range of activities by which individuals, groups and organisations improve their capacity to achieve sustainable NRM. Capacity in this context includes awareness, skills, knowledge, motivation, commitment and confidence. While regional bodies are the target audience for capacity building, it is equally an issue for diverse players such as Landcare groups, indigenous communities, industry sectors, local government and State/Territory and Commonwealth Government agencies.

Capacity building for NRM goes beyond the traditional top down approach of enhancing skills and knowledge through training and the provision of technical advice. It focuses on enhancing genuine community engagement in all aspects of NRM from planning to on-ground actions. Therefore, in addition to the transfer of technology and technical capability, capacity building should foster social cohesion within communities, and build both human and social capital.

According to RIRDC, capacity building covers human, social, physical, financial and natural capital: *human* capital is the capability of individuals while *social* capital refers to the level to which social networks, relationships and processes within a community support individuals to exercise their capabilities; *physical* capital is the infrastructure; *financial* capital goods and services produced through human effort including physical and financial knowledge; and *natural* capital the renewable and non-renewable resources found in nature, useful and required for human existence. Taking these definitions into account, capacity building can be used to help improve business and industry profitability and sustainability; the ecological health of catchments; the wellbeing of people; and the wellbeing of their communities. *Capacity building improves the stock of capital.*

As there are no real ‘valid blueprints’ for capacity building available, it is often a process of social *experimentation*. And for this reason, creative and flexible management is recognised as an essential ingredient for success. In fact, careful monitoring and reflective evaluation in support of responsive management are considered more important for the success and impact of a capacity building process than detailed planning and effective control over implementation processes.

In general terms, the evaluation of successful capacity building during the Horse EMS project was guided by the following questions:

- Do all involved (Horse SA peak body, EPA, steering committee and pilot group participants) participate in a joint effort to improve a problematic situation?
- Is the program based on co-learning, so that everyone who has knowledge relevant to the project, is willing to share, and to learn (e.g. Horse SA and members and EPA are participants willing to engage in the provision *and* use of each others expertise and information)?
- Do the initial goals of action-taking vary among the project partners and is this acknowledged and taken into account (e.g. a physical and financial capital for land managers, social capital for horse keeping community, and human capital for educators (e.g. Land Management Program), NRM improvements (EPA))?
- Is leadership style facilitative and does it result in all project partners being able to initiate action to do with the project?

Primary tools to capture the extent of capacity building success in the Horse EMS project included the use of surveys, feedback questionnaires and anecdotal information provided by the participants (and other stakeholders) throughout the process.

The most significant change technique

The most significant change technique is:

“...a form of participatory monitoring and evaluation. It is participatory because many project stakeholders are involved both in deciding the sorts of change to be recorded and in analysing the data. It is a form of monitoring because it occurs throughout the program cycle and provides information to help people manage the program. It contributes to evaluation because it provides data on impact and outcomes that can be used to help assess the performance of the program as a whole”(Davies and Dart 2005).

Essentially, the process collects significant change ‘stories’ emanating from the participant level, and panels of designated interested parties or project management staff, systematically selects the most significant of these stories and initially ‘observes’ project impact.

Once changes have been captured (in an observational or narrative manner), stories can be evaluated by these staff who have regular and often in-depth discussions about the value of these reported changes. When the technique is implemented successfully, whole teams of people begin to focus their attention on program impact. The technique is applicable in many different sectors, including agriculture, education and health, and especially in development programs. It is also applicable to many different cultural contexts. This evaluation technique is especially useful in project or program contexts that are characterised as:

- complex and produce diverse and emergent outcomes
- large with numerous organisational layers
- focused on social change
- participatory in ethos
- designed with repeated contact between project management and participants
- struggling with conventional monitoring systems.

The Horse EMS project applied an observational technique to adapt the course of the project based on ‘measuring’ how quickly the horse keeping audience was following along, where the knowledge gaps were, and to capture project success as a whole. This strategy allowed for appropriate sequencing of the tasks within each project phase, which, in turn, ensured that the pilot group participants remained engaged in the project achievement process. A significant difference to a strictly ‘indicator’-driven monitoring approach was that this anecdotal monitoring technique (including indirect feedback loops)

of intermediate project outcomes enabled the project team to adjust the course of the project (often due to unexpected changes).

3.6.2 Summary of monitoring and evaluation methodology

The evaluation tools used for project outcomes and outputs began with the overarching evaluation principles (see Section 3.5.1).

Overall (social, environmental, economic) project outcomes were monitored and evaluated using the following tools:

- pilot group participant surveys (one at the beginning and the end of the three-year project; mid-term review; feedback sheets after each workshop and field day) (Attachment 2)
- information night, workshops and field days (Attachment 3)
- site visits
- anecdotal reports (participant summaries of NRM accomplishments; networking/capacity building assessment)
- project review sessions (e.g. mid term project review and barrier analysis to overcoming arising project impasse)
- feedback analysis from funding bodies
- analysis of promotional success.

Expert review workshops

The project outputs (Action Planner for Horse Keepers, and the adoption and outreach strategy contractor document) were validated using review workshops with invited experts and by soliciting review comments on the drafted products. For example, two 'Action Planner' review workshops were held with relevant government agency representatives and experts in all environmental management areas addressed in the action planner. The outreach and adoption strategy included several workshops with the project management team and interagency review.

4. Project results

Project outputs and outcomes were achieved in a linked, step-by-step approach.

4.1 Phase 1—Prototype EMS development

The goal of Phase 1 was to develop a prototype EMS for the horse keeping community. Participatory research explored EMS components relevant and useful for the community. Early in the process, fence post signs (see Attachment 4) were distributed to all pilot group participants as a means of recognition to the landholders. The Phase 1 approach:

- developed cause-and-effect relationships between management activities on horse properties and potential environmental impacts
- investigated options for translating these relationships into a pragmatic and practical risk assessment approach for horse keepers
- examined promising approaches to achieve on-property improvements.

PLAN (pilot group tasks):

- **Write policy statement**
- **Identify activities**
- **Identify hazards/ aspects and environmental impacts**
- **Plan risk assessment action**

Cause-and-effect relationships

The first step in an EMS is a thorough analysis of the potential risks of existing management activities to the environment. For the first time in Australia, a comprehensive, tabulated summary was compiled of potential impacts from all horse management-related activities. The prototype was developed in collaboration with the pilot participant group and reviewed by experts. It listed all possible activities on a horse property and their potential impacts on the different environmental media water, soil and air. The risk identification matrix covered: water management, stable yards, shelter, soil management, biodiversity, waste management, pest plant and animal management, chemical management, fire prevention, energy/greenhouse, air and noise (see Attachment 5).

The summary listing of potential environmental impacts provided a basis for conducting an environmental risk assessment at a property level. A horse property manager could use the cause-and-effect summary listing to prioritise high-risk activities on their own property, then draft an action plan and, consistent with the EMS sequence, develop a schedule of high priority improvement actions in the property's economic context.

Phase 1 tested the validity of the 'prototype' itself as well as the straightforwardness of the system for leading the user through the EMS steps.

Risk assessment approach for horse keepers

An environmental risk assessment according to the prototype layout was considered to be quite complex, especially for 'lifestyle landholders'. This group, to which most horse property managers belong, is generally characterised by owning horses as a leisure activity and not a main source of income. They are foremost concerned about the wellbeing of the horse and more often than not put management of their property as a second priority. Even with good intentions for taking care of the environmental assets on their land, they lack some of the basic knowledge and/or capacity to do so effectively. The concept of a risk assessment was also novel for many pilot project participants.

Thus concepts had to be introduced using a step-by-step sequence of several practical field days and participatory workshops. Adaptive management techniques allowed adjustments to accommodate adequate learnings. For example, more than the originally anticipated number of workshops and additional field days were needed in order to ensure that the risk assessment concepts were understood and could be translated into on-ground improvement actions. These initial workshops and field days also revealed that the pilot group (and hence, the larger horse keeping community) lacked some understanding about how some challenging natural conditions of a horse property could lead to a potential exacerbation of the natural conditions if they are not correctly managed. (e.g. steep slopes, clayey soils prone to water logging).

A land capability assessment sequence was therefore integrated into the project. More specifically, the *Step-by-step guide for land capability assessment* was produced as a handbook for horse keepers to guide them through the process of assessing the biophysical conditions of the property (e.g. soils and potential soil compaction areas, slopes, stormwater and surface water runoff patterns, pasture growth conditions). It also provides instructions on how to determine environmentally sustainable stocking rates on the horse property, appropriate locations for stables, yards and other intensive horse keeping structures and property maintenance requirements. This guide is now an integral part of the Adelaide and Mount Lofty Ranges Natural Resources Management Board's Land Management Program (a program tailored to small landholdings in the Mount Lofty Ranges) and can be obtained upon request (see Attachment 6 for an outline).

Promising approaches for on-property improvements

Phase 1 testing concluded with an evaluation of whether the prototype summary sheet would allow adequate prioritisation of risks and lead towards property improvement actions in an uncomplicated manner. Several tools were used.

First, field days and property visits provided insight into the ability of landholders (represented by the project pilot group) to make the risk assessment relevant to their own properties. The site visits were a one-on-one service to participants to reinforce the learned EMS steps and guide them through the process on their own property. Second, a workshop was held introducing various monitoring and evaluation tools to track the success of on-property improvements. It provided expert knowledge into techniques such as those for photopoint monitoring, soil health assessments, weed control, pasture maintenance.

Risk assessment was also expanded to include considerations of regional NRM priorities in decisions about on-property improvements. Regional GIS maps, distributed to the participants, highlighted the water catchment their property was located in, as well as regional biophysical information (e.g. native vegetation, soils, erosion potential, rainfall, slope). Attachment 7 shows an example of such a map used in the project. The use of aerial photographs for individual property assessments was also encouraged.

An acknowledgment component was introduced to the project in Phase 1. The early acknowledgement in the fence post signs for each participant was an important contributor to a maintained membership of the pilot group and their commitment. There was a sense of pride in participating in the project.

Evaluation results highlighted that the system developed during Phase 1 was comprehensive for a holistic appreciation of cause-and-effect relationships. However, as an adequate extension tool, the Phase 1 prototype needed to provide one-on-one assistance for property managers to successfully perform the full EMS cycle. Again, it needs to be recognised that most horse property managers have horses for hobby purposes and therefore are not likely to embark on a complex process of property improvement planning.

The following project engagement tools were applied during Phase 1.

- **Workshop 1: Introduction to EMS and the project** (15 October 2003); 3-year commitment by the participants; initial survey
- **First Field Day: Environmental Risks—Get to know your property I** (10 December 2003) [Property planning from the beginning]
- **Second Field day: Environmental Risks—Get to know your property II** (21 January 2004) [Introducing on-property land capability assessment]
- **Workshop 2: Risk Assessment and Action Planning** (16 March 2004) [Assessing potential risks of horse keeping activities (aspects and impacts) to the environment, based on likelihood and consequence]
- **Site visits** [to assist in or confirm property-specific risk assessments and help with action plan development]
- **Workshop 3: Monitoring and Evaluation plans based on action plans** (10 August 2004) [Introducing and practicing the use of monitoring templates for each participant's property]
- **Production of:**
 - Fence post signs for Horse EMS participants (see Attachment 4)
 - Prototype EMS (Attachment 5)
 - Step-by-step guide for land capability assessment (see Attachment 6)

4.2 Phase 2—Action Planner for Horse Keepers

Phase 2 produced the *Action Planner for Horse Keepers* (Attachment 8), the main product of the overall project. The Action Planner represents a fine-tuning of the prototype EMS, especially the PLAN, DO and ACT parts of the EMS cycle, and focuses on environmental risk assessment and implementation scheduling. It uses a self-assessment questionnaire to guide the user through the environmental risks of on-property activities and towards creating a property improvement action plan. To complete the end product, Phase 2:

- developed the Action Planner
- tested and reviewed the Action Planner.



Development of the Action Planner

A global literature review, combined with extensive feedback sessions with the pilot group, aimed to identify the appropriate structure, layout and ‘pitch’ of a self-assessment tool for horse property managers.

Literature review

The review examined the use and success of a range of extension tools in the horse industry sector including self assessment tools, guidelines, score card approaches, fact sheets. A multitude of guideline and fact sheet material on horse health, and some on environmental management on horse properties,

was sourced (e.g. the Department for Environment and Conservation in NSW (horse keeping in the urban fringe), the USA's Horses for Clean Water program and the Horse Environmental Awareness Program, the UK's Surrey County Council Horse Pasture Management Project, and the Mount Lofty Ranges Land Management Program, Marion Council (SA) guidelines). However, self-assessment tools in the rural/agricultural sectors were not as easy to find, especially not for the horse industry. For the most part, self-managed risk assessment tools were generally linked to a simplified EMS and often developed under the guidance of industry peak bodies (for the benefit of their members). All systems were similar in their ability to assess and prioritise environmental risks on individual properties.

Australian self-assessment tool examples include DairySAT for dairy farmers (Dairying for Tomorrow 2005); VERA for viticulturists (CRC for Viticulture 2002); or tools developed as part of the 16 national EMS pilot projects (Department of Agriculture, Fisheries and Forestry 2006). Overseas examples include the European approach of Ecomapping (2005); and Ben&Jerry's Icecream Score Card (USA). The degree to which these tools are linked to the EMS cycle varies depending on the drivers for EMS or the tool itself. Not all of them have monitoring and evaluation components included. For example, DairySAT and VERA could be used in isolation from continuous monitoring and reporting efforts, if the user chooses to. The Ben&Jerry Icecream Score Card gave interested parties information on the company's 'good global citizenship' and environmentally conscious business behaviours. Hence, the ability to monitor, rank and report via the Score Card was essential. The European Ecomapping approach used yet another course of action, a visual mapping method, as a means to identify high-risk areas on a property map.

Pilot group feedback

Early in the development of the Action Planner it became clear that any horse property-related self-assessment tool or questionnaire needed to be straightforward and simple in design. Key feedback informed the final structure of the Action Planner:

- **A self-assessment tool needs to relate to common property management clusters**—The Action Planner was broken down into three distinct management areas: whole-of-property, paddock management, and intensive horse keeping.
- **Avoid positive/negative scoring of practices**—The pilot group decided to use language that related the current practice of horse property managers to their knowledge about the topic instead of scoring practice as good or bad. The 'scoring' language became 'Haven't thought about it' (instead of 'poor practice'), 'Have started to implement' (instead of 'good practice'), or 'Ideal' (instead of 'best practice').
- **Use 'active language' and entice the user to implement action**—The name Action Planner implies that the self-assessment portion is just used to promote continuous improvement action (and the Action Planner includes an action plan template); the previous 'self-assessment tool' did not necessarily lead the reader through to improvement action.
- **Easy access to Action Planner**—The Action Planner itself does not contain any photos to underpin the topics or self-assessment questions and thus is easy to copy or download from the internet. The management guidelines (developed with additional funding) contain the detailed, photographically supported, 'how to' information. The Action Planner and associated guidelines are available on an interactive website on the internet from which documents can be downloaded or directly linked by a mouse click. Online self-assessment automatically summarises results and translates them into an action plan template.

Testing and review of the Action Planner

The Action Planner was reviewed using the following mechanisms:

Pilot group

The pilot group trialed and evaluated the Action Planner for user-friendly application. Field days and workshops ensured that the structure and content of the Action Planner enticed novices to use the tool. They also reinforced the risk assessment components and illustrated how improvement actions were

implemented and monitored. Several pilot group participants' properties were used to show these examples.

Reference expert panel

The state and interstate reference panel, established at the beginning of the project to deliver review services throughout, included horse and natural resources management experts. They reviewed the Action Planner through workshops and written comments. Two review workshops were held in South Australia. Interstate review panel members could choose to test the Action Planner (if they were a membership entity such as the Western Australian Equestrian Landcare group) or provide written comments. Overall, the feedback on the Action Planner was positive with few suggestions made to the content or structure.

Other review

Additional review was solicited by means of directly contacting individuals who expressed interest in using (and hence, reviewing) the Action Planner, as well as through attending local and national events. For example, the Equitana 2006 provided an excellent forum for feedback solicitation. A presentation on the project, provided by Horse SA, and flyers indicating the need for feedback, allowed the project team to receive additional feedback on the planner.

The following project engagement tools were used during Phase 2.

- **Workshop 4: The EMS self audit kit workshop** (16 March 2005)
- **Third Field day: EMS in action** (7 December 2004) [Example property which conducted a risk assessment through to an action plan]
- **Two 'Action Planner' review workshops:** [with relevant government agencies and experts in the field to obtain their feedback (on natural resources issues) and final endorsement]
- **Production of:**
 - Horse EMS Poster (see Attachment 9)
 - EPA banner on Horse EMS
 - Horse SA land management banner

4.3 Phase 3—Outreach and adoption

An outreach and adoption program was devised to ensure that the products, primarily the Action Planner, were used and promoted beyond the life of the project and their success in enticing land management behaviour change was monitored. Consequently, Phase 3 investigated promising strategies for using the Action Planner and associated guidelines in property decision-making, but also making on-ground environmental improvements actually happen. Phase 3 developed and produced:

- an adoption and outreach strategy (see summary table in Attachment 10)
- an interactive community-of-practice website, displaying Action Planner and management guidelines (soon to be available at www.horseslandwater.com).

ACT/REVIEW (pilot group tasks):

- **Fine-tune Action Planner and outreach strategy**
- **Evaluate monitoring results**

Adoption and outreach strategy

Additional financial support from the Natural Heritage Trust's Envirofund permitted the use of an engagement and marketing specialist to help develop the strategy.

The overarching objectives of the strategy were to increase the:

- awareness of horse keepers about NRM issues (and, in particular, water quality)
- participation of horse keepers in NRM activities
- adoption of environmentally sound land management practices by the horse keeping community.

Some of the identified tools can easily be adapted beyond the target area of the strategy, the Mount Lofty Ranges watershed, to the national level.

The methodology

The methodology was developed by Porter Novelli SA Pty Ltd (2005), based on Professor Doug McKenzie-Mohr's community-based marketing approaches (McKenzie-Mohr 2005). According to McKenzie-Mohr, to promote sustainability, it is essential to have a firm grasp of how to effectively encourage individuals and businesses to adopt behaviours that are resource-efficient. Traditionally, initiatives to foster sustainable behaviour rely upon large-scale information campaigns that utilise advertising to encourage behaviour change. He states that while advertising can be effective in creating public awareness and in changing attitudes, numerous studies show that behaviour change rarely occurs as a result of simply providing information. Community-based social marketing is an attractive alternative to information-based campaigns. It is based upon extensive research in the social sciences. Research suggests that behaviour change is most effectively achieved through initiatives delivered at the community level which focus on removing barriers to an activity while simultaneously enhancing the benefits.

Porter Novelli developed the strategy via the following methodology:

- reviewed best practice in environmental projects that aim to change behaviour
- a desk-top review of lessons learned from similar projects with horse keepers overseas
- captured the knowledge and experience of people in the project, including Horse SA, members of the project steering committee and a pilot group of about 20
- ran a survey and workshop for horse keepers in the region
- ran a workshop with key project participants to identify known characteristics of the target audience, and perceived barriers and benefits to change.

Porter Novelli participated in a two-day workshop with internationally respected environmental psychologist Doug McKenzie-Mohr, focusing on using community-based social marketing techniques to change behaviour in relation to environmental issues.

Overall, the strategy aimed to provide market segmentation into the different target audiences by strategically timing and tailoring overall land management improvement messages to the different horse keeping sectors. In the first instance, primary, secondary and tertiary audiences within the horse keeping community in the watershed were analysed. In their report, Porter Novelli indicated that the groupings are generally reflective of likely commonalities in key barriers and perceived benefits as well as key messages and practical options that will influence them to change (Porter Novelli SA Pty Ltd 2005).

Furthermore, current attitudes and behaviours were scanned and barriers, motivational drivers and communication vehicles identified in order to make the outreach effort successful.

The results

The strategy was developed based on the following findings by Porter Novelli.

Target audiences

The following target audiences were identified:

Primary target audiences are made up of the individual horse keepers, divided into their key sectors, including:

- horse keepers who live in the watershed
- horse keepers who live in the metropolitan area but keep horses in the watershed
- commercial horse keepers, such as racehorse trainers, horse breeders, agistment property owners and managers
- people who keep horses for sport and/or recreational use, and belong to a recognised horse group
- people who keep horses but do not belong to any recognised horse group.

Secondary target audiences consist of those groups who influence individual horse keepers and whose support and resources should be leveraged to disseminate information, including:

The media

- regional media which cover the watershed, mainly newspapers
- metropolitan Adelaide media
- rural media (*Stock Journal, Smart Farmer*)
- local newsletters including local government, environment, community groups
- specialist horse sector magazines, websites, publications including *Green Horse*

Horse organisations

- Horse SA members
- Horse organisations that are not members of Horse SA

Government

- EPA
- local government
- Federal and State Members of Parliament representing watershed residents.

Tertiary target audiences include those closest to the project who must be communicated with on a regular basis and whose support and resources are essential to the success of the endeavour.

Survey and workshop recommendations for targeting the primary audience

- The experiences of other projects and feedback generated by both the survey and the workshop indicated that horse keepers prefer information in 'bite size' pieces rather than being expected to absorb a whole of system approach to environmental management.
- There was a strong preference for one-off seminars/information sessions focusing on specific management issues or topics, rather than committing to a course over several weeks, or giving up a whole weekend for intensive training. Likewise, with information, they would prefer individual fact sheets focusing on a particular issue, rather than having to peruse a whole book or set of guidelines that covers the entire system.
- Information and assistance ranked highly as things that would encourage people to do more to manage the land where their horses are kept.
- Research and feedback to date indicated packaging in book or booklet form was the most popular option. Email or the web ranked second but by a considerable margin. This audience definitely did not favour CD or DVD formats.
- Any efforts by horse keepers to support initiatives or become involved must be acknowledged to encourage them and others to continue, and they must be given regular feedback on what is being

achieved. This is critical to achieving sustained effort by individuals to improve land management practices.

- The strategy could put considerable emphasis on peer group influence (through the use of key influencers or champions). This links to community-based social marketing theory on the increasing importance of developing social norms that support desired behaviours. Identifying to establish new social norms has consistently proved to be one of the most effective ways of raising awareness and engaging landholders in issues such as natural resource management.
- The most effective strategies are those which use a matrix of communication and information tools. Research and experience shows that landholders must hear or see a message a minimum of three or four times, in different forms and media, before they actually transfer that into action or changed behaviour.
- Importantly, research and experience in extension programs across a range of sectors in Australia clearly shows that the success of an outreach and adoption program usually depends on the quality of the people implementing it, and the attention to detail in putting the various activities into practice. For example, just because a newsletter doesn't work, it doesn't mean that newsletters are ineffective communication tools. It is more likely to mean that the newsletter in question did not contain information of value to the reader, was not well presented, or delivered at a time and place when the audience was more likely not to take it in.

Suggested activities and materials for a marketing and promotions plan

- **Awards program**—to encourage and honour, similar to successful programs in the USA, behaviours of horse keepers who make an effort in adopting key management practices promoted by the program. The system could include 'independent judges' (e.g. the EPA) who evaluate the achievements of voluntary awards nominees. Fence post signs would illustrate their accomplishments.
- **General promotional materials**—to raise general awareness; tools include flyers, fridge magnets, distribution of materials in key point of sale locations, signs, banners, stands.
- **Horse keepers' survey**—to establish benchmarks that allow measurement of behaviour adoption and contribute to mutual understanding on where the industry is at and what is needed to accelerate progress. A formal survey could be carried out by an accredited market research organisation.
- **Media and advertising**—to be used as a major communication tool to drive awareness and participation in environmental management.
- **Mini self assessment tool**—to enhance the uptake of the self assessment tools and guidelines. Such an intermittent tool encourages people who think they are doing the best they can to recognise that they could be doing more and getting better results.
- **Project calendar**—to provide a prompt tool for horse keepers to remind them what to do and when. Such a tool can help overcome the lack of knowledge and encourage forward planning.
- **Recognition and accreditation program**—to drive commitment to ongoing behavioural change. Key elements of such programs are peer group pressure and recognition for 'doing the right thing'.

Training and information plan

- **Action Planner**—to most effectively promote and advertise for it by distributing it at events, in stores and other key locations
- **Community liaison officer**—to provide continuity in the outreach program and drive the implementation of this adoption and outreach strategy
- **Fact sheets, guidelines**—to provide a 'how to' information on the topic of environmental land management
- **Field days, bus tours, focus farms and demonstration sites**—to maintain the knowledge of existing and new horse keepers with respect to environmental management and provide capacity building opportunities
- **Horse champions**—to provide a powerful motivational mechanism for driving behaviour change through peer group influence

- **Speaking and stakeholder briefings**—to promote the message on land management and the available tools, and maintain relationships with key stakeholders
- **Training seminars**—to address the need for one-on-one interaction as one of the most successful behaviour change tools
- **Website**—to enable the promotion, use and uptake of the Action Planner and guidelines to a large (inter-)national audience
- **DVD**—to (potentially) provide an adult learning tool in addition to the website

A summary table of key strategy elements and their potential sequencing is provided in Attachment 10.

Interactive community-of-practice website

An interactive website was designed for a ‘community-of-practice’ online forum and online self assessment. More specifically, website users are guided through the Action Planner questions and provided with summary sheets of their results as well as action planning templates. The ‘forum’ aspect of the site includes opportunities to link to other knowledge-related websites and offers a ‘chat’ space.

The following project engagement tools were applied during Phase 3.

- **Two ‘Action Planner’ review workshops:** [with relevant government agencies and experts in the field to obtain their feedback (on natural resources issues) and final endorsement]
- **Workshop 5: Outreach Workshop: How did we do? How can we spread the message?** (22 February 2006) [summary of property improvements; outreach components; end-of-project survey]
- **Production of:**
 - Adoption and outreach strategy (Attachment 10)
 - Final Action Planner (& accompanying Management Guidelines) (Attachment 8)
 - Interactive ‘community-of-practice’ website, displaying Action Planner and supporting management guidelines

4.4 Summary of results

The overall project produced three distinct deliverables: a prototype EMS for the horse keeping community; a self-assessment tool (Action Planner for Horse Keepers) and an adoption and outreach strategy. All three products were building blocks to each other and were achieved by the adaptive management and participatory engagement strategies. Figure 4 summarises how the project was executed to deliver these outputs and outcomes.

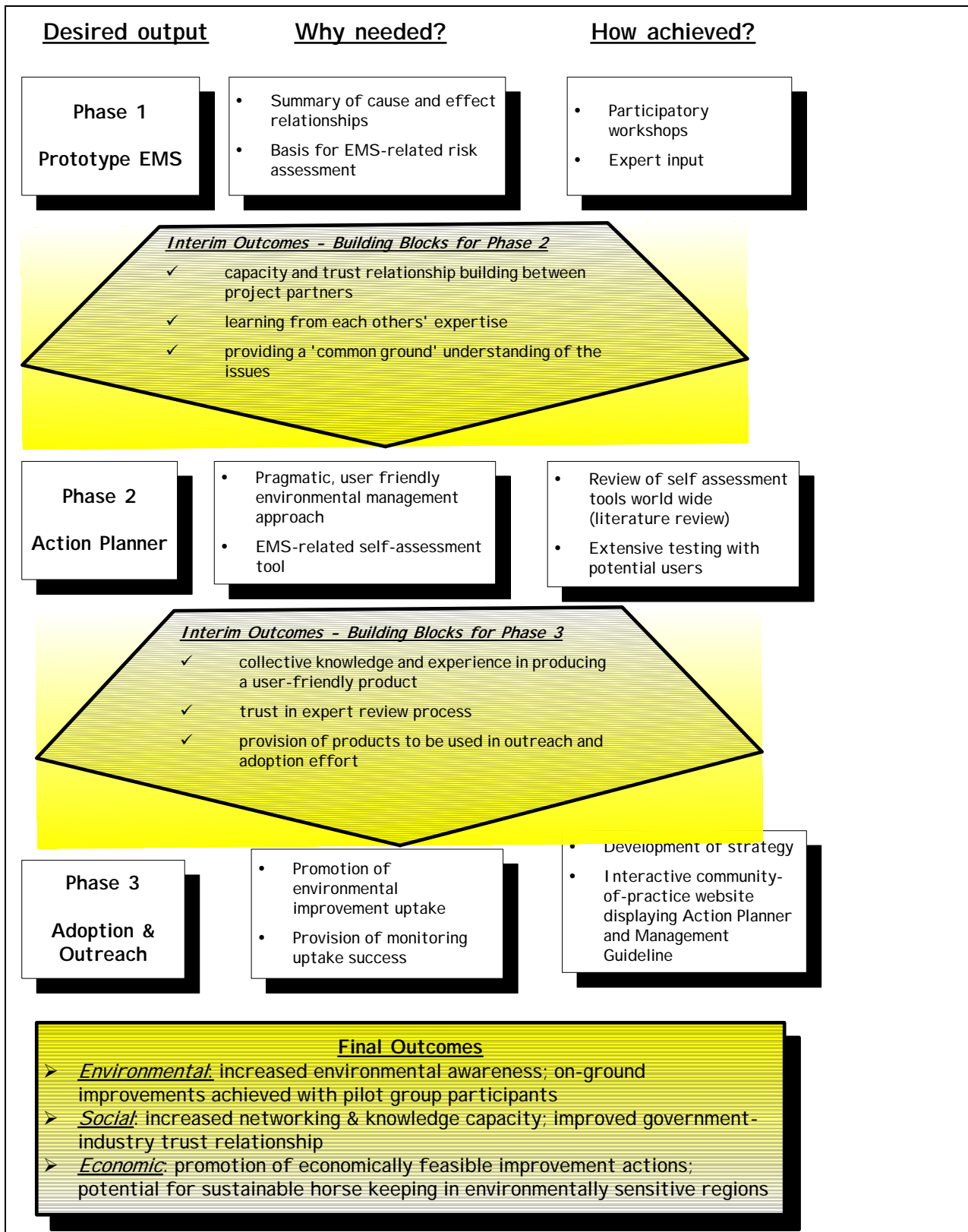


Figure 4. Summary of project results

5. Discussion

The primary goal of the three-year Horse EMS project was to develop specific products (prototype EMS for horse keepers, a self-assessment tool (Action Planner), and an outreach and adoption strategy). It also evaluated the 'process' and engagement techniques applied in the project. This section provides a brief discussion on the value of the project as an engagement (capacity building) tool and eliciting behavioural changes on the ground, and the opportunities and limitations for further applications.

5.1 Project value

All project outputs were delivered on time and within budget to the satisfaction of all relevant parties. The project also attracted additional resources to address flagged gaps or needs during the project execution. The project management team's adaptive management, 'creative resourcing' abilities and promotion of the project goals drove these 'value-adding' outcomes.

5.1.1 Capacity building and engagement

For example, an initial careful evaluation of the pilot group's existing knowledge and awareness base was conducted. It became evident that the successful continuation of the project was only possible if additional resources and informational guides were made available to the group. Hence, the following tasks were 'interjected':

- development of a step-by-step guide to conduct land capability assessments
- 'best' environmental management guidelines.

The tools are now additional resources in the overall environmental management 'kit' for horse keepers. In addition, the development of these tools contributed significantly to the trust building relationship of the project partners, as it was adaptive management in practice. They fostered the willingness of the participants to further engage in environmental behaviour change and were increasingly eager to contribute their knowledge and expertise to the project.

Project survey and workshop feedback results confirmed that participants felt adequately engaged and were satisfied with the way the project was conducted. Survey results indicated that about 90% of all participants were satisfied with the progress and the manner the project was managed. Participants indicated that the project increased their environmental awareness and that they are considering the application of the tools in the future. Attachment 11 provides details of the final survey results.

Networking opportunities have been well exploited. The project was represented at several national and local events such as the Royal Adelaide Show (2004 and 2005), the Magic Millions Yearling Sales Morphettville (2004 and 2005), Channel 7 Animal Expo (2004 and 2005), the Equitana (2005) and the National Racing Training Conference (2005). It was also reported on in local and national newsletters and newspapers. The interactive, online Action Planner and Management Guidelines are valued outreach and networking tools of the project. The community-of-practice website promotes the tools and the actual behaviours (inter-)nationally, and provides for the capacity to assess the success of the outreach effort.

5.1.2 Environmental management behaviour change

Anecdotal evidence of property improvements was gained in several ways throughout the project. Most noteworthy were the narrative descriptions of pilot group participants when they were asked for general feedback at the end the three-year project, and to describe how they fared in conducting property improvements based on the learning and tools they had been given. About 80% of all participants performed significant improvements on their properties despite some financial and social hardships.

5.2 Project limitations

The limitation of the project is that the Action Planner and guidelines were developed for the Mount Lofty Ranges watershed in South Australia, which is characterised by a unique set of biophysical conditions. If the project outputs are to be used in different regions of Australia both the Action Planner and guidelines may need refinement and tailoring to the specific regional conditions and NRM priorities. This is consistent with other rural industry sector projects, where tools developed in one region are adapted for use in other regions or contexts.

5.3 Future potential

- **Industry reporting**—To value self-assessment and guideline tools as true instigators for environmental behaviour change, third party verification is essential. There could be opportunities to use the tools in developing an industry sector-based, collective, reporting tools as to what degree environmental improvements are achieved by industry members. Such reporting mechanisms could be modelled according to existing efforts in other parts of the world, where industry reporting is now used in the NRM decision making framework by government.
- **Adoption and outreach**—The success of the outreach program can (and needs to be) monitored and evaluated over time. Horse SA can take the lead in this effort and liaise with government (e.g. EPA) on the promotion of the results.
- **Extension**—Adaptation of the tools to other areas of Australia can be initiated if desired. Horse SA has already indicated that they will be seeking ways to adapt these tools to other regions in Australia.
- **Promotion of tools nation wide**—This can occur through a media extension effort, led by Horse SA.

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Attachment 1

Targeting outcomes of programs

The TOP's hierarchy's seven levels and their unique characteristics

- Level 1:** **SEE** represents **S**ocial, **E**conomic, and, **E**nvironmental conditions (or situations) that may need improvement. **S**ocial, **E**conomic, and **E**nvironmental outcomes are the end results or benefits from programs targeted toward SEE conditions. These outcomes may represent [public or private benefits](#). **S**ocial, **E**conomic, and **E**nvironmental needs decrease as they are prevented, checked, reduced, or solved by the use of recommended practices (or behaviors).
- Level 2:** **Practices** are patterns of behaviors, procedures, or actions that influence SEE condition. Through [educational programs](#), individuals, groups, organizations, and communities adopt practices and technologies that achieve needed SEE outcomes. These practices are adopted as program participants apply relevant knowledge, attitudes, skills, and aspirations (KASA).
- Level 3:** **KASA** refers to **K**nowledge, **A**ttitude, **S**kills, and **A**spirations that influence the adoption of selected practices and technologies to help achieve targeted social, economic, and environmental outcomes. **K**nowledge gain pertains to learned information or accepted advice; it also includes comprehending economic, social, and environmental principles, and comprehending individual and group decision-making processes. **A**ttitudes focus on individuals' beliefs, opinions, feelings, or perspectives. **S**kills refer to individuals' mental and physical abilities to use new or alternative practices. And, **A**spirations refer to ambitions, hopes, objectives, or desires. Changes in KASA can occur when people react positively to their involvement in program activities.
- Level 4:** **Reactions** reflect participants' degree of positive or negative interest in topics addressed, their acceptance of activity leaders, and their attraction to the educational methods. Delivering relevant, research-based subject matter can help hold clientele interest. People may obtain information, education, or assistance from different agencies or organizations at the same time. Thus, the way they react to an [activity](#) sponsored by one organization may be influenced by complementary activities that are sponsored by other agencies or organizations.
- Level 5:** Program **participants** include individuals, families, groups, organizations, or communities. Participants must be sufficiently involved in program activities to acquire KASA and adopt practices needed to improve SEE conditions. Duration, continuity, frequency, and intensity of program participation all contribute to amount of KASA change.
- Level 6:** [Activities](#) are the various educational strategies and events used to inform, educate, or train target audiences. They range from direct personal contacts to indirect technological or mass media approaches. Program activities are determined by requirements to obtain positive reactions from participants as well as other factors needed to achieve desired changes in KASA and practices. Program activities are supported by program resources.
- Level 7:** **Resources** are time, money, and staff (including volunteers) used to plan, promote, implement, and evaluate programs. Resources also include research-based educational materials, organizational maintenance, communication technologies, and transportation.

Source: TOP website (Bennett et al.), <http://citnews.unl.edu/TOP/>

Attachment 2

Pilot group participant surveys

ENVIRONMENTAL MANAGEMENT ON HORSE PROPERTIES (RIRDC / EPA South AUSTRALIA / HORSE SA) **BASELINE SURVEY**

Dear Participant,

This is the first of 2 general evaluation surveys we will ask you to fill out for the evaluation of this project. Primary reasons for the Rural Industries Research and Development Corporation (RIRDC) investing in this project are to understand the value of an environmental management system (EMS) as a management tool for horse keeping properties, and to assess the benefits and costs of undertaking a continuous environmental improvement process through an EMS approach.

Our assessments relate to environmental issues, profitability concerns and potential improvement of market access, but they also include changes in your knowledge, attitudes, skills and aspirations about EMS.

With this survey, we are trying to record what your opinions are *now* about the above mentioned effects. We will ask you again at the end of the project (or, if you leave the project before its end, at an earlier stage) to see whether your impressions have changed. This will help us assess what value there has been for you and (if applicable) your business as a result of adopting EMS along with the overall value of this project.

This initial survey will help us understand your motivations and your level of entry into the EMS pathway. This will provide useful information to the project partners (EPA, Horse SA and RIRDC) about whether and how horse owners can be supported in a coordinated effort in the future to promote the adoption of environmental management on horse properties.

Your information will be kept confidential; we will report the results in a way that your individual responses cannot be identified. It will not be provided to RIRDC or any other Government Department.

Please only fill-out this survey if you consider yourself to be a major decision-maker in your enterprise. Every major decision-maker should fill out Part A; if there are several major decision-makers in your enterprise, only one of you should answer Part B (enterprise details).

In this questionnaire, we have used EMS as shorthand for a continuous improvement system for environmental management that incorporates the Plan – Do – Check – Review cycle.

Throughout this project, the project team may also ask you additional questions that relate estimates of your inputs (time, \$\$) into the Project and into implementing EMS on your enterprise, for the analysis of benefits and costs associated with EMS.

We have tried to make the language and terms as general as possible, as there is a wide range of horse-keeping enterprises comprising the project. Nevertheless, there may be questions that do not apply to your property or enterprise. Please answer those questions to the best of your knowledge or leave them empty.

With Thanks,

For the EMS Horse-keeping Project Team

Agreement of confidentiality

We only collect personal information, which is necessary to our functions and activities. We collect such information only by lawful and fair means and aim to collect it in the least intrusive manner possible. We use the personal information, which we collect about you for the purposes of carrying out our functions, for related purposes and for purposes to which you have consented. We disclose your personal information only in accordance with the Privacy Act or when you have provided your written consent for us to do. Personal information supplied as the result of answering this and other questionnaires associated with this project will be used by researchers to evaluate and document the progress of the project. (Personal information is information or opinion [including information or an opinion forming part of a database] that is recorded in any form and whether true or not, about an individual whose identity is apparent, or can reasonably be ascertained from the information or opinion.) We take care to maintain the integrity of your personal information and to protect that information from unauthorised access.

PART A: THIS SECTION IS DESIGNED TO COLLECT INFORMATION ABOUT YOU AND WHAT YOU THINK.

Project Name: Environmental Management on Horse Properties

1. Your name (Surname, Given names) [this will be kept confidential]

2. Name of your enterprise

3. Date of commencing in the Pilot project (dd/mm/yy):

4. Date of filling in this questionnaire

(dd/mm/yy): _____

5. I've got involved in this project because ...

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
	1	2	3	4	5
5a I'm concerned for the health of the natural environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5b I would like to make improvements to the management of my land, water and other natural resources through my horse keeping practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5c I want to make my property more attractive for visitors/tourists/clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5d I want to be able to ask a premium/higher price for my services or products in the market place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5e I want to improve my property through increased pasture carrying capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5f I want my enterprise to be more profitable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5g I want to learn more about EMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5h I want to show people outside the industry that I/we manage horse keeping sustainably	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5i I want to ensure I have continued access to the natural resources on which my enterprise is dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
	1	2	3	4	5
5j I want to plan more formally for adverse conditions or seasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5k I want to keep up to date with legal & legislative developments about environmental management in relation to horse – keeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5l I think having an EMS is likely to result in our business receiving preferential access to government services or increased funding for Landcare-type activities. I want to take advantage of this.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5m I want to make my property or business more marketable to potential buyers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5n I want to know more about the linkages between horse health and sustainable land management practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5o Other reasons?

Introducing an EMS into your enterprise is likely to influence many things.

Questions 6 to 12 explore your thinking about this.

Substantial Improvement	Improvement	No Change	Worse	Substantially Worse	Don't Know
1	2	3	4	5	6

6. To what extent do you think the introduction of EMS in the management of your enterprise will lead to changes in the **condition of your land and water resources** in the long term (ie. 5 years or more from now) ?

--	--	--	--	--	--

7. To what extent do you think the introduction of EMS in the management of your enterprise may lead to changes in **enterprise profitability** in the long term (ie. 5 years or more from now)?

--	--	--	--	--	--

8. How much do you think market access for your services or products will change as a result of introducing an EMS?

--	--	--	--	--	--

9. How much do you think the prices you get for your products or services will change as a result of introducing an EMS?

--	--	--	--	--	--

10. How much do you think that your ability to respond to changing legal and legislative environmental management requirements will change as a result of including EMS?

--	--	--	--	--	--

11. How much you think your production/ability to carry stock efficiencies will change as a result of introducing EMS?

--	--	--	--	--	--

Substantial Improvement	Improvement	No Change	Worse	Substantially Worse	Don't Know
1	2	3	4	5	6

12. How much do you think your additional input (eg, feed) will change as a result of introducing EMS?

--	--	--	--	--	--

13. What was your experience with EMS before deciding to participate in this project? Tick only the box that reflects the greatest level of experience you have had, and remember that in this questionnaire, we have used 'EMS' as shorthand for any continuous improvement system for environmental management that incorporates the Plan – Do – Check – Review cycle.

13a I have (or have had) a property management plan developed as a part of my enterprise management system

13b I am in the process of developing an EMS for my enterprise

13c I have had formal training in EMS

13d I have had direct experience of EMS whilst working in other industries

13e I have attended introductory seminars on EMS or actively looked into EMS

13f I have read about EMS in the media and/or in other publications

13g I have discussed EMS with my neighbours and others

13h I have no previous experience with and little knowledge of EMS

14. On average, how many hours a week in total do you spend working in (i.e., 'manual work') or managing (i.e., 'office work') the enterprise? (Include both hands-on 'farm' work and management activities)

15. On average, what proportion of this time (Q. 14) do you spend managing your enterprise?

- a All of my time in the enterprise is devoted to management operations – I have staff to do the hands-on work
- b Most (>75%) of my time in the enterprise is devoted to management operations
- c Much (50-75%) of my time in the enterprise is devoted to management operations
- d Some (25 –50%) of my time in the enterprise is devoted to management operations – most of my work is hands-on
- e Little (<25%) of my time in the enterprise is devoted to management operations

16. When were you born?

Before	1930-	1940-	1950-	1960-	1970-	After
1930	1939	1949	1959	1969	1979	1980
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. What is your gender?

Female	Male
1	2
<input type="checkbox"/>	<input type="checkbox"/>

18. Are you willing to participate in a follow-up survey after the project has finished?

Yes	No
1	2
<input type="checkbox"/>	<input type="checkbox"/>

If so, please provide your contact details:

Postal Address

Telephone numbers:

Email address:

Environmental Management on Horse Properties

Mid Term Survey

The 'Environmental Management on Horse Properties' Program has been in progress for over a year.

To date the Program has involved 3 workshops (covering Environmental Risks, Action Planning and Monitoring), 3 Field Days and a site visit to each pilot participants property.

This survey is an opportunity for you to provide feedback to the Project Management Team regarding the Program.

Please take the time to read through the survey and answer the questions as honestly as possible. You can either send your completed survey to Julie Fiedler at Horse SA (PO Box 483, Plympton SA 5038, or fax 8294 2860) or bring it with you to the next workshop. There will be an opportunity to discuss your responses at the next workshop.

Your comments are valuable to the project team and will allow for improvements to be made to the existing tools developed through the Program as well as provide a better Program in the future that is focussed towards the groups needs.

1. Since being involved in this program.....

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1a. I have an improved understanding of environmental issues on my property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1b. I have improved my skills in managing environmental issues on my property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1c. I am able to set environmental targets for my property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1d. I have put some of the theory covered in workshops into practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1e. I have found the information provided in the workshops useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1f. to date, my involvement in the program has been a positive experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Have you undertaken any environmental improvements on your property since beginning this program?

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

If yes, please describe

3. Have you done an environmental risk assessment for your property?

Yes

No

If no, why?

- Takes too much time
- Too difficult
- Not a priority for managing my property
- I need more information on how to identify environmental risks
- I already know what the environmental risks are on my property and don't need to write them down
- Other – please explain

4. Have you written any Action Plans to address environmental risks on your property?

Yes

No

If no, why?

- Takes too much time
- Too difficult
- Not a priority for managing my property
- I need more information on how to make environmental improvements
- I already practice good environmental management and don't need to write it down
- Other – please explain

5. Have you done any environmental monitoring on your property (e.g. soil structure, soil health, pasture composition, weed mapping, photographic monitoring)?

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

If no, why?

- Takes too much time
- Too difficult
- Not a priority for managing my property
- I need more information on how to do environmental monitoring
- I already practice good environmental management and don't need monitor it
- Other – please explain

6. Do you feel that the tools provided through the program will enable you to plan for and build on your environmental improvements on an ongoing basis?

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

If no, why?

7. What do you like most about the program?

8. What are the main problems with the program?

8. How could the program be improved?

9. How do you rate the program's success over the past year in developing a tool that can assist in improving environmental management on horse properties?

Poor			OK		Excellent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	

10. Any other comments regarding the program....

Name (Optional) _____

**ENVIRONMENTAL MANAGEMENT ON HORSE PROPERTIES
(RIRDC / EPA South AUSTRALIA / HORSE SA)
*END-OF-PROJECT SURVEY***

Dear Participant,

This is the **second (last) of 2 general evaluation surveys** we will ask you to fill out for the evaluation of this project. Primary reasons for the Rural Industries Research and Development Corporation (RIRDC) investing in this project are to understand the value of an environmental management system (EMS) as a management tool for horse keeping properties, and to assess the benefits and costs of undertaking a continuous environmental improvement process through an EMS approach.

Our assessments relate to environmental issues, profitability concerns and potential improvement of market access, but they also include changes in your knowledge, attitudes, skills and aspirations about EMS.

With the first survey, we have asked your *initial* opinions about the above mentioned effects. We are now asking you again at the end of the project (*after your 2.5 years experience with EMS*) to see whether your impressions have changed. This will help us assess what value there has been for you and (if applicable) your business as a result of adopting EMS along with the overall value of this project.

This survey will help us understand how your level of understanding of EMS has changed throughout this project, what you have learned, and what the costs and benefits were to you. Your answers will also provide useful information to the project partners (EPA, Horse SA and RIRDC) about whether and how horse owners can be supported in a coordinated effort in the future to promote the adoption of environmental management on horse properties.

Your information will be kept confidential; we will report the results in a way that your individual responses cannot be identified. It will not be provided to RIRDC or any other Government Department.

Please only fill-out this survey if you consider yourself to be a major decision-maker in your enterprise. Every major decision-maker should fill out Part A; if there are several major decision-makers in your enterprise, only one of you should answer Part B (enterprise details).

In this questionnaire, we have used EMS as shorthand for a continuous improvement system for environmental management that incorporates the Plan – Do – Check – Review cycle.

We have tried to make the language and terms as general as possible, as there is a wide range of horse-keeping enterprises comprising the project. Nevertheless, there may be questions that do not apply to your property or enterprise. Please answer those questions to the best of your knowledge or leave them empty.

With Thanks,

For the EMS Horse-keeping Project Team

Agreement of confidentiality

We only collect personal information, which is necessary to our functions and activities. We collect such information only by lawful and fair means and aim to collect it in the least intrusive manner possible. We use the personal information, which we collect about you for the purposes of carrying out our functions, for related purposes and for purposes to which you have consented. We disclose your personal information only in accordance with the Privacy Act or when you have provided your written consent for us to do. Personal information supplied as the result of answering this and other questionnaires associated with this project will be used by researchers to evaluate and document the progress of the project. (Personal information is information or opinion [including information or an opinion forming part of a database] that is recorded in any form and whether true or not, about an individual whose identity is apparent, or can reasonably be ascertained from the information or opinion.) We take care to maintain the integrity of your personal information and to protect that information from unauthorised access.

Project Name: Environmental Management on Horse Properties

1. Your name (Surname, Given names) [this will be kept confidential]

2. Name of your enterprise

—

3. Date of commencing in the Pilot project (dd/mm/yy): _____

4. Date of filling in this questionnaire (dd/mm/yy): _____

5. Expectations vs. Experience– I thought my involvement in this “environmental management” project would:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
	1	2	3	4	5
5a help me learn how I can contribute to the health of the natural environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5b help me make improvements to the management of my land, water and other natural resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5c help me make my property more attractive for visitors/tourists/clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5d enable me to ask a premium/higher price for my services/products and property on the market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5e inform me how to improve my property through increased pasture carrying capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
5f provide me with ideas on how to make my enterprise more profitable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>					
5g help me learn more about EMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>					
5h help me show people outside the industry that I/we manage horse keeping sustainably	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>					
5l help me ensure that I have continued access to the natural resources on which my enterprise is dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>					
5j assist me in planning more formally for adverse conditions or seasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>					
5k help me keep up-to-date with legal & legislative developments about environmental management in relation to horse – keeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAS IT?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>					

Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree

5l result in our business receiving preferential access to government services or increased funding for Landcare-type activities. I wanted to take advantage of this.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

HAS IT?

5m help me understand the linkages between horse health and sustainable land management practices

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

HAS IT?

5n Other?

6. What proportion of your on-farm working week is spent managing your enterprise?

All of my time on the property is devoted to mgt. of the property – I have staff to do the hands-on work
Most of my time (>75%) is devoted to mgt. operations

Most of my time (>75%) is devoted to mgt. operations

Much of my time (50-75%) is devoted to mgt. ops.

Some of my time (25-50%) is devoted to mgt. ops.

Little of my time (<25%) is devoted to mgt. ops.

7. My involvement in this project has led to the following changes:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
7a. Better general awareness of environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7b. Increase knowledge of relationship between a healthy environment and my horses' health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7c. Increased knowledge on how a property management plan is done	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7cc. Increased confidence on doing a property management plan myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7d. Increased knowledge on how to improve my property	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7dd. Increased confidence on how to improve my property	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7e. Increased knowledge on why, how and when to check (monitor) my improvements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7ee. Increased confidence on checking/monitoring the success of my improvements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7f. On average, my working hours a week on property (due to environmental management) have

increased by %

decreased by %

8. What are your current property management priorities?

	Highest Priority	High priority	Don't know	Not really a Priority	Insignificant Priority
<u>WHOLE OF PROPERTY</u>					
1 Property Management Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Horsekeeping systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Development and related approvals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Siting of stables, yards and intensive work areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Fire prevention planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Emergency response planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Habitat for native plants and animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 Storage and transport of veterinary products and chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 Application and disposal of veterinary products and chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 Preventing weeds entering or leaving the property	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 Pest animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 Disposal of deceased horses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Paddock Management

	Highest Priority	High priority	Don't know	Not really a Priority	Insignificant Priority
1 Maintain groundcover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Pasture composition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Weed identification and control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Proclaimed pest plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Seasonal wet areas, wet seeps and drainage lines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Steep slopes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Management of manure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 Fence line tracking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 Management of horse feeding, watering and congregating areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 Shade and shelter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 Management of watercourses (including erosion gullies and dams)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 Stock crossings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Intensive Horse Keeping

	Highest Priority	High priority	Don't know	Not really a Priority	Insignificant Priority
1 Horse exercise areas and yards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Cleaning of intensive horsekeeping areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Stable/ yard waste storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Storage of feed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Cleaning out horse floats and trucks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Wash down areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Pick 3 high priority management areas (eg, pest plant control, washdown areas, etc.) and determine what you will do in the future

First Priority Area: _____

	Will use	Will try to use	Don't know	is very important	Will not use
	1	2	3	4	5
<i>I think I will use/have used:</i>					
9a. environmental risk assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9b. objectives and target setting approach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9c. assessment of regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9d. action/environmental management plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9e. monitoring the success of my improvements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9f. a checking mechanism after one year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9g. contacts in Horse SA for up-to-date information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9h. contacts in government agencies for up-to-date information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9i. additional comments:

Second Priority Area: _____

	Will use 1	Will try to use 2	Don't know 3	is very important 4	Will not use 5
<i>I think I will use (I have used):</i>					
9aa. environmental risk assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9bb. objectives and target setting approach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9cc. assessment of regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9dd. action/environmental management plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9ee. monitoring the success of my improvements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9ff. a checking mechanism after one year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9gg. contacts in Horse SA for up-to-date information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9hh. contacts in government agencies for up-to-date information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9ii. additional comments:

Third Priority Area: _____

	Will use 1	Will try to use 2	Don't know 3	is very important 4	Will not use 5
<i>I think I will use (I have used):</i>					
9aaa. environmental risk assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9bbb. objectives and target setting approach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9ccc. assessment of regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9ddd. action/environmental management plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9eee. monitoring the success of my improvements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9fff. a checking mechanism after one year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9ggg. contacts in Horse SA for up-to-date information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9hhh. contacts in government agencies for up-to-date information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9iii. additional comments:

10. What were the useful topics as part of the environmental management approach?

	Very useful	Useful	Indifferent	Marginally useful	Not at all useful
10a. coming up with a family (or business) – owned “environmental policy” (or commitment, or statement)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10b. assessing the potential environmental risks of horse-keeping related activities on my property	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10c. Legal overview	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10d. Action planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10e. Monitoring program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10f. Field days to monitor success and arising issues/questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 <i><u>Some of the “products”</u></i>					
10g. Step-by-step guide for assessing land capability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10h. Action Planner (risk assessment) for horse properties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Very useful	Useful	Indifferent	Marginally useful	Not at all useful
10i. Management guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10j. Hands-on field days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10k. Workshops on specific topics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. With the value hindsight, would you participate as a pilot participant in a similar setting again?

Absolutely YES	YES	Uncertain	No	Absolutely NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please explain why/why not:

12. What might be your reasons for using a (similar) environmental management approach in 5 to 10 years time?

Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree

Land/business management

12a. keep learning about new approaches

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

12b. help me improve my property for market reasons

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

12c. help me reduce my overall costs of environmental management

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

12d. help me with my time management (to be able to spend more time with family, etc.)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

12e. help me with succession planning

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Horse health/environmental management

12f. help me improve my horses' health

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

12g. motivate me to improve my property environmental management

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

12h. help me stay on top of potential environmental problems on my property

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree

12i. help me find out where I am located with respect to other regional resources (eg, catchment, etc.)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

12j. help me contribute to the "health" of the region's water, soil and vegetation

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Legislation

12k. help me comply with current legal and legislative requirements

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

12l. help me avoid more stringent and prescriptive regulatory standards

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

12m. help me get better access to government funding and services

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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13. Would you recommend the products/principles to other horse property owners?

<input type="checkbox"/>	NO
<input type="checkbox"/>	YES

14. Do you have any recommendations for improving the uptake of the environmental management principles at this stage?

<input type="checkbox"/>	NO
<input type="checkbox"/>	YES _____

15. Would you like to participate in “spreading the messages” (participate in the outreach part of the project?)

NO

YES

16. Who should manage/fund an outreach process?

Suggested managing body (ies):

Suggested funding body (ies):

END OF SURVEY

FEEDBACK SHEET

To ensure you get the most out of each workshop please provide your open and honest feedback to the following:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1. I found the workshop content useful to relate to my activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Information was presented with enough explanation and coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. There was a good balance between theory and practical activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I was happy with the location of the workshop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I have a good understanding of what information to collect for an initial environmental review	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel competent in considering environmental aspects and impacts on my horse keeping property	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. There was enough opportunity for me to interact (ask questions, get answers, express i	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I feel that the time allowed in the workshop to cover the topics was sufficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Further comments on how to improve future workshops are appreciated.

THANKYOU

**ENVIRONMENTAL MANAGEMENT ON HORSE PROPERTIES
(RIRDC / EPA South AUSTRALIA / HORSE SA)**

SURVEY TO SELECT PARTICIPANTS FOR FIELD DAYS

Dear Participant,

Field days are a great opportunity to see some successful examples of environmentally conscious horse property management, learn how to put environmental management theory into practice, and share ideas on how to improve horse properties (continuous improvement).

The Horse EMS project management team would like to provide pilot project participants with the opportunity to present their property at one of the coming field days. Please fill out the attached page if you are interested in sharing information from your property as part of a field day.

Our general property selection criteria for field days include:

- ◆ Proposed property complies with current legislative requirements (to the best of the property owners knowledge) relevant to their natural resources (soil, water, air, flora & fauna) management;
- ◆ Topics to be discussed on the property are relevant to environmental management system elements as detailed in the workshops;
- ◆ Topic fits within the funding agency (RIRDC)'s required project accomplishments;
- ◆ If more than one property is included in one field day - properties are in close proximity to each other.

Although we do not intend to exclude any property from a field day, due to time and content restrictions dictated by funding, some properties may not be included in field days.

With Thanks,
For the EMS Horse-keeping Project Team

**ENVIRONMENTAL MANAGEMENT ON HORSE PROPERTIES
(RIRDC / EPA South AUSTRALIA / HORSE SA)**

SURVEY TO SELECT PARTICIPANTS FOR FIELD DAYS

Your name (Surname, Given names) [this will be kept confidential] / Name of your enterprise

General times of availability to participate in field days (i.e. preferred month, day of the week etc.): _____

Date of filling in this questionnaire (dd/mm/yy): _____

1. Which element of your horse property management would you like to share on the field day (eg. overall property management and organisational responsibilities, property layout & design, breeding facilities, stabling/yarding, etc.)?

2. Which specific environmental aspects would you like to cover (eg. manure management, pasture management, streambank management, weed control, chemical storage, etc.)?

3. How do you think sharing information from your property would benefit other EMS project participants?

4. What would you like to learn while presenting your property?

5. What would you like to learn from attending field days at other properties?

6. Are there any legislative requirements (relevant to natural resource management) that you would like more information on?

7. Other comments?



Action Planner for Horse Properties & Management Guidelines Booklet

Feedback Sheet

Please return by Friday March 10th, 2006

1. Tell us about your horse keeping:

- a. I own (and manage) ____ hectare horse property with _____ (insert number) of horses
- b. I own and do not manage ____ hectare horse property with _____ (insert number) of horses
- c. I lease/rent ____ hectare horse property with ____ (insert number) of horses
- d. I have my ____ horse(s) agisted on another property
- e. I own/manage agistment property
- f. I own/manage racing stables
- g. Other _____

2. Postcode of the property that I own/manage/agist on postcode _____

3.a How do you like the layout of the **Action Planner**? (please circle one)

excellent good O.K mediocre awkward

b. If ranked OK, why? _____

c. How do you like the layout of the **Management Guidelines**? (please circle one)

excellent good O.K mediocre awkward

d. If ranked OK, why? _____

e. Which did you prefer – the spiral back or stapled booklet? (circle one)

4. a. How easy did you find answering the **Action Planner** questions? (circle one)

very easy / easy / OK / difficult /very difficult

b. How easy did you find referring to supporting information in the **Management Guideline?**

very easy / easy / OK / difficult /very difficult

5a. Do you think the **Action Planner & Management Guideline addresses all environmental horse keeping issues on your property? (Please circle one)**

Addresses all of them/ addresses most of them / is missing a few

b. What is missing? _____

6 a. How easy was it to understand the 4 steps you need to undertake to prioritise improvement actions on your property? (Please circle one)

Very clear to understand / easy / OK/ hard to understand /
Don't really know how to do this

b. How could this be done better?

6. Would you recommend the use of the **Action Planner to other horse property owners? (Please circle one) Yes / No**

If no, why not _____

7. Would you recommend the use of the **Management Guideline to other horse property owners? (Please circle one) Yes / No**

If no, why not _____

Thank you for your time.

Horse SA
PO Box 483 PLYMPTON SA 5038
Ph 08 8294 2460 Fax 08 8294 2860
Email www.horsesa.asn.au
www.horsesa.asn.au

Attachment 3

Workshops and field days

Workshop 1

15th October, 2003

PROGRAM OUTLINE	DETAILS	WORK REQUIRED / RESOURCES
MEET & GREET	<ul style="list-style-type: none"> • Light Supper 	<ul style="list-style-type: none"> • Food & drink
INTRODUCTION / REVIEW	<ul style="list-style-type: none"> • Facilitator will begin workshop with suggestion of rules to keep people/groups focussed and to time. • Facilitator start with an ice breaker – Participants to introduce themselves (2minutes maximum each) <ul style="list-style-type: none"> • Who are you? • Where is your property? • Why are you participating in this project? • Jacqueline to repeat some previous material for those not at info night. <ul style="list-style-type: none"> • What is EMS • Steps in EMS • Motivations • 3yr Strategy / Overview • Individuals to think of something they could commit to that might be achievable in a year (broad / fuzzy). 	<ul style="list-style-type: none"> • Running Sheet Produced with times • Modify presentation from info night • First 7 minutes of EMS Video may achieve this?
BASELINE SURVEY	<ul style="list-style-type: none"> • Review survey example • Decide on survey value and design • Facilitator will introduce survey in participants folder & explain value – to complete and hand in at end of evening. 	<ul style="list-style-type: none"> • Produce survey
RISK ASSESSMENT	<ul style="list-style-type: none"> • Facilitator to run session, split into groups, provide materials, etc • Brainstorm general issues/factors impacting on participants business (group to think holistically – Economic, Environmental, Social). • For environmental list group issues and factors into categories. • Determine related activities for each issue/factor. • Present idea of “Environmental Aspect” and “Environmental Impact” (also in participants folder) • Groups to consider “Environmental Aspects” and “Environmental Impacts” for each activity • Present idea/concept of how this will be used in 2nd workshop (Prioritising/ranking of environmental aspects and impacts). (Also in participants folder). 	<ul style="list-style-type: none"> • Sticky pads / brainstorm • Someone will need to facilitate. • Present idea of “Environmental Aspect” and “Environmental Impact” • Worksheets for activities • Basic presentation/ discussion on how info will be used.
POLICY	<ul style="list-style-type: none"> • Facilitator to present idea of policy statements for farm / property / business. (Also in participants folder) • Participants have a go at developing policy statement and then take home to discuss with family and firm up at 2nd workshop. 	<ul style="list-style-type: none"> • Presentation on Policy Statements • Worksheet for Policy Statement development.
PROJECT LOGO & NAME	<ul style="list-style-type: none"> • Ask participants if happy with project name – do they want to brainstorm or put forth any ideas they have for a project name and logo???? We may not want to go here??? 	
FIELD DAY	<ul style="list-style-type: none"> • Decide on how to run field day with group, ie: 1 whole day or 2 half days – agree on dates???? 	
2 nd WORKSHOP	<ul style="list-style-type: none"> • Present agenda for 2nd workshop (In participants folder) & agree on date. 	

WORKSHOP 2
“Environmental Management on Horse Properties”
Mt Lofty Ranges Catchment Centre, Mt Barker
16th March, 2004

TOPIC	START	FINISH
Meet & Greet with a light supper	6:30pm	6:45pm
Review of Project: Workshop 1 & Field Days	6:45pm	7:15pm
Property Assessment	7:15pm	7:45pm
Identifying Environmental Risks on Your Property		
Horse Activities and associated Environmental Hazards and Impacts	7:45pm	8:00pm
Risk assessment principles	8:00pm	8:20pm
Group Activity	8:20pm	8:45pm
Coffee Break	9:00pm	9:15pm
Environmental Action Planning for Your Property		
Action Planning Principles	9:15pm	9:40pm
Group Activity	9:40pm	10:00pm
Site Visits	10.00	10.15
Group feedback	10.15	10.25
Field days & 3 rd Workshop Confirmation	10:25pm	10:30pm

WORKSHOP 3
“Environmental Management on Horse Properties”
Lobethal Bowling Club, Lobethal
10th August, 2004

TOPIC	START	FINISH
Meet & Greet with a light supper	6:30pm	6:45pm
Review of Project: Workshops & Site Visits	6:45pm	7:00pm
Action Plan Overview Brief summary from participants	7:00pm	7:20pm
Monitoring Environmental Actions on Your Property		
Overview	7:20pm	7:30pm
<i>What should you monitor and why?</i>		
<u>Soil monitoring</u> Guest Speaker: Brian Hughes Land management consultant, Rural Solutions SA	7:30pm	8:00pm
<u>Monitoring Ground Cover and Weeds</u> Guest Speaker: Andy Cole Small Property Management Advisor, Mount Lofty Ranges Land Management Program	8:00pm	9:00pm
Coffee Break	9:00pm	9:15pm
Photographic Monitoring	9:15pm	9:35pm
Take Home Activity	9:35pm	9:40pm
Workshop survey	9:40pm	9:50pm

WORKSHOP 4
“EMS self Audit Kit Workshop”
Mt Lofty Ranges Catchment Centre, Mt Barker
16th March, 2005

TOPIC	START	FINISH
Meet & Greet with a light supper	6:30pm	6:45pm
Project Overview	6:45pm	6:55pm
Mid term survey	6:55pm	7:05pm
Self Audit tool	7:05pm	7:15pm
General feedback on tool	7:15pm	7:30pm
Coffee Break	7:30pm	7:40pm
Specific feedback on tool	7:40pm	8:40pm
Discussion and summary	8:40pm	9:00pm

WORKSHOP 5
“Environmental Management on Horse Properties”
MLR Catchment Centre, Mt. Barker
22nd February, 2006

Program for Workshop:

TOPIC	START	FINISH
Meet & Greet with a light supper	6:30pm	6:45pm
Review of Project (presentation)	6:45pm	7:00pm
How have we been doing?		
Action Plan Overview (participant presentations): <ul style="list-style-type: none"> • Individual presentations (5 minutes each) • Open discussion and questions (up to 30 minutes) 	7:00pm	8:00pm
End-of-project survey	8:00pm	8:30pm
Coffee Break	8:30pm	8:45pm
How we plan to reach the general horse keeping community: Outreach and Adoption Strategy		
Overview presentation	8:45pm	9:00pm
How can you be involved during the outreach and adoption? <ul style="list-style-type: none"> • Strategy details • Community-of-practice • Discussion 	9:00pm	9:30pm
Upcoming events (eg, launch of final products)	9:30pm	9:45pm
Feedback sheet	9:45	9:50
CLOSE		9:50pm

Example Outline of Today's Field Day
[T.B.'s Property (10/12/2003)]

♦ Welcome and Introductions

(T.B./Property Owner; Jacqueline Frizenschaf/EPA; Julie Fiedler & Pam Brookman/Horse SA; Jacquie Foyel/Hoofprints Author)

♦ Topic of Today's Field Day:

“Get to know your property “

♦ Property Walk

[items touched on: location of property; soils/vegetation/water/air/neighbours...; property management (wins and losses)]

♦ Light Supper and Feedback

Attachment 4

Fence post sign

WaterCare
It's in your hands



ENVIRONMENTAL MANAGEMENT ON HORSE PROPERTIES
'Managing Horse Health and the Environment'



PILOT PROJECT PARTICIPANT

This property has made a commitment to
Environmental Management
and is helping to improve water quality in the
Mount Lofty Ranges Watershed

FOR MORE INFORMATION:

Horse SA (08) 8294 2460

www.horsesa.asn.au

EPA (08) 8139 9900

www.epa.sa.gov.au



HORSES • LAND • WATER

Environmental Management on Horse Properties

Pilot group participant

Certificate of Appreciation

Awarded to:

For your involvement in the development of the Action Planner for
Horse Properties, Management Guidelines and interactive Web Site



Attachment 5 Prototype EMS

ENVIRONMENTAL MANAGEMENT ON HORSE PROPERTIES PROJECT

HORSE KEEPING ACTIVITIES AND ASSOCIATED ENVIRONMENTAL HAZARDS AND IMPACTS

Activity	Potential Environmental Hazard/s (aspects)	Potential Environmental Impact
WATER MANAGEMENT		
<u>Paddocks</u>		
Irrigating paddock by mains, surface or groundwater	Overuse	Surface water pollution
		Land degradation (erosion, waterlogging)
	Irrigation water run-off	Land degradation (Erosion)
	Lowered groundwater table	Land degradation (Increased soil salinity)
<u>Stormwater run-off</u>	Large volumes with high flow velocity	Land degradation (erosion)
	Diffuse pollution source	Surface water contamination
<u>Watering Points</u>		
Drinking water accessibility	Watercourses used as watering point	Stream bank erosion
		Surface water contamination
		Damage to riparian zone.
<u>Locating watering points</u>	Trough poorly sited	Land degradation
	Inadequate water storage – leads to less desirable water access methods during dry periods	(see ‘drinking water accessibility)
<u>Stables, Yards and Shelters</u>		
Siting of Stables, Yards and Paddock Shelters	Sited too close to water course/ or on a	Surface water contamination

Activity	Potential Environmental Hazard/s (aspects)	Potential Environmental Impact
	floodplain.	
	Sited close to property boundary/ neighbours	Noise
	Sited on too steep a slope	Land degradation (erosion)
	Shelters sited too far from regular work area so less likely to maintain correctly	Land degradation <i>(Horse Health –welfare issue)</i>
Stormwater running off of structures during rain events	Large volumes with high flow velocity	Land degradation (erosion)
	Diffuse pollution source	Surface water contamination
	Runoff not managed (e.g. goes into horse yards)	Land degradation (erosion) <i>(Horse Health – issue with standing in waterlogged yards)</i>
<u>Operating open holding yards (crush and raceway system)</u>	Too much water during wet periods	Land degradation (soil compaction)
	dry and dusty during dry periods	Land degradation (dust)
<u>Using Parade Ring, exercise arena or track</u>	Lack of available water	Land degradation (dust)
	Over fertilising	Ground and surface water contamination.
	Waterlogging due to poor design	Land degradation
<u>Wash Down Area</u>		
Use of Water	excessive water use	Surface water contamination
Waste Water Management	Runoff entered stormwater system or water course	Surface water contamination
	Nutrient leaching	Ground and surface water contamination
<u>Swimming Pool</u>		
Backwash water management	Runoff entered stormwater system or water course	Ground and surface water contamination
	Nutrient leaching	Ground and surface water contamination
Water Quality	Insufficient disinfection	Proliferation of mosquitoes, bacteria and other pathogens <i>(Horse Health – increased risk to horses of skin infections)</i>
<u>Waterbody</u>		
Stream Bank (riparian) Management	Water body accessed by horses	Land degradation (soil compaction)

Activity	Potential Environmental Hazard/s (aspects)	Potential Environmental Impact
		Surface water contamination
		Loss of biodiversity
	Riparian vegetation removed (e.g. weeds or other vegetation)	Stream bank erosion.
Stock Crossings	Poor siting, construction or maintenance	Stream bank erosion
		Surface water contamination
		Damage to riparian zone. <i>(Horse Health – increased injury risk to horses)</i>
Storing water in dams	Leakage or overflow of stored water	Ground and surface water contamination
		Land degradation (erosion)
	Unmanaged access by horses	Surface water contamination
		Dam bank erosion
SOIL MANAGEMENT		
<u>Paddocks</u>		
Selecting Paddock size, and fencing	Size too small for number of horses	Land degradation
	Fence layout not suited to land class	Land degradation
	Slope too steep	Land degradation (Erosion)
	Paddocks contain Wet areas (springs) or are subject to flooding	Ground and surface water contamination
	Presence of geographical/ man made hazards for horses (wells etc)	Ground water contamination <i>(Horse Health – Injury to horses)</i>
Deciding on horse stocking rates	Overstocked	Land degradation (erosion)
	Understocked	Weed invasion
		Fire risk
Grazing	Over grazed	Land degradation (erosion) <i>(Horse Health – increased health problems for horses, e.g. sand colic and increased worm burden)</i>
	Selective grazing by horses	Land degradation
Establishing, Maintaining and Renovating Pastures	Poor choice of pasture seed mix	Land degradation (erosion)
		Weed infestation

Activity	Potential Environmental Hazard/s (aspects)	Potential Environmental Impact
		<i>(Horse Health – increased toxicity risk for horses)</i>
	Weed control	See ‘Weed Control’ category
	Fertilising	ground and surface water contamination
	Tractor and equipment damage	Land degradation (erosion)
	Poor advice & planning	Land degradation
Siting of feeding points	Poor management of ground where large numbers of horses are regularly hand fed.	Land degradation (compaction/ soil structure decline)
<u>Access Areas</u>		
<u>Laneways</u>	Poor design or siting	Land degradation (erosion, compaction) <i>(Horse Health – poor design will not safely move horses around the property)</i>
<u>Gateways</u>	Poor siting or maintenance	Land degradation (erosion, compaction) <i>(Horse Health – increased risk of injury to horse)</i>
<u>Horse Trails</u>	Poor location of trails	Land degradation (erosion)
	Deviation by horses from trails	Disruption of native vegetation/ ecosystems, Weed invasion (introduction of weeds into areas of native veg)
BIODIVERSITY		
Tree Planting	Poorly located plantings	Introduction of invasive species <i>(Horse Health – little or no use as horse shelter)</i>
	Inappropriate species planted	Introduction of invasive species,
Revegetation	Inappropriate species planted	Introduction of invasive species/ disruption of ecosystem <i>(Horse Health – potential toxicity to horses)</i>
Managing of remnant vegetation	Areas of remnant vegetation are unfenced or accessible to horses	Loss of biodiversity/ disruption of ecosystem,
		Weed invasion
Clearing Vegetation	Remnant vegetation removed	Loss of biodiversity

Activity	Potential Environmental Hazard/s (aspects)	Potential Environmental Impact
WASTE MANAGEMENT		
<u>Manure Management</u>		
Collecting, Storing and Composting manure	Run-off from stored manure	Surface water contamination
	Nutrient and pathogen leaching from stored manure	Ground and surface water contamination
	Insufficient collection or poor management on paddock surface	Ground and surface water contamination
	Pests and vermin	Proliferation of pests and vermin <i>(Horse Health – can lead to poor worm burden control in horses)</i>
	Poorly contained storage and composting areas	Odour
Ground and surface water contamination		
Manure and fertiliser application	Run-off during rain event	surface water contamination,
	Nutrient leaching during rain event	Ground and surface water contamination
	Spray drift	Loss of biodiversity
	Overuse/ incorrect application	Ground and surface water contamination
Disposing of manure	Inappropriate disposal by third party (outside property)	Pollution
<u>Other Waste</u>		
Managing waste from machinery and equipment.	Inappropriate disposal	Pollution
	Leaks and spills from liquid waste	Ground and surface water contamination
Land degradation (soil contamination)		
Managing waste from cleaning out floats	Inadequate method of cleaning (water or sweeping)	Ground and surface water contamination
Veterinary Treatment Area	Chemical and organic run off from treatment	Ground and surface water contamination
	Storage and disposal of veterinary drugs and syringes	hazardous waste entering landfill
Managing toxic wastes	Incorrect storage and/or disposal	Ground and surface water contamination

Activity	Potential Environmental Hazard/s (aspects)	Potential Environmental Impact
		Soil contamination
		Loss of biodiversity
Foaling Down Areas	Disposal of afterbirth	Ground and surface water contamination,
		Proliferation of bacteria and other pathogens
	Disposal of deceased foals	Ground and surface water contamination,
		Proliferation of bacteria and other pathogens
Disposing of Deceased horses	Disposal of deceased horses	Attraction of vermin and feral animals
		Ground and surface water contamination
		Proliferation of bacteria and other pathogens
		Attraction of vermin and feral animals
PEST PLANT AND ANIMAL MANAGEMENT		
<u>Weed Management</u>		
Weed Identification and Control	No weed control	Weed invasion (loss of biodiversity)
	Poor recognition of weed species and knowledge of life cycle	Weed invasion (loss of biodiversity)
	Integrated weed management plan not prepared	Weed invasion (loss of biodiversity)
	Inappropriate herbicide use and application	Ground and surface water contamination
Land degradation (soil contamination)		
Weed Disposal	Incorrect disposal leading to spreading of weeds/ seeds (on and off site)	Weed Invasion (loss of biodiversity)
Importation of weeds	Sale and purchase of hays containing weed seeds	Weed invasion
	Contractors and other visitors coming on and off of property	Weed invasion
	New horses onto property, potentially from unknown feed source	Weed invasion
<u>Feed</u>		
Feed Storage	Feed accessed by vermin & pests	Proliferation of vermin & pests (<i>Horse Health – increased risk of botulism and associated illness for horses</i>)
Feed purchase	poor quality control for feed	Introduction of weeds

Activity	Potential Environmental Hazard/s (aspects)	Potential Environmental Impact
Vermin Control		
Baiting pest animals	Non-target animals killed	Loss of biodiversity (adverse impact upon fauna)
	Leaks and spills from poisons	Ground and surface water contamination <i>(Horse Health – drinking water supply contamination)</i>
		Soil contamination
CHEMICAL MANAGEMENT		
Storing and Transporting Chemicals	Leaks and spills	Soil contamination
		Contamination of ground and surface water <i>(Horse Health – drinking water supply contamination)</i>
	reactive chemicals stored in same area (e.g. fertiliser and fuel)	fire (or explosion)
	Incorrect storage	Ground and surface water contamination
	Incorrectly labelled containers	Fire or explosion
Ground and surface water contamination		
Chemical use (herbicides, fertilisers, insecticides)	Off target spray drift	Loss of biodiversity (adverse impact on non target flora & fauna)
		Contamination of surface water
	Application greater than recommended rates	Contamination of ground and surface water contamination
	Inappropriate timing of application	Weed invasion (application ineffective)
	Selection of highly toxic chemical	
Chemical Disposal	Inappropriate offsite disposal	pollution
Transporting, Storing and handling fuel	Leaks and spills	Ground and surface water contamination
		Soil contamination
FIRE PROTECTION		
Fire Prevention	no fire plan for animals and property	Destruction of property <i>(Horse Health – horse welfare threatened)</i>
		loss of biodiversity
	poor siting and/or management of hay/feed	fire

Activity	Potential Environmental Hazard/s (aspects)	Potential Environmental Impact
	sheds	
Fire Control	Run-off from fire control agents	Contamination of surface water
	Fire control devices not accessible	Destruction of property
ENERGY/GREENHOUSE		
Building design	Poor energy efficiency	Greenhouse emissions, climate change
Lighting & heating	using more electricity (fossil fuels) than necessary	Greenhouse emissions, climate change
Electrical machinery	using more electricity (fossil fuels) than necessary	Greenhouse emissions, climate change
Forge	using more gas than is necessary	Greenhouse emissions, climate change
Vehicles	No regular maintenance	Greenhouse gas emissions
AIR AND NOISE		
Outdoor exercise arena or track	unmanaged surface	Land degradation (dust)
Roundyard	unmanaged surface	Land degradation (dust)

RISK ASSESSMENT RATING TABLE

Likelihood →	Very Common 5	Common 4	Occasional 3	Possible 2	Unlikely 1
Severity ↓					
Severe Impact 4	Urgent	Urgent	Urgent	High	Medium
Major Impact 3	Urgent	High	High	Medium	Low
Significant impact 2	High	Medium	Medium	Low	Low
Minor 1	Medium	Medium	Low	Low	Low

<p><u>Likelihood:</u></p> <p>Very Common – Will always occur in the normal course of events Common – Will probably occur in the normal course of events Occasional – Will occur on some occasions Possible – Could occur on some occasions Unlikely – Will only occur in extraordinary circumstances</p>	<p><u>Severity:</u></p> <p>Severe Impact – The impact could cause permanent and irreparable damage to the environment Major Impact – The impact could cause serious but reparable damage to the environment Significant Impact – The impact could cause harm to the environment and will require remediation. Minor – The impact is likely to cause minor impact on the environment</p>
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Urgent/ High Priority	Medium Priority	Low Priority
<p>A high-risk impact with a strong probability of occurring with significant environmental consequences.</p> <p>This risk must be managed to prevent environmental harm or meet a legal obligation</p>	<p>A moderate-risk impact with a reasonable probability of occurring with moderately significant environmental consequences.</p> <p>This risk should be managed to reduce the potential for environmental harm</p>	<p>A low-risk environmental impact with a low probability of occurring with minor to insignificant environmental consequences.</p> <p>This risk may be managed to reduce any potential for environmental harm.</p>

Attachment 6

Step-by-step guide to land capability assessment

A STEP-BY-STEP GUIDE TO EVALUATING YOUR HORSE KEEPING PROPERTY



Introduction

Horse owners are increasingly becoming aware of the need to manage their horses and the land on which they live in a sustainable manner. Not only for the benefit of the horses and perhaps in saving weed spraying and hand feeding costs long-term but to promote water quality, biodiversity and to have a more attractive visual impact on the landscape.

A link can also be made between healthy land and healthy horses. By understanding the risks horses can have on the environment and then selecting appropriate management methods, ailments such as greasy heel, sand colic and grass founder will be less prevalent if not eliminated.

Aims

By undertaking a property assessment using a step-by-step process, you will begin to understand

- The natural resources your property already has
- The potential (or existing) environmental risks horse keeping may have in relation to your property's natural assets
- What management options are open to you that will keep both the horses healthy and happy and ensure that the overall environment is not only well managed but has some gain

Pre-planning

A property assessment may take several dedicated observation sessions, over a number of weather types to help you understand how the property reacts natural events including heavy rain, poor rainfall or prevailing winds.

Sharing the property evaluation with other members of your family, staff or agistors will help create a raised awareness amongst all persons who may have some decisions on how potential impacts, such as grazing, are managed. The final property management plan will also be more likely to succeed if a group of people, with a group leader, are dedicated to making it work.

Discuss with others the goals for the property, keeping in mind career goals, the purpose of the property (eg Agistment) family & financial constraints and the skills & knowledge about sustainable horse keeping within the group. By writing these thoughts down, it will help you prioritise actions later on.

What you will need

1. An aerial photograph or a scaled diagram of the property with just the boundary marked on. A3 size is best.
2. Clear plastic or acetate to place over the photograph, to allow you to use coloured markers to record information without damaging the main photo
3. 1 set of coloured permanent overhead projector texta pens
4. Clinometer (these can be loaned from the Land Management Program) or a 1:10,000 map with 5m contours
5. PH soil test kit

Help to undertake your property assessment

If you feel you would like some advice or assistance, contact the **Land Management Program (LMP)**.

The Land Management Program, with offices at Mt Pleasant, Mt Barker, Strathalbyn and Normanville, provide a range of services to small property owners. They include courses on developing property management plans, field days & workshops on such topics as electric fencing and weed control. The organization also has farm advisers available to visit your property for free, give telephone or email follow ups and arrange for the loan of some equipment which will help you gather the information from your property that you need.

For further information and advice, contact Pam Brookman on Ph 8391 7505 or email brookman.pam@saugov.sa.gov.au or visit www.mlcrp.sa.gov.au

Horse SA, a not-for-profit community based organization, strongly supports & promotes the Land Management Program activities. For general information, including downloading healthy land healthy horses fact sheet series, visit www.horsesa.asn.au or ph 8294 2460

Let's Get Started

The aim of collecting the information set out in the following step process is to help you learn more about your property and where the environmental risks are in relation to horse keeping. The information is then used to make informed decisions about the management practices you would like to adopt. As you move through the steps, mark different land qualities with a different colour texta and mark the different land classes for each land quality placing a line around the area.

Take advantage of the free property visiting service for farm management advice offered by the Land Management Program.

Step One: Getting to know your key geographic information

On overlay No. 1 mark around the boundary (but no internal fences) then record the information required in Step 1.

Task – assess the land qualities below and assign the relevant land class symbol for your property	How to achieve this	Who can help me	Next Action	Tick when done
Measure slopes (in %)	Use a clinometer or calculate from a contour map appendix 1. Record areas according to the scale in Table 1 below.	Clinometers can be loaned from LMP 1:10,000 maps with 5m contours can be obtained from Mapland	Mark a line around the areas as outlined in Table 1 and label with the appropriate symbol.	
Rockiness	Visual inspection and record areas according to the scale in Table 2 below		Mark a line around the areas as outlined in Table 2 and label with the appropriate symbol.	
Landslips	Visual inspection.		If they occur, mark their position on overlay 1 and record as 5l	
Watercourses and gullies	Visual inspection. Watercourses and gullies have a defined bank and bed. If the area is just a wide grassed area where water runs when it rains, that is referred to as a drainage line and recorded on overlay 4.		If they occur mark their position on overlay 1 and record as 5g	
Tunnel erosion	Visual inspection		If they occur mark their position on overlay 1 and record as 5gt	

Wind erosion – Land is classified for the land quality - wind erosion, using multiple factors, rainfall zone, soil erodibility, depth of sand over a more clayey or carbonate layer and sand hill height and slope. If you think your land is subject to wind erosion then use the table in 'Assessing Agricultural Land' by David Maschmedt, PIRSA Land Information (December 2000) to assign a land class to the area concerned.

Table 1 – SLOPE

Land class classification criteria for the land quality - SLOPE	Land class symbols for the land quality - SLOPE
Slope less than 2%	1 e
Slope 2-4%	2 e
Slope 4-12%	3 e
Slope 12-20%	4 e
Slope 20-30%	5 e
Slope greater than 30%	6 e

Table 2 - ROCKINESS

Land class classification criteria for the land quality - ROCKINESS	Land class symbols for the land quality - ROCKINESS
No outcrop. Nil to minor surface stone.	1 r
Minor rocks. Sufficient stones to interfere with tillage, but picking or rolling is not necessary.	2 r
Moderate rocks. Sufficient stones to necessitate picking. Less than 10% rock outcrop, concentrated in reefs.	3 r
Up to 10% of the land cannot be driven on. 10-50% rock outcrop concentrated in reefs, some cultivation in between.	4 r
Up to 50% of land cannot be driven on. Some pasture improvement possible, using standard equipment.	5 r
Cannot be driven on. Too rocky for machinery access.	7 r

Step Two: Getting to know your Soil
--

On overlay 2 after you have marked the property boundary on assess and record the following land qualities as in Step 1.

Task – assess the land qualities below and assign the relevant land class symbol for your land	How to achieve this	Who can help me	Next Action	Tick when done
Soil fertility	Take a soil sample and have it tested and the results analysed. Appendix 2 has instructions on how to take a soil sample and interpret the results.	Collect a free soil sample bag from the Land Management Program. Collect soil sample according to instructions (LMP can loan a soil sampler) Send off sample with payment. Contact LMP, your local PIRSA office or a land management consultant for interpretation of results.	Mark lines around areas according the information in Table 3 and label with the appropriate symbol.	

Task – assess the land qualities below and assign the relevant land class symbol for your land	How to achieve this	Who can help me	Next Action	Tick when done
pH	This test will be included in the soil sample analysis (above) Or you can do your own test See Appendix 3 on how to collect your soil sample then follow the directions with the pH kit on how to test the sample and interpret the results.	A pH kit can be borrowed from the LMP or purchased from gardening stores.	Mark a line around the different pH areas according to the scale in table 4 and label with the appropriate symbol.	
Toxicities	Test only if contaminants are known in your area	Information about local soil toxicities can be obtained from your closest PIRSA office	If toxicities are present refer to 'Assessing Agricultural Land' by David Maschmedt and use this information on how to record your results on overlay 2.	
Soil surface condition	Collect surface soil sample and assess its texture. See Appendix 3 on how to collect your sample and Appendix 4 on how to test the texture of the sample.		Mark a line around the different texture areas according to the scale in Table 5 and label with the appropriate symbol.	
Sub-soil condition	Dig a hole till you reach the subsoil and measure that depth. Visually assess the subsoil for any characteristics outlined in Table 6, then collect a handful of the subsoil and test its texture as outlined in Appendix 4. To check if the subsoil is dispersive see Appendix 5.		Use the information in Table 6 to assess the subsoil, then mark a line around the different subsoil areas and label with the appropriate symbol.	
Soil Strength	Visual inspection		Use the information in Table 7 to assess the soil strength, then mark a line around the different soil strength areas and label with the appropriate symbol.	
Saline areas	Take a soil sample and have it tested for salinity. This will be done as part of the complete soil test for fertility.		Use the information in Table 8 to assess the soil salinity, then mark a line around the different saline areas and label with the appropriate symbol.	
Waterlogged areas	Visual inspection over time		Mark lines around areas according the information in Table 9 and label with the	

Task – assess the land qualities below and assign the relevant land class symbol for your land	How to achieve this	Who can help me	Next Action	Tick when done
			appropriate symbol.	

Table 3 – SOIL FERTILITY

Land class classification criteria for the land quality – SOIL FERTILITY	Land class symbols for the land quality – SOIL FERTILITY
High – Soils require no more than maintenance N and P applications	1 n
Fair – Marginal deficiencies of several elements which are readily correctable	2 n
Marginal – Significant deficiencies of several elements requiring annual applications for correction.	3 n
Low – Severe deficiencies.	4 n

Table 4 – SOIL ACIDITY/SOIL PH

Land class classification criteria for the land quality – SOIL pH (acidity/alkalinity) of topsoil (0-10cm)	Land class symbols for the land quality – SOIL ACIDITY
Strongly acidic. pH less than 5 in water	3 h
Acid pH 5-6 in water	2 h
Neutral pH7	1 h
Alkaline pH 8-9in water	2 I
Strongly alkaline pH > than 9 in water	3 I

Table 5 – SURFACE SOIL CONDITION

Land class classification criteria for the land quality – SURFACE SOIL CONDITION (0-10cm)	Land class symbols for the land quality – SURFACE SOIL CONDITION
Sandy Friable Sandy Loam-Sandy Clay Loam Friable Clay Loam - Clay	1 c
Hard Sandy Loam-Clay loam	2 c
Dispersive Hard Clay Poorly structured Sandy Loam-Clay Loam	3 c
Highly dispersive	4 c

Table 6 – SUBSOIL STRUCTURE

Land class classification criteria for the land quality – SUBSOIL STRUCTURE (B Horizon)	Land class symbols for the land quality – SUBSOIL STRUCTURE				
	Depth to subsoil				
	<10cm	10-20 cm	20-30 cm	30-60 cm	>60cm
Sandy	1 p	2 p	3 p	4 p	5 p
Friable Sandy Loam-Clay Loam	2 p	1 p	1 p	1 p	1 p
Friable Clay Loam-Clay	2 p	1 p	1 p	1 p	1 p
Hard Sandy Loam-Sandy Clay Loam	3 p	2p	1 p	1 p	1 p
Hard Clay	4 p	3 p	2 p	1 p	1 p
Poorly structured Sandy Loam–Clay Loam	3 p	3 p	2 p	1 p	1 p
Dispersive	5 p	4 p	3 p	2 p	1 p
Highly Dispersive	5 p	5 p	4 p	3 p	2 p
Solid limestone layer	4 p	3 p	2 p	1 p	1 p

Table 7 – SOIL STRENGTH

Land class classification criteria for the land quality – SOIL STRENGTH	Land class symbols for the land quality – SOIL STRENGTH
Leaves footprints when bare if cultivated	1 d
Leaves footprints when bare but not recently cultivated, but does not distort readily.	2 d
Only distorts underfoot when saturated or bare and dry, but not recently cultivated (e.g, loamy sand)	3 d
Has more resistance than beach sand but distorts readily underfoot when bare, dry or moist but not recently cultivated (e.g. sand).	5 d
Can be stirred when cultivated, dry and bare (e.g. beach sand)	7 d

Table 8 - SALINITY

Land class classification criteria for the land quality - SALINITY	Land class symbols for the land quality – SALINITY
Low salinity ECe 0-2 dS/m.	1 s
Moderately low Ece 2-4 dS/m	2s
Moderate Ece 4-8 dS/m Halophytic species usually present (e.g. sea barley grass)	3 s
Moderately high salinity ECe 8-16 dS/m. Halophytes usually dominate.	4 s
High Ece 16-32 dS/m. Land dominated by halophytes with bare areas.	5 s

Table 9 – WATER LOGGING

Land class classification criteria for the land quality – WATER LOGGING	Land class symbols for the land quality – WATER LOGGING
Rapidly drained. Soil never wet for more than several hours.	1 w
Moderately well drained. Soil is wet for up to one week.	2 w
Imperfectly drained. Soil is wet for several weeks.	3 w
Imperfectly drained where soil is prone to saturation very early in the season	4 w

Poorly drained through to inundated. Soil is wet for several months to permanently under water.	5 w - 8 w
---	-----------

Step Three: Constructing your Land Class map

When steps I & 2 are completed, label the resulting areas with the appropriate land class symbols of Class 2 or greater (ie, an area may be 2 e, 4 w, 3 s).

This will then give you a good map of the type of land on your property. Land is officially classed by its highest level or land quality. In the example above, that section would be classed just as 4 w. However, it is very important to know all the land qualities for any part of the land, as they all have some significant effect on its capabilities and how it must be managed for environmental sustainability.

Step Four: Getting to know your vegetation

To manage your land using best practice techniques it is important to also overlay your property's land type map with the area(s) and quality of native vegetation

On a new overlay (No. 3) record all the information about the type of vegetation on the property.

Use a different coloured text to put a line around each type of vegetation. For areas of native vegetation, then use a system of shading to indicate the amount of weed infestation.

Written notes and a herbarium for each area marked is a really good idea. See appendix on how to set up a herbarium and books that can assist you in plant identification

Task	How to achieve this	Who can help me	Next action	Tick when done
Improved pastures	Visually assess the area for the species present, their abundance and distribution pattern plus the type and level of weed infestation. This may need to be done over several seasons as some plants have a limited life cycle.	LMP Plant ID books listed in appendix 6	Record on overlay. Use a recording system that clearly shows the main type of pasture and level of weed infestation. Make separate notes to go with each area if necessary. Make a herbarium of any plants that you cannot easily identify for future reference.	
Native pastures	As above	As above	Record on overlay as above	
Native vegetation	As above	As above	Record on overlay as above	
Re-vegetation projects	As above	As above	Record on overlay as above	
Shelter belts	As above	As above	Record on overlay as above	

Step Five: Other factors that may affect planning of any actions on your property.

On a new overlay (No. 4) record any specific property concerns or permanent features of your property. It is important to be aware of these as they may have a considerable impact on how you can manage your property.

(a) specific property concerns can include:

- high potential for weed invasion
- stock camps - fire risk areas
- vermin harbours - neighbours livestock
- weed infestations - native fauna habitat
- spray drift - main summer and winter wind direction
- drainage lines - frost hollows
- ridge lines

(b) permanent features include:

- house/sheds/driveways -existing shelter belts
- power/telephone cables - dams/bores
- water pipes - road reserves
- easements
- fences are not permanent features but you may like to record them here as they will influence how you can currently manage your land.

Step Six: Evaluation of your property natural resources and the affect your horse keeping enterprise may have upon them.

Now you have recorded all the information above you can more clearly evaluate how the current property layout, enterprise and its management may impact on the natural resources of your property. Draw up your future property layout and outline what management practices you will implement to minimise any environmental impacts while maintaining a viable economic enterprise.

APPENDICES

Appendix 1: How to use a clinometer and measure slope from a contour map

Appendix 2: How to collect soil samples that are to be sent to a laboratory for testing and how to interpret the results.

Appendix 3: How to collect soil samples to do simple field tests

Appendix 4: Field test for texture

Appendix 5: Field test to check soil dispersion

Appendix 6: Land capability in the Mt Lofty Ranges

CONTACTS

Aerial photos can be obtained from
Mapland 300 Richmond Road Netley
Ph 8226 4946.

www.environment.sa.gov.au/mapland/maps

Land Management Program Mt. Barker Catchment Centre
Pam Brookman
Ph 8391 7505

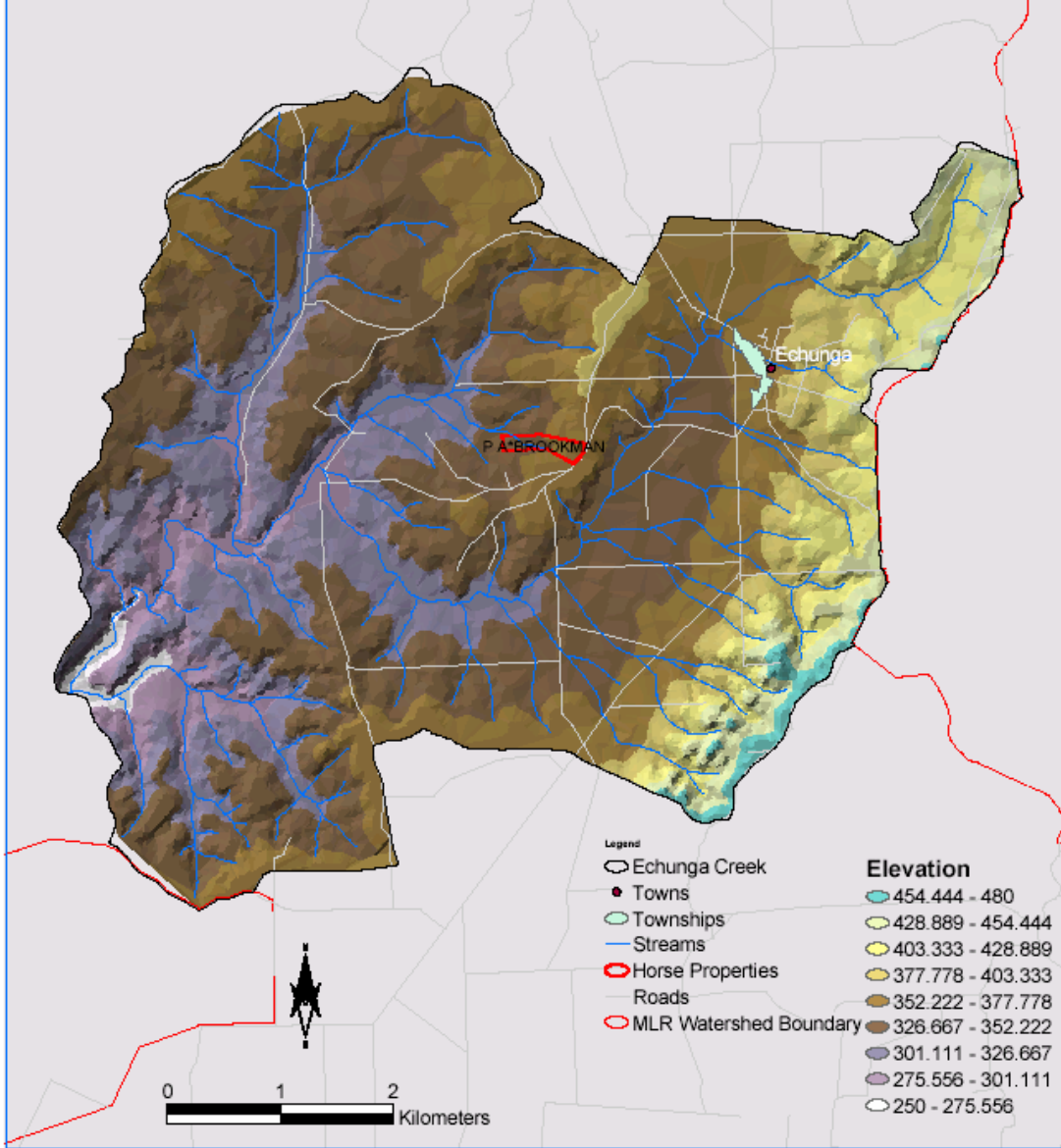
email brookman.pam@saugov.sa.gov.au or visit www.mlcrp.sa.gov.au

ACKNOWLEDGEMENT: 'Assessing Agricultural Land' by David Maschmedt, PIRSA Land Information, December 2000 for his land class assignment concept

Attachment 7

GIS example maps

Echunga Subcatchment Relief



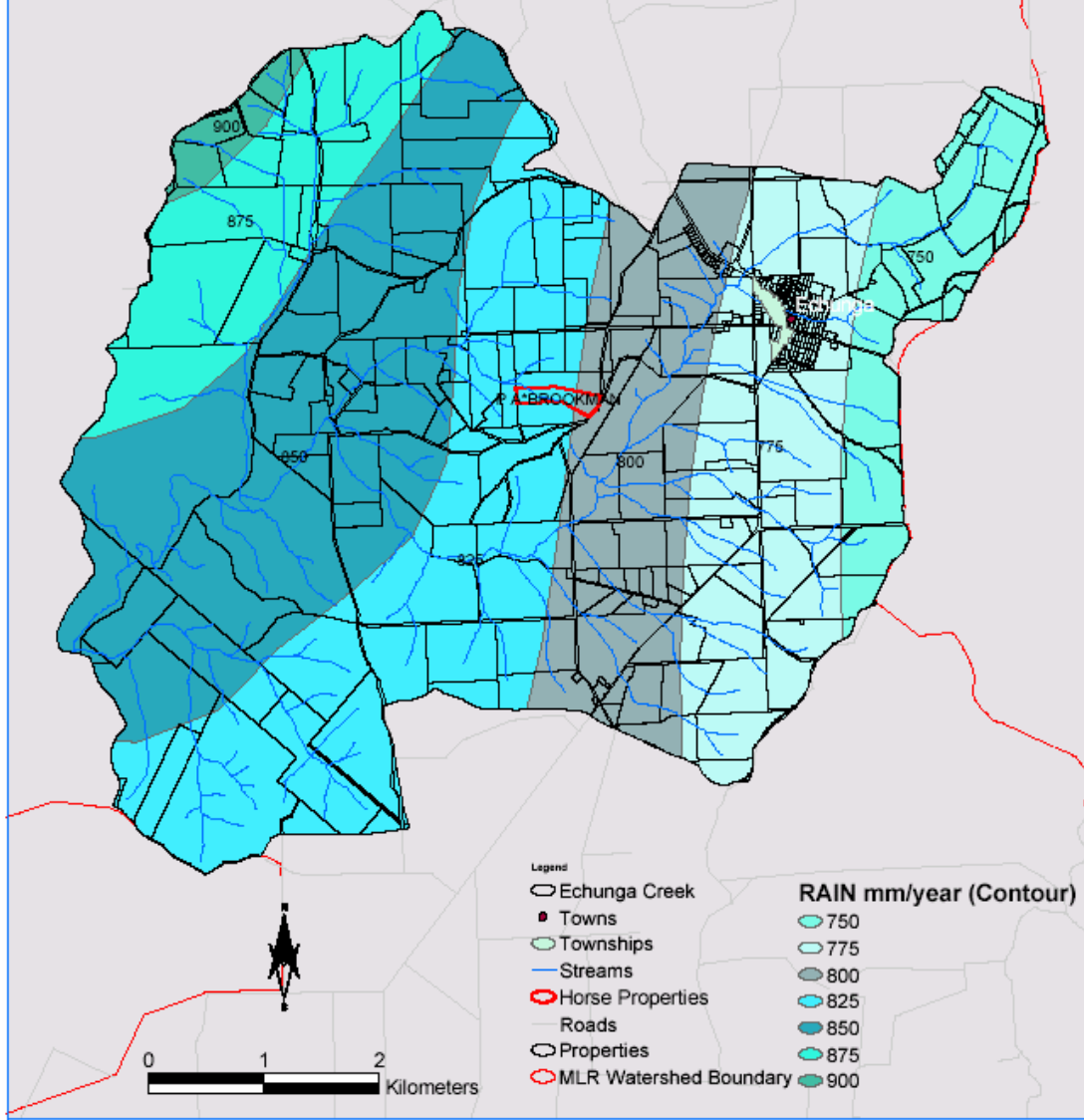
- Legend**
- Echunga Creek
 - Towns
 - Townships
 - Streams
 - Horse Properties
 - Roads
 - MLR Watershed Boundary
- Elevation**
- 454.444 - 480
 - 428.889 - 454.444
 - 403.333 - 428.889
 - 377.778 - 403.333
 - 352.222 - 377.778
 - 326.667 - 352.222
 - 301.111 - 326.667
 - 275.556 - 301.111
 - 250 - 275.556

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 The data and related graphics in GIS products are NOT A PLAN OF SURVEY.



ECHEA RegionalPublicGISDataAssetsImageCachingLogosAndMetadata

Echunga Subcatchment Average Annual Rainfall



- Legend**
- Echunga Creek
 - Towns
 - Townships
 - Streams
 - Horse Properties
 - Roads
 - Properties
 - MLR Watershed Boundary
- RAIN mm/year (Contour)**
- 750
 - 775
 - 800
 - 825
 - 850
 - 875
 - 900

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\\128176\pub\p1\gis\2005\200506\echunga\Code\Map\p1\avg\code\echunga.mxd

Attachment 8

Action Planner for Horse Keepers

Complete document is attached separately. Cover page is shown only.

HORSES, LAND AND WATER

Action Planner for Horse Properties

A tool to assist horsekeepers assess and improve environmental management

to accompany the

HORSES, LAND AND WATER
Management Guidelines



- Whole of property management
- Paddock management
- Management for intensive horsekeeping





www.horseslandwater.com

Acknowledgments

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Jacquie Foyel
Jim and Sandy Doig
the 10 members of the project pilot group
Adelaide Hills Council
Horse SA members

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Email horsesa@horsesa.asn.au

HORSES, LAND AND WATER Management Guidelines

to accompany the

HORSES, LAND AND WATER
Action planner for horse properties



- Whole of property management
- Paddock management
- Management for intensive horsekeeping



You are invited to attend the
Launch of the

Action Planner for Horse Properties

A tool to assist horsekeepers assess and
improve environmental management

11.00am
Monday 7th November 2005

Equitana Asia Pacific
Melbourne Exhibition Centre

Demonstration Area D

RSPV Tuesday 2nd November to
Mary-Anne Binnie, Horse SA
Ph 08 8294 2460 or
Email horsesa@horsesa.asn.au
www.horsesa.asn.au



HORSE SA

*Not for profit community based organisation
growing the horse industry in South Australia*

Visit www.horsesa.asn.au or our
information stands at:

Equitana Asia-Pacific,
Melbourne Nov 4-7th
&

Adelaide International Horse Trials,
CBC Oval, Nov 11-13th

Find out about:

- The Kidman trail
- The State Horse Centre proposal
- Free brochures on horse care
- Special membership offer (join for 2006
and get the rest of 2005 for free!)
- Discounts for members in our online store
- And more!

Horse SA

PO Box 483 Plympton SA 5038
Ph 618 8294 2460 Fax 618 8294 2860
Email horsesa@horsesa.asn.au
www.horsesa.asn.au



Please send me information about
joining Horse SA

Name _____

Address _____

Ph _____

Email _____

You are invited to attend the
Launch of the

Action Planner for Horse Properties

A tool to assist horsekeepers assess and
improve environmental management

11.30am
Friday, 11th November 2005

Adelaide International Horse Trials
Trade Fair area

(please report to the Horse SA information tent in the
Trade Fair area for directions to the precise location)

RSPV Tuesday 8th November to
Mary-Anne Binnie, Horse SA
Ph 08 8294 2460 or Email horsesa@horsesa.asn.au
www.horsesa.asn.au



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Please send me information about
joining Horse SA

Name _____

Address _____

Ph _____

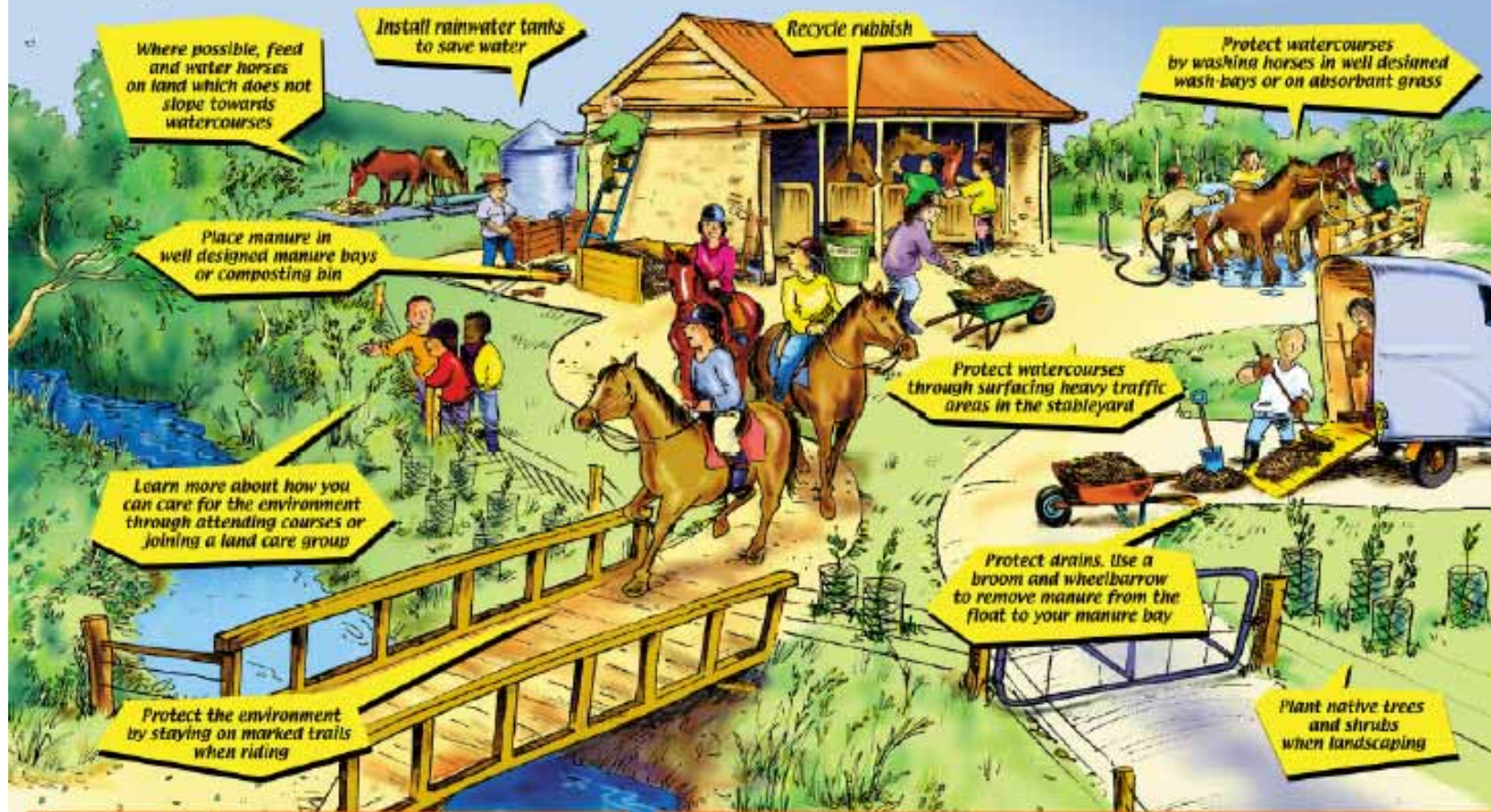
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Attachment 9

Horse EMS poster

Horses - protecting our watercourses



HorseSA



Meepersville Racecourse, Meepersville SA 5113
P.O. Box 483 Plympton SA 5078 Phone: (08) 8294 2400
Email: horsesa@horsesa.net.au Internet: www.horsesa.net.au

Onkaparinga

Catchment Water Management
Board



Salvation Army Complex, The Hub, Aberleya Park SA 5159
Phone: (08) 8374 6000 Fax: (08) 8218 4274
Email: onkaparinga@onk.rwnb.sa.gov.au Internet: www.onkaparinga.net

Attachment 10

Outreach and adoption summary

Strategy Summary

A = top priority B = medium priority C = low priority

Phase One – start-up (Spring 2005 – Summer 2006)

Communication activity	Type of tool	Target audience	Priority	Links to other activities	Timeline/frequency	Outcome
Project promotional flyer (general promotional material)	Communication	Horsekeepers	A	Action planner Guidelines	November 2005	Awareness Participation
Media and advertising	Communication	All	A	Action planner Guidelines Fact sheets Website	November 2005 – ongoing	Awareness Participation Adoption
Fact sheets	Communication	Horsekeepers Secondary audiences	A	Media and advertising Website Guidelines	November 2005 – July 2006	Adoption
Action planner	Commitment Communication	Horsekeepers Secondary audiences	A	Guidelines Media and advertising Website	November 2005	Adoption
Guidelines	Communication	Horsekeepers Secondary audiences	A	Action planner Media and advertising Website	December 2005	Adoption

Community liaison officer		All	A	Would drive all proposed activities	February 2006 - ongoing	Awareness Participation Adoption
Displays at events/field days (general promotional material)	Communication	Horsekeepers	A	Display material Mini self-assessment tool	November 2005 - ongoing	Awareness Participation Adoption
Display banners (general promotional material)	Communication	Horsekeepers	A	Events/field days	November 2005	Awareness Participation
Website	Communication	All	B	Media and advertising Fact sheets Action planner Guidelines	February 2006	Awareness Participation Adoption
Speaking and stakeholder briefing	Communication	All	A	Action planner Guidelines Champions program	November 2005 – ongoing	Awareness Participation
Horsekeepers survey	Evaluation	Horsekeepers	A	All	February 2006	Awareness Participation Adoption

Phase Two – (Autumn 2006 – Spring 2006)

Communication activity	Type of tool	Target audience	Priority	Links to other activities	Timeline/frequency	Outcome
Calendar	Prompt	Horsekeepers	B	Media and	Spring 2006 – annual	Awareness

		Businesses/ service providers		advertising		Participation Adoption
Mini self-assessment tool	Communication Norms	Horsekeepers	C	Website Display material Media and advertising	Winter 2006	Participation Adoption
Fridge magnet (general promotional material)	Prompt	Horsekeepers	B		Winter 2006	Awareness Participation
Point of sale material (general promotional material)	Communication Prompt	Horsekeepers	B	Fact sheets Calendar	Spring 2006	Awareness Participation Adoption
Property gate signs (general promotional material)	Commitment Norm	Horsekeepers	A	Seminars Awards Action planner	Spring 2006	Adoption
Behaviour prompt signs for stables/yards (general promotional material)	Prompt	Horsekeepers	A	Action planner	Winter 2006	Adoption
Field days	Norms Commitment Communication	Horsekeepers	A	Action planner Guidelines Media and advertising Fact sheets Champions	Seasonal	Adoption
One-off evening seminars	Communication Commitment	Horsekeepers	B	Action planner Guidelines Media and advertising Fact sheets Champions	Seasonal	Adoption

				program		
Bus tour	Norms Commitment	Horsekeepers	B	Media and advertising Fact sheets Champions program	Annual/biannual Start Spring 2006	Participation Adoption
Speaking program	Communication	All	A	Action planner Guidelines Champions program Media and advertising	Ongoing	Awareness Participation Adoption
Champions program	Norms	Horsekeepers	A	Field days Seminars Speaking program Media and advertising	Autumn 2006 – ongoing	Adoption
Recognition program	Commitment Norms	Horsekeepers	A	Action planner Seminars Community liaison officer	Autumn 2006	Adoption

Phase Three – Summer 2006 – Spring 2007

Communication activity	Type of tool	Target audience	Priority	Links to other activities	Timeline/frequency	Outcome
Awards program	Norms Commitment	Horsekeepers Media	A	Champions program Media and advertising Property gate signs Field days Bus tour	Summer 2006 – annual	Adoption
Focus farms	Norms Commitment	Horsekeepers	B	Champions program Media and advertising Property gate signs Field days Bus tour Action planner Guidelines	Autumn 2007	Adoption
Demonstration sites	Norms Commitment	Horsekeepers	A	Champions program Media and advertising Property gate signs Field days	Spring 2006	Adoption

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Adoption and Outreach Strategy for Horsekeepers in the Mount Lolly Ranges Watershed



				Action planner Guidelines		
DVD	Communication	Horsekeepers	C	Champions program Media and advertising Action planner Guidelines	Winter 2007	Adoption
Accreditation program	Commitment Norms	Commercial horsekeepers	C	Champions program Media and advertising Action planner Guidelines	Winter 2007	Adoption
Horsekeepers survey	Evaluation	Horsekeepers	A	All	February 2007	Awareness Participation Adoption

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Adoption and Outreach Strategy for Horsekeepers in the Mount Lolly Ranges Watershed



Attachment 11

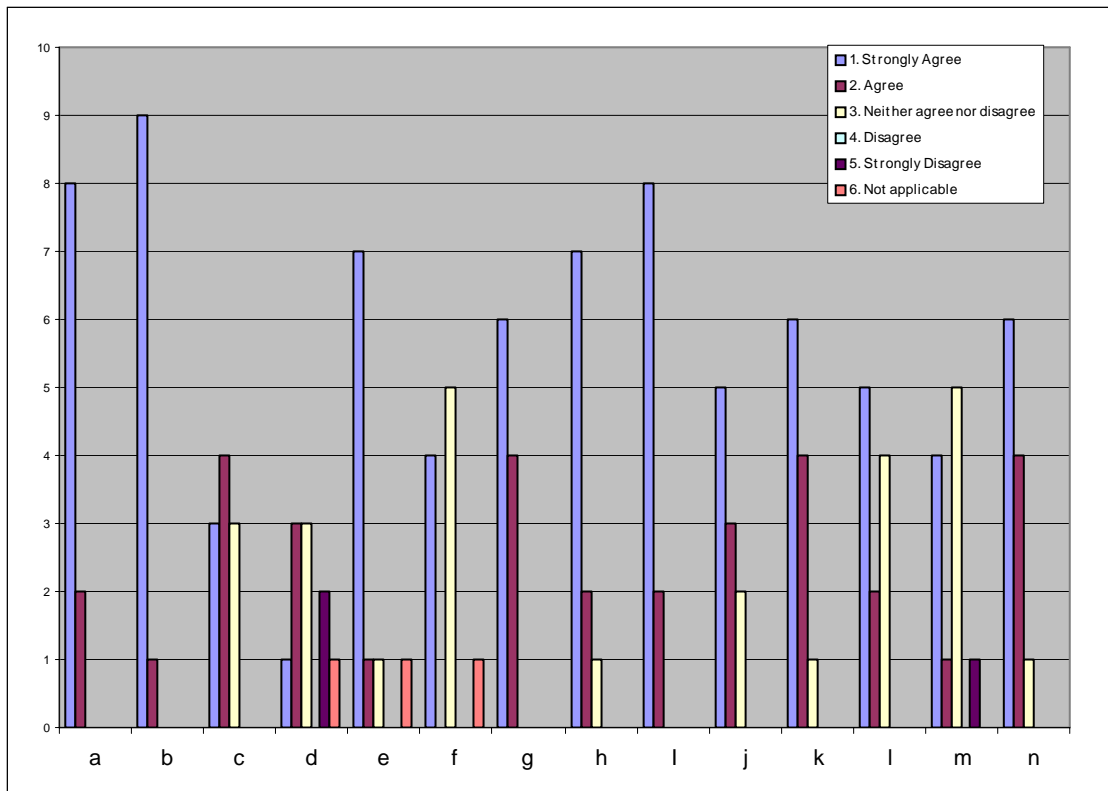
Survey results

Initial survey results

Questions

	1. Strongly Agree	2. Agree	3. Neither agree nor disagree	4. Disagree	5. Strongly Disagree	6. Not applicable
Q5. I've got involved in this project because....						
a. I'm concerned for the health of the natural environment	8	2				
b. I would like to make improvements to the management of my land, water and other natural resources through my horse keeping practices.	9	1				
c. I want to make my property more attractive for visitors/ tourists/ clients.	3	4	3			
d. I want to be able to ask a premium/ higher price for my services or products in the market place	1	3	3		2	1
e. I want to improve my property through increased pasture carrying capacity.	7	1	1			1
f. I want my enterprise to be more profitable	4		5			1
g. I want to learn more about EMS	6	4				
h. I want to show people outside the industry that I/we manage horse keeping sustainably	7	2	1			
i. I want to ensure I have continued access to the natural resources on which my enterprise is dependent	8	2				
j. I want to plan more formally for adverse conditions or seasons	5	3	2			
k. I want to keep up to date with legal and legislative developments about environmental management in relation to horse-keeping	6	4	1			
l. I think having an EMS is likely to result in our business receiving preferential access to government services or increased funding for Lancare-type activities. I want to take advantage of this.	5	2	4			
m. I want to make my property or business more marketable to potential buyers.	4	1	5			1
n. I want to know more about the linkages between horse health and sustainable land management practices.	6	4	1			
o. Other reasons.						

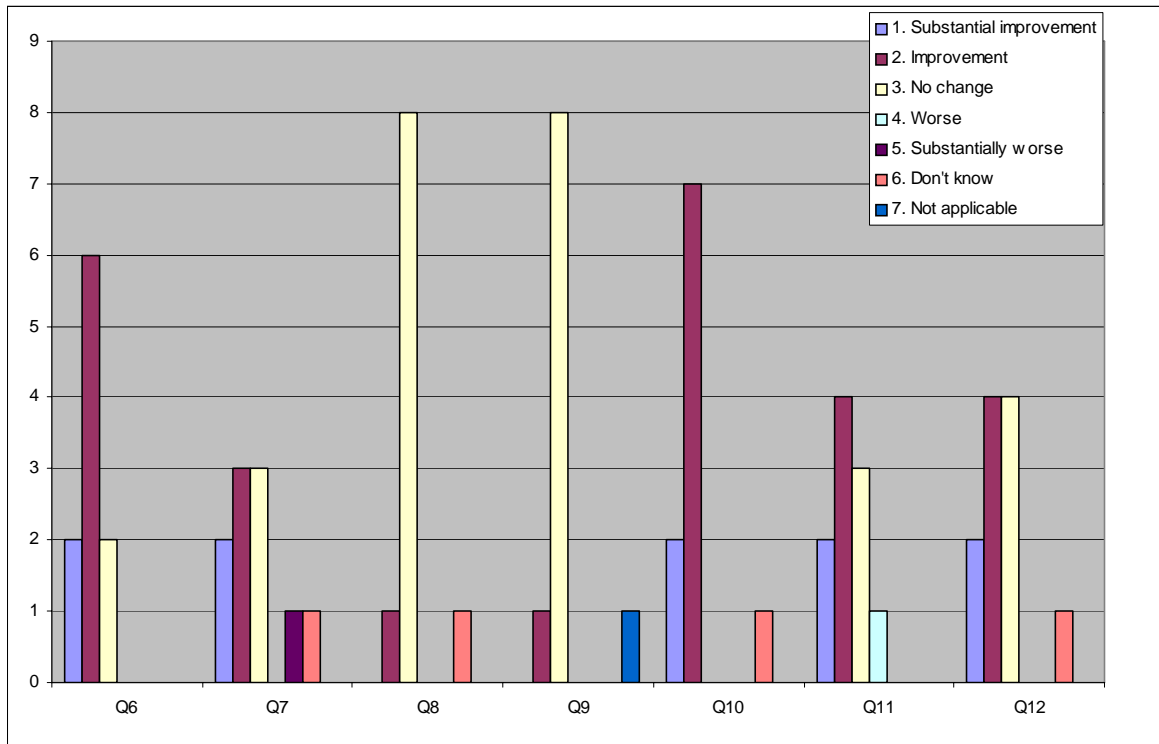
Results



Questions

	1. Substantial improvement	2. Improvement	3. No change	4. Worse	5. Substantially worse	6. Don't know	7. Not applicable
Q6. To what extent do you think the introduction of EMS in the management of your enterprise will lead to changes in the condition of your land and water resources in the long term (i.e. 5 years or more from now)?		2	6	2			
Q7. To what extent do you think the introduction of EMS in the management of your enterprise may lead to changes in enterprise profitability in the long term (i.e. 5 years or more from now)?		2	3	3		1	1
Q8. How much do you think market access for your services or products will change as a result of introducing an EMS?			1	8			1
Q9. How much do you think the prices you get for your products or services will change as a result of introducing an EMS?			1	8			1
Q10. How much do you think that your ability to respond to changing legal and legislative environmental management requirements will change as a result of including EMS?		2	7				1
Q11. How much do you think your production/ability to carry stock efficiencies will change as a result of introducing EMS?		2	4	3	1		
Q12. How much do you think your additional input (e.g. feed) will change as a result of introducing EMS?		2	4	4			1

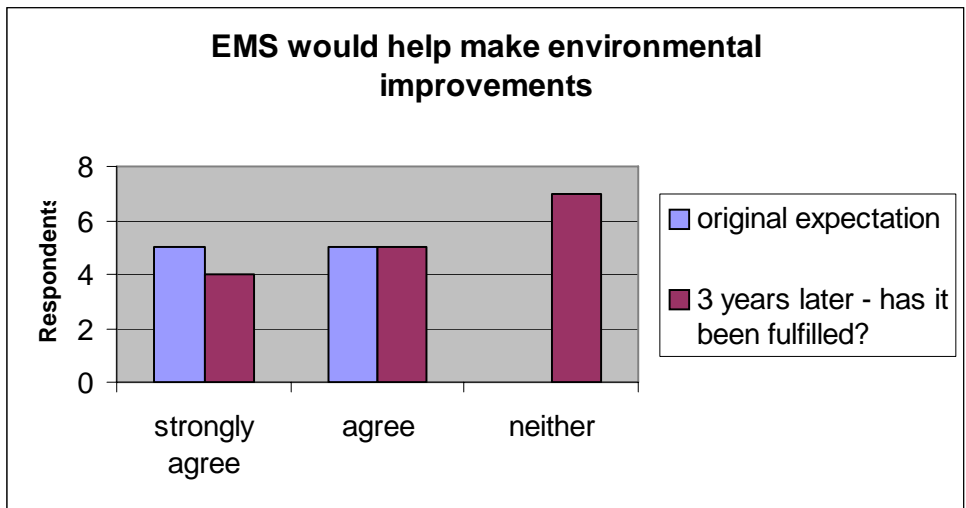
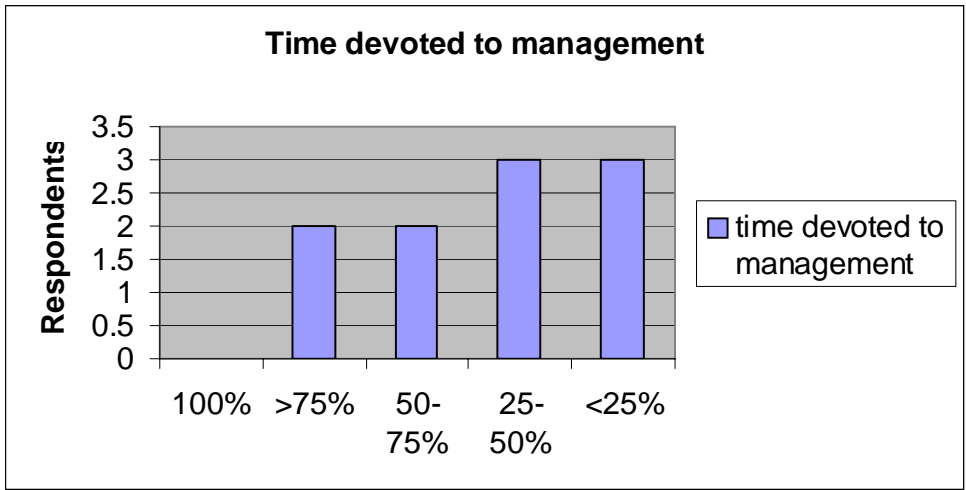
Results



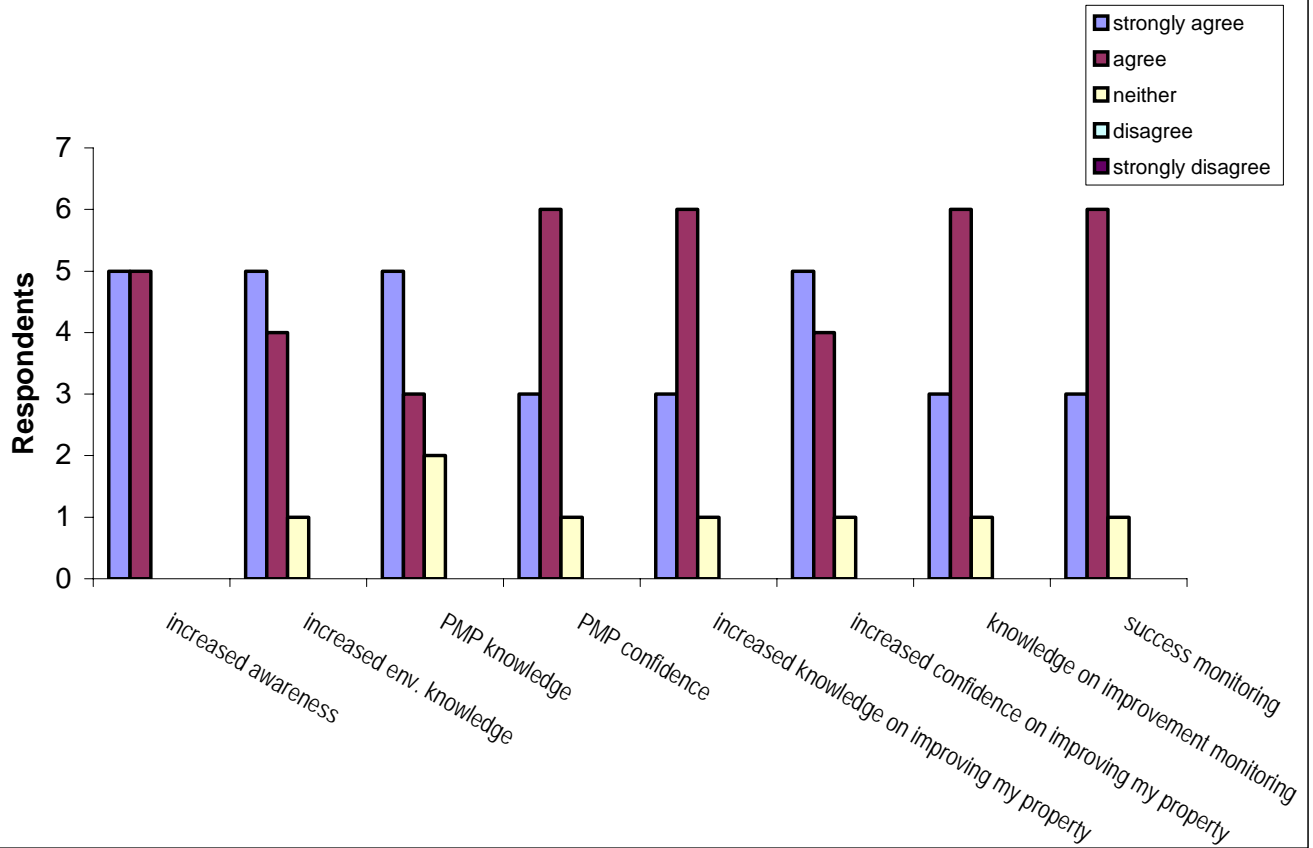
Q13. What was your experience with EMS before deciding to participate in this project?	
a. I have (or have had) a property management plan developed as a part of my enterprise management system.	6
b. I am in the process of developing an EMS for my enterprise.	1
c. I have had formal training in EMS	
d. I have had direct experience of EMS whilst working in other industries	
e. I have attended introductory seminars on EMS or actively looked into EMS	3
f. I have read about EMS in the media and/or in other publications	5
g. I have discussed EMS with my neighbours and others	1
h. I have no previous experience with and little knowledge of EMS	1

Q14. On average, how many hours a week in total you you spend working (l.e. manual work) or managing (l.e. office work) the enterprise?	
Q15. On average, what proportion of this time do you spend managing your enterprise?	
a. All of my time in the enterprise is devoted to management operations - I have staff to do the hands-on work.	
b. Most (>75%) of my time in the enterprise is devoted to management operations	2
c. Much (50-75%) of my time in the enterprise is devoted to management operations	
d. Some (25-50%) of my time in the enterprise is devoted to management operations - most of my work is hands-on	1
e. Little (<25%) of my time in the enterprise is devoted ot management operations	6

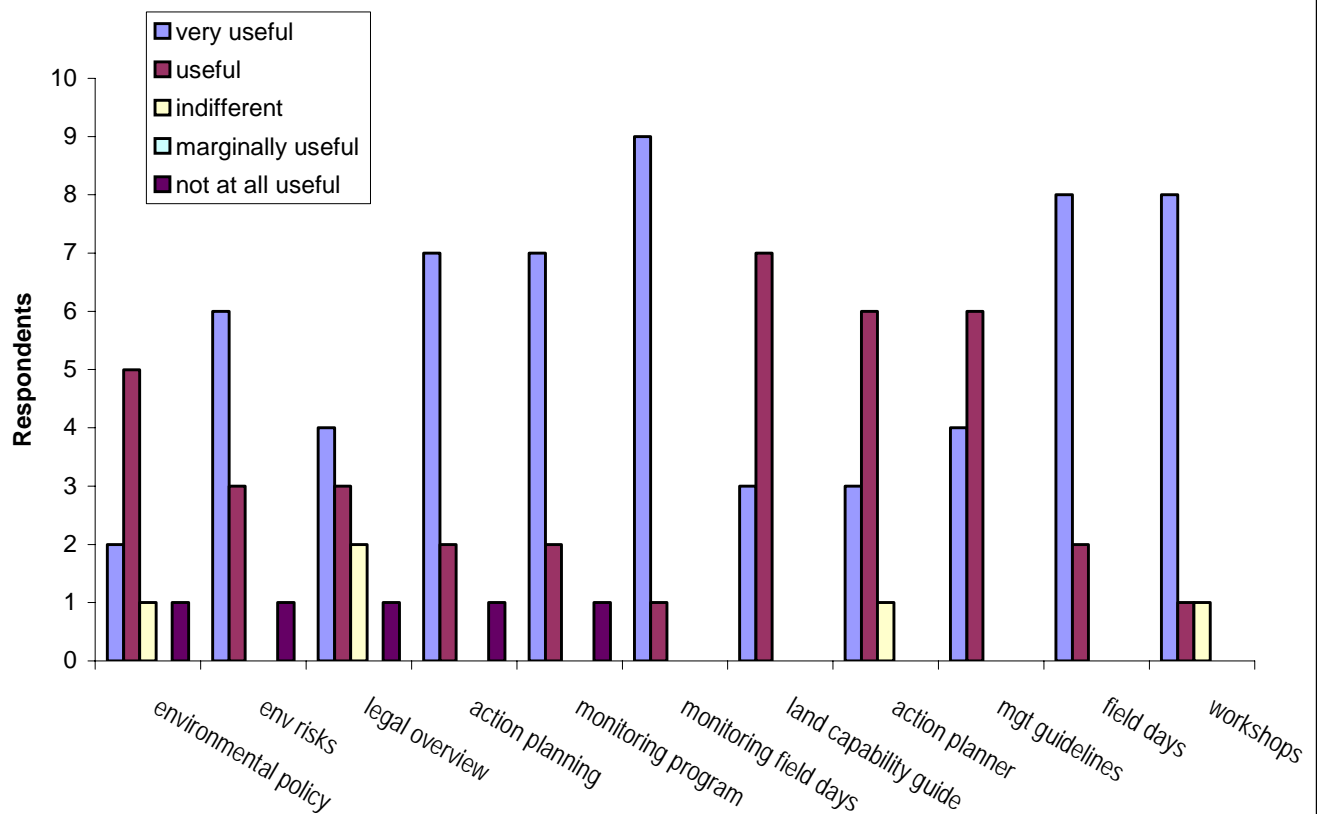
Final survey - results

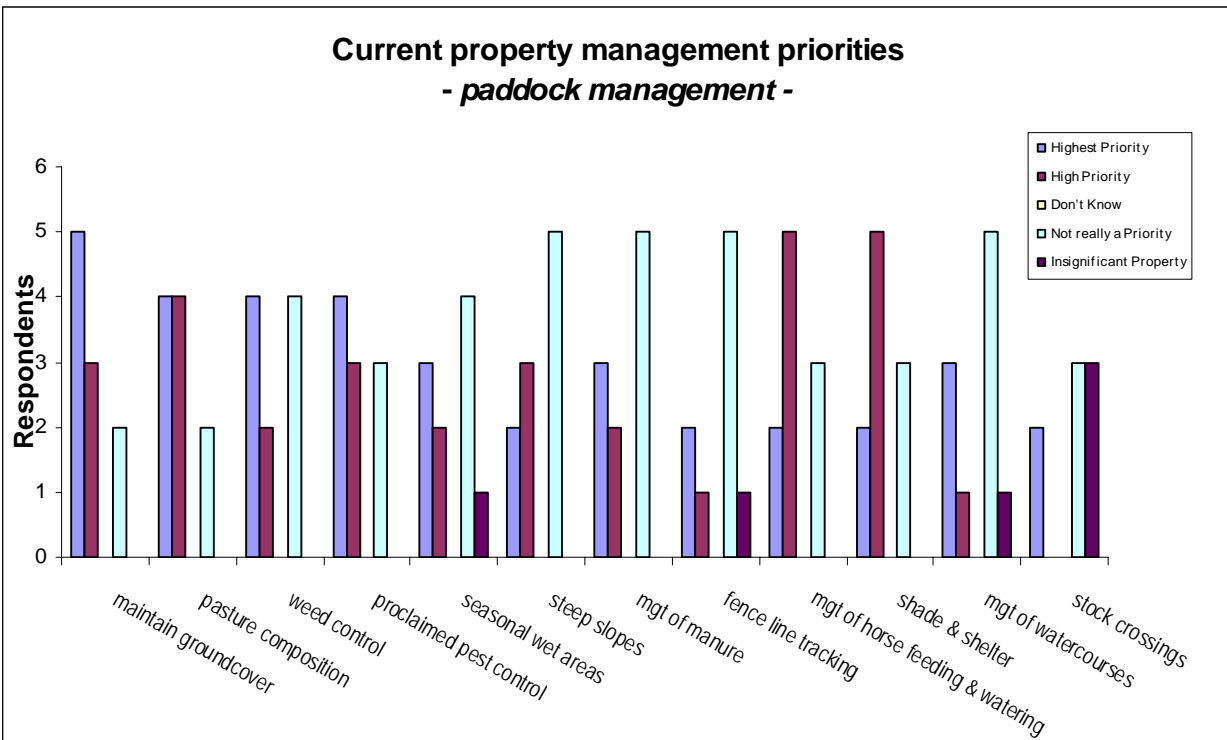
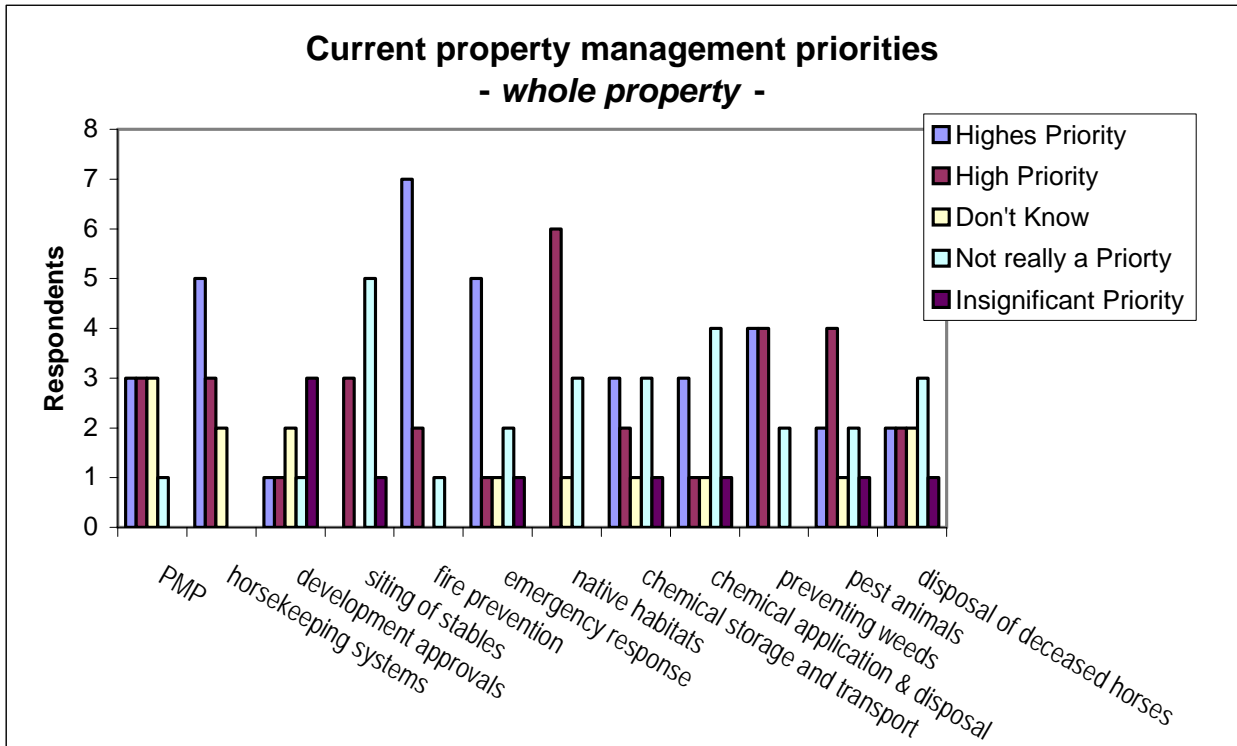


Increased knowledge in environmental management

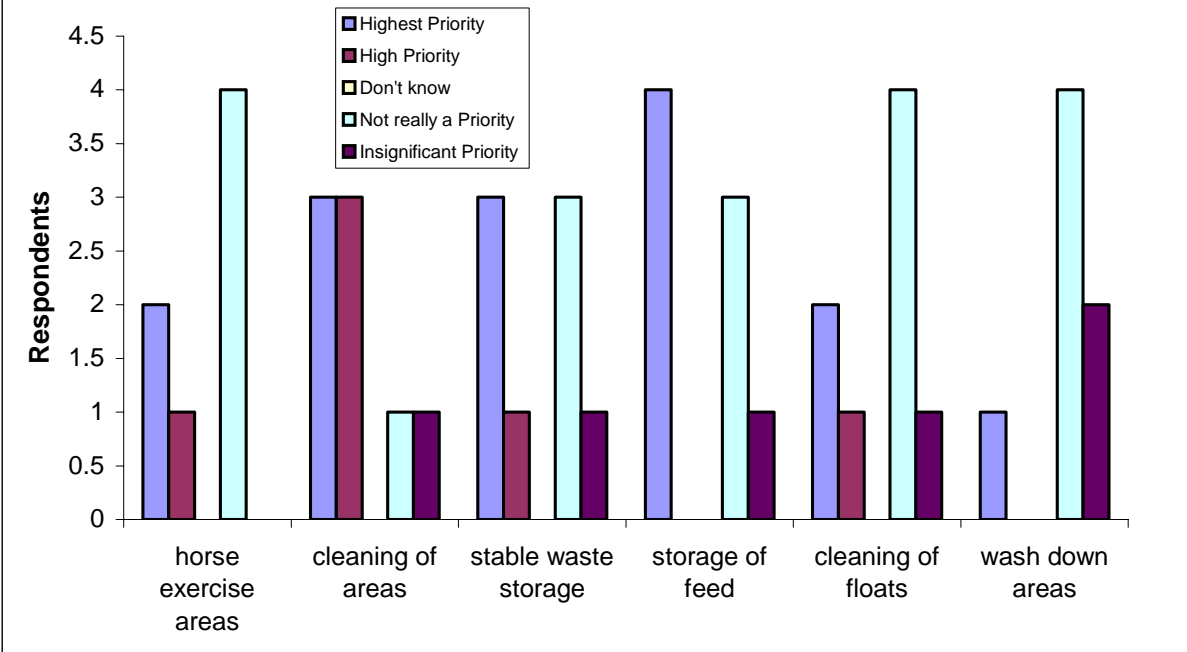


Useful EMS topics





Current property management priorities - intensive horse keeping -



Future secondary priority management areas

