

## Evaluation of a grazier education program in a drinking water catchment

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**Abstract:** Telephone interviews of graziers were held 3 months (n=35) and 12 months (n=63) after their attendance at courses held under the Sustainable Grazing Program (SGP). The SGP was a partnership of the Sydney Catchment Authority (now part of WaterNSW) and NSW Department of Primary Industries. It provided education to graziers in Sydney's drinking water catchment for the purpose of improved water quality running off agricultural lands. The program ran from 2007 to 2014, during which time almost 4,000 graziers attended over 200 courses. The findings demonstrate that SGP led to substantial change in farm practices and that courses were highly regarded and influential. Typical changes on-farm were subdivision fencing to allow greater control of grazing, fencing to exclude livestock from riparian and other sensitive areas, increased adoption of rotational grazing and objective pasture assessment, better targeted use of fertilisers, better targeted weed control, a greater focus on high levels of groundcover and the increased establishment of locally suited perennial pastures. The paper discusses what participants liked about the courses, what changes were made

on farms, benefits observed and the future role that Local Land Services can play in continuing extension efforts with graziers.

**Key words:** Extension, grazing, farm practices, Prograze®, LANDSCAN™.

### Introduction

The Sustainable Grazing Program (SGP) allowed Sydney Catchment Authority (SCA) and NSW Department of Primary Industries (NSW DPI) to work together to provide education and extension activities to graziers in Sydney's drinking water catchment, which includes around 6,000 km<sup>2</sup> of grazing land. The courses and associated activities assisted graziers to manage their properties to achieve both environmental and enterprise benefits: clean water running off agricultural land and farm profitability.

The primary courses run were Prograze® and LANDSCAN™, each with 8 half or short day sessions held over 6 to 12 months, and Paddock Plants, which normally had a single session lasting 3 or 4 hours. Paddock Plants often served as a 'taster' to the longer, more intensive SGP courses. The 3 courses mentioned were already developed and being offered by NSW DPI. Under SGP, elements of SCA's 16 best

management practices for water quality for grazing land (WQ BMP) were incorporated into course notes and highlighted during delivery. The WQ BMP cover the following topics: manage pastures to minimise the movement of sediments, nutrients and pathogens; soil management and protection; stock management and health and management of riparian areas and waterways.

### Methods

In-depth telephone interviews of graziers were held 3 months (n=35) and 12 months (n=63) after their attendance at courses held under SGP. In this round of interviews, the 98 interviewees were selected at random and had attended one of 20 events representing 7 of SGP's suite of 14 courses. The graziers represented ≥ 25% of attendance at these 20 events. All interviews were carried out by staff of NSW DPI and around 80% were carried out by an author of this report (M Lieschke).

These follow-up phone evaluations complement evaluations completed by graziers at the conclusion of each course. An outcomes hierarchy, post-course evaluation forms and templates for the phone interviews were developed by an agricultural consultancy firm

as part of an independent evaluation contract undertaken by SCA during the first three years of the SGP.

The phone interviews took around 20 to 30 minutes. The 10 questions sought to understand the changes, or lack of change, resulting from the training. The questions addressed actions taken or planned as a result (at least in part) of the course, benefits observed so far, intentions to make changes in the future and the role of the course in encouraging changes in farm practice.

## Results and Discussion

### *Actions taken as a result of the course, benefits observed and future intentions*

After 12 months, 52 of the 63 graziers interviewed (83%) had implemented at least one change on their property as a result (at least in part) of the course that they attended. Forty-nine interviewees (78%) said they planned to take further action. Encouragingly, the figure of 83% taking action at 12 months is slightly higher than the proportion of interviewees (74%) who said, at 3 months, that they planned to take action on their properties.

Actions taken so far are varied, reflecting the range of courses surveyed, but in general consist of:

- changes to grazing management (e.g. more rotational grazing, pasture assessments)
- improvements to infrastructure (e.g. fencing to exclude livestock from dams and riparian areas, fencing for sub division, installing watering points),
- new weed control strategies
- fertiliser and lime applications: developing and implementing a fertiliser program

### *Prograze®*

Eight participants were interviewed from two groups that finished Prograze® courses in mid 2012. One group was based in the Southern Highlands and the other at Goulburn. Seven of the eight graziers had made changes on their farms and all eight intended to make further

changes. One grazier had his property under lease and had not been able to take action. Following the course, all graziers, except the one leasing his property, assess their pastures. Several mentioned grazing to a target height or pasture mass (e.g. 2000 kg DM/ha). Five graziers mentioned their use of rotational grazing.

Fencing was a common theme among interviewees with five of the eight having already fenced and six intending to carry out more fencing. This was the action most commonly cited for future action. The reasons for fencing were: sub-division and exclusion. Most graziers had made paddocks smaller so as to improve control of grazing. Two graziers also stated they had fenced riparian areas to exclude stock. Two graziers mentioned being more focussed on quality when buying hay. Two graziers said they fat score and use that information to help decide when to sell stock. Some actions and benefits nominated by graziers who had undertaken a Prograze® course are listed in Table 1.

**Table 1. Actions taken and benefits reported by graziers interviewed after completing a Prograze® course.**

Actions taken	Benefits (observed or expected)
Subdivided paddocks to increase grazing control and improve pasture utilisation	The property is more evenly grazed and pasture utilisation has been improved
Fat scoring: mainly to determine when cattle are ready to be sold	Selling cattle that are at the right condition
Using Pro Plus software to do fodder budgeting and ... see how much pasture will be available over the winter period	Prior to the course ... used to do these calculations himself, but the Pro Plus software package makes this much quicker and more accurate.

### *LANDSCAN™*

Six graziers were interviewed from a group who had participated in a LANDSCAN™ course based at Goulburn. Five of the six participants had made changes on their farms and all six intended to make further changes. Fencing was the most common theme among interviewees with four of the six having already fenced, and

five intending to carry out more fencing. As well as fencing to improve grazing control via sub-division (3 graziers) and to exclude areas for conservation purposes (1 grazier), three graziers mentioned having fenced according to land capability. Some actions and benefits nominated by graziers who had undertaken a LANDSCAN™ course are listed in Table 2.

**Table 2. Actions taken and benefits reported reported by graziers interviewed after completing a LANDSCAN™ course.**

Actions taken	Benefits (observed or expected)
Fenced according land capability (slope and aspect)	Better targeted investment (e.g. applying fertiliser on the 'better' country to increase 'bang for buck')
Subdivided paddocks and installed troughs	Assisted in developing pasture rotations to give pasture a longer recovery period
Spread turkey manure based on soil test results	Strongly believes that fertiliser program and resultant increase in pasture growth has nullified the need to supplementary feed over autumn/winter.

**Paddock Plants**

Twenty-eight graziers were interviewed following their participation in four Paddock Plants workshops. Of these, 21 (75%) had taken action in some way. It is worth noting that most of those who said they had not taken action were carrying out on-going practices such as weed suppression. Many of the actions taken focussed on weed control, particularly the use of herbicides on serrated tussock (10 graziers).

Many graziers found that Paddock Plants gave them the skills to distinguish serrated tussock from native tussock grasses and correctly identify desirable pasture species. At least some graziers now monitor their properties for incursions of Chilean needle grass and other weeds. One grazier stated “Learning the value of native pastures and how to manage them has been the most valuable (outcome of the course)”.

**Role of the course in encouraging practice change**

In total and across all courses, 85% of interviewees said (at 12 months) that the SGP course(s) they had attended was ‘influential’ in encouraging action on their property – including 38% who said the course was ‘very influential’. Comments on the influence of courses and the very positive attitudes towards them included:

- “Prograze® was really good – pitched at the right level and is a fantastic resource for both small and large farmers”
- “Courses like Prograze® have made me think differently about farming systems and how to go about things”
- “Prograze® introduced me to a whole range of people and I have developed good contacts in DPI and CMA”
- “Was interested in learning about stock/drought management, when to sell and winter feeding. Course covered these things well” (Prograze®)
- “Fantastic course, very practical and hands on” (Prograze Plus®)
- “Great course – always recommends people to do SGP courses” (LANDSCAN™)
- “Realised that the fences were in the wrong place. Used this knowledge to re-fence according to land capability” (LANDSCAN™)
- “Soil sampling made the course more contextualised to your own needs and where your property sits (e.g. acidity, trace elements, etc.). This was a great feature of the course!” (LANDSCAN™)
- “Course can give you a framework for thinking through various land management decisions (e.g. fencing, dams, weed control, etc.)” (LANDSCAN™)
- “Small group meant that interaction component worked well – could run a question around the group without taking up too much time” (LANDSCAN™)

- “All SGP courses have been great – always something to learn and you pick things up as you go along. Also a great opportunity to ... gain knowledge from the presenters who have a lot of industry experience.”

**Value and benefits of attending courses**

When asked what they most liked about undertaking courses, by far the most common response was the ability to interact, network and learn from other participants through sharing their own experiences, asking questions and providing additional comments. Many interviewees felt that hands-on, practical, face-to-face learning, and the opportunity to ask questions directly of presenters were other key benefits of attending SGP courses (Fig. 1). Below are comments by interviewees on what they particularly liked about the courses:

- “Courses are very motivating and are a very condensed form of learning. Points you in many directions and gives you ideas that you can follow up in your own time”

- “Credible advice that is delivered directly from the presenter”
- “Ability to see expression from presenter and the degree of emphasis that is made on certain points. This helps you ID what’s important”
- “Face-to-face learning is more engaging and a more fun way of learning”
- “Face-to-face learning means that it can be explained better – ability to ask questions”
- “Being able to walk out into the paddock and see things for yourself”
- “Being able to ask questions and visiting other properties (and having people visit your own property – they notice things that you don’t!)”
- “Practical examples from the presenters and interaction/learning from other landholders”
- “Doing the course with other people that are facing the same problems and issues”

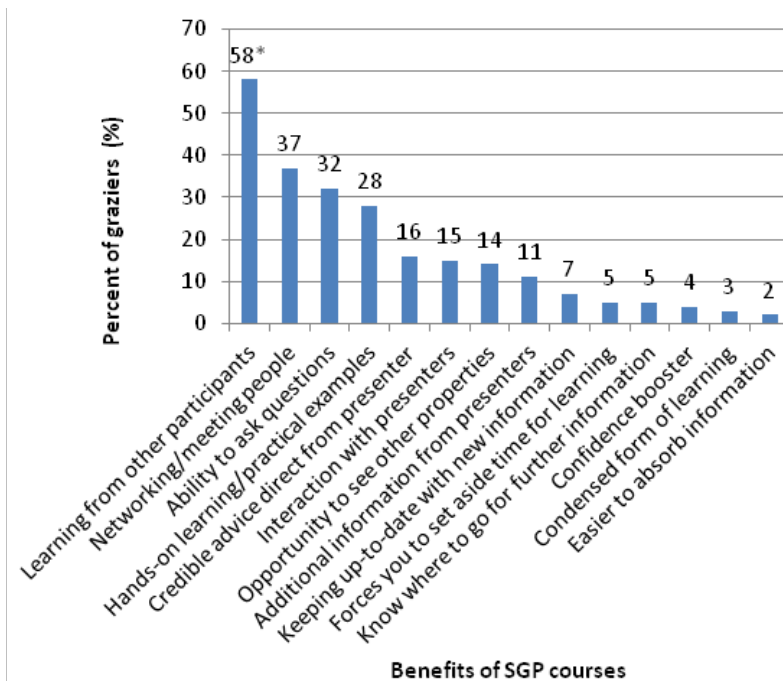


Figure 1. Benefits of SGP courses as nominated by graziers interviewed 3 or 12 months after completing courses and the percentage of graziers (n=98) who considered each benefit an outcome of the course. Note that interviewees could nominate more than one benefit. \*The number of graziers nominating each benefit is shown on top of the column.

## Conclusions

Graziers interviewed liked that the courses were practical and face-to-face; allowing direct questioning of knowledgeable presenters as well as interaction with, and learning from, neighbouring graziers in similar situations. There were very few suggestions on how to improve the courses.

Following the restructure of NSW DPI, Local Land Services (LLS) is now responsible for delivery of extension services in NSW. While each LLS region will tailor extension programs to suit local customer and stakeholder needs and priorities, there is no doubt that group-based learning will play a major role across the state. As such, the evaluation of programs like SGP provides valuable feedback that can be used to inform the planning and delivery of future programs.

While the evaluation of SGP provided valuable feedback and lessons, a significant amount of time and labour was involved. One of the challenges in designing extension programs is incorporating an evaluation process that provides meaningful information while minimising effort from both landholders and staff.

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