

BIOSECURITY SA
PIRSA

Buffel Grass Best Practice Workshop Report

FEBRUARY 2015



Government of South Australia
South Australian Arid Lands Natural
Resources Management Board



Native Vegetation Council



Buffel Grass Best Practice Workshop Report

Information current as of 15/10/2015

© Government of South Australia 2015

Disclaimer

PIRSA and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein as regards to its correctness, accuracy, reliability and currency or otherwise. PIRSA and its employees expressly disclaim all liability or responsibility to any person using the information or advice.

All enquiries

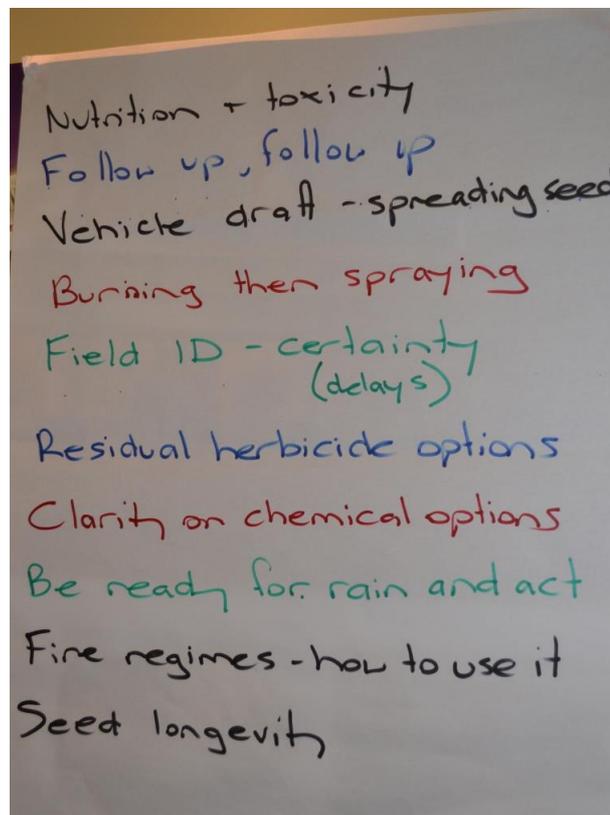
NRM Biosecurity

Primary Industries and Regions SA (PIRSA)

GPO Box 1671, Adelaide SA 5001

T: 08 8303 9620 F: 08 8303 9555

E: nrmbiosecurity@sa.gov.au



Acknowledgements

The Buffel Grass Best Practice Workshop was supported by a grant from the Native Vegetation Council's Significant Environmental Benefits Programme, the SA Arid Lands Natural Resources Management Board and Beach Energy.

Troy Bowman, Buffel Grass Operations Coordinator with Biosecurity SA, was the workshop organiser and Helen Lamont, from Lamont Connections, facilitated the workshop.

The members of the SA Buffel Grass Taskforce were instrumental in bringing together the workshop program and ensuring participants from remote locations were encouraged to attend.

The excellent presentations by the invited speakers were a highlight and many thanks go to Peter Latz, Graeme Armstrong, Jodie Reseigh-O'Brien, Clint Taylor, Alex Clarke, Mike Chuk, Reece Pedler, Emma Vasey, Chris Brodie and Troy Bowman for sharing their knowledge and experiences.

Michaela Heinson, Principal Biosecurity Officer, Weeds with Biosecurity SA and Helen Lamont from Lamont Connections prepared this report.

Introduction

Buffel grass has been recognised as one of the greatest threats to biodiversity across SA's arid rangelands. It rapidly and aggressively invades native habitats, forming monocultures and increasing fire risk.

The South Australia Buffel Grass Strategic Plan 2012-17 was released in October 2012 and buffel grass (*Cenchrus ciliaris* and *Cenchrus pennisetiformis*) was declared under the *Natural Resources Management Act 2004* in January 2015. A two-day Buffel Grass Best Practice Workshop was held in Port Augusta on 25th and 26th February with more than 80 attendees. The participants were from state and local government, NRM boards, non-government organisations, mining/exploration companies, pastoralists, indigenous communities, railway managers and research organisations.

This report details the purpose, format and findings of the workshop, the workshop program and list of participants.

Purpose of the Buffel Grass Best Practice Workshop

In August 2013 the members of the SA Buffel Grass Taskforce identified the need to hold a Best Practice Workshop to discuss and document a wealth of field experience, anecdotal evidence and knowledge gaps for effective buffel grass management. At subsequent meetings the Taskforce members prioritised the following topics:

- Identification
- Surveillance
- Control methods
- Preventing spread

A unique opportunity to map infestations and key assets for protection in the Anangu Pitjantjatjara Yankunytjatjara Lands was also added to the program to help prioritise future control activities in the state's north-west.

The main aim of the workshop was to share knowledge and gather information to be included in a set of extension materials for broader distribution.



Format of the Workshop

On the first morning, participants visited a herbicide trial site and a local infestation. In the afternoon, participants listened to presentations from invited speakers. The herbicide trial was established by Biosecurity SA in 2014 at the Australian Arid Lands Botanic Gardens. The three-year trial will help provide data on best practice herbicide options and application to control buffel grass.

Invited speakers provided presentations on: controlling buffel grass; fire intensity and frequency in buffel grass infestations; the nutritional value of buffel grass in pastures; managing buffel grass amongst mining and exploration activities, on Aboriginal Lands, on roadsides, and in conservation areas; volunteer activities of the Roxby Buffel Busters; and buffel grass identification and lookalikes. The workshop agenda in Appendix A of this report includes a list of the speakers and topics presented.

The second day comprised of workshop sessions and a question and answer session with the panel of speakers to clarify key findings. A list of workshop participants is provided in Appendix B of this report.



Presentations by Speakers

Peter Latz from Alice Springs spoke about his experiences controlling buffel grass in Central Australia in conservation areas. His key messages on best practice included: be persistent, follow up control is critical after every rainfall event, getting 99% control is easy but the last 1% is hard to eliminate, and to achieve conservation outcomes you can't afford to miss any plants as they can set seed at four weeks old.

Graeme Armstrong from the Department of Environment, Water and Natural Resources gave a presentation on the increased frequency and severity of fires in buffel grass. Some of Graeme's key points included: scientific data on the fire-feedback loop created by buffel grass, the irreversible impacts that buffel grass fires have on native habitats, the mortality of woody species, and under acacias buffel grass appears to be unaffected by allelopathy.

Jodie Reseigh-O'Brien from Rural Solutions SA delivered an interactive presentation on buffel grass nutrition. Jodie's talk focused on four different pasture phases for buffel grass and their forage value for stock. She provided participants with an equation for determining the amount of metabolisable energy or protein an animal will be able to consume and if the feed offered is sufficient to support maintenance, lactation, growth or weight gain.

Clint Taylor from Anangu Pitjantjatjara Yankunytjatjara Land Management spoke about the impacts of monocultures of buffel grass on culture, biodiversity, threatened species, food sources, medicine and bushfire risk throughout the region. Clint explained the control activities being undertaken and lessons learnt. His key messages about best practice included: the importance of preparing site management plans, development of data capture standards, using detailed maps, and employing a diversity of control methods.

Alex Clarke from Senex Energy gave a presentation on managing buffel grass and exploration activities in the Cooper Basin. Alex spoke about the risk of spreading buffel grass during seismic surveys and mitigation measures used to abate the risks. Alex's key messages on best practice included: use preliminary site inspections to survey and map areas where seismic lines are proposed, use desktop assessments and satellite imagery to identify priority locations for ground surveys, the importance of site

inductions and post survey audits, development of a Buffel Grass Management Procedure, rehabilitation and monitoring.

Mike Chuk from Bush Heritage Australia shared his first hand experience of controlling buffel grass on Bon Bon Station over very large areas. Mike's key points about best practice control included: the value of multiple partnerships to achieve control across land tenures, burning is effective but labour intensive, diligent re-treatment requires as much time as the first strike but may only require a fraction of the herbicide, and to ensure effective control of re-growth in follow up years complete ground spray with a Glyphosate/Flupropanate mix is recommended.

Reece Pedler from the Roxby Buffel Busters Group spoke about volunteer control of buffel grass in Roxby Downs since 2012. His key messages on best practice included: set goals, remove all mature plants (this was achievable using a combination of hand grubbing, burning and herbicides), undertake follow up control, and complement volunteer hours (600+) with work by contractors and a Prisoner Reintegration Employment Opportunity Program.

Emma Vasey from the Department of Planning, Transport and Infrastructure gave a presentation on roadside control works, management planning, capturing and maintaining data, burning trials and monitoring. Emma's main messages for best practice include: after a five year program of controlling buffel grass with herbicides native grasses have re-colonised sites on Eyre Peninsula, monitor success rates, develop a well-organised surveillance program, and the importance of coordinating activities with land holders/pastoralists, NRM Boards, Councils and other states/departments.

Chris Brodie from the SA Herbarium spoke about how to identify buffel grass, look-alike species and how to collect samples for identification. His key messages on best practice were: take paper bags and a plant press with you in the field, for grasses always collect flowers, roots, stems and leaves in each sample, and look-alike grasses include *Chloris* spp., other *Cenchrus* spp., *Enneapogon* spp., *Setaria* spp. and *Digitaria* spp.

Troy Bowman from Biosecurity SA provided an overview of the SA Buffel Grass Strategic Plan and the three-year project he is delivering to reduce the threat of buffel grass in SA. Troy's main messages for best practice included: using distribution data and management zoning to determine control priorities, strategic approaches to planning control activities – location and timing, making use of habitat susceptibility and suitability modeling, and the use of standardised methods for designing and monitoring field trials.

Workshop Sessions and Findings

IDENTIFICATION

At the workshop participants created a Top Five list of priorities for the identification of buffel grass:

- Nothing beats large, high quality photos
- Laminate good, dried specimens to use in the field
- Electronic resources should be readily available
- Roadside signage is an important tool to communicate how to identify buffel grass
- Most stakeholders need to know how to identify seedlings before flowering starts

The workshop participants listed the following actions that work well:

- Keep a herbarium in the car, with samples of different life stages and species
- Recognise that good identification requires experience and practice

- Collect samples for identification by the State Herbarium and seek some informal training from botanists at the Herbarium
- When preparing buffel grass identification resources and training information, recognise who the target audience is and tailor the approach accordingly
- Wherever possible, use fresh specimens when delivering training on buffel grass identification
- Ensure identification resources are available on-line and as hard copies
- Develop a simple identification key that includes lookalike grasses
- Ensure that land holders can easily contact a local or regional expert to provide identification advice
- Identification resources should include photos and information about different life stages
- Provide good quality identification resources for land holders who don't have buffel grass

The workshop participants shared their tips for identification:

- Buffel grass has a zig-zag pattern on the seed spikes, however this is also a feature of some native grasses
- Buffel grass has a red tinge on the leaves at the base of the plant (similar to juvenile kikuyu)
- The area where the leaf joins the stem has fine hairs.

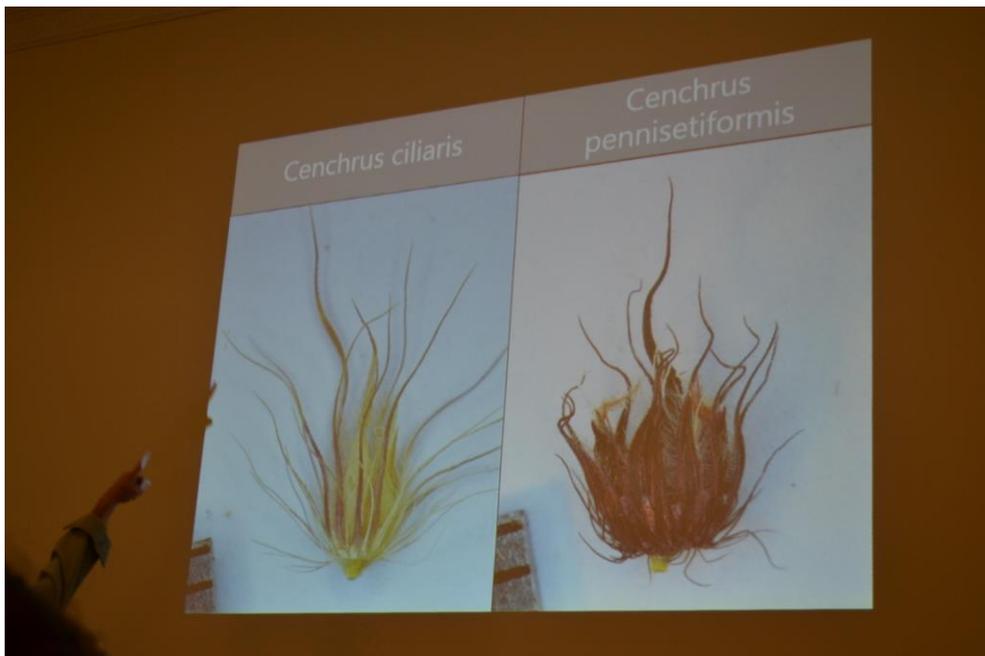


A list of problems and challenges associated with identifying buffel grass was prepared:

- Buffel grass seedlings are easily confused with native grasses
- New methods and resources for educating landholders on how to identify buffel grass are needed
- The colour of the seed heads is not an identifying feature – colour variation is wide-ranging
- Post fire, diligence is required to check whether old plants have re-sprouted and require treatment
- It is not possible to accurately identify a dry tussock. A return visit after rain is required for accurate identification; and
- Mapping relies on accurate identification.

Knowledge gaps include:

- A range of incentives to detect buffel grass should be explored
- A comprehensive list of lookalike grasses and photos should be prepared and distributed



SURVEILLANCE

At the workshop participants created a Top Five list of priorities for buffel grass surveillance:

- A centralised digital database of information is required for all to use
- A comprehensive resource covering identification, data collection standards and hygiene practices is required
- Surveillance should be prioritised considering introduction pathways (including suitable habitats, at risk activities eg. quarries, stock yards, roads and drainage lines)
- All sectors need to be engaged in surveillance: mining, transport, primary producers, community, government agencies including defence etc.; and
- Consideration should be given to the implications of providing buffel grass data, such as potential impacts on property values, confidentiality in the provision of private information and concerns with compliance under the *Natural Resources Management Act*.

The workshop participants listed the following actions that work well:

- Use rainfall reporting to inform the timing of surveillance activities. Timing is critical
- Use GPS to map infestations
- Undertake surveillance after control works
- Target surveillance by analysing risks for each pathway, and use experts to undertake surveillance for high risk pathways
- Clearly explain the impacts of buffel grass to landholders who don't have it – use story-telling to encourage surveillance. It's the "Grassy Cane Toad"; and
- Record absence and presence of buffel grass

The workshop participants shared their surveillance tips:

- Always collect samples for the SA Herbarium as a part of surveillance activities. Verification is important; and
- The Atlas of Living Australia and Bowerbird are online databases that can be used to report the locations of buffel grass infestations.

A list of problems and challenges associated with buffel grass surveillance was prepared:

- In the past roadsides have been the focus of surveillance. The approach needs to be expanded to include other pathways especially drainage lines and gravel pits.
- Existing databases that hold distribution information for buffel grass are not accessible to everyone.
- Should government agencies take the lead for surveillance and engage communities to achieve a coordinated approach?
- Should an app for buffel grass be developed to report surveillance data?
- The risk of spread via surveillance activities should be identified and mitigated.
- Can rewards/incentives be used for providing data? Can the local of people be harnessed?
- To establish a consolidated database and encourage surveillance, the methods for capturing data must be simple and easy to use.

Knowledge gaps include:

- A cost effective aerial survey technique is yet to be determined
- A system to share distribution data with neighbouring states and territories should be established
- What motivates people to undertake surveillance? Are pastoralists worried about compliance under the *Natural Resources Management Act* and does this reduce surveillance?
- Distribution data across state/territory boundaries; and
- A comprehensive study of the buffel grass varieties in SA and how this information could inform surveillance.



CONTROL METHODS

At the workshop participants created a Top Five list of priorities for the control of buffel grass:

- Increase communication and education activities to support control work
- More funding and resources are required for control
- Initiate research into insects and pathogens that impact on buffel grass with a view to have biocontrol options in the future
- Proactive and reactive approaches for controlling infestations both have their place depending on site requirements. More information to guide decision-making will support land holders; and

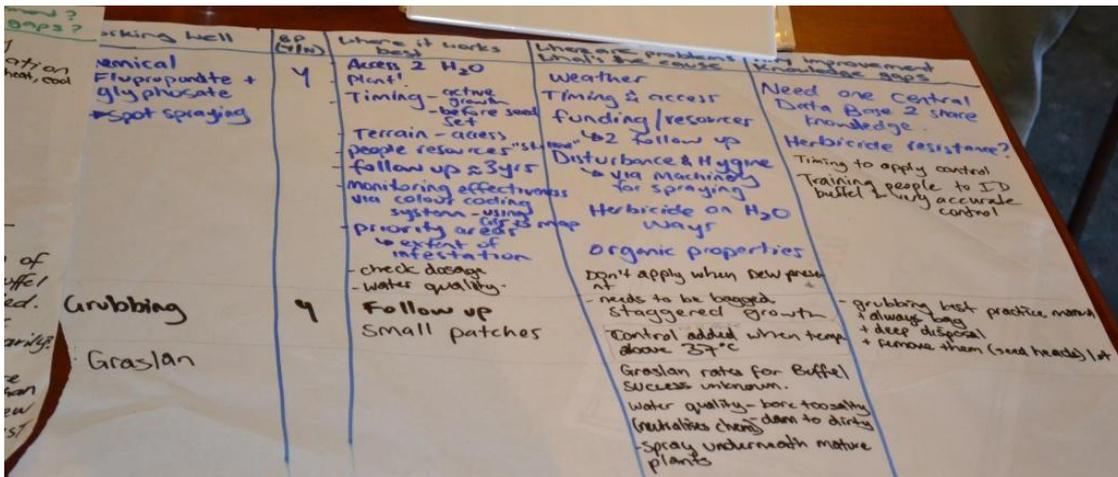
- New herbicide treatments and optimal timing for herbicide application are being investigated. Scientific recommendations from herbicide trials are critical to inform best practice and improve the effectiveness of control work.

The workshop participants listed the following actions that work well to control buffel grass:

- Digging up small patches of buffel grass is considered to be best practice, including follow-up monitoring and control
- If you are applying glyphosate to plants that have already gone to seed add flupropanate to the mix to help suppress future germinations from seed in the soil
- Explain to landholders that buffel grass is relatively easy to kill with herbicides
- Follow-up monitoring and treatment is essential for effective buffel grass control. Strategic and rapid response after rains is also critical; and
- Set up a system for gathering data on when and where it rains. You will need these data to respond quickly to new germinations of buffel grass.

The workshop participants shared their tips for controlling buffel grass:

- Controlled burns followed by herbicide treatment is considered best practice. Of course it requires thorough risk management and approvals to burn. Burning activities can be combined with CFS training.
- Flame guns are a good tool for burning individual tussocks
- Preventing spread is more cost effective than control work
- Always consider the potential for herbicide resistance and rotate the use of different chemical groups
- Always put human health first. Choose herbicides that reduce the risk of affecting people's health
- Plan well, determine priorities and establish containment lines if required to guide decision-making
- Consider which rehabilitation, or revegetation, techniques are most appropriate for areas where buffel grass is being controlled, and allocate funds to do this at the start of your project
- When using glyphosate on its own it must be applied before seed set
- Roundup biactive and hand-grubbing are the only two appropriate methods for controlling buffel grass along watercourses. Residual herbicides should not be used along watercourses, including seasonally dry watercourses.
- Never apply herbicides when dew is present
- Check herbicides labels to determine when conditions are too hot to be applying chemicals; and
- In some situations mowing or slashing before applying herbicide is easier than burning.



A list of problems and challenges associated with controlling buffel grass was prepared:

- There is an urgent need for guidelines on best practice chemical control (what, where, when and risks).
- Permits are required for using Graslan and Velmac – they are not registered for use on buffel grass. There are issues with application rates that need to be resolved. The potential for off-target damage with these chemicals is high. These chemicals are expensive, yet they could be useful in the future for controlling small, isolated infestations.
- More Green Army teams working on buffel grass control could increase resources on the ground. Support is required to prepare applications and host Green Army projects.
- Additional resources for guiding voluntary compliance and visits to mining/exploration sites are needed.
- Responsibilities for control work on roadsides and railway corridors need to be better communicated.
- Sometimes the availability of water (and suitable water quality) limits options for applying herbicides.
- Effective control relies on good identification skills and accurate application of herbicides.
- The options for controlling buffel grass on organic properties are limited.
- Best practice guidelines for hand-grubbing are needed. The guidelines should include bagging, deep disposal and methods for removing seed heads.
- Land holders in SA may not be aware of the declining forage quality of buffel grass over time. Examples from Qld could be used to demonstrate what happens over 10 years and longer; and
- While a long-term option for using biological control agents is ideal, the reliance on buffel grass as a pasture species in other states/territories inhibits action. Biological control is appealing to producers with organic accreditation.

Knowledge gaps include:

- Scientific information about seed viability
- What are the risks associated with investigating biological agents already present in Australia?
- In which situations would 'crash grazing' be a useful method to help prevent spread?
- How does fire affect the viability of buffel grass seed? On plants, on the ground and in the soil?
- Does heating or cooling the seed influence viability?
- What replaces buffel grass once it is controlled? Monitoring is required.
- The most effective rates for applying Graslan.
- What are current views in the pastoral community on controlling buffel grass since it has been declared?

- Does the uptake of herbicide vary with changes in air temperature? How does this influence buffel grass control?

PREVENTING SPREAD

At the workshop participants created a Top Five list of priorities for preventing the spread of buffel grass:

- Limit access to buffel grass sites with a high risk of spread and use appropriate signage
- Improve engineering of: vehicles and equipment to trap less seed; road design at containment lines; and shaker grids to remove buffel grass seed
- Encourage better farm-based biosecurity using codes of practice and hygiene kits
- Implement a penalty-based system where contractors who don't comply with codes of practice do not receive a residual payment; and
- Deliver an education program on preventing spread with government agencies leading by example.



The workshop participants listed the following actions that work well:

- A combination of both wash-down and compressed air is considered best practice to de-contaminate vehicles and machinery to prevent spread
- Use wash-down bays to de-contaminate machinery and monitor the bays to detect weeds (they can provide ideal situations for plants to establish – water and bare earth); and
- Develop codes of practice and training packages.

The workshop participants shared their tips for preventing spread:

- Ensure hygiene practices are rigorous for earth moving equipment
- Be diligent with site inductions and compliance visits to maintain a high standard
- Biosecurity programs on Kangaroo Island provide a good example of how to prevent the spread of weeds; and
- Prioritise control activities at sites with a high risk of spread by road users (road trains, 4WDs, campers etc.).

A list of problems and challenges associated with preventing the spread of buffel grass was prepared:

- Some pastoralists are not concerned about preventing spread
- Strategic planning and communication need to be improved to reduce the spread from road/railway maintenance and construction activities

- Time must be allocated to undertake hygiene/de-contamination activities
- Even with the development of Standard Operating Procedures, not all contractors are compliant; and
- Need to guide improved awareness of the need for hygiene to prevent spread of buffel grass.

Knowledge gaps include:

- What is risk of spread through contaminated hay and how can the risk be mitigated?
- What are the most practical methods for preventing buffel grass spread via the transport of stock?

Panel Discussion

Questions and answers from the workshop panel discussion covered topics such as: techniques for communicating with pastoralists, the history behind buffel grass control work coordinated by the Department of Planning, Transport and Infrastructure, the use of drones for detection activities, more buffel grass signs on roadsides, and collaboration with NSW. Key messages about best practice from the panel discussion are:

- When communicating with pastoralists, it is best to talk about production values and nutrition as well as the requirement to control buffel grass under the *Natural Resources Management Act*
- Prevailing winds are significant in the spread of buffel grass seed
- Use integrated weed management and develop a plan to control multiple weeds based on risk, not just one species at a time; and
- As new technology is developed, detection and mapping via drones may become a cost effective option.



Summary and Future Directions

The workshop proved to be hugely successful for teasing out and documenting current knowledge and gaps for managing buffel grass, as well as expanding the network of practitioners who work across different land tenures. The information in this report will be used to develop a set of extension materials being prepared by Biosecurity SA. In addition, the members of the SA Buffel Grass Taskforce and workshop participants plan to use this report to guide future projects and improve current practice. Staff and communities in the Anangu Pitjantjatjara Yankunytjatjara Lands will further develop maps to guide strategic planning and prioritise buffel grass control works.



Some of the main themes discussed during the workshop that require more research, communication and coordination include:

- Practitioners consider burning followed by herbicide application to be an effective control technique. However more information is needed on the most effective way to manage fire regimes.
- New information on 'rundown' – the decline in the nutritional value of buffel grass over time due to a reduction in the availability of soil nitrogen. The carrying capacity in older buffel pastures (>10-20 years since establishment) declines by up to 50%.
- Further research on seed longevity and tolerances of seed to varying temperatures/salinities is required. A new Honours project supervised by the University of South Australia with funding support from Biosecurity SA will help answer some of these questions.
- Mechanisms to motivate proactive surveillance across different land tenures.
- Suggestions to improve: data management, data sharing, simultaneous mapping and control, identification resources to use in the field, community awareness using roadside signage and farm biosecurity practices.

A Buffel Grass Management Forum has been proposed for mid-2016 to be held in Adelaide, with the aim of incorporating some of the above themes.

Appendix A – Workshop Agenda

BEST MANAGEMENT PRACTICE FOR BUFFEL GRASS

Standpipe Golf Motor Inn

Cnr Highways 1 and 87, PORT AUGUSTA, SA, 5700

Day 1- 25th of February

	Timing	Summary	Lead / Who	Objective of Session
Meet at the Standpipe for 9:30 departure	2 hours	Field visit to Herbicide Trial and local Infestation	Troy Bowman and Barry Cooke	Scene setting
11:30	15 min	Break		
11:45am	5 min	Welcome	Troy Bowman	Background
11:50am	5 min	Outline for the two days	Helen Lamont (Facilitator)	Scene setting
11:55am	20 min	Introductions around the room	Helen Lamont	Meet and greet
12:15pm	5 min	Questions	Helen Lamont	Q&A
Lunch 12:20-1:00pm				
1:00pm	30 min	Biosecurity SA	Troy Bowman	SA Buffel Grass Project
1:30pm	5 min	What to look for	Helen Lamont	Encourage participants to take down key points during the afternoon for workshop discussion
1:35pm	30 min	Conservationist/Botanist	Peter Latz	Buffel Grass and its

				management
2:05pm	15 min	AW NRM Board	Graeme Armstrong	Buffel Grass and Fire
2:20pm	15 min	Rural Solutions SA	Jodie Reseigh- O'Brien	Buffel Grass Nutrition
2:35pm	15 min	APY Land Management	Clint Taylor	Managing Buffel Grass on Aboriginal Lands
2:50pm	15 min	Senex Energy	Alex Clarke	Managing Buffel Grass amongst mining and exploration activities.
3:05pm	15 min	Break		
		<i>PRESENTATION CANCELLED</i>	<i>DUE TO</i>	<i>CYCLONE IN QLD</i>
3:20pm	20 min	QLD Parks and Wildlife Service	Rhonda Melzer	Managing Buffel Grass in Conservation Areas
3:20pm	20 min	Bush Heritage Australia	Mike Chuk	Managing Buffel Grass in Conservation Areas
3:40pm	15 min	Roxby Buffel Busters	Reece Pedler	Community Buffel Grass Control
3:55pm	10 min	Department of Planning Transport and Infrastructure	Emma Vasey	Managing Buffel Grass in Road Reserves
4:05pm	15 min	SA Herbarium	Chris Brodie	Buffel Grass "Look alikes" and Specimen Collection/ Identification
4.20pm	10 min	Q and A	Helen Lamont	What do we know, what is missing?
4.30pm	5 min	Plans for day two	Helen Lamont	

4:35pm	5 min	Close	Helen Lamont
6:30pm	Dinner to be held at the Standpipe – Sponsored by Beach Energy		

Day 2- 26th of February

	Timing	Summary	Lead / Who	Objective of session
8.30am	60 min	Buffel Grass Taskforce Meeting	Michaela Heinson	Meeting of Taskforce
9.30am	10 min.	Welcome	Helen Lamont	Summary of information from yesterday
9.40am	5 min.	Outline for today	Helen Lamont	
9.45am	20 min then change	Identification <hr/> Control methods <hr/> Preventing spread <hr/> Surveillance	All (with note takers)	Concurrent sessions to brainstorm best practice approaches and resources/extension materials required. Add to previous groups notes
11.05am	15 min	Break		Summarise notes with note takers
11.20am	40 min	Feedback summaries	Note takers	
12:00pm	15 Min	Q and A	Helen Lamont	Add to findings/ points of clarification
12.15pm	5 min	Where to from here	Troy	Bringing it all together - Who - How - When
12.20pm	5 min	Sum up and close	Facilitator	
Lunch 12:25-1:00pm				

Appendix B – List of Participants

NAME	ORGANISATION
Frederick Pickett	
Kurt Tschirner	Acacia Park Consulting
APY Executive Member	Anangu Pitjantjatjara Yankunytjatjara Executive
Clint Taylor	Anangu Pitjantjatjara Yankunytjatjara Land Management
Kat Lynch	Anangu Pitjantjatjara Yankunytjatjara Land Management
Shane Doudle	Anangu Pitjantjatjara Yankunytjatjara Land Management
Indigenous Rangers	Anangu Pitjantjatjara Yankunytjatjara Land Management
Perri Carter	Arid Recovery
Bernie Haase	Australian Arid Lands Botanic Gardens
James Ringland	Australian Arid Lands Botanic Gardens
Brian Upton	Australian Rail Track Corporation
Zoe Bowen	Beach Energy
Jem Shimmield	Beach Energy
Frank Bernhardt	Bernhardts Feral Pest and Weed Control
John Virtue	Biosecurity SA, PIRSA
Troy Bowman	Biosecurity SA, PIRSA
Michaela Heinson	Biosecurity SA, PIRSA
John Heap	Biosecurity SA, PIRSA
Peter Latz	Botanist and Conservationist, Northern Territory
Glen Norris	Bush Heritage Australia
Mike Chuk	Bush Heritage Australia
Julia Harris	Bush Heritage Australia
Joel Kowald	Coober Pedy Council
Quinton Kessner	Country Fire Service, South Australia
Ruth Raleigh	DELWP, Victoria
Rebecca James	Department of Environment and Primary Industries, Victoria

Phil Elson	Department of Environment, Water and Natural Resources, South Australia, South Australia
Jessica Cavallo	Department of Environment, Water and Natural Resources, South Australia
Grant Roberts	Department of Environment, Water and Natural Resources, South Australia
Emma Bloomfield	Department of Environment, Water and Natural Resources, South Australia
Kevin Lintern	Department of Environment, Water and Natural Resources, South Australia
Carly Dillon	Department of Environment, Water and Natural Resources, South Australia
Russell Martin	Department of Environment, Water and Natural Resources, South Australia
Gemma Marshall	Department of Environment, Water and Natural Resources, South Australia
Adrian Growden	Department of Environment, Water and Natural Resources, South Australia
Russell Norman	Department of Environment, Water and Natural Resources, South Australia
Steve Baltussen	Department of Environment, Water and Natural Resources, South Australia
Nathan Williams	Department of Environment, Water and Natural Resources, South Australia
Greg Patrick	Department of Environment, Water and Natural Resources, South Australia
Sarah Voumard	Department of Environment, Water and Natural Resources, South Australia
Lisa Taylor	Department of Environment, Water and Natural Resources, South Australia
Matthew Westover	Department of Environment, Water and Natural Resources, South Australia
Graeme Armstrong	Department of Environment, Water and Natural Resources, South Australia
Louise Gavin	Department of Environment, Water and Natural Resources, South Australia
Reece Pedler	Department of Environment, Water and Natural Resources, South Australia
Dan Bailey	Department of Environment, Water and Natural Resources, South Australia
Janet Walton	Department of Environment, Water and Natural Resources, South Australia
Emma Vasey	Department of Planning, Transport and Infrastructure, South Australia
Peter Hamnett	Department of Planning, Transport and Infrastructure, South Australia
Frank Potts	Department of State Development, South Australia
Daniel Podger	Department of State Development, South Australia
Jarrold Spencer	Department of State Development, South Australia
Scott Howell	Department of State Development, South Australia
Jack Annear	Department of State Development, South Australia
Rob Langlely	Department of State Development, South Australia

Daniel Orr	Department of State Development, South Australia
Jack White	Department of State Development, South Australia
John Read	Ecological Horizons Pty Ltd
Barry Cooke	Glenbarr Weed and Pest Control
Mick Durant	Greening Australia
Kevin Hawkes	Landscape Construction Services Pty Ltd
Mitchell Plumbe	Local Land Services, Broken Hill, New South Wales
Lyell Ros	Martins Well Pastoral
Darrel & Kathryn Fargher	Martins Well Pastoral
Brenton Arnold	Nature Foundation SA
Grant Chapman	Northern and Yorke Natural Resources Management Board
Francene O'Connor	Port Augusta City Council
Larry Martin	Port Augusta City Council
John Pitt	Rural Solutions SA, PIRSA
Jodie Reseigh	Rural Solutions SA, PIRSA
Chris Brodie	SA Herbarium
Alex Clarke	Senex Energy
Andrea Tschirner	University of South Australia
Joan Gibbs	University of South Australia

