



**Monaro Farming Systems
2021 - 2022 Annual Report**

**Annual General Meeting
14th September 2022**

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MFS SUCCESSFUL PROJECT SUBMISSIONS - YET TO COMMENCE

NIL

MFS CURRENT PROJECT SUBMISSIONS

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CHAIRMAN'S REPORT 2022: JOHN MURDOCH

2021-22 has proved to be a pivotal year for MFS, its board and members. The last 12 months have seen the group begin to adapt and revolutionise how it operates in a challenging funding environment. Proudly we can say MFS continues to 'punch above its weight' with the group delivering strongly on its project outcomes and strengthening its industry position as a highly credible, leading extension and research driven farming network. MFS has transitioned into a Knowledge Broker role as part of the Southern NSW Innovation Hub and has set the benchmark for the hub in terms of calibre of project design and calibre of engagement. This is testament to the foresight, innovation and execution that MFS contributors (staff, board and members) have delivered through the entire life of the group.

The MFS board and staff have consciously reflected on what and how we deliver to members and have begun to subtly evolve how we engage. In 2021-22 we focused on trying to hold field days 'on farm' to give an extra dimension to the days and we have tried to deliver a greater breadth of topics and value add opportunities to members through our project and service delivery. Highlights of the twelve months have been the Farm Communications and Wellbeing workshops, Drought feeding and farm decision-making tools workshops, and MFS's first attempt at an exhibitor field day with its highly successful Ag-tech Symposium. A big thank you to Agrifutures, and the Foundation for Rural Regional Renewal (FRRR) for the funding to deliver these new events.

As I am guilty of perpetually repeating, MFS has faced a number of challenges in the funding environment in which it operates. In response to this the MFS board with input from members has developed the 2023-25 three-year strategy for the group. The aim of this document is to provide a road map for the board to transition the group into a position of financial long-term sustainability and the highest membership value. The draft document is attached as an appendix and the board welcomes any and all input. MFS has already achieved some of the strategy goals, with MFS becoming a funded contributor to the Southern NSW Innovation Hub and with the organisation performing a service delivery labour supply role with the newly formed independent Next Gen-Forecasting group. This strategy will be underpinned by the commitment to stay true to the principle objectives of MFS, engaging and seeking feedback from its members and investing in the critical success factor of its staff.

2022 saw the conclusion of the Next Generation Forecasting project (aka Farming Forecaster), this project has been a flagship for MFS and the other contributing partners and is held in the highest regard amongst government and industry. The network continues to expand throughout the country and has become a posterchild for what groups like MFS, TFS and their partners can deliver. It was fitting upon completion of the funding stream for this project to transition out from underneath MFS into its own independent organisation. The new group was established effective 1 July 2022 and MFS will retain a position on the governance panel through its board representative David Mitchell. In addition, MFS is supplying the new organisation a project officer on a contract basis with Nancy Spoljaric returning as an MFS employee to serve this role. Lastly, the effort and personal investment that has been contributed to this project through its life cannot be overstated. MFS representatives such as Phil Graham, Richie Taylor, Zoe Rolfe, Nancy Spoljaric and Frances Lomas have put significant blood sweat and tears into this project, and perhaps none more so than Andrea Mitchell in a role of Executive Officer of the project. The board, members and whole farming community extend sincere gratitude to the commitments made by Andrea and wish her all the best in her next endeavours.

MFS had some significant changes operationally in the last 12 months, Zoe Rolfe sadly indicated she wanted to step back from the EO position to focus on family and personal business growth. Zoe was a magnificent contributor to MFS, filling incredibly big shoes left by the departure of Nancy Spoljaric in 2020. The success of a number of MFS projects after her departure, and the smooth transition to our new EO are testament to the skill and passion that Zoe brought to the role. The MFS board wholeheartedly thanks

Zoe for her amazing contributions to group and we wish her and Andrew all the best in their future endeavours. The loss of Zoe presented the board with a significant challenge and some stresses, however these soon evaporated with the engagement of MFS' new EO Frances Lomas. The MFS board and members are truly fortunate to have MFS managed by Frances, she hit the ground running and has taken a significant project delivery workload and MFS complexities in her stride. Frances' experience in governance, project delivery and executive management are second to none on the Monaro and the group is truly fortunate to have her at its heart. A big thank you must also be extended to Bec Kading, who not only expertly controls the finances for MFS, but who also has contributed to the successful transition of EO's and the delivery of a number of MFS project this year.

2022 has seen some board transition, we welcomed John Jeffreys back to the committee this year and his passion and enthusiasm for on the ground work in the realm of farm emissions/soil carbon will be of the highest value to MFS in the coming years. This year has seen the board tenure of Andrew Rolfe and Nancy Spoljaric conclude. Andrew's passion for Monaro agriculture cannot be matched and his commitment to the delivery of practical and tangible outcomes will be missed. In addition, Nancy's role on the board has sadly come to a premature end, however she is not leaving, with her transition back into the fold as an MFS employee performing the Project Officer role for the newly formed Next Gen-Forecasting organisation. Positively this means MFS will have the significant wisdom of Nancy with the added benefit to MFS's bottom line. Lastly 2021-22 will see the transition of industry director Dan Medway off the MFS board, Dan was appointed last year in the vacancy left after Jono Forrest's retirement from Boyce CA, and sadly Dan has made the tough decision to transition back to Dubbo from Cooma. We thank Dan and Boyce CA for their contributions to MFS over the past 12 months.

This AGM will see my tenure as Chair finalised. I and the rest of the board are very excited that Mandy Horton has agreed to take on the Chair role for the next three-year period. Mandy brings refreshed ideas and thinking to the role and is a hugely respected member of the Monaro farming community, I need not wish her any luck. In finishing my role, I would like to reiterate how valuable MFS is to the Monaro farming and wider community. This group exists and achieves what it does through the significant contributions and engagement from its members, I strongly encourage all members to reflect on the value MFS plays and on how they can shape and contribute to the group to insure a strong and relevant organisation into the future.



Image: John Murdoch presenting at the Autumn Field Day & Containment Feedlot Tour- 'Woburn'

MFS STATEMENT OF PROFIT & LOSS - FOR THE YEAR ENDED 30 JUNE 2022

Profit and Loss
Monaro Farming Systems CMC Incorporated
1 July 2021 to 30 June 2022
Cash Basis

30 Jun 21		30 Jun 22	Notes
Income			
\$20,000	LLS Service Delivery Contract	\$0	
\$42,461	Project Grants Income	\$93,852	1
\$15,320	Sponsorship	\$17,012	2
\$23,900	Membership	\$26,300	
\$302	Bank interest	\$102	
\$30,500	Covid Stimulus Payments	\$0	
\$13,570	Paid Parental Leave Subsidy	\$0	
\$146,053	Total Income	\$137,266	
\$146,053	Gross Profit	\$137,266	
Less Operating Expenses			
\$1,690	Accounting	\$0	
\$0	Advertising	\$640	3
\$54	Bank charges	\$45	
\$375	Board meetings	\$546	
\$0	Strategic Planning	\$4,250	
\$339	Depreciation Expense	\$339	
\$3,071	Field Day and Workshop Expenses	\$0	
\$3,454	Catering	\$0	
\$2,504	Insurance	\$2,496	
\$0	Materials / capital items	\$196	
\$0	MFS employee training	\$350	
\$1,922	Office operating costs	\$1,848	
\$68,426	Project Grant Expenses	\$97,162	4
\$2,614	Subscriptions	\$2,505	
\$168	Sundry	\$138	
\$46,832	Wages	\$67,942	
\$4,194	Wages - allowances	\$3,472	
\$3,491	Wages - Job keeper Top up	\$0	
\$13,570	Paid Parental Leave Wages	\$0	
\$4,428	Superannuation	\$6,670	
-\$11,453	Reimbursed Expenses	-\$11,619	5
\$145,677	Total Operating Expenses	\$176,980	
\$375	Net Profit	-\$39,714	

Profit and Loss Notes

1	Project Grants Income is made up of the following:		
	Soils Club	\$10,000	
	Soil Moisture Probes	\$3,200	
	Next Gen Forecasting	\$3,714	
	MLA PDS Steer Finish	\$8,855	
	MLA PDS Winter Feed Gap	\$12,665	
	BocoRock Lovegrass	\$7,100	
	SMRC Containment Tour	\$4,700	
	Communications Workshop	\$26,918	
	FRRR Seasonal Outlooks	\$16,700	
	Total	\$93,852	
2	Sponsorship Income is made up of the following:		
	Virbac	\$ 1,000	
	Upper Murray Seeds	\$ 1,000	
	AgriWest Cooma Rural	\$ 1,000	
	Commonwealth Bank	\$ 1,000	
	Lambpro	\$ 1,000	
	Incitec Pivot	\$ 3,830	
	Nutrien Ag	\$ 5,182	
	Zoetis	\$ 1,000	
	Elders	\$ 1,000	
	Rabobank	\$ 1,000	
	Total	\$17,012	
3	Advertising for EO position		
4	Project Grants Expenses is made up of the following:		
	Seasonal Outlooks	\$4,045	
	Soils club	\$24,887	
	Worms club	\$818	
	Soil Moisture Probes	\$3,200	
	MLA PDS Steer Finish	\$10,124	
	MLA PDS Winter Feed Gap	\$7,772	
	BocoRock Lovegrass	\$4,821	
	Agrifutures Technology Symposium	\$514	
	SMRC Containment Tour	\$2,957	
	Communications Workshop	\$20,882	
	FRRR Seasonal Outlooks	\$10,423	
	Drought Preparedness on the Monaro	\$6,547	
	Drought Hub	\$172	
	Total	\$97,162	
5	Soil test costs to members above \$300 credit		

MFS BALANCE SHEET - AS AT 30 JUNE 2022

Balance Sheet
Monaro Farming Systems CMC Incorporated
As at 30 June 2022
Cash Basis

30 Jun 2021		30 Jun 2022	Notes
Assets			
Bank			
\$77,545	Monaro Farming Systems Inc	\$84,113	
\$81,730	NAB Business Cash Maximiser	\$81,747	
\$48,874	NAB term deposit	\$48,960	
\$208,150	Total Bank	\$214,820	
Current Assets			
\$0	Accounts Receivable	-\$198	1
\$0	Total Current Assets	-\$198	
Fixed Assets			
\$2,846	Computer	\$2,846	
\$500	Electronic Equipment	\$1,145	
-\$1,990	Accumulated Depreciation	-\$2,329	
\$1,356	Total Fixed Assets	\$1,662	
\$209,506	Total Assets	\$216,284	
Liabilities			
Current Liabilities			
\$50,308	Grant Clearing Account	\$96,773	2
\$5,478	GST	\$3,420	
\$1,416	PAYG tax liability	\$4,472	
\$0	Superannuation liability	-\$970	3
\$57,202	Total Current Liabilities	\$103,695	
\$57,202	Total Liabilities	\$103,695	
\$152,304	Net Assets	\$112,589	
Equity			
\$21,248	Opening Bal Equity	\$21,248	
\$130,680	Retained Earnings	\$131,055	
\$376	Current Year Earnings	-\$39,715	
\$152,304	Total Equity	\$112,589	

Balance Sheet Notes

- 1 Overpayment by member, account in credit
Drought Hub income (\$20,000) yet to be received. Not shown in report run on cash basis.
- 2 The Grant Clearing Account contains income from the below projects that was received in the 2022 financial year and will be expended in the 2023 and 2024 financial year.

Project	Income	Deposited	Expense	Budgeted
AgriFutures Tech Symposium	\$11,590	Jun-21		
	\$7,728	Nov-21	\$19,318	Aug-22
FRRR Drought Preparedness on the Monaro	\$19,050	Mar-22	\$19,050	Aug-22
Monaro Seasonal Outlooks	\$58,405	Apr-22	\$9,500	Sep-22
			\$9,500	Dec-22
			\$9,500	Mar-23
			\$9,500	Jun-23
			\$20,405	23-24 FY
Total:	\$96,773		\$96,773	

\$38,718 of the 2021 balance was put to projects: BocoRock Lovegrass (\$7,100), SMRC Containment Tour (\$4,700) and Communications Workshop (\$26,918).

- 3 Next Generation Forecasting superannuation paid by MFS to be reimbursed by NGF

MFS CASHFLOW STATEMENT – FOR THE YEAR ENDED 30 JUNE 2022

Statement of Cash Flows

Monaro Farming Systems CMC Incorporated

For the year ended 30 June 2022

Account	2022
Operating Activities	
Receipts from customers	137,464
Payments to suppliers and employees	(130,148)
Net Cash Flows from Operating Activities	7,317
Investing Activities	
Payment for property, plant and equipment	(645)
Net Cash Flows from Investing Activities	(645)
Financing Activities	
Other cash items from financing activities	0
Net Cash Flows from Financing Activities	0
Net Cash Flows	6,672
Cash and Cash Equivalents	
Cash and cash equivalents at beginning of period	208,150
Net change in cash for period	6,671
Cash and cash equivalents at end of period	214,820

PROJECT REPORTS

MFS Project 10.01

Soils Club

Project Leader:

Owen Smith

Project Manager:

Frances Lomas

Project Collaborators:

Dr Richard Simpson (CSIRO), South East LLS, TFS, HLN

Project Funder:

South East LLS / MFS

2022 REPORT

The MFS Soils Club originally initiated in 2010 and continually increases in value as data is collected and collated for individual paddocks providing solid evidence for producers to be confident in basing fertiliser investment decisions on the trend lines indicated.

In 2021/22, the Soils Club once again received a grant of \$10,000 from the LLS to assist with associated testings costs and continual development and improvement of the database. Board members, Richard Simpson and Owen Smith continue to dedicate many hours of work to monitor the project and to ensure accuracy and precision in data management. A number of errors have been identified in the database and are being rectified to ensure the data accurately reflects the material contained therein.

MFS will continue to promote the data base with a view to using it for future projects that examine the relationship between soil carbon and extensive livestock production systems. As climate change and carbon emissions become part of the social consciousness, it is also hoped the data base can be leveraged to industry to help demonstrate the sustainability of the production systems currently operated on the Monaro.

MFS Project 10.06**Project Leader:****Project Manager:****Project Collaborators:****Project Funder:****MFS Worms Club**

Mandy Horton

Bec Kading

Dawbuts, MFS Producers

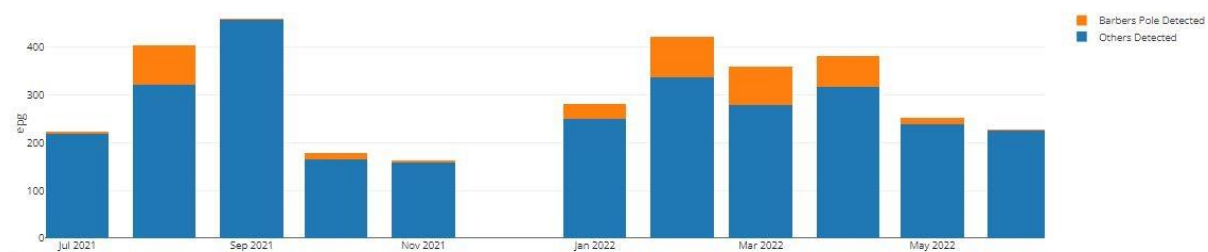
MFS

2022 Report

During the 2021/2022 financial year, MFS has been sent 135 test results from our members, down from 171 the previous year. Covid restrictions late in 2021, may have impacted these figures. Members are reminded that they receive worm kits as part of their membership package and encourage members to organise a time to collect them from the LLS office. We hope to lift the number of results for the next financial year. Results from 2021 show the highest testing rates being forwarded to MFS were in March, and highest mean egg count was in September, at 458.

With the lasting wet conditions, testing is of high importance for all producers, and forwarding the results to MFS will benefit the Monaro farming community, with anonymous results available on the MFS website.

For optimum results, the database requires a significant number of tests from a variety of producers. Please forward any results, regardless of lab used, to Bec at admin@monarofs.com.au.

Worm Club

Month Year	Mean Eggs	Number of Tests
Jul 21	223	6
Aug 21	404	4
Sep 21	458	10
Oct 21	178	20
Nov 21	162	16
Dec 21	0	0
Jan 22	281	18
Feb 22	422	5
Mar 22	360	24
Apr 22	381	11
May 22	252	16
Jun 22	226	5

Image: MFS Website Graphic

MFS Project 18.08: Farming Forecaster

Project Leader: Andrea Mitchell & Nancy Spoljaric

Project Manager: Zoe Rolfe & Frances Lomas

Project Collaborators: Consortium includes MFS as the lead organisation with project partners TFS, LLS and Bookham Ag

Project Funder: Dept. of Agriculture & Water Resources, National Landcare Program – Smart Farming Partnerships

Background & Overview

The consortium led by MFS along with CSIRO and Square V web developers established a farmer-driven platform that is a process-based pasture-livestock model developed into a real-time service for Australian producers. The original Next Gen Forecaster Project officially wound up in June 2022 and has been replaced by the Farming Forecaster Incorporated Association.

Andrea Mitchell managed the Government funded NGF project for 5 years. The new incorporated association hopes to build on the good work done by the NGF Consortium and continue to move the project into an expansion/improvement phase.

The FF is one of the most advanced pasture forecast tools available to the grazing industry and related support services in Australia. Launched in 2020, Farming Forecaster is now being rolled out to other regions such as Hunter, Central Tablelands, Murray, Tasmania, and Stirlings to Coast Farmers in Western Australia.

Farmingforecaster is publicly available online using a PC, a mobile phone, and a tablet and is being widely used by producers and support networks that service the grazing industry.

Some analytics:

- 64% said the Farming Forecaster website assisted in making decisions around adjusting stocking rates.
- The Farming Forecaster website provides a **Pasture Forecast**. i.e., current pasture position (kg DM/ha) and projected pasture availability over the next 4 months.

This feature rated (1 = Not useful; 5 = Extremely useful) an average response rating of 4.27 out of 5

- The Farming Forecaster website provides a Pasture Forecast. i.e., current pasture position (kg DM/ha) and projected pasture availability over the next 4 months.

Please rate this feature (1 = Not useful; 5 = Extremely useful)

- 67 responses
- 4.26 Average response rating
- 31 comments in response to this question (see in italics below)

“Good for prediction of dry matter for pasture budgets”

“This feature is very useful especially with Winter approaching. This allows to gauge growth and estimate the extra feed required for current stocking levels.”

“This helps a lot with planning and is surprisingly reliable”

"It is very important to our business"

"Having this information allows for much more accuracy in planning the likely feed base available and therefore the business decisions that flow from that expected position."



Australian Government

**National
Landcare
Program**



MFS Project 18.11:	MLA PDS Weaner to Yearling Production Pays Off (Steer Finishing)
Project Leader:	John Murdoch
Project Manager:	Zoe Rolfe Frances Lomas
Project Collaborators:	Doug Alcock (GrazProphet), MFS Producers
Project Funder:	Meat and Livestock Australia
Status:	Completed

2022 Report

PDS Aim: *Can high quality forage crop and perennial pasture systems be utilised to meet target weights for finishing steers on the Monaro and increase overall farm profit relative to the traditional base selling enterprise system?*

Traditional beef systems on the Monaro target weaner production with all steer weaners sold before their first winter. Recent price trends have enticed producers to consider retaining these steers to greater weights by retaining them over their first winter into their second spring. Previous system modelling suggested that retaining steers past weaning was a profitable strategy and especially if a specialist high quality forage could be grown to ensure growth rates are maintained over winter. This PDS seeks to validate the decision to retain steers to heavier weights and demonstrate the achievable winter steer growth rates for a range of forage crops and pastures in order to give Monaro producers the confidence to retain their steer weaners through the winter and then grow them on to heavier weights

Objectives

- *On six properties, validate the farm system modelling which showed retaining steers through their first winter is more profitable than the common practice of selling as weaners in autumn.*
- *For each of the six properties, validate farm metrics such as dry matter production, feed quality, steer growth rate, area of specialist crop/pasture and soil fertility.*
- *Conduct a cost benefit analysis of retaining steers over winter on specialist crop and pasture compared to the traditional base weaner selling system.*
- *Deliver educational and training activities to increase producer confidence, knowledge and skills to adopt the system. Targets of 65% of these businesses will learn new knowledge and skills resulting in 35% adopting (or intention to adopt) new finishing practices on-farm.*

Methodology

Ten indicative paddocks were chosen on 6 farms run by 4 cooperating (core) farmers representing a range of potential crops and specialist pastures. Over the winters of 2019 and 2021 steer weaners were retained and grazed on these paddocks with steer liveweight gain being measured along with entry and exit herbage mass and green herbage feed quality. All pasture and livestock costs were recorded, and a partial budget conducted to determine the relative profitability of these paddocks compared with baseline pasture as determined by farm benchmarking. As the cooperating farmers were already committed to retaining steers to grow them over winter, steers were only grazed on higher producing pastures and crops grazing on lower quality baseline pastures such as native pastures would have compromised the performance of retained steers and so was not economically feasible for the co-operators.

Results/key findings

- *In every demonstration paddock over both years steers were able to maintain significant weight gain during winter grazing. Economic analysis indicated that the establishment of these crops or pastures increased profit in every case and with the replacement of 7% of baseline pastures with these higher performing crops and pasture could lift average farm profit between 2 and 24%. Overall, the additional profit across a 1000ha farm ranged between \$12,000 and \$100,000 but the majority of monitor paddocks gave an improvement in whole farm profit of between \$25,000 and \$50,000. In practice farmers are likely to adopt more than one of the tested crops/pastures according to their agronomic suitability so extra farm profit is likely to be somewhere in the middle of the range.*
- *Weight gains over the measured periods were mostly in excess of 1 kg/hd/d and ranged from a low of 0.5 kg/h/d on a waterlogged winter wheat paddock in 2021 which became heavily pugged during the grazing period through to a high of 1.6kg/h/d on a winter wheat paddock in 2019. Obviously, the growing conditions were the major factors impacting these extremes as both were the same crop type.*
- *It is clear that as long as the choice of specialist pasture or crop was agronomically suited to the location and conditions then retaining steers over the winter is profitable. However due to the provision of additional grazing throughout the year and their establishment costs being amortised over a longer time frame, high quality perennial pastures ranked among the most profitable options while annual crops were more subject to the vagaries of the seasonal conditions. It is likely that both crops and pastures will play a role with crops helping to manage weeds before sowing longer term specialist pasture.*
- *Extension and communication activities were completed in line with original plan and included field day presentations, newsletter articles and website updates. From pre and post project surveys 100% of core producers said their knowledge, skills and confidence increased and this similarly 100% for observer producers. Ninety percent of core producers and 75% of observer producers are expected to implement finishing weaners / steers on crop in the future.*
- *Monitoring and evaluation was completed in line with the original plan*

Benefits to industry

Since in every case the addition of these crops and pastures to the farm showed an improvement in farm profits, Monaro farmers should now have the confidence to take this option to retain the steer portion of their drop except in the poorest of seasonal conditions.

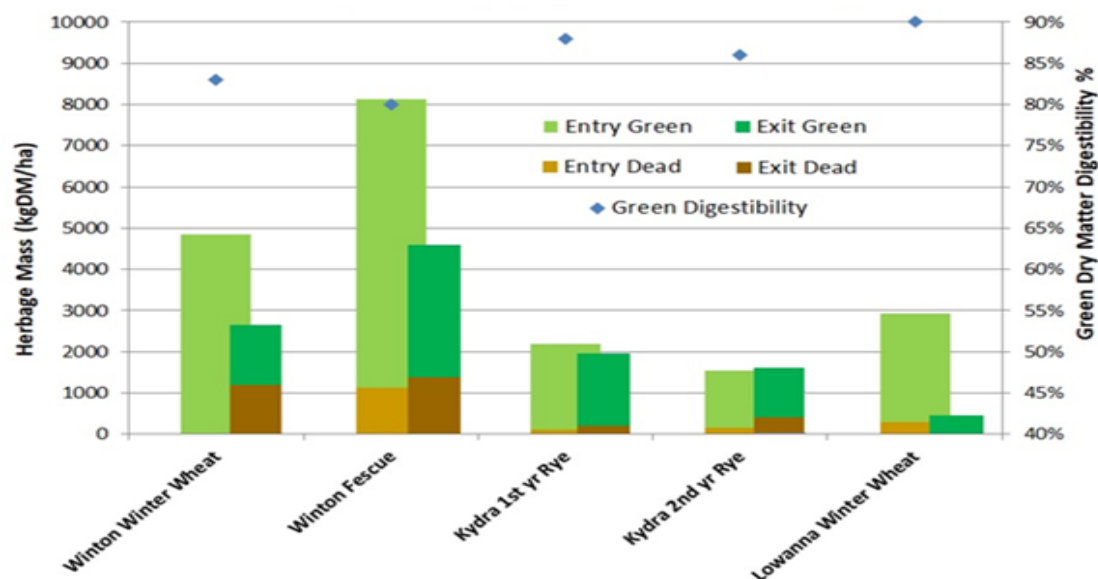
Future research and recommendations

Based on the very high digestibility levels measured in these specialist crops and pastures it is suggested that adding an additional digestibility class to the green component of GrazFeed would enhance its utility for helping to manage these high productivity systems.

Herbage mass and Quality

The herbage mass was assessed upon entry and exit of the steers from each paddock. At the time of entry, the feed quality was also tested.

Figure 10. Herbage availability and quality at the start and the herbage mass at the end of the grazing period for each paddock in 2021



Animal Performance

Paddock g) Winton Winter Wheat

Steers grazed this paddock over a single 71-day period from the 19th of April until the 29th of June 2021. Steers began the trial at averaging 297kg liveweight and an interim liveweight was taken on the 11th of May. On average the steers gained 1.27 kg/h/d over the entire grazing period. GrazFeed predicted weight gain based on entry herbage mass and quality was just over 1.3 kg/h/d which was slightly higher than the upper end of the 95% confidence interval for the measured data. Dry matter percentage was low at this time with just 17% dry matter and with digestibility being very high at 83% it is possible a lack of effective fibre may have limited the digestive performance of the steers especially as they adjusted to the feed in the early stages of grazing.

Figure 11. Performance of steers on winter wheat at "Winton" in 2021

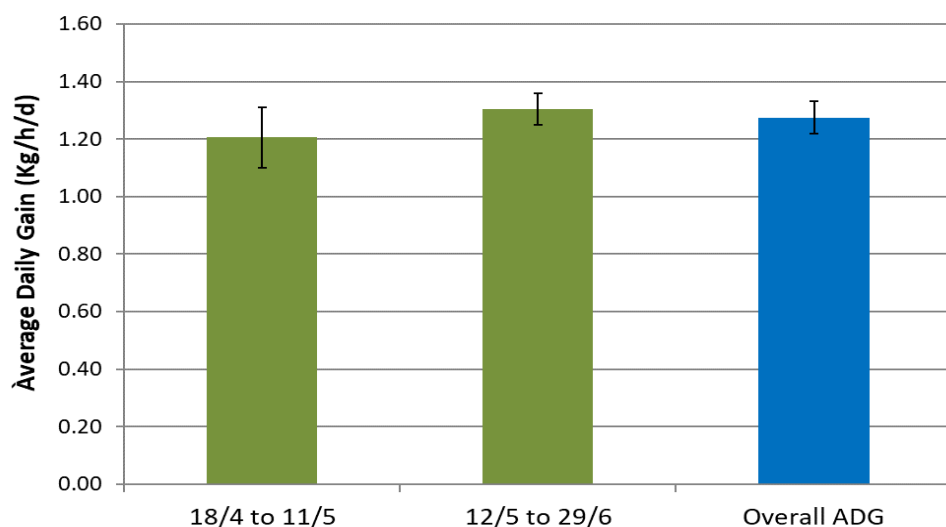
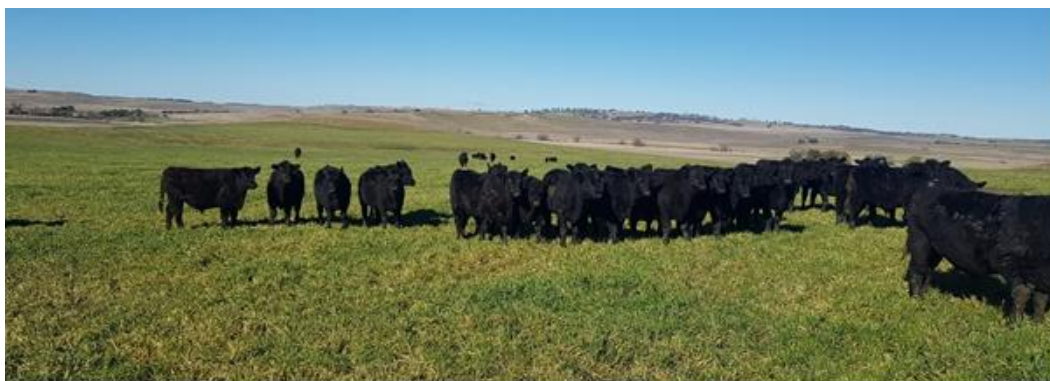


Plate 2. Winton winter wheat crop on the 18th of April 2021



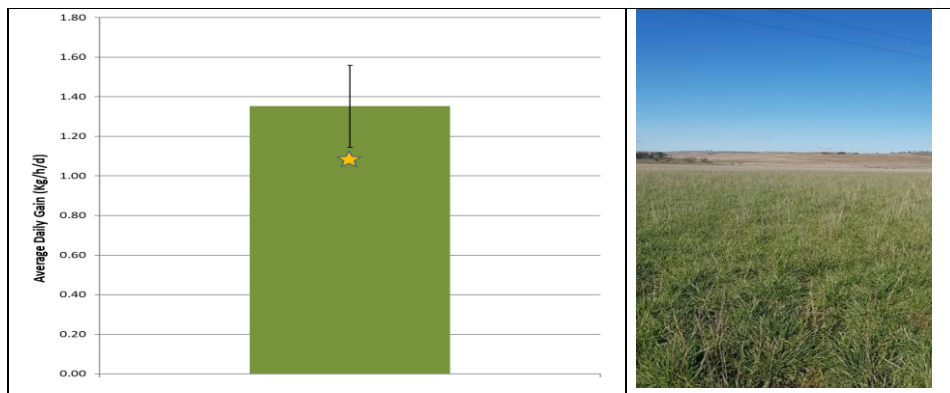
Plate 3. Steers grazing Winton Wheat paddock on the 29th of June 2021.



Paddock h) Winton Fescue

Steers were moved directly from the winter wheat on to this Fescue / Lucerne pasture at “Winton”. Steers grazed this paddock between the 29th of June and the 15th of August. Being winter the contribution from the Lucerne component was very low and herbage was dominated by tall fescue.

Figure 12. Animal performance on Fescue / Lucerne Pasture at Winton in 2021



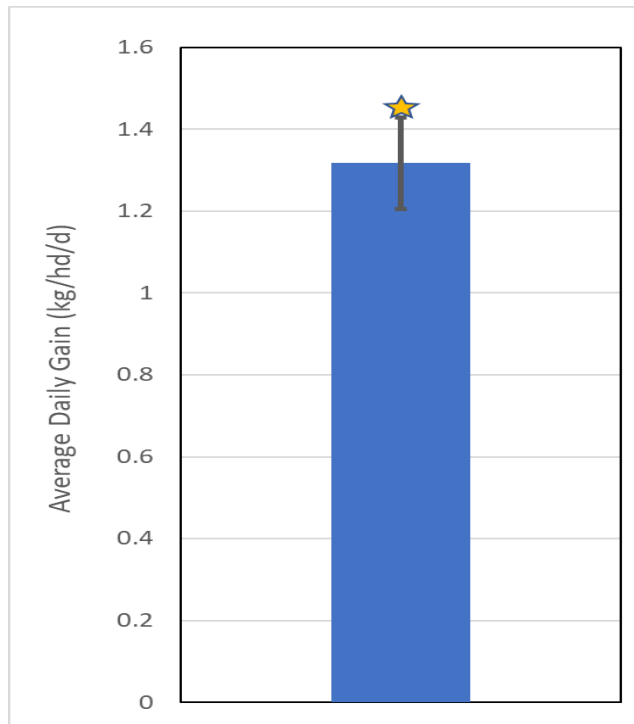
On average the steers continued to gain at 135 kg/h/d across the 47 days of grazing. GrazFeed modelling projected a steer growth rate just under the observed range. This difference is largely due to the highest digestibility pool in GrazFeed being 80% which limits the animals' diet to 80% DMD. As the measured green digestibility is right on 80% animals would be selecting a diet higher than 80% which would account for the underestimate of growth rate in GrazFeed.

Paddock i) Kydra 1st year Ryegrass

Conditions in this paddock were quite wet and rainfall was ongoing throughout the grazing period

Steers grazed this paddock between the 15th of June and the 22nd of July and entered the paddock at 429 kg Live weight.

Figure 13. Animal Performance on 1st year Ryegrass at Kydra in 2021



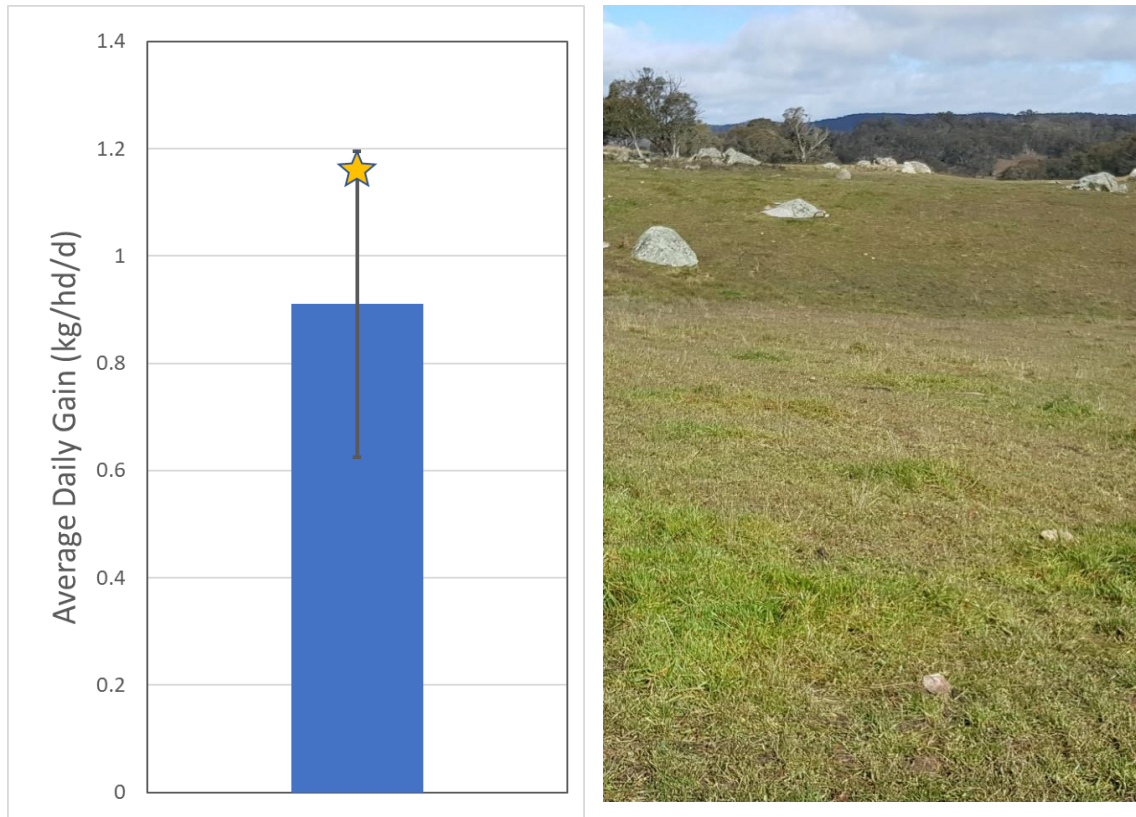
On average the steers gained 1.32kg/h/d across 35 days of grazing. Due to the very high digestibility of the green herbage the pasture was modelled predominantly as an 87% digestibility roughage supplement to offset the problem that the maximum digestibility of pasture allowed in GrazFeed is only 80% digestible. This supplement was offered ad lib against a background pasture of 500kgDM/ha and 80% digestible to ensure that there was some energy use for grazing accounted for. Using this method, the expected gain based on the GrazFeed model at 1.43kg/h/d was right at the top end of the 95% confidence limits of the observed average of 1.32 kg/h/d. Overall this error is small, and the methodology used was imperfect.

Paddock j) Kydra 2nd yr Ryegrass

Grazing of this paddock occurred in parallel to the 1st year Ryegrass at this location with entry and exit dates being 16th of Jun and the 20th of July.

Steer entry weights were about 10kg lighter at 418kg and over the 34 days of grazing they gained an average of 0.91kg/h/d. This will be because of a combination of lower herbage mass and also slightly lower digestibility. GrazFeed runs were done in a similar manner to the 1st yr. Ryegrass, and the model overestimated the growth rate in a similar fashion with the estimate right at the upper end of the 95% confidence limits of the measured gain. This paddock was also a difficult paddock to sample effectively as it was much more broken up by outcrops of boulders necessitating the use of a split transect to ensure better coverage of the paddock.

Figure 14. Performance of Steers on 2nd year Ryegrass at Kydra in 2021.

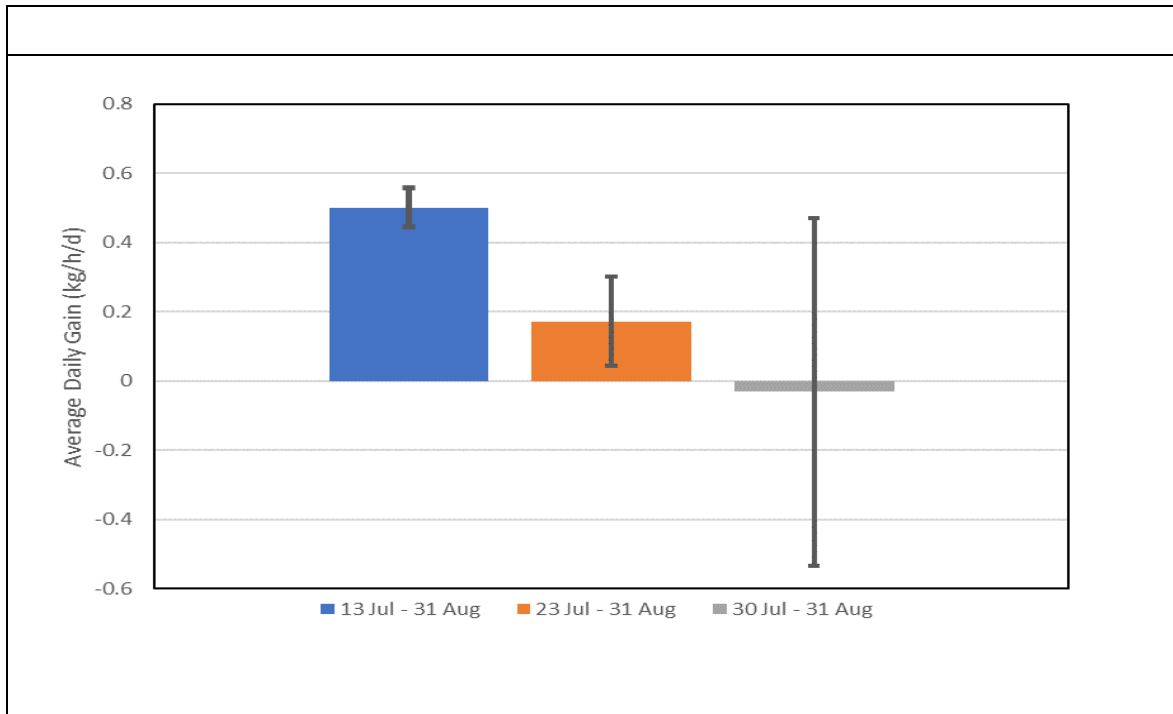


Paddock k) "Lowanna" winter wheat

This property is right on the edge of the eastern escarpment of the Monaro region and receives a larger amount of rain on average, but this year there has been abnormally wet conditions and the paddock monitored was subject to considerable waterlogging and hence pugging during the grazing period.

This paddock had a single grazing with steers. 97 steers entered the paddock on the 14th of July at around 300kg liveweight. On the 23rd of July a further 17 steers averaging 322kg entered the paddock and then finally 4 more steers averaging 285kg entered the paddock on the 30th of July. All steers remained in the paddock until the 31st of August. Weight gain of the initial cohort averaged 0.5kg/h/d which is considerably lower than would be expected for the herbage availability and quality at the grazing entry date. The second cohort averaged just 0.17 kg/h/d and the final 4 steers did not gain weight over their month of grazing.

Figure 15. Weight gain of three cohorts of steers with different date of entry onto winter wheat at “Lowanna” in 2021



When modelled in GrazFeed as a supplement It would be expected that while ever the herbage was available to graze the steers should have been able to grow in excess of 2kg/h/d. The paddock however was just 20ha and the number of steers ultimately grazing the paddock tallied 118 or almost 6 steer per ha. Initial intake of DM would be expected to approach 10kg/h/d so DM would have been consumed at around 60kg/ha/d plus there would have been at least 50% wastage due to soiling and pugging under that high stock density and with such wet soil. This brings the amount of dry matter leaving the paddock to at least 90kg/ha/d and with waterlogged soils the additional growth of herbage might be expected to be very low to negligible. The reality of the feed budget for such a high stocking density has meant that the grazing period has been too long in this paddock for the size of the mob.

Looking at each cohort individually since the third cohort did not gain weight over the final month of grazing then it is reasonable to assume that the other steers would have performed similarly over this period. Based on that assumption the second cohort must have grown at 0.96kg/h/d in the last week of July in order to average 0.17kg/h/d over the full grazing period.

Using similar logic then the first group of 97 steers would have grown at 1.78kg/h/d for the first 10 days before the entry of the second cohort in order that their average gain reach 0.5kg/h/d over the entire grazing period. This level of initial growth is much more in line with the GrazFeed expectations based on the entry herbage mass and quality.

Overall, the poor performance of the steers over this grazing period is more to do with a high stocking rate diminishing herbage availability and quality rather than a poor performance of the crop per se.

Plate 4. Herbage at the commencement and the end of grazing at Lowanna in 2021



MFS Project 19.05: MLA PDS The Sense in Supplementation (Lambs)

Project Leader: John Murdoch
Project Manager: Zoe Rolfe | Frances Lomas
Project Collaborators: Doug Alcock (GrazProphet), MFS Producers
Project Funder: Meat and Livestock Australia
Status: *Variation in place*

2022 Report

PDS Aim: *Can supplementation of lambs on finishing crop and pasture systems significantly increase live weight gains and overall net profits and how sensitive is this practice to grain and lamb price fluctuations?*

During a previous PDS on lamb finishing systems it was identified that on one of the pasture finishing systems the use of supplements had enabled the host producer to utilise the available herbage more completely without compromising per head animal performance. Despite the extra cost of feeding, this strategy had enabled large profits per ha exceeding the profit achieved on most other forage systems which were tested in the absence of feed supplements.

It was decided to test the utility of using supplements in lamb finishing enterprises to utilise pasture biomass more fully and increase profits across a range of forage types, including grass-based pasture, Lucerne and forage brassicas. The work will be conducted over two summers and was to have started in the summer of 2019-20 but was postponed due to severe drought conditions.

2021 Results

Field work was commenced in December 2020 with the first year's grazing completed. MFS had four trial sites across the Monaro:

- 1) Murdoch (Undowah) – Lucerne/Rye/Phalaris Pasture – Supplemented by DDG Pellets – Located Bibbenluke – Grazed with 1st X Lambs
- 2) Murdoch (Undowah) – Lucerne Stand – Supplemented by DDG Pellets – Located Bibbenluke – Grazed with 1st X Lambs
- 3) Cottle (Shirley) – Brassica – Supplemented by Barley – Located Nimmitabel – Grazed with 1st X Lambs
- 4) Rolfe (Kenilworth) – Lucerne – Supplemented by Barley – Located Maffra – Grazed with Merino Lambs

On each demonstration, 50 lambs from each treatment were randomly selected from each group as monitor animals. These animals were weighed before entering the paddocks and, as grazing periods were relatively short, they were weighed again only upon exiting the trial paddocks. Herbage and livestock data were used as inputs to the GrazFeed decision support tool to evaluate how closely this tool would have predicted the actual lamb growth rates, both with and without supplements.

Conclusion

Since supplemented and un-supplemented lambs showed very little difference in the performance of the trial animals at any of the four demonstration sites, then clearly under the seasonal circumstances experienced lamb performance was never being excessively limited by pasture quantity or quality. It is clear that under these circumstances the voluntary intake of supplements was low for all but Demonstration 4 and that there was effectively a direct substitution between pasture and supplement. Logically, the lambs are satisfying the majority of their appetite with herbage, which is of better quality than the supplement, so when the supplement is eaten then it substitutes for herbage of a very similar quality in the diet.

It is impossible to predict how the supply of quality forage will pan out for the coming summer/autumn period, but all current indications are that the better-than-average seasonal conditions will persist. In those circumstance a different strategy will be required for the second year of measurements if we hope to generate any useful data about the threshold where supplements become profitable.

2022 Additional Information

Given the continuation of good seasonal conditions, MFS met with MLA and have requested a Variation to the Contract to remove the second year of testing. At time of writing, the Variation was still being drafted by MLA and the final outcomes will be reported in the 2022-23 Annual Report.

MFS Project 20.01: **MLA PDS Fodder Systems and Feed Gaps (Winter Feed Gap)**
Project Leader: John Murdoch & Andrew Rolfe
Project Manager: Frances Lomas
Project Collaborators: Doug Alcock (GrazProphet), MFS Producers
Project Funder: Meat and Livestock Australia

PDS Aim: *Can granular and foliar pasture applications such as Nitrogen and Gibberellic Acid significantly increase dry matter production on pastures on two soil types on the Monaro over the winter period to optimize stock production and performance relative to untreated winter pastures?*

Severe cold winter temperatures with a high frequency of frosts, lead to low soil temperatures and subsequently restrict pasture growth creating an inhibitive “winter feed gap” on the Monaro from May to September.

Many producers currently use supplementary feeding over the winter period at a major enterprise cost to maintain stocking rate rather than looking at ways to utilize / enhance the feed base by strategically applying pasture growth stimulants such as gibberellic acid (GA) and nitrogen (N). Winter stocking rates generally dictate enterprise production capacity over the spring and summer period therefore winter carrying capacities remains a major profit driver for the whole grazing system.

Anecdotal observations suggest GA and N products to optimize dry matter production (DMP) is significantly underutilized in the Monaro grazing Industry compared to other grazing regions.

There has been no scientific based, trial work on a paddock scale done for our local area or cost benefit analysis to determine if N & GA applications are actually translating into additional, measurable DMP and therefore improving animal performance and enterprise net profit. Some strip trials that have been done on improved pasture suggest increases of 200-600 kg/DM/ha are possible using GA however this data has not been integrated into livestock performance or gross margin comparisons.

2022 Report

Following an initial delay back in 2020, site selection, trial pegging and soil sample collection were able to be undertaken during the winters of 2021 and 2022. MFS sought interest for Year 2 hosts in March 2022, consultation and zoom meetings followed to discuss Host Protocols and expectations.

Trial sites for Year 2 were identified and pegged on 4 March.

Pastures:

Phalaris - Woburn at Bungarby

Ryegrass - Kydra at Kybeyan

Cereal - Maffra at Maffra

Each site identified has easy access, with Maffra site being the most difficult. Located in the same paddock, near where the winter forage variety demo was. Three demonstration sites pegged in March (4 Treatment Strips per site).

Site 1

Phalaris; Woburn at Bungarby

Aspect: South

Elevation: 954m

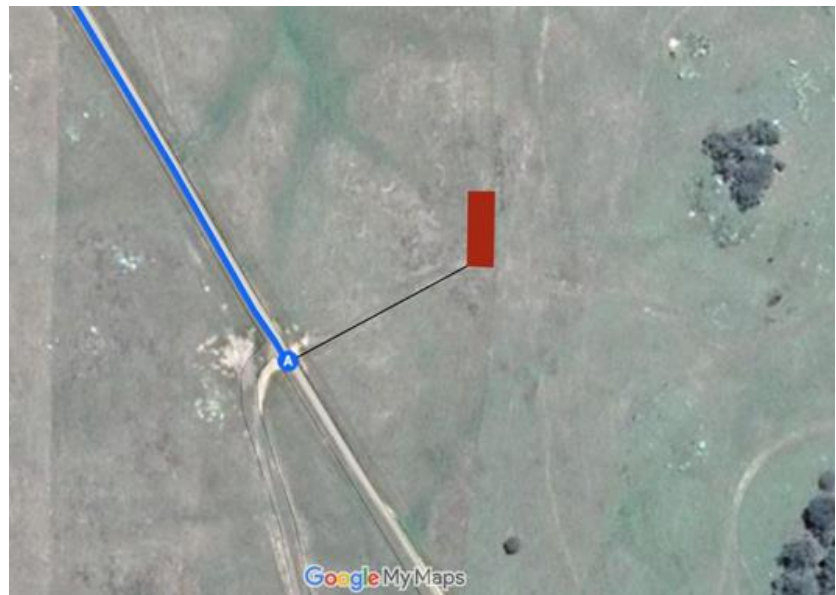
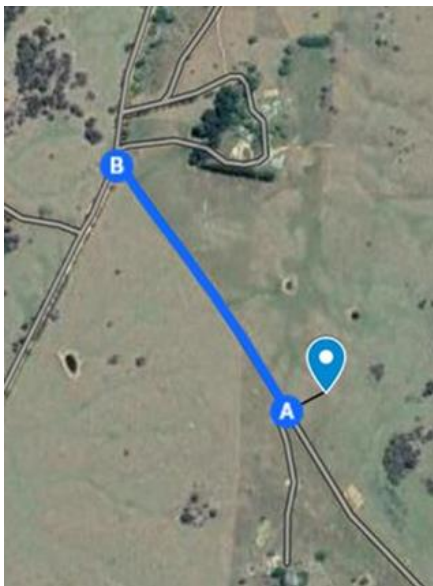


Site 2

Ryegrass – Kydra at Kybeyan

Aspect NW

Elevation: 1108m

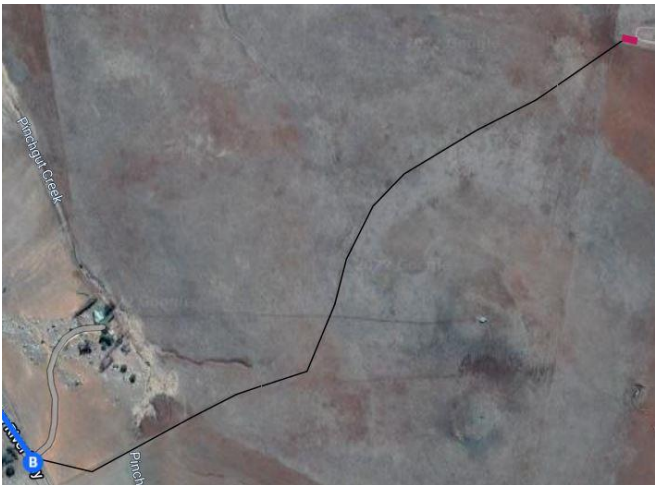


Site 3

Cereal Maffra at Maffra.

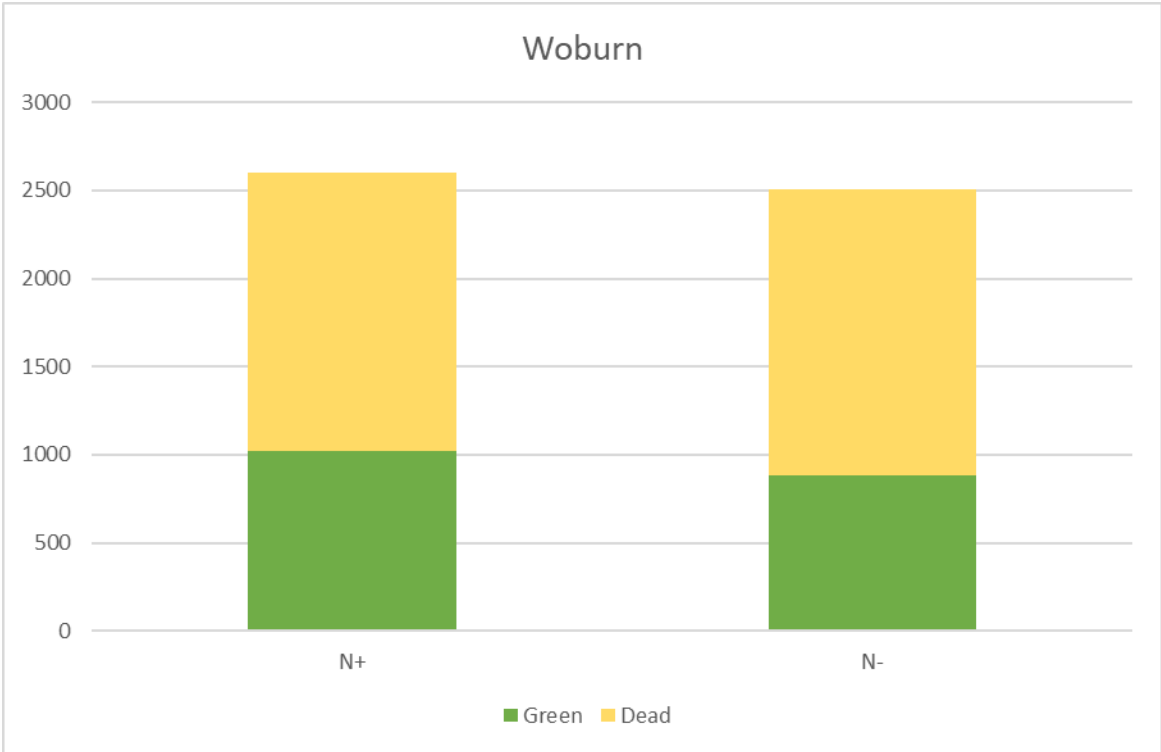
Aspect: SW

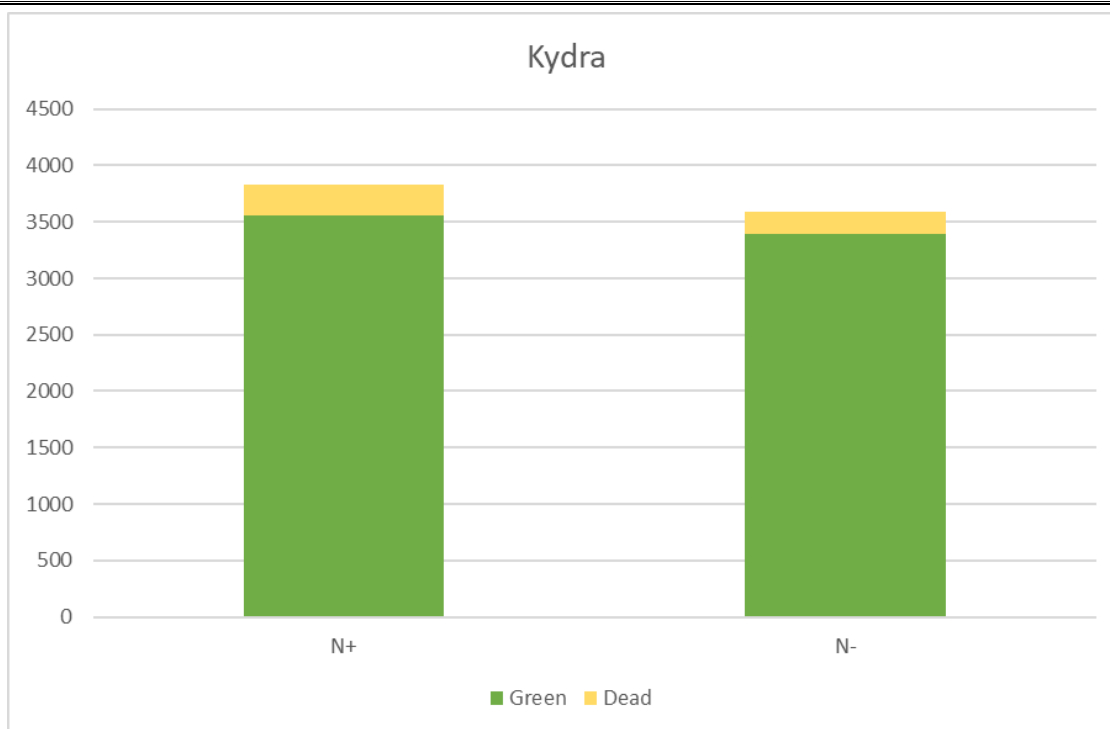
Elevation: 879m



Key results from June Cuts 2022

Although there are nominally three treatments and a control as only Nitrogen has been applied to date the average biomass over the two N fertilized plots (N+) and the two unfertilized plots (N-) are shown in aggregate

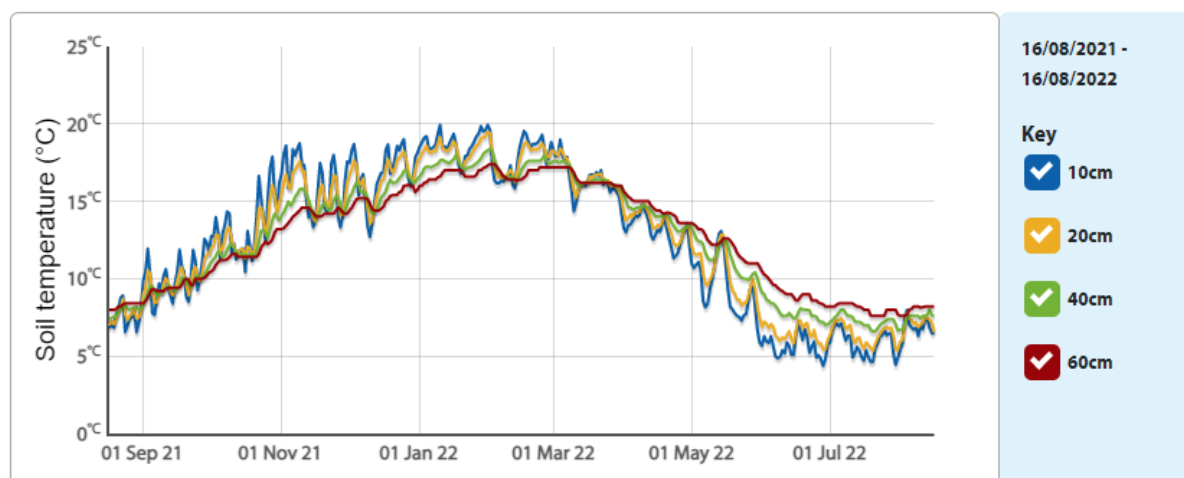




Unfortunately, due to an unintended grazing in the treatment paddock at Maffra insufficient biomass had accumulated at this site to make an assessment at the planned date. GA has been applied and the site excluded from grazing so data should be available for the GA impact assessment in August.

For the Woburn and Kydra sites it can be seen that while the N+ treatments do have slightly higher total and green biomass at the end of June the difference is minor and variation between plots would suggest insignificant. N was not applied until the third week of May and although there was plenty of soil moisture there was a distinct plummet in temperature with the onset of a series of large cold fronts and some associated snow. Soil temperatures in the top 20cm plummeted from around 10°C in the first two weeks of May to just 5°C by the end of the month. This along with the potentially anaerobic wet conditions is likely to have led to some losses of N through denitrification but also the potential growth of the plants in the 6 weeks between application and biomass assessment may also have been hampered directly by the onset of very cold conditions

Soil Temperature i



The producer demonstration site project “Fodder Systems and Feed Gaps” (Winter Feed Gap) is aiming to demonstrate that foliar pasture applications such as Nitrogen and Gibberellic Acid significantly increase Dry Matter Production (DMP) on pastures on two soil types in the Monaro district of NSW over the winter period to optimize stock production and performance relative to untreated winter pastures.

From two of three trial sites during the winter of 2022 (Year 2), it can be seen that while the N+ treatments do have slightly higher total and green biomass at the end of June the difference is minor and variation between plots would suggest insignificant. N was not applied until the third week of May and although there was plenty of soil moisture, there was a distinct plummet in temperature with the onset of a series of large cold fronts and some associated snow. Soil temperatures in the top 20cm plummeted from around 10°C in the first two weeks of May to just 5°C by the end of the month. This along with the potentially anaerobic wet conditions is likely to have led to some losses of N through denitrification but also the potential growth of the plants in the 6 weeks between application and biomass assessment may also have been hampered directly by the onset of very cold conditions.

MFS Project 20.10: **Boco Rock Grant: African Love Grass – Resistance Testing**
Project Leader: Jo Powells, South East LLS
Project Manager: Andrew Rolfe
Project Collaborators: South East LLS, DPI, MFS Producers
Project Funder: Boco Rock Community Grants Hub

This project aims to provide science-based evidence of the status of resistance in ALG populations on the Monaro to chemical (flupropanate) control methods. This will enable land holders and Councils to tailor their chemical control strategies more effectively and efficiently.

Project Description:

- 43 sites were sampled for testing to resistance of flupropanate 12 of the sites funded by Boco Rock Wind Farm grant. Some sites in the Bredbo region (as the core infestation with long history of herbicide use), Cooma and around Maffra (as an area upwind of Nimmitabel)
- Testing 3 rates of flupropanate (Taskforce) - 1, 2 and 3 L/ha
- Samples sent to Plant Science Consulting (South Australia)

Results:

As suspected from previous pilots there is a significant population of resistant ALG on the Monaro.

- Resistant 7
- Developing resistance 22
- Susceptible 14
- Total 43



Images: Plant Science Consulting

www.lls.nsw.gov.au

Other conclusion that can be made are that low rates of flupropanate can increase survival of ALG.

% Survival of African lovegrass plants treated with flupropanate

	1.25 L/ha	2 L/ha	3 L/ha
North East 2021	95	25	0
Central West 2021	95	50	0
South 2021	75	40	5

Table 1. showing % survival of ALG (Table Jo Powell, LLS)

It is worrying to see such high levels of resistance to one 2 chemicals registered for control of ALG. It shows the need for using an IPM approach when talking any pest problem.

Thank you to the LLS and Jo Powell for putting this much needed work together.

MFS Project 21.05: **SMRC Bushfire Grant: Monaro Containment Lot Tour for Disaster Preparedness**
Project Leader: John Murdoch
Project Manager: Frances Lomas
Project Collaborators: Megan Rogers, SheepConnect NSW, Doug Alcock, (GrazProphet), MFS Producers
Project Funder: SMRC Bushfire Grant

2022 Report

Project Outline

Our aim is to host a bus tour for local farmers and graziers to view “best practice” ideas for on-farm disaster preparedness should we encounter fire and drought situations as experienced in the last two years (and most recently, flood situations).

This will be a practical day, led by a professional agronomist, and will also give local landowners the chance to connect socially, another key facet in building resilience when dealing with adversity.

Results

Monaro Farming Systems successfully delivered a project titled “Disaster Preparation: Containment Area Tour of the Monaro” on Tuesday 22 March 2022. All four sides of the Monaro were impacted by the Christmas/New Year fires - Kosciusko to the West, Mt Darragh to the East, The Border Fires to the South, and the Bredbo Fires to the North. A large proportion of our farming family members spent considerable time volunteering during the peak fire period, either fighting fires with the RFS or defending or preparing their own properties or those of neighbour’s or friends. Much of this time was spent moving livestock to safety (often numerous times as the fires progressed).

A number of properties had established contained yards for feeding animals during the drought conditions, and upon discussion and reflection after the bushfire events, it has been acknowledged that having these contained set ups assisted greatly with management of stock both during and after disaster conditions. This practice spiked a real interest for many farmers across the region keen to share and hear the benefits, advantages and implementation of containment feedlots.

The Containment Feedlot bus tour included industry representatives, local farmers and producers, sponsors and interested parties viewing “best practice” ideas for on-farm disaster preparedness should the Monaro encounter fire and drought situations as experienced in the last two years.

The tour was delivered on farms and led by industry experts. Attracting over forty participants, it provided an opportunity for local land holders to connect socially, recognizing that these networks are crucial to building resilience and sharing experiences, particularly when dealing with adversity. The day concentrated on the design of containment feeding - purpose built lots v using sacrifice paddocks, key decision triggers, practicalities of confinement feeding and designing full rations.



Image: Farm visit to Woburn, Bungarby



Image: Doug Alcock presenting at Delegate Station

MFS Project 21.06: Agricultural Technology Workshop and Symposium

Project Leader: John Murdoch

Project Manager: Frances Lomas

Project Collaborators: AgriFutures, Sponsors, Doug Alcock, (GrazProphet), MFS Producers,

Project Funder: AgriFutures Australia (Rural Industries Research and Development Corporation)

2022 Report

Project Outline

Monaro Farming Systems proposes to coordinate a Regional Agricultural Technology Symposium, which will run over a full day. The symposium would involve practical demonstrations and technical presentations of the relevant technologies for the Southern NSW grazing Industry, tailored specifically to the Monaro production systems.

It is proposed that the day be held on farm, which will enable some actual demonstrations of the targeted technologies. The day would be open to not only MFS members, but also any other interested Monaro farmers, to reach the maximum number of participants. Local caterers and bus transport companies will be engaged.

Results

Stage 1 – Workshop (delivered by previous Executive Officer, Zoe Rolfe)

- The Tech Workshop was held on Wednesday October 20th, 2021.
- The workshop was delivered by Brooke Sauer on behalf of Rural Edge Training.
- 16 participants in attendance.

Stage 2 – Agricultural Technology Symposium (delivered by current EO, Frances Lomas)

- Ag Tech Symposium was held on Wednesday 3 August 2022 at the Cooma Showground and Multi-Function Centre, Cromwell Street Cooma.
- 34 exhibitors were present from as far away as Armidale.
- Attendance on day, including exhibitors, estimated at 230 pax. members and non-members. Sign in sheets counted 178, approximately 40 exhibitors and together with a school group were also present.
- Guest Speaker, Jon Medway, CSU. A copy of the presentation will be made available upon receipt.
- A range of technologies were present showcasing farming software, labour efficiency, drone/robotics, remote sensing, connectivity, animal health and management, livestock handling, soil health and pasture/fodder. Other exhibitors including Tafe NSW, Safe Work, Snowy Monaro Regional Council and attendance from a number of sponsors including Rabobank, Comm Bank, Square V who interacted with the crowd.

An extract from one of our exhibitors is below: *‘We think you and the team did a great job in organising everything. Most well-planned event we have been to in a while, and we appreciated the updates leading up to the event. Would love to be involved again next year’ BreedElite.*



Images: Attendees at the Ag Tech Symposium – Cooma Multi-Function Centre & Showground



MFS Project 21.07: FRRR Grant: Communications Workshops

Project Leader: Mandy Horton & Jono Forrest

Project Manager: Frances Lomas

Project Collaborators: Anna Marshall, People Mastery, MFS Producers

Project Funder: Foundation for Regional and Rural Renewal (Tackling Tough Times Together Grant) - The Snow Foundation and Australian Government

2022 Report**Project Outline**

The aim of the project is to host workshops for local rural families to regroup after recent tough times. The focus will be on deepening trust, increasing self-awareness & improving general communication effectiveness within, and between, farming families, as well as learning and building habits for a healthy mind.

The funds will pay for a local training organisation (People Mastery) to specifically develop a workshop targeted to our rural community. The workshops will be held at central venues across the community (Nimmitabel, Cooma, and Bombala) and will be fully catered for participants.

Summary & Results

The project included hosting two workshops for producers, families and individuals with the aim of building communication and resilience skills for use during everyday situations, particularly during tough times such as drought, fires and Covid as in the past 2 years.

The workshops were held at the Travellers Rest, Snowy Mountains Highway, Cooma on Tuesday 17 May and Wednesday 18 May 2022. The project was delivered by local training organisation, People Mastery, who specifically tailored the workshops for the local rural community. Each participant was required to complete an online personal assessment tool, DiSC, prior to the workshop.

Although the participants were apprehensive to respond to the assessment tool, all had completed the task as required prior to the workshops. Anna Marshall, Presenter, provided an engaging and inclusive environment and quickly relayed any fears or anxieties about the day ahead. The workshops provided an opportunity to engage, socialise, strengthen and deepen connections with similar rural members. It also provided a number of strategies and tools to equip the participants when dealing with stress and difficult conversations within and beyond the farming family. These strategies will reach far more broadly than the individual that attended.

The project achieved the following outcomes:

- Greater ability to deal with / respond to individual / community level challenges
- Enhance community identity / wellbeing / sense of place
- A friendly and inclusive community / stronger social fabric

Although our delivery directly reached 34 participants, the indirect reach would be trifold. Each participant was part of a team in a professional environment, family unit and/or community group. The learned skills would permeate throughout these intertwined units to reach far beyond.



FRRR

Foundation for Rural
Regional Renewal



MFS Project 21.08: FRRR Grant: Drought Resilience Grant - Seasonal Outlooks to build Drought Preparedness

Project Manager: Frances Lomas

Project Collaborators: Doug Alcock, GrazProphet, MFS Producers

Project Funder: Foundation for Regional and Rural Renewal (Tackling Tough Times Together Grant) - The Snow Foundation and Australian Government

The aim of this project is to provide two targeted Seasonal Outlooks (prepared by an expert agricultural analyst) based on The Monaro region of NSW. This data will assist local farmers and graziers with decision making for the upcoming seasons (Summer 2021 and Autumn 2022) around stocking rates, stock sale versus stock retention, feed and supplementation, pasture utilisation and planning.

Through the Seasonal Outlook, to be delivered at a Field Day open to all local farmers and graziers on The Monaro, we will also provide opportunities for people to come together, increase social connections and networks, increase community engagement and belonging, as well as building a positive community culture.

The funds will pay for a local expert, Doug Alcock from GrazProphet, to specifically design and develop a Seasonal Outlook based on real-time and relevant data provided by local moisture probe sites, weather analysis data, and real on-farm examples which participants will be able to adapt to their own personal settings and locations. The funds will also pay for lunch which is a key driver in both facilitating discussion amongst peers, as well as encouraging attendance.

OUTCOMES

MFS successfully completed two specifically designed Seasonal Outlook during the reporting period which provided local producers with scientific modelling (utilising the newly developed Farming Forecaster tool) helpful in their on-farm decision making. This enabled a platform for engagement and discussion amongst a group setting where producers shared and reflected on drought management strategies, past and future.

Full details of the Seasonal Outlooks are housed on the MFS website and available to all members of the public acting as a point of reference for the future.



MFS Project 22.03: FRRR Grant: Drought Preparedness Workshops – Grazfeed and Stockplan

Project Manager: Frances Lomas

Project Collaborators: Phil Graham (Graham Advisory), MFS Producers

Project Funder: Foundation for Regional and Rural Renewal

AIM

MFS will engage a consultant (Graham Advisory) to run the workshop. The content will be covered over 3 separate days to allow optimum skills development and adequate coaching through Grazfeed and Stockplan software.

The workshop will be broken in too several modules:

- Resilience to drought is increased through early action. Producers will gain an understanding of the climate drivers and how they affect the weather. This information will be coupled with BOM forecasting and the Farming Forecaster support tool to help producers predict the probability of going into drought.*
- Accurately assessing available resources increases a producer's ability to deal with drought. On farm paddock walks will be used to train producers to estimate available dry matter and digestibility.*
- Hands on condition scoring of sheep and cattle will be undertaken. This will give participants the ability to determine feed required by the animal and have benefits for animal welfare.*
- The participants will be trained in the use of Grazfeed. Feed budgets will be generated, giving the producer an early understanding of what will be required to feed their animals through drought. This understanding will increase producers' resilience to drought, whilst having a positive impact on animal welfare.*
- Infrastructure is critical to dealing with drought well. Producers will visit farms that have invested in drought lots. Discussion will focus on the ability to reduce erosion, accurately feed animals in a timely manner and distribute nutrients across the landscape. Producers that invest in infrastructure to deal with drought, before it occurs, will be more resilient when drought does occur.*
- Economic resources are critical to dealing with drought. An understanding of the finances required to deal with drought and increased confidence in decisions around purchasing fodder and selling animals will increase participants resilience to drought*

Outcomes

MFS held three workshops, each one held at the Nimmitabel Country Club, Nimmitabel is considered a centre point for the Monaro, and held on three consecutive Thursday mornings - 30th June 7th July and 14 July. Each day was facilitated by Phil Graham (Graham Advisory).

Workshop 1 was attended by 11 individuals, representing 8 properties on the Monaro. This session concentrated on Grazfeed with each property receiving a copy of the Grazfeed software, the facilitator and MFS Executive Officer were present to assist with all IT issues and load the software onto each device.

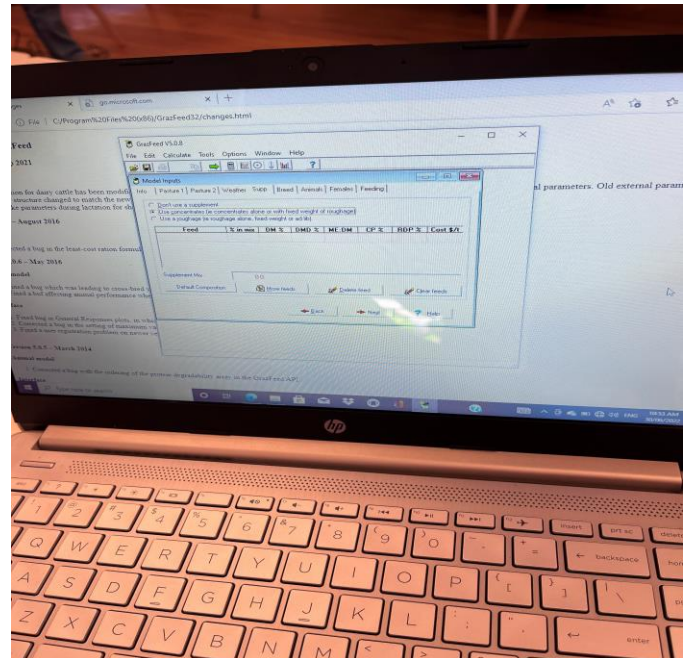
Workshop 2 was attended by 16 individuals, representing 14 properties. This session provided an overview of day 1, with additional information and hands on data entry and access. Again, both the facilitator and EO were present to assist.

Workshop 3 was attended by 17 individuals, representing 13 properties. This session concentrated of Stockplan, again with participants having the opportunity to load the software onto their device. Full training and explanation were provided by the facilitator with a Q & A at the end of the workshop to ensure all participants plenty of time to ask pertinent questions.

In total, 15 licences were purchased from Horizon Agriculture Pty Ltd.

The three workshops were not only an opportunity to develop skills for each individual present, but it provided an avenue for connection, building community resilience for future drought preparedness, enhanced a sense of purpose and education in a group that would not otherwise be connected together.

Each participant was able to demonstrate an increased knowledge of both software programs. They were positive that the tools provided would be beneficial for years to come.



MFS Project 22.04: Department Industry – Black Summer Fire – Seasonal Outlooks

Project Leader: Nancy Spoljaric

Project Manager: Frances Lomas

Project Collaborators: Doug Alcock | Graz Prophet Consulting, MFS Producers

Project Funder: Dept Industry – Black Summer Bush Fire – Seasonal Outlooks

2022 REPORT

Background and Aim

MFS were successful in a grant application to continue its delivery of 7 (seven) seasonal outlooks during the period March 2022 to March 2024, through the Department of Industry – Black Summer Bushfire grant.

A primary outcome of the Seasonal Outlook will be to provide a platform for engagement and discussion in a group setting so producers can share and reflect on disaster management and mitigation strategies going forward. The Seasonal Outlook will also provide local producers with scientific modelling (utilising the newly developed Farming Forecaster tool) that will be helpful in their on-farm decision making.

Outcomes to date

March 2022 - Autumn Seasonal Outlook

The Autumn Seasonal Outlook was delivered by Doug Alcock (GrazProphet) at an on-farm field day held at the properties of Woburn and Delegate Station. The presentation provided data on soil moisture, projected green herbage mass, pasture and ground-cover details, historical rainfall and trends, predicted seasonal conditions for the following three months. It also provided an opportunity to network and interact with fellow producers on the Monaro. Throughout the day, 45 producers were on hand to listen to the presentation.

Benefits of Seasonal Outlooks:

- Increased confidence and understanding of seasonal outlooks and trigger points.
- Pasture growth potentials, soil water holding capacities, different wilting points of certain pasture species.
- Translate this to the amount of feed availability for the next three months and the likely impacts on ground cover, stock performance and condition score, weight gains, lambing/calving and weaning success rates as well as the probability of needing supplementary feeding etc.
- Better understanding of the different water use efficiencies of crop and pasture systems.
- Better understanding of soil and water interactions at critical crop & pasture growth stages.



Image: GrazProphet Consulting – Autumn 2022 Seasonal Outlook – Delegate Station



Image: Producers at 2022 Autumn Seasonal Outlook – ‘Delegate Station’

MFS Project 22.05:**Project Manager/Knowledge Broker:****Project Collaborators:****Southern NSW Innovation Hub**

Frances Lomas

Hub Partners led by Charles Sturt University, ANU, UOW, LLS, DPI, Farming Systems Group Alliance, MFS Producers

Background and overview

MFS entered into a Collaboration Agreement with the Southern NSW Drought Resilience Adoption and Innovation Hub for the period Jan 2022 to 30 June 2024.

The SNSW Hub is one of 8 across Australia funded by the Future Drought Fund - an Australian Government Initiative. It is a partnership led by CSU including University of Wollongong, University of Canberra, Australian National University, NSW DPI, NSW Local Land Services, First Nations Governance Circle, Rural Aid and Farming Systems Group Alliance (comprised of Farmlink, CWFS, Riverina Plains, Southern Growers, IREC, ICC, Holbrook Landcare Network, MFS and TBC)

The Hub is working with farmers and communities to identify how it can increase resilience to drought. The Hub wants to speed up the adoption of innovations on farms, modernising approaches for improved community, landscape and production outcomes.

The Hub will continue to focus on values as a key driver for change, fully understanding farmer needs and involving them in designing and implementing solutions. This will see a reimagining of how we develop and deliver activities that foster innovation and better address the needs of the current farming environment.

The Hub has appointed 22 Knowledge Brokers including the role of Executive Officer for MFS, Frances Lomas. The Chief Knowledge Broker is Dale Stringer. The role of a Knowledge Broker is to act as the 'on-ground' eyes and ears for the region, compiling a list of issues, pursuing opportunities, providing resources, networks and information building for our members and non-members, identify gaps and action plans for outcomes.

It is not to deliver projects, but to facilitate the projects with the assistance of research and technical experts.

Reporting and outcomes

As part of its obligations under the Agreement, MFS has a targeted set of activities to deliver for each 6-month period, a report of which is submitted to the Hub including project co-design, identify priorities and projects for development, networking and relationship building with Hub partners, stakeholder engagement and communication and promotion of the Hub's activities amongst its networks.



CURRENT PROJECT SUBMISSIONS

MLA PDS - Managing Merino Flystrike

Can flystrike management practices be optimized on the Monaro to achieve production objectives and best practice animal welfare and chemical resistance management guidelines?

By July 2023, MFS will:

1. Document and analyse the current flystrike management practices in:

a. Six farm management systems

b. Fly resistance to all known chemical controls using NSW DPI kits, tested on another 14 properties amongst members (20 total tests)

2. Hold one farm field day to be attended by 70 Core and observer producers demonstrating differing fly management technologies to assist in controlling fly strike risk, including crutching machines and jetting plants.

3. Hold two producer skill and training development days where annual results are presented and best practice and farm system improvement opportunities are communicated, each to be attended by 70 core and observer producers.

4. Produce a final report to be provided to producer network and wider organisations (DPI, LLS etc.) highlighting results, lessons learned, and further issues identified.

Application Withdrawn

MFS were successful in their preliminary application for MLA PDS – Managing Merino Flystrike. Given the complexities of the PDS, it was decided that the project would not proceed at this time.

COLLABORATING PROJECTS

Robotic Weed Sprayer “Kelpie” - Agent Orientated Software (AOS) Group

This project is currently in development stages with trials being done on The Monaro. The team are working on weed detection - specifically serrated tussock and horehound.

The project will build and test an autonomous mobile robot, “Kelpie”, to identify individual weeds and selectively spray or remove them. Five Kelpie systems will be trialled on Monaro farms and Treasury Wine Estates vineyards - autonomously navigating pasture or vineyard to economically control weeds where it is currently not possible. Kelpie will record the position and size of the weeds, to produce a Weeds Map for planning and audit purposes, and a Feed Quality Map with the current farm stock carrying capacity.

Project Partners include Agent Oriented Software Pty Ltd, The University of New England, Department of Industry, Queensland University of Technology, Monaro Farming Systems CMC Incorporated, Autonomous Operational Software Pty Ltd, David Miron, and Treasury Wine Estates Vintners Limited.

Serradellas for the New Environments - MFS and CSIRO

Project Leader: Rebecca Haling (CSIRO)

Project Collaborators: NSW DPI (Richard Hayes), University of Tasmania (Rowan Smith) and TFS

Project Funder: MLA

2022 REPORT

This project commenced 1 July 2021 and aims to develop serradellas as a viable legume option for permanent pastures systems in south-eastern Australia. The research component aims to develop the scientific and technical knowledge that will enable adoption of serradellas including identifying suitable cultivars, sowing strategies (e.g., rates, companion species) and proof of persistence and productivity. On the Monaro there are currently two experiments underway:

- (1) The second year of a serradella flowering experiment (at “Kyleston”, Bombala) that is assessing flowering dates and flowering date stability of several the most promising cultivars and lines identified in previous work. This experiment is part of a wider experiment network with similar flowering experiments at Canberra, Glen Innes and Launceston.*
- (2) A serradella persistence experiment (at “Burando”, Bombala) which tests the ability of the most promising cultivars to maintain sufficient legumes biomass over time in a mixed sward. This experiment was sown in autumn 2021. Seasonal conditions have led to the site currently being very grass dominated; this will be quantified later in spring 2022 through composition and dry matter assessments. Ongoing monitoring (until 2025) will assess the longer-term persistence and productivity of the different serradella cultivars.*

As part of this project, MFS will have an integrated Producer Demonstration Site (PDS) that aims to demonstrate serradellas under paddock conditions. An agreement for this PDS activity is currently being drafted with CSIRO. It is intended that from October onwards, MFS will work with the project collaborators (CSIRO, NSW DPI) to design and locate a suitable PDS with sowing planned for autumn 2023 and ongoing monitoring/maintenance of the site planned until mid-2025.

FDF Soils and Landscapes Grant - “Creating landscape-scale change through drought resilient pasture systems” - “Resilient Pastures” project

Project Leader: Nancy Spoljaric, Project Officer
Project Collaborators: Holbrook Landcare, SNSW Innovation Hub, Riverine Plains, DPI
Project Funder: Future Drought Fund
Status: Contract yet to be finalised

MFS have engaged the services of Nancy Spoljaric to assist with the overall management of a “Resilient Pastures” project which is part of a bigger consortium (including Holbrook Landcare, Riverine Plains etc.). The project is to establish pasture trial sites across Southern NSW.

Although the main objective is linked to drought resilience (Showcase modern pasture species combinations and management practices known to build greater drought resilience in farming systems and landscape), MFS will implement and deliver the trials in a method suitable to the area and host sites. Dependent on the success of the trial, DPI may visit the possibility of co-locating research at these sites in the future to help make them sustainable long term “legacy sites”.

Balancing soil fertility on the Monaro

Project Leader: Rebecca Haling (CSIRO)/ Madi Guan (Graminus Consulting/Charles Sturt University)
Project Collaborators: Charles Sturt University / Graminus Consulting: co-supervision of master’s degree candidate / MFS experiment-host farms
Project Funder: CSIRO internal project / Charles Sturt University / Graminus Consulting / CSIRO student operating funds

2022 REPORT

Sixteen nutrient management experiment sites are established across the Monaro region. Most are focussed on sulfur (S) management, but some have a multiple nutrient management objective (i.e., P, K, S & micronutrients).

The aims of the research are to develop better guidelines for soil S testing and S-fertiliser use, and to understand how to combine this with results of P and K testing to determine the correct rate, balance and type of S, K and P inputs for optimum soil fertility management.

The S experiments were commenced under an earlier MFS soils club project (Solving the sulfur story) but drought in 2018/19 prevented full value being obtained from these experiments. Since then, the work was continued via an internally funded project at CSIRO and more recently through a master’s degree student (Charles Sturt University). Funding that supports participation by the science team is a perpetual problem for this work because the usual sources of pasture research funds have dried up. During 2021 and 2022, the original sites were maintained and renovated, and some additional sites were set up in autumn 2022 to add more locations with low S soils. Pasture response to soil test S, P and K levels were obtained from multiple sites in spring 2021 and a subset of the sites will again be sampled in spring 2022. The experiments will deliver evidence as to whether the current critical soil S test value predicts the S responsiveness of a site accurately. Results obtained to date are incomplete but are promising. Additional sampling has also commenced to assess seasonal fluctuations in soil S fertility. Both of these activities are now also components of the master’s research project.

MFS EVENTS SUMMARY 2021/2022

➤ MFS Spring Field Day & AGM – 9 September 2021

- Location: Via Zoom due to Covid
- Attendees: 37
- Speakers - Doug Alcock (GrazProphet) | Warwick Badgery (MFS Board) | Richard Simpson (MFS Board)

➤ MFS Agriculture Technology Workshop – 20 October 2021

- Location: Club Bombala, Bombala
- Attendees: 16
- Funded by AgriFutures and facilitated by Rural Edge Training & MFS

➤ MFS Soils Club / Summer Field Day – 6 December 2021

- Location: Coolringdon
- Attendees: 35
- Greenhouse gas mitigation in grazing and soil carbon sequestration
- Monaro Seasonal Outlook by Doug Alcock (GrazProphet)
- Monaro Soils Club Testing Results

➤ MFS Autumn Field Day – 23 March 2022

- Location: On Farm at 'Woburn' Bungarby and 'Delegate Station' Delegate
- Attendees: 45
- Containment Feedlot Tour / Inspection
- Seasonal Outlook - Doug Alcock (GrazProphet)
- MLA PDS Winter Feed Gap update – Doug Alcock (GrazProphet)

➤ Drought & Innovation Hub Partner Forum and Knowledge Broker Training – 29 & 30 March 2022

- Location: Charles Sturt University, Wagga
- Attendees: 23 Knowledge Brokers including MFS Executive Officer

➤ FRRR 'Building Resilient Relationships with Farmers' Workshops – 18 & 19 May 2022

- Location: Snowy Mountains Travellers Rest, Cooma
- Attendees: 35
- Communications Workshop including facilitator of individual DiSC profiles

➤ **FRRR Drought Preparedness – Feed Evaluating and Drought Planning Workshops – 30 June 2022 (7 July 2022 & 14 July 2022)**

- Location: Nimmitabel Country Club, Nimmitabel
- Attendees: 34 over 3 days
- Interactive workshops

➤ **MFS Winter Field Day in conjunction with Agricultural Technology Symposium – 3 August 2022 (this project was run during 2021 and 2022 reporting periods)**

- Location: Cooma Multi-Function Centre and Showground
- Attendees: 232
- Held in conjunction with Agricultural Technology Symposium
- Presentation by Jon Medway, Charles Stuart University
- Seasonal Outlook - Doug Alcock (GrazProphet)

MFS SUPPORTERS - THANK YOU

MFS Partners

South East Local Land Services

NSW DPI

CSIRO

University of Sydney

Tablelands Farming Systems

Holbrook Landcare Network

Bookham Agricultural Bureau

Project Funders

South East Local Land Services

Department of Agriculture & Water
Resources

National Landcare Program

Meat & Livestock Australia (MLA)

AgriFutures Australia

Snowy Monaro Regional Council

Foundation for Regional and Rural Renewal

Sponsorship Packages

Rabobank

Incitec Pivot

Mercado

Dawbuts

Boyce

Bronze Sponsors

Achmea

Cooma Rural - Agriwest

CommBank

Elders Cooma

Lambpro

MLP (Monaro Livestock & Property)

NutrienAg Bombala

South East Rural - Cooma

Upper Murray Seeds

Virbac

Zoetis



Local Land Services South East



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