



# Final report

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## Sheep Reproduction Strategic Partnership (SRSP) – Program Coordinator

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## Abstract

Following completion of the Sheep Reproduction RD&E Investment Plan (2012-2017) (SRRIP) (Trompf *et al.* 2013), and a stocktake of recently completed and current RD&A projects (Beattie and Howard 2020), MLA along with stakeholder partners sought to develop new strategies and initiatives to improve lamb survival in Australian sheep flocks. Recognising the need for a coordinated approach to improving sheep reproductive performance, MLA engaged with industry partners to develop the Sheep Reproduction Strategic Partnership (SRSP).

This project provides external Program Coordination for the Sheep Reproduction Strategic Partnership with a key focus on working with the Management Committee to develop the partnerships strategic direction, objectives and engagement processes.

The objectives of the SRSP program Coordinators role were to

1. Assist MLA to develop, implement and maintain a comprehensive stakeholder engagement plan to inform and keep industry stakeholders up-to-date on the progress of the Sheep Reproduction Strategic Partnership (SRSP).
2. Oversee the planning and hosting of a series of engagement events to include a SRSP forum and quarterly webinars.
3. Provide quarterly reports to update MLA and the SRSP Management Committee.
4. Collate and manage an on-going database of projects funded by the SRSP as well as relevant projects funded by other industry partners or international stakeholders.
5. Actively evaluate other funding sources that align with program objectives.
6. Coordinate the review of applications received to the partnership.

The key activities of the SRSP Program Coordinator included:

- i. development and continuous update of SRSP stakeholder assessment, engagement, communication and MER plans;
- ii. ii. presentations made to 588 industry stakeholders via a combination of zoom and in-person presentations;
- iii. iii. SRSP webpage set up on the MLA website in 2021 and refreshed in 2023; produced 33 issues of the SRSP Sheep reproduction RD&A alert which are currently directly distributed to 295 recipients and indirectly distrusted to more than 1,300 recipients via various industry networks and download from the SRSP website;
- iv. iv. facilitated and chaired 6 webinars with recordings available to view from the SRSP website. The number of viewings of the recordings increases each quarter;
- v. v. organised an SRSP forum was held in October 2022 attended by 32 participants representing the spectrum of Australian sheep RD&A providers and vi. provided timely executive support provided to the SRSP Management Committee.

## Executive summary

### Background

Following completion of the Sheep Reproduction RD&E Investment Plan (2012-2017) (SRRIP) (Trompf *et al.* 2013), and a stocktake of recently completed and current RD&A projects (Beattie and Howard 2020), MLA along with stakeholder partners sought to develop new strategies and initiatives to improve lamb survival in Australian sheep flocks. Recognising the need for a coordinated approach to improving sheep reproductive performance, MLA engaged with industry partners to develop the Sheep Reproduction Strategic Partnership (SRSP).

This project provides external Program Coordination for the SRSP with a key focus on working with the SRSP Management Committee to develop the partnerships strategic direction, objectives and engagement processes.

### Objectives

1. Assist MLA to develop, implement and maintain a comprehensive stakeholder engagement plan to inform and keep industry stakeholders up-to-date on the progress of the Sheep Reproduction Strategic Partnership (SRSP).
2. Oversee the planning and hosting of a series of engagement events to include a SRSP forum and quarterly webinars.
3. Provide quarterly reports to MLA and the SRSP Management Committee.
4. Collate and manage an on-going database of projects funded by the SRSP as well as relevant projects funded by other industry partners or international stakeholders.
5. Actively evaluate other funding sources that align with program objectives.
6. Coordinate the review of applications received to the partnership.

### Methodology

- Develop and maintain stakeholder assessment, engagement communication and MER plans.
- Undertake engagement events & activities:
  - Sheep reproduction RD&A alert
  - Stakeholder presentations
  - SRSP webinars
  - SRSP forum
- Provide executive support for the SRSP Management Committee and complete quarterly reporting requirements.
- Set up and maintain a database of sheep reproduction research projects.
- Provide technical review of TOR, project applications, reports and extension materials related to sheep reproduction.

### Results/key findings

The SRSP stakeholder assessment and engagement plans are live documents and are continuously updated.

Presentations made to 588 industry stakeholders via a combination of zoom and in-person presentations.

SRSP webpage set up on the MLA website in 2021 and refreshed in 2023.

Thirty-three issues of the SRSP Sheep reproduction RD&A alert were produced and currently to 295 recipients and indirectly distributed to more than 1,300 recipients via various industry networks and download from the SRSP website.

Six SRSP webinars have been presented with recordings made available to view from the SRSP website. The number of viewings of the recordings increases each quarter.

An SRSP forum was held in October 2022 attended by 32 participants representing the spectrum of Australian sheep RD&A providers.

Timely executive support provided to the SRSP Management Committee.

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## 1. Background

### 1.1 Sheep Reproduction Strategic Partnership (SRSP)

The Sheep Reproduction Strategic Partnership (SRSP) is a long-term program consisting of a collation of research, development and adoption (RD&A) projects aimed at improving sheep reproductive performance and ewe and lamb survival in the Australian sheep meat and wool industries. Increased knowledge and adoption of best practice management strategies presents a significant opportunity to sustainably increase the productivity and profitability of Australian sheep enterprises whilst addressing potential social license issues associated with sheep reproduction.

Sheep reproduction related diseases (peri-natal mortality, dystocia, weaner ill thrift and mortality, mastitis, hypocalcaemia, pregnancy toxemia and infectious abortion) have been estimated to cost the Australian sheep industry approximately \$1.8 billion annually (Shephard *et al.* 2022) based on estimated production losses and the costs of prevention and treatment. Peri-natal mortality is the largest contributor at \$850.6M, followed by dystocia (\$528.7M) and weaner ill thrift and mortality (\$225.0M) (Shephard *et al.* 2022).

Research has consistently shown that optimising the condition score (CS) of ewes at key times of the breeding cycle is a key factor impacting both ewe and lamb survival and the lifetime productivity of the progeny (Behrendt *et al.* 2019; Thompson *et al.* 2011a, b). Active management of ewe CS during the entire breeding cycle provides producers with the opportunity to improve conception rates, ewe survival, lamb survival, weaner survival, ewe wool production and quality as well as progeny lifetime fleece value (Hocking Edwards *et al.* 2011; Trompf *et al.* 2011). The profitability of sheep enterprises could be improved by 10 to 15% when ewes are actively managed to CS targets during the breeding cycle (Young *et al.* 2011).

Pregnancy scanning is an essential enabling tool to allow sheep producers to optimise ewe nutrition and actively manage ewes during the breeding cycle (i.e. differential management of single and multiple bearing ewes, preparation of lambing and weaning paddocks and mob size during lambing) (Allworth *et al.* 2017; Hobbs and Mounter 2023; Young *et al.* 2016).

The SRSP aims to profitably and sustainably increase lamb production by increasing weaning rates and decreasing mortality. The Partnership will consolidate and build on existing RD&A activities to increase the adoption of best practice management during the breeding cycle as well as identify and address any ongoing RD&A gaps.

### 1.2 SRSP Program Coordinator

MLA conducted a tender process for a SRSP Program Coordinator in August 2020 to coordinate the SRSP activities, manage internal and external relationships to ensure the success of the partnership, develop and implement a communication and MER plan and provide executive support to the SRSP Management Committee. Dr Sue Hatcher (Makin Outcomes Pty Ltd) was the successful tenderer with a contract executed on 25-Nov-2020.

## 2. Objectives

- Assist MLA to develop, implement and maintain a comprehensive stakeholder engagement plan to inform and keep industry stakeholders up-to-date on the progress of the Sheep Reproduction Strategic Partnership (SRSP).
- Oversee the planning and hosting of a series of engagement events to include a SRSP forum and quarterly webinars.
- Provide quarterly reports to MLA and the SRSP Management Committee.
- Collate and manage an on-going database of projects funded by the SRSP as well as relevant projects funded by other industry partners or international stakeholders.
- Actively evaluate other funding sources that align with program objectives.
- Coordinate the review of applications received to the partnership.

## 3. Methodology

### 3.1 Stakeholder engagement plan

#### 3.1.1 Stakeholder assessment and engagement plan

Prepared a Stakeholder assessment spreadsheet to list key stakeholders and categorise them into groups for engagement activities. The stakeholder assessment feeds into a Stakeholder engagement plan which details the actions and activities undertaken to inform and keep industry stakeholders up to date on the SRSP progress.

#### 3.1.2 Communication and MER plan

Collaborated with MLA's Communications team to initiate and develop a SRSP Communications plan that outlined key communication activities from early 2021 through to 2023.

Prepared a communications brief for the development of a suite of SRSP communication collateral (i.e. SRSP logo, signature block, PowerPoint template, fact sheet template and social media tiles) to ensure consistent branding of SRSP activities and industry recognition of the partnership.

Collaborated with MLA's Communications team and the Sheep & Goat Productivity management team to facilitate the development and on-going maintenance of a SRSP landing page on the MLA website.

An initial short MER survey was prepared, targeted at SRSP researchers and extensionists, seeking feedback on the SRSP Sheep reproduction RD&A alert, quarterly webinars, other initiatives respondents would like the SRSP to consider and general feedback. The MER surveys were conducted during June and July 2022 with the survey (in pdf format) was emailed to 14 researchers and 17 extensionists. Results were collated and presented to the SRSP Management Committee at their August 2022 update.



## 3.2 Engagement events & activities

### 3.2.1 SRSP Sheep reproduction RD&A alert

The SRSP Sheep reproduction RD&A alert is a monthly newsletter circulated at the end of each month, that provides a snapshot of the latest research, development and adoption research related to improving the reproductive performance of sheep. Scientific reviews, scientific and conference papers published in international journals related to sheep reproduction RD&A are curated and collated to produce each issue. The email address of the corresponding author of each publication is provided to encourage communication and collaboration among the sheep reproduction RD&A community. The highlights and abstract of each paper are included where available and the DOI link provided for each paper. Milestone and final reports from MLA, AWI and Animal Health Australia are also included where relevant and available for distribution as well as upcoming events and funding calls relevant to sheep reproduction. A new section, Feature Project Update, was incorporated into the RD&A alert for the February 2022 and subsequent issues. This section highlights current sheep reproduction projects (including Producer Demonstration Sites, PDS, projects) with feature projects identified in conjunction with MLA's Sheep & Goat Productivity program management team. Other *ad hoc* sheep reproduction information relevant to MLA, AWI and Animal Health Australia initiatives are added when relevant.

The SRSP Sheep reproduction RD&A alert was initially produced in Word, using a MLA branded template produced by MLA's Communications team and directly distributed to participants in pdf format. From the February 2022 issue onwards, the RD&A alert is now distributed using the Mailchimp platform which provides metrics regarding reader engagement with each issue. These include statistics on the number of recipients, successful deliveries and bounced emails as well as a click analysis which details the number of times each alert is opened, the number of unique opens and both the total number of clicks and the number of unique clicks on each link contained in each issue. The number of times each link in each issue is clicked is also tracked which allows the most frequently clicked links to be identified.

In addition to direct distribution, the RD&A alert is also circulated the SALRC and WALRC networks, MerinoLink and State Farming Organisation networks (NSW Farmers, VFF, Livestock SA, TFGA, AgForce, WA Farmers and PGA). From January 2023, each issue is included in the [Grower Group Alliance newswire](#) which currently has a subscriber base of approximately 1,300.

A pdf version of each issue is available to download from the SRSP website.

### 3.2.2 Stakeholder presentations

As the key point of contact and coordinator for SRSP stakeholders and partners, the SRSP Coordinator actively sought opportunities to provide an overview of the SRSP and outline the activities undertaken by the SRSP to key stakeholders, sheep producer groups and at industry events either in-person or virtually.

### 3.2.3 SRSP webinars

Planning for a quarterly SRSP webinar series commenced in March 2021 to enable each webinar to be set up via MLA's Events Hub. SRSP webinar topics and speakers are identified in conjunction with MLA's Sheep & Goat Productivity program management team. All speakers are provided with the SRSP PowerPoint template and webinar presenter guidelines. Webinars are promoted via MLA's social

media accounts, the Program Coordinator’s social media accounts, AWI’s grower networks, in the SRSP RD&A alerts and via an email blast to SRSP stakeholders. All webinars are recorded, with the recordings uploaded to the SRSP website.

### **3.2.4 SRSP forum**

Given the COVID-19 state border closures and travel restrictions, an in-person SRSP forum with key stakeholders was not able to be held until October 2022. The aims of the 2022 SRSP forum were to:

- i. Review current SRSP progress and key activities,
- ii. Identify critical knowledge and skills gaps, discuss and design strategies to address these gaps and determine co-investment priorities for future RD&A activities,
- iii. Identify opportunities to foster student and early career professional expertise with relation to the SRSP objectives, and
- iv. Initiate new partnerships between key RD&A partners to facilitate information exchange and to address regional or topic related gaps in RD&A initiatives.

A draft program and forum budget, including venue requirements, was prepared in consultation with MLA’s Sheep & Goat Productivity program management team and presented to the SRSP Management Committee at their August 2022 Update for discussion and input. A MER survey was undertaken to facilitate evaluation of the SRSP forum.

## **3.3 Quarterly reporting**

### **3.3.1 Engagement with the SRSP Management Committee**

The Program Coordinator provides executive support for the SRSP Management Committee tri-annual updates. For each update the Program Coordinator facilitates the most appropriate day, time and location for each meeting and works with the Committee Chair and MLA’s Sheep & Goat Productivity program management team to set the agenda. Liaison with invited speakers, preparation of meeting papers and minutes, collation and Identification and completion of action items is undertaken following each meeting.

### **3.3.2 Milestone reports**

Preparation and submission of quarterly milestones as per the contracted schedule.

## **3.4 Projects database**

A spreadsheet database of projects funded via, or of relevance to, the SRSP was created and regularly updated. The database initially contained both completed and current MLA funded projects but was expanded to include PDS projects. The database contains details of project final reports as well as any scientific papers (linked via their DOI) produced from each project. It will highlight the key outcomes from each project and identify whether they have been incorporated into any extension or adoption initiatives.

## **3.5 Other funding sources**

Actively pursue other funding sources for the program including collaborative investment.

### 3.6 Review SRSP project applications

Provide technical reviews of funding terms of reference (TOR) prior to their release, current research projects and final reports and extension material for sheep productivity projects.

## 4. Results

### 4.1 Stakeholder engagement plan

#### 4.1.1 Stakeholder assessment and engagement plan

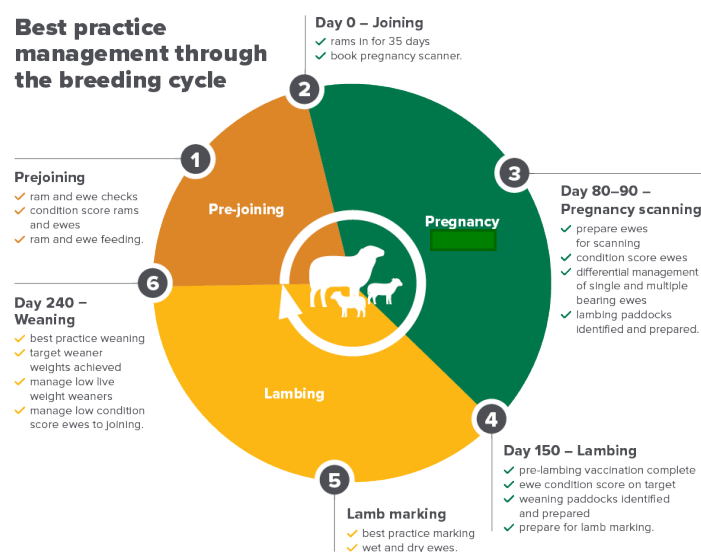
As live documents, both the stakeholder assessment and stakeholder engagement spreadsheets have been continuously updated and maintained during the life of the consultancy.

#### 4.1.2 Communication and MER plan

The Program Coordinator participates in monthly communication meetings the Sheep & Goat Productivity program management team and the designated MLA Communications team person. The current SRSP Communication plan provides the basis for all SRSP Program Coordinator's communication activities. These include production and distribution of the Sheep reproduction RD&A alert, establishment of the SRSP webpage on MLA's website, consistent use of the SRSP branding collateral, SRSP webinars, engagement with the SRSP Management Committee and providing information for MLA's Feedback and Weekly publications. The SRSP Communications plan will be updated for 2024 to 2025.

The initial version of the [SRSP web page](#) went live during September 2021. The Program Coordinator worked with MLA's Communications Team to refresh the SRSP webpage. This included developing a graphic to promote best practice management during the breeding cycle (Figure 1). The refreshed SRSP web page went live during June 2023.

**Figure 1. Graphic depicting best practice management during the breeding cycle**



## 4.2 Engagement events & activities

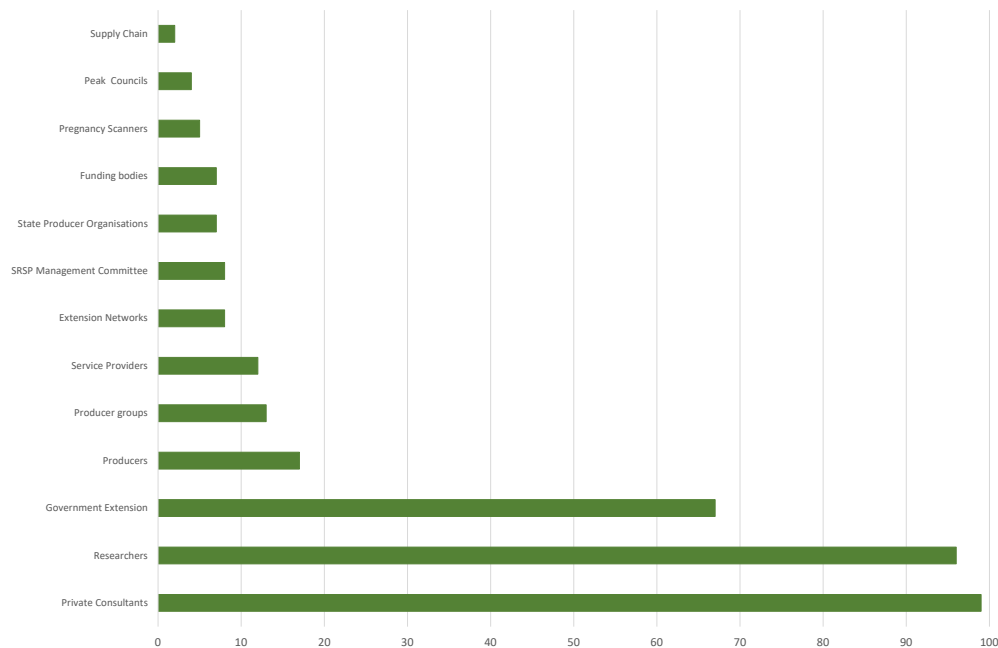
### 4.2.1 Sheep reproduction RD&A alert

The first issue, January 2021, was distributed on 10 February 2021 to 86 recipients. Since then, 33 issues have been produced which are directly distributed to an average of 215 recipients per issue (Table 1). The direct distribution list numbers 295 as at 31 October 2023.

**Table 1. Summary statistics for the SRSP Sheep reproduction RD&A alert**

Year	Issues	Content Summary					Average direct recipients per issue	Total direct recipients
		Review papers	Scientific papers	Milestone/ Final reports	Events	Funding calls		
2020-21	10	8	70	2	65	5	124.4	1,244
2021-22	12	0	101	4	72	5	217.0	2,604
2022-23	11	11	109	0	69	1	297.8	3,276
<b>Total</b>	<b>33</b>	<b>19</b>	<b>280</b>	<b>6</b>	<b>206</b>	<b>11</b>	<b>215.9</b>	<b>7,124</b>

**Figure 2. Classification of SRSP stakeholder who receive the Sheep Reproduction RD&A alert**



Mailchimp statistics on the number of recipients, successful deliveries and bounced emails (Table 2) allows incorrect or changed email addresses to be amended. More than 96% of the issues distributed since February 2022 were successfully delivered.

**Table 2. Direct distribution details from Mailchimp for the Sheep reproduction RD&A alert from February 2022**

Issue	Recipients	Successful deliveries	%	Bounced	Unsubscribed
<b>2021/22</b>					
Feb-22	230	223	96.96	7	0
Mar-22	231	226	97.84	5	0
Apr-22	230	225	97.83	4	1
May-22	230	226	98.26	4	0
Jun-22	232	228	98.28	4	0
Jul-22	230	229	99.57	1	0
Aug-22	238	235	98.74	3	0
Sep-22	240	238	99.17	2	0
Oct-22	239	238	99.58	1	0
<b>2022/23</b>					
Nov-22	242	241	99.59	1	0
Dec-22	295	292	98.98	3	0
Jan-23	310	305	98.39	5	2
Feb-23	308	302	98.05	6	0
Mar-23	306	301	98.37	5	0
Apr-23	306	301	98.37	5	0
May-23	305	300	98.36	5	0
Jun-23	302	299	99.01	3	0
Jul-23	302	299	99.01	3	0
Aug-23	301	295	98.01	6	1
Sep-23	295	291	98.64	4	0

Mailchimp's click analysis which details the number of times each alert is opened, the number of unique opens and both the total number of clicks and the number of unique clicks on each link contained in each issue (Table 3). The total number of opens (i.e. the number of times the email is opened) compared to the unique opens (i.e. the number of recipients that open the email) indicates that many recipients return to the alert multiple times. The click rate for the 2021/22 issue varied from 4.39% to 14.22% and for the 2022/23 issues 5.14% to 14.43%.

**Table 3. Click analysis for the Sheep reproduction RD&A alert issues from February 2022**

Issue	Total opens	Unique opens	Total clicks	Unique clicks	Recipients who clicked	Click rate %	Clicks per unique open %
<b>2021/22</b>							
Feb-22	351	96	91	50	24	10.76	25.00
Mar-22	243	112	86	38	26	11.50	23.21
Apr-22	309	106	185	112	32	14.22	30.19
May-22	272	98	150	72	23	10.18	23.47
Jun-22	220	110	21	16	10	4.39	9.09
Jul-22	248	107	131	109	29	12.66	27.10
Aug-22	358	122	206	127	33	14.04	27.05
Sep-22	226	109	58	36	19	7.98	17.43
Oct-22	262	115	106	73	24	10.08	20.87
<b>2022/23</b>							
Nov-22	288	135	77	47	20	8.30	14.81
Dec-22	374	122	37	24	15	5.14	12.30
Jan-23	509	156	287	175	44	14.43	28.21
Feb-23	348	133	108	76	26	8.61	19.55
Mar-23	377	176	119	82	28	9.30	15.91
Apr-23	269	125	145	100	36	11.96	28.80
May-23	446	133	165	101	34	11.33	25.56
Jun-23	297	123	242	94	31	10.37	25.20
Jul-23	478	126	189	111	36	12.04	28.57
Aug-23	294	115	60	26	20	6.78	17.39
Sep-23	353	108	102	57	33	11.34	30.56

The number of times each link in each issue is clicked is also tracked which allows the most frequently clicked links to be identified (Appendix Table A.1 & A.2).

Feedback from recipients:

*"Thanks Sue. Great initiative, look forward to reading up"* Jim Meckiff, JM Livestock

*"I found this very useful with the right amount of detail. Well done"* Phil Graham, Graham Advisory

*"This is a useful alert because sometimes we are busy and miss interesting papers/events. I think the detail is fine – inclusion of the abstracts and links is great."* Susan Robertson, Charles Sturt University

*"Sue this is brilliant - thank you! Already there was something in there that I had been wanting to follow up on but hadn't realised was available yet. Very helpful!"* Laura Broughton, Productive Livestock Systems

*"It's a great project initiative and definitely of interest to me."* Penny Schulz, Schulz Livestock

*"I found the alert extremely useful and interesting!"* Dr Tim Gole, For Flocks Sake

*"I am a member of SGCV special interest group and Tim Gole has just sent us an email regarding it, looks like a great publication"* Rachael Holmes, Program Manager Livestock Welfare Compliance Agriculture Victoria

*"That's a cracking edition, all the papers look terrific. I can't wait to read them"* Dr Gordon Refshauge, NSW DPI

#### **4.2.2 Stakeholder presentations**

The current status of the SRSP and activities of the Program Coordinator has been presented to a total of 588 industry stakeholders via a combination of zoom and in-person presentations. The

presentations provided an overview of the SRSP, updates on the progress of current projects and activities of the SRSP Program Coordinator.

### 4.2.3 SRSP webinars

Six SRSP webinars have been presented since September 2021 (Table 4). While the number of attendees has been low for some webinars, the number of viewings of the recordings increases each quarter.

**Table 4. Details of the SRSP webinars held between September 2021 and October 2023**

Date	Subject	Presenter/s	Attendees	Web recordings - number of views						Change from last MR
				Aug-22	Nov-22	Jan-22	Apr-23	Jul-23	Oct-23	
22-Sep-21	Can melatonin improve twin lamb survival?	William van Wettere	20	138	152	155	162	171	180	+9
16-Nov-21	Breeding ewe fitness and maternal ewe mortality	Part 1 - Mary McQuillan <i>Unlocking the keys to ewe survival</i>	11	132	158	168	176	194	198	+4
		Part 2 - Andrew Whale <i>Fit to join</i>		88	111	114	118	124	126	+2
5-Apr-22	How to profit from pregnancy scanning	Part 1 - John Young <i>Can you afford not to scan?</i>	5	147	313	317	323	332	338	+6
		Part 2 - Josh Cousins <i>Set your scanning up for success</i>		73	187	198	202	209	209	0
11-Oct-22	The impacts of long-term selection for reproductive performance in Merino sheep in South Africa	Schalk Cloete	32	-	-	-	100	118	130	+12
28-Sep-23	Let's talk rams	Part 1 - Simon de Graaf <i>Sexed semen</i>	2						70	
		Part 2 - Eloise Spanner <i>Successful ovine AI</i>							44	
27-Oct-23	Managing triplet bearing ewes for success	Part 1 - Andrew Thompson <i>Setting R&amp;D priorities</i> Part 2 - Amy Lockwood <i>The Importance of mob size</i> Part 3 John Young <i>Managing ewe condition score</i> Part 4 Jason Trompf <i>On-farm best practice guidelines</i>	21							

### 4.2.4 SRSP forum

The 2022 SRSP forum was held on 11 and 12 October 2022 with a theme of *Turning knowledge into solutions to increase weaning rates and decrease mortality in the Australian sheep flock*. The four aims of the forum were to:

1. Review current SRSP progress and key activities
2. Identify critical knowledge and skills gaps, discuss and design strategies to address these gaps and determine co-investment priorities for future RD&A activities
3. Identify opportunities to foster student and early career professional expertise with relation to the SRSP objectives
4. Initiate new partnerships between key RD&A partners to facilitate information exchange and to address regional or topic related gaps in RD&A initiatives.

Thirty-two attendees representing the spectrum of sheep reproduction RD&A providers in Australia attended the forum which commenced with a welcome session featuring:

- a video introduction from Jane Kellock, SRSP Management Committee Chair, who challenged attendees to identify research gaps and to work collaboratively to bring about change for the sheep industry in reproduction. Jane encouraged forum participants to be open, network and collaboratively work together to identify a pathway for greater impact on sheep reproductive performance and the means for sheep producers to achieve better results in their enterprises.
- Joe Gebbels (MLA Program Manager, Sheep & Goat Productivity) highlighted the importance of sheep reproduction in terms of animal welfare, industry profitability and emissions intensity and challenged forum participants to focus on integrating R&D outcomes to achieve adoption

through creating links between knowledge developed from past and current projects and to develop, articulate and evaluate a complex systems-based value proposition to increase weaning rates and decrease mortality in the Australian sheep industry.

- Sally Leigo (MLA Program Manager, Adoption) provided an overview of the adoption landscape for the Australian sheep industry and highlighted the relative importance of sustainability and animal welfare to key retailers of Australian sheep meat in advanced and developing global markets. Sally detailed MLA's adoption pathway, highlighted the need to build livestock advisor capacity and provided a table to assist with documenting the adoption pathway in RD&A proposals.

Attendees were given an overview of MLA's key projects in MLA's sheep productivity RD&A portfolio via a series of recorded presentations grouped into three sessions: i. weaning to mid-pregnancy; ii. mid-pregnancy to weaning and, iii. environment & management. Each session was followed by Q&A with the presenter (or their delegate) and a small group facilitation session that sought attendee feedback on the following questions:

- What are the gaps – knowledge or application?
- Can we group into new adoption programs or add into existing packages?
- Is further work required for adoption?
- How to address the adoption gaps?
- What is the current capacity of teams to do the work?

The outcomes of the facilitation sessions were collated, summarised by the SRSP Program Coordinator, and presented in the 2022 SRSP Forum report (Hatcher 2022).

A Sundowner Seminar presented by Professor Schalk Cloete (Stellenbosch University) provided attendees with an overview of a long-term selection experiment for reproductive performance in Merino sheep. Due to delays in visa approval, the sundowner had to pivot to a virtual presentation. An overview of Prof Cloete's presentation was included in the October issue of the Sheep reproduction RD&A alert along with the details of scientific papers he referred to during the sundowner.

A Forum Dinner provided attendees with the opportunity to network.

A 10-question survey was prepared (via Survey Monkey) to seek feedback from attendees about their experiences of the forum. The outcomes of the MER survey were presented in the 2022 SRSP Forum report (Hatcher 2022).

## **4.3 Quarterly reporting**

### **4.3.1 Engagement with the SRSP Management Committee**

Six SRSP Management Committee meetings were facilitated during the contracted period. These were held either on-line (n=5) or face-to-face (n=1). Due to changes in the Sheep & Goat Productivity management team in 2023 an email update was provided to the Management Committee in March 2023.

Agenda items for the Management Committee include standing items (Program Coordinator update and projects update by the Sheep & Goat Productivity program management team) and guest speakers on topics of interest to the committee. All documentation relating to each SRSP Management Committee update (i.e. Agenda, Briefing Papers & Minutes) were prepared and



distributed to the Committee within the timelines stipulated by the Charter of Operations for the SRSP Management Committee.

In addition to the updates, the Program Coordinator regularly connects with the Management Committee via email and phone.

The Program Coordinator coordinated the nomination process for the 2023 refresh of the SRSP Management Committee following the expiry of the term of membership of the original producer members.

#### **4.4 Projects database**

This is an on-going activity. New projects are added to the database following execution of projects and details of current projects are updated following submission and acceptance of milestone reports. Any scientific papers or extension outputs are notes. Updates to the sheep reproduction PDS projects are made when these are updated in the [PDS news](#).

#### **4.5 Other funding sources**

No other funding sources have yet been identified.

#### **4.6 Review SRSP project applications**

The Program Coordinator reviews Terms of Reference (TOR) related to sheep reproduction prior to their release and undertakes technical reviews of project reports (Milestones and Final Reports) as well as extension materials for contracted projects and participates in project review meetings as requested.

### **5. Conclusion**

This report details the activities of the SRSP Program Coordinator for the first 3 years of the contracted period.

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## 7. Appendix

### 7.1 Sheep Reproduction RD&A alert Mailchimp click analysis – most clicked links

**Table A.1. The top 5 clicked links for the Sheep reproduction RD&A alert issues for 2021/22 (Feb-22 to Oct-22)**

Issue	Top 5 clicked links	Top clicked paper details
<b>2021/22</b>		
Feb-22	<ol style="list-style-type: none"> <li>2. doi.org/10.3390/ani12030319 (12.1%)</li> <li>3. doi.org/10.3390/ani2040513 (12.1%)</li> <li>4. MLA Producer demonstration sites (6.6%)</li> <li>5. PIRSA Livestock Forum Mt Gambier (6.6%)</li> <li>6. PGS webinar Importance of trace minerals for ewes at lambing</li> </ol>	<p>Paper 1 - Ridler et al. (2022) ewe hogget lamb mortality</p> <p>Paper 2 - Hutchinson et al. (2022) maiden vs adult ewe reproduction</p>
Mar-22	<ol style="list-style-type: none"> <li>2. Sheep Connect NSW - Winning with weaners Forbes (10.5%)</li> <li>3. LLS Reproduction rates in pastoral sheep (9.3%)</li> <li>4. doi.org/10.1186/s12917-022-03211-w (8.1%)</li> <li>5. PGS webinar Importance of trace minerals for ewes at lambing (7.0%)</li> </ol>	Clune et al. (2022) Toxoplasma gondii & maiden ewes
Apr-22	<ol style="list-style-type: none"> <li>1. Shade and shelter project (SRSP website link) (8.6%)</li> <li>2. SRSP website (webinar recordings) (8.1%)</li> <li>3. LLS event (Managing the growth of ewe weaners) (7.6%)</li> <li>4. SRSP website (shade &amp; shelter project) (7.0%)</li> <li>5. doi.org/10.1080/00288233.2020.1840399 (7.0%)</li> </ol>	Paper 1 - Haslin et al. (2022) Ewe lamb reproductive performance
May-22	<ol style="list-style-type: none"> <li>1. Event - Bestwool/Bestlamb conference (15.3%)</li> <li>2. Kenyon webinar benefits of mid-pregnancy shearing (10.7%)</li> <li>3. Event - MerinoLink Conference (7.3%)</li> <li>4. doi.org/10.3389/fendo.2022.880861 (7.3%)</li> <li>5. doi.org/10.3390/biology11020206 (7.3%)</li> </ol>	<p>Paper 1 - Pool et al. (2022) Estrogenic pastures</p> <p>Paper 2 - Redfearn et al (2022) Dystocic lambing events</p>
Jun-22	<ol style="list-style-type: none"> <li>1. SheepConnect NSW Winning with Weaners (38.1%)</li> <li>2. MLA MeatUpForum Wagga (28.%)</li> <li>3. 34th AAAS conference (9.5%)</li> <li>4. doi.org/10.1016/j.smallrumres.2022.106705 (9.5%)</li> <li>5. SRSP website (4.8%)</li> </ol>	Paper 1 - Kao et al. (2022) Commerccail sheep performance
Jul-22	<ol style="list-style-type: none"> <li>2. Animal Production Science 34th AAAS conference special issue (15.3%)</li> <li>3. doi.org/10.1016/j.prevetmed.2021.105478 (12.2%)</li> <li>4. Sheep Connect NSW RAMping Up repro (9.2%)</li> <li>5. SRSP website (8.4%)</li> </ol>	Paper 1 - Bruce et al. (2021) Dystocia in NZ
Aug-22	<ol style="list-style-type: none"> <li>2. WALRC YouTube channel (16.5%)</li> <li>3. doi.org/10.1111/eva.13442 (10.2%)</li> <li>4. doi.org/10.1016/j.anireprosci.2022.107064 (7.8%)</li> <li>5. doi.org/10.1093/jas/skac061 (7.3%)</li> <li>5. doi.org/10.1016/j.theriogenology.2022.07.011</li> </ol>	<p>Paper 1 - du Preez et al. (2022) feeding systems &amp; growth, fat and semen quality of Merinos</p> <p>Paper 2 - Douhard et al. (2022) cost of host genetic resistance on body condition</p> <p>Paper 3 - Banchemo et al. (2022) mid gestation nutrition and</p>
Sep-22	<ol style="list-style-type: none"> <li>1. SRSP website (27.6%)</li> <li>2. doi.org/10.1016/j.livsci.2022.105028 (13.8%)</li> <li>3. doi.org/10.3390/biology11020206 (10.3%)</li> <li>4. doi.org/10.1071/AN20143 (10.3%)</li> <li>5. doi.org/10.1016/j.smallrumres.2022.106795 (8.6%)</li> </ol>	<p>Paper 1 - McManus et al. (2022) response to heat stress in small ruminants</p> <p>Paper 2 - Redfearn et al. (2022) pen-side blood parameters to predict dystocic ewes</p> <p>Paper 3 - Paganoni et al. (2022) mating lwt &amp; CS to predict lambing</p>
Oct-22	<ol style="list-style-type: none"> <li>2. doi.org/10.1016/j.animal.2022.100640 (10.4%)</li> <li>3. Sheep Connect NSW Improving reproduction in extensive sheep flocks (5.7%)</li> <li>4. doi.org/10.1071/EA02225 (4.7%)</li> <li>5. BredWell FedWell pilot J4.7%)</li> </ol>	<p>Paper 1 - Farrell et al. (2022) bio-economic modelling of sheep meat production systems</p> <p>Paper 2 - Cloete et al. (2004) Genetic parameters for reproduction traits in South African Merinos</p>

**Table A.2. The top 5 clicked links for the Sheep reproduction RD&A alert issues for 2022/23 (Nov-22 to Sep-23)**

Issue	Top 5 clicked links	Top clicked paper details
<b>2022/23</b>		
Nov-22	<ol style="list-style-type: none"> <li>1. MLA's Global review of adoption practices and outcomes (35.1%)</li> <li>2. doi.org/10.3390/ani2223207 (19.5%)</li> <li>3. doi.org/10.017/AN21480 (13.0%)</li> <li>4. doi.org/10.3390/ani2212908 (10.4%)</li> <li>5. doi.org/10.3389/fgene.2022.910413</li> </ol>	<p>Paper 1 - Kenyon et al. (2022) Breeding ewe lambs: an Australasian perspective</p> <p>Paper 2 - Sohi et al. (2022) sensors &amp; ewe behaviour around lambing time</p> <p>Paper 3 - Bates et al. (2022) mating conditions &amp; ewe management</p>
Dec-22	<ol style="list-style-type: none"> <li>1. dx.doi.org/10.1590/1984-3143-AR2022-0088 (24.3%)</li> <li>2. MLA BredWell FedWell deliverer EOI (21.6%)</li> <li>3. Pregnancy scanning in extensive shepe flocks PDS (18.9%)</li> <li>4. Maximising Dorper Reproductive Efficiency (8.1%)</li> <li>5. doi.org/10.1016/j.applanim2022.105800 (8.1%)</li> </ol>	<p>Paper 1 - Martin (2022) frontiers in sheep reproduction</p> <p>Paper 2 - Freitas-de-Melo et al (2022) sex or maternal care?</p>
Jan-23	<ol style="list-style-type: none"> <li>1. MLA's 2023 Sheep flock &amp; market forecast (18.1%)</li> <li>2. MLA's Oestrogenic clover factsheet (11.5%)</li> <li>3. MLA's Oestrogenic clover identification guide (9.1%)</li> <li>4. doi.org/10.1016/j.anireprosci.2022.107154 (8.7%)</li> <li>5. doi.org.10.1071/RD22219 (7.7%)</li> </ol>	<p>Paper 1 - Landaeta-Hernandez et al. (2023) Biostimulation and pheromones in livestock - A review</p> <p>Paper 2 - Hungerford et al. (2023) Sperm cryopreservation: current status and future developments</p>
Feb-23	<ol style="list-style-type: none"> <li>1. doi.org/10.1016/j.applanim.2023.105847 (17.6%)</li> <li>2. towards90.com.au (15.7%)</li> <li>3. doi.org/10.3390/ani13030388 (13.0%)</li> <li>4. MLA's PDS search tool (6.5%)</li> <li>5. Ag Victoria's BWBL event listing (5.6%)</li> </ol>	<p>Paper 1 - Lewis et al. (2023) Potential use of biologgers to automate detection of lame ewes and lambs</p> <p>Paper 2 - Bates et al. (2023) A cross-sectional study of commercial ewe management practices for different breeds of sheep across Southern Australia</p>
Mar-23	<ol style="list-style-type: none"> <li>1. MLA's 2023 PDS TOR (18.5%)</li> <li>2. doi.org/10.1111.rda.14302 (13.4%)</li> <li>3. doi.org/10.1016.j.livsci.2023.105204 (13.4%)</li> <li>4. doi.org/10.1016/j.animal.2023.100715 (11.8%)</li> <li>5. LLS Riverina Production in the Rangelands Forum (5.9%)</li> </ol>	<p>Paper 1 - Sharat et al. (2023) Melatonin improves post-thaw sperm quality after mild testicular heat stress in rams</p> <p>Paper 2 - Moloney et al. (2023) Bigger lambs or more lambs: the conundrum for New Zealand lamb producers</p> <p>Paper 3 - Wanjala et al. (2023) On-station comparative analysis of</p>
Apr-23	<ol style="list-style-type: none"> <li>1. MLA Sheep and Goat Productivity Project Manager (17.9%)</li> <li>2. doi.org/10.1093/jas/skad071 (12.4%)</li> <li>3. doi.org/10.3390/ani13071258 (11.0%)</li> <li>4. doi.org/10.1093/jas/skac418 (10.3%)</li> <li>5. doi.org/10.1016/j.jtherbio.2023.103503 (9.0%)</li> </ol>	<p>Paper 1 - Ramos et al. (2023) Genetic and phenotypic relationships between ewe reproductive performance and wool and growth traits in Uruguayan Ultrafine Merino sheep</p> <p>Paper 2 - Thompson et al. (2023) Reproductive performance of triplet-bearing ewes on commercial farms and research priorities identified by</p>
May-23	<ol style="list-style-type: none"> <li>1. doi.org/10.1071/AN22225 (17.6%)</li> <li>2. doi.org/10.1071/AN22339 (14.5%)</li> <li>3. dx.doi.org/10.1590/1984-3143-AR-2022-011 (9.1%)</li> <li>4. doi.org/10.1016/j.compag.2023.107787 (8.5%)</li> <li>5. Agriculture Vic Improving lamb survival workshop (6.1%)</li> </ol>	<p>Paper 1 - Masters et al. (2023) Shade and shelter for grazing sheep: implications for animal welfare and production and for landscape health</p> <p>Paper 2 - Hobbs &amp; Mounter (2023) New South Wales sheep producers' perceptions regarding lamb mortality and the adoption of pregnancy scanning</p>
Jun-23	<ol style="list-style-type: none"> <li>1. doi.org/10.3390/ani13122005 (37.2%)</li> <li>2. MLA's Productivity &amp; Profitability Series (7.9%)</li> <li>3. doi.org/10.1016/j.animal.2023.100845 (7.4%)</li> <li>4. Sheep Sustainability Framework 2023 Annual Report (6.2%)</li> <li>5. doi.org/10.3390/ani13121936 (5.4%)</li> </ol>	<p>Paper 1 - Araujo et al. (2023) Ensiling sorghum with urea, aerobic exposure and effects on intake, digestibility, ingestive behaviour and blood parameters of feedlot lambs</p> <p>Paper 2 - Mace et al. (2023) PhenoBR: a model to phenotype body condition dynamics in meat sheep</p>
Jul-23	<ol style="list-style-type: none"> <li>1. doi.org/10.3390/ani131320257 (11.6%)</li> <li>2. doi.org/10.1093/af/vfad012 (11.1%)</li> <li>3. Shedding sheep reproduction project participant survey (8.5%)</li> <li>4. doi.org/10.3390/ani13132173 (8.5%)</li> <li>5. doi.org/10.1093/af/vfad031 (7.9%)</li> </ol>	<p>Paper 1 - Haslin et al. (2023) Managemetn of body condition score between pregnancy scanning and lamb marking impacts the survival of triplet-bearing ewes and their lambs</p> <p>Paper 2 - Baumrucker et al. (2023) The importance of colostrum in maternal care and its formation in mammalian species</p>
Aug-23	<ol style="list-style-type: none"> <li>1. SRSP Let's talk rams webinar registration (40.0%)</li> <li>2. MLA events hub Let's talk rams webinar registration (33.3%)</li> <li>3. doi.org/10.1071/AN22417 (6.7%)</li> <li>4. doi.org/10.1016/j.anireprosci.2023.107278 (6.7%)</li> <li>5. doi.org/10.1016/j.theriogenology.2023.06.019 (6.7%)</li> </ol>	<p>Paper 1 - Embryo development and survival in peripubertal ewe lambs</p> <p>Paper 2 - Menezes et al. (2023) Effect of reduced water intake on ovarian reserve, leptin immunoeexpression and impact of leptin on the in vitro culture of sheep secondary follicles</p> <p>Paper 3 - Timing and duration of nutrient restriction and its impacts on</p>
Sep-23	<ol style="list-style-type: none"> <li>1. SRSP triplets webinar registration (30.4%)</li> <li>2. SRSP website - webinar recordings (12.7%)</li> <li>3. doi.org/10.10.3390/ani13182900 (7.8%)</li> <li>4. Ag Vic Stock management in containment event (5.9%)</li> <li>5. Ag Vic Managing seasonal variability - animal nutrition and</li> </ol>	<p>Paper 1 - Richardson et al. (2023) use of a visual scoring system to assess external udder conformation and its relationship to colostrum quality and lamb growth rates</p>