



CENTRE FOR
INVASIVE SPECIES SOLUTIONS

BEHAVIOURALLY EFFECTIVE COMMUNICATION AND EDUCATION IN MANAGEMENT OF WILD DOGS

FINAL REPORT FOR PROJECT P01-E-001 PART 2

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DEVELOPING AND MAINTAINING EFFECTIVE LEARNING NETWORKS IN INVASIVE SPECIES MANAGEMENT

**SUB-COMPONENT OF 'BEHAVIOURALLY EFFECTIVE COMMUNICATION
AND ENGAGEMENT IN THE MANAGEMENT OF WILD DOGS'**

FINAL PROJECT REPORT FOR P01-E-001, PART 2

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CONTENTS

EXECUTIVE SUMMARY	3
Key takeaways	5
Things to continue/things to try	5
INTRODUCTION	8
The value of learning in a learning network	8
Significance of research	8
Project aims	9
Research questions	9
METHODS	10
Research participants	10
Data collection	10
Data analysis	10
RESULTS	11
Section 1: Research Question 1	12
Establishing the wild dog management learning network	12
Features of Zoom sessions	14
Benefits of Zoom sessions.....	16
Enablers of success.....	23
Things to continue/things to try.....	25
Review & reflect.....	37
Section 2: Research Question 2	39
In-person versus online meetings.....	39
Section 3: Research Question 3	49
Zoom for data collection – participant responses	49
Zoom for data collection – researcher response	50
Zoom recordings & Echo360 for data analysis – researcher response.....	51
Review & reflect.....	51
Section 4: Summary & Recommendations/Suggestions	53
Research with wild dog network (Section 1).....	53
Research with other key informants (Section 2).....	55
Zoom & Echo360 for data collection & analysis (Section 3).....	56
Concluding remarks	56
ACKNOWLEDGEMENTS	58
REFERENCES.....	59
APPENDIX 1. INTERVIEW GUIDE	61

EXECUTIVE SUMMARY

Invasive species, such as wild dogs, pigs, goats, cats, deer and rabbits, cause extensive damage to natural ecosystems and agricultural production systems. They are a key threat to biodiversity, and a major cause of extinction of native flora and fauna. Invasive species continue to result in high environmental, economic, social and human costs and their management may be highly conflicted and traumatic.

It is vital that continuous learning and collaborative and adaptive processes are prioritised in all aspects of invasive species management, including research and practice. One way of learning and supporting collaborative effort is through a learning network. A learning network or 'community of practice' is a 'group of people who share a concern, a set of problems or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis' (Wenger, McDermott and Snyder, 2002). Project teams, work units and multi-stakeholder groups can all form and behave as learning networks.

This research is important and timely. Historically, participants of teams, work units and learning networks have met face-to-face. Online interaction, team meetings and learning networks are, however, increasingly common because of globalisation, improved technology, and geographic dispersion of people. More recently, the Covid-19 pandemic has restricted movements and gatherings of people, with many people now interacting with others online.

This purpose of this research is to identify features, benefits and enablers of, and barriers and improvements to teams, work units and learning networks, with a focus on the wild dog learning network. The research outcomes are intended to yield practical benefits for existing and potential teams, work units and learning networks in invasive species management, through providing recommendations regarding key requirements for their successful establishment and maintenance.

Data was collected through individual hour-long Zoom interviews with thirteen participants of the wild dog network. This is a group of wild dog management facilitators, the National Wild Dog Management Coordinator and associated personnel from different jurisdictions around Australia. Members of the network previously developed strong working relationships through in-person meetings, conferences and associated social gatherings. They now attend monthly Zoom (video-conferencing) sessions. Data was augmented through individual Zoom interviews with seven key informants who work in different aspects of invasive species management.

These interviews provided additional information regarding online versus in-person meetings, improvements to collaboration, multi-species approaches, and the features of effective work units and communities of practice. With consent, all interviews were video recorded and transcribed for data analysis. Lastly, Zoom and Echo360 transcription software, which are relatively new tools in qualitative research, were assessed in relation to their effectiveness for qualitative data collection and analysis.

Key findings and recommendations:

- When participants have previously developed strong relationships in-person, regular Zoom sessions provide valuable psychological/emotional support and social interaction and contribute to continuous learning. Regular sessions should continue.
- Zoom sessions are cheaper and more time effective than in-person events and gatherings. However, while they are a valuable adjunct, they are not a replacement for in-person interaction.
- In-person events and gatherings enhance the capacity for people to develop and maintain relationships, build networks, improve collaboration and create opportunities for further initiatives as well as providing deep and rich learning and

psychological/emotional support. Such events and gatherings should be reinstated when possible.

- The human dimensions of invasive species management should continue to be prioritised. This may include further research into the features of effective and collaborative teams, work units and learning networks and practical application of findings. Additionally initiatives such as coaching and mentoring should be considered to ensure ongoing collaboration and effectiveness
- Focus on integrated management of invasive species needs to continue.
- Conducting interviews by Zoom and recording videos for data analysis is an appropriate and cheaper alternative than in-person interviews if participants are located at great distances from the researcher and each other, and/or if there is not a further need to be on-site to collect additional research data.

KEY TAKEAWAYS

Following is a summary of the key takeaways identified throughout the document.

ESTABLISHING THE WILD DOG MANAGEMENT LEARNING NETWORK

The wild dog network is built on strong relationships and friendships that developed through in-person interactions during conferences, meetings and associated social activities over approximately the past eight years.

FEATURES OF ZOOM SESSIONS

The existing features of the Zoom sessions are well-supported and highly valued by participants. Continuing these sessions will contribute to ongoing maintenance and effectiveness of the network.

BENEFITS OF ZOOM SESSIONS

Regular Zoom sessions enable rich social learning, including sharing perspectives and suggestions, providing help and feedback, discussing initiatives, preventing duplication and transferring innovation.

LEARNING FROM RESEARCHERS

Research presentations and reports are highly valued by participants and allow transfer of information to community members.

SOCIAL INTERACTION & BANTER

Participants enjoy and value the social interaction, camaraderie and banter that occurs in Zoom sessions.

PSYCHOLOGICAL/EMOTIONAL SUPPORT

Wild dog coordinators are geographically and organisational isolated, working in an emotional, conflicted and often traumatic role.

THE PSYCHOLOGICAL/EMOTIONAL SUPPORT OF THE GROUP

While learning from each other and from researchers is important to participants, the varied social aspects and psychological/emotional support of the group are equally as important to coordinators.

PSYCHOLOGICAL SAFETY & TRUST

Participants' strong existing relationships that have developed through past in-person formal and informal interactions were identified as paramount to the success of the online interactions. These strong relationships have contributed to a high level of psychological safety and trust in the group and these are augmented by and demonstrated by their capacity for banter, chat and fun during informal interaction.

THINGS TO CONTINUE/THINGS TO TRY

The regular Zoom sessions with the wild dog network are highly valuable and it is recommended they continue. More widespread use of video-conferencing presents an opportunity for researchers, facilitators, producers and others involved in invasive species management. It is important to acknowledge the downsides of overuse of Zoom, and to consider Zoom as an additional and beneficial tool, that augments rather than replaces in-person meetings.

FACILITATION

Online groups need effective facilitation and ground-rules and these may be specific to online sessions.

ANNUAL SCHEDULE & INTENTION FOR EACH MEETING

It is suggested that the group considers having a planned schedule for the year, while maintaining flexibility for issues that arise; that the intention for the meeting is sent out prior to each meeting; that there is agreement as to what should happen if NWDMC cannot attend; and, that a reflective learning framework is implemented.

PRESENTATIONS & DISCUSSIONS ABOUT MULTIPLE SPECIES

Including a broader range of researchers in Zoom sessions may be beneficial. Continue discussions on how an integrated multi-species management approach may be implemented, including how wild dog coordinators may work within this expanded framework.

PRESENTATIONS FROM INDIVIDUAL COORDINATORS

Sessions where the focus is on one coordinator or one jurisdiction and their activities, initiatives or innovations could be scheduled.

CONTINUE WITH INFORMAL DISCUSSION & BANTER

Informal discussions and banter are of high value to participants and contribute to psychological/emotional wellbeing, social interaction, job motivation and job satisfaction, while also enhancing learning, and should therefore continue.

MAXIMISING BENEFIT OF RESEARCH PRESENTATIONS

Consider having two groups, a broader group for when researchers present and the existing smaller group for less formal discussion.

OTHER SOCIAL MEDIA APPLICATIONS/REPOSITORY OF RESEARCH

Reconsider what applications will be supported and include an accessible and searchable repository of research papers and recordings.

TRAINING IN CONFLICT MANAGEMENT & OTHER HUMAN DIMENSIONS

Implement training in conflict management and other human dimensions, consider re-running Muresk-type event (an event held for invasive species practitioners several years ago).

CONTINUE FUNDING DOG BAITS

Continue paying for baits for producers and delivery by coordinators to enhance relationships and information transfer with and between producers.

REINSTITUTE IN-PERSON MEETINGS & ASSOCIATED INFORMAL ACTIVITIES

There is strong support for reinstating in-person meetings, conferences and associated social activities, when Covid permits. These are identified as crucial to building and maintaining ongoing social relationships, building collaborative networks, supporting psychological/emotional wellbeing and enabling deep, broad and rich learning.

IN-PERSON VERSUS ONLINE MEETINGS

In-person meetings and conferences are viewed as superior to online meetings through their enhanced capacity for people to develop and maintain relationships, build networks, improve collaboration and create opportunities for further initiatives. However, Zoom is far cheaper and time effective than travelling to meetings in-person. Zoom is viewed as superior to phone and may assist in maintaining relationships and collaborations that have previously been established in-person.

IMPROVING COLLABORATION

Collaboration is challenging when publishing and funding are inherently competitive. However, lack of collaborative effort negatively impacts outcomes. It is recommended that further research is conducted into how collaboration may be improved, for example through rewarding collaboration, identifying the barriers to collaboration and fostering connections through in-person meetings and conferences.

INTEGRATED APPROACH TO MANAGING MULTIPLE SPECIES

It is recommended that a continued focus on ongoing improvements to an integrated approach to coordination and management amongst researchers and practitioners who work in different species is maintained; that consistent monitoring of numbers and impacts is instigated; and that, different options for investment and longer-term vision are considered.

CO-LOCATED WORK UNITS

It is recommended that the aspects identified here are considered in other work units and teams when aiming to create a supportive work environment that fosters collaboration, motivation, performance, and ultimately achieves improved invasive species outcomes. This could be supported and implemented through a combined research/coaching approach.

LEARNING NETWORKS (COMMUNITIES OF PRACTICE) THAT MEET FACE-TO-FACE

It is suggested that the aspects discussed above are considered when establishing and maintaining other communities of practice. These can be summarised through quotes from P18:

So...you stay together, that safe, trusting environment and that code of conduct, and making it fun and engaging and then I guess bringing in that expertise as well. And it just makes that learning experience a whole lot better. And then it becomes that sense of community, in that family.
The recipe is working...one comment was 'the overall learning experience was enjoyable' so that's a big tick, they'll come back. And I actually had one person say to me, 'I see it as a holiday or break, and I enjoy myself when I come, you know we pay for their meals, we pay for their accommodation, and we give them a really nice experience.'
They get to learn and collaborate with one another, take away some new information, and the job's done.

ZOOM FOR DATA COLLECTION – PARTICIPANT RESPONSES

Participants reported the interview being conducted by Zoom was better than had it been conducted by phone. It was close to or just as good as being conducted in-person, and superior when considering time and cost-savings.

ZOOM FOR DATA COLLECTION – RESEARCHER RESPONSE

The researcher reports the interview being conducted by Zoom was better than had it been conducted by phone. It was close to or just as good as being conducted in-person, and superior when considering time, cost and emissions savings.

ZOOM RECORDINGS & ECHO360 FOR DATA ANALYSIS – RESEARCHER RESPONSE

The researcher reports that the use of Zoom video recordings for data analysis was superior to using audio-recordings, and improvements could be made to the transcription software.

INTRODUCTION

THE VALUE OF LEARNING IN A LEARNING NETWORK

Invasive species are a growing and costly problem. Their management requires innovative solutions, and the involvement of a wide range of stakeholders and diverse perspectives. Learning, creativity and innovative change often occur in collaboration with others where it may be referred to as social learning (for example, Pahl-Wostl, 2007). Social learning is important in natural resource management (NRM) because complex and unpredictable interactions within social–ecological systems make it difficult, and even impossible, for any individual or organisation to have full knowledge of the system (for example, Cundill et al, 2015).

One way of learning is through a learning network. A learning network, alternatively known as a 'community of practice' refers to a group of 'people who share a concern, a set of problems or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis' (Wenger, McDermott and Snyder, 2002 p.4). Project teams, work units and multi-stakeholder groups can all form and behave as learning networks.

The aim of a learning network is to increase knowledge and capacity of participants, thereby helping them to improve what they do, including adapting and transforming in response to challenges. Belonging to a learning network allows people to correspond easily and informally with people working in similar disciplines. It may help them share information and ideas, work together on common initiatives, ask for assistance, prevent duplication of activities, and learn about and potentially avoid errors.

In addition to the benefits of learning, belonging to a learning network often provides social and psychological benefits through the development of interpersonal relationships, and may help people feel less geographically and socially isolated. Connection with peers and colleagues is particularly important in NRM. This is because people are often geographically dispersed across rural, regional and remote areas, and work in a context in which there are often contentious social-ecological values-conflicts within communities.

Using a qualitative approach, this research seeks to identify features, benefits and enablers of, and barriers and improvements to the wild dog learning network and other teams, work units and communities of practice. Following a case study conducted in the wild dog learning network, data was augmented through interviews with key informants who work in different aspects of invasive species management, including different species, jurisdictions and organisations.

SIGNIFICANCE OF RESEARCH

This research is important and timely. Historically, participants of teams, work units and learning networks have usually met face-to-face. Past research into collaborative social entities, including learning networks has therefore tended to focus on people who can and do meet in person (for example, Wenger, E., McDermott, R., & Snyder, (2002). Online (or 'virtual') interaction and learning networks are, however, increasingly common because of globalisation, improved technology, and geographic dispersion of people. More recently, Covid-19 has restricted movements and gatherings of people across Australia and the world, with many people now working virtually from home, and interacting with others online.

Teams, work units and learning networks, whether they are face-to-face or online, are likely to share some common characteristics. For example, effective learning requires the open expression of diverse opinions and the freedom to ask questions. To express themselves openly, individuals must feel comfortable within the group, not fearing judgment, ridicule, blame or shame. For any group to function effectively requires a climate of psychological safety and

trust (for example, Edmondson, 1999). Other specific features, enablers, barriers and benefits may be context specific (see, for example, Ardichvili, 2008; Bourhis and Dubé, 2010).

The outcomes of this research are intended to yield practical benefits for existing and potential teams, work units and learning networks, including the wild dog learning network, through providing recommendations regarding key requirements for their successful establishment and maintenance. These benefits are expected to have flow-on effects. For example, improving the successful establishment and maintenance of learning networks in invasive species management is expected to improve the management of these species. This will lead to ongoing benefits for biodiversity and for farming and other communities and organisations ultimately improving the efficiency of the use of government and non-government funding. Findings may be extended more broadly across NRM and into other sectors. The research will produce scholarship of interest to a number of disciplines including: social-ecology, environmental management, network learning, technology and qualitative research methodology.

PROJECT AIMS

1. Identify how a learning network may be successfully established and maintained in invasive species management
2. Gain information regarding the use of Zoom and Echo360 for qualitative data collection and transcription.

RESEARCH QUESTIONS

1. What are the features, enablers and benefits of, and barriers and improvements to the wild dog learning network?
2. What additional information can be gained from participants involved in invasive species research and facilitation about teams, co-located work units and other learning networks?
3. What are the experiences and perceptions of researchers and participants of the use of Zoom as a qualitative data collection and analysis tool, and Echo360 as a transcription tool?

METHODS

RESEARCH PARTICIPANTS

Research participants were purposively selected from publically available information on organisational websites and the researcher's professional networks. The researcher had no organisational or personal links with participants. A singular case study was conducted with the wild dog learning network which is comprised of a total of 13 participants, including wild dog management co-ordinators, the wild dog management facilitator and associated personnel from different jurisdictions of Australia. This data was augmented through interviews with seven additional key informants, who are all involved in various aspects of invasive species management including facilitation and research. Participants were drawn from state government agencies, industry bodies, research institutes and non-government organisations and involved in a range of species, including wild dogs, cats, deer, pigs and rabbits.

DATA COLLECTION

Data collection strategies reflected an evolution in data collection technologies (see Tessier, 2012). Individual semi-structured interviews, based on an interview guide, were conducted via Zoom, a cloud-based video conferencing service with videos turned on and participant consent for video-recording. 'Pre-Covid', interviews would have been held in-person, with the researcher travelling to participant's place of work to conduct the interviews. However, the restrictions on travel and in-person interaction resulting from the Covid-19 pandemic necessitated a 'virtual' approach to data collection. Interviews ran for approximately one hour. The researcher took notes as the participant spoke. All interviews were conducted in accordance with the ethical standards of the Human Research Ethics Committee of the University of New England (Approval No. HE20-201). A copy of the interview guide can be found in Appendix 1.

DATA ANALYSIS

Data was analysed using techniques applicable to qualitative research, using an iterative approach. Recordings were automatically transcribed using Echo360, video capture and transcription software used in universities. The researcher reviewed each video and transcript. Because of the relatively low quality of automatic transcription and difficulty in copying and pasting to a word document, the researcher transcribed important aspects of interviews as she reviewed recordings. A large monitor was used to display a word document where themes and sub-themes were developed with quotes allocated to appropriate sub-themes. Transcripts were subject to thematic analysis to identify patterns, themes and contradictions. Links and connections were identified to clarify common themes, and propositions relating to teams, work units and learning networks. Themes and sub-themes together with concepts from the literature formed the basis of this research report.

RESULTS

The results of the case study of the wild dog management network, including the features, benefits, enablers, potential improvements are described in Section 1 (Research Question 1). This is followed by additional information gained from other key informants about meetings, improvements to invasive species management, co-located work units and learning networks (communities of practice) in Section 2 (Research Question 2). Comments regarding the use of Zoom and Echo360 for data collection and analysis are in Section 3 (Research Question 3). The Summary and Recommendations based on the research are covered in Section 4. The researcher has bolded key words and phrases for emphasis throughout the report.

SECTION 1: RESEARCH QUESTION 1

What are the features, enablers and benefits of, and barriers and improvements to a learning network in invasive species management, with a focus on the wild dog learning network?

A case study of wild the dog network was conducted to answer the first research question. Nine of the thirteen participants were wild dog management coordinators, and the remaining four were the National Wild Dog Management Coordinator (NWDMC), a representative of a funding body, (Australian Wool Innovation - AWI) and two part-time personnel who work in publicity and communications. Individuals work for different organisations, with different sources of funding (and heavily reliant on AWI) and are based in different jurisdictions. In this report the participant group is referred to as the 'wild dog management network' or 'wild dog group'.

Notes:

1. The term 'in-person' is used to refer to traditional face-to-face interaction. Video-conferencing may sometimes be referred to as face-to-face, and in this research it is important to differentiate 'real' gatherings from 'virtual' or 'online' meetings.
2. Wild dog coordinators are sometimes referred to as facilitators or practitioners and in this report the terms are used interchangeably.
3. Where participants used a word which may identify them, the word has been replaced with a letter such as X, Y or Z.

ESTABLISHING THE WILD DOG MANAGEMENT LEARNING NETWORK

Over the past eight years or so, the wild dog group has met in-person once or twice a year usually around other events such as relevant conferences, such as the Australian Vertebrate Pest Conference, regional field days and National Wild Dog Action Plan meetings. Over this time, the National Wild Dog Management Coordinator (NWDMC) has also connected with individuals by phone and email once every week or two. The group's last in-person gathering was in Toowoomba in 2018.

In-person formal events and associated social gatherings have contributed to members developing strong friendships based on robust working relationships. P07 explained:

The network was basically a group of friends that developed throughout pest and weed management. There was weed conferences, there was pest conferences and that's where we would meet, that was the only face-to-face we would get those conferences, where obviously party together and have fun together and whatever else and build that relationship. (P07)

P04 said that 'it is the social interaction makes the job enjoyable.' (P04). However, funding to pay for the travel, accommodation and meals that allowed coordinators to meet in-person declined from 2019. The cessation of in-person events and gatherings is reported to have had a negative impact on relationships, wellbeing and job satisfaction:

In the beginning we were all quite social in that we had quite a lot of meetings and things where all the wild dog facilitators really got together and there was really good camaraderie and a great group. We interacted and it's amazing how well we click socially but it was also really good from a work perspective. And then that really crashed and burned and we just really became the Lone Ranger riding out on our horses and there was no interaction whatsoever and we really became quite isolated and it really took the edge off the job. (P04)

Participants reported a high level of affective (emotional) commitment to their jobs and attributed most, if not all of this, to belonging to the 'team'. P09 said 'I love my job, and have a great team to be part of'. Affective commitment is most likely when people feel an emotional attachment, and, identify with and enjoy membership of a group or other social entity such as an organisation (Meyer, Allen & Smith, 1993). P05 said 'it's a pretty good bunch. I have really enjoyed the role, and that's the people, so the networks really important. What's a network? It's a bunch of people. There's good people involved and that's the thing.' Affective commitment contributes to high levels of intrinsic motivation. Intrinsic motivation refers to the internal desire to do something because it is personally rewarding through being challenging, interesting, satisfying or exciting and this leads to higher creativity and job performance (Amabile, 1997; Cerasoli, Nicklin & Ford, 2014) and therefore should be nurtured.

Commitment to their jobs and each other over a relatively long term has enabled each individual to build up both trust with each other and tacit knowledge because of the nature of their jobs. Tacit knowledge is knowledge embodied in an individual based on years of practical experience that is not easily transferrable without long-term interactions, socialisation, through spending time together, and mentoring (Nonaka & Konno, 1998). To transfer tacit knowledge people need to trust each other, and trust that people are not going to leave. P05 explained:

What I like about this role is that vast number of people have been in it for a long time and they are fairly committed and they're not using it as a stepping stone for somewhere else. So you get ongoing relationships with people and there's this accumulated knowledge and things as well that doesn't just walk out the door every few months

In March, 2020 the Covid-19 pandemic hit Australia and the capacity for people to travel and gather in-person suddenly stopped. Around that time, the NWDMC recognised that people wanted to 'see each other, talk to each other and catch up with each other' more frequently, and the monthly Zoom sessions were initiated. P01 explained:

We are spread across the country, try to get together face-to-face once a year but that's been limited in the past two years. So we have to look at other options, trying to engage with each other and share our knowledge, information, experiences and provide support and assistance. So that's when we instigated the online Zoom approach and it seems to be working relatively well.

These sessions have been very well supported, and attendance has been described as '90% plus' (P15). The regular Zoom sessions have allowed people to meet regularly without the need to travel, thereby saving time and money. P07 explained:

It's no secret that everyone is busy so I guess zooming and online meetings allows for meetings to happen with minimal disruption to everyone's schedules, there's no travel to and from. It allows me to attend those meetings without three days out of my week.

The strongly supported monthly Zoom sessions have resulted a wide range of benefits, including sharing information and innovative practices, learning from researchers as well as contributing to social interaction and psychological/emotional wellbeing. The features, benefits, enablers, potential improvements to the group sessions and broader recommendations are described in Sections 2-6 (Research Question 1).

Key takeaway

The wild dog network is built on strong relationships and friendships that developed through in-person interactions during conferences, meetings and associated social activities over approximately the past eight years.

FEATURES OF ZOOM SESSIONS

The identified features of the Zoom sessions are highlighted in this section. Some of these are considered in greater depth in Section 5, 'Things to continue/ things to try'.

STRUCTURE & CONTENT

The structure of the sessions varies depending on 'what is going on' (P01). While there is no set agenda from meeting to meeting, sessions often involve a presentation from a researcher. Participants value the research presentations during the sessions and the journal papers that NWDMC sends out:

The national coordinator keeps up to date with research and quite religiously passes it on with some comments 'have a look at this, this might be applicable, or this might answer the question you asked two weeks ago or I found this in a journal, maybe this will be of use to someone.' (P15)

This is preceded or followed by 'around the grounds,' which gives everyone an opportunity to say what they have been doing:

Everyone has a chance for a recap, what they've been doing or have a question or a bit about what they think would benefit all....to go around the room individually gives them an opportunity to say something, gives them permission to speak. (P09)

GROUND RULES

The group did not set up ground rules when they first started meeting over Zoom. This was because the group had already been meeting for a number of years: 'we have engaged with each other for quite some time', the group is 'self-moderating' and 'it's an unwritten rule that it's confidential' (P01). Members 'respect' each other. (P11)

TIME OF DAY

Participants supported the sessions being mid-morning. P08 said 'I think this time works perfectly well, it would suit me any time of day or night I would make time for it'. One participant suggested evenings as an alternative but this was not supported by others, for example P07 said 'mid-morning, smoko time is good...not interested in night because I have enough teleconferences at night and other things' while P05 said 'night time would be terrible' and P10 concurred 'definitely day time, night time – where would I fit that in?'

DURATION

Sessions vary in length, and most people were agreeable to this, for example: 'I think it's an hour, and we tie up what we need to tie up.' P07 commented:

I think it's an hour, I think it's longer than an hour actually, I think it's about two or one and a half or something. I generally think an hour is long enough for any meeting, but if it's a really good learning session then it can be an hour and a half to two...if you have someone on then that might be two hours but you might have a little break in the middle...if you know and you put that time aside the you don't mind, if it's worthwhile, you really want to be part of it' (P09).

However, a small number participants indicated they would prefer a more definite finish time in line with an intention for the meeting.

REGULARITY

Participants enjoy meeting once a month, for example. P11 said 'once a month is good, if someone misses a month that's ok, its way better than catching up once year or two.' P08 elaborated:

Once a month is good, it gives us time to think about what (we) want to discuss, and if we get the materials beforehand on guest speakers it gives us enough time to read that information and come up with questions that we have in relation to those papers, so that we can have a proper discussion.

P14 suggested:

Monthly may be a bit too often, every couple of months may be more acceptable to most. Greg is often struggling to find agenda items and having them just for the sake of having them is not really ideal. Maybe if you reduced the frequency that would help considerably/

However, P13 surmised that meetings could be held fortnightly, with one meeting being for a researcher or other presentation, such as a dogger, and the next one for 'vibing, where people connect, we talk about what we did and about what's going on in our state and what's happening.'

FACILITATION & SCHEDULE CHANGES

The NWDMC 'calls the meetings, convenes the meetings and leads the meetings' (P11) and is 'the glue that (holds) them (the group) all together' (P01). P11 elaborated:

(The NWDMC) 'is really good at including people, 'does anyone have any questions, anyone got anything else?' and asking 'do you want someone to come and talk about that?' (We) go 'oh yeah!' because you don't know what you don't know.

P05 reported liking 'the freedom of throwing in ideas or what research to have.'

Zoom sessions are intended to be held regularly once a month, however the schedule often changes, 'they often get put off for various reasons' (P10) if the NWDMC or others cannot attend. Some participants do not mind the changes, for example 'it doesn't really matter, we're all fairly flexible' (P08) but others would prefer that the session times did not change, 'once a month, if it's a set day, time, once a month (it) helps my brain...we can put it in our calendars' (P09) and 'more forward planning would help, and set up a 12 month program in advance and then you can lock the speakers in, and that may take the pressure off a bit' (P10). Some expressed a strong dislike for schedule changes:

You have changed it three times, well I am not going to bother. I put it in my calendar, I'm available then you change it, then you change it again. I understand people are not available, but it's got to be something people think it needs to be a priority. (P02)

When asked why meetings did not go ahead if the NWDMC could not attend responses included 'if the NWDMC can't be there he just cancels it, yeah I don't think it actually occurs to him that it could run without him...it's really interesting' (P10). 'If he can't be there then we could all take turns leading the meeting' (P09). (If the NWDMC) 'was unavailable it could default to (the AWI representative) or it could be somebody else' (P14). P11 pointed out 'I think the value of having the NWDMC there is his knowledge base, they ask him questions and he can also fill them in on some background, particularly history of things. Without him being there might be a list of questions for him. It's not to say it couldn't happen.' Another participant said 'It would feel a bit wrong without having Greg on the call, he's the national coordinator...but I have never really thought of it'

GROUP MEMBERS

The people who are invited to the regular Zoom session by the NWDMC are the wild dog management coordinators, a representative of AWI, the National Wild Dog Action Plan Implementation Manager and the Communications Manager. 'You have to have the right people there' (P02). Participation is voluntary. P01 explained:

You have to make sure that whatever you do is targeted toward a group of stakeholders that you want to be part of it. It's got to be useful for them. We are all flat out so for us to give up three hours of our day once a month there's got to be a fairly good rationale....All too often with government agencies they force something that's not usable or not seen as being particularly useful...rather than asking them 'what sort of medium would suit your best or how do you want to do it or what do you want out of it?'

At times, expanding the group has been discussed, but most people prefer the group to stay as it is, because of its size and because of their level of comfort with each other. P03 said 'if we had every wild dog coordinator then the group would be too big...it's got me thinking that the on-ground staff need to be involved in some sort of group. We have an interagency group.'

Key takeaway

The existing features of the Zoom sessions are well-supported and highly valued by participants. Continuing these sessions will contribute to ongoing maintenance and effectiveness of the network.

BENEFITS OF ZOOM SESSIONS

When asked about the benefits of the monthly zoom sessions there were many positive responses. P11 said '**lots of benefits**'. P10 explained:

To start with, they just tell everybody what they've been up to, what's going on in their patch, it's really hard to get national perspectives on what is going on with wild dog activities so it's probably one of the few opportunities for that snap shot of what's going on...that's one of the reasons why it's really, really valuable.

Other responses included the following:

- 'Benefits are huge especially when you have only got a couple of people per state, it's the professional support and mentoring' (P10)
- 'The zoom meeting has been great for inclusiveness and for bringing everyone to the table' (P05)
- 'Having those meetings once a month is fantastic!' (P08)
- 'Getting (us) together regularly because it might be 18 months or 2 years before (we) get together face-to-face' (P11)
- 'Connecting with the wild dog coordinators is very important...whether it is face-to-face or on Zoom, doing it regularly is good' P13

Specific benefits have been grouped under key themes in the following three sections.

INFORMATION SHARING & LEARNING

Learning primarily involves knowledge and information sharing with each other, and from presentations and reports from researchers.

SHARING INFORMATION AND LEARNING WITH EACH OTHER

Participants acknowledged that there are differences in the ways in which they operate, including State or Territory legislation and landscapes, and that information sharing was highly valuable. P03 explained:

It's certainly beneficial to be listening and learning and how they run programmes... Its interesting hearing and learning what others do and whether or not that can be brought into our state. So things about the aerial baiting, for example, especially when you are looking at different landscapes and regions.

The following benefits related to sharing information and learning arose from Zoom sessions:

- **'Cross pollination of ideas'**...each state is different...I find its good that they can get together and swap ideas' (P11), for example, 'changes to 1080 legislation.' (P08)
- **Trying new things:** 'So I think it helps them in terms of understanding of the issues across Australia, as well as things that maybe works in some area they could try in their area... someone has always done something that you can pick up on.' (P04)
- **Asking questions, asking for help and helping each other:** 'Has anyone got any ideas of how we could do that?' (P11)
- **'Sharing similar experiences and difficulties'**...we all live in very different locations and work with different stakeholders and face a whole range of different obstacles.' (P01)
- **Reciprocity:** 'I have been helping them with X and they have been helping me with Y.' (P04)
- **Preventing duplication:** 'It's about opening up those channels so that (we) can leverage off each other's work and not just duplicate, that's not efficient at all. I see duplication all over the place (in different States) and all these little voices everywhere which if (we) actually held hands could be one big voice...And that takes some doing because as you can see from our reaction to Covid, we're still a collection of little states that hardly seem to function as a Federal entity in a lot of ways.'
- **Innovation transfer:** 'We are now seeing meat drying racks being used as pig traps, it came out of a New England design and it's found its way to Victoria, and that's because of a personal connection' (P15)
- **Improving return on capital:** meat drying racks are now being used 362 days a year for pig traps and 3 days as meat drying racks. (P04)
- **Innovation:** 'We are doing stuff that others haven't done so I am able to share that information with them. Then they ask me questions, ok, but how does that work on the ground?' P03
- **New perspectives:** 'Having that completely fresh set of eyes looking at what you're doing, you know just from a completely different perspective is really, really good, because you become quite focused.' (P04)
- **Reflective learning:** 'We've started something, we need advice, we have a chat, we work it out, we go away, we do our thing, then we come back and say this is what we've come up with, what do you think?' (P09)

- **Interactive decision-making:** 'One of the things about my job that is really difficult is that you are just on your own. You really need that bouncing board to sound out what you are doing and, so much information swapping and very attentive to others activities, what's working, and what's not, just different challenges.' (P10)
- **Enhanced communication, saving time and money:** 'Enables communication and meetings and decisions to be made in times where you just wouldn't be able to. And the cost and the logistics in getting (people) together. For (some people it can be) a three-day exercise to go to a short meeting.' (P10)

Key takeaway

Regular Zoom sessions enable rich social learning, including sharing perspectives and suggestions, providing help and feedback, discussing initiatives, preventing duplication and transferring innovation.

LEARNING FROM RESEARCHERS

Many sessions include a presentation from a relevant **researcher**. Coordinators are aware of the large amount of research that has been conducted, and they 'don't have time to hunt this stuff down' themselves (P04). P07 said 'the value add for me is having a topic, that's not just getting together for the sake of getting together'.

Participants explained the importance of these presentations for their own learning as well as viewing themselves as the **conduits of information** that they can pass onto producers and other community stakeholders. P04 said 'we actually have stuff to bring out because **research without practice doesn't take you anywhere**.' P02 added '**research without adoption is nothing** – unless it's seen or mentioned it doesn't count'. P08 said: 'I really like the guest speakers especially the researchers who have knowledge, so that they can share the information, that scientific data that we can then talk about or share with whether or not its landholders or other people'. After the presentation and group discussion, coordinators then feel comfortable in contacting the researcher for further information if they wish.

Research papers are often emailed to participants prior to the session so that members have time to read the information and ask questions that are relevant to their own communities. People value the combination of hearing from the researcher as well as reading the research 'having that researcher on board makes it much easier to digest' (P01). They appreciate having copies of the papers and presentations: 'it's absolutely helpful, that I can go back and learn more information about it...the Zoom really sparked my interest, I can save that paper on my machine and go back to it' (P07). Research papers are 'really handy' to refer to at public meetings (P04).

It is, however, important to maintain a **balance between technical information and the provision of emotional support** (covered in more detail in Sections 3.2 and 3.3):

When I am working with groups, research articles are great. However, most of the time a lot of what we are dealing with is emotional, and you can throw research at the wall and a lot of the time it's not sticking, because such and such is angry with such and such. It's about building the relationships and the connection and the stability within those groups, so I don't need a lot of research projects. (P13)

Key takeaway

Research presentations and reports are highly valued by participants and allow transfer of information to community members.

SOCIAL INTERACTION & BANTER

The regular Zoom sessions have augmented previous in-person interaction enabling people to maintain and strengthen relationships and be comfortable with each other: 'just for connections, relationships it's been really good, having that platform is good for getting to know someone, **much better than a random phone call.**' (P05) 'The Zoom platform has generated much more contact between coordinators. (It has) built a sense of **camaraderie** and that we are **part of a team** even though we are working in different parts of the country. (P01) Building connections through regular Zoom sessions means that coordinators are now willing to contact other individuals between sessions. P01 said 'they are now all comfortable to ring someone from outside their state and have a chat' and this was confirmed by P14 'I have no hesitation in ringing X and sourcing documentation.'

Participants recognised that social interaction and camaraderie are just as, and sometimes more important than learning: 'we even had one at Christmas, and there was no topic, it was just how you going? We all had a little party hat on and that was it, that was just as important as to look at a research study' (P09). Learning was described as closely intertwined with social interaction. P04 said 'the camaraderie is very important and you know the information sharing through that camaraderie...it's not just having **friends** but its **information sharing** in our roles.'

Most participants mentioned the **banter** that occurs within sessions. P11 said 'I mean they all give each other stick and have a bit of a joke which is great'. P07 said 'we all take the mickey out of each other and have that informal fun as well' and P15 commented 'galah session can happen occasionally, I think it's a reflection of a fairly mature group, that's comfortable, they joke amongst themselves, they can be very honest about issues and things they are talking about and feel comfortable in that group.'

Banter, laughter and fun have been identified in other research as being an important part of working life, contributing to a sense of involvement, raising morale and increasing creativity. A workplace in which fun and work are integrated is a healthy workplace (for example, Yerkes, 2007).

Banter, informal chat and having fun can be viewed in several ways:

- As a **benefit** of the group: 'sometimes it's a bit superfluous but they get a kick out of it, an opportunity to joke about, have a bit of a laugh, put a bit of shit on each other'. (P01)
- An **enabler, or catalyst of deeper connection** with others: 'that's all part of it as well, because it's not met to be a formal meeting where you can't say something silly if you want to, which helps them as a group know each other better so I think it's very valuable'. (P11)
- An **enabler or catalyst for ongoing connection** with others through continued operation and enjoyment of the group.
- An **indicator** of the level of psychological safety, trust and maturity of the group.

Key takeaway

Participants enjoy and value the social interaction, camaraderie and banter that occurs in Zoom sessions.

PSYCHOLOGICAL/EMOTIONAL SUPPORT

Wild dog coordinators have challenging and unique jobs, being faced with values **conflicts**, **anger** and other **emotional reactions** and **trauma**. These experiences arise from working with different stakeholders, including producers, who have varied perspectives and emotional responses, and also dealing directly with predated and maimed livestock as a result of wild dog attacks.

Their experiences are different from those of other invasive species management coordinators: I don't hear any stories about PTSD with pigs. (P13) This makes the provision of psychological/emotional support of the wild dog group even more important, as P09 explained:

We are a unique program doing a unique role, we still come across people who don't realise there are wild dogs, and there are others just scream that there is not being enough done. When you get yelled at by landholders does it help to know you have the support of other coordinators? Yes because we all have it, it happens to all of us...we compare notes of who has had the worst meeting. So having a common interest, someone that just gets it, you have that connection. It's helpful for everything from mental health to your confidence.

The psychological/emotional challenges arise from a number of influences, as described in the following section.

THE PSYCHOLOGICAL/ EMOTIONAL CHALLENGES OF A WILD DOG COORDINATOR

Many participants referred to a sense of **isolation** and **loneliness** and this is influenced by a number of factors 'wild dog coordination is one of the loneliest job whichever state you work in....it's a weird little corner.' P15

GEOGRAPHICAL ISOLATION AND LONELINESS

Some coordinators are **geographically isolated** due to working in remote areas:

If you're working in a very remote area, you can be very alone and particularly if you are working by yourself and you don't have anybody to bounce ideas or ask questions (meaning that talking) with contemporaries is very valuable. (P11)

Many of the individuals work from home, and even those who are office-based have been working from home during extended lockdowns in response to the Covid-19 pandemic:

I work from home so its years sitting by myself so it's nice to have that Zoom and catch up with people, there's no staff around here so I don't get to interact with people so even if it was a catch up it would still be fine with me. (P07)

ORGANISATIONAL & COMMUNITY ISOLATION

Coordinators may be **organisationally isolated** because other staff in the relevant agencies do not work in the same fields, do not understand what wild dog management coordinators do, and that their roles may be contentious and challenging:

Even with those who work within government agencies, what they are doing can be seen to be contentious within their own organisation...you can become quite isolated and alienated. We all work as independent entities even though we collaborate with other agencies, it can be an isolating role and you can feel quite isolated because you are trying to be everybody's friend and not piss off anybody and facilitate outcomes but at the same time it also makes it difficult to develop relationships because you might need to challenge someone's department policy in public. (P01)

Very often there is no one. Very often you are working between often what are opposed forces of the regulatory body that controls lethal control and the producers that want the problem solved and it could be a fairly tense situation. (P15)

COMMUNITY BLAME & ANGER

Wild dog management continues to be **contentious and conflicted**, with some groups and individuals opposing control in the belief that dingos, in particular, should be preserved. A sense of isolation may be exacerbated by the resulting **values conflicts** within organisations and communities. Moreover, producers may blame others, including state agencies for the presence of wild dogs. P09 said 'we can stand in front of 200 people being yelled at because there are wild dogs and they're your dogs...people avoid us...and people think they are government dogs.'

P13 explained a coordinator may:

Go into a meeting and farmers are so angry because they have a crappy business, or dogs are killing their sheep. What they're saying or complaining about is not necessarily the government, they just need to vomit or let it all out then the coordinators have to provide a space for them to do that then things can become much more constructive.

TRAUMA

An additional sense of isolation and need for support arises from the **trauma** of the job. (Dogs killing livestock is) 'extremely emotional and draining, and people have PTSD. Our role is so isolated'. (P13)

Coordinators see predated and maimed livestock and are required to deal with the associated emotions of sadness, grief and anger expressed by producers. P04 explained:

The wild dog thing is so emotional, you know people are getting their sheep ripped up, or their dogs getting poisoned by 1080 and so you always a lot of the time dealing with people who are upset, and they are yelling at me, yelling at (x organisation) yelling at (y organisation). And I know my job basically is to sort out these issues, so the crankier someone gets the more likely I am to end up with them to resolve the issues.

URGENCY

The urgency of the need to respond to a reported wild dog attack means that co-coordinators are **always on-call** 'responses have to be immediate, it can't be next month or Monday. There are no real days off from it.' (P04)

Key takeaway

Wild dog coordinators are geographically and organisational isolated, working in an emotional, conflicted and often traumatic role.

THE PSYCHOLOGICAL/EMOTIONAL SUPPORT OF THE GROUP

The isolated, conflicted and often traumatic role of the wild dog coordinator is difficult for an individual to deal with on their own. There are a number of ways in which belonging to the group provides the necessary psychological/emotional support that contributes to well-being of individuals and their enjoyment of the job.

SUPPORT & FRIENDSHIP

Most participants spoke of the value of connecting, support and friendship through the regular Zoom sessions:

- 'It's nice to have that Zoom and **catch up with people**, there's no staff around here so I don't get to **interact** with people so even if it was a catch up it would still be fine with me.' (P07)
- 'Social (support) is important for people in a state without a little team'. (P09)
- 'There is a fair bit of **support**, and that's actually stunned me, how quick that was, probably the thing that developed most quickly and most strongly was the level of support to the extent that we have had coordinators who had never heard of each other now going on fishing trips. They're actually quite **close friends** and that's grown on the back of their work role.' (P15)
- 'To **connect up and chat** and look at the latest something or other, I think it keeps us connected. So in our role we are very unique, for a start, most of us are very isolated, and we need to be self-managed, **self-starters** and wing it a lot sometimes. We may not have a huge amount of direction, so we just do what seems right.' (P08)

THE ABILITY TO VENT

The support of the group and the regular Zoom sessions is vital in allowing people to 'vent.' P13 said 'sometimes there is a lot of shit spoken at some of the meetings, sometimes you need to talk a bit of that to bond to get it off your chest.' P01 explained:

*Being able to come on board and have a bit of a **rant and a vent** and get the shit off the liver is important at times just to maintain the sanity....So, having the capacity to **bounce ideas off each other** and have a bit of a vent and realise I am not the only one in this boat... it gives them the push they need at times, or the support they need at times to keep forging on. Without that I think it would become quite soul destroying at times.*

ACKNOWLEDGMENT OF SUCCESSES

The group recognises and celebrates **successes**. Successful outcomes in wild dog management may be years in the making and these do not 'fit' with shorter-term funding programs or reporting requirements. P01 explained:

The group appreciates and understands what it takes to get a win. Management often don't know how much it takes to get a win, so it is appreciated more in the group. Outcome focussed reports may look like I am doing 'stuff-all' because it can take six months to get someone to sign a plan or adopt a practice.

Key takeaway

While learning from each other and from researchers is important to participants, the varied social aspects and psychological/emotional support of the group are equally as important to coordinators.

ENABLERS OF SUCCESS

The features and range of benefits of the network have been identified. The factors that have allowed the group to be successfully established and maintained is considered in this section. These factors are referred to as enablers, and may also be referred to as supports or catalysts.

MEMBERS ALREADY KNEW EACH OTHER

It was easy for NWDMC to establish and gain support for Zoom sessions because members already knew each other and were already comfortable in connecting with each other, having already developed close relationships during past in-person events and associated social gatherings. Participants maintained that their working relationships would not be as effective if they had not previously met in-person. P11 said 'If they hadn't met face-to-face then maybe they wouldn't (open up). But they do give each other curry, and they wouldn't do that if they didn't feel comfortable I believe.'

P14 explained:

You've got to build those relationships personally before they will work electronically...X and I have developed a close relationship, not over the phone or Zoom, it's because we used to go to all the meetings and build up that sort of friendship and common interests.

P02 commented:

People don't build affiliations and relationships online. You get to know people by meeting people face-to-face and interacting with them then this makes this sort of interaction fine...We have a group of people who know each other well so there is no hindrance...we had good relationships before we kicked this off, it is much easier...new people might take a bit longer.

P07 said:

Look at the current group we've got. I think that's because we've spent time together face-to-face, we have that personal relationship as well, we have a general idea of everyone's different personality types. We know who is going to ask the silly questions, and we have a bit of fun at the same time. We are comfortable with each other.

P13 explained:

Fortunately, before Covid, we had the opportunity to bond face-to-face and I love that. Those are my little buddies. We are all doing the same thing, in different locations, it's a very isolating job, and it's fantastic to be able to catch up with other people that are doing the same thing in a different location. Talk about stuff and feel like you have a little tribe. Also I would call them on the phone. (Others) 'Talk regularly on the phone, so it's important to have that one-on-one connection as well.'

Participants reported that had they not had that in-person interaction, connecting online would be more challenging '**If you didn't have that face-to-face with that background it would be far more difficult.** I mean overtime I guess you'd develop some sort of a relationship.' (P04) P15 noted 'it's difficult to put myself in their shoes, but it would be difficult for a complete newcomer to come into the online sessions and settle in quickly.'

Moreover, if a new group was starting, the first meeting should be in-person, and in-person meetings should continue to be part of the mix. P04 said:

If you were starting something new like this learning network, the first meeting would be face-to-face. It you have that mixture of face-to-face and zoom that would be good, a bit of an annual catch up. That's a good combination.

PSYCHOLOGICAL SAFETY & TRUST

The close relationships developed during in-person gatherings have enabled a high level of **psychological safety and trust** to develop. 'Psychological safety' is defined as a shared belief that a group is safe for interpersonal risk-taking (Edmondson, 1999). In a psychologically safe group, people feel comfortable expressing themselves openly without fear of negative consequences to self-image or status, trusting they will not suffer from personal engagement. Psychological safety is necessary for **open dialogue, reflection** and **mutual inquiry** by individuals and teams, underpins **learning behaviours**, and may allow **resolution of difficulties** when they occur. Psychologically safe social relationships and interactions are important because they allow **knowledge creation, conversion of tacit to explicit knowledge**, and **knowledge sharing** through discussion and dialogue. In other research, trust has been identified as one of the main enablers of knowledge sharing, so building and maintaining trust is important in any group that wishes to maximise knowledge sharing (Ardichvili, 2008).

A high level of psychological safety and trust within the network was indicated by participants' reported ability to **talk openly and honestly**, to ask questions and to tease each other, as indicated by the following comments:

- 'That's a big part of it, **talking openly and freely**, and we can do that amongst our current group...you don't have to think tomorrow "oh shit I wonder if I offended him."' (P01)
- 'I think **everyone feels safe**, there is no big brother there' 'as a group I think we gel really, really well so I don't think there is any awkwardness or anything like that.' (P04)
- 'There's **no restrictions**. We are **familiar** with each other, we have met each other face-to-face and **I don't think anyone holds back** in asking any sort of questions.' (P07)
- 'I am comfortable in **asking questions** if I have them, that's what the meetings are there for, to educate. I would rather have my queries answered than still wondering.' (P08)
- 'If someone is having an issue with their wild dog community group, somebody is not doing something or somebody's being a pain in the neck, yeah **they speak up** so they feel comfortable.' (P11)
- 'They do **give each other curry**, and they wouldn't do that if they didn't feel comfortable I believe.' (P11)

COMBINING FORMAL WITH INFORMAL

The group could be described as '**formal**' during presentations and discussion, and '**informal**' and fun at other times. P05 explained (we have) 'a nice mix of bit of banter then get into the more formal, have a presentation, then opportunities for questions.' The word '**banter**' was

used by many participants when describing the informal interactions during Zoom sessions. This was identified as a feature of the group, a benefit of the group and an enabler of the group (Section 3.2). Other scholars have identified playfulness, humour and having fun at work as fostering creativity and motivation, cementing relationships and improving performance (Yerkes, 2007).

The word '**chat**' was also used regularly by participants when describing the value of Zoom sessions. This highlighted previous research in Australian public sector work units that found that the use of the term 'chat' indicated a level of free-flowing spontaneity that occurs when people have relaxed, open relationships which are not perceived to be under surveillance (Boud et al., 2009).

Key takeaway

Participants' strong existing relationships that have developed through past in-person formal and informal interactions were identified as paramount to the success of the online interactions. These strong relationships have contributed to a high level of psychological safety and trust in the group and these are augmented by and demonstrated by their capacity for banter, chat and fun during informal interaction.

THINGS TO CONTINUE/THINGS TO TRY

Participants reported that they valued the network highly. No barriers were identified. P05 said 'I am happy with the way it runs, the research, the check-in. I can't think of any improvement.' However, applying a continuous improvement mindset, some 'things to try' were identified.

ZOOM SESSIONS

The barrier to using video-conferencing which may exist in some sectors, organisations or groups was not reported in this group. More widely, the use of video-conferencing has proliferated during the Covid-19 pandemic because of restrictions on travel and in-person gatherings. P11 commented:

In another group I am in probably 80% of people had never been on a Zoom, and Covid meant they couldn't have face-to-face meetings... I think yeah it's certainly progressed in terms of the barriers to participation in online learning of any sort.

The **adaptation to Zoom sessions was seamless** in early 2020 because members already knew each other, and were familiar with the use of technology. P11 said 'I think the barriers to online discussions or online conversations and training has certainly changed over the last 12 months with Covid, and that's really an important factor.' P10 commented 'it's a really amazing tool, (I use it for other meetings) and **we just talk like we are in the same room** and its fantastic for small groups or little task force things.' P07 concurred 'Zoom as a platform is something that we have all become used to and when it's done right, it's a really good thing.'

Zoom sessions **allowed the group to interact regularly**, this being a valuable supplement to in-person meetings. P13 said 'we are able to connect more regularly with Zoom, which we couldn't do, so that's better.' P11 explained that it was 'much better than catching up once a year or every two years, because they have hardly seen the people then they take a whole lot of time getting back together as a group to feel comfortable again'.

The capacity for people to see each other, their facial expressions and body language via video was recognised as valuable. Zoom sessions were identified as **better than telephone**. P01 explained:

Heaps better than telephone. I am very intuitive, I can see people's responses and better than teleconferences. Zoom adds an extra element of camaraderie

because you can see each other and the difference to face-to-face is that you are having it much more often, so if you miss one it is easier to come to the next one.

P11 explained 'I think in a teleconference people only speak when they're asked a question, it's not really conducive to conversations, whereas on Zoom you can see people's faces, you can see people's expressions.' P10 said '**Being able to see those facial cues** is very important, I probably study that stuff a lot to see how people are reacting to things. As soon as you cannot see everyone on one screen you can no longer read those facial cues.'

P11 commented that the **interactive** nature of a 'zoom (session is) more valuable than say a webinar where you have a presenter, with a PowerPoint, they have a script, that are churning out their presentation, and there may be time for questions afterwards of they say put your questions in the chat, and if people don't want to type and go 'oh no I couldn't be bothered'. If there is not a chatty type of session at the end people drop off, lose interest. I've been on these.'

The need for having **cameras** on was noted:

Some people turn their camera off, they say it's not working or something, but Zoom works better when you can see people like sitting around a table, you can see their facial expressions, their body language, or their head and shoulders. You can see if they are tuned in. If they have their camera off you don't know if they're listening, whether they are taking it in. Obviously if they are on their phone, they may not have their camera on if they're driving, that's find if you understand. Greg will say 'I can see you are there but are you really there?' Sometimes they will have it off if their internet speed is not great, and they will turn it on when they are speaking. (P11)

P15 commented that the **video quality** also impacted on the ability to create a personal connection: 'I think the better the quality, if you can see someone consciously or unconsciously, you're reading their non-verbal language. If the image is good enough I think you will get to know someone than if it stops and starts.' Internet connectivity was identified as a problem for some, meaning that they may not be able to use their video. P15 said 'for some people, the technology link isn't good enough, in the country we suffer from poor services, line speed. Sometimes if video is on, it freezes.'

A major benefit of Zoom sessions is the **time and cost savings** arising from not needing to travel. P01 said

During Covid the even the less technologically advanced amongst us have picked it up pretty quickly and are happy to jump on a meeting rather than spend six hours travelling them turnaround and travel six hours home...When it comes to budgets it can be difficult to travel, feed, accommodate.

P04 agreed 'online is good if there is not much benefit from being face-to-face, we spend a lot of time driving.' Moreover, P15 noted the positive influence of Zoom sessions on planning and efficient use of time: 'if nothing else, the use of online sessions teaches you that you need to plan to get the absolute most out of the hour or two hours that you are going to be together.'

A further benefit of Zoom sessions is that 'They are **recorded** so can be watched again and don't miss out on information whereas if you don't attend a forum you miss out on the information.' (P01)

There were some **downsides** to Zoom, which is not viewed as a total replacement for in-person interactions because of **lack of depth and breadth** of conversation. P13 explained:

With Zoom I don't know if you can go as deep...if you only spending that hour with that person...but when we get together as coordinators we spend night and day together for 3 days. And we have conversations that you wouldn't

necessarily have in a structured meeting as a group, with the facilitator. Everyone's there and your level of conversation is different. You may have 3 coordinators together having a chat for an hour. You might have a few drinks, you can go a bit deeper over that time.

Compared with in-person meetings it may be easier to avoid the meeting: 'its informal so don't always get everybody because you get caught up with other work whereas if it's face-to-face you block it out of your calendar and you go somewhere' (P01). Some acknowledged they may be distracted by other things when on a Zoom session and P11 noted that '**Zoom can be overused** as well' (P11). **Zoom fatigue** is now a recognised phenomenon, however this was not reported as a problem by participants in the wild dog network.

For the Zoom sessions to remain effective into the future, the following factors are viewed as important, noting that most of these are a **continuation of current practice**:

- **Interesting content** 'keep it interesting, keep agendas rolling with interesting information.' P01
- **Draw in interesting researchers and others to foster continuous learning** 'being able to access and get key speakers along and understand what we might or want to know more about X and have that person turn up and basically learn.... Sometimes there is nothing wrong with having a get together and catching up, and that's enough, but to have the value add and have a key topic is really a winner for me.' P07
- **Ask members what information they want:** 'what they need' including 'the research that influences the decisions that are made, how they undertake control, how to improve control, what are the managers issues, source information on a regular basis' (P01), while also acknowledging that members may not know what they don't know.
- **Ensure members feel as if they are heard and understood** 'it's got to be worthwhile for participants, they've got to be able to be heard, and really they have got to get some value out of participation.' (P11)
- **Engaging and engaged members:** 'if you didn't have a group as dynamic as ours you may find it gets pretty stale.' (P01)
- **Supportive:** 'The need for mutual support, mentoring, that sort of thing will always make it sustain I think, because you just can't go down the street and talk to another wild dog coordinator, particularly about the issues that just pertain to those roles.' (P10)
- **Effective facilitation** 'needs someone to drive it, but we are all involved.' (P05)

Asked what they would do if they were **establishing a new online learning network**, P09 responded 'really what we are doing already' and continued:

*The very baseline is **ground rules**, have to look at **why we are doing it**, who, what, when, why. **Who is important**, is there for the right reasons, why would you be doing it for example, research, tools, connection; a good **chairperson**, someone to plan the meetings, send the calendar invite. People don't want to waste their time, so it's important to have a **topic**, or **something to read beforehand**, or a **reason to meet**. You can have a bit of a **chat** at the beginning and at the end, but having a chat for an hour can be very frustrating with someone that's really got other places they have gotta go or do or be. It needs to be worthwhile or they are just not going to come. And that's not helpful. It can help really, really well or it can fade away a little bit. **You need someone to call meetings, gets everyone together, gets a topic, and we love it.** I think when you have a good reason to meet up it definitely helps with the connections and the input people have.*

Zoom sessions enable people to connect where this may not ordinarily happen, and without the need for costly travel. The possibility of widening the use of Zoom sessions, including with landholders was raised. P09 commented 'we've always said landholders won't do that, but they do and they have! They are more comfortable now, they've surprised themselves and we've surprised ourselves.' P07 added 'we try not to expose landholders too much with technology but that's probably a backward step'. Initially you would never ask producers to a Zoom conference, but it's become more normal, but there is a generation change so we need to think about that opportunity (for example, podcasts) and throw them in the deep end, some of them would probably love it.'

Key takeaway

The regular Zoom sessions with the wild dog network are highly valuable and it is recommended they continue. More widespread use of video-conferencing presents an opportunity for researchers, facilitators, producers and others involved in invasive species management. It is important to acknowledge the downsides of overuse of Zoom, and to consider Zoom as an additional and beneficial tool, that augments rather than replaces in-person meetings.

FACILITATION

There are aspects to facilitating Zoom sessions that need to be considered. While not reported as an issue in this group, some groups may suffer if some people continue to dominate sessions and others decide not to attend because of this. P10 explained:

If you have individuals that tend to take over and talk a lot, people just fade away into the background where they feel like they're not making any impact and so 'I should go and spend my time elsewhere because if it is a voluntary thing there isn't a financial compulsion to stick the distance or have to apply yourself to it.

P10 recommended:

More facilitator training (for online facilitation), and make it accessible, well established, well understood protocols for running meetings. Sometimes I feel on some of them it's a bit all over the shop. Just trying to read when you can interject, when you can and when you shouldn't. It's much easier if you put that hands up system. People who are good at running a meeting like that will say 'hey Andrew I see you I will get to you in a minute'...when someone can do that better, you get better information flow and sharing, and less of that issue where dominant personalities dominate.

Key takeaway

Online groups need effective facilitation and ground-rules and these may be specific to online sessions.

ANNUAL SCHEDULE & INTENTION FOR EACH MEETING

Some participants suggested that **more structure** would be valuable, also recognising sometimes 'it's a little less scripted but everyone is busy so you need to find time to talk about stuff.' (P02). P04 suggested that the sessions 'need an agenda, a structure and a reason to meet, because without an agenda it becomes a bit of a more informal chat and it's easy to go, oh I won't bother this month.'

The following are suggestions going forward:

- **Schedule of presenting researchers** planned for the year (with capacity for some flexibility for issues that may arise) P04 'tighter focus, structure, agenda, a guest presenter rather than just bit of an informal chat. If you have a guest presenter then you feel like you need to be there...so it's the research and the chat' P11 'maybe put it out and say here's the schedule for the year What do you think? What else would you like to know?'
- **Send out an intention for the meeting:** 'What's the purpose of this meeting? Are we here for information or are we here for talking about whatever? I think the meetings could have a clearer purpose, but I am also all for non-purpose, because sometimes you go and see someone and there is no purpose and you are able to be with that person and then connect and conversations are able to come out of that...it just depends on what you want to get out of the meetings. If we're just having a chat and connecting? That's fantastic, that's what we are doing, or, today is researcher day, we're hearing from one or two researchers.' (P13)
- **Do not make late changes to the date/time,** 'Unfortunately the scheduling of them is often constantly changed so that makes it hard to lock in.' (P14)
- Discuss with members if someone else should step in and facilitate **if NWDMC cannot attend** – a specific person, or take it in turns 'he is the leader of the group and leader of the pack but maybe that is something we could discuss.' (P07) and 'taking turns in running the meeting could help people with confidence, it could add a different flavour.' (P09)
- Discuss with group if they would prefer a definite **finishing time**.
- Recap on previous sessions using a **reflective learning approach**. In one session agree on actions, in next session reflect on how this went, any issues, and ask for feedback from others if desired.

Key takeaway

It is suggested that the group considers having a planned schedule for the year, while maintaining flexibility for issues that arise; that the intention for the meeting is sent out prior to each meeting; that there is agreement as to what should happen if NWDMC cannot attend; and, that a reflective learning framework is implemented.

PRESENTATIONS & DISCUSSIONS ABOUT MULTIPLE SPECIES

Most participants noted that they are now including other emerging and/or problematic invasive species in their work and a **multi-species approach** could be expanded with an increased focus. P07 commented:

We are already combining dog and pig control...its part of what we do...the species vary...could be foxes. A broader approach would be good. In the absolute perfect scenario of a dog control program, you run your pig program first so the pigs are not taking your dog bait away.

P09 explained:

We have started organising some events around X and I have had a flyer about Y. We have been merging into multi-species support. If you are going to put up a fence, then do it for multiple reasons. We can support landholders for multispecies....part of the plan is invasive animals....we support landholders

with 1080 baiting, it's for wild dogs, but it's also out foxes so you're doing it anyway...we are merging into different species but not in a big way and not in a focussed way; it's about supporting the landholder to increase their productivity.

Practical on-ground implementation of an integrated multi-species management approach could be supported by an expansion of **research presentations** beyond wild dogs. P08 explained:

Landholders are always experiencing multiple different issues so I'd be willing to open that field up to anything...weeds, deer...I went to X and it was extremely interesting to hear about Y species knowing that they've got a major issue and their issues started off like we currently have. It was extremely interesting to touch base on that and learn what they're doing to try and control the Y population down there. In my (area) everyone has different issues, for example X, Y.

P07 added:

The more I can learn about other species...my funding runs out again, so I need to keep myself in a job. African swine fever has brought pigs onto the agenda...6 times out of 10 producers ask me about the pig stuff as well.

P10 elaborated:

We just going to see more and more of that, that's the cutting edge of where conversations are heading, and that's what's happening out there so it's important that conversations reflect that. So that opens a whole new doorway to different research and learnings. We need to talk about that integrated multiple predator management. Because where do I (get) information? It's like 'I've got pigs and I've got dogs, how do I physically tackle that? You know what? No one has really developed that. So the conversations into the future about are going to be really, really important, the best practice, and the communication of the best practice. There needs to be some sort of academia, or....CISS would be perfectly positioned instead of saying 'here's the pig manual, here's the dog manual.

Key takeaway

Including a broader range of researchers in Zoom sessions may be beneficial. Continue discussions on how an integrated multi-species management approach may be implemented, including how wild dog coordinators may work within this expanded framework.

PRESENTATIONS FROM INDIVIDUAL COORDINATORS

Some participants discussed the value of hearing from **other coordinators** and suggested individual coordinators could be scheduled to provide presentations within Zoom sessions: '(Rather than a few minutes each) go a bit deeper, maybe if it was rostered, one state once a year have 10 minutes on a couple of key projects' (P14). This would assist the group to learn about what they may try in their own regions, and to avoid pitfalls. It would also allow the presenting coordinator/s to reflect on their activities and garner feedback and suggestions regarding improvements. P09 expanded on this:

We do it anyway a little bit in around the grounds but we could formalise it a bit...We have some great chats with X about Y...it's a good example of us connecting with another coordinator and what he has done to help us...we can utilise a lot of what we do into our program especially it's an emerging species. (A coordinator could talk about) a project that might be running, how they did it,

what worked, what didn't and then get feedback from everybody else so that might be good for us. For example, I just ran some field days and I could talk about that – how that went, what went right and wrong, why we did it, who were the partnerships, how many attended. That might help others think about different things they could be doing and it helps people know a bit about myself and that contributes to a personal connection, connection into what they are doing in the program, because we are all so different, and it really helps us to think outside the square.

P11 commented:

Sometimes it's from their fellow colleagues, I mean they do it informally, but they could have someone talking about a particular thing that's happening in their area that people want to hear more about. The person may not think its earth shattering because they do it and they don't know that others don't know that that happens. That's the good part of the informal part.

Key takeaway

Sessions where the focus is on one coordinator or one jurisdiction and their activities, initiatives or innovations could be scheduled.

CONTINUE WITH INFORMAL DISCUSSION & BANTER

It is important the climate of the Zoom sessions remains informal and that sufficient time is allowed for **informal discussions, chat and banter**. Several participants did, however, suggest that it may be helpful for the intention of the session be clearer prior to the meeting, and the purpose of the meeting may vary from meeting to meeting. P15 explained:

It will continue to evolve, today's session was just a galah session, there was no real formal agenda, so it was a bit of a catch up...There needs to be some form of structure but the structure can vary, as long as people know that.... need to have some structure, it can vary from meeting to meeting. If there is an issue we need to deal with we would have a more formal agenda, as long as that is recognised in the group.

Key takeaway

Informal discussions and banter are of high value to participants and contribute to psychological/emotional wellbeing, social interaction, job motivation and job satisfaction, while also enhancing learning, and should therefore continue.

MAXIMISING BENEFIT OF RESEARCH PRESENTATIONS

Some participants suggested that the group could be expanded for the research presentations, but without losing the existing group. This is an area that would need discussion within the group in order not to jeopardise the ongoing benefits and support of the existing group. P10 noted the difference in the interaction when others join the session:

I think it changes it quite a lot, having seen them together without those (others) there is a lot of banter normally between them...show no mercy...it's really quite different, it's like kids meeting in a sandpit because they have known each other a long time, but they may not see each other for a couple of years. You start seeing this banter that goes around in circles that just doesn't exist once you get other people coming in.

P05 suggested the possibility of two groups, for example, a wider group for research sessions and existing smaller group/s for less formal discussion.

Key takeaway

Consider having two groups, a broader group for when researchers present and the existing smaller group for less formal discussion.

OTHER SOCIAL MEDIA APPLICATIONS/REPOSITORY OF RESEARCH

Over the past few years, two applications (Facebook and Slack) have been trialled. A **Facebook** group was set up several years ago, but this was not well supported. P01 said 'maybe it's just a bloke thing but I don't have time for Facebook and the content wasn't always directly related,' while P04 said 'that's just not something I am interested in.' More recently, another application, **Slack** was introduced. The purpose of this was to maintain regular contact between coordinators and post and store research reports and journal articles. Success has been limited and most participants agreed that they 'have been slack with Slack' (P10, P13). P05 explained the potential value of Slack:

*If I want to know something I can send an email out, but I send it to one person and it's of value to other people and they don't see it (so) I thought Slack would be a better way of connecting, but it hasn't worked. It's got the potential to work, but everyone's got to decide that they're going to use it and I think the majority have not bothered so I don't tend to use it either. It's been underutilised. It's a good platform, it's been good when it's been used, but X will put something on it and half the people won't even see it...So, lots of potential in that area if you are forced into it. It's a good repository for papers and research, easy to find. So there's value there as well as our connections, and anything that you would talk about is there. So I think it's actually a great platform, very underutilised and I would love to see it used more, but it hasn't really been taken up. **It's hard to beat these regular (Zoom) meetings and annual face-to-face meetings for pulling people together....Regular meetings is the main key thing***

Additional comments included the following:

- 'It's easy to find things, to follow the thread, better than email, but like most software you have to use it for a while to get the hang of it... there are so many different applications you can use, you can't use everything, you've got to find the ones that work well and if they don't use it then, sometimes you've just got to say, 'well that was great but we just don't have time.' (P11)
- 'You need someone to moderate it and keep it ticking over...otherwise people overlook it.' (P01)
- 'Slack is a mystery to me...I really struggle with things I have in front of me...I would rather research papers were emailed to me or were on a hard drive.' (P04)
- 'Personally I like dropbox because I like neat files, but that's probably because I am familiar with using it...slack was working kind of ok but as soon as things got busy it fell off.' (P10)
- 'It takes more than an app to build a network.' (P14)

Despite the low use of Slack, some participants want to access an easy to use **repository** of research papers. It is suggested that the group discusses what platform they would prefer, for example, this may be Slack, Dropbox, or email attachments which they can save to their own files.

Key takeaway

Reconsider what applications will be supported and include an accessible and searchable repository of research papers and recordings.

TRAINING IN CONFLICT MANAGEMENT & OTHER HUMAN DIMENSIONS

A number of participants mentioned the valuable training they had received at Muresk under the guidance of Ted Alter (Penn State University) several years ago. Dealing in a conflicted area is challenging, and further **training in conflict management and engagement** may be of value. P09 explained the challenges of working with communities:

It's not our fault but for landholders it's the last straw, and they've no one to yell at so 'I will yell at you because at least you'll listen and understand'... When we have a public meeting, that's what they do, it's like 'this is our role, our role is to turn up and yell at the department because that's what we've done for 20 years'... You'll know that they have a game plan. They have a plan on how to deconstruct any meeting, but I have learnt that it's not just us, it will be weeds next week or some chemical. They are often the same landholders and they do have a mantra. I think the way was that if you disrupted a meeting and you yelled enough that you would get things done, but it's just not helpful..... I have done lots of different tactics... I have changed it from a podium and chairs on a stage which is like a throwing tomato gallery. I have made the tables like little work stations. We are not calling them meetings they are workshops, so there's little subtle changes that happen, there's also things like we have a bit of a cuppa before the meeting so lots of anti-stuff happens then. But unfortunately that's when they get together work out their game plan. We try to remind everyone we are all in this together, we are actually there for the same reason... and it's not as hard as it used to be... I'll try and get a landholder that's a strong person to speak and they will shut down people pretty quickly too because they're the same. You will always cross your fingers that it won't backfire because it can... lots of little tactics... there are some landholders that won't come because of the aggression so they will contact me after the meeting because they can't do it at the meeting. People are there for their own self-importance sometimes.... It might be helpful for us to get some sort of training or some sort of support in how to handle it. I have never done any of it. It's available in (x department) but for management only... it's only for management but really? What about us?... So that could be something if we're going to flag some training, that could be a good one.'

Key takeaway

Implement training in conflict management and other human dimensions, consider re-running Muresk-type event (an event held for invasive species practitioners several years ago).

CONTINUE FUNDING DOG BAITS

AWI started paying for baits several years ago and this has contributed to a more collaborative approach to wild dog management, less conflict and improved social interaction: P09 explained:

*The support that AWI put in for **funding baits** went a long way into **healing that divide**. To be able to come to a meeting and to offer funded baits was*

huge for me. It gathered people together. It enable us to meet up with people and to know who is doing what.

P14 expounded on the benefits:

*Farmers turn up to get their baits, but there so many other things, because they're individually picking up baits, they're **collectively** they start to talk about everything that's going on. They may not have not seen each other for weeks either because they've been busy on their farms. They talk about what's happening in town, the football, and what's happening to who, where and everything else and prices and the weather and its really interesting to be part of that, to hear what their issues are, what's their priorities at the moment, local weddings, whose got pups for sale, it's just **general conversation** and that's really informative because then you **pick up whose having dog problems**. You are able **to feed that information back to line managers** from sources in the field.*

Key takeaway

Continue paying for baits for producers and delivery by coordinators to enhance relationships and information transfer with and between producers.

REINSTITUTE IN-PERSON MEETINGS & ASSOCIATED INFORMAL ACTIVITIES

All participants discussed the **value of in-person gatherings**, including past conferences and planning meetings. In particular, participants talked about the contribution that the associated informal **social interaction** has to **relationship-building** and **learning**, and their enjoyment of social activities before or after formal events. While often unrecognised and difficult to quantify, this form of learning has very high value. P02 explained:

*We went to the pest conference in Townsville. It was great, we got up there a couple of days before hand and did a little fishing trip together...If we do those sort of things, they give you the connection to go back and be able to ring those people...**that's what gives you the real learning**.*

P14 said:

*It's good but **I really miss that face-to-face stuff**, we haven't had a face-to-face...We used to catch up probably twice a year because the coordinators used to all go to the National wild Dog Action Plan meetings, and we would then go to (other places) to look at other baiting programs to share information. I don't think the term 'team' is applicable to the current group, because we haven't had the opportunity to meet with the group and establish those close networks.*

*There's reasons why it happened (lack of face-to-face): **Covid, AWI budget cut, reduction in the levy, but it's unfortunate and it's to the detriment of the group**. Not only were we a strong network, at the time we were also a strong social group.... just having an informal chat (and solving problems), that's really missing.*

There was **strong support for in-person events and gatherings** to be reinstated when the Covid-19 pandemic permits: 'Face-to-face once per year twice a year would be ideal, at a minimum once year, ideally twice.' (P14) Online interaction, while it offers additional benefits, is not a substitute for connecting in-person.

The following compilation of comments describes the range of benefits arising from in-person gatherings:

- **'Learning techniques and methodologies** is better done face-to-face in this sort of network because it gives people opportunities to bounce ideas around and talk about their own experiences and stuff.' (P01)
- **Learning & storytelling:** 'The learning thing, a lot of that is about getting together and telling stories and the freedom to ring people up and you don't get that over the computer.' (P02)
- **Combining formal and informal learning:** (Online is) 'not the same as face-to-face where we get to have a few beers afterwards, you can't knock the value of those meetings, and the informal time we get after those meetings....you get so much in a short time when you do that stuff, you pack a lot into that time, and the value of the informal time after that is not really quantifiable but it's of great value. So having these online meetings is great but still have face-to-face once a year but depends on who comes up with the dollars to get us there.' (P05)
- **Shared experiences contribute to learning:** 'You have to have something that gets people together and share interaction, and not make it all school room. You have to have that shared experience, I know it's hard to justify but it can't always be about jamming as much information into people as you can.' (P02)
- **Motivating:** 'It's really good to hear that raw enthusiasm again because you get jaded. Face-to-face X was really infectious and you don't get that in zooms, you don't get that sense in zooms, you don't get that level of emotiveness or commitment that some of these guys have.' (P10)
- **Builds relationships:** 'Face-to-face meetings is essential to be brutally honest...having face-to-face for me is how you build that true relationship. You can have zoom and it's a useful tool, but face-to-face, having that I guess human interaction is truly where I guess you build those relationships and getting to know the real person.' P07 'Zoom is far better than nothing at all and they have their place, but even every couple of years if groups like that could get together face-to-face for a sustained period, I think it builds relationships then that will make that zoom experience better because you have more trust in those people, you know them better.' (P10)
- **Builds teamwork:** 'I think face-to-face still very important; there is nothing better than catching up with people one-on-one, as a group and building relationships. I think you need both, the bottom line is I think you need to build that team work and it makes it much easier for them to get on board with something like this.' (P01)
- **Strengthens connections:** 'I would love to have another face-to-face meeting with the guys, last meeting would have to be 2 years ago...it was SO good, having that connection face-to-face and having good conversations, and a cuppa made it real, because they were real people with real families, and this is what I did and what about you, and it was fantastic.' (P09)
- **Deep, tough conversations** 'If they meet face-to-face they will really bunker down and talk about the tough bits, how to engage.' (P10)
- **Refresh memories:** 'It's always good to be around them and talk about things you may have forgotten about. It gives you time to refresh your brain on those sort of situations.' (P08)
- **Emotional support:** 'We need to get together occasionally face-to-face because of what our jobs are. There are fairly frontline trauma and you know, getting together with others to work through that stuff is really, really good.' (P04)

- **Builds networks and expands viewpoints:** ‘conferences are really good because you get to meet people, it refreshes what you are doing, and you get out of your silo.’ P02
- **Solving problems over dinner or a beer, not in the conference room:** ‘You would be well aware that most problems are solved outside the conference room or teleconference, they are done over a social gathering, over a dinner or a beer or something like that. Just having an informal chat, so that’s really missing.’ (P14)
- **Staying together enhances interaction:** ‘It’s better to have rooms all together, go to dinner together. We went fishing and that really got us together and we had some stories to tell.’ (P02)
- **Shared travel:** can contribute to learning ‘the most learning I have ever done in this job was a car drive to A with X, Y, and Z... I had all these questions and they were all answered in the first 20 minutes. And then we just talked. And that talking process, you don’t know what you don’t know and therefore you don’t know what questions to ask.’ (P02)

Since learning involves knowledge sharing, and knowledge sharing requires trusting relationships, anything that contributes to the building and strengthening of trusting relationships should be considered (Ardichvili, 2008). Notwithstanding the value of **formal training, meetings and conferences**, many of the benefits highlighted here relate to the **incidental and informal interactions** that people enjoy as part of, or attached to a more formal event. The significant, yet difficult to quantify contribution that incidental and informal learning make in augmenting structured formal learning has been identified in previous research (Marsick and Watkins, 2001). Moreover, the informal and incidental learning that occurs through social interaction forms a significant component of individual, team and organisational learning (for example, Marsick and Volpe, 1999).

In another case study, Australian teachers from different regions reported more learning arising from the informal interactions than the formal sessions when they attended staff development days, (Solomon, Boud & Rooney, 2006). Activities such as drinks after work, tea breaks, lunches and shared car trips, have been identified as crucial to everyday learning (Solomon et al., 2006). These may be referred to as ‘hybrid spaces’ where work and social activities overlap, direction of talk is not under scrutiny, people joke, and the varied conversations include work and non-work topics (Solomon et al., 2006).

Findings highlighted previous research reporting the correlation between ‘consuming behaviours,’ that is eating and drinking together, and learning (Rooney et al., 2016). In a South African case study, drinks and barbecues after field trips were identified as central to building trust and respect between stakeholders working in water management (Biggs, Westley & Carpenter, 2010). Further examples include the informal gatherings for drinks and dinner held by Japanese companies outside their workplaces that enable creative and detailed innovative discussions about strategies, product development and challenges, while also enhancing mutual trust (Nonaka & Takeuchi, 1995).

Key takeaway

There is strong support for reinstating in-person meetings, conferences and associated social activities, when Covid permits. These are identified as crucial to building and maintaining ongoing social relationships, building collaborative networks, supporting psychological/emotional wellbeing and enabling deep, broad and rich learning.

REVIEW & REFLECT

Results indicate that the wild dog group is functioning very effectively and learning, social and psychological/emotional needs of participants are being met through the group. A number of key findings have been identified.

Key Finding 1: The wild dog management group is a highly cohesive network who most of all value the support of each other because of their isolated, conflicted and at times traumatic working lives. They enjoy engaging with each other and are highly supportive of the monthly Zoom sessions that were initiated in early 2020. Their banter and chat indicates the high level of psychological safety that is necessary for open and relaxed conversation and expression of diverse opinions.

Key Finding 2: Participants value learning from each other and from researchers who are often scheduled to present during the Zoom sessions. They also value the research reports that are distributed amongst the group. This enables them to be conduits of information to community members.

Key Finding 3: Possible improvements to the Zoom sessions to be considered by the group include a regular schedule for the year; how to approach schedule changes if NWDMC or participants are unavailable; an intention for each meeting; presentations from coordinators; widening the scope to other invasive species; a reflective learning approach; and, training in conflict management and other human dimensions.

Key Finding 4: Participants place high value on in-person interaction at conferences and meetings and the associated social connection and informal learning. In-person interaction contributes to relationship-building, psychological/emotional support and deep, broad and rich learning. Participants identified reinstating in-person events and gatherings as a key priority when the Covid pandemic, that has curtailed travel and congregating, permits. While many benefits accrue from the regular Zoom sessions, Zoom sessions are viewed as a augmenting but not replacing in-person gatherings.

These key findings can be understood in the context of **self-determination theory**, an empirically based theory of human behaviour and personality development. This theory explains that human flourishing, psychological wellbeing, engagement and social development depend on three basic needs being met. These are the need for **social connection** (or human relatedness), the need for **autonomy**, and the need for **competence**. When these basic needs are fulfilled, staff are highly motivated to **perform** their jobs and to **learn**, demonstrating high levels of **intrinsic motivation, creativity, compassion and productivity** (Ryan & Deci, 2017).

Here self-determination theory is applied to the results that have emerged from the study of the wild dog network and the following comments are made:

- The results indicate that the network plays a key role in providing the needs for **social connection** (Key Findings 1 and 4).
- Individuals' need for **autonomy** is primarily met within their individual work roles, however a greater need for certainty regarding the intention for each Zoom session was suggested by some participants (Key Finding 3). Nevertheless, it is important that the

existing flexibility and highly valued informal aspects of the sessions are not jeopardised by any increase in formality because this may be to the detriment of social connection and enjoyment.

- The results further indicate that the network plays a key role in the need for **competence** through providing knowledge and information through learning from researchers and from each other (Key Findings 2 and 4).

It is suggested that while the human need for autonomy may be met without the network, the needs for social connection and competence require the network to be maintained through an appropriate combination of in-person and online interaction.

SECTION 2: RESEARCH QUESTION 2

What additional information can be gained from participants involved in invasive species research and facilitation about collaborating in teams, both online and in-person, co-located work units and other learning networks?

Seven participants who are involved in research and facilitation in invasive species management were interviewed. Participants work in different roles, organisations, jurisdictions and species. The purpose of these interviews was to contribute additional information to form the basis of recommendations that may improve collaboration, learning and other improvements in invasive species management.

IN-PERSON VERSUS ONLINE MEETINGS

Participants reported that **in-person meetings** are better than online meetings for building trust and relationships and enabling more social interaction and discussion. However, when people already know one another:

It's fine, we use Zoom and Teams all the time and have a lot of meetings online. It's just as good as face-to-face and everybody is a lot better at it (online) now, and we can record the meetings so we have a record. (P20)

P16 commented that when meeting in-person, 'speaking about things other than the specific task at hand is probably going to build those relationships.' P16 continued:

*If you get together in actual person you are much more likely to engage in **friendly social discussion** as well. Like often when you go on a zoom you get on this 'hey, how are you going? Good. Now let's get to the detail of why we're here to talk...ok good job, talk to you next time'. But if you actually got together in person, it would be 'hey how's your mother, how's your daughter, how's your life?'*

While relationship-building is important, however, people are unlikely to view it as important as task-based activities. P16 noted that people were unlikely to want to participate in a meeting if the intention was just to build the relationship, saying 'Unfortunately getting a good relationship out of it is not a good enough reason. They'd say 'get stuffed, I have other things to do'.

P12 explained the benefits of in-person meetings:

*I would say definitely the face-to-face meetings, particularly a full day (or longer) you get lot of time to have a **general chit chat** with individuals over the **tea session**, etcetera, and probably **more relationships** are built and people probably enjoy it more. There's probably more **impromptu discussion** about things because of body language. I suspect there's probably **more commitment** to things because you are there. People **enjoy it** because there's **food** provided and it's an **event**. There is probably **more engagement** too because you are **more accountable**, people can't just fall asleep or wander off or turn your zoom thing off. It's seemed a little bit more **flexible**, because if you are not keeping to time, people could duck in and out, or let's just have tea break.*

P06 added:

***Nothing can beat face-to-face**, it helps to **establish relationships** and then reverting to phone or zoom it just helps to build those relationships...everything has been online for a year, it's amazing how you adapt. It (Zoom) has helped with how we use **budgets**, particularly with two people. If there is a big group*

where people go off the screen that's not so good, but when there is a small group (its fine).

According to P19, meeting someone in-person underpins successful **collaboration**. P19 elaborated on the difficulties that arise when in-person interaction has not happened:

*I see X at six-monthly (online) meetings, only, but if I had a chance to meet X in person at all of these meetings, I would build a good working relationship with X and **we would have collaborated more** than we do now. We are contributing to this multi-million dollar project but we still don't know each other. **I can't ask people for help when don't know them**, and this is difficult because this is a collaborative project. So I think that's what's lacking now. (Projects) are more about collaboration and that connection between groups so that we have more interaction and can trust each other more.*

P19 acknowledged that 'I think it's important to meet for the first time in-person...it's easier when you have had that face-to-face meeting to build that trust, and then you can take it online. P19 also explained the importance of the associated social aspects of meetings and conferences to collaboration:

*We might not talk during the conference but we can talk about things **at lunch or evening sessions or happy hours**, and that how we collaborate. And I think that's what we miss here (being online), because then we don't have that connection from social interaction allowing us to find more, and do things more apart from what we do.*

Some participants talked more extensively about Zoom meetings. P12 commented on the benefits of video-conferencing compared with phone:

*Two years ago if I couldn't fly to meet you, I probably would have had this on a phone, and now I can see you, and interact heaps better, well I feel I can. Even having one or two meetings on a daily basis, Teams or Zoom, these **online platforms are fantastic, they have improved the interactions we used to have on the phone**.*

There are downsides to Zoom as P12 explained:

*Zoom has **disadvantages** though, it's difficult to have discussion with say more than 10, or I would say even more than eight people, Its more difficult and I would say the conversation is more staccato, and I don't think people speak unless they REALLY want something REALLY to be heard and they will put their hand up whereas **face-to-face people are more free flowing** with their information or discussion. That can be a good and a bad thing and discussion can go on and on and on. We have one member who has hearing difficulties and he does a lot of lip reading, and from my perspective he seemed to get more out of the face-to-face, and I don't know how it is for him on teams, my assumption is that it's more difficult.*

P17 noted during online meetings 'I feel less comfortable because sometimes if I don't see the person in-person, I feel less comfortable in asking questions.' Some online meetings are challenging, with P17 saying 'it can get quite rowdy and people not listening and talking over each other' but adding that is not necessarily the fault of Zoom: 'the fact we can establish good relationships with other people makes me think it's just a communication issue between the specific people.'

P12 considered the factors that are important in online meetings:

- 'the **chair** is very important'
- 'I think it needs to be more **structured** than it would for a face-to-face to make sure everyone's expectations are met'
- 'a **small number** of people 8-12, if you have 15-20 people you can't have much discussion, people turn camera off and you don't know if they are engaged or not.'
- 'keep meetings to **one and a half hours**, because people can't stay there on this type of platform or don't have the time'
- 'be really **tight with the questions** and the papers and discussion...Because everyone is expecting the online thing, they are fitting more into their week or their day and it's even hard to find one and half to two hours.'

Key takeaway

In-person meetings and conferences are viewed as superior to online meetings through their enhanced capacity for people to develop and maintain relationships, build networks, improve collaboration and create opportunities for further initiatives. However, Zoom is far cheaper and time effective than travelling to meetings in-person. Zoom is viewed as superior to phone and may assist in maintaining relationships and collaborations that have previously been established in-person.

IMPROVING COLLABORATION

Competition for data, publishing and funding was reported as often being conducive to an individualist and competitive rather than a collaborative approach. P17 explained:

*For a lot of scientists their research is their **identity** and its **competitive**...nice guys finish last...So, I mean it's changing, but the peer review process, the **publication system, the awards system and the grant system and everything, its brutal**. You are not rewarded for outreach or community stuff. It **fosters the lone wolf**.*

P16 added:

*The tricky thing too is that when its research and publications and authorship involved, if we have a monthly meeting and discuss stuff, and we have had five meetings where we have discussed the project and these people have had really good input, and it becomes sort of another **political** thing. These people had good input but are they authors or just acknowledgements? Sometimes you don't want other peoples' input.*

The number of years of experience individuals have had may impact the way they **communicate**. P16 commented:

If you have been working in a certain area of research for 15 or 20 years and you really think you're an expert or an authority in that field, and you are really passionate about it, when people disagree with you, or if you think it should be done another way, you are probably more annoyed and frustrated and voice your opinion much louder that you would otherwise, comparative to someone that's recently come into the field, that doesn't have a 20 year attachment to this field of research; is really just providing their thoughts based on previous experiences, like novel views that are not founded by 20 years of passion and blood, sweat and tears, and they are not diehard because they are new to the field. That can influence how people can react.

Other issues that ultimately affect outcomes include:

*Egos to some extent, **money**, future research **funding**, **lack of openness** for example, if project not going so well or they said they would deliver X but this is not working and would be better if delivered Y but they won't say this, so people won't be fully honest and they don't want to jeopardise funding. (p16)*

One participant, P17, specifically spoke about the **challenges of collaboration** in projects, including those funded by the Centre for Invasive Species Solutions (CISS):

*I don't know if it's a cultural thing, or its male/female thing and some people feel like they are trying to prove something. You know they're trying to defend their patch or prove themselves, but yeah people get **defensive**...and it (can) be **interfering with the science**.*

*It's interesting, it's the people in centre for invasive species solutions that have actually been the hardest. Maybe there's more **competition** there rather than collaboration. I don't know, but maybe it's just the people. We've reached out and it's really hard to get any **engagement**....I don't know, maybe they are all **introverts** or maybe everyone's too **busy**...but it has certainly been a very hard group to connect with compared with other groups.*

When asked for ideas on how engagement and collaboration may be improved, P17 responded with the following suggestions:

*I am not putting any weight on either of these or in the order, I am just saying they are potential solutions. Like one is CISS **supporting people with that culture and that collaborative nature**. So if you haven't been found to be collaborative or if you don't have that motivation, then you don't get funding in the future sort of thing...You know, building up, picking, choosing the people to be part of the centre who have those sorts of attributes you are looking for. That's one option.*

*Two, try to **identify what the barriers are** – is it that people are overworked? Is it because people don't care? Is it because people have different values or have different priorities? What are their values and priorities? Is it because people don't feel connected? Um and so then once you find the barriers I think working towards those things.*

*(Three), **fostering connections through networking events**. Through conferences if people prefer fact to face then doing it that way. I don't know...holding monthly webinars to foster that sense of community and engagement. Um I think those would be the three things, you know, I guess working towards shared goals to incentivise collaboration.*

When considering these issues from a broader natural resource management perspective, it is now widely accepted in the literature and in practice that **collaborative approaches are required to achieve successful outcomes**. Yet earlier scholarship argues that the necessary institutional changes required in different contexts remain under-researched (for example, Imperial, 1999, p. 461; Steel & Weber, 2001). Challenges to and in collaboration continue to arise and are often not addressed. One reason for this is likely to include the ongoing difficulty in integrating social sciences with biological sciences (for example, Folke, 2007) and these challenges may remain difficult to address. Suggestions such as those raised by P17 are worthy of consideration.

Key takeaway

Collaboration is challenging when publishing and funding are inherently competitive. However, lack of collaborative effort negatively impacts outcomes. It is recommended that further research is conducted into how collaboration may be improved, for example through rewarding collaboration, identifying the barriers to collaboration and fostering connections through in-person meetings and conferences.

INTEGRATED APPROACH TO MANAGING MULTIPLE SPECIES

Some participants discussed the challenges of coordination in invasive species management, with many organisations involved, complicated funding arrangements and complexity in management arising from inconsistencies in legislation across jurisdictions. P06 deliberated on the value of enhanced coordination and communication within and across **multiple species**:

*(Coordinators are) wonderful in sharing knowledge and building connections which is what this is all about. (However), there is a really strong need for all of the work that is going on around the country to be pulled together and get the **coordination** happening...For X species there is a lot of work on but there is really no coordination and no one really knows about it. People are doing it by themselves or in small groups and don't know what other groups are doing. The outcomes of that work aren't being **communicated** anywhere. I think there is a lot of need to actually get all of that work together to actually **demonstrate the impacts**...*

*There's **no point having separate groups for separate species** because people only have so much time, you need to be thinking about it in an **integrated** way rather than at a species level. It's also how you get some reach into an **existing group**...rather than getting a new group started. How do we work more closely with groups that have already been established, then include information about (other species)? Where ever we can use existing networks and work with them it's great – **it's not a competition**. If roles are **diversified** then less reliant on sources of funding...that would give longevity and focus.*

P06 discussed the need to integrate invasive species management as part of **farm planning** and to work with producer **mental health and wellbeing**:

The mental health side of things, (producers) they get a defeatist attitude, if they see damage they will go and do something, but it may have been better if they had done it before you can see the damage. Earlier control may give better result. Vertebrate pest management seems to sit on the side of farm plans.

P06 commented on the need for improvements to **monitoring of numbers and impacts**:

*There are lots of **knowledge gaps**. We don't even know how many are out there, so how do you actually gauge success? Lots of challenges. The **impact figure is old**. The more data and information we have the more we can demonstrate impacts have the more we can demonstrate the need for change in the how the whole area is actioned...Even when they do population counts around the country every state uses different methodologies to work out abundance, and density of species X then they try to bring that data all together and make a national map even though we use **different methods**...what can we do about addressing all of these?*

P06 discussed need for a **long-term vision** and different **investment models**:

*The models for investment a lot of the work is being done through **short term projects**, government funded. X species rapidly reproduce so if you don't get a lot of the population knocked down when you are doing a control activity then they'll be back at that population or even higher...(We) need long term vision, if we do a short term program we won't change anything. How do we get land managers engaged, motivated, incentivised? Even if you can't see many it doesn't mean they are not there, that's when it becomes harder. What sort of incentive or financial benefit could be used? What are these investment models we can look at? Reef credits, abatement programs for carbon?...How can we use those models and feed vertebrate pest information in to get some long term investment and feed back into implementation... philanthropists...all sorts of interested people. Models may vary according to where you are in Australia so what are the trigger points?*

P06 concluded by saying: 'The more you delve into X species, the more **it's about the people, not the species.**'

Key takeaway

It is recommended that a continued focus on ongoing improvements to an integrated approach to coordination and management amongst researchers and practitioners who work in different species is maintained; that consistent monitoring of numbers and impacts is instigated; and that, different options for investment and longer-term vision are considered.

CO-LOCATED WORK UNITS

Some participants, including P17 and P19, are based in co-located **work units**, also referred to as **teams**. They identified how some of the features and benefits of their workplaces positively impacted job satisfaction, motivation, performance and outcomes.

P17's description of their team included the following:

*(In our team) we've got quite a **flat hierarchy**, I am sitting in an office with other people so there's a lot of **work talk** but also **banter**. We do a little bit of stuff **socially** as well, although that's dropped off over the past few years...but we do things like decorate people's desks for their birthdays and **celebrate** publications.*

*At our team meetings here, we sort of discuss the **expectations**, it's **not a formalised process**, but it's kind of like, people raise concerns they have, so people know what triggers other people within the individual team...(our) team is tightknit...it's a **safe space**,...a **leader** can't really make a safe space, it has to be buy in from the **entire team**...encourage this by active listening, leading by example, sharing so if you show you **trust**, you are more likely to get trust back, making time, not springing surprises...so we have a **weekly meeting** so people know there is a time and they can prepare themselves physically and mentally rather than just 'hey everybody, were going to get together now and talk about if there's any issues', you know because obviously there's different learning styles...and there's that whole team thing like forming, norming.*

P19 described collaboration in their particular work unit:

***We help other people** within the unit. When the X species person is in the field the Y person helps X and while the Y person is working in the field the X person helps Y, that's how we help each other and execute those field activities. They have a **good working relationship**....It's not a government*

directive, we don't need to work with each other, but what it does, it also gives you an experience and **interaction with other projects**, and it also gives you the opportunity to work with those groups and **networks** which you have made **connections** with and can use each other's groups to pass the message. We run workshops, we try and integrate X, Y and Z (species), so that **landholders** can make the most out of a **multi-species approach**.

P19 explained aspects that may contribute to the collaborative culture:

*I think because **we're in the same building**. Our unit is like a satellite unit away from (head office). Within our unit we are **well coordinated to help each other** and I think because we are outside (HO) and we are a small unit I think we're more **connected to each other**.*

*I think if we were in (head office) the setup is different and there is less social interaction between people. That's (the feedback) we have been getting from (others). For example some X people that moved from head office to our building. They said that the **office layout** and the people are so nice, that X would never have lunch with other staff from head office, whereas **we always have lunch outside** when the weather is good, or even inside we have lunch together. No one has lunch at their desk, that's not a good culture or department. So that's how we try and keep up and connect with each other....we have tables and chairs set up outside with a big shade umbrella so we can sit and have lunch and I think we quite **enjoy** that...I have seen people (in other workplaces) working and lunching at their desks and I wouldn't do that, I would hate that...I am **happy** I am working in a group that also has that thing.*

*I helped the X pest people and the Y pest people, and the Z people. If I didn't connect with those people during **lunches and morning teas** or those things I would never connected with them, we would never have interacted and we wouldn't have a good working relationship.*

*We also try and get involved between us **socially**. So we try to **celebrate** birthdays, our small achievements in our life or professional life. When (people come back from the field, after say a good X cull) we try and celebrate, we have a **morning tea** celebrating the good work. We did this for other groups as well. This is how we keep everyone else **motivated** including ourselves.*

*We have a **manager** that tries to pull it together, but I think we have some **proactive people** in the group who make sure these things happen. The manager changed the **office design**. Before it was little cubicles but the height of the walls was more than a person's height so a person couldn't see and talk to the next person. That that was kind of isolating. So the manager reduced the height so people can just raise their head to talk to each other and that has increased the social interaction. Have several cubicles for W group, X group, Y group, Z group and we can all talk to each other if we wanted to.*

*So it's the **design** and the right **attitude** from people as well...people in our unit are **enthusiastic** about managing and controlling pests
I still go back to the previous people who were working in this field who are retired and have a chat and they are 'more than happy to have a chat' and I still have **good working relationships** with them.*

Key takeaway

It is recommended that the aspects identified here are considered in other work units and teams when aiming to create a supportive work environment that fosters collaboration, motivation, performance, and ultimately achieves improved invasive species outcomes. This could be supported and implemented through a combined research/coaching approach.

LEARNING NETWORKS (COMMUNITIES OF PRACTICE) THAT MEET FACE-TO-FACE

This section addresses the features and benefits of face-to-face learning networks that P18 has been involved in. The text is taken directly from P18's comments in response to researcher's questions. P18's description has been structured into key themes by the researcher.

STRUCTURE

(Morning is) **meet and greet**, what have you been up to? What are the challenges? We might pose problems to them or just some, you know, observations or thinking to challenge their thinking about what does collaboration look like or what does this mean for you? We have sent journal articles or said watch this Ted talk, or I'll just bring up in conversations, you know two scenarios (gave example) then ask them to reflect and think about how it relates to their work together...think about how human behaviour comes into play and how you can be resilient and rethink or reframe things.

And then we go into the **field** and do a site visit and have **guest speakers** from their community and normally **stay overnight** and have dinner and then have some **fellowship** at the end. That's pre-Covid.

GROUND RULES THAT SUPPORT A PSYCHOLOGICALLY SAFE ENVIRONMENT

We have that agreed contract or that **verbal agreement** amongst the group that we have like almost a charter, that we will be **respectful** of one another, so we really talk about our **values and behaviours** and how we are going to behave in the group, that remind people to **listen, not judge, to hear**. We always try to make it **comfortable** for everybody so everyone can be heard, and um not criticise. I guess it's a **safe environment and trusting**, so that is number one key. So if there's aggression or a lot of **tension**, there can be tension, but we just need to make sure people feel safe and trusted in the environment.

We always go over the **ground rules at every session**, especially at the start and I remind them every day. And I never used to think that was important but I've had one participant be very dominant and very aggressive and I realised how important that is....And it then it becomes engrained in the participants that this is a safe space and we're going to listen, and **we may not agree with you and that's ok**.I think it's really talking about the code of conduct and talking about respect and listening and valuing people, I think it's probably a key thing and that we all matter and what you do matters.

FUN & ENGAGING

I always try and make it **fun and engaging**, and there's always fellowship built in there. So there's always **long tea breaks, long lunches and always a dinner**. And I also try and make us **stay together**. So it's sort of like, **you stay together, you play together**.

We try and run those thought-provoking sessions at the front-end, say one of Ted Alter's papers or watch a **Ted talk** or I read a lot of **journal papers** because I feel like I am a natural people person. And so, often we bring some sort of literature or review or comment on, I guess, human behaviour. So that's probably one thing I like to bring in to make them think a little more about how we can collaborate more. What happens if we don't collaborate or what happens if we don't do democratic practice and share things and shared decision-making. So I like to do that.

And I also really like, I guess we are just really **light-hearted and jokey**. You know it's comfortable and it's these excursions that we go on. We've really made it **interesting** where we go, so there's sort of like a hook or a carrot and say 'come to this place'. And then I think also that **fellowship** in the evening, so there could be that fire-pit if we are more rural or another time we went to the pub and did a trivia night. We also do these getting to know you activities like 'what was the last movie you watched? What are you reading? What are you listening to?' So **you get to know that person** a little bit more as well.

STAY TOGETHER & COMBINE FORMAL LEARNING WITH SOCIAL INTERACTION

When we have accommodation, I really look out, even though it's the biggest pain in my side, for those group hostel accommodation, like school camps or hostels. So we've got a **one stop shop, where its catering, the rooms are all onsite, and like a fire pit or something so you can have this yarn session or this gathering, and that way people don't go off to their rooms and work, or um disengage**. So we're really thrown, so it can probably be uncomfortable for a lot of people. But it's SO nice to see at the end of the day everyone around the campfire having a social drink, and just relaxing and then having that interaction with each other.'

ONE-ON-ONE INTERACTION SUPPORTS GROUP INTERACTION

When we are delivering this course or these learning networks, if it's me sharing stuff at the top of the classroom or in a circle or something like this we are all included. But I think it's that **one-on-one dialogue** as well. So there's **group work**, but then there's that one-on-one, so you're having a meal with them or you're having a cup of tea and they tell me about their children or something like that. So it's about **establishing that relationship**, that **when you get to know someone as a human being it has that ripple effect**.

OPEN DOOR POLICY

I have always got the **invitation on the table**, that people are always welcome in our group, and you can always come back...you might not be able to attend this session or this session, and you might not even come and see us for two years, and the third year, you'll come back again and go 'oh yeah, I need to catch up with that group again and that's ok.' so I just sort of have this open door policy.

FACILITATION WITH A SUCCESSION PLAN

A strong facilitator that brings it all together is the glue. Mentors are subject matter experts that come from different backgrounds, they could easily take the lead if I wasn't there because they've got the skill base as well. As the group's mature, you could almost nominate someone in the group to take the lead for the group, or they become the next mentors. So we're trying to think about succession plan for the mentors as well, that they come from within the network, up into the ranks and become the next sort of apprentice mentor.

Key takeaway

It is suggested that the aspects discussed above are considered when establishing and maintaining other communities of practice. These can be summarised through quotes from P18:

So...you stay together, that safe, trusting environment and that code of conduct, and making it fun and engaging and then I guess bringing in that expertise as well. And it just makes that learning experience a whole lot better. And then it becomes that sense of community, in that family. The recipe is working...one comment was 'the overall learning experience was enjoyable' so that's a big tick, they'll come back. And I actually had one person say to me, 'I see it as a holiday or break, and I enjoy myself when I come, you know we pay for their meals, we pay for their accommodation, and we give them a really nice experience.'

They get to learn and collaborate with one another, take away some new information, and the job's done.

REVIEW & REFLECT

Interviews with the seven participants who work in the research or facilitation fields of invasive species management extended the findings of the case study in the wild dog management network and identified some further areas of research and practical application, including pursuing an integrated approach to invasive species management. The difficulties in online interaction in building relationships were noted. There was strong support for regular in-person meetings and associated social gatherings when possible. Suggestions regarding improvements to collaboration were raised and the key features and benefits of co-located work units and in-person communities of practice experienced by participants were identified. It is recommended that these are considered for further research and implementation in other situations and contexts where improvements to engagement, collaboration, job motivation, performance and outcomes are desirable.

SECTION 3: RESEARCH QUESTION 3

What are the experiences and perceptions of researchers and participants of the use of Zoom as a qualitative data collection and analysis tool, and Echo360 as a transcription tool?

ZOOM FOR DATA COLLECTION – PARTICIPANT RESPONSES

At the conclusion of each interview, all participants were asked to comment on the interview compared with if had been conducted via phone or in-person. All participants said that **Zoom was much better than phone**. Most participants said that Zoom was **as good as in-person**, and added that the **cost and time savings** for the researcher were significant, given that she would have had to travel to many jurisdictions and rural areas to conduct the interviews had they been in-person. The lack of need to travel saved time and money and **avoided carbon emissions**. Several participants noted that they found it easier because they had already met the researcher.

Participant comments regarding the interviews are listed below:

- 'With Covid and the use of Zoom and other online forums for meeting people, I think that's a very effective way of engaging. I think the nice part about doing it with Zoom is that you can see the person rather than just on the phone. I have found it really easy. We have had good discussion. It helps with the whole time management aspect.' (P06)
- 'I have found this really good, good connectivity, no lag which can be frustrating. Way better than a phone call, engagement much higher and I would be distracted by things on my screen. Your ability to drag things out of me, you are very good at what you do because I am not the most talkative person, but yes it's been really good.' (P07)
- 'Great but I am just waiting for cake with a coffee. It has been lovely talking to you, you are very easy to talk to so that's very nice...Put in a plug for us to meet face-to-face with the crew. Zoom is fine because it's saving my time and your travel time. Now I will have a break and I will come back and do that report, so to me it's time effective and I still get to see your pretty face.' (P09)
- 'We are never going to get rid of Zoom now, I can be sitting here talking to you then get back to what I was doing. Far better than telephone, because I like to read people, (so I) much prefer zoom than phone calls because you glean 50% from visuals from what people say. I guess it doesn't work 100% but for the intent and purpose of what you are trying to do, I think it works! Absolutely fine. Like, I feel very comfortable talking to you. Far more effective when you put in time and all the economics into it. It's been fun!' (P10)
- 'Zoom has taken over the world. I think it's extremely convenient for people because it is hard to schedule meetings around everything else. So it's extremely convenient to be able to work in with everyone else and hit a button, open your laptop and boom there's everyone else. It works well when you are busy all the time. It's convenient. Zoom or telephone doesn't really make a difference but Zoom is a bit more personal if you want to see one another.' (P08)
- 'Much better than telephone. And much the same as face-to-face, I don't think we would have achieved any more or any less than if we were sitting across the table from each other...It was good, really good.' (P11)
- 'It's fine, just as good as face-to-face.' (P20)

- 'Heaps better than telephone, I would prefer to have a face-to-face, but when you factor in the time and the flying and everything this is great. Not much benefit (of in person) when its one-on-one.' (P12)
- 'I like Zoom a little better than telephone, you can kind of be with the other person. You actually can connect over Zoom. It's been fun! You are a really cool lady. It's perfect that your involved having those skills. I'm glad they hired you to be involved.' (P13)
- 'Compared to over the phone I really enjoy this sort of medium better. You can actually see who you're talking to. It is face-to-face, basically, and it is far more successful than phone communication. We also use this in our local area too, it's far more successful.' (Compared with getting in a room) 'Oh fine, no problem, I think it works, certainly much better than as I said, over the phone.' (P14)
- 'Over the phone would be last. I think Zoom when you can get the quality that we have had over the past hour, of audio and video, I think there is very little difference (to face-to-face) Certainly where the travel is too long then I would be quite happy using Zoom. If you can get quality of audio and visual then it's pretty close.' (P15)
- 'Better like this than by phone because people's facial expressions are important, I guess that's why Zoom exists. For something like this my preference would be via Zoom rather than in person because it's less time commitment (especially if we have to drive somewhere). It's quicker and easier.' (P16)
- 'It's been good, you could have sent a questionnaire by email and I would have been much less engaged because there is not an opportunity to clarify...I am not a fan of telephone personally...I prefer videos to that....Face-to-face would have been fine but the associated hassle around travel, parking, being in a new spot, trying to find the room, new people, new handshake, have to wear a mask...and the unnecessary expense and the emissions.' (P17)
- 'This has been great, Katrina. I've so enjoyed it. It's been really refreshing to share knowledge. I never know what I know, so it's nice to be able to share that as well.' (P18)

KEY TAKEAWAY

Participants reported the interview being conducted by Zoom was better than had it been conducted by phone. It was close to or just as good as being conducted in-person, and superior when considering time and cost-savings.

ZOOM FOR DATA COLLECTION – RESEARCHER RESPONSE

Zoom compared with phone: the researcher felt she was able to create much greater rapport with participants because they could see each other over Zoom.

Zoom compared with in-person: Conducting the interviews via Zoom rather than in-person resulted in huge time, travel, financial costs and emissions savings because participants were located in disparate locations, and up to thousands of kilometres from the researcher. In the future, given this positive experience, the costs of in-person data collection may be difficult to justify unless there are other research needs that necessitate in-person connection, or the participants are located close by the researcher and/or each other.

KEY TAKEAWAY

The researcher reports the interview being conducted by Zoom was better than had it been conducted by phone. It was close to or just as good as being conducted in-person, and superior when considering time, cost and emissions savings.

ZOOM RECORDINGS & ECHO360 FOR DATA ANALYSIS – RESEARCHER RESPONSE

If the data had been collected in-person, as was originally intended, interviews would have been audio (not video) recorded. Conducting the interviews over Zoom allowed video-recording of the sessions. Video recordings were stored for rewatching and reviewing during data analysis. This allowed very rich re-immersion in the data augmented by the simultaneous automatic transcription. The researcher found this to be a more valuable form of re-immersion experience than listening to audio-recordings, and this contributed to a rich data analysis experience. Because of the 'virtual' access to the primary data source, the researcher did not need to use the hand written notes she had taken during the interviews. However, she recognises that these notes would have been required had any video recordings been unsuccessful.

The researcher used the automatic voice recognition option of Echo360 to automatically transcribe interviews to save time and money and because this software is approved for use by UNE. However, compared with transcription by a person, transcripts were of relatively low quality and the downloaded documents were difficult to read. Other digital transcription services would be considered in the future providing these did not breach ethical guidelines. The relatively poor quality of the transcriptions did not impact the research, however, because the researcher had recorded the Zoom sessions. This enabled her to review each video and transcribe the recordings herself, focussing on aspects that were identified as important.

KEY TAKEAWAY

The researcher reports that the use of Zoom video recordings for data analysis was superior to using audio-recordings, and improvements could be made to the transcription software.

REVIEW & REFLECT

The huge cost savings of conducting interviews with Zoom compared with in-person interviews, combined with the easy access to video recordings for data analysis meant that the research process was extremely rich, effective and efficient.

Common practice prior to the Covid pandemic was to conduct interviews in-person and digitally record these. However the pandemic has restricted travel and in-person meetings, and the use of video-conferencing has become the 'new normal' across the workplace and society. The use of video-conferencing software for qualitative data collection and analysis is a new and emerging research method, with little past literature to draw upon. Recent articles supporting the approach include Archibald, Ambagtsheer, Casey & Lawless (2019), Andrejuk (2020) and Lobe, Morgan and Hoffman (2020).

Key finding: The researcher suggests that conducting interviews by Zoom and recording videos for data analysis (with informed consent) in future qualitative research is an appropriate and cheaper alternative than in-person interviews if participants are located at great distances from the researcher and each other, and/or if there is not a further need to be on-site to collect

additional research data. The researcher suggests that consideration be given to the use of higher quality digital transcription software, if consistent with ethics approval.

SECTION 4: SUMMARY & RECOMMENDATIONS/SUGGESTIONS

The key takeaways documented within the report have been used to form the basis of the report summary and recommendations/suggestions for further research and/or implementation.

RESEARCH WITH WILD DOG NETWORK (SECTION 1)

SUMMARY

1. The wild dog management network is a highly cohesive network, members of which value the support of each other because of their isolated, conflicted and at times traumatic working lives. The network is built on strong relationships and friendships that developed through in-person interactions during conferences, meetings and associated social activities over approximately the past eight years. They enjoy engaging with each other and are highly supportive of the monthly Zoom sessions that were initiated in early 2020.
2. The existing features of the Zoom sessions are well-supported by participants, and are likely to engender the network's ongoing interaction.
3. Participants' strong existing relationships that have developed through past in-person formal and informal interactions were identified as paramount to the success of the online interactions.
4. Their strong relationships have contributed to a high level of psychological safety and trust in the group that is necessary for open and relaxed conversation and expression of diverse opinions. Psychological safety and trust are augmented by and demonstrated by their capacity for banter, chat and fun during informal interaction.
5. Participants value learning from each other and from researchers who are often scheduled to present during the Zoom sessions. They also value the research reports that are distributed amongst the group.
6. While learning from each other and from researchers is important to participants, the social aspects and psychological/emotional support of the group are equally as important.
7. Strong relationships and connections are linked to job satisfaction, enjoyment and commitment and the transfer of tacit knowledge.
8. It is important that staff continue to be supported given their high levels of tacit knowledge, the years it takes to form positive working relationships within their communities, and the isolated, conflicted and often traumatic nature of their jobs.

RECOMMENDATIONS

Note: the following include recommendations/suggestions for the wild dog management network, CISS, funders and other groups

1. Continue with the regular Zoom sessions, including time within each session for informal discussions and banter. These are of high value to participants and contribute to psychological/emotional wellbeing, social interaction, job motivation and job satisfaction, while also enhancing learning.
2. Possible improvements to the Zoom sessions to be considered by the group include a regular schedule for the year; how to approach schedule changes if NWDMC or participants are unavailable; an intention for each meeting; and an enhanced reflective learning approach.
3. Online groups need effective facilitation and ground-rules and these may be specific to being online.
4. Continue and expand discussions on how a multi-species management approach may be implemented, including how wild dog coordinators may work within this expanded framework. Include a broader range of researchers in Zoom sessions.
5. Consider having two groups, a broader group for when researchers present and smaller group for less formal discussion. One way of doing this would be a big group for research presentations while maintaining the smaller species-specific groups for less formal interactions.
6. Schedule sessions where the focus is on one coordinator or one jurisdiction and their activities, initiatives or innovations.
7. Reconsider what social media and other tech applications will be supported and include an accessible and searchable repository of research papers and recordings.
8. Implement training in conflict management and other human dimensions, consider re-running a Muresk-type event.
9. Continue funding of baits for producers and delivery by coordinators.
10. More widespread use of video-conferencing presents an opportunity for researchers, facilitators, producers and others involved in invasive species management. At the same time it is important to acknowledge the downsides of overuse of Zoom, and to consider Zoom as an additional and beneficial tool, that supplements in-person meetings.
11. Participants identified reinstating in-person events and gatherings as a key priority when the Covid pandemic, that has curtailed travel and congregating, permits. While many benefits accrue from the regular Zoom sessions, Zoom sessions are viewed as augmenting rather than replacing in-person gatherings. In-person formal and informal interactions are identified as crucial to building and maintaining ongoing social relationships, supporting psychological/emotional wellbeing and enabling deep, broad and rich learning.

RESEARCH WITH OTHER KEY INFORMANTS (SECTION 2)

SUMMARY

1. In-person meetings and conferences are viewed as superior to online meetings through their enhanced capacity for developing and maintaining relationships, building networks, improving collaboration and creating opportunities for further initiatives. However, meeting through Zoom is far cheaper and time effective than travelling to meetings in-person when people already know each other and when meeting in-person is not necessary. Zoom is viewed as superior to phone and may assist in maintaining relationships and collaborations that have been established in-person.
2. Collaboration is challenging when publishing, funding and challenges of working together are inherently competitive.
3. When work units function effectively, this leads to greater job satisfaction and performance and improved collaborative and community outcomes.
4. Effective communities of practice can enhance the experiences and learning of participants which is likely to lead to improved on-ground collaboration and outcomes in relation to invasive species management.

RECOMMENDATIONS

1. Prioritise in-person meetings and conferences and associated informal activities over online meetings, and establish online interaction as a valuable adjunct, but not a replacement for in-person meetings.
2. When initiating a new project, project teams meet in-person for the first meeting, *at least*. Project leaders and team members may benefit from mentoring and/or coaching in how to work well together to successfully achieve outcomes.
3. Consider, research and implement key activities and initiatives, such as mentoring and/or coaching that improve collaboration, for example rewarding collaboration, identifying the barriers to collaboration and fostering connections through in-person meetings and conferences to improve collaborative efforts, and ultimately invasive species outcomes.
4. Consider, research and implement an integrated approach to invasive species management, including ongoing improvements to coordination and management within and across species and jurisdictions; consistent monitoring of numbers and impacts; different options for investment; and instigating longer-term vision.
5. Consider, research and implement key activities and initiatives, such as mentoring and/or coaching that will help improve the effectiveness of work units and team, including creating a supportive work environment that fosters collaboration, motivation, performance, and ultimately achieves improved invasive species outcomes. It is recommended that this is supported by ongoing research, implementation and mentoring/coaching.
6. Consider, research and implement key activities and initiatives, such as mentoring and/or coaching that will help improve the effectiveness of communities of practice that are established and maintained to improve the management of invasive species through a collaborative, multi-stakeholder approach.

ZOOM & ECHO360 FOR DATA COLLECTION & ANALYSIS (SECTION 3)

SUMMARY

1. Participants reported the interview being conducted by Zoom was better than had it been conducted by phone. It was perceived as just as good as being conducted in-person, and superior when considering time and cost-savings.
2. The researcher reports the interview being conducted by Zoom was better than had it been conducted by phone. It was just as good as being conducted in-person, and superior when considering time and cost-savings.
3. The researcher reports that the use of Zoom video-recordings for data analysis was superior to using audio-recordings.
4. Improvements could be made in the transcription software.

RECOMMENDATIONS

1. The researcher suggests that conducting interviews by Zoom and recording videos for data analysis (with informed consent) in future qualitative research is an appropriate and cheaper alternative than in-person interviews if participants are located at great distances from the researcher and each other, and/or if there is not a further need to be on-site to collect additional research data.
2. Automatic transcription is a viable and much faster and cheaper alternative than transcription by a person providing the quality is satisfactory.

CONCLUDING REMARKS

Australia has a poor track record in conserving its ecosystems and maintaining biodiversity. Invasive species, such as wild dogs, pigs, goats, cats, deer and rabbits, cause extensive damage to natural ecosystems and agricultural production systems, are a key threat to biodiversity, and a major cause of extinction of native flora and fauna. As well as having significant environmental impacts, invasive species continue to result in high economic, social and human costs. The management of invasive species, control of which may be highly conflicted and traumatic, requires innovative solutions, and the involvement of a wide range of stakeholders and diverse perspectives.

It is vital that continuous learning and collaborative and adaptive processes are prioritised in all aspects of invasive species management, including research and practice, if innovative responses to these wicked social-ecological challenges are to continue to emerge. Moreover, those who work in facilitation and co-ordination roles continue to need ongoing and strong support, particularly when their roles are isolated, conflicted and often traumatic. It is expected that ongoing support, including through regular in-person and online interaction, will continue to contribute to maintaining their motivation, job satisfaction, performance and long-term commitment to their roles, each other and their stakeholders, thereby improving invasive species outcomes.

The research findings highlight the continuing need for in-person events that enable rich learning, social interaction and psychological/emotional support. In-person gatherings can be augmented with, but not replaced by the ongoing and potentially increased use of video-conferencing, such as Zoom. Further research, implementation and collaboration between researchers, coordinators and other personnel is recommended and an integrated approach to

multi-species considered. Human dimensions must continue to be prioritised. This may include further research, and implementation of initiatives such as coaching and mentoring to improve team, work unit and learning network effectiveness which will ultimately improve invasive species outcomes.

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REFERENCES

- Amabile, T. (1997). Motivating creativity in organizations: On doing what you love and loving what you do. *California Management Review*, 40(1), 39-58.
- Andrejuk, K. (2020). Online qualitative research in immigrant communities: opportunities and challenges during the pandemic. *Ask Research and Methods* 29(1): 55-73.
- Archibald, M. Ambagtsheer, R. Casey, M. & Lawless, M. (2019), Using zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*, 18.
- Ardichvili, A. (2008) 'Learning and Knowledge Sharing in Virtual Communities of Practice: Motivators, Barriers, and Enablers.' *Advances in Developing Human Resources* 10 (4), 541-54.
- Biggs, R., Westley, F., & Carpenter, S. (2010). Navigating the back loop: Fostering social innovation and transformation in ecosystem management. *Ecology and Society*, 15(2), 9.
- Boud, D., et al. (2009). Talking up learning at work: Cautionary tales in co-opting everyday learning. *International Journal of Lifelong Education* 28(3): 323-334.
- Bourhis, A., Dubé, L. and Jacob, R. (2010) 'Structuring Spontaneity': Investigating the Impact of Management Practices on the Success of Virtual Communities of Practice.' *Journal of Organisational Change Management*. 18 (2), 145-166.
- Cerasoli, C. P., et al. (2014). "Intrinsic Motivation and Extrinsic Incentives Jointly Predict Performance: A 40-Year Meta-Analysis." *Psychological Bulletin* 140(4): 980-1008.
- Cundill, G., Leitch, A., Schultz, L., Armitage, D., & Peterson, G. (2015). Principle 5 - Encourage learning. In R. Biggs, M. Schuller, & M. Schoon (Eds.), *Principles for building resilience: Sustaining ecosystem services in social-ecological systems* (pp. 174-200). Cambridge, United Kingdom: Cambridge University Press.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350-383. doi:10.2307/2666999
- Folke, C. (2007). Social–ecological systems and adaptive governance of the commons. *Ecological Research*, 22(1), 14-15. doi:10.1007/s11284-006-0074-0
- Imperial, M. (1999). Institutional analysis and ecosystem-based management: The institutional analysis and development framework. *Environmental Management*, 24(4), 449-465.
- Lobe, B., et al. (2020). "Qualitative data collection in an era of social distancing." *International Journal of Qualitative Methods*, 19.
- Marsick, V., & Volpe, M. (1999). The nature and need for informal learning. *Advances in Developing Human Resources*, 1(3), 1-9. doi:10.1177/152342239900100302
- Marsick, V., & Watkins, K. (2001). Informal and incidental learning. *New Directions for Adult and Continuing Education*, 2001(89), 25-34.
- Meyer, J., Allen, N., & Smith, C. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, 78(4), 538-551.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York, NY: Oxford University Press.

- Pahl-Wostl, C. (2007). Transitions towards adaptive management of water facing climate and global change. *Water Resources Management*, 21(1), 49-62. doi:10.1007/s11269-006-9040-4
- Rooney, D., Manidis, M., & Scheeres, H. (2016). Making space for consuming practices. *Vocations and Learning*, 9(2), 167-184.
- Ryan, R., & Deci, E. (2017). *Self-determination theory basic psychological needs in motivation, development, and wellness*. New York, NY: Guilford Publications.
- Solomon, N., Boud, D., & Rooney, D. (2006). The in-between: Exposing everyday learning at work. *International Journal of Lifelong Education*, 25(1), 3-13.
- Steel, B. S., & Weber, E. (2001). Ecosystem management, decentralization, and public opinion. *Global Environmental Change*, 11(2), 119-131.
- Tessier, S. (2012). From Field Notes, to Transcripts, to Tape Recordings: Evolution or Combination? *International Journal of Qualitative Methods* 11(4): 446-460.
- Yerkes, L. (2007). *Fun Works : Creating Places Where People Love to Work*, Oakland: Berrett-Koehler Publishers, Incorporated.
- Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Harvard Business School Press: Boston, MA

APPENDIX 1. INTERVIEW GUIDE

Demographics

1. Role and length of time in current job
2. Previous roles and approximate length of time in these
3. Age range
4. Gender
5. Academic qualifications

Questions
What teams, work units or learning networks are you involved in and what are their features?
What are the features of the team, work unit or learning network in-person and/or Zoom sessions, for example, format, duration, regularity, facilitation, content, participants?
What are the benefits of teams, work units or learning networks that you are/have been involved in?
What is/was needed for the team, work unit or learning network to be established?
Did you set ground rules for your team, work unit or learning network in-person or zoom sessions? If so, what are/were these? Are these adhered to?
What is needed for a team, work unit or learning network to be successfully maintained?
What are/were the barriers/difficulties and improvements to your team, work unit or learning network being established and maintained?
Do you believe you can speak openly without judgement? In your opinion, do you think everyone contributes equally and when they want to?
If you have, or were to, set up a team, work unit or learning network, what would you do? What steps or actions would you take, and in what order?
(Wild dog management participants) When researchers present on your Zoom session, do you believe you can transfer results, findings or recommendations to your area, to make them context specific? If so, how do you do this? If not, what may help?
Are there other aspects of invasive species management that you want to learn about? If so, what?
(Wild dog management participants) What other platforms/social media applications have you used/are using? Which are useful and why? Which are not so useful and why? Are there other platforms that have been tried or you would like to try?
Is information that is shared stored? If so, how? Is this important?
What if you have a question, or want help, or a chat between in-person or zoom meetings, what do you do?
How has this zoom interview been? How would you compare it to a face-to-face interview? Telephone interview?
Any other comments?

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