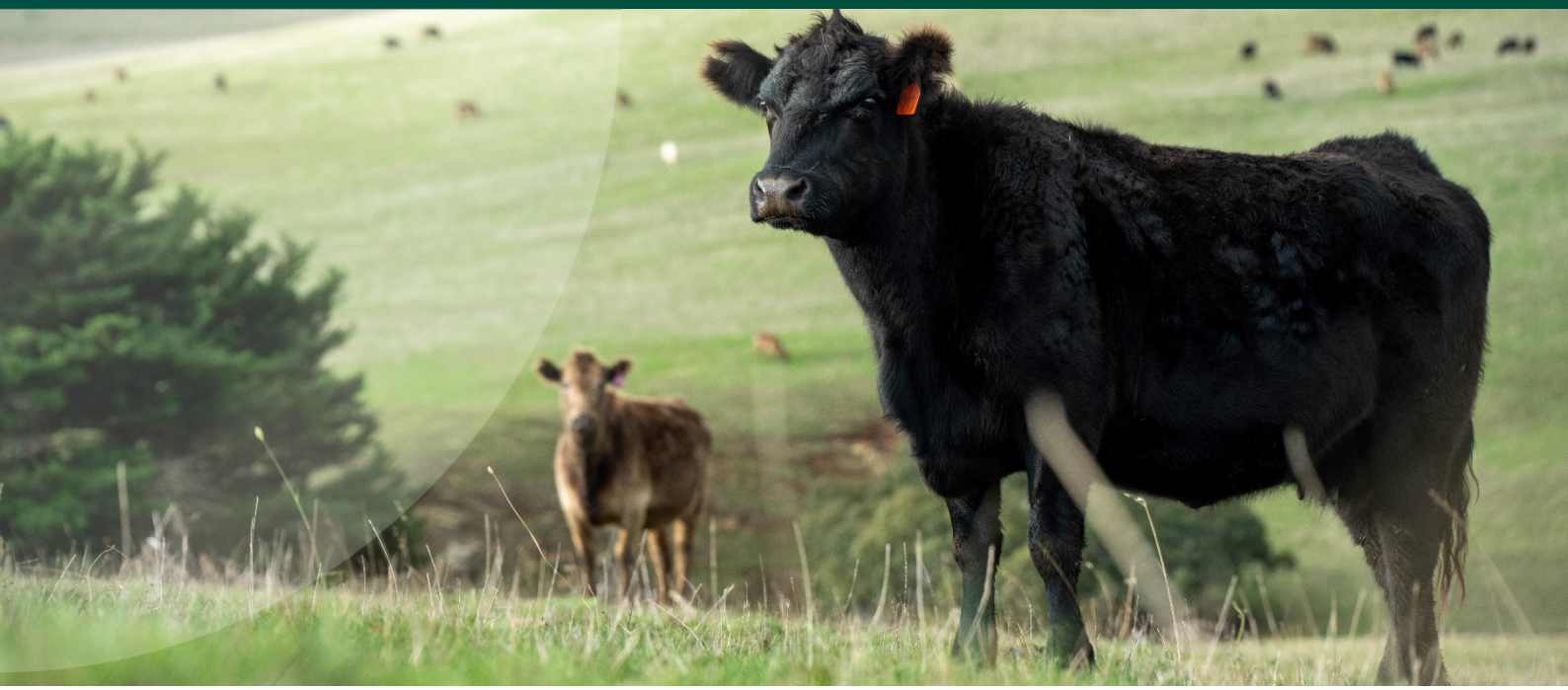
Committee on Investment, Industry and Regional Development

LEGISLATIVE ASSEMBLY

Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024



Report 2/58 – October 2024

New South Wales Parliamentary Library cataloguing-in-publication data:

A catalogue record for this
book is available from the
National Library of Australia

ISBN: 978-1-925214-51-2

The motto of the coat of arms for the state of New South Wales is “Orta recens quam pura nites”. It is written in Latin and means “newly risen, how brightly you shine”.

Contents

Membership

Chair	Mr Roy Butler MP
Deputy Chair	Mr Stephen Bali MP
Members	Mr Justin Clancy MP Ms Charishma Kaliyanda MP Mr Warren Kirby MP Ms Maryanne Stuart MP Mr Richie Williamson MP
Contact details	Committee on Investment, Industry and Regional Development 6 Macquarie Street SYDNEY NSW 2000
Telephone	02 9230 2601
E-mail	investmentindustry@parliament.nsw.gov.au
Website	www.parliament.nsw.gov.au/committees

Chair's foreword

With farmers in New South Wales facing increasing challenges from natural disasters and fluctuating markets, it is important to examine whether virtual stock fencing technology can help them and the broader environment.

The *Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024*, introduced by Mr Philip Donato MP, Member for Orange, aims to legalise the commercial use of virtual fencing in New South Wales. The bill was referred to our Committee so we can hear from the public about the impact of the technology and look into the benefits, risks and any unintended consequences raised by the bill.

Throughout the inquiry, it was clear that the technology provides numerous benefits to farmers including better pasture and grazing management, cost savings from reducing the need for physical fences, increased labour productivity and reduced exposure to work health and safety issues.

We also heard that the benefits extend to the broader environment. For example, the technology can help farmers better preserve ecologically sensitive areas. Through constant monitoring of stock animals, virtual fencing also allows farmers to quickly identify sick animals and prevent the spread of disease.

To help farmers access these benefits, we have recommended that the NSW Government consider legalising virtual stock fencing. This is important not only for farmers but also the New South Wales agriculture sector as a whole. Other Australian and overseas jurisdictions, such as Tasmania, Queensland, Western Australia and New Zealand, already allow the commercial use of virtual fencing. Consistency in the accessibility of this technology is key to ensuring the competitiveness of New South Wales agriculture.

We know that there are concerns about the animal welfare risks of this technology and heard from a wide range of stakeholders to understand these risks. Some Committee members also went to Queensland to see and test the technology in person.

Animal welfare organisations told us that the delivery of electric shocks could cause anxiety and stress to animals. They also said a lack of regulation on the technology including its operation, collar design and the intensity and frequency of electric shocks can lead to animal welfare risks.

Researchers told us that the animal welfare impact of virtual fencing would be determined by stock management techniques and the features of the technology. Most stakeholders agreed that safeguards can mitigate animal welfare risks and we have considered the suggestions they put forward in Chapter Two.

To support animal welfare and mitigate unintended consequences, we have recommended that the Department of Primary Industries and Regional Development develop a mandatory code of practice. The code of practice would prescribe in detail what characteristics are permissible in the design of the technology, including the strength of the electrical stimulus, the weight of the device and the ability to monitor and alert critical welfare data.

We have also recommended that the Department develop a community education campaign on the operation, risks, benefits, and permissible uses of virtual stocking fencing. This would help farmers and communities better understand the technology and address their concerns.

Finally, we recognise that the technology is fast developing and the legal framework should be reviewed and updated accordingly. We have recommended that the NSW Government review amendments to legalise virtual fencing two years after their commencement to ensure they remain fit for purpose. This should also allow the government to leverage the virtual fencing regulation work currently led by the Animal Welfare Task Group of the Australian Government Department of Agriculture, Fisheries and Forestry.

On behalf of the Committee, I thank everyone who made a submission or appeared as a witness at the public hearing. The inquiry evidence provided valuable insights and helped members understand virtual fencing. We hope this report and its recommendations will help the House and the NSW Government consider this bill and any future legislations on virtual fencing.

In closing, I want to thank all members of the Committee for their dedication and insights. This is an emerging technology that required us to diligently go through all evidence and develop recommendations that balance animal welfare and benefits to farmers.

This work is made possible through the dedicated support of the secretariat. I want to thank and acknowledge the excellent work they do in supporting inquiries like this one. The public would probably not appreciate just how much work happens in between meetings and hearings. The public value delivered through inquiries supported by the secretariat is significant and inquiries like this form a key part of Parliamentary and democratic process.

Mr Roy Butler MP
Chair

Findings and recommendations

- The velocity of an animal at which it will not receive a shock.
- The prohibition of the ability to manually deliver shocks.
- The ability to monitor and alert critical welfare data and thresholds.
- The time lag between data collection and access/reporting.
- The management and supervision of animals using virtual stock fencing devices.

That the Department of Primary Industries and Regional Development review the operation of internal fencing in regional New South Wales including the benefits and risks of removing redundant internal fences when virtual fences are put in place.

That the Department of Primary Industries and Regional Development develop a community education campaign on the operation, risks, benefits, and lawful use of virtual stock fencing.

Chapter One – Virtual Stock Fencing

Outline of virtual stock fencing technology

Summary

Virtual stock fencing technology is a system that can confine and move animals without the use of physical fences. The following section outlines the main features of this technology as well its legal status in New South Wales and other Australian states and territories.

1.1 Virtual stock fencing technology is a fencing system that can move, confine, and monitor animals without the need for physical fences.[1]

1.2 The Committee heard how this technology controls the location of livestock through the following features.

- Global Position System (GPS): with the help of GPS, users can create a digital fence through an application on a computer or handheld device. The placement of a digital fence is co-ordinated by GPS, which in turn communicates with cellular networks to locate animals.[2]
- Wireless devices: virtual stock fencing technology requires the placing of wireless neckbands or collars on animals to track their location relative to the virtual fence and enforce virtual boundaries. The devices are either solar or battery powered.[3]
- Sensors: when an animal approaches the virtual fence, the neckband or collar emits an audio cue for a defined period of time, encouraging the animal to move away from the virtual fence.[4] If the animal ignores the audio cue, a mild electric shock will be delivered to deter the animal from crossing the virtual fence.[5]

Technical details of virtual stock fencing technology

The Committee heard from technology providers and researchers about the technical details of virtual fencing.

- The neckbands or collars usually deliver an electric shock between 0.18 and 0.20 joules while a shock from a conventional 'mains-powered electric fence' can range from 18 to 40 joules.[6]

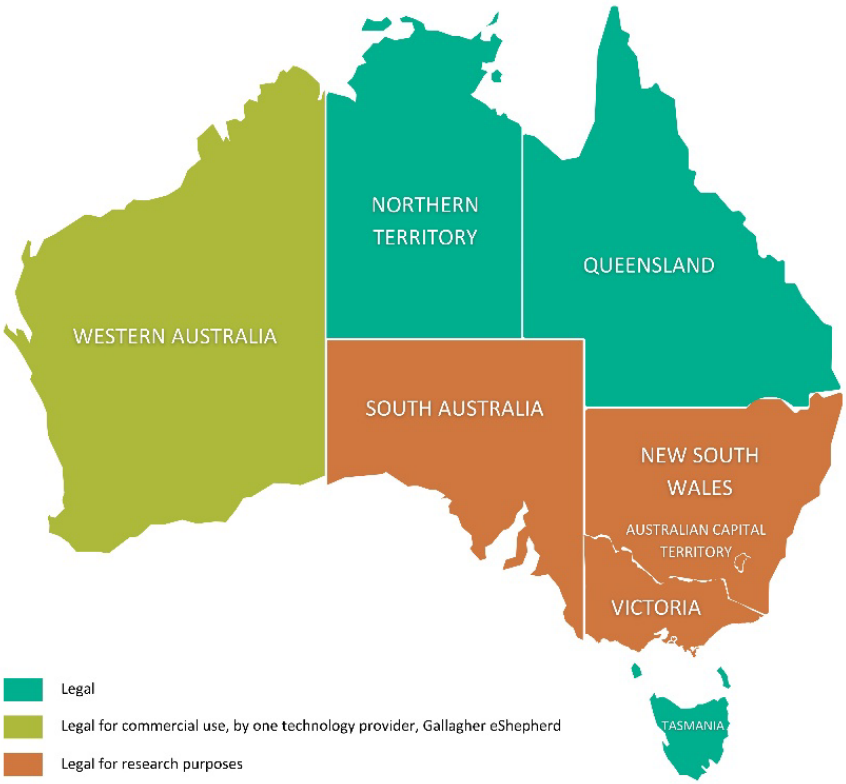
[1] An overview of the technology can be found in: New South Wales, Legislative Assembly, *Parliamentary Debates*, second reading, 8 February 2024 (Mr Phil Donato MP, Member for Orange).
[2] Submission 37, MSD Animal Health, p 2; Submission 42, (Gallagher eShepherd) Pty Ltd, p 2.
[3] Submission 37, MSD Animal Health, p 2; Submission 47, Halter, p 3.
[4] Submission 42, Gallagher eShepherd, p 2.
[5] Submission 37, MSD Animal Health, p 2; Submission 42, Gallagher eShepherd, p 2; Submission 47, Halter, p 3.
[6] Submission 37, MSD Animal Health, p 3; Submission 42, Gallagher eShepherd, p 2; Submission 47, Halter, p 4.

- The neck bands or collar usually weigh between and 1.13 kg and 1.42 kg.[7]
- Animals can physically break free from the neckbands when necessary and the breaking point for cattle is between 180 kg and 360 kg.[8]
- The technology uses a 'base station' and/or 'communication network' to ensure sufficient communication coverage for each farm.[9] For example, MSD Animal Health, a US-based virtual stock fencing technology provider, stated that their base station was designed to cover 10,000 to 100,000 acres.[10] This is equivalent to around 4,000 to 40,000 hectares.

Legal status of virtual stock fencing in Australia

1.3 States and territories in Australia have different approaches to virtual stock fencing. The following graph outlines its legal status across Australia.

Figure: Legal status of virtual stock fencing in Australia as of October 2024



1.4 In Queensland and Tasmania, virtual stock fencing is legal for both commercial and research use. There is no legislation or code of conduct regulating the use of the technology.[11]

[7] Submission 37, MSD Animal Health, p 2; Submission 47, Halter, p 8.
[8] Submission 37, MSD Animal Health, p 2; Submission 47, Halter, p 8.
[9] Submission 47, Halter, p 8.
[10] Submission 37, MSD Animal Health, p 2.
[11] Submission 55, Animal Defenders Office (ADO), p 7; *Animal Welfare Act 1993* (Tas); *Animal Care and Protection Act 2001* (Qld), s 18 (2)(e), s 37A; *Animal Care and Protection Regulation 2023* (Qld).

1.5 In the Northern Territory virtual stock fencing is legal and expressly permitted by the regulations. Farmers in the Northern Territory are required to use virtual fencing in line with the manufacturer's instructions.[12]

1.6 In Western Australia, only virtual stock fencing devices from Gallagher eShepherd are permitted for commercial use on cattle.[13]

1.7 In South Australia, Victoria, the Australian Capital Territory and New South Wales, virtual stock fencing is only permitted for research purposes and not for commercial use.[14] These restrictions are outlined in relevant animal welfare legislations.[15]

Legalising virtual stock fencing in New South Wales

Summary

Currently, virtual stock fencing is not permitted for commercial use in New South Wales. The *Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024* (the bill) aims to legalise virtual stock fencing for commercial use, allowing farmers in New South Wales to access the technology. The section below outlines the objectives and key provisions of the bill.

1.8 The bill seeks to amend the *Prevention of Cruelty to Animals Act 1979* (POCTA Act) to legalise virtual stock fencing by removing 'virtual stock fencing device' from the list of prohibited devices in the POCTA Act.[16]

1.9 The bill defines a virtual stock fencing device as one that:

> Consists of GPS-enabled sensors and collars capable of delivering electric pulses and cues to stock animals, and is used for the purposes of confining, tracking, and monitoring stock animals.[17]

1.10 This means that the bill would allow the placing of a collar capable of delivering electric pulses and cues on stock animals for the purposes of confining, tracking, and monitoring animals. Chapter Two discusses the definition in more detail.

The POCTA Act and virtual stock fencing devices

The POCTA Act is the primary legislation in New South Wales safeguarding the welfare of animals. The Act aims to prevent cruelty to animals and encourage considerate treatment of animals. It also enforces these principles by

[12] *Animal Protection Act 2018* (NT), s 30; *Animal Protection Regulations 2022* (NT), sch 2.
[13] *Animal Welfare (General) Regulations 2003* (WA), r 3(a), r 7.
[14] RSPCA NSW, 'What is virtual fencing (and virtual herding) and does it impact animal welfare?', knowledgebase, (last updated 2 July 2024), viewed 25 July 2024.
[15] *Prevention of Cruelty to Animals Act 1979* (NSW)(POCTA Act); *Prevention of Cruelty to Animals Regulation 2012* (NSW)(POCTA Regulation); *Animal Welfare Act 1985* (SA); *Animal Welfare Regulations 2012* (SA); *Animal Welfare Act 1992* (ACT); *Animal Welfare Regulation 2001* (ACT); *Prevention of Cruelty to Animals Regulation* 2019 (Vic).
[16] Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024.
[17] Proposed Virtual Stock Fencing Bill, sch 1 [2] s 16(1), p 3.

criminalising certain conduct, including the use of certain 'electrical devices' on animals.[18]

Section 16 of the POCTA Act prohibits the use of 'electrical devices' on animals.[19] These devices are defined in the *Prevention to Cruelty to Animals Regulation 2012* (POCTA Regulation) as 'any other device producing an electrical discharge that is used in such a way that the animal … cannot move away from the device.'[20] The only exception is using the devices for animal research purposes.[21]

As outlined earlier in this chapter, virtual stock fencing devices deliver a mild electric shock to animals when they cross the virtual boundary and animals cannot move away from the neckbands. This means that virtual stock fencing is not permitted under the POCTA Act in New South Wales.

[18] POCTA Act, pt 2.

[19] POCTA Act, s 16(2).

[20] POCTA Regulation (NSW), sch 3.

[21] POCTA Act, s 24(1)(e).

Chapter Two – Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024

Options to legalise virtual stock fencing

Summary

Virtual stock fencing can be legalised either through an amendment to the POCTA Act or the POCTA Regulation. Stakeholders were concerned that the former approach would be inconsistent with the current legal practice and suggested that a regulatory amendment might be more appropriate.

Recommendation 1

That the House proceed to debate the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024, and consider recommendations and evidence from this inquiry.

Recommendation 2

That the NSW Government legalise virtual stock fencing by amending the Prevention of Cruelty to Animals Regulation 2012 and review these amendments two years after their commencement to ensure they are fit for purpose.

2.1 As outlined in Chapter One, the bill proposes to legalise virtual stock fencing in New South Wales by amending the POCTA Act.

2.2 The Committee recommends that the NSW Government legalise virtual stock fencing via an amendment to the POCTA Regulation. This would ensure consistency with the current legislative practice and flexibility in the regulation of virtual stock fencing.

2.3 We note that the POCTA Act is currently under review by the NSW Department of Primary Industries and Regional Development (DPIRD).[22] The Animal Welfare Task Group (AWTG) of the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) is also developing a national guide for virtual stock fencing regulations.[23]

[22] Dr Kim Filmer, Chief Animal Welfare Officer, NSW Department of Primary Industries and Regional Development (DPIRD), Transcript of evidence, 5 July 2024, p 52.

[23] Submission 51, (NSW Farmers') Association, p 4; Submission 52, (Dairy NSW) Ltd, p 1; Dr Andrew Hancock, Sustainable Animal Care Manager, Dairy Australia, Transcript of Evidence, 5 July 2024, p 32; Dr Helen Schaefer, Team Leader Policy and Programs (Livestock), NSW Department of Primary Industries and Regional Development (DPIRD), Transcript of evidence, 5 July 2024, p 47; Dr Filmer, DPIRD, Transcript, p 48; Department of Agriculture, Fisheries and Forestry, The Animal Welfare Task Group, webpage, Australian Government, viewed 21 August 2024.

2.4 Some inquiry participants suggested that the legalisation of virtual stock fencing in New South Wales could wait until the completion of the national guide.[24] However, the precise timeline and deliverables of this project were unclear at the time of the inquiry.[25]

2.5 The Committee is of the view that legalising virtual stock fencing should not depend on the outcome of lengthy government reviews given its benefits. We note that any amendments to legalise virtual fencing in New South Wales can be reviewed two years after their commencement to ensure they remain fit for purpose. They can also be updated to align with review recommendations.

2.6 Some stakeholders questioned whether it is appropriate to amend the POCTA ACT to legalise virtual stock fencing. They were concerned that this approach:

- departs from the current legislative practice of introducing permitted electrical devices via the POCTA Regulation.[26]
- contradicts with the objects of the POCTA Act.[27]
- offers less flexibility as virtual fencing technology develops over time. This is because amending the POCTA Act would be more cumbersome than amending the POCTA Regulation.[28]

2.7 The Animal Defenders Office said that the government usually introduces permitted 'electric devices' by amending the POCTA Regulation. The bill's approach would therefore be inconsistent with the current legislative practice and the inconsistency could lead to 'interpretive issues'.[29]

2.8 We also heard concerns that amending the POCTA Act to legalise the technology would contradict with the objects of the Act.[30] The objects of the Act are to 'prevent cruelty to animals' and 'promote the welfare of animals'.[31] Animal Defenders Office argued that animal welfare should be the primary justification for an amendment to the POCTA Act.[32]

2.9 The Royal Society for the Prevention of Cruelty to Animals (RSPCA) NSW suggested a more flexible approach to legalise virtual fencing through the POCTA Regulation. Specifically, they proposed that Schedule 3 of the POCTA Regulation could be amended to permit virtual stock fencing for specified purposes and for particular stock animals. They explained that a flexible approach is 'particularly

[24] Submission 55, ADO, p 7; Dr Liz Arnott, Chief Veterinarian, Royal Society for the Prevention of Cruelty to Animals (RSPCA) NSW, Transcript of evidence, 5 July 2024, pp 7-8; Dr Filmer, DPIRD, Transcript, pp 48-49.
[25] Dr Shaefer, DPIRD, Transcript, pp 47-48; Dr Filmer, DPIRD, Transcript, p 48.
[26] Submission 55, ADO, pp 5, 12.
[27] Submission 50, Environmental and Natural Resources Law Research Unit (ENREL), The University of Adelaide, p 5; Mr Ken Powell, Senior Solicitor, Animal Defenders Office (ADO), Transcript of evidence, 5 July 2024, p 17.
[28] Submission 49, Royal Society for the Prevention of Cruelty to Animals (RSPCA) NSW, p 5.
[29] Submission 55, ADO, pp 5, 12.
[30] Submission 50, ENREL, p 5; Mr Powell, ADO, Transcript, p 17.
[31] POCTA Act, s 3.
[32] Mr Powell, ADO, Transcript, p 17.

important' because there is 'incomplete' evidence on the risks of virtual stock fencing on different stock animals and for different use cases.[33]

2.10 DPIRD also stated that any approach to legalise virtual stock fencing should be 'flexible' and 'futureproofed'. This is to ensure that the legal framework can accommodate new development in research over time.[34]

Definition of virtual stock fencing technology

Summary

Virtual stock fencing technology is broadly defined in the bill and does not exclude the use of virtual stock fencing as perimeter fencing. The definition is also unclear about whether 'herding' would be a permissible use case. Stakeholders were concerned about the potential unintended consequences of this definition.

Recommendation 3

That the Department of Primary Industries and Regional Development prohibit the use of virtual stock fencing as perimeter fencing or replacing physical perimeter fencing with virtual fencing, when legalising the technology.

Recommendation 4

That the Department of Primary Industries and Regional Development include "herding" in the definition of virtual stock fencing devices, when legalising virtual stock fencing.

Virtual stock fencing should not replace physical perimeter fencing

2.11 The current definition of virtual stock fencing would allow it to replace physical perimeter fences, potentially putting animals and communities at risk when virtual fencing fails. This includes stray stock animals on public roads harming communities[35] or confrontation between stock and wildlife.[36]

2.12 The Committee is of the view that virtual stock fencing should only be used for internal fencing. To mitigate the risk, the Committee recommends that DPIRD prohibit the use of virtual stock fencing as perimeter fences or replacing physical perimeter fences with virtual fencing.

Definition of virtual stock fencing device

The bill defines virtual stock fencing as a device:

- consisting of a GPS-enabled sensors and collars capable of delivering electric pulses and cues to stock animals, and

[33] Submission 49, RSPCA NSW, p 5.

[34] Dr Filmer, DPIRD, Transcript, p 47; Dr Shaefer, DPIRD, Transcript, p 49.

[35] Submission 15, Mr Derek Shaw, p 1; Submission 56, Sydney (School of Veterinary Science), University of Sydney, p 3; Ms Robyn Cooper, Manager Health & Regulatory Services, Shire Futures, Wollondilly Shire Council, Transcript of evidence, 5 July 2024, p 38.

[36] Submission 39, (FOUR PAWS) Australia, p 2; Submission 53, Wildlife Information, Rescue and Education Service (WIRES), p 6.

- used for the purposes of confining, tracking, and monitoring stock animals.[37]

2.13 We heard that physical perimeter fencing provides an important safeguard for communities and cannot be replaced.[38]

2.14 Stakeholders told us that stock animals can breach virtual fencing in some circumstances. For example, most virtual stock fencing devices allow collars to deactivate as a safeguard measure.[39] Halter collars deactivate if a cow or group of cows fail to respond to the guidance cues.[40]

2.15 Animals may also trespass virtual fencing when needed, for example, a mother needing to get to a calf or stock animals being chased by a predator. MSD Animal Health explained that to support animal welfare, virtual stock fencing is designed in a way that allows stock animals to ignore the virtual fence when compelled to.[41]

2.16 Wollondilly Shire Council said that stock animals might run through a virtual fence to escape from dangerous situations. If there was no physical fence acting as the last barrier, stock could wander onto public roads with 'catastrophic' consequences.[42]

2.17 Inquiry participants also raised the issue of device failure.[43] For example, the Sydney School of Veterinary Science at the University of Sydney said a system failure such as a power outage could cause animals to escape and go astray.[44]

2.18 Additionally, the Wildlife Information Rescue and Education Service (WIRES) and FOUR PAWS Australia were concerned that an absence of perimeter fencing could lead to confrontations between stock animals and wildlife.[45] WIRES highlighted instances of cattle injuring koalas.[46] FOUR PAWS noted that predator-proof fencing provides a physical barrier that helps prevent farmed animals being attacked by predators.[47]

2.19 Virtual stock fencing producer, Gallagher eShepherd, agreed that physical perimeter fencing should be maintained. They said that perimeter fences provide

[37] Virtual Stock Fencing Bill.
[38] Submission 15, Mr Shaw, p 1; Submission 26, Wollondilly Shire Council, p 1; Submission 50, ENREL, p 4; Submission 56, School of Veterinary Sciences, p 3.
[39] Submission 37, MSD Animal Health, p 2; Submission 42, Gallagher eShepherd, p 2; Submission 47, Halter, p 7.
[40] Submission 47, Halter, p 7.
[41] Mr Frank Wooten, Director of Marketing, MSD Animal Health, Transcript of evidence, 5 July 2024, p 25.
[42] Ms Cooper, Wollondilly Shire Council, Transcript, p 38.
[43] Submission 15, Mr Shaw, p 1; Submission 56, School of Veterinary Sciences, p 3; Ms Cooper, Wollondilly Shire Council, Transcript, p 38.
[44] Submission 56, School of Veterinary Sciences, p 3.
[45] Submission 39, FOUR PAWS, p 2; Submission 53, WIRES, p 6.
[46] Submission 53, WIRES, p 6.
[47] Submission 39, FOUR PAWS, p 2.

an important backup to virtual fences and they do not sell their technology to farms where a boundary fence is not in place.[48]

'Herding' animals should be a permissible use case

2.20 As outlined in the previous section, the bill does not explicitly list 'herding' as a purpose for virtual stock fencing. This means that farmers might not be able to herd stock animals with the technology.

2.21 To ensure farmers can access the benefits of virtual herding, the Committee recommends that DPIRD include 'herding' in the definition of virtual stock fencing devices, when legalising virtual stock fencing.

Virtual herding

Apart from monitoring, tracking and confining stock animals, virtual stock fencing devices can be used to herd animals actively or passively.

Some collars include an additional cue that directs the animals to walk in a certain direction. This directional cue can be used to move cattle to a new area or towards milking sheds.[49] This is known as 'active' herding.

Users can also move stock animals 'passively' by gradually opening up new grazing areas and then closing off previous areas once the herd has moved on.[50]

2.22 We heard that different herding methods may suit different types of cattle. Dr Caroline Lee, from the Commonwealth Scientific and Industrial Research Organisation (CSIRO), explained that passive herding appeared to work better on beef cattle compared to active herding.[51] Dr Megan Verdon, from the Tasmanian Institute of Agriculture at University of Tasmania, noted that active herding can direct dairy cows to milking sheds and they usually learn to respond to the active herding cues within four days.[52]

2.23 Stakeholders told us that using virtual stock fencing to herd animals could save time, reduce injury, and enhance job satisfaction for farmers.[53] For example, both the Federated Farmers of New Zealand and NSW Farmers' Association said that virtual herding could potentially increase productivity and reduce on-farm labour requirements.[54]

---

[48] Ms Sarah Adams, GM Strategy and New Ventures – Gallagher Animal Management, (Gallagher eShepherd) Pty Ltd, Transcript of evidence, 5 July 2024, p 21.

[49] Submission 35, Dr John Hellstrom, p 4; Submission 47, Halter, p 5; Answers to Supplementary Questions (SQ), Halter, 26 July 2024, pp 2-3.

[50] Ms Adams, Gallagher eShepherd, Transcript, p 26; Dr Caroline Lee, Senior Principal Research Scientist - Animal Behaviour and Welfare, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Transcript of evidence, 5 July 2024, p 44.

[51] Dr Lee, CSIRO, Transcript, p 44.

[52] Dr Megan Verdon, Research Fellow, Tasmanian Institute of Agriculture (TIA), University of Tasmania, Transcript of evidence, 5 July 2024, p 3.

[53] Submission 45, (Federated Farmers) of New Zealand, p 2; Submission 47, Halter, p 12; Submission 51, NSW Farmers, p 7.

[54] Submission 45, Federated Farmers, p 2; Submission 51, NSW Farmers, p 8.

2.24 Halter, a virtual fencing technology provider, noted the benefits of virtual herding in reducing fuel emissions from quad bikes. One of Halter's customers claimed that his fuel usage was 85 per cent lower as he no longer needed to move around the farm herding cattle or setting up temporary fencing.[55]

Definition of stock animals

Summary

The bill proposes to legalise virtual stock fencing for all animals defined as 'stock' under the POCTA Act. Some stakeholders raised animal welfare concerns because not all animals defined in the POCTA Act have been extensively studied in virtual stock fencing research.

Recommendation 5

That the Department of Primary Industries and Regional Development limit the use of virtual stock fencing to cattle and sheep when legalising the technology, with a view to broadening its permitted uses in the future.

2.25 The Committee heard concerns about the appropriateness of legalising virtual stock fencing for all animals defined as 'stock' in the POCTA Act.[56]

What are 'stock' under the POCTA Act?

Part 1(4) of the POCTA Act defines 'stock' as 'an animal which belongs to the class of animals comprising cattle, horses, sheep, goats, deer, pigs, poultry and any other species of animal prescribed for the purposes of this definition.'[57]

2.26 The Committee recommends that DPIRD limit the use of virtual stock fencing to cattle and sheep when legalising virtual stock fencing, with a view to broadening its permitted uses in the future. This can ensure that the technology is used on appropriate species of stock animals.

2.27 We heard that testing and adapting collars to suit different species of stock animals is important when designing virtual stock fencing devices.[58] Dr Lee told the Committee that different stock animals react to collars differently and species-specific research is required to modify collars.[59] For example, Dr Lee noted that horses are a 'flight animal,' and research 'specifically on those animals' is required to better understand how they might respond to the cues.[60]

2.28 We also heard evidence that the research on virtual stock fencing is more advanced for cattle than other species of stock. RSPCA NSW noted that most virtual stock fencing research has been undertaken on cattle.[61] Similarly, the Animal Defenders Office cited a literature review from DAFF that virtual stock

[55] Submission 47, Halter, p 12.
[56] Submission 49, RSPCA NSW, p 5; Submission 55, ADO, p 12; Dr Arnott, RSPCA NSW, Transcript, p 7.
[57] POCTA Act, pt 1(4).
[58] Dr Lee, CSIRO, Transcript, p 45.
[59] Dr Lee, CSIRO, Transcript, p 45.
[60] Dr Lee, CSIRO, Transcript, p 45.
[61] Submission 49, RSPCA NSW, p 5.

fencing research is more developed for cattle than other stock animals.[62] This aligns with the evidence from DPIRD that the technology 'is in a better place to cater for use in cattle than it is for other species'.[63]

2.29 RSPCA NSW questioned the legalisation of virtual stock fencing for sheep due to animal welfare concerns.[64] Dr Lee noted that researchers were initially 'unsure' about how well sheep would respond to the cues. However, they later found that sheep were 'quite sensitive' to the cues and learnt 'almost quicker than cattle did'.[65]

Lack of safeguard provisions in the bill

Summary

There are currently no safeguard provisions in the bill to regulate the use of virtual fencing and mitigate animal welfare concerns. The lack of safeguard provisions could lead to adverse animal welfare outcomes through deliberate or inadvertent misuse or poor animal management. To address animal welfare concerns and ensure appropriate treatment of livestock, the bill should include safeguard provisions to regulate the use and specifications of virtual fencing devices.

Recommendation 6

That the Department of Primary Industries and Regional Development develop a mandatory code of practice within three months of the tabling of this report to support the legalisation and regulation of virtual stock fencing, with a draft code to be circulated to relevant stakeholders within six weeks of the tabling of this report. The code of practice should include safeguards including but not limited to:

- **Stock management considerations including only permitting collars to be used on the intended species, the fitting and placement of collars, regular checking of collars and rapid removal of animals that are non-learners.**
- **Collar design including the weight and materials of the collar, release load break points and compliance with electrical device safety standards.**
- **The appropriate shape, size and angulation of boundaries for stock animals.**
- **The strength of the electrical stimulus, including the power and duration of the shock.**
- **The maximum number of shocks permissible before cessation.**
- **The maximum threshold of consecutive shocks.**

[62] Submission 55, ADO, p 12; Dr Andrew Fisher and Dr Amelia Cornish, *Report to Department of Agriculture, Fisheries and Forestry: Independent scientific literature review on animal welfare considerations for virtual stock fencing*, December 2022 (updated November 2023), pp 13, 15, 33.

[63] Dr Shaefer, DPIRD, Transcript, p 51.

[64] Submission 49, RSPCA NSW, p 5.

[65] Dr Lee, CSIRO, Transcript, pp 42, 45.

- **The velocity of an animal at which it will not receive a shock.**
- **The prohibition of the ability to manually deliver shocks.**
- **The ability to monitor and alert critical welfare data and thresholds.**
- **The time lag between data collection and access/reporting.**
- **The management and supervision of animals using virtual stock fencing devices.**

The need for safeguards and regulations

2.30 Animal welfare is a key concern raised by stakeholders opposing the legalisation of virtual stock fencing. They said that the deployment of virtual fencing without adequate safeguards could lead to adverse animal welfare outcomes.[66]

2.31 To mitigate animal welfare risks, the Committee recommends that DPIRD develop a mandatory code of practice to support the legalisation and regulation of virtual stock fencing.

2.32 As outlined earlier in this chapter, the AWTG is reviewing virtual fencing and aims to develop guidelines for the deployment of the technology across all Australian jurisdictions. The Committee notes that the guidelines would be advisory in nature and considers it important to put in legislative safeguards in New South Wales. These safeguards can be updated to align with the AWTG guidelines in due time.

2.33 The bill in its current form does not specify limits for the use of the technology. We heard that without legislated safeguards, new market entrants might not hold themselves to the same high standards as current technology producers.[67] The uptake in technology may also lead to lower levels of oversight from technology producers.[68] RSPCA NSW said leaving the regulation of how the devices should be used to producers is 'insufficient for such critical management requirements'.[69]

2.34 As a result, RSPCA NSW stressed the importance of 'future-proofed' legislation which provides for a minimum standard that is 'robust [and] animal welfare focused'.[70]

2.35 The following sections outline the key animal welfare concerns from inquiry participants and explain how safeguards and regulations could address these concerns.

[66] Submission 39, FOUR PAWS, pp 1, 3; Submission 43, The Hon. Emma Hurst MLC, pp 1, 2; Submission 50, ENREL, p 3; Submission 55, ADO, p 6.
[67] Dr Arnott, RSPCA NSW, Transcript, pp 9-10; Dr Hancock, Dairy Australia, Transcript, pp 32, 33; Dr Filmer, DPIRD, Transcript, p 50.
[68] Dr Filmer, DPIRD, Transcript, p 50.
[69] Submission 49, RSPCA NSW, p 3.
[70] Dr Arnott, RSPCA NSW, Transcript, pp 7, 9-10.

Stock management

2.36 The Committee recommends that the safeguards include stock animal management considerations including only permitting collars to be used on the intended species, the fitting and placement of collars, regular checking of collars, and rapid removal of animals that are non-learners.

2.37 During the inquiry, we heard that different species of stock have different requirements in the design and fit of virtual stock fencing collars. The CSIRO told us their early studies in sheep showed they require a different electrical stimulus to cattle.[71]

2.38 Some inquiry participants also said that the bill does not have an age limit for the placing of collars on animals. This can increase the risk of injury for animals who are growing rapidly and need their collars to be adjusted regularly.[72] FOUR PAWS said collars are not recommended for 'juvenile animals' and questioned how this technology would be 'managed, checked and maintained'.[73]

2.39 We heard that to prevent these issues, some technology producers have imposed age or weight requirements for collars.[74] Gallagher eShepherd told us they train weaned animals from 8 months or 200 kilograms.[75] Halter currently train cattle of 12 months, but are trialling training animals from 7 months.[76] We heard that these age or weight requirements should be regulated.[77]

2.40 Apart from collar fitting and placement, stakeholders were also concerned about animals that are slow or struggle to adapt to the technology, including due to disability.[78]

2.41 RSPCA NSW said that there is 'individual variation in how quickly cattle learn to avoid the electric shock and how often they interact with the virtual boundary'.[79] We heard that animal welfare is an 'individual characteristic' not a 'population characteristic'.[80]

2.42 For example, RSPCA NSW cited one study where the median number of electric shocks received by Angus steers was 20 over the trial period. However, in another paddock, it was closer to 45 over the same period and some cattle received more than 50 shocks during the period.[81]

---

[71] Dr Lee, CSIRO, Transcript, p 45.

[72] Submission 43, Ms Hurst MLC, p 3; Dr Arnott, RSPCA NSW, Transcript, p 11.

[73] Ms Louise Ward, Programs Lead, (FOUR PAWS) Australia, Transcript of evidence, 5 July 2024, p 8.

[74] Mr Charlie Baker, Vice President of Growth, Halter, Transcript of evidence, 5 July 2024, p 24; Ms Adams, Gallagher eShepherd, Transcript, p 24.

[75] Ms Adams, Gallagher eShepherd, Transcript, p 24.

[76] Mr Baker, Halter, Transcript, p 24.

[77] Submission 49, RSPCA NSW, p 4; Dr Arnott, RSPCA NSW, Transcript, p 11.

[78] Submission 43, Ms Hurst MLC, p 3; Submission 49, RSPCA NSW, p 2; Submission 50, ENREL, p 4; Dr Arnott, RSPCA NSW, Transcript, p 11.

[79] Submission 49, RSPCA NSW, p 2.

[80] Dr Arnott, RSPCA NSW, Transcript, p 10.

[81] Submission 49, RSPCA NSW, p 2.

2.43 RSPCA NSW said that differences in learning can lead to 'really significant psychological, and… physical, impacts' especially if an animal is unable to 'predict and avoid a painful or unpleasant experience that is about to occur'.[82]

2.44 They also noted that the literature review from DAFF classified the welfare risk for animals that cannot learn as 'high' for cattle and 'very high' for sheep.[83] This is important given the scale of impact. Dr Liz Arnott from RSPCA NSW said that 'if 4 or 5 per cent of cattle are not learning … then there could be 1,500 or 2,000 animals that are experiencing distress'.[84]

2.45 The Environmental and Natural Resources Law Research Unit (ENREL) at the University of Adelaide also noted that cattle, like other stock animals, have 'different capacities for learning and will not all adapt to the virtual fencing at the same rate'.[85]

2.46 Dr Lee from the CSIRO said that 'behaviourally based application of cues' can mitigate animal welfare risks. In particular, these cues should be consistent and applied 'at the right time in relation to their behaviour'.[86]

2.47 We heard there should be protocols for the rapid removal of non-learners.[87] ENREL also suggested restricting the use of collars on animals known to be deaf or disabled as they cannot hear the warning audio cue before receiving a shock.[88]

Collar design

2.48 The Committee recommends that the safeguards also include collar design features including the weight and materials of the collar, release load break points and compliance with electrical device safety standards.

2.49 As outlined in Chapter One, virtual fencing operates by placing a collar or neckband on an animal. Collars are composed of a variety of materials including rubber, plastic, chains and solar or lithium batteries.[89]

2.50 We heard that the weight and material of the device may have adverse animal welfare impacts, particularly given its placement in the neck region.[90]

2.51 The Hon. Emma Hurst MLC cited work from RSPCA Australia outlining the animal welfare risks of the devices. Specifically, the risks include 'potential irritation and/or ulceration of the skin due to the use of collars, choking on collars and

[82] Dr Arnott, RSPCA NSW, Transcript, p 9.
[83] Submission 49, RSPCA NSW, p 6.
[84] Dr Arnott, RSPCA NSW, Transcript, p 10.
[85] Submission 50, ENREL, p 4.
[86] Dr Lee, CSIRO, Transcript, pp 41 and 42.
[87] Submission 49, RSPCA NSW, p 4.
[88] Submission 50, ENREL, p 5.
[89] Submission 37, MSD Animal Health, p 2; Animal welfare considerations for virtual stock fencing, p 16.
[90] Submission 43, Ms Hurst MLC, p 3; Submission 50, ENREL, p 3.

equipment malfunction'.[91] A report from DAFF also said that the use of a collar could lead to injury from pressure, chafing, rubbing and device pinching.[92]

2.52 ENREL stated that the weight and bulk of collars may be uncomfortable and could cause long-term strain on the animal's neck.[93] They also said that the chain in the collar can be a choking hazard for stock animals if they are caught on branches or with other collars.[94]

2.53 We heard that the regulations should specify release load break points for collars.[95] These break points are designed so that an animal can break free from the collar if caught on vegetation or another item.[96] Current market producers have release load break points at 180 kg and 360 kg.[97]

2.54 RSPCA NSW also raised the need for virtual fencing collars to comply with relevant electrical safety standards.[98] For example, they said collars should adhere to the International Organisation for Standardisation (ISO). The ISO regulates electrical device safety issues including electrical engineering, wires, cables, batteries, and magnets.[99]

Boundary setting

2.55 The Committee recommends that the safeguards include the appropriate shape, size, and angulation of boundaries for stock animals.

2.56 The ability to set and adjust virtual fences is one of the primary benefits of the technology. However, we heard that farmers could deliberately or inadvertently create inappropriate or impractical fences. Examples include virtual fences that are too tight or small, unnavigable corridors, or fences without access to resources. These fences can lead to adverse animal welfare outcomes by subjecting animals to frequent electric shocks and denying access to critical resources such as feed, water, or shelter.[100]

2.57 We heard that stock animals may breach virtual fences and be subject to shocks if their primal needs are placed outside the virtually fenced areas. RSPCA NSW said there is a 'risk of placing collars on dams with young at foot,' who may be tempted to bolt or test the fence to stay near their young. They also cited studies that showed animals would choose to accept the electric shock and breach a virtual fence when the available feed within fenced areas got too low.[101]

---

[91] Submission 43, Ms Hurst MLC, citing RSPCA Australia, p 3.
[92] Submission 43, Ms Hurst MLC, citing Department of Agriculture, Fisheries and Forestry, p 3.
[93] Submission 50, ENREL, p 3.
[94] Submission 50, ENREL, p 3.
[95] Submission 49, RSPCA NSW, p 3.
[96] Submission 47, Halter, p 8.
[97] Submission 37, MSD Animal Health, p 2; Submission 47, Halter, p 8.
[98] Submission 49, RSPCA NSW, p 3.
[99] International Organization for Standardization (ISO), Standards, webpage, viewed 21 August 2024; ISO, Electrical engineering, webpage, viewed 21 August 2024.
[100] Dr Verdon, TIA, Transcript, p 3; Dr Arnott, RSPCA NSW, Transcript, pp 11, 12.
[101] Submission 49, RSPCA NSW, p 3; Dr Arnott, RSPCA NSW, Transcript, p 11.

2.58 Dr Verdon from the Tasmanian Institute of Agriculture noted the risk of inappropriate boundary setting and suggested that operators should 'not create a motivation for them [stock animals] to excessively challenge the virtual fence line.'[102]

Stimulus and shocks

2.59 The Committee recommends that the safeguards should regulate stimulus and shocks in virtual fencing. This should include the strength, power, duration and the maximum number and threshold of electric shocks. The regulation should also regulate the velocity at which animals should not receive shocks and prohibit the ability for humans to manually deliver shocks.

2.60 Stakeholders expressed concerns that the bill does not currently limit the strength of the shock.[103] RSPCA NSW stated that shocks 'must have an unpleasant effect of sufficient intensity' on stock animals to 'override the motivation to undertake the behaviour that [virtual fencing] is seeking to… suppress.'[104]

2.61 We heard from Dr Verdon about her experience with electric shocks from virtual fencing collars. She described the shock as 'similar … to a moderate shock from an electric fence'. However, she noted that a shock from an electric fence goes 'right through your body down to the ground' while a shock from virtual fencing is 'in a localised area for a very short duration'.[105]

2.62 FOUR PAWS was concerned that the lack of regulation meant that 'any volume, intensity or frequency of audio cue is permitted'.[106] Ms Hurst noted that an animal may be 'forced to endure audio cues at a problematic volume or frequency' and that such cues 'may startle an animal into bolting or injuring themselves'.[107]

2.63 Dr Lee from the CSIRO said it is important to regulate the duration of electric shocks and that they 'need to be really quick'. Research showed that if a shock is left on for too long, animals can begin to spin as they try to escape the shock.[108]

2.64 We heard that the technology should pause electric shocks when necessary.[109] Dr Verdon provided an example where animals were blocked from moving down a laneway. She explained that safeguards built into the technology can identify the situation, pause the delivery of electric shocks, and send an alert to farmers.[110]

[102] Dr Verdon, TIA, Transcript, p 3.
[103] Submission 50, ENREL, p 5; Ms Ward, FOUR PAWS, Transcript, p 8.
[104] Submission 49, RSPCA NSW, p 1.
[105] Dr Verdon, TIA, Transcript, p 6.
[106] Ms Ward, FOUR PAWS, Transcript, p 8.
[107] Submission 43, Ms Hurst MLC, p 2.
[108] Dr Lee, CSIRO, Transcript, p 43.
[109] Submission 49, RSPCA NSW, p 3.
[110] Dr Verdon, TIA, Transcript, p 4.

2.65 Ms Hurst was concerned about the 'complete absence of regulations or restrictions' in the bill.[111] As in the scenario above, if stock animals are unable to comply with the virtual fence or respond to cues, they could be shocked repeatedly with no upward limit. As a result, RSPCA NSW and the Animal Defenders Office emphasised the need for a maximum threshold of consecutive shocks that a collar could administer and the total number of consecutive shocks before they stop.[112]

2.66 RSPCA NSW also suggested that electric shocks should stop when an animal reaches a certain speed or velocity.[113] Gallagher eShepherd said a heightened pace may indicate that animals are responding to immediate danger, such as a predator or lightning.[114] We heard that Gallagher eShepherd products have an in-built accelerometer which detects the speed an animal is travelling. If it is above a certain speed, the collar identifies a 'panic state' which then disables the collar and any cues or shocks.[115]

2.67 We also heard that users should not be able to manually deliver shocks for animal welfare reasons and that this prohibition should be included as a safeguard.[116] The Committee notes that many collars on the market already have this safeguard.[117]

Monitoring and auditing for compliance

2.68 The Committee recommends that the safeguards include monitoring and auditing requirements. These include the ability to monitor critical welfare data and send alerts. The time lag between the data collection and data access should also be regulated to ensure timely reporting.

2.69 Technology producers told us about the data analytics capability of the technology. Gallagher eShepherd and Halter explain staff monitor pulse counts and other data to identify how well animals are trained.[118] Gallagher eShepherd also collects information on pulse voltage and current.[119]

2.70 RSCPA NSW said that virtual stock fencing regulation should include data monitoring and third-party auditing of virtual stock fencing devices.[120] They also suggested a maximum allowable timeframe between data collection and reporting.[121]

2.71 RSCPA NSW told us that having access to 'real-time, and retrospective data' will be important to ensure they can effectively monitor animal welfare issues and

[111] Submission 43, Ms Hurst MLC, p 2.
[112] Submission 49, RSPCA NSW, p 3; Mr Powell, ADO, Transcript, p 17.
[113] Submission 49, RSPCA NSW, p 3.
[114] Ms Adams, Gallagher eShepherd, Transcript, p 25.
[115] Ms Adams, Gallagher eShepherd, Transcript, p 25.
[116] Submission 49, RSPCA NSW, p 3.
[117] Submission 47, Halter, p 6; Animal welfare considerations for virtual stock fencing, p 54.
[118] Answers to SQ, Gallagher eShepherd, 26 July 2024; Answers to SQ, Halter, p 1.
[119] Answers to SQ, Gallagher eShepherd, pp 1-2.
[120] Submission 49, RSPCA NSW, p 3.
[121] Submission 49, RSPCA NSW, p 3.

enforce compliance.[122] For example, access to data may help them collect information on cattle that are 'failing to learn the system'.[123] However, they noted the effectiveness of this may be difficult to determine until data samples are available.

2.72 The benefits of data collection and monitoring are discussed further in Chapter Three.

[122] Answers to SQ, Royal Society for the Prevention of Cruelty to Animals (RSPCA NSW), 30 July 2024, p 2.

[123] Answers to SQ, RSPCA NSW, p 2.

Chapter Three – Key impacts of virtual stock fencing technology

Animal Welfare

Summary

While noting that virtual fencing technology presents some risks to animal welfare, the technology also has a range of animal welfare benefits. These include virtual herding, data collection and monitoring, and management of stock during extreme weather events.

Animal welfare benefits

Benefits of virtual herding

3.1 The Committee heard that compared to other herding methods such as quad bikes, the technology may allow stock animals to walk more slowly and naturally, benefiting animal welfare.[124]

3.2 Halter explained that traditional herding methods pressure stock animals from behind, and can cause 'bunching, lameness and stress'.[125] Virtual herding allows animals to move at their own pace. Dr John Hellstrom, Animal Welfare Advocate at Halter New Zealand, stated that virtually herded cows can better avoid hazards, reducing cases of 'trauma-induced lameness'.[126]

3.3 However, RSPCA NSW stated that it is 'unknown' whether stock animals find virtual herding more amiable than a stockperson.[127] A literature review of virtual fencing by DAFF also noted there was no research comparing animal stress responses to virtual and traditional herding.[128]

Data collection and health monitoring

3.4 As previously discussed in Chapter Two, the Committee heard that sensors in virtual fencing can provide insights into animal welfare through continuous data collection and monitoring of stock animal health.

3.5 Stakeholders said that the technology can track animal health and reproductive statistics, including heat detection. It can also monitor breed fertility to assist with animal management.[129]

3.6 Halter said that a typical virtual fencing collar measures animal welfare information such as 'grazing, rumination, resting, movement, and location' on a continuous, 24-hour basis. This continuous monitoring can help identify early

[124] Submission 4, Mr Thomas Winter, p 1; Submission 47, Halter, p 9.

[125] Mr Baker, Halter, Transcript, p 26.

[126] Submission 35, Dr Hellstrom, p 4.

[127] Submission 49, RSPCA NSW, p 4.

[128] Animal welfare considerations for virtual stock fencing, p 43.

[129] Submission 42, Gallagher eShepherd, p 3; Submission 47, Halter, p 12; Mr Robert McIntosh, Chair – NSW Farmers Dairy and Animal Welfare Committee, (NSW Farmers') Association, Transcript of evidence, 5 July 2024, p 28.

signs for issues such as disease, pregnancy or health concerns such as lameness or mastitis.[130] Once identified, these issues are instantly communicated to a farmer through animal health alerts.[131] These alerts allow early and immediate intervention from a farmer or veterinarian, where illness may otherwise not have been known or detected. Halter estimated that in 2023 it alerted farmers to 260,000 cows showing signs of illness.[132]

3.7 RSCPA NSW noted that farmers can already track the health of stock animals through sensory collars. These sensory collars simply provide health data without the ability to deliver electric shocks to set up virtual fencing.[133] However, the literature review from DAFF identified that the virtual fencing 'can provide additional health and welfare information'. The 'incorporation of health and welfare monitoring systems' was described as a 'beneficial add-on' to the technology.[134]

Traceability and emergency management

3.8 The Committee heard that farmers can use the technology to track lost cattle, and minimise risks of theft.[135] The technology can also be used to confine animals when perimeter fences are destroyed or breached. In this situation, animals could be confined to a virtual paddock.[136]

3.9 Stakeholders told us about the benefits of virtual fencing in natural disasters. They said that farmers can use the technology to quickly locate and manage cattle to ensure they are fenced in a safe area. They can also disable virtual fencing when there is an extreme whether event so that animals are not trapped in paddocks with physical fences.[137]

3.10 This quick containment or evacuation of cattle not only benefits farmers but also allows emergency responders to access affected areas more safely and efficiently.[138] We note that all virtual collars currently on the market have features that allow farmers to remotely manage stock including disabling virtual fencing during disasters.[139]

Animal welfare risks

3.11 As previously discussed, the Committee recommends a mandatory code of practice with comprehensive safeguards to address animal welfare risks. The following section focuses on the mixed evidence about the psychological impact of virtual fencing on stock animals.

---

[130] Submission 47, Halter, p 9; Mr Baker, Halter, Transcript, p 22.
[131] Answers to SQ, Halter, p 1; Answers to SQ, Gallagher eShepherd, p 1.
[132] Answers to SQ, Halter, p 1.
[133] Submission 49, RSPCA NSW, p 4.
[134] Animal welfare considerations for virtual stock fencing, pp 55-56.
[135] Submission 37, MSD Animal Health, p3.
[136] Submission 57, Beechwood Biological Solutions, p 3.
[137] Submission 21, Narrabri Shire Council, p 2; Submission 28, Butmaroo Station, p 1; Submission 37, MSD Animal Health, p 4; Submission 47, Halter, pp 10-11; Submission 51, NSW Farmers, pp 5-6.
[138] Submission 56, School of Veterinary Sciences, p 3.
[139] Submission 37, MSD Animal Health, p 3; Submission 42, Gallagher eShepherd, p 2; Submission 47, Halter, p 8.

3.12 We heard that the unpleasant nature of electric shocks delivered by virtual fencing has inherent risks including psychological stress.[140]

3.13 RSCPA NSW stated the shock can cause 'pain, fear, stress, anxiety' and in extremes can extend to 'hypervigilance and even physiological harm/illness'. They said in one study, cattle were avoidant of areas where virtual fencing boundaries were previously set, and the same behaviour was not observed with physical electric fencing. This suggested that virtual fencing might create lasting memories of fear in cattle.[141]

3.14 RSPCA NSW also stated that animals would need to endure a period of uncertainty and stress, as they learn to link the audio cue to the electric shock.[142] They further stated that the psychological impacts may become more pronounced when an animal is fenced away from natural needs such as social contact, offspring, water or shelter.[143]

3.15 However, RSPCA NSW also pointed out in its submission that one study found 'no difference in faecal corticosteroid metabolites' which are 'indicators of physiological and/or psychological stress'.[144]

3.16 Dr Lee from the CSIRO stated that the shock delivered by virtual fencing raised cortisol levels similar to the presence of a barking dog and animals recovered quickly.[145] Dr Verdon from the Tasmanian Institute of Agriculture also said that 'the welfare of cattle managed with virtual fencing can be at least comparable to those managed with electric fencing'.[146]

[140] Submission 43, Ms Hurst MLC, citing RSPCA Australia, p 3; Submission 49, RSPCA NSW, p 2; Submission 50, ENREL, pp 3-4.

[141] Submission 49, RSPCA NSW, pp 1-2.

[142] Submission 43, Ms Hurst MLC, citing RSPCA Australia, p 3; Submission 50, ENREL, p 4.

[143] Submission 43, Ms Hurst MLC, citing RSPCA Australia, p 3; Submission 49, RSPCA NSW, p 2; Dr Arnott, RSPCA NSW, Transcript, p 11.

[144] Submission 49, RSPCA NSW, p 2.

[145] Dr Lee, CSIRO, Transcript, p 41.

[146] Dr Verdon, TIA, Transcript, p 2.

Farm Management

Summary

Virtual stock fencing technology can increase farm productivity and efficiency by improving pasture management, reducing operational costs, and improving labour productivity. With virtual fencing, farmers can reduce spending on physical fencing. They can also reduce the labour and time requirements of moving stock and adjusting physical fences. Additionally, by reallocating the labour required in herding to high value and more rewarding tasks, farmers can better attract and retain staff in the regional agriculture industry.

Stock, pasture and grazing management

3.17 Throughout the inquiry, the Committee heard that virtual stock fencing could improve pasture management and allow farmers to better manage the grazing behaviours of cattle.[147]

3.18 NSW Farmers' Association said that with virtual fencing, farmers can transition to rotational grazing method with shorter grazing periods. This method can increase the nutritional benefits of pasture by leaving sections of grass ungrazed for greater periods of time. It can also increase the maximum stock density and allow farmers to grow more feed with less waste, improving overall farm efficiency.[148]

3.19 Similarly, Gallagher eShepherd noted that by increasing grazing intensity, cattle are encouraged to eat all available feed on a smaller paddock, increasing pasture utilisation.[149] Some inquiry participants also told us that controlled and targeted animal grazing could help prevent fires by reducing the amount of dry vegetation that acts as fuel.[150]

What is "rotational grazing"?

Rotational grazing is a system of livestock management where animals are periodically moved from one paddock or grazing area to another. As such, rotational grazing requires paddocks to be subdivided using fixed or movable internal fencing. Paddocks are then left to "rest" and regrow before livestock are returned.[151]

---

[147] Submission 1, Mr Ross Hubbard, p 1; Submission 3, Mr William Wheeler, p 1; Submission 4, Mr Winter, p 1; Submission 10, Mr Johnny Kahlbetzer, p 1; Submission 11, Mr Raymond Hall, p 1; Submission 12, Mr Alan Schmidt, p 1; Submission 13, Mr Jonathan Tooth, p 1; Submission 14, Mr Simon Wright, p 1; Submission 16, Mrs Kate Manka, p 1; Submission 19, Mr Tom Pickard, p 1; Submission 20, Mr Scott Hurrell, p 1; Submission 27, Regional Development Australia Southern NSW & ACT (RDASNA), p 2; Submission 28, Butmaroo Station, p 1; Submission 30, Mr Mark Houlahan, p 1; Submission 32, Mr Tony Jeglic, p 1; Submission 33, Mr John Rowe, p 1; Submission 40, Newbury Farm, p 1; Submission 41, Sheep Producers Australia (SPA), p 1; Submission 47, Halter, p 3; Submission 51, NSW Farmers, p 5; Submission 54, Mrs Jaime Moers, p 2; Submission 56, School of Veterinary Sciences, p 1; Submission 57, Beechwood Biological Solutions, p 2.

[148] Answers to SQ, (NSW Farmers') Association, 25 July 2024, p 1.

[149] Submission 42, Gallagher eShepherd, p 3.

[150] Submission 41, SPA, p 1; Submission 47, Halter, p 11; Submission 54, Mrs Moers, p 2.

[151] Local Land Services, Grazing management systems, webpage, NSW Government, May 2020, viewed 16 September 2024.

3.20 Apart from rotational grazing, stakeholders said virtual fencing can reduce the cost barrier of adopting regenerative farming practices.[152] These practices are designed to work with the landscape, climate, livestock, and people.[153]

3.21 Farmers told us that these practices can benefit livestock and soil quality.[154] They can also reduce the use of chemicals and synthetic fertilisers in the long term.[155] Farmers also explained that improved soil quality translates to more efficient weed management, less pest and feral species, and reduced spending on herbicide.[156] Narrabri Shire Council said that improved grazing management also helps farmers manage land more effectively during droughts.[157]

3.22 MSD Animal Health said that farmers can use data on cattle behaviour and grazing patterns to improve pasture management and beef and dairy production.[158] Gallagher eShepherd also noted that the technology can track animal weight gain and how efficiently the cattle are converting grass to beef.[159]

Economic benefits and cost-savings

3.23 As outlined above, virtual stock fencing can improve grazing management. We heard this can lead to more profits for farmers.[160] Federated Farmers of New Zealand said that with the same input, farmers can increase the 'overall production'.[161]

3.24 Dairy NSW told us that the technology can help farmers save costs by reducing or eliminating the need to build, maintain or replace physical fencing.[162]

3.25 Farmers said that physical fencing is expensive and the price per kilometre can vary depending on location and terrain.[163] They also said that labour shortages in

[152] Submission 8, Dr Stephen Pickard, p 1; Submission 9, Mr Angus Barrett, p 1; Submission 24, Mr Cam Laurie, p 1; Submission 33, Mr Rowe, p 1; Submission 54, Mrs Moers, p 2.
[153] Local Land Services, Regenerative Agriculture, webpage, NSW Government, May 2020, viewed 16 September 2024.
[154] Submission 4, Mr Winter, p 1; Submission 19, Mr Pickard, p 1; Submission 24, Mr Laurie, p 1; Submission 33, Mr Rowe, p 1; Submission 37, MSD Animal Health, p 4; Submission 47, Halter, p 3; Submission 54, Mrs Moers, p 2.
[155] Submission 6, Yarrawa Native Forest, p 1; Submission 33, Mr Rowe, p 1; Submission 40, Newbury Farm, p 1; Submission 47, Halter, p 12; Submission 54, Mrs Moers, p 2.
[156] Submission 3, Mr Wheeler, p 1; Submission 32, Mr Jeglic, p 1; Submission 33, Mr Rowe, p 1; Submission 51, NSW Farmers, p 8; Submission 54, Mrs Moers, p 1.
[157] Ms Donna Ausling, Director Planning and Strategy, Narrabri Shire Council, Transcript of evidence, 5 July 2024, p 37.
[158] Submission 37, MSD Animal Health, p 3.
[159] Submission 42, Gallagher eShepherd, pp 3-4.
[160] Submission 27, RDASNA, p 6; Submission 28, Butmaroo Station, p 1; Submission 33, Mr Rowe, p 1; Submission 35, Dr Hellstrom, p 1; Submission 40, Newbury Farm, p 1; Submission 45, Federated Farmers, p 2; Submission 51, NSW Farmers, p 5; Ms Adams, Gallagher eShepherd, Transcript, p 20.
[161] Submission 45, Federated Farmers, pp 1-2.
[162] Answers to SQ, (Diary NSW) Ltd, 25 July 2024, p 2.
[163] Submission 37, MSD Animal Health, p 3; Submission 48, Mr Bruce Christie, p 1; Answers to SQ, NSW Farmers, p 1.

regional areas meant they often have to pay higher wages and experience project delays.[164]

3.26 We heard that the high cost often makes constructing traditional fences on larger farms expensive and impractical.[165] Farmers also told us that they cannot keep stock on challenging terrains such as steep mountainsides or land close to flood-prone waterways due to the cost of physical fences.[166] It is also important to note that maintaining physical fencing is costly and time-intensive in light of increasingly frequent climate related disasters.[167]

3.27 In comparison, virtual stock fencing allows farmers to save costs on internal physical fences, use their land more efficiently, and better adapt fences to natural disasters.[168] By reducing the labour requirements on fences and herding, the technology can also reduce fuel and maintenance costs of farm equipment, such as quadbikes and other vehicles.[169]

3.28 We note that there has not been a comprehensive and peer reviewed analysis of the economic benefits of virtual stock fencing at the time of writing. The Tasmanian Institute of Agriculture is currently researching into the effects of virtual fencing in a commercial farm setting.[170]

3.29 An estimate from Dairy NSW suggested that a shift from physical fencing to virtual fencing could result in $18,388 net savings per year.[171] The NSW Farmers' Association estimated that an average beef cattle farm could save $5,350 per year in labour and fencing costs, and an average dairy farm could save $3,888 per year on labour costs.[172]

[164] Submission 48, Mr Christie, p 1; Dr James Neal, Chair, (Dairy NSW) Pty Ltd, Transcript of evidence, 5 July 2024, p 33.
[165] Submission 27, RDASNA, p 8; Submission 37, MSD Animal Health, p 5; Submission 40, Newbury Farm, p 1.
[166] Submission 1, Mr Hubbard, p 1; Submission 30, Mr Houlahan p 1; Submission 40, Newbury Farm, p 1; Submission 48, Mr Christie, p 1; Submission 54, Mrs Moers, p 2; Mr John McGoverne, Policy Advisor, Sheep Producers Australia (SPA), Transcript of evidence, 5 July 2024, p 34.
[167] Submission 27, RDASNA, p 9; Submission 40, Newbury Farm, p 1; Submission 48, Mr Christie, p 1; Submission 51, NSW Farmers, p 5; Submission 54, Mrs Moers, p 2.
[168] Submission 1, Mr Hubbard, p 1; Submission 14, Mr Wright, p 1; Submission 27, RDASNA, p 2; Submission 28, Butmaroo Station, p 1; Submission 30, Mr Houlahan, p 1; Submission 33, Mr Rowe, p 1; Submission 37, MSD Animal Health, pp 3-4; Submission 40, Newbury Farm, p 1; Submission 45, Federated Farmers, pp 1-2; Submission 47, Halter, pp 11, 12; Submission 51, NSW Farmers, p 6; Submission 54, Mrs Moers, p 1; Mr Baker, Halter, Transcript, p 20; Ms Adams, Gallagher eShepherd, Transcript, p 22; Mr McGoverne, SPA, Transcript, p 34; Ms Ausling, Narrabri Shire Council, Transcript, p 37.
[169] Submission 47, Halter, p 12; Answers to SQ, Diary NSW, p 2; Answers to SQ, NSW Farmers, p 1.
[170] Answers to SQ, Tasmanian Institute of Agriculture (TIA), 26 July 2024, p 1.
[171] Answers to SQ, Diary NSW, p 2.
[172] Answers to SQ, NSW Farmers, p 1.

Labour benefits

3.30 The Committee also heard that farmers can reallocate labour from herding and fence management roles to higher value or more rewarding tasks. This can also improve productivity and farm efficiency.[173]

3.31 For example, Halter claimed that its customers can save on average 20 to 40 hours per week by not managing physical fences and herding. This means that they can repurpose the time to animal and pasture management.[174] Dr Verdon from Tasmanian Institute of Agriculture noted that the time saved can be spent on staff training, leading to a more skilled workforce and better staff retention.[175]

3.32 Farmers may also choose to reduce the total working hours of workers. This can improve the work-life balance and mental wellbeing of workers, leading to higher job satisfaction.[176]

3.33 Stakeholders told us virtual fencing technology can reduce farmers' exposure to work health and safety issues.[177] Manual herding usually requires farmers to use quadbikes, which are one of the major causes of injuries on farms in New South Wales.[178] Reducing the need to manually herd cattle in poor weather or adverse conditions on quad bikes can reduce injury risks for workers.[179]

Wildlife protection, environmental conservation and biosecurity

Summary

Virtual stock fencing has the potential to enhance wildlife protection and environmental conservation by keeping farmed animals away from wildlife habitats and environmentally sensitive areas. The technology can also help identify and isolate sick animals, improving biosecurity. However, to maximise the potential for virtual stock fencing to protect native wildlife, a review of the operation of internal fencing in New South Wales is necessary.

Recommendation 7

That the Department of Primary Industries and Regional Development review the operation of internal fencing in regional New South Wales including the benefits and risks of removing redundant internal fences when virtual fences are put in place.

3.34 The Committee heard that virtual stock fencing can help protect wildlife and the environment. However, some stakeholders questioned the effectiveness of

[173] Submission 47, Halter, p 5; Submission 51, NSW Farmers, p 7; Dr Neal, Dairy NSW, Transcript, p 35; Answers to SQ, Diary NSW, p 2.

[174] Submission 47, Halter, p 5.

[175] Answers to SQ, TIA, p 1.

[176] Mr Baker, Halter, Transcript, p 26; Dr Hancock, Dairy Australia, Transcript, p 34; Answers to SQ, Diary NSW, p 2.

[177] Submission 4, Mr Winter, p 1; Submission 20, Mr Hurrell, p 1; Submission 47, Halter, p 13; Submission 51, NSW Farmers, pp 6-7; Submission 52, Dairy NSW, p 1.

[178] Submission 20, Mr Hurrell, p 1; Submission 47, Halter, p 12.

[179] Dr Neal, Dairy NSW, Transcript, p 34.

virtual stock fencing in reducing wildlife injuries caused by entanglement without removing physical fences.[180]

3.35 To better understand the impact of virtual and physical fences on wildlife, the Committee recommends that DPIRD review the operation of internal fencing in regional New South Wales. The review could include an assessment of the benefits and risks of removing redundant internal fences when virtual fences are put in place.

Wildlife protection

3.36 We heard evidence that virtual stock fencing may protect wildlife from being caught or injured in wire fences.[181] However, we note that virtual the benefits to wildlife protection is contingent on the removal of physical fences.

3.37 To optimise benefits to wildlife, the Committee recommends DPIRD review the operation of internal fencing in regional New South Wales.

3.38 NSW Farmers' Association noted virtual stock fencing can reduce the usage of physical fences that can trap and entangle native animals.[182] Similarly, MSD Animal Health stated that 'eliminating' physical fences could reduce wildlife injuries and deaths caused by collision with fences.[183]

3.39 However, some stakeholders argued there is no guarantee that virtual stock fencing would reduce the usage of physical fences.[184] For example, RSPCA NSW stated that the 'quantum benefit' to wildlife protection might be hard to determine, since it is not clear whether farmers would use virtual fencing to replace physical boundaries.[185]

3.40 Similarly, FOUR PAWS, pointed out that there were no provisions in the bill for removing old physical fences when virtual fencing is put in place.[186] Ms Hurst stated that it may be impractical to expect farmers to remove fences, given the time and labour costs.[187] Additionally, physical fences left in a state of disrepair might pose an even greater injury risk for wildlife.[188]

Environment conservation

3.41 Throughout the inquiry, the Committee heard that virtual stock fencing can help protect the environment through more eco-friendly stock management techniques. In particular, stakeholders highlighted virtual stock fencing as a more

[180] Submission 43, Ms Hurst MLC, p 4; Submission 49, RSPCA NSW, p 5; Ms Ward, FOUR PAWS, Transcript, p 10.

[181] Submission 27, RDASNA, p 8; Submission 41, SPA, p 1; Submission 47, Halter, p 13; Submission 51, NSW Farmers, p 8; Submission 56, School of Veterinary Sciences, p 1.

[182] Submission 51, NSW Farmers, p 8.

[183] Submission 37, MSD Animal Health, p 4.

[184] Submission 43, Ms Hurst MLC, p 4; Submission 49, RSPCA NSW, p 5; Ms Ward, FOUR PAWS, Transcript, p 10.

[185] Submission 49, RSPCA NSW, p 5.

[186] Ms Ward, FOUR PAWS, Transcript, p 10.

[187] Submission 43, Ms Hurst MLC, pp 4-5.

[188] Submission 43, Ms Hurst MLC, p 4.

practical and cost-effective way to protect waterways and soil compared to physical fences.[189]

3.42 Inquiry participants told us that virtual stock fencing can help keep livestock away from environmentally sensitive areas more effectively than physical fences.[190] For example, a number of stakeholders said that it can be impractical and cost-prohibitive to keep farmed animals out of riverbanks or waterways using physical fences.[191]

3.43 Sheep Producers Australia told us that physical fences on watercourses are 'constantly' damaged during floods. This means that property owners may leave waterways unfenced due to the difficulty of maintaining these fences.[192]

3.44 In comparison, virtual stock fencing can help fence off challenging landscapes that require constantly adapting fences, or where physical fencing is unsuitable.[193] For example, Halter explained that virtual fences can be set up in seconds to keep livestock away from waterways when they are sensitive to erosion.[194]

3.45 Similarly, MSD Animal Health noted that virtual stock fencing can keep stock out of sensitive environmental areas, including riverbanks and wetlands, without the need for physical fences.[195]

3.46 Additionally, stakeholders said that virtual fencing support sustainable grazing methods that help protect the environment.[196] MSD Animal Health noted that rotational grazing allows fields to regrow, improving soil health and biodiversity.[197] Halter explained that preventing overgrazing also increases carbon sequestration.[198]

---

[189] For example: Submission 4, Mr Winter, p 1; Submission 8, Dr Pickard, p 1; Submission 9, Mr Barrett, p 1; Submission 10, Mr Kahlbetzer, p 1; Submission 19, Mr Pickard, p 1; Submission 24, Mr Laurie, p 1; Submission 30, Mr Houlahan, p 1; Submission 32, Mr Jeglic, p 1; Submission 33, Mr Rowe, p 1; Submission 37, MSD Animal Health, p 4; Submission 40, Newbury Farm, p 1; Submission 47, Halter, pp 12-13; Submission 48, Mr Christie, p 1; Submission 51, NSW Farmers, pp 7-8; Submission 56, School of Veterinary Sciences, p 1.

[190] Submission 4, Mr Winter, p 1; Submission 37, MSD Animal Health, p 4; Submission 45, Federated Farmers, p 2; Submission 47, Halter, p 12; Submission 51, NSW Farmers, p 8; Submission 54, Mrs Moers, p 2; Submission 57, Beechwood Biological Solutions, p 2.

[191] Submission 9, Mr Barrett, p 1; Submission 30, Mr Houlahan, p 1; Submission 40, Newbury Farm, p 1; Submission 48, Mr Christie, p 1; Mr McGoverne, SPA, Transcript, p 34.

[192] Mr McGoverne, SPA, Transcript, p 34.

[193] Submission 1, Mr Hubbard, p 1; Submission 33, Mr Rowe, p 1; Submission 37, MSD Animal Health, p 4; Submission 47, Halter, p 13; Submission 51, NSW Farmers, p 8; Submission 54, Mrs Moers, p 2.

[194] Submission 47, Halter, p 13.

[195] Submission 37, MSD Animal Health, p 4.

[196] Submission 4, Mr Winter, p 1; Submission 37, MSD Animal Health, p 4; Submission 47, Halter, p 12; Submission 56, School of Veterinary Sciences, p 1.

[197] Submission 37, MSD Animal Health, p 4.

[198] Submission 47, Halter, p 12.

Biosecurity

3.47 During the inquiry, the Committee heard that virtual stock fencing can enhance biosecurity. It can do this by assisting stock managers and farmers to quickly identify and isolate sick animals, which helps prevent the spread of diseases.[199]

3.48 As outlined previously, virtual stock fencing can continuously monitor stock animals and alert users when an animal is showing early signs of illness. Additionally, virtual stock fencing can be used to separate sick and healthy animals.[200] Dr Hellstrom from Halter noted that farmers can use virtual stock fencing to move stock away from areas where they might be exposed to diseases.[201]

3.49 However, stakeholders noted that virtual fencing could pose a biosecurity risk if used to replace physical boundary fences. The Sydney School of Veterinary Science noted that diseases or parasites could spread between fenced-in stock animals and local wildlife if physical perimeter fences are removed.[202]

3.50 Equally, without physical fences, technological vulnerabilities, including GPS failures or power outages could allow sick stock to stray and spread diseases.[203]

Public education and community safety

Summary

Some stakeholders were concerned that communities might be reluctant to adopt the technology as there is a lack of understanding of its operations, benefits, and risks. A community education campaign can improve understanding of the technology and address the public's concerns about its applications.

Recommendation 8

That the Department of Primary Industries and Regional Development develop a community education campaign on the operation, risks, benefits, and lawful use of virtual stock fencing.

Public education

3.51 The Committee considers an education campaign critical in raising awareness of the new technology including its operation, function and impacts on animal welfare. To ensure that the public understands this new technology, the Committee recommends that DPIRD develop a community education campaign. This campaign should raise awareness of the operation, risks, benefits, and legal use of virtual stock fencing.

---

[199] Submission 27, RDASNA, p 6; Submission 35, Dr Hellstrom, p 6; Submission 37, MSD Animal Health, p 2; Submission 42, Gallagher eShepherd, p 3; Submission 47, Halter, pp 9-10.

[200] Submission 11, Mr Hall, p 2; Submission 27, RDASNA, p 6; Submission 35, Dr Hellstrom, p 6; Submission 37, MSD Animal Health, p 2; Submission 42, Gallagher eShepherd, p 3; Submission 47, Halter, pp 9-10; Ms Ausling, Narrabri Shire Council, Transcript, p 37.

[201] Submission 35, Dr Hellstrom, p 6.

[202] Submission 56, School of Veterinary Sciences, p 2.

[203] Submission 27, RDASNA, p 6; Submission 56, School of Veterinary Sciences, p 2.

3.52 We heard evidence that virtual stock fencing can improve community safety. However, some stakeholders were concerned that community members may not be familiar with the technology and can have concerns about its application.[204] The lack of understanding means that there might be confusion and pushback on the technology in communities.[205]

3.53 The Sydney School of Veterinary Science said that replacing physical fencing with virtual fencing may result in confusion and inadvertent trespassing. This is because people not familiar with the technology may misinterpret warning signals or boundary markings. Community members may also oppose the use of the collars due to their concerns about the impact of unpleasant stimuli on stock.[206]

3.54 A participant in Regional Development Australia Southern NSW & ACT's survey on the technology suggested that public education can ensure community members understand 'the purpose and function of the technology'. For example, information about the 'boundaries and limitations' of the technology can reduce misunderstandings and make sure people do not interfere with virtually fenced animals.[207]

3.55 The Sydney School of Veterinary Science recommended that the education could be done in collaboration with agricultural extension services, industry organisations, and animal welfare groups.[208]

Community safety

3.56 In addition to public education about the technology, we also heard evidence about its impact on community safety.

3.57 Stakeholders told us that virtual stock fencing can keep drivers and animals in rural areas safer by reducing the likelihood of animal collisions with vehicles.[209] We heard that the technology could help contain animals during roadside grazing or prevent animals from wandering onto roads.[210]

3.58 Narrabri Shire Council said that virtual stock fencing might reduce traffic accidents on the travelling stock routes and the risk of animals escaping onto busy roads.[211] The Sydney School of Veterinary Science said that virtual stock fencing can potentially reduce traffic hazards by removing obstructions to drivers' visibility.[212]

---

[204] Submission 27, RDASNA, pp 7-8; Submission 56, School of Veterinary Sciences, p 3.

[205] Submission 27, RDASNA, pp 7-8; Submission 56, School of Veterinary Sciences, p 3.

[206] Submission 56, School of Veterinary Sciences, p 3.

[207] Submission 27, RDASNA, pp 7-8.

[208] Submission 56, School of Veterinary Sciences, p 3.

[209] Submission 27, RDASNA, p 7; Submission 56, School of Veterinary Sciences, p 3; Ms Ausling, Narrabri Shire Council, Transcript, p 37.

[210] Submission 27, RDASNA, p 7; Submission 54, Mrs Moers, p 2.

[211] Submission 21, Narrabri Shire Council, p 2; Ms Ausling, Narrabri Shire Council, Transcript, p 37.

[212] Submission 56, School of Veterinary Sciences, p 3.

3.59 However, some stakeholders were concerned about the implication of technology failure on community safety.[213]

3.60 The Sydney School of Veterinary Science said that virtual stock fencing software can be hacked and misused by third parties.[214] As outlined in Chapter One, virtual fencing systems rely on wireless communication and GPS technology. These features could be susceptible to malicious interference such as unauthorised access to properties and compromise the security of stock.[215]

3.61 In addition to technology malfunction or interference, we heard over reliance on the technology and not having sufficient training for stock animals can cause harm to farmers. For example, if the technology were to fail when farmers are loading stock animals on to ships or trucks, poorly trained animals might harm handlers.[216]

3.62 We also heard about the challenges of returning stray animals to farms. Mr Derek Shaw, a ranger working in local government, said that the current practice is to secure stray animals to the property via temporary fencing repairs. Mr Shaw expressed concern that this practice would no longer be possible without internal fencing.[217]

[213] Submission 15, Mr Shaw, p 1; Submission 26, Wollondilly Shire Council, p 1; Submission 27, RDASNA, p 7; Submission 50, ENREL, p 4; Submission 56, School of Veterinary Sciences, p 3; Ms Cooper, Wollondilly Shire Council, Transcript, p 38.

[214] Submission 27, RDASNA, p 8; Submission 56, School of Veterinary Sciences, p 3.

[215] Submission 56, School of Veterinary Sciences, p 3.

[216] Submission 27, RDASNA, p 7.

[217] Submission 15, Mr Shaw, p 1.

Appendix One – Terms of reference

That the Committee inquire into and report on the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024, with particular reference to:

(a) the provisions of the bill,

(b) the animal welfare, biosecurity, and community safety implications of permitting virtual fencing,

(c) any benefits, issues or unintended consequences raised by the bill, and whether any amendments may address those,

(d) any other related matter.

Appendix Two – Conduct of inquiry

Referral from the House

On 17 October 2023, the Member for Orange, Mr Philip Donato MP introduced the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2023 in the Legislative Assembly.

On 21 March 2024, the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024 was referred to the Legislative Assembly Committee on Investment, Industry and Regional Development for inquiry and report by 22 October 2024.

In accordance with Standing Orders, the bill lapsed on 18 April 2024. The Member for Heffron, Mr Ron Hoenig MP will seek to reinstate the bill pending the NSW Government's response to the report.

Terms of reference

The terms of reference required the Committee to consider the provisions of the bill, with particular reference to animal welfare, biosecurity and community safety implications of virtual fencing, and examine the benefits, issues or unintended consequences of virtual fencing. The full terms of reference are at Appendix One.

Calls for submissions

The Committee called for submissions and wrote to key stakeholders inviting them to make a submission. A media release was issued and information about the inquiry was posted on the Legislative Assembly's social media accounts.

Deadline for submissions was 17 May 2024. The Committee received 56 submissions from a range of stakeholders including primary industry producers, animal welfare organisations, academics, and virtual fencing manufacturers.

A list of submissions is at Appendix Four and copies of the submissions are available on the Committee's webpage.

Public hearing

The Committee held a public hearing at Parliament House on 5 July 2024. Members and witnesses attended either in person or via videoconference.

A list of witnesses who appeared at the hearing is at Appendix Five. The transcript of evidence from the hearing is available on the Committee's webpage.

Site visit

At its meeting on 27 May 2024, the Committee resolved to conduct a site visit to Gallagher eShepherd to gain better understanding of how virtual stock fencing technology works. On 31 July, members of the Committee and staff travelled to Queensland to see the technology in practice. The site visit report is at Appendix Three.

Appendix Three – Site visit report

On 31 July 2024, Mr Roy Butler MP, Chair, Mr Justin Clancy MP, and Mr Richie Williamson MP visited Gallagher eShepherd in Mutdapilly Queensland. The purpose of the visit was to gain a better understanding of how virtual stock fencing technology works.

Gallagher eShepherd is a New Zealand-based agriculture technology producer and currently operates in Tasmania, Queensland, Western Australia, New Zealand, the United States, and parts of Europe.[218] Gallagher eShepherd is an early developer of the virtual fencing technology and has worked alongside CSIRO in the research and development of the technology.[219]

The site visit allowed the Committee to learn more about the technology and see it in practice. Members heard from engineers, researchers, and executives about Gallagher eShepherd's experience in designing the technology and bringing it to market.

Particularly, members heard about the ongoing process in developing the technology. This includes the creation of prototypes, design improvement processes and continued engagement with customers to receive feedback.

Gallagher eShepherd also demonstrated the operation of virtual fencing including boundary setting. They presented case studies of the technology, such as cattle feeding on varied species of crops and on previously unavailable land.

As part of the site visit, Committee members saw cattle interacting with a virtual fence line. Gallagher eShepherd also showed members how collars are placed on cattle.

The Committee would like to thank Gallagher eShepherd and its staff for hosting the visit and is grateful for the knowledge and insights.

[218] Submission 42, Gallagher eShepherd, p 3.

[219] CSIRO, Virtual fencing, Research, Australian Government, viewed 25 August 2024.

Appendix Four – Submissions

No.	Author
1	Mr Ross Hubbard
2	Confidential
3	Mr William Wheeler
4	Mr Thomas Winter
5	Confidential
6	Yarrawa Native Forest
7	Mr Matthew Macri
8	Dr Stephen Pickard
9	Mr Angus Barrett
10	Mr Johnny Kahlbetzer
11	Mr Raymond Hall
12	Mr Alan Schmidt
13	Mr Jonathan Tooth
14	Mr Simon Wright
15	Mr Derek Shaw
16	Mrs Kate Manka
17	Mr Guy Hirst
18	Mr Chris Attenborough
19	Mr Tom Pickard
20	Mr Scott Hurrell
21	Narrabri Shire Council
22	Dr Peter Roach
23	Mr John Chappell
24	Mr Cam Laurie
25	Tasmanian Institute of Agriculture, University of Tasmania
26	Wollondilly Shire Council
27	Regional Development Australia Southern NSW & ACT
28	Butmaroo Station
29	Mr Charles Cleverdon
30	Mr Mark Houlahan
31	Mr Peter Lees
32	Mr Tony Jeglic

No.	Author
33	Mr John Rowe
34	Mr Malcolm Rouse
35	Dr John Hellstrom
36	Animal Care Australia
37	MSD Animal Health
38	Confidential
39	FOUR PAWS Australia
40	Newbury Farm
41	Sheep Producers Australia (SPA)
42	Gallagher eShepherd Pty Ltd
43	The Hon. Emma Hurst MLC
44	Confidential
45	Federated Farmers of New Zealand
46	Australian Organic Limited
47	Halter
48	Mr Bruce Christie
49	Royal Society for the Prevention of Cruelty to Animals (RSPCA) NSW
50	Environmental and Natural Resources Law Research Unit (ENREL), The University of Adelaide
51	NSW Farmers' Association
52	Dairy NSW Ltd
53	Wildlife Information, Rescue and Education Service (WIRES)
54	Mrs Jaime Moers
55	Animal Defenders Office
56	Sydney School of Veterinary Science, University of Sydney

Appendix Five – Witnesses

5 July 2024
Parliament House, Macquarie Room, Sydney, NSW

Witness	Position and Organisation
Dr Megan Verdon	Research Fellow, Tasmanian Institute of Agriculture, University of Tasmania
Dr Andrea Harvey	Associate Professor in Small Animal Medicine, Sydney School of Veterinary Science, University of Sydney
Dr Liz Arnott	Chief Veterinarian, Royal Society for the Prevention of Cruelty to Animals (RSPCA) NSW
Ms Louise Ward	Programs Lead, FOUR PAWS Australia
Ms Karri Nadazdy	ACA Horse & Livestock Representative, Animal Care Australia
Mrs Kylie Gilbert	ACA Dog Representative, Animal Care Australia
Mr Ken Powell	Senior Solicitor, Animal Defenders Office
Ms Tara Ward	Managing Solicitor (volunteer), Animal Defenders Office
Ms Sarah Adams	GM Strategy and New Ventures – Gallagher Animal Management, Gallagher eShepherd Pty Ltd
Mr Charlie Baker	Vice President of Growth, Halter
Mr Frank Wooten	Director of Marketing, MSD Animal Health
Mr Robert McIntosh	Chair – NSW Farmers Dairy and Animal Welfare Committee, NSW Farmers' Association
Mr Ashley Cooper	Policy Director - Agricultural Industries, NSW Farmers' Association
Mr Phil Holland	Senior Policy Advisor, Animal Welfare, Federated Farmers of New Zealand
Dr Andrew Hancock	Sustainable Animal Care Manager, Dairy NSW Ltd
Dr James Neal	Chair, Dairy NSW Ltd
Mr John McGoverne	Policy Advisor, Sheep Producers Australia (SPA)
Ms Robyn Cooper	Manager Health & Regulatory Services, Shire Futures, Wollondilly Shire Council
Ms Donna Ausling	Manager Strategic Planning, Narrabri Shire Council
Dr Caroline Lee	Senior Principal Research Scientist - Animal Behaviour and Welfare, Commonwealth Scientific and Industrial Research Organisation (CSIRO)

Ms Kate Lorimer-Ward	Executive Director General Agriculture, NSW Department of Primary Industries and Regional Development
Mr Sion Jones	Director Extensive Livestock, NSW Department of Primary Industries and Regional Development
Dr Kim Filmer	Chief Animal Welfare Officer, NSW Department of Primary Industries and Regional Development
Dr Helen Schaefer	Team Leader Policy and Programs (Livestock), NSW Department of Primary Industries and Regional Development

Appendix Six – Extracts from minutes

MINUTES OF MEETING 8
9:00 am, 28 March 2024
Room 1043 Parliament House, and via videoconference

Members present
Mr Butler (Chair), Mr Clancy (via videoconference), Ms Kaliyanda, Ms Stuart

Apologies
Mr Bali (Deputy) and Mr Williamson

Officers present
Stephanie Mulvey, Shanshan Guo, Kate McCorquodale, Abegail Turingan and Yann Pearson

1. **Confirmation of minutes**
   Resolved, on the motion of Ms Stuart, seconded by Mr Clancy: That the minutes of the meeting of 20 February 2024 be confirmed.

2. **Inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024**

   2.1 Terms of Reference
   Committee noted the following extract from the Legislative Assembly Votes and Proceedings No. 48, Thursday, 21 March 2024 and considered Terms of Reference for the inquiry.

> Mr Ron Hoenig moved, That the motion be amended by omitting all word after 'that' and inserting instead:
>
> (1) the bill be referred to the Legislative Assembly Committee on Investment, Industry and Regional Development for inquiry and report with particular reference to:
>
> (a) the provisions of the bill,
>
> (b) the animal welfare, biosecurity, and community safety implications of permitting virtual fencing,
>
> (c) any benefits, issues or unintended consequences raised by the bill, and whether any amendments may address those,
>
> (d) any other related matter.
>
> (2) The committee shall report to the House by 22 October 2024.
>
> …
> Amendment agreed to.
> …
> Motion as amended agreed to.

Resolved on the motion of Mr Clancy, seconded by Ms Stuart: That the Committee inquire into and report on *the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024*, with particular reference to:

(a) the provisions of the bill,
(b) the animal welfare, biosecurity, and community safety implications of permitting virtual fencing,
(c) any benefits, issues or unintended consequences raised by the bill, and whether any amendments may address those,
(d) any other related matter.

Ms Kaliyanda joined the proceeding at 9:07 am via videoconference.

2.2 Submissions

Committee considered a call for submissions including the closing date for submissions.

Resolved on the motion of Ms Stuart, seconded by Mr Clancy:

- That the Committee call for submissions and advertise the inquiry on the Committee's webpage.
- That the closing date for submission be 17 May 2024.
- That the Chair issue a media release announcing the inquiry.
- That the Secretariat circulate a list of stakeholders for members to provide further input within 3 business days from the date on which the list is circulated.
- That key stakeholders identified by the Committee be informed of the inquiry and invited to make a submission.

3. ***

Mr Kirby jointed the proceeding at 9:12 am via videoconference.

4. ***

5. Next meeting

The meeting adjourned at 9:19 am until a time and date to be determined.

MINUTES OF MEETING 9

10:04 am, 27 May 2024
Room 1254 Parliament House, and via videoconference

Members present

Mr Butler (Chair), Mr Bali (Deputy), Mr Clancy, Mr Kirby, Ms Stuart, Ms Kaliyanda (all via videoconference)

Apologies

Mr Williamson

Officers present
Kieran Lewis, Shanshan Guo, Naomi Parkinson, Oliver Sinclair, Yann Pearson, Abegail Turingan (via videoconference)

1. **Confirmation of minutes**
   Resolved, on the motion of Ms Stuart, seconded by Mr Kirby: That the minutes of the meeting of 28 March 2024 be confirmed.

2. ***

3. **Inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024**

   3.1 Publication of submissions
   Resolved on the motion of Mr Clancy, seconded by Mr Kirby: That:

   - the Committee authorise publication of submissions numbered 1, 3-4, 6-37, 39-43, and 45-56 in full, with standard redactions.
   - submissions numbered 2, 5, 38 and 44 remain confidential to the Committee and not be published.

   3.2 Public hearing
   Resolved on the motion of Ms Kaliyanda, seconded by Ms Stuart: That the Committee:

   - conduct a public hearing for the inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024.
   - invite witnesses listed at Attachment C to attend the public hearing to give evidence to the inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024.
   - authorise the Chair and Committee staff to make the administrative arrangements for the public hearing.

   3.3 Site visit
   Resolved on the motion of Mr Kirby, seconded by Ms Stuart:

   - That the Committee conduct a site visit to Gallagher in 2024 for the inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024.
   - That the Committee seek funding approval from the Speaker to undertake the site visit to Gallagher in 2024 as part of the inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024.
   - That the Committee authorise the Chair and Committee staff to make arrangements for the site visit.

4. ***

5. **Next meeting**
   The meeting adjourned at 10:19 am until a time and date to be determined.

MINUTES OF MEETING 10
11:07 am, 17 June 2024
Room 1254 Parliament House, and via videoconference

Members present
Mr Butler (Chair) (in person), Mr Bali (Deputy), Ms Kaliyanda, Mr Kirby, Ms Stuart, Mr Williamson (all via videoconference)

Apologies
Mr Clancy

Officers present
Kieran Lewis, Shanshan Guo, Naomi Parkinson, Oliver Sinclair, Abegail Turingan, and Yann Pearson.

Recording of deliberative meetings
Resolved on the motion of Ms Stuart, seconded by Mr Kirby: That the Committee agree to record the meeting for the purposes of Committee staff preparing the minutes and report amendments, and that the recording be deleted when the report is tabled.

1. **Confirmation of minutes**
   Resolved on the motion of Mr Kirby, seconded by Ms Stuart: That the minutes of the meeting of 27 May 2024 be confirmed.
2. ***
3. **Inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024**
   Committee discussed site visit arrangements for Queensland.
4. ***
5. **Next meeting**
   The meeting adjourned at 11:33 am until a time and date to be determined.

MINUTES OF MEETING 11
9:16 am, 5 July 2024
Macquarie Room Parliament House, and via videoconference

Members present
Mr Butler (Chair), Mr Bali (Deputy), Mr Williamson, Ms Stuart, Mr Clancy (via videoconference), Ms Kaliyanda

Apologies
Mr Kirby

Officers present
Kieran Lewis, Shanshan Guo, Naomi Parkinson, Oliver Sinclair, Abegail Turingan and Yann Pearson

1. **Confirmation of minutes**
   Resolved, on the motion of Mr Bali, seconded by Mr Williamson: That the minutes of the meeting of 17 June 2024 be confirmed.

2. **Inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024**

Pre-hearing deliberative meeting

2.1 Procedural resolutions

Resolved on the motion of Ms Stuart, seconded by Mr Bali: That:

- the Committee invites the witnesses listed in the notice of the public hearing for Friday, 5 July 2024 to give evidence in relation to the inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024.
- the Committee authorises the audio-visual recording, photography, and broadcasting of the public hearing on 5 July 2024, in accordance with the Legislative Assembly's guidelines for the coverage of proceedings for parliamentary committees administered by the Legislative Assembly.
- the Committee adopts the following process in relation to supplementary questions:
  - Members to email any proposed supplementary questions for witnesses to Committee staff by 4:00 pm, Wednesday 10 July 2024;
  - Secretariat to then circulate all proposed supplementary questions to the Committee, with members to lodge any objections to the questions by 4:00 pm, Thursday 11 July 2024.
- witnesses be requested to return answers to questions taken on notice and supplementary questions by 4pm, Thursday 25 July 2024.

2.2 Public hearing: Inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024

The Committee noted the factsheet received from the Tasmanian Institute of Agriculture on 4 July 2024 and circulated to Committee members on 4 July 2024 by email.

Ms Kaliyanda joined proceedings at 9:27 am.

The Chair opened the public hearing at 9:29 am. Witnesses attended the public hearing in person and via videoconference. The Chair made a short opening statement.

The following witnesses were admitted:

- Dr Megan Verdon, Research Fellow at the Tasmanian Institute of Agriculture, University of Tasmania, appearing via videoconference, was affirmed and examined.
- Dr Andrea Harvey, Associate Professor in Small Animal Medicine at the Sydney School of Veterinary Science, University of Sydney, appearing via video conference, was affirmed and examined.

Evidence concluded and the witnesses withdrew.

The following witnesses were then admitted:

- Dr Liz Arnott, Chief Veterinarian at RSPCA NSW, appearing in person, was affirmed and examined.
- Ms Louise Ward, Programs Lead at FOUR PAWS Australia, appearing in person, was affirmed and examined.

Evidence concluded and the witnesses withdrew.

The following witnesses were then admitted:

- Ms Karri Nazdazdy, Horse and Livestock Representative from Animal Care Australia, appearing in person, was affirmed and examined.
- Mrs Kylie Gilbert, Dog Representative from Animal Care Australia, appearing via videoconference, was affirmed and examined.

Evidence concluded and the witnesses withdrew.

The following witnesses were then admitted:

- Mr Ken Powell, Senior Solicitor at the Animal Defenders Office, appearing via videoconference, was affirmed and examined.
- Ms Tara Ward, Managing Solicitor (Volunteer) at the Animal Defenders Office, appearing via videoconference, was affirmed and examined.

Evidence concluded and the witnesses withdrew.

The following witnesses were then admitted:

- Ms Sarah Adams, General Manager Global Strategy and New Ventures at Gallagher eShepherd, appearing in person, was affirmed and examined.
- Mr Charlie Baker, Vice President of Growth at Halter, appearing in person, was affirmed and examined.
- Mr Frank Wooten, Director of Marketing at MSD Animal Health, appearing via videoconference, was affirmed and examined.

Evidence concluded and the witnesses withdrew.

The following witnesses were then admitted:

- Mr Robert McIntosh, Chair of NSW Farmers Dairy and Animal Welfare Committee at NSW Farmers' Association, appearing in person, was sworn and examined.
- Mr Ashley Cooper, Policy Director, Agricultural Industries at NSW Farmers' Association, appearing in person, was sworn and examined.
- Mr Phil Holland, Senior Policy Advisor, Animal Welfare at Federated Farmers of New Zealand, appearing via videoconference, was affirmed and examined.

Evidence concluded and the witnesses withdrew.

The following witnesses were then admitted:

- Dr Andrew Hancock, Sustainable Animal Care Manager from Dairy Australia, appearing on behalf of Dairy NSW Ltd, appearing in person, was affirmed and examined.
- Dr James Neal, Chair of Dairy NSW Ltd, appearing via videoconference, was sworn and examined.
- Mr John McGoverne, Policy Advisor at Sheep Producers Australia, appearing via videoconference, was sworn and examined.

Evidence concluded and the witnesses withdrew.

Mr Williamson left the proceeding at 1:15 pm.

The following witnesses were then admitted:

- Ms Robyn Cooper, Manager Health & Regulatory Services, Shire Futures at Wollondilly Shire Council, appearing via videoconference, was sworn and examined.
- Ms Donna Ausling, Director Planning and Strategy at Narrabri Shire Council, appearing via videoconference, was affirmed and examined.

Evidence concluded and the witnesses withdrew.

The following witness was then admitted:

- Dr Caroline Lee, Senior Principal Research Scientist, Animal Behaviour and Welfare from the Commonwealth Scientific and Industrial Research Organisation (CSIRO), appearing in person, was affirmed and examined.

Evidence concluded and the witness withdrew.

The following witnesses were then admitted:

- Ms Kate Lorimer-Ward, Executive Director General Agriculture, at NSW Department of Primary Industries and Regional Development, appearing in person, was affirmed and examined.
- Mr Sion Jones, Director Extensive Livestock, at NSW Department of Primary Industries and Regional Development, appearing in person, was affirmed and examined.
- Dr Kim Filmer, Chief Animal Welfare Officer, at NSW Department of Primary Industries and Regional Development, appearing in person, was affirmed and examined.
- Dr Helen Schaefer, Team Leader Policy and Programs (Livestock), at NSW Department of Primary Industries and Regional Development, appearing in person, was sworn and examined.

Evidence concluded and the witnesses withdrew.

The public hearing concluded at 3:47 pm.

Post-hearing deliberative meeting

The post-hearing deliberative meeting opened at 3:52 pm.

2.3 Publishing transcript of evidence

Resolved, on the motion of Ms Stuart, seconded by Ms Kaliyanda: That the corrected transcript of public evidence given today be authorised for publication and uploaded on the Committee's webpage.

3. Future work plan

Committee discussed the further work plan for the Committee.

Committee requested Committee staff to compile a short list of videos about virtual herding and circulate them to members.

4. Next meeting

The meeting adjourned at 4:13 pm until a time and date to be determined.

MINUTES OF MEETING 12

4:01 pm, 5 August 2024
Room 1043 Parliament House, and via videoconference

Members present

Roy Butler (Chair), Stephen Bali (Deputy Chair) (via videoconference), Richie Williamson, Warren Kirby (via video conference), Charishma Kaliyanda (via videoconference), Maryanne Stuart (via videoconference), Justin Clancy

Officers present

Shanshan Guo, Kieran Lewis, Oliver Sinclair, Naomi Parkinson, Abegail Turingan, Yann Pearson

1. Resolution permitting recording of video meeting

Resolved, on the motion of Mr Williamson, seconded by Ms Stuart: That the Committee agree to record the meeting for the purposes of Committee staff preparing the minutes and report amendments, and that the recording be deleted when the report is tabled.

2. Confirmation of minutes

Resolved, on the motion of Mr Clancy, seconded by Ms Stuart: That the minutes of the meeting of 5 July 2024 be confirmed.

3. Correspondence

The committee noted the following correspondence received from:

- Halter on 12 July 2024.

The committee noted the following correspondence sent to:

- NSW Farmers' Association on 5 June 2024.
- Halter on 17 July 2024.

4. Inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024

4.1 Publication of answers to questions taken on notice and supplementary questions

Organisation / Individual	Author's requested publication status	Publication recommendation
Answers to questions taken on notice		
Animal Defenders Office	Not specified	Public
Animal Care Australia	Not specified	Public
Department of Primary Industries and Regional Development	Not specified	Public
Tasmanian Institute of Agriculture, University of Tasmania	Not specified	Public
RSPCA NSW	Not specified	Public
Answers to supplementary questions		
Halter (dated 23 July 2024)	Confidential	Confidential
Halter (dated 25 July 2024)	Public	Public
MSD Animal Health	Not specified	Public
Dairy NSW	Not specified	Public
NSW Farmers' Association	Not specified	Public
Gallagher eShepherd Pty Ltd	Not specified	Public
Tasmanian Institute of Agriculture, University of Tasmania	Not specified	Public
CSIRO	Not specified	Public
RSCPA NSW	Not specified	Public

Resolved, on the motion of Mr Clancy, seconded by Ms Kaliyanda:

- That the Committee accepts the responses to the following questions taken on notice at the public hearing on 5 July 2024 and supplementary questions, and publish them on its website with contact details redacted.
  - Animal Defenders Office, answers to questions taken on notice, received 25 July 2024.
  - Animal Care Australia, answers to questions taken on notice, received 25 July 2024.
  - NSW Department of Primary Industries and Regional Development, answers to questions taken on notice, received 29 July 2024
  - Tasmanian Institute of Agriculture, University of Tasmania, answers to questions taken on notice, received 30 July 2024.
  - RSPCA NSW, answers to questions taken on notice, received 30 July 2024.
  - Halter, answers to supplementary questions, received 25 July 2024.
  - MSD Animal Health, answers to supplementary questions, received 25 July 2024.
  - Dairy NSW, answers to supplementary questions, received 25 July 2024.

- NSW Farmers' Association, answers to supplementary questions, received 25 July 2024.
- Gallagher eShepherd, answers to supplementary questions, received 26 July 2024.
- Tasmanian Institute of Agriculture, University of Tasmania, answers to supplementary questions, received 26 July 2024.
- CSIRO, answers to supplementary questions, received 29 July 2024.
- RSPCA, answers to supplementary questions, received 30 July 2024.

- That answers to supplementary questions from Halter dated 23 July 2024 remain confidential to the Committee and not be published.

4.2 Site visit

Resolved, on the motion of Mr Bali, seconded by Ms Kaliyanda: That the Committee authorises the Chair to send a thank-you letter to Gallagher eShepherd Pty Ltd.

5. ***

6. ***

7. Next Meeting

The meeting adjourned at 4:36 pm until the 17 October 2024.

UNCONFIRMED MINUTES OF MEETING 13

9:02 am, 17 October 2024
Room 1136, Parliament House, and via videoconference

Members present

Mr Butler (Chair), Mr Bali (Deputy Chair), Ms Kaliyanda, Mr Kirby (via videoconference), Ms Stuart, Mr Williamson

Officers present

Kieran Lewis, Shanshan Guo, Naomi Parkinson, Oliver Sinclair, Abegail Turingan and Yann Pearson

1. Confirmation of minutes

Resolved on the motion of Mr Clancy: That the minutes of the meeting of 5 August 2024 be confirmed.

Ms Kaliyanda joined the meeting at 9:03 am.

Ms Stuart joined the meeting at 9:04 am.

2. ***

Mr Kirby joined the meeting at 9:06 am.

***

3. Inquiry into the Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024

3.1 Correspondence

The Committee noted the following correspondence:

- sent to Gallagher eShepherd on 7 August 2024.
- received from Gallagher eShepherd on 15 August 2024.

3.2 Publication of submission

Resolved on the motion of Mr Clancy: That submission numbered 57 be published in full on the Committee's website with standard redactions and that a content warning page be inserted after the cover page to inform the audience of potentially distressing images in the submission.

3.3 Recording the meeting

Resolved, on the motion of Ms Stuart: That the Committee records the meeting for the purposes of Committee staff preparing the minutes and report amendments, and that the recording be deleted when the report is tabled.

3.4 Consideration of Chair's draft

Resolved, on the motion of Mr Williamson, seconded by Mr Clancy: That the Committee considers the Chair's draft report in globo.

Resolved, on the motion of Mr Clancy, seconded by Mr Bali:

1. That the draft report, including the cover page and its photo, be the report of the Committee and that it be signed by the Chair and presented to the House.
2. That the Chair and Committee staff be permitted to correct stylistic, typographical and grammatical errors.
3. That, once tabled, the report be posted on the Committee's webpage.

4. ***

5. Next meeting

The meeting adjourned at 9:15 am until a time and date to be determined.