

**Submission  
No 39**

**PREVENTION OF CRUELTY TO ANIMALS AMENDMENT (VIRTUAL STOCK  
FENCING) BILL 2024**

**Organisation:** FOUR PAWS Australia

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

Legislative Assembly

Parliament of New South Wales

Via <https://www.parliament.nsw.gov.au/committees/inquiries/Pages/lodge-a-submission.aspx?pk=3044>

To whom it may concern,

Thank you for this opportunity to contribute to the important discussion and development of the **Prevention of Cruelty to Animals Amendment (Virtual Stock Fencing) Bill 2024**.

FOUR PAWS is the global animal welfare organisation for animals under direct human influence, which reveals suffering, rescues animals in need and protects them. With offices worldwide, including Australia, our vision is a world where humans treat animals with respect, empathy and understanding.

Within our organisation, we hold great expertise in animal welfare science and leading welfare developments.

Upon reviewing the proposal and relevant research, we have found that as it currently stands, **it is not clear if virtual fencing does not cause negative welfare impacts, such as stress, pain, fear, and harm to farmed animals.**

Further, many different factors (including but not limited to, the type, intensity and graduality of the warning, suitability for each species, habituation (individual learning)) can affect the animal's welfare negatively.

Specifically, we refer to the below information and relevant resources listed at the end of this submission.

### **Impact on Animal Welfare of farmed animals using Virtual Fence**

According to relevant research<sup>1</sup>, one of the issues raised by virtual fencing is that, as it is not visible, it is more complex for an animal to associate the aversive punishment (shock) with the intended outcome than conventional electric fences. This can result in the animal receiving more shocks.

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<sup>1</sup> [Frontiers | A Framework to Assess the Impact of New Animal Management Technologies on Welfare: A Case Study of Virtual Fencing \(frontiersin.org\)](https://www.frontiersin.org)



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Further, the intensity of the auditory warning used causes discomfort for animals, and a reduction of welfare by causing unnecessary stress for the animals. Specifically:

By testing cows and goats in an operant conditioning paradigm, Heffner and Heffner (1983, 1990, and 1998) found the animals to be 1 dB more sensitive than humans and more sensitive than most other animals tested as pigs, horses and sheep. The noise can disturb the animal in their locomotive, resting, foraging and social behavior. **Cattle experience discomfort at 90–100 dB, but ear damage occurs at 110 dB** (Phillips, 2009; Brouček, 2014).

When a range of 60–90 dB has been exceeded, studies have found that physiological processes are usually disrupted. This includes issues including disorders of the secretory activity of the adrenal cortex, adverse changes in the metabolism of polyunsaturated fatty acids, and reduction of the immune response, which in turn negatively affects the animals behaviour (mainly feeding behaviour) and – in the case of dairy cows – causes a decrease in their milk yield, an increase in the number of somatic cells in milk, and reproductive problems (Johns et al., 2015; Esmail, 2017). Further:

Exposure of dairy cattle to 80–100 dB of noise twice a day reduces milk yield and may even result in breaks in milk discharge (Algers et al., 1978; Algers and Jensen, 1991) that should be evidence that the animal presents some discomfort regarding the sound.

In a study with sheep using virtual fencing, there were indications of potentially negative welfare implications for the animals that were exposed to the virtual fence due to the increased proportion in electrical stimulus received and the animals running.

Virtual fencing could also make farmed animals more vulnerable to predators, therefore cannot replace predator-proof fencing. Predator proof fencing provides both a physical barrier between predators (such as dingoes), and farmed animals and prevents animals from straying. Using fencing conservatively and appropriately, in combination with the presence of guardian animals and humans to supervise and defend farmed animals can be an effective way of reducing harm to both wild animals and farmed animals (Boronyak and Quartermain 2022).

Based on the available research, it appears that virtual fencing as an option for maintaining animals in an open space in pasture areas should only be considered with extreme caution, with the key concerns being:

1. Animals could not have a fast habituation regarding the fence (adaptation by learning). If they cannot see the limit (fence) this can lead to more electric shocks until the animals learn not to walk “outside” the limited area.
2. If not habituated properly, the animals do not know that the warning is connected to a virtual fence but might rather connect it with other stimuli. This can lead to confusion, stress, and insecurity.
3. The sonorous alarm causes discomfort for the animals and could change the feed behaviour and resting of the animals. Therefore, proposed limits of intensity would be needed.



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4. As the virtual fence could be used for cattle, goat and sheep, the intensity of the sonorous and electric stimulus could result in a different reaction in different species. Any kind of negative stimuli that could cause fear and pain on the animals, however, should not be used.
5. There is a risk that virtual fencing has the potential to escalate human-wild animal conflicts, particularly related to predators of farmed animals which creates significant animal welfare consequences. For example, the lethal control of predator animals, such as Dingos, through shooting, trapping and poisoning kills both non-target species and working dogs. There is no guarantee that these control methods reduce farmed animal risks and often amplifies the presence of predators due to destabilisation of the environment's biodiversity (Boronyak and Quartermain 2022).

Therefore, from a Farmed Animal Welfare point of view, FOUR PAWS Australia concludes that **if a negative impact on the animal's wellbeing cannot be excluded with certainty, we do not support nor recommend virtual stock fencing. Fencing that poses low risk to wildlife and farmed animals should be used.**

Related to this issue, in dog training, there are similar devices such as electric shock collars, and collar with sound or spray features, that are not accepted by FOUR PAWS Australia, nor is their use supported by or shown to be effective by leading animal welfare science. In many countries the sale and use of technical and chemical devices (e.g. shock or spray collars for dogs) are banned by law.

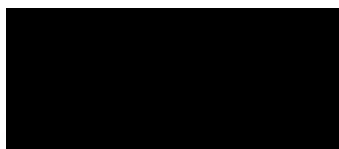
In various Australian states and territories, the use of electric shock devices is prohibited, for example;

- In the ACT, the Animal Welfare Act 1992 (2001 Amendments) prohibits the administration of an electric shock to an animal, and the placing of an electric shock device on an animal.
- In NSW the Prevention of Cruelty to Animals Act 1979 prohibits the possession, sale and use of electric dog collars, with limited exemptions for electric boundary systems.
- In SA the Animal Welfare Act 1985 prohibits the use of an electric device to confine or control an animal.

It should also be noted that traditional fencing is not without faults and can pose a threat to the welfare of both farmed and wild animals by design, or if used inappropriately. FOUR PAWS Australia recommends that only an appropriate fencing which poses low risk to the welfare of farmed and wild animals should be used.

**As such, we strongly recommend that this proposal be denied.**

Thank you for your consideration.



**Rebecca Linigen**  
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FOUR PAWS Australia



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#### Links and References:

- [Agriculture | Free Full-Text | Virtual Fencing Technology for Cattle Management in the Pasture Feeding System&mdash;A Review \(mdpi.com\)](#)
- [Boronyak, L and Quartermain, E. 2022. Predator Smart Farming: Modernising Australia's approach to livestock protection. Humane Society International Australia](#)
- [Frontiers | A Framework to Assess the Impact of New Animal Management Technologies on Welfare: A Case Study of Virtual Fencing \(frontiersin.org\)](#)
- [Lee et al . 2008 . The effect of low energy electric shock on cortisol,  \$\beta\$ -endorphin, heart rate and behaviour of cattle - ScienceDirect](#)
- [Marini et al. \(2020\). Social influence on the effectiveness of virtual fencing in sheep - PMC \(nih.gov\)](#)
- [ALGERS B., EKESBO I., STROMBERG S. \(1978\). THE IMPACT OF CONTINUOUS NOISE ON ANIMAL HEALTH. ACTA VET. SCAND., SUPPL. 67: 1-26.](#)
- [ALGERS B., JENSEN P. \(1991\). TEAT STIMULATION AND MILK PRODUCTION-DURING EARLY LACTATION IN SOIS: EFFECTS OF CONTINUOUS NOISE. CAN. J. ANIM. SCI., 71: 51-60](#)